MANIPAL UNIVERSITY, JAIPUR
Building a sustainable organization

CASE STUDY

QUICK FACTS

- Location: Jaipur, Rajasthan
- Capacity: 800 kWp
- Type of system: RCC installation
- Annual generation: 12 lac units
- Carbon dioxide abated: 113 tonnes CO_2 annually
- Date of commissioning: March 2015

OVERVIEW

Manipal University continued their journey of adopting solar energy and partnered with CleanMax solar to install rooftop solar plant at their Jaipur, Rajasthan Campus. The plant was commissioned on March 2015 and has a capacity of 800 kWp. The solar plant fulfilled the expectation of abating 113 tons of CO2 annually. Overall, the plant has generated roughly 12 lac units per year, supplying power to the whole campus. Besides the campus at Rajasthan, CleanMax has also installed rooftop systems at other campuses in Bangalore (135 kWp), Mangalore (978 kWp), and Udupi (215 kWp).
Under the BOO model, the incentives for Manipal University are threefold - (i) Capex free - without any investment, (ii) Hassle free- turnkey solutions with 25 years of maintenance support and (iii) Risk-free - it is CleanMax ownership as a developer to ensure optimum plant performance.

SOLUTION

For Manipal Education Group, the goal was to be a sustainable organization and so, the key metrics to evaluate the performance of a solar developer, as well as the installed PV system, was based on three key parameters:

- **Performance Ratio (PR)**
  The industry standard for a very high-performing system is up to 75%. The Manipal University, Jaipur plant is achieving PR as high as 79%. The closer the PR value is to 100% (which cannot be achieved due to unavoidable losses), the more efficiently the PV plant is operating. Unlike efficiency, PR uses real-world data to judge the performance of a module and power plant.

- **Energy yield**
  The yield on energy has a direct impact on the performance of a project and can be used to calculate the “Economic Yield” of the system. Manipal University, Jaipur Solar plant has been giving 1564 kWh/kWp per year energy yield performance, which was more than simulated calculation done using software called PVSyt during designing.
  It is based on real-world conditions, with site-specific solar radiance and weather conditions taken into account, which makes it a better predictor of actual performance than efficiency measured in laboratory conditions.

- **QA-QC (Quality Assurance Quality Checks)**
  We ensured all components as per our BOQ (Bill of Quantities) for solar plants are verified and certified independently by third-party, as per our rigorous QA-QC (Quality Assurance and Quality Check) Policy to ensure lifetime system performance.

BENEFITS

Engineering, procurement and construction of a large-scale PV system is a complex undertaking. It comes with a certain level of client expectations in terms of delivering on the energy output and cost saving. So at CleanMax, a sound system design is always followed as per industry-based practices, and the selection of reliable and quality equipment for each project is paramount to meeting Manipal’s expectations of a high-performance solar plant.

Since installation, Manipal University, Jaipur system on average has outperformed the predicted design by 9%.

ABOUT MANIPAL UNIVERSITY

Manipal University Jaipur is a private university. It is the fifth University established under Manipal Group. T.V. Mohandas Pai is the Chairman of Manipal Global Education. It is recognised by UGC as a private university under section 3 of UGC Act 1956.

ABOUT CLEANMAX SOLAR

CleanMax Solar is India's #1 provider of solar energy to corporates. Since 2011, the company has successfully installed more than 200 projects, with a combined capacity of 100MWp of onsite solar plants. It has been recognised by the Ministry of New & Renewable Energy (Govt. of India) with National Excellency awards for the Rooftop solar developer and rooftop solar EPC player in the country.