

# Tata Group Company: Gujarat's largest on-site solar power system. High quality designing, better generation!

## Quick Facts

- ▶ Location: Gujarat
- ▶ Capacity: 2036 kWp
- ▶ Type of system: Metal Roof installation
- ▶ Annual generation: 28.5 lac units annually
- ▶ Carbon dioxide abated: 2690 tons CO<sub>2</sub> abated annually
- ▶ Date of commissioning: August 2015

## Overview

A 2 MWp solar power system started supplying power to this Tata Group Company in Gujarat in the August of 2015. It is the largest on-site solar power plant in the state. Installed on metal roofs, the system is exceeding the expected energy output by 105% on an average since the time of installation.



## Challenges

### ▶ Zero penetration of roof

The project was executed without a single penetration on the client's roof sheeting (Standing seam galvanium sheet). German-made, non-penetrating module mounting clamps were used to achieve this. While this is only possible on certain roof sheets, CleanMax uses non-penetrating systems whenever possible.

### ▶ Loading on the rooftop

All the module mounting structures used are aluminum, thereby reducing the load on the roof significantly. The aluminum structure-based design puts a load of 20-25 kg/sq.m. on the roof, compared to ~70kg/sq.m. for conventional steel structure design. While lightweight, the structures are designed to last for more than 25 years, and to withstand the highest possible wind speeds at the plant location, based on historical wind data and IS standards, and with an additional margin of safety.

## Solutions

### ▶ Executed in record time

Since the plant was a key component of the client's cost reduction programme, they were very keen that it be set up at the earliest. Working under tremendous pressure, CleanMax executed the project in record time. The site was mobilised in June, 2015 and the plant (2 MWp spread over two metal roofs) was completed by August, 2015. This execution time of 2 months is half that usually taken to execute rooftop solar projects (3-4 months) and is particularly notable in the face of strict safety regulations at the client's factory and the challenging working conditions, including working on rooftops 20 metres high.

### ▶ Power loss reduction

Despite the plant being megawatt scale, central inverters as well as transformers have been avoided. Instead more expensive string inverters have been used and all connections have been made at LT (415V) to minimize energy losses involved in step up as well as the higher loss levels in central inverter systems. The electrical layout has been created to ensure that the cabling from the roof travels the minimum distance and connects directly to the LT distribution panels in the factory below. The principle of enabling consumption within the loads nearest to the generation source has been used in establishing which solar power plant output should connect to which client LT panel.

## Highlights

- ▶ Tata Group is widely seen as a thought leader in the country, and today they are leading users of rooftop solar power as well. When this Tata Group company chose CleanMax to be their solar partners for a 25-year long journey, our zeal to meet client expectations and quality standards was very high. We met this challenge by installing the solar power plant in a record time of 2 months, surpassing our benchmark for installation speed. This speed was achieved while also maintaining a strict adherence to our own quality, safety and compliance standards, as well as those of Tata Group company.

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## About CleanMax



CleanMax is the sustainability partner for India's leading corporates. Headquartered in Mumbai, we are the largest provider of solar power to commercial and industrial customers.

The company develops projects on turnkey basis, providing cheaper-than-grid solar power without any upfront investment from its customers. With a highly skilled in-house team, CleanMax operates across India, Middle East and South East Asia.

Our track record with India's top companies has made CleanMax a preferred partner across sectors such as Automotive, Pharmaceuticals, Food & Beverages, Information Technology, Education and many other industries. We also partner with some of India's leading government institutions and top universities.

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### Website:

[www.cleanmax.com](http://www.cleanmax.com)