



## QUICK WIN PROJECT – RAJKOT SOLAR PV IN SOCIAL HOUSING

### About Rajkot

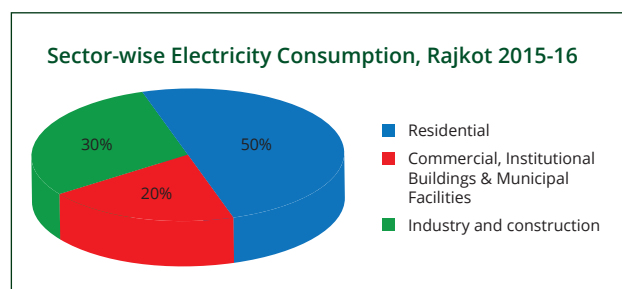
Rajkot, an industrial town famous for its foundry and machine tools industry, is the fourth largest city in the state of Gujarat. It is located on the banks of the Aji and Nyari rivers at the center of peninsular Saurashtra region, in the central plains of Gujarat state. It is the biggest city in terms of population in the Saurashtra-Kutch region, and is bustling with commercial activity.

### CapaCITIES Project

Cities account for approximately two-thirds of global energy use and over 70 percent of energy-related greenhouse gas (GHG) emissions that drive global climate change. In India, increased demand for energy, infrastructure and services is putting city systems under pressure. This will be accentuated further by growing risks caused by climate variability. Poor and vulnerable segments of the city populations will be affected most. Through the Capacity Building for Low Carbon and Climate Resilient City Development project (CapaCITIES), SDC's Global Programme Climate Change will support and accelerate the Government of India's efforts for sustainable urbanization.

### Energy Consumption in Residential Sector

Energy consumption in the residential building sector was 606 million units (2015-16), accounting for 50% of total electricity consumption in the city, contributing to 35% of GHG emissions from economy wide activities



in the city (498,590tCO<sub>2</sub>e GHG emission in 2015 -16) Therefore, it is imperative to focus on reducing energy consumption and enhancing energy efficiency in the residential buildings sector. Maximizing the use of renewable energy is a significant measure that would reduce the consumption of predominantly coal based grid energy.

### Social Housing Complex 11A

The Krantiveer Khudiram Bose social housing complex in plot number 11A consists of 5 buildings with a total of 140 dwelling units. At full occupancy, common amenities i.e. lifts, lights and pumps, will consume 3000 units of electricity per month. To encourage the adoption of solar PV in social housing, a 31.5 kWp grid connected solar PV system is installed, as a first step.

The social housing complex has an association which will be responsible for ensuring the safe operation and maintenance of the system. The solar PV system will generate 3780 units of electricity per month (45,360 kWh per year), which has a potential to reduce 37 tCO<sub>2</sub>e GHG emissions per year. The system will consist of 100 poly-crystalline PV panels of 315Wp capacity each, which are mounted on a frame at a 21 degree panel tilt.

The solar PV system will be operated and maintained by the implementation contractor for a period of 10 years from commissioning. Overall responsibility for the safety, security and periodic cleaning of the panels will lie with members of the township. Training for periodic cleaning of the panels, safety of the inverter, and reading from bidirectional meter is provided to members of the township. They are cleaning the panels once in month and has provided separate valve and pipeline for cleaning purpose.

As buildings are not fully occupied yet, an average of 500 kWh electricity per building is credited in their monthly electricity bills. Before the solar PV system,





Members of the township were paying approx. 10000 INR to DISCOM for electricity consumption in common utilities, but as the township is generating and utilizing solar energy from Solar PV system, approx. 12000 INR is credited to their accounts by DISCOM every month after adjusting the electricity consumption from DISCOM and electricity generation from Solar PV.

## Beneficiaries

Residents of the Krantiveer Khudiram Bose Township (Social housing 11A) and Rajkot Municipal Corporation.

## Potential for Replication

RMC plans to construct a total of 9,141 dwelling units by the year 2020. Considering the assessed usage of electricity for common amenities, based on the experience at the pilot site, it is found that it is feasible to structure a PPP project to install Solar PV systems for catering to the common amenities load in all upcoming social housing complexes. Relevant policy interventions to mandate such a practice could be put forth by RMC. RMC has already proposed a 100kWp grid connected solar PV system for common utilities at Smart Ghar 3 affordable housing scheme.

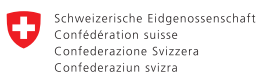
## Project Investment

The total project investment was CHF 37'000



For more information, please contact:

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