



## RENEWABLE ENERGY DEPLOYMENT AT AJI WATER TREATMENT PLANT IN RAJKOT

### Project Highlights

- Installation of 145kWp grid connected solar PV system at Aji water treatment plant
- Compensation of 18% of the electricity demands of the water treatment plant by renewable source

### Background

Rajkot is part of Swiss Agency for Development and Cooperation's (SDC) Capacity Building for Low Carbon and Climate Resilient City Development project (CapaCITIES) project, which aims to enhance capacities of Indian partner cities (Rajkot, Coimbatore, Siliguri, and Udaipur) in planning and implementing climate mitigation and adaptation measures along with increasing awareness on low carbon and climate resilient city development. Water supply accounting for 61% of the total municipal electricity consumption (2015-2016) is the most energy intensive municipal service of the city. This depicts immense potential of reducing energy consumption of the water supply sector through renewable energy alternatives. In view of this, RMC implemented a pilot project with energy efficiency and renewable energy measures in one of the water treatment plants, i.e., Aji water Treatment Plant.



**Rajkot,  
Gujarat**

2015-2016

*(Not to scale)*

### Project Objectives

- I. To reduce conventional electricity consumption by introducing Energy Efficiency (EE) in pumping and maximize use of Renewable Energy (RE) through grid-connected solar PV system deployment as per Gujarat Solar Policy 2015
- II. To reduce the conventional electricity consumption and related GHG emission from Aji WTP by approx 15 to 18%
- III. To understand the potential of scaling up EE and RE integration in the water supply sector of Rajkot based on learnings from the solar PV system deployment at Aji water treatment plant

### Key Stakeholders

Rajkot Municipal Corporation (RMC) and ICLEI India

### Approach

The following initiatives were undertaken to transform the electricity consumption patterns of the Aji water treatment plant:

- Feasibility study was conducted by ICLEI South Asia to identify feasible location for the project
- Technical specifications were identified for project and contractor was finalized for implementation through technical terms of reference
- The solar PV system was installed based on a co-financing model and the performance of the system is monitored in real time through an online software
- The solar PV system will be operated and maintained by the contractor who set up the plant for a period of 10 years from installation

## Financial Structure of the initiative

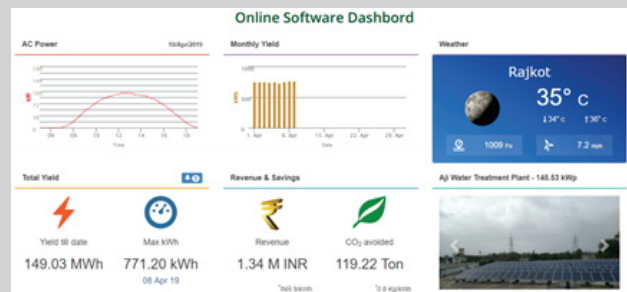
The total cost of the project was estimated to be around INR 8.3 million. The breakup of the funding scheme is: INR 4 million was financed by SDC under the CapaCITIES project (for 70kWp solar PV) and the remaining INR 4.3 million was financed by RMC through the 'SJMMSVY' scheme (for 75kWp solar PV).

## Achievements



### Benefits and Co-Benefits

- Energy Savings: Plant has generated a total of 224,150 kWh electricity
- Improved facilities for citizens
- Environmental Benefits: reduced 184 tons of CO<sub>2</sub> equivalent GHG emissions since its installation over a period of 12 months



Glimpse of the Solar Rooftop setup at the Aji water treatment plant

## Success Factors

- Technical innovations for effective implementation of Solar panels at the water treatment plant

## Future Prospects

RMC has already proposed a 250kWp grid connected solar PV at Raiyadhar wastewater treatment plant after the successful implementation of this project and is commissioning a feasibility study to install solar PV systems on other water and drainage pumping stations/ treatment plants. A bankable project based on the RESCO model is also being developed with an aim to install solar PV systems on Ribda and Raiyadhar water treatment plants; and Gavridhar and Madhapar sewage treatment plants. These projects when realized will supplement a significant proportion of the electricity consumed by the municipal services provided by the RMC. Thus, RMC will lead by example in achieving CO<sub>2</sub> abatement through RE integration into their services.

Source: Case received from the city

For more Information

<https://capacitiesindia.org/projects-rajkot/>

<https://timesofindia.indiatimes.com/city/rajkot/rmc-to-set-up-80-ml-d-plant-at-madhapar/articleshow/57708719.cms>

[https://www.unescap.org/sites/default/files/IDM\\_Water\\_Demand\\_and\\_Waste\\_Water\\_Management\\_Rajkot.pdf](https://www.unescap.org/sites/default/files/IDM_Water_Demand_and_Waste_Water_Management_Rajkot.pdf)

[https://urban-leds.org/wp-content/uploads/2019/resources/case\\_studies/ICLEI\\_UrbanLEDS\\_case\\_story\\_Rajkot\\_2016.pdf](https://urban-leds.org/wp-content/uploads/2019/resources/case_studies/ICLEI_UrbanLEDS_case_story_Rajkot_2016.pdf)