

## Case Study: Akota Solar Bridge, Vadodara city

Vadodara is one of the largest cities in the state of Gujarat with a population of about 1.8 Million people (Census 2011). It is located in the central area of the state at a distance of 141 kilometres from the capital city of Gandhinagar. Vadodara is often known as the cultural capital of Gujarat situated on the banks of river Vishwamistri. It is a significant point of business and economy of the area.



Location Map of Vadodara City, Gujarat

Gujarat is one of the top states in India with solar power generation capacity. Seizing the opportunity, the governing bodies have taken the initiative of promoting solar projects in various ways. Solar rooftop and solar ground mounted projects are actively promoted. Under the smart city project commenced by Gujarat Government, one of the first projects launched in Vadodara is the bridge top project.

Vadodara Municipal Corporation implemented a unique project of over bridge rooftop solar power plant. The Akota bridge is covered with a total of 3024 solar panels of 325 W power along with 14 solar inverters of 70 kW and a power transformer with a capacity of 1000 kW ampere. It generated a total of 7,92,000 units of clean energy over the period of 9 months. The panels are angled northwest at 12 to 18 degrees so that sunlight is available at all times of the day creating a direct profit of Rs 47,33,550 in the nine months of its operation.



Akota Solar Panel Bridge

The bridge is illuminated at night through installed decorative colour lighting under the rooftop as seen in the adjacent image. The panels are cleaned every two weeks during night time, in absence of sunlight.



Night view of Akota Solar Panel Bridge

The solar panels are made of aluminium and copper material called blue wafer which brings neutrons into the stream from the radiation of sunlight and produces clean electricity. Therefore, solar energy not not create greenhouse gases for the energy production.

Vadodara Municipal Corporation (VMC) has laid focus on sustainability in their draft budget for the year 2022-23, especially generation of solar power. A proposal of a first of its kind 2000 kW capacity floating solar plant in Ajwa Reservoir by VMC will reduce the generation of green house gases. As per the guidelines of Central Pollution Control board, the setting up of Continuous Ambient Air Quality Monitoring stations shall take place to monitor GHG Emission.