

**SURAT SMART CITY PROJECTS**  
**ABD-11**  
**Solar Power Generation 1MW**

**1. Name of the Project:**

Solar Power Generation 1MW

**Vision:** To promote green energy and clean energy, to mitigate the effects of climate change and shoulder targets of National Solar Mission.

**Background:**

Surat city's growth is phenomenal over last couple decades. In the decade of 1991 to 2001 City population increased to 24,33,835 from 14,99,560. It means decadal population growth is more than 62%. Present population of city has reached at 5 million. Due to increased population and consequent increase in industrial & business growth service volume like water supply, sewage disposal, street lighting etc. is also increased considerably.

Consequently, electricity bill is increased by 245% to Rs. 39.54 crores in 2000-01 from Rs. 11.46 crores in 1996-97. Services of water supply, sewage disposal & street lighting accounting for more than 92% of total bill of SMC.

**Need for Solar Power Plant:**

Electrical energy is the prime factor for providing the basic services of water supply, drainage and street lighting. Provide these services at optimum cost is the big challenge for SMC, as the sources of income are limited and rate of electricity are increasing every year.

Electricity bill increased to almost 3½ times during the period from 1996-97 to 2000-01 and continual increment in the electricity bill, SMC realized that the Energy Efficiency is the key factor to meet this challenge.

The rate of rise was enormous due to increase in service volume and lesser operational efficiency of the various electrical machineries/ equipments used to run the basic services.

Realising all this factors a cell was established in Oct-2001 to monitor and manage energy known by "Energy efficiency cell". After the analysis and report submitted by the cell 1st Solar power plant was established at Surat Science Centre of 5 MW capacity. Later looking at the results of this Power Plant Surat has in total 37 Solar Power Plant located at various Properties owned by the Municipal Corporation of Surat City where a total of 1390KWp is generated without using any fossil fuel. This generated power is used to run various Treatment Plants of Water works and

Drainage/Sewage system. The study and experience of Surat's Energy efficiency cell states that 4.5 to 5 Acres of land is required to generate 1MW power. Presently the Municipal Corporation of Surat city is motivating the Citizens of Surat City to even go for roof top solar power system to cut short the energy expenses of Individuals. Surat city has proposed to have another 0.2MW power plant apart from existing Solar power plants.

**2. Sector: Renewable Energy**

**3. Cost and financing:**

▪ SCP Cost –	Rs. 11.00 Cr
▪ DPR Cost –	NIL
▪ Tender Estimated Cost -	Rs. 8.49 Cr
▪ Tender Sanctioned Cost -	Rs. 5.13 Cr
▪ Convergence Scheme/PPP/SMC –	MNRE (15%) + Swarnim (85%)
▪ Convergence/PPP/SMC Costing-	Rs. 5.13 Cr (100 % Convergence)

**4. Current status of the project implementation: - Work Completed**

**5. Impact/ Envisaged Impact of the project:**

This project gives an indirect benefit to the Citizens of Surat by transmitting the generated electricity to Anjana Sewage Treatment plant where the existing 82.5MLD sewage plant is augmented to 122MLD plant. The transmitted energy serves as a guiding force to move the mechanisms and pumps of the STP at anjana. This will reduce the overall energy demand received at Grid, resulting in economical benefit to City Corporation of Surat which in turn would reduce the burden on Tax payers of the city. With this particular 1MW plant Surat would generate 14 lacs units / annum, resulting in saving of around Rs. 85 lacs / annum in electricity bill with reduction in emission of 6500 tonnes CO<sub>2</sub> / annum.

**6. Site Plan (Google Map)**





**7. Site Photographs (High Resolution Image, before & after implementation)**





