AVAPPA TEMPLE THANE 12.71KW

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

AYYAPPA TEMPLE, THANE

PROJECT IRR

43%

TOTAL INVESTMENT 0.89 INR million

PAYBACK PERIOD 4 yrs AVERAGE MONTHLY SAVINGS IN BILL 100%

Shree Ayyappa temple is a temple and religious institution based in Vartak Nagar, Mumbai, Maharashtra. It is incorporated as a trust and society. The management of the temple decided to opt for solar power to reduce its increasing power bills. The temple hosts installed a 41-panel rooftop solar power plant. The excess energy generated by the plant flows into the grid operated by Maharashtra State Electricity Distribution Company (MSEDCL) as governed by the net metering regulations of the state.

The rooftop solar system is also a symbolic in religious terms, since the temple authorities see that the sun is lighting and powering up the temple. The project is so successful that the temple does not pay any electricity bills after the installation of the rooftop solar PV system.

517E 12.71 kw	SITES 1	AVERAGE MONTHLY CONS 1,935 kwh		SUMPTION		
SECTOR		SUBSECTOR	MANAGED BY			
Commercial		Religious	Avishakti Rooftop Solar			
ROOF TYPE		ROOFTOP AREA AVAILABLE		TOTAL INSTALLATION AREA		4
Metal Sheds		460 sq.m.		95 sq.m.		
PROJECT STAR Jun 2017	T DATE	CONSTRUCTION 4 months	PERIOD	PROJECT CI) MMISIONING DA 7	TE



POLICY AND REGULATORY

The system was commissioned under the regulation for 'Net Metering for Rooftop Solar PhotoVoltaic Systems' issued by Maharashtra Electricity Regulatory Commission (MERC). In order to avail and claim the subsidy benefit, the project was registered with Maharashtra Energy Development Authority (MEDA)

TYPE OF MODEL

CAPEX (Upfront Capital Investment Model)

KEY STAKEHOLDERS

AY YAPPA TEMPLE

Owner of Solar Rooftop PV system.



Savings matter of course, but there are also bigger things to look at. The world and especially India is harnessing solar energy to meet the energy demands as well as to tackle the problem of climate change. This is our humble contribution to the government's initiatives in solar sector for the betterment of our community and the environment.

Mr. M. Ravindran Nair, President, Shree Ayyappa Temple Trust

AVISHAKTI SOLAR PVT. LTD.

Responsible for the engineering, procurement and construction (EPC) of the rooftop solar PV system. Also responsible for the maintenance of the system for first five years.





When a spiritual institution pledges commitment to the cause of green energy, it is truly inspiring. It is, in my opinion, a great way to lead by example. By adopting solar, you contribute to the environment and save on your electricity bills. There is a misconception that rooftop solar plants are very expensive. Though rooftop solar projects come with an initial investment that could be a bit high, in the long-term it results in huge savings. The advantage will be reflected every month in the temple's reduced electricity bills, the estimated annual savings as a result of this project is around INR 2,60,000/-. The subsidy plan by the government on residential rooftop solar projects reduces overall cost and adds to the end benefit to the customer.

Mr. M. Ravindran Nair, President, Shree Ayyappa Temple Trust

MAHARASHTRA STATE ELECTRICITY DISTRIBUTION COMPANY LTD.

The local power distribution company, responsible for granting net metering approvals, and the offtake of the excess electricity generated by the RTPV plant.



TECHNICAL SPECIFICATION



PLANT CAPACITY 12.71 kW



ABB





AVERAGE MONTHLY GENERATION 1,969 kWh

EXPECTED CO, EMISSION OFFSET







¹The performance of a PV power plant is often denominated by a metric called the capacity utilisation factor. It is the ratio of the actual output from a solar plant over the year to the maximum possible output from it for a year under ideal conditions. Capacity utilisation factor is usually expressed in percentage.

FINANCIAL INFORMATION

TARIFF RELATED DATA

Tariff Category	Commercial	AVERAGE ANNUAL
Tariff	13.20 ² INR/kWh	SAVINGS IN BILL
Cost of Generation (LCOE)	6.89 INR/kWh	100%

FINANCIAL METRICS

Total System Cost	0.89 INR million
Equity Injection	0.67 INR million
State Government Subsidy	0.22 INR million
Debt	0.00 INR million
Net Investment	0.67 INR million

Payback Period	4.00 Year	
Project IRR	43 %	
Equity IRR	43 %	

CAPEX MODEL | CUMULATIVE SAVINGS



RECOMMENDATIONS

Most religious institutions in India fall under the commercial category. Rooftop solar power system can significantly reduce power bills and free up financial resources for other social activities

Religious and spiritual organizations often have a large following which sets a good example for the devotees to follow and install at their respective premises

Rooftop solar systems are associated with the sun and can often have symbolic religious and spiritual meaning for devotees, making it an added benefit

