

## PROJECT REPORT for MANGALYA PROSPER

**System Size:** 49kW

**Solar Panels:** Vikram Solar 395Wp, 124 Nos.

**Inverter:** Solaredge Inverter 27.6kW, 2 Nos.

Based on your overall consumption, you would require a 68kW solar plant to offset 100% of your electricity bill. But due to the current BESCO regulations on LT meters, we can provide only a maximum of 49kW. This system is capable of saving 73% of your electricity bill on an average.

**Energy Savings based on your Monthly Consumption (According to the current BESCO guidelines of NET METERING):**

Month	Consumption (kWh)	Production from 49kW Solar (kWh)	Amount Payable to BESCO	% Reduction in Electricity Bill
Jan	7840	5987	20,360	76%
Feb	6800	6498	3,429	96%
Mar	6960	6821	1,554	98%
Apr	7120	6892	2,531	97%
May	7440	6179	13,795	83%
Jun	7760	4666	34,058	60%
Jul	7920	4382	38,775	55%
Aug	7760	4619	34,576	60%
Sep	8240	4618	39,512	56%
Oct	7920	4867	33,582	61%
Nov	8240	6036	22,757	73%
Dec	8160	5996	24,790	73%

- Consumption is based on your monthly electricity bills shared by the association
- Production from 49kW Solar is based on our calculations by considering multiple factors like weather, transmission loss, soiling loss etc.
- Amount Payable to BESCO is based upon the cost at which the remaining electricity consumption is bought from BESCO at current grid tariff.
- It can be verified in % Reduction in Electricity Bill that during the months of Feb, March, and April, the production of the system is capable of offsetting atleast 95% of your Electricity Bills.
- All these could vary based on real time climate conditions, site conditions and on how well the system is maintained.

**Possible Yearly Energy Savings:**

Year	Yearly Consumption (kWh)	Production from 49kW Solar (kWh)	% Covered by Solar	Cost Saving with Solar Installation
1	92160	67562	73%	7,43,182
2	92160	66886	73%	7,87,248
3	92160	66384	72%	8,35,775
4	92160	65887	71%	8,88,157
5	92160	65392	71%	9,42,953
6	92160	64902	70%	10,01,438
7	92160	64415	70%	10,63,492
8	92160	63932	69%	11,29,039
9	92160	63453	69%	11,99,262
10	92160	62977	68%	12,73,395
11	92160	62504	68%	13,52,587
12	92160	62036	67%	14,36,133
13	92160	61570	67%	15,25,089
14	92160	61109	66%	16,20,000
15	92160	60650	66%	17,20,640
16	92160	60195	65%	18,26,918
17	92160	59744	65%	19,39,888
18	92160	59296	64%	20,60,536
19	92160	58851	64%	21,88,080
20	92160	58410	63%	23,23,550
21	92160	57972	63%	24,66,129
22	92160	57537	62%	26,20,810
23	92160	57105	62%	27,82,727
24	92160	56677	61%	29,55,706
25	92160	56252	61%	31,38,862

- Yearly Consumption is only based on your one year electricity bills provided by the association. It could vary as per your actual consumption.
- Production from solar is based upon the yearly degradation of the solar panels for the next 25 years from the time it is installed.
- Energy Cost Savings are based on the how much solar is able to cover the overall consumption and considered the yearly increase in price of electricity/unit at the rate of 7%.
- All these could vary based on real time climate conditions, site conditions and on how well the system is maintained.

**PAYBACK PERIOD and IRR as per NET METERING Policy:**

Meter Sanctioned Load	271 kW
Solar Required	68 kW
Solar Proposed	49 kW
% Reduction in Consumption	73%
System Cost	INR 24,50,000/-+GST
Payback Period	3.5 Years
IRR	36%

**Top View of the Possible System Installation:**


This design is just to see if there is enough space to allocate 49kW sized solar plant on the rooftop of Mangalya Prosper. There is not the final design as it can vary based on site conditions and your suggestions. I have not considered the vacant building complex on the left as it is still under construction.

**SOLAR ENERGY MADE – SIMPLE. RELIABLE. PROFITABLE.**

**Energy Savings based on your Monthly Consumption (According to the BESCOM guidelines of GROSS METERING if it is applicable from April 1st):**

Month	Consumption (kWh)	Production from 49kW Solar (kWh)	Amount Payable to BESCOM	% Reduction in Electricity Bill
Jan	7840	5987	68256	21%
Feb	6800	6498	55413	28%
Mar	6960	6821	56122	28%
Apr	7120	6892	57667	27%
May	7440	6179	63227	22%
Jun	7760	4666	71386	16%
Jul	7920	4382	73831	15%
Aug	7760	4619	71528	16%
Sep	8240	4618	76456	15%
Oct	7920	4867	72518	17%
Nov	8240	6036	71045	16%
Dec	8160	5996	72758	22%

- The Amount Payable to BESCOM is calculated by considering INR 8/Unit for the solar generated and bought from BESCOM and the remaining electricity that is directly consumed from BESCOM at the current grid tariff.
- The price of solar/unit under the Gross Metering is not confirmed. I have considered it at a rate 3 Rupees lesser than the grid tariff. It wouldn't be below this value as per our understanding.
- It can be verified from the % Reduction in Electricity Bill that a maximum of 28% reduction is only possible. This will increase your Payback period and reduce your Interest Rate of Return as compared to the Net Metering policy.

**From these detailed calculations, you get an understanding how installing a solar project under the current Net-Metering policy is more advantageous than the Gross-Metering policy from the savings point of view.**