



**BANGALORE
APARTMENTS'
FEDERATION**



Solar Roof Top Photo Voltaic Power Generation Brigade Petunia

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BAMBOOS
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Brigade Petunia

Banashankari II Stage, Bangalore

Community of 49 apartments
100% Organic Waste Composting
100% Waste Water Treatment

**Now Solar Power for Common
Utilities**



Solar Roof Top Photo Voltaic System

Initial Choices

Common Utilities rather than Individual Apartments

Grid connected Net Metering rather than Battery Storage

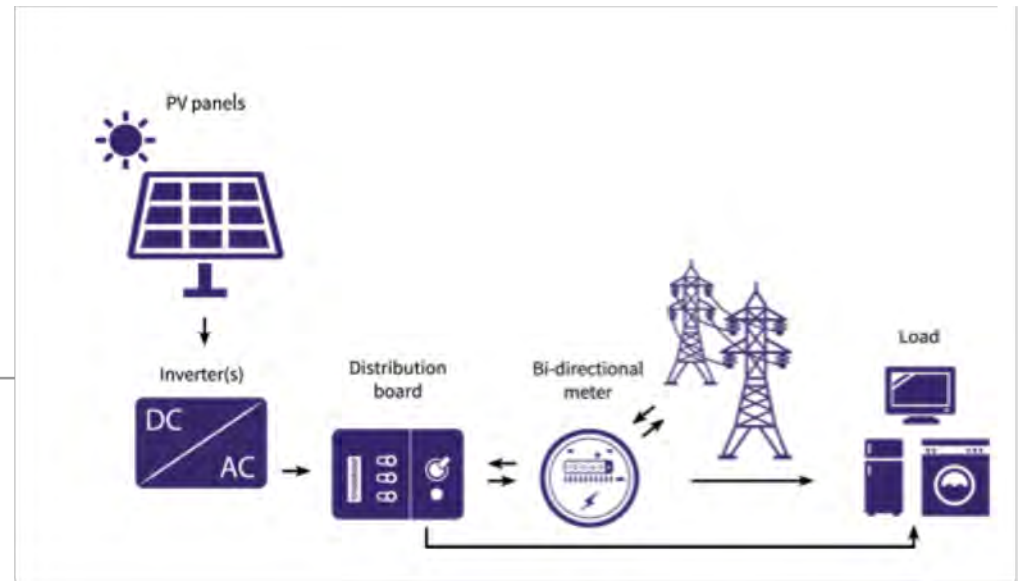
How large a Capacity?

Lower than sanctioned load

Roof top Area available

Efficiency assumptions based on location, sun angle and cloud cover

Extent of Grid failure

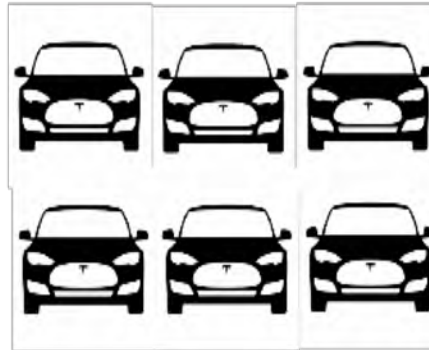


96 kWp Rooftop Solar Plant meets more than 90% of our Common Utilities energy needs

Avoids: 80.6 Tons of CO₂ emissions per year



Which powers 33 Indian homes for a year!

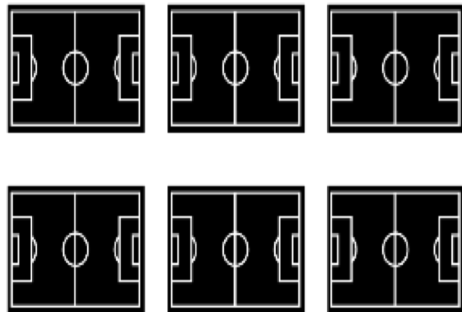


Equivalent to driving 37 Tesla cars!



Having 2 new Lalbaghs in the city!

100 kW Rooftop Solar Plant



Deforestation of 25 football fields!



Avoiding mining of 124 tons of Coal!

Cash Benefit

- When we use solar energy, we substitute costly BESCOM energy @ ₹7.60 per unit with free solar energy
 - Tariff increase expected >5% yearly
- Annual saving in first full year estimated at ₹ 9,800 per kWp installed
- Capital Cost was ₹54,000 / kWp installed after accounting for SECI subsidy
- At 7% return, investment recovered within 7 years
 - 15% IRR on a 10 year cash flow

Details about SRTPV Project

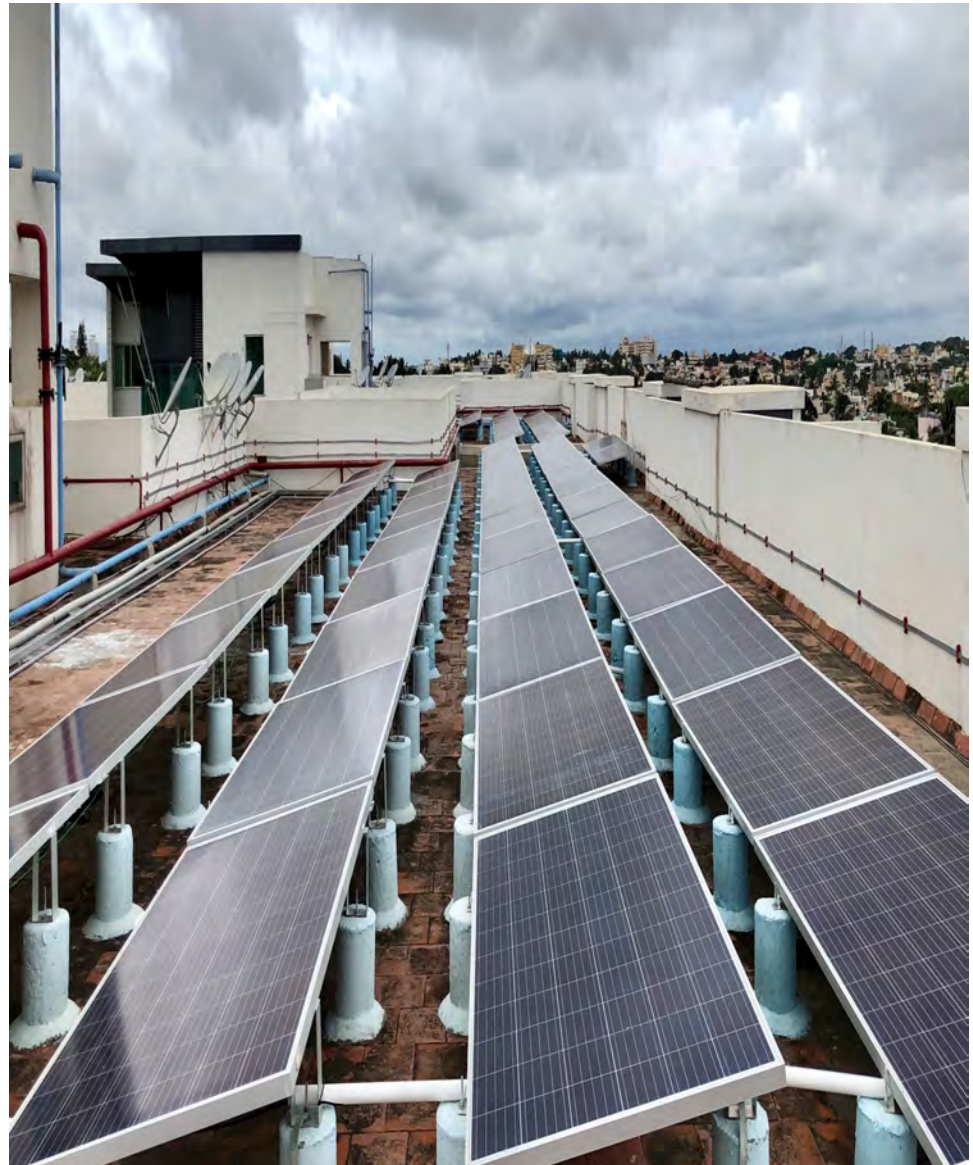
- One time, up front contribution by all 49 apartment owners
- Smart Panels with Power Optimizers
 - online real time monitoring
 - each panel optimised, no “weakest link”

Risks

- Our system is On Grid and not a back up for grid failure. Annual savings will drop if grid failure increases.
- Major risk is under-performance of the SRTPV system.
 - Vendors guarantee a Capacity Utilisation factor of 15%
(3.6 kWh generated per day per kWp installed)
- Maintenance and replacement expenditure is not significant
 - Routine maintenance is largely panel cleaning
 - No batteries. No moving parts, modular equipment
 - 12 year warranty on Inverters & 25 years warranty on Power Optimizers - low replacement costs expected

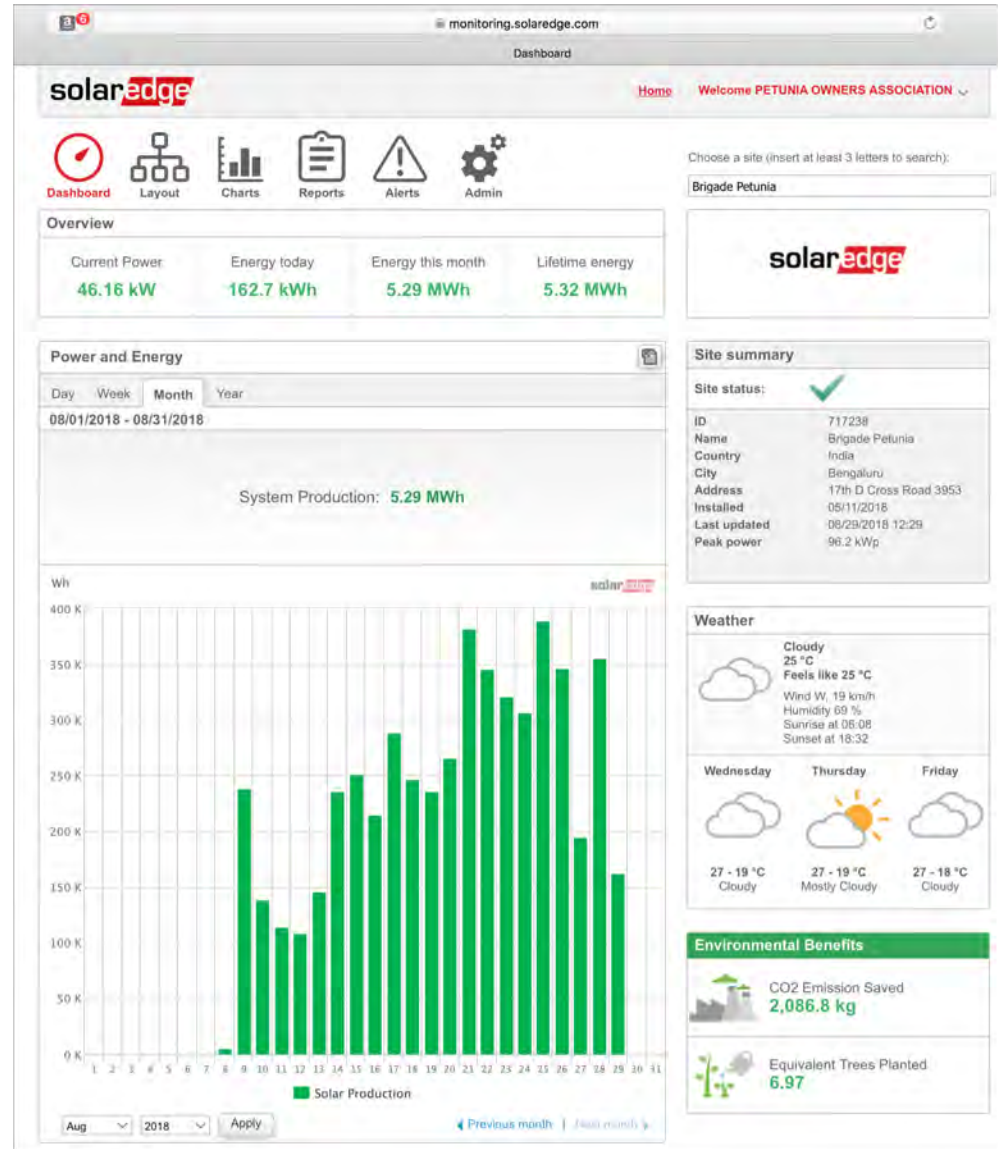
Brigade Petunia Solar Roof Top PV System

Commissioned in August 2018



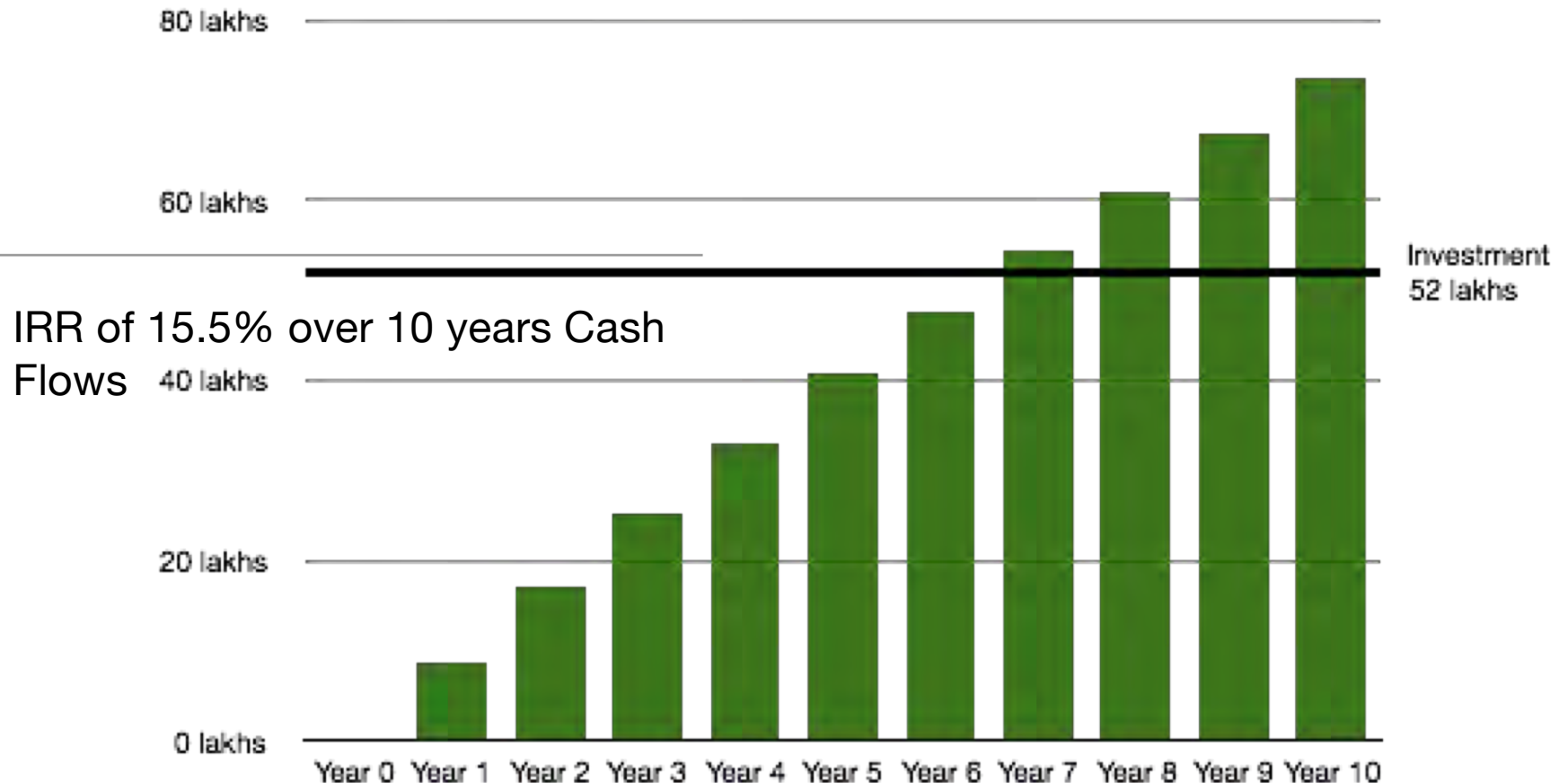
Solar Remote Monitoring Dashboard

Life Time Real Time Monitoring of Solar Assets
Web and IOS and Android Apps

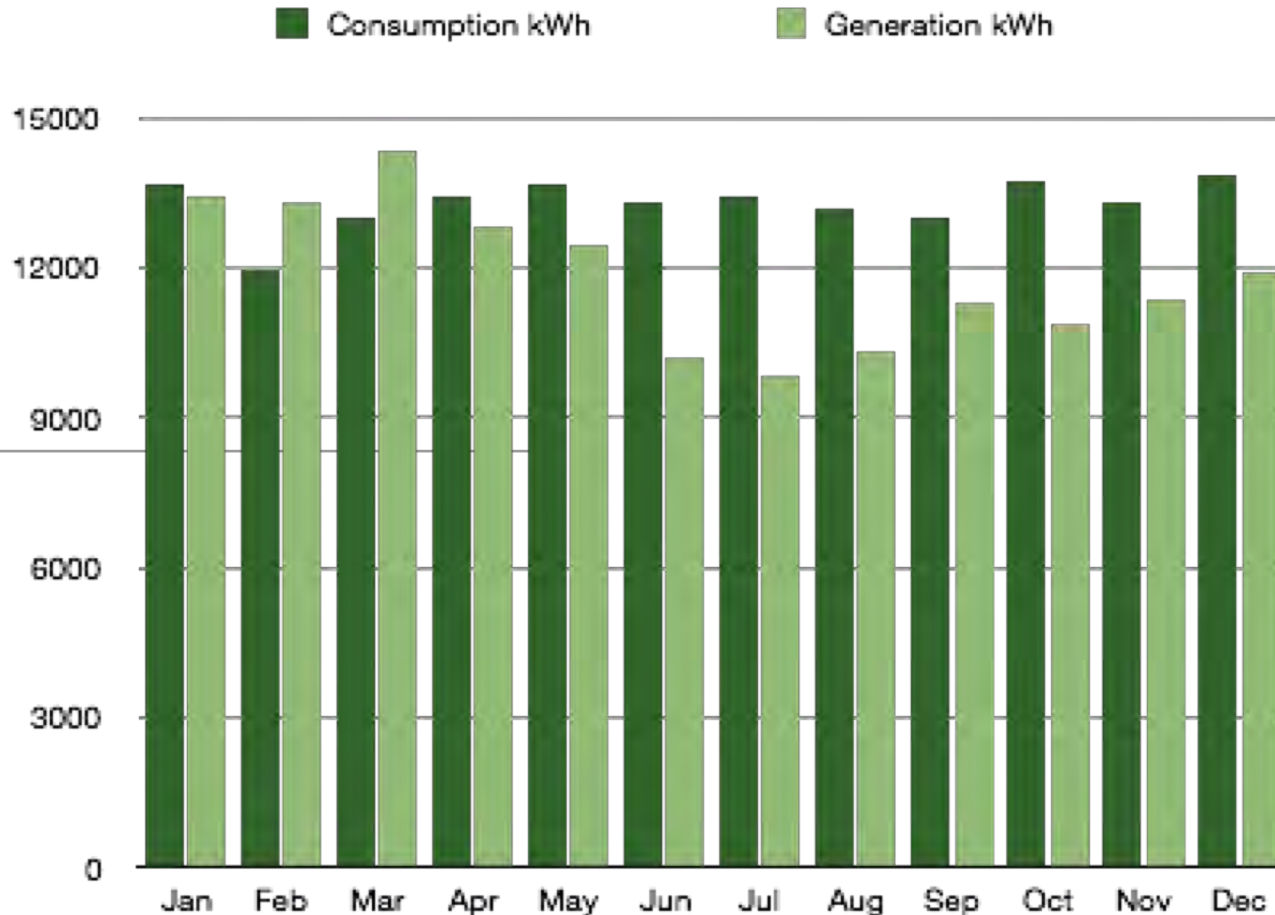


At 7% Return, Investment is recovered within 7 years

Cumulative Savings



Generation varies month to month. But greater than 90% of annual requirement is met



average 11500 kWh / month,
@ 3.84 kWh/day/kWp installed

Video of Solar Installation at Brigade Petunia



THANK YOU!