www.cleanmaxsolar.com

Energy Cost Savings Through Solar

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CleanMax Rooftop Solar Installation at leading MNC in Pune, 550 kWp

Why Do Corporates Adopt Solar?

- **Carbon footprint reduction –** Zero carbon emissions from a solar power plant. A 1 MW solar power plant offsets ~1400 tonnes of CO_2 annually, equivalent to taking 450 cars off the road.

- **Visible Commitment to Sustainability**: Compared to open access power or energy efficiency, rooftop solar is visible to employees, visitors, etc.

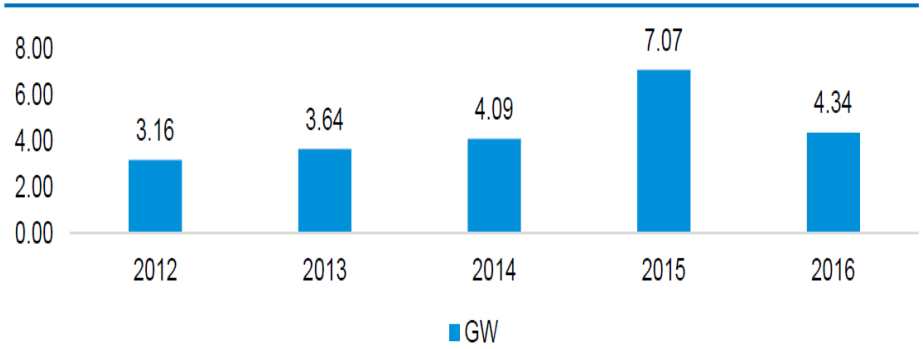
- **Cost Savings:** Competitive against retail cost of power, 20-30% Cheaper to grid

- **Minimum interference during operation :** After installation and commissioning typically, there is a small amount of routine maintenance required only in terms of cleaning the solar modules. The rest of the system typically requires very minimal and infrequent O&M.

- **Onsite/Rooftop advantage:** Rooftop/onsite solar plant is the best and easiest way to use unutilised space (RCC/metal roof/ground area) for productive function.

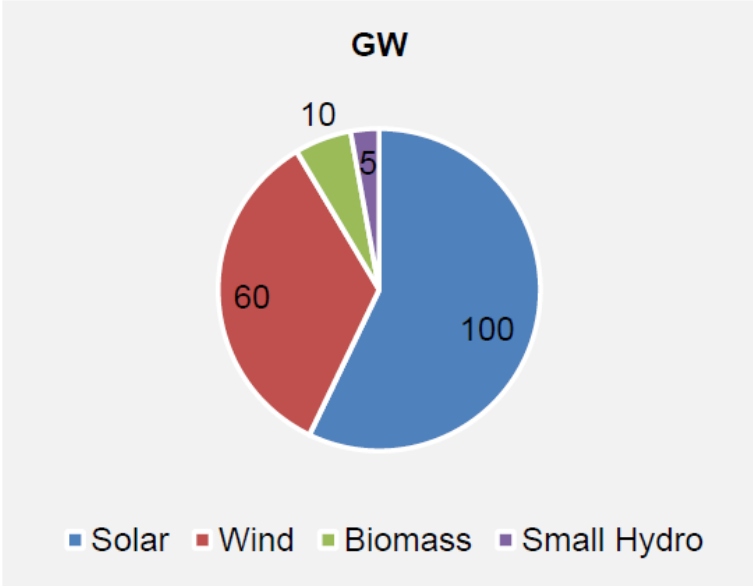
India energy scenario today

The Government has revised its target of renewable energy capacity to 175 GW by end of 2022, making it the largest expansion in the world and providing plenty of opportunities for investors. So far we have installed 22.3 GW of solar plants in the country.



4.34 GW capacity has been added from various renewable energy sources as on December 31, 2016 for FY2016-17.

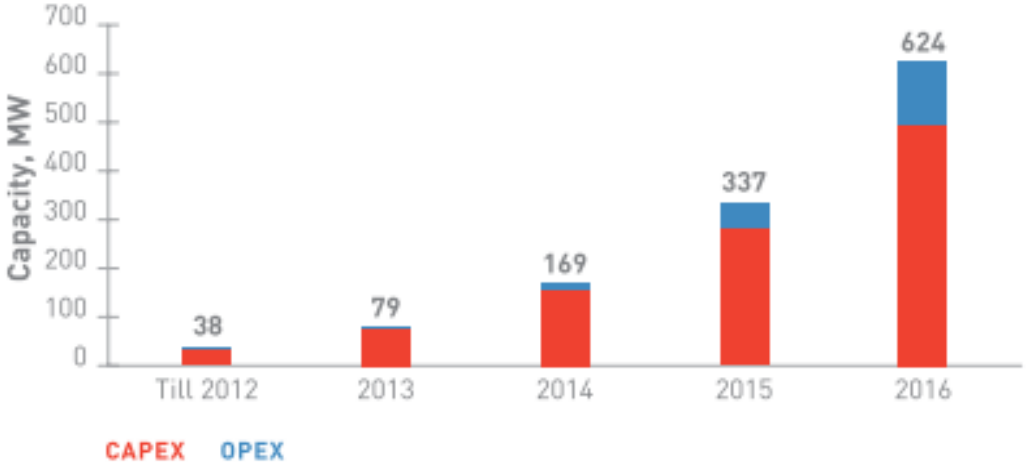
As on February, 2016, cumulative capacity of 50 GW grid interactive renewable energy capacity has been installed in the country, which constitutes 16% of the total installed power generation capacity of 314.6 GW

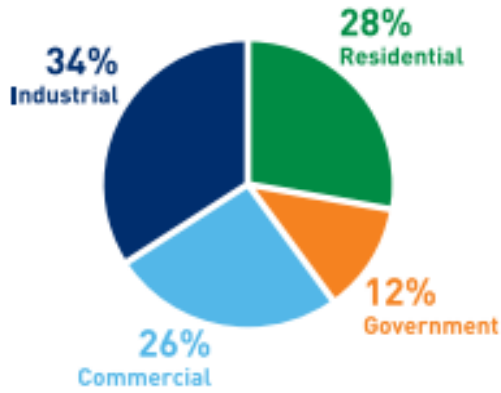


Source: Ministry of New and Renewable Energy

Rooftop solar scenario today and future predictions

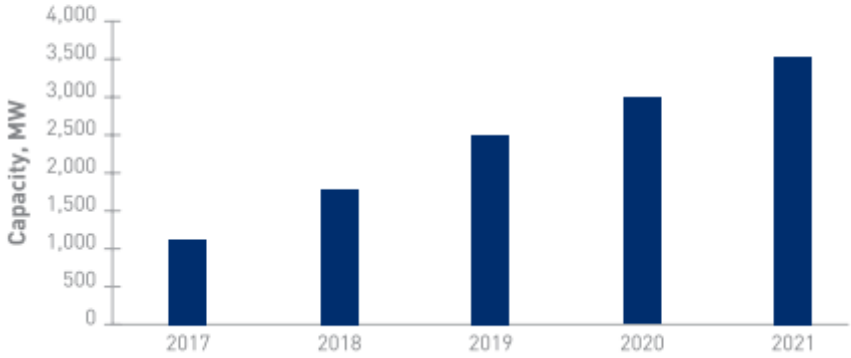
Figure 16: Rooftop solar annual capacity addition





11.9 GW of new rooftop solar capacity addition is expected in India between 2017 and 2021.

Figure 17: Rooftop solar capacity addition projections



Source: Bridge to India

Zero-Capex, Build-Own-Operate Model

- **Certainty of procurement outcome:** Lock in power cost savings through solar power (with no uncertainties, technology selection, generation risks, lifetime repairs and maintenance costs, etc.)
- **No investment risks:** Investment made by Solar developer
- **Ease of Procurement**: No capex approval
- **Ease of implementation :** Zero capex with complete outsourcing of power plant to a external party.
- **Ease of O&M:** External Party responsible for complete O&M
- **Savings:** 25% - 30% below grid power cost in states like Rajasthan (may vary from site to site)

Make vs. Buy analysis overwhelmingly favour outsourcing solar power investment to developers

	Make	Buy
Capex	• Rs 4.5 – 5.0 Cr/MWp	• Nil capex • Option to buyout solar power plant at any point in 25 year contract
Returns	• 12 to 13% IRR post tax (including depreciation benefit) • 7-9 year Payback • Unsuitable for manufacturing firms where IRR expectations ~18-22% and 18 to 36 month payback	• 10% to 40% lower tariff than grid rates from day 1 • Zero payback period
Risk	• Weather Risk (solar radiation) • Equipment or vendor failure/underperformance • Business landscape risk (relocation/shutdown)	• All solar performance risk on vendor • Offtaker has to guarantee Offtake • Business landscape risks mitigated by PPA t&c
Mgmt. Complexity	• Technical Selection of Equipment • Project Management • O&M Management	• Contract Terms to be finalised • Project Coordination • Rapid Scale-up

Companies can reduce costs by extensive deployment of rooftop solar and opportunistic adoption of open access solar

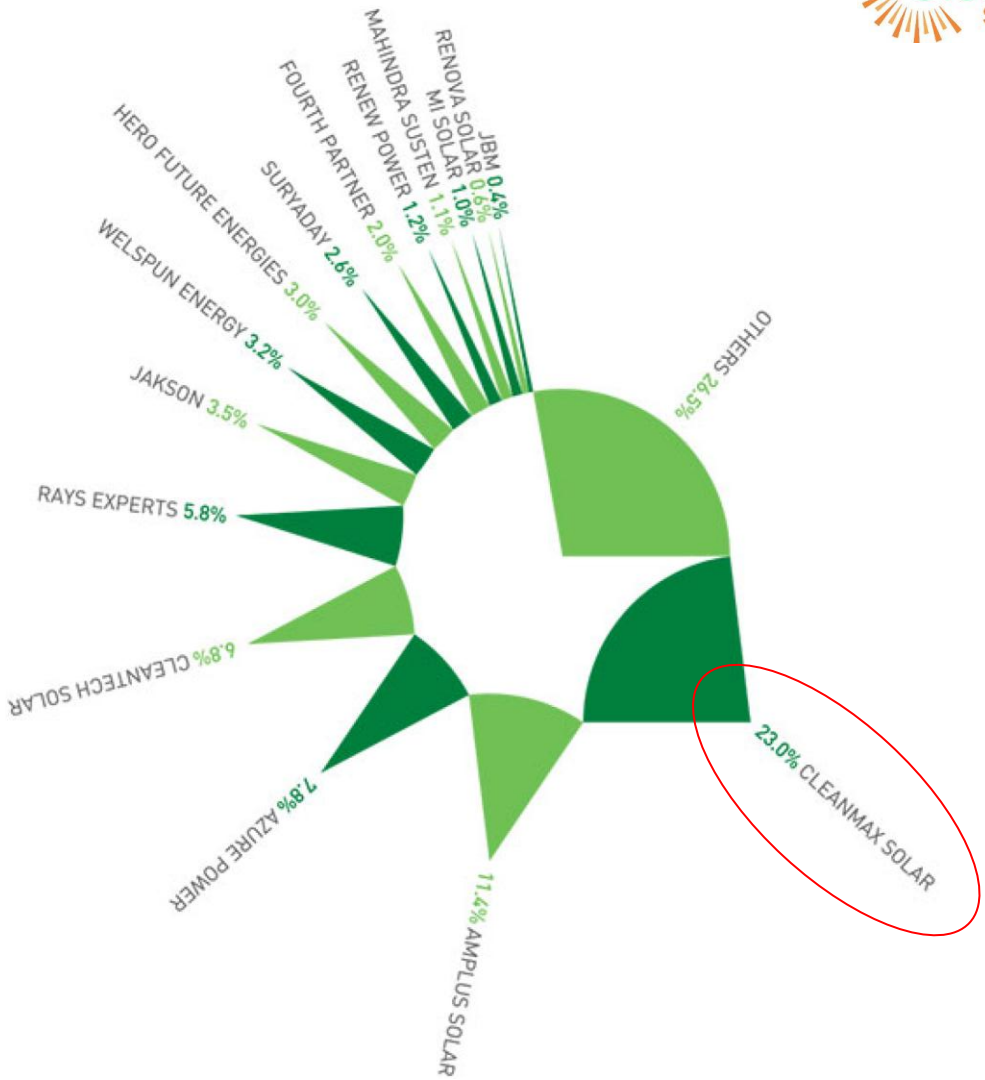
State	Grid Tariff (Rs/kWh)	Rooftop and Solar Farm Tariffs and Policy			% of Energy Consumption Offset	
		Rooftop Solar (Rs/kWh)	Solar Farm (Rs/kWh)	Solar Farm Policy	Rooftop Solar	Solar Farm
MH	8.5	4.5 - 5.0	-	-	<10% for process industry; 10% to 50% for assembly industry	
GJ	7.0	4.5 - 5.0	5.0 - 5.5	Group Captive farms permitted (26% equity in the solar plant from the user and remaining from developer) with relatively low wheeling and transmission charges		25% - 30%
KA	6.6	4.5 - 5.0	5.0 - 5.7	Zero charges for a 10 year period after the plant's commissioning (policy expires in 2018)		100%
TN	7.5	4.7 - 5.2	5.0 - 5.5	Farms allowed in general but only group captive works well since charges are very high for pure open access		75% - 80%
RJ	7.8	4.5 - 5.0	-	-		
HR	7.6	4.7 - 5.2	-	-		
PB	7.5	4.7 - 5.2	-			

India’s First and Largest Onsite Solar Developer

Ranked #1 Onsite Solar Developer since the inception of Bridge to India’s “India Solar Rooftop Map”

CleanMax’s fleet of installed Solar Plants exceeds **200+ rooftops**, amounting to more than **80 MWp**

In-house engineering, procurement and project management



Market size: 115MW (as of Oct 2016)

http://www.bridgetoindia.com/wp-content/uploads/2016/10/India-solar-rooftop-map_20161.pdf

Select client list of Clean Max Solar

CleanMax's experience in variety of Commercial & Industrial roof types

RCC Roof Installations

Sloped RCC Installation
(SKF India, Bangalore, 1 MWp)

Metal Sheet Roof Installations

Curved Metal Roof Installation
(Asahi Glass, Chennai, 2.6 MWp)

Ground Mount Installations

Tracker System (ground mount)
(NBC Bearings, Jaipur, 443 kWp)

Solar Car Port Systems

Carport Structure with metal sheet
(Mahindra & Mahindra – Nashik)

All sites shown are operational CleanMax installations

Selected Projects in Rajasthan

RCC Roof Installations

RCC Installation
(Manipal, Jaipur, 1 MWp)

Metal Sheet Roof Installations

Metal Roof Installation
(Kajaria Ceramics Gelpur, 1.3 MWp)

Ground Mount Installations

Tracker System (ground mount)
(NBC Bearings, Jaipur, 443 kWp)

Solar Car Port Systems

Tractor Parking Structure with metal sheet
(Mahindra Tractors - Jaipur)

India's Only Pan-India Developer with >80 MW of onsite installations

Dedicated in-house Projects team for Onsite Solar solutions

5 Offices and Project Execution Hubs Across India:

- Mumbai
- Bangalore
- Chennai
- NCR/Delhi
- Pune

CleanMax Offers Corporate Clients 3 ways to green their operations without incurring capex

- **Rooftop Solar**
  - CleanMax is the largest provider of Solar Rooftop solutions in India
  - Customized rooftop solar power solutions as per space available and demand
- **Open Access / Wheeled Solar Power**
  - Karnataka - CleanMax was the first developer to set up an solar farm in Karnataka for open access; 200 MWp under development
  - Tamil Nadu - 30 MW solar farm to commission in Tamil Nadu March, 2017 exclusively for corporate clients (single largest solar farm for a corporate in Asia).
  - Rajasthan – Ground work underway and target to develop 100 MW in FY 18-19.
- **Energy Storage**
  - Newest offering takes advantage of falling costs of advanced battery technologies, to reduce diesel generator usage, enable renewables and reduce grid charges

Tamil Nadu - 30 MWp Solar Farm in Dindigul

Karnataka - 30 MWp Solar Farm in Tumkur

Tata Motors, Sanand (2 MWp)

Asahi Glass, Tamil Nadu (2.6 MWp)

Asahi Glass, Taloja (1 MWp)

Gabriel, Hosur (265 kWp) (Curved Roof Solution)

Calrsberg Alwar (Curved Roof Solution)

Thank you!