

Sector	Project Title
New & Renewable Energy	Solar Modules Project

Project Description

India is amongst the leading energy consumers in the world, accounting for 4.1% of global energy consumption (2007 data). The energy requirement of the country stood at 830594 MU during 2009-10. The demand for energy has grown at an average of 3.6% per annum over the past 30 years and an energy shortage of around 10-12% is anticipated during 2010-11 in the country.

Details of estimated renewable energy potential and cumulative achievement under different programmes as on 31.12.2009 are given as follows:



- a. For grid-interactive renewable power

Programmes/ Systems	Estimated Potential	Cumulative Achievement
Biomass Power	16881 MW	829.50 MW
Wind Power	45195 MW	10925 MW
Small Hydro Power	15000 MW	2558.92 MW
Cogeneration-Bagasse	5000 MW	1308 MW
Waste to Energy	2700 MW	65.01 MW
Solar Power	50 MW / sq. km.	9.13 MW

- b. For Off-grid/ distributed renewable power including captive / CHP plants

Programmes/ Systems	Cumulative Achievement
Biomass Power / Cogeneration (Non-Bagasse)	238.17 MW
Biomass Gasifier	125.44 MW eq.
Waste to Energy	52.72 MW eq.
Solar PV Power Plants	2.92 MW
Aero-Generators/ Hybrid Systems	1.07 MW

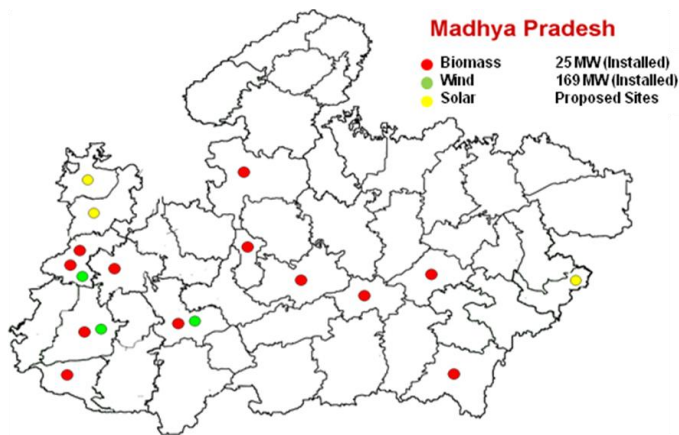
This project proposes to set up solar modules for energy production in the state of Madhya Pradesh. Demand for energy in the state continues to be on a growth path. The state of M.P. is endowed with diverse forms of renewable energy sources (wind, biomass, small hydro, solar). The state's potential for renewable energy is very high i.e. wind – 1200 MW, biomass – 1040 MW, small hydro – 410 MW and solar – 20 MW/ sq. Km.

Project's Value Proposition

A draft Solar Energy Policy was issued in July 2010 & is expected to be finalized soon. Focus areas of the proposed Solar Energy Policy are as follows:

- To establish state as leader in solar energy
- Proposed target of 500 MW by 2013
- Land database being set up to facilitate faster allocation of land
- Exemption from electricity duty and carbon credit benefit for investor
- Enhancement in plan ceiling from Rs. 130 million to Rs. 215 million
- Active involvement with DFID / GTZ / BEE for capacity building and strengthening of infrastructure

The project will help utilize the high renewable energy potential of the state of Madhya Pradesh. Following is an illustration of the installed and proposed energy projects in the state.

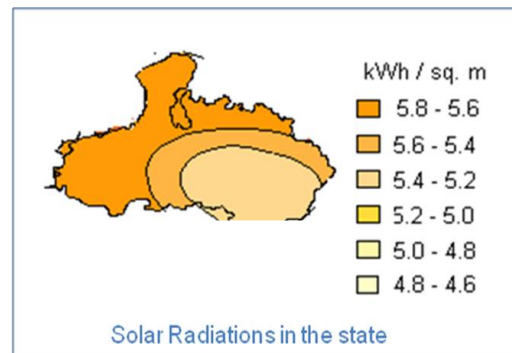


MP's value proposition

Madhya Pradesh is ideally suited to house this project on account of the following reasons:

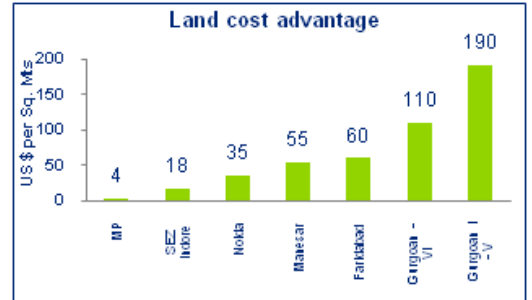
State's solar energy potential

- It receives high solar radiation with more than 300 days of clear sun & solar potential up to 5.8 kWh/sq m
- High Solar energy Potential
- The State endowed with high solar radiation with around 300 days of clear sun
- The State offers good sites having potential of in the range of 5.5 to 5.8 kWh/ sq.m. for installation of solar based power projects
- A Solar Energy Park being setup in Rajgarh District



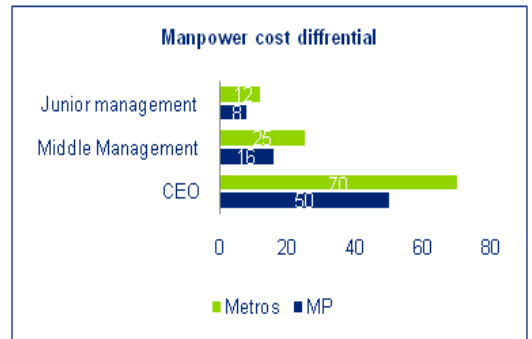
Land cost advantage

MP offers cheap land cost in comparison to other developed industry centres



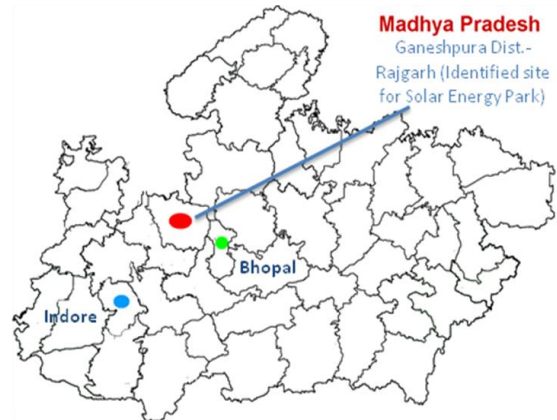
Man Power Cost Advantage & peaceful labour environment

- Number of engineering & technical graduates passing out every year
- Cost to a company for human resources is cheaper by 30-35% in the State
- Greater saving potential for the executive on account of cheaper land, cheaper housing and cheaper labour
- Man days lost over last 5 years < 1% of total available man days
- One of the most peaceful and labour productive State



Key highlights of the solar energy park being developed at Rajgarh

- 2 hrs away from Bhopal Airport
- 367 acres of land allotted at Ganeshpura in Rajgarh district
- Development in 3 phases proposed at a total outlay of approx. Rs 200 millions
- State support & PPP methodology to finance the project
- Target to set up 50 MW solar energy based power generation capacity by 2013
- To provide support infrastructure like business centre, security, evacuation infrastructure, warehousing for spares
- To identify local ITI's for support on technical & trained manpower
- Potential to develop a manufacturing hub for Renewable Energy sector
- Sufficient land available for future expansion
- Opportunity under JNNSM to promote domestic manufacturing
- 220 kV sub-station on site
- Load Dispatch Centre



Policy Initiatives by MP state government

- Industrial investment promotion assistance – 50 to 75% of commercial tax for 4-5 years
- 5 year electricity duty exemption on captive power generation
- For thrust sector industries, 25% capital subsidy

- Concessional registration charges and stamp duty exemption for term loans
- Interest subsidy of 3-5% on term loan for 5-7 years
- Land on 75% concessional rate for mega projects
- Govt. (non forest) Land use permission @ Rs. 1/-(token) premium per year
- Entry tax exemption for 5 years
- Projects Reports Cost Reimbursement Scheme
- Subsidy on ISO Certification, Patent Registration & Technology Acquisition
- VGF funding of up to 40% (20% GoI + additional 20% GoMP)
- Carbon credit related financial benefits directly given to the investor
- Banking of generated power in each financial year at minimal charges (2%)

Project Specification

The proposed project will have the following specifications:

- Location: The project can be set up at the solar energy park being developed at Rajgarh
- Capacity: Annual capacity is proposed at 135000 solar modules
- Project Cost: Major components of the project (for a single unit) and their estimated costs are presented in the table below:

Particulars	Amount (INR in Millions)
Land	225.00
Building	492.00
Plant & machinery	9475.00
Misc. Fixed assets/furniture fixtures	-
Contingencies	-
Pre-operative expenses	-
Margin money for working capital	-
Total	10192.00

- Returns: Internal rate of return is estimated at 20-22%.

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