



**Government of Madhya Pradesh**  
**New & Renewable Energy Department**

**Growth with Partnership**  
**Global Investors Summit-II**

**22<sup>nd</sup>-23<sup>rd</sup> October, 2010 Khajuraho**



**Alok Shrivastava**  
Principal Secretary  
New and Renewable Energy  
Department

New and Renewable Energy M.P.  
STRUCTURE OF PRESENTATION

Slide 2



**Scenario & Potential  
of  
Renewable Energy in  
Madhya Pradesh**

State Government  
(Minister, NRE)

Department of New & Renewable Energy  
(Formed in April 2010)

M.P. Urja Vikas Nigam  
(State Nodal Agency)

- 15 Field offices in M.P.

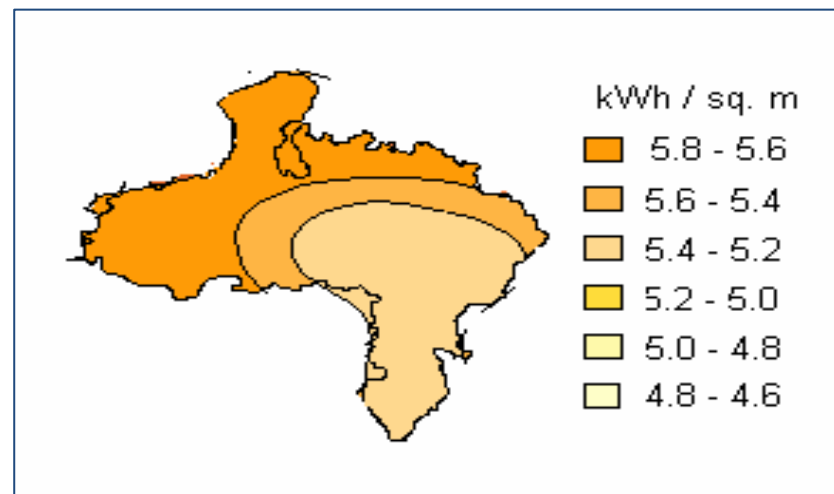
## POTENTIAL OF RENEWABLE ENERGY

Slide 5

- Madhya Pradesh endowed with diverse forms of renewable energy sources (wind, biomass, small hydro, solar)
- High solar radiation with more than 300 days of clear sun & solar potential upto 5.8 kWh/sq.m.

Technology	Achievable Potential *
Wind	1200 MW
Biomass	1040 MW
Small Hydro	410 MW




Solar Potential

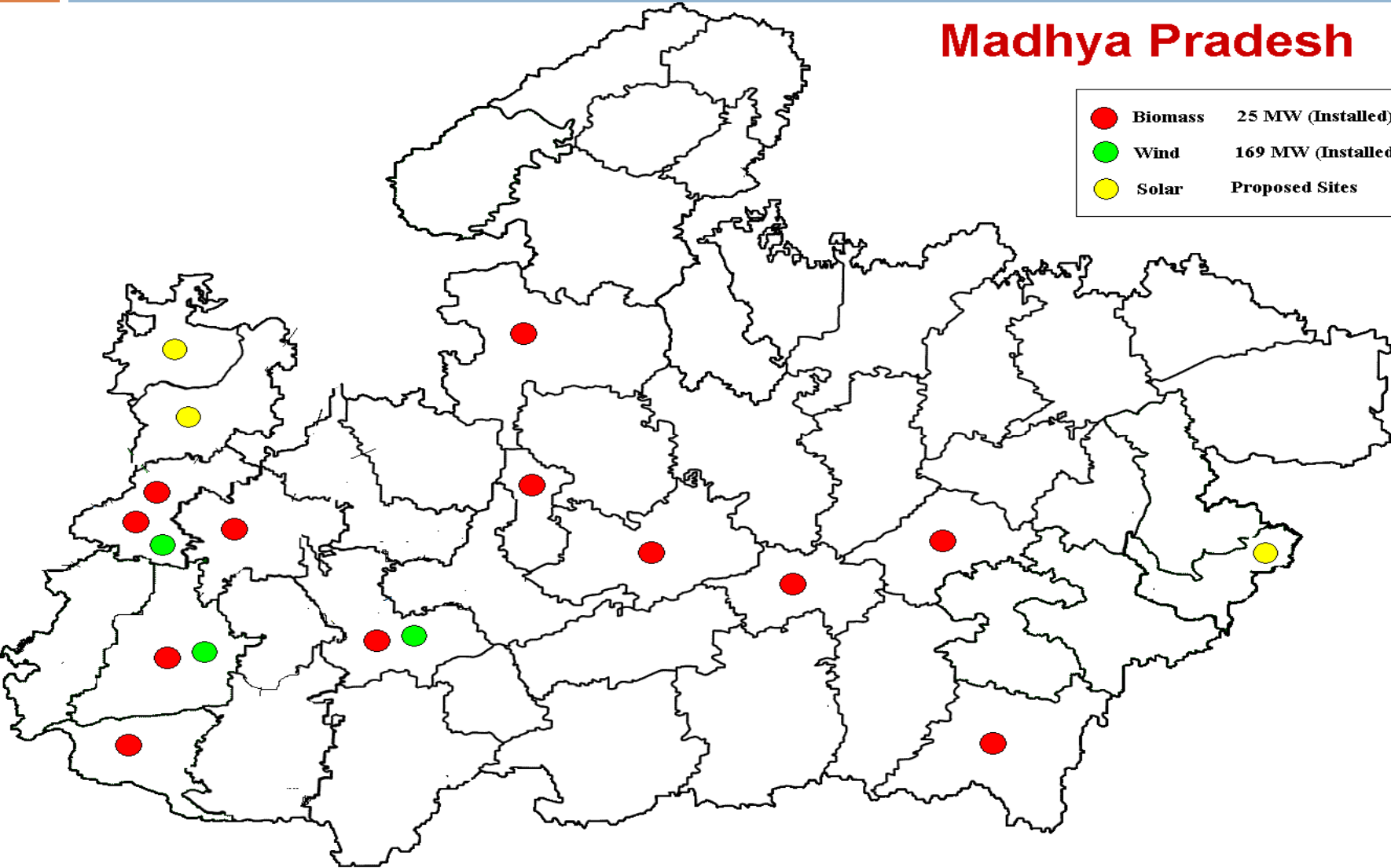


\* Source : MNRE data 2009

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**RENEWABLE ENERGY PROJECTS - SCENARIO**

# Madhya Pradesh

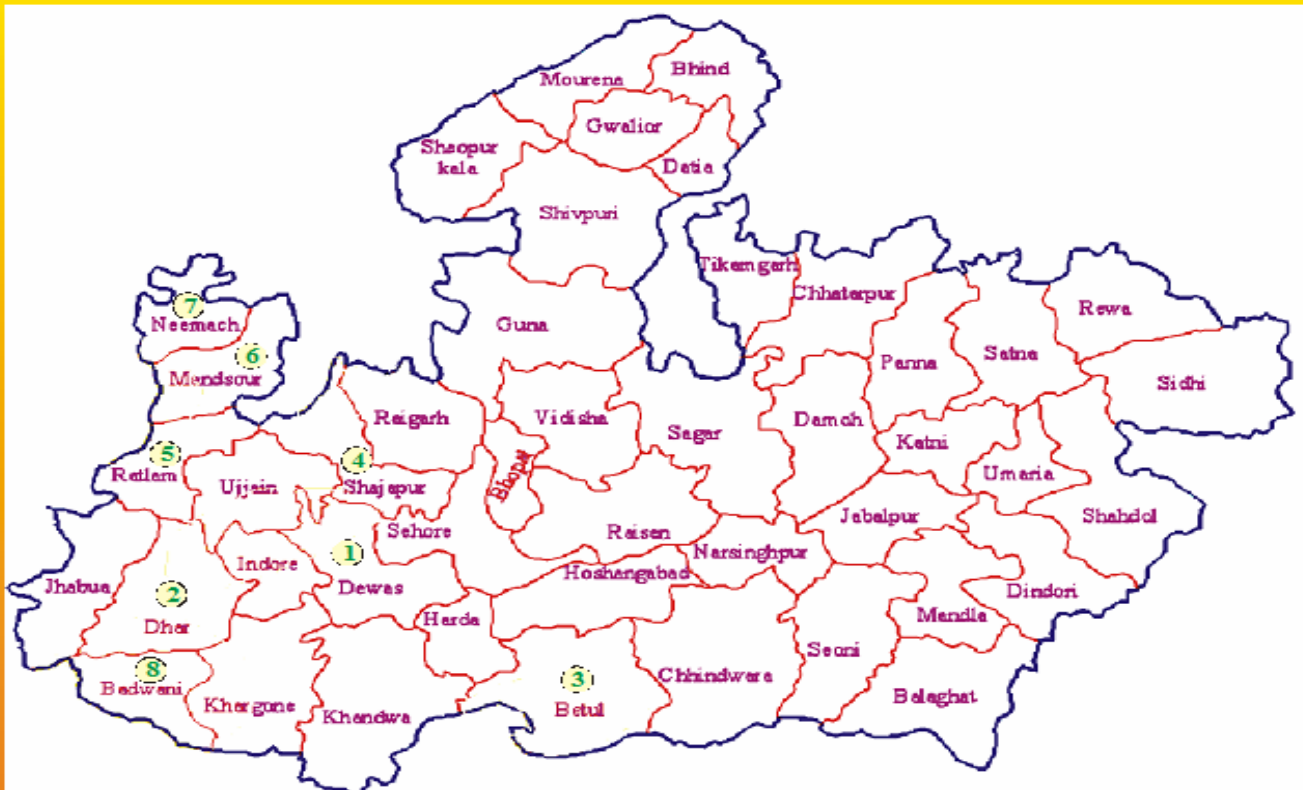
	<b>Biomass</b>	<b>25 MW (Installed)</b>
	<b>Wind</b>	<b>169 MW (Installed)</b>
	<b>Solar</b>	<b>Proposed Sites</b>



## OPPORTUNITIES IN WIND

Slide 7

- ❑ Proven Sites Capacity – 1200 MW
- ❑ Present Wind Power Installed Capacity - 169 MW
- ❑ Projects Under Processing/Implementation - 800 MW



Distt.	Capacity
Dewas	250
Dhar	50
Betul	250
Shujalpur	150
Ratlam	150
Mandsaur	50
Neemach	50
Badwani	250
<b>Total</b>	<b>1200</b>

# OPPORTUNITIES IN WIND

- Gross Wind Potential is 5500 MW, however till now technically proven sites is only 1200 MW
- Plan to install new wind monitoring stations
- More sites expected to open up for investment

## Opportunities in Wind



## WIND POWER – Installed Capacity

Sr No	Name of power Developer	Site	Capacity
1	Enercon Ltd	Dewas	51.2
2	Suzlon Energy Ltd	Ratlam	32.7
3	M P Wind farms	Dewas	15
4	M P Wind Farms	Dewas	13
5	Suzlon Energy Ltd	Dewas	12.5
6	Enercon Ltd	Dewas	9.6
7	Suzlon Energy Ltd	Ratlam	9.6
8	Goezte Fiancial Service	Dewas	5.9
9	NEPC/Southern Wind Farms	Ratlam	4.9
10	S E Energy park	Ratlam	4.8
11	Others		9.7
		<b>Total</b>	<b>169 MW</b>

- Gross potential of Biomass Based power in MP - 1040 MW
- Installed Capacity : 25 MW
- Expected commissioning in 2010-11: 30 MW
- Biomass based power plants take about 24-30 months time for Commissioning
- All projects are in IPP mode (through private investors)

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**BIOMASS POWER– Potential**

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	<b>Distt.</b>	<b>Capacity in MW</b>		<b>Distt.</b>	<b>Capacity in MW</b>
1	<b>Chindwara</b>	<b>10</b>	<b>20</b>	<b>Ratlam</b>	<b>10</b>
2	<b>Burhanpur</b>	<b>10</b>	<b>21</b>	<b>Madsaur</b>	<b>10</b>
3	<b>Khargone</b>	<b>10</b>	<b>22</b>	<b>Shajapur</b>	<b>10</b>
4	<b>Betul</b>	<b>10</b>	<b>23</b>	<b>Rajgarh</b>	<b>10</b>
5	<b>Gwalior</b>	<b>10</b>	<b>24</b>	<b>Bhind</b>	<b>10</b>
6	<b>Datia</b>	<b>10</b>	<b>25</b>	<b>Jabalpur</b>	<b>10</b>
7	<b>Balaghat</b>	<b>10</b>	<b>26</b>	<b>Damoh</b>	<b>10</b>
8	<b>Sagar</b>	<b>10</b>	<b>27</b>	<b>Chattarpur</b>	<b>10</b>
9	<b>Shivpuri</b>	<b>10</b>	<b>28</b>	<b>Satna</b>	<b>10</b>
10	<b>Annupur</b>	<b>12</b>	<b>29</b>	<b>Sidhi</b>	<b>10</b>
11	<b>Narsinghpur</b>	<b>10</b>	<b>30</b>	<b>Umaria</b>	<b>10</b>
12	<b>Seoni</b>	<b>10</b>	<b>31</b>	<b>Raisen</b>	<b>3</b>
13	<b>Jhabua</b>	<b>10</b>	<b>32</b>	<b>Sheopur</b>	<b>12</b>
14	<b>Morena</b>	<b>10</b>	<b>33</b>	<b>Indore</b>	<b>10</b>
15	<b>Dewas</b>	<b>15</b>	<b>34</b>	<b>Katni</b>	<b>7.5</b>
16	<b>Sehore</b>	<b>10</b>	<b>35</b>	<b>Khandawa</b>	<b>10</b>
17	<b>Harda</b>	<b>5</b>	<b>36</b>	<b>Rewa</b>	<b>10</b>
18	<b>Dhar</b>	<b>10</b>	<b>37</b>	<b>Vidisha</b>	<b>10</b>
19	<b>Ujjain</b>	<b>3.5</b>	<b>38</b>	<b>Mandla-Dindori</b>	<b>10</b>

## BIOMASS POWER – Installed Capacity

S. No.	Biomass project developer	Project location	Capacity (MW)
1	Ramnik Power	Balaghat	6
2	H.R. Johnsons	Dewas	3.5
3	Narmada Sugar	Badwani	3
4	Deepak Spinners	Guna	3
5	Khetan Chemicals	Dhar	2.1
6	Ambika Solvex , Indore	Jaora	1.2
7	Bajrang Agro Industries	Dhar	1.2
8	API Agro	Raisen	1.05
9	Javandhai Sugar	Narsinghpur	0.75
10	Lyod Insulators	Dhar	0.6
11	Kashyap sweatner	Ratlam	0.44
12	Satya Biscuits	Bhopal	0.4
13	Kundan Namkeen	Bhopal	0.3
14	Aditya Food	Bhopal	0.3
15	Others		1.6
		<b>Total</b>	<b>25.43</b>

- **High Solar energy Potential**
  - ▣ **State endowed with high solar radiation with around 300 days of clear sun**
  - ▣ **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**
- **Land database being set up to facilitate faster allocation of land**
- **Solar Energy Park being setup in Rajgarh District**
- **Draft Solar Energy Policy issued in July 2010 & expected to be finalized soon**

- Summary of the Basin-wise power potential of SHP on small rivers, hilly streams and canal heads is as below

	Basin	No. of sites	Installed capacity	Dependable Energy
		available	in kW	(GWh)
1	Son	3	26500	108
2	Narmada	5	49000	164.37
3	Godawari (Pranhita)	6	54040	208.61
4	Tapi	3	37000	135
<b>Total</b>		<b>19</b>	<b>183900</b>	<b>714.48</b>

Source : WRD Madhya Pradesh

## New and Renewable Energy M.P.

### SHP SITES IDENTIFIED BY WRD/NVDA/MPPGCL

S.No	Name of the Project	District	Nearest village	Tentative installed capacity in MW	Status
1	Add MHP	Sidhi	-	0.1	-
2	Asan Fall	Morena	Ghughas	2.7	DPR was approved by MPEB . Now DPR is to be revised as per actual availability of water at present. RFQ under evaluation.
3	Bahadurpur Kharar	Khargone	Bahadurpur	0.25	DPR was approved by MPEB . Now DPR is to be revised as per actual availability of water at present
4	Bahuti Pratap	Rewa	-	1.5	Proposed as per topo-sheet. Preliminary investigation and preparation of DPR is proposed.
5	Bansagar RBC	Shahdol	deolond	0.3	-
6	Bawanthadi MHP	Balaghat	-	0.65	-
7	Beehar	Rewa	-	6	DPR is under preparation by MPEB
8	Bina	Sagar	-	2	Detail Survey is to be done by WRD for Bina complex Phase-I.
9	Budhna	Shivpuri	Deokhan	0.1	-
10	Chakdahi MHP	Satna	-	0.1	-
11	Cimidi	Shahdol	-	5.5	Project is proposed on return canal of Thermal Power Station.
12	Datia Carrier Canal	Datia	Simara	4.5( 2x2.50)	DPR was approved by MPEB . Now DPR is to be revised as per actual availability of water at present
13	Datia Irrigation Canal	Datia	Bhavanipur	6(2x3.0)	DPR was approved by MPEB . Now DPR is to be revised as per actual availability of water at present )
14	Deori MHP	Mandla	-	5	-

## New and Renewable Energy M.P.

### SHP SITES IDENTIFIED BY WRD/NVDA/MPPGCL

S.No	Name of the Project	District	Nearest village	Tentative installed capacity in MW	Status
15	Dhamoi	Jhabua	Dhamoi	0.175	-
16	Dharampur MHP	Mandla	-	3	-
17	Galgala	Rewa	-	0.2	-
18	Gour	Mandla	-	1	Proposed as per topo-sheet. Preliminary investigation and preparation of DPR is proposed.
19	Gour Jhamar	Sagar	-	0.3	Proposed as per topo-sheet. Preliminary investigation and preparation of DPR is proposed.
20	Gursa	Satna	-	0.2	-
21	Halali	Vidisha	Halali	0.8	RFQ under evaluation.
22	Halow MHP	Mandla	-	1	-
23	Kaketo	Gwalior	Kaketo	0.25	-
24	Karia Gotighat MHP	Khandwa	-	8	-
25	Kariya MHP	Satna	-	0.1	-
26	Ken Canal	Chattarpur	Bariapur	23	Survey work of project is completed by MPEB and preparation of DPR is pending
27	Keoti	Rewa	-	0.45	DPR is to be prepared.
28	Kolar Barrage	Sehore	Kankaria	0.1	-
29	Kolar(Dam)	Sehore	Lavakhedi	2	DPR was approved by MPEB . Now DPR is to be revised as per actual availability of water at present
30	Kushma MHP	Rewa	-	0.1	-
31	Mahan	Sidhi	Khaddi	0.4	-
32	Majha Khar MHP	Mandla	-	0.225	-

## New and Renewable Energy M.P.

### SHP SITES IDENTIFIED BY WRD/NVDA/MPPGCL

S.No	Name of the Project	District	Nearest village	Tentative installed capacity in MW	Status
33	Mankishar MHP	Sidhi	-	0.2	-
34	Mohini Pickup Weir	Shivpuri	Mohini	0.6	Feasibility Report is prepared by MPEB
35	Naguras MHP	Rewa	-	5.5	-
36	Nagurna	Sidhi	-	5	Project is proposed as per topo-sheet.
37	Naina	Rewa	-	3	Submergence of Project coming under Reserve Forest. Project site is to be shifted.
38	Noniya	Seoni	Noniya	0.25	DPR was approved by MPEB . Now DPR is to be revised as per actual availability of water at present )
39	Pehsari	Gwalior	Pehsari	0.75	-
40	Piyari	Rewa	-	1	-
41	Rahatgarh	Sagar	-	2	Detail Survey is to be done by WRD for Bina complex Phase-I.
42	Rajghat LBC	Guna	Chanderi	0.6	DPR is prepared by MPEB
43	Rampur Canal fall RD. 248.00	Guna	Kaloni	0.2	-
44	Rampur Canal fall RD.315.15.	Guna	Bhorna	0.15	-
45	Rampur Dam Toe	Guna	Rampur	0.2	-
46	Rathamati	Betul	-	4.5	Project is proposed as Multipurpose Project. DPR is to be prepared by WRD.
47	Rus MHP	Mandla	-	4	-
48	Ruthiai	Guna	Kankana	0.15	DPR was approved by MPEB . Now DPR is to be revised as per actual availability of water at present )

## New and Renewable Energy M.P.

### SHP SITES IDENTIFIED BY WRD/NVDA/MPPGCL

S.No	Name of the Project	District	Nearest village	Tentative installed capacity in MW	Status
49	Salidhana	Chindwara	-	4	Project is proposed on the basis of proposed Irrigation Project.
50	Salodhana MHP	Chindwara	-	4 (2x2.0)	-
51	Salodhana MHP	Chindwara	-	0.1	-
52	Salodhana MHP	Chindwara	-	0.2	-
53	Saraswaha	Satna	-	0.2	-
54	Satna Rewa MC MHP	Satna	-	5	-
55	Satna Rewa MC MHP	Satna	-	5	-
56	Satna Rewa MC MHP	Satna	-	2	-
57	Sindh Phase-II	Shivpuri	Ukaila	1.7	RFQ under evaluation.
58	Sinhawal-I	Sidhi	Mohaniya	0.65	-
59	Sinhawal-II	Sidhi	Badkhan	0.35	-
60	Sita Rewa MHP	Chindwara	-	4.1	-
61	Sone	Balaghat	Chundal	1.9	RFQ under evaluation.
62	Sukta	Khandwa	Baregoan	0.45	-
63	Tapi	Betul	-	4.5	Revised feasibility report is to be prepared after re-examination of project.
64	Thanwar	Mandla	Dobbi	0.75	-
65	Tikari	Seoni	-	4.1	Preliminary investigation is to be done.
66	Tikari MHP	Seoni	-	4.1	-
67	Upper Tawa	Chindwara	-	10	August 2010

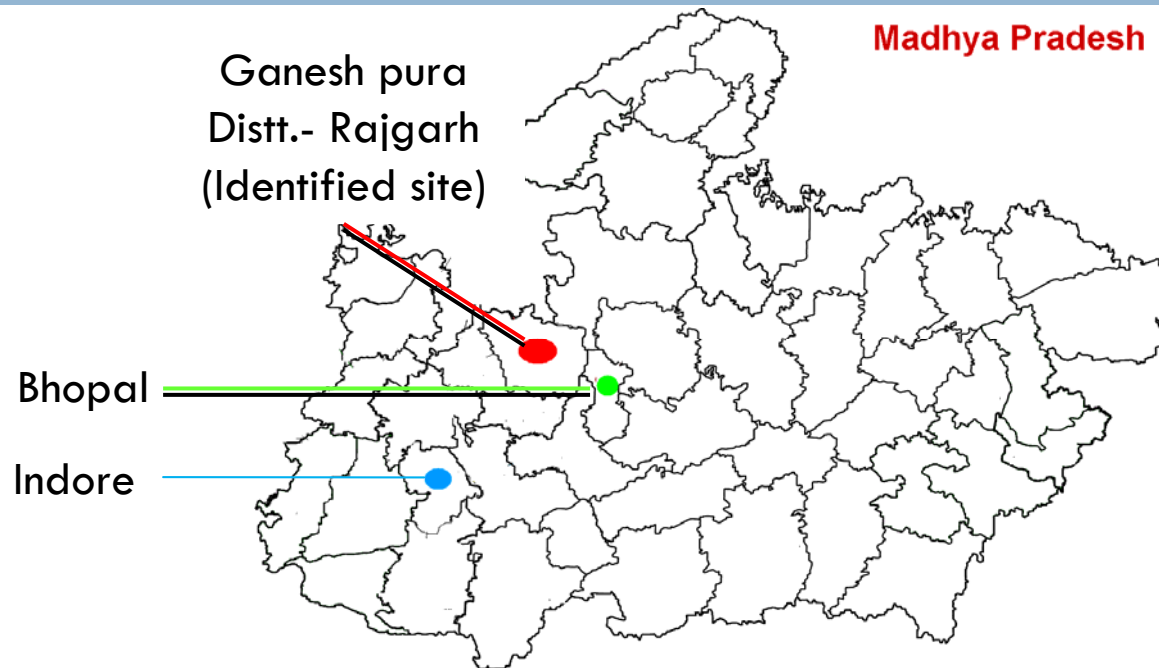
**Efforts & Achievements  
in  
Renewable Energy & Energy Efficiency in  
Madhya Pradesh**

## ACHEIVEMENTS & FUTURE TARGETS

Technology	Current Installed Capacity	Cumulative Target by 2013
Wind	169 MW	400 MW
Biomass	25 MW	200 MW
Small Hydro	71 MW	-
Solar	-	200 MW

## SOLAR ENERGY PARK AT RAJGARH

Slide 21



- 2 hrs away from Bhopal Airport
- 363 Acres of wasteland reserved
- 220 kV sub-station on site
- Insolation in the range of 5.5 to 5.9 kWh/ sq. m & more than average sunny days

- To provide support infrastructure like business centre, security, evacuation infrastructure, warehousing for spares
- Development in 3 phases proposed at a total outlay of approx. Rs 20 crore
- State support & PPP methodology to finance the project
- Target to set up 50 MW solar energy based power generation capacity by 2013
- Potential to develop a manufacturing hub for Renewable Energy sector
  - ▣ Opportunity under JNNSM to promote domestic manufacturing

- Investment Grade energy auditing of 13 Municipal Corporations completed
  - ▣ Indore Municipal Corporation has implemented energy efficiency program of street lighting
- Investment Grade Energy audit of 22 Government buildings
  - ▣ Projects awarded & expected completion by September 2010
- Training and awareness Programmes completed during 2009-10 for ULB, DISCOM & Designated Consumers
  - ▣ 3 training programs conducted covering 21 designated consumers & around 50 officials from ULB & DISCOM (Sept. 2009)

Compulsory Energy Audit of all Govt. establishments having annual electricity bill of more than Rs 5.0 lakh

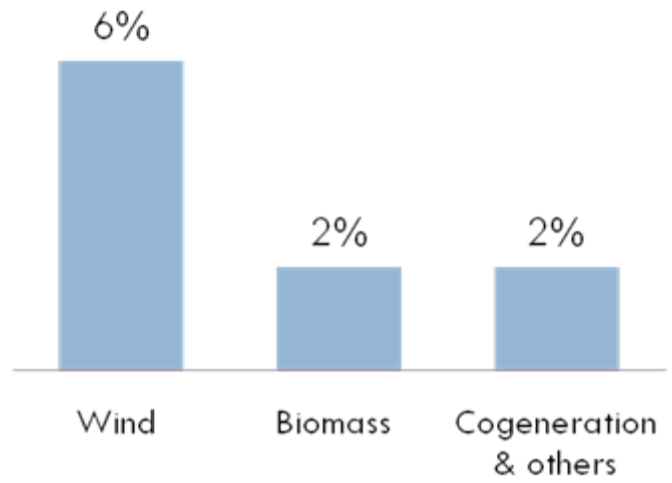
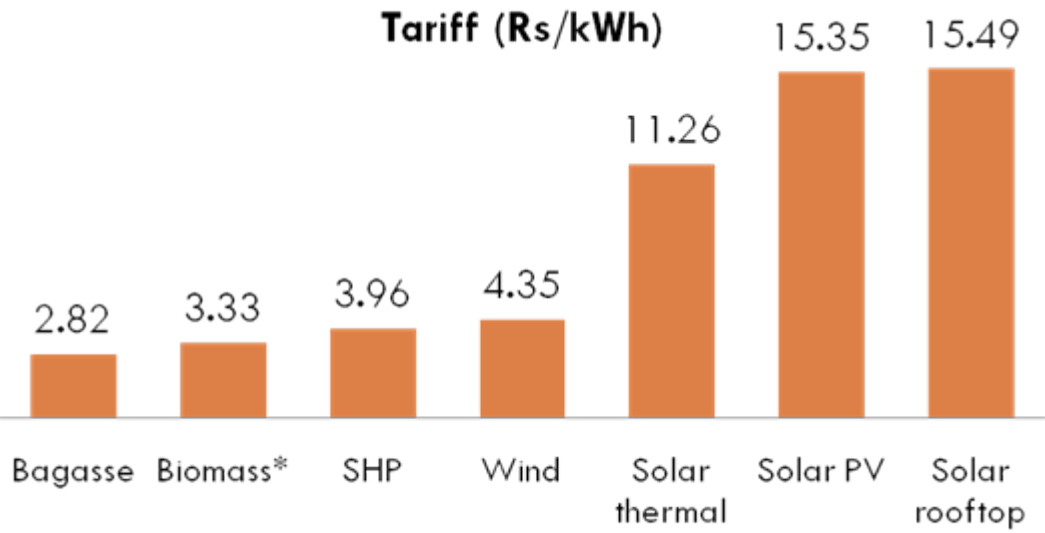
Energy Audit to be done by empanelled auditors within 3 months

Implementation of recommendations to be strictly monitored

# **Advantage Madhya Pradesh**

## ATTRACTIVE TARIFFS

- Tariff order issued for all main RE technologies including solar energy
- Renewable Purchase Obligation (RPO) fixed at 10% by MPERC Order 2008



MPERC Order 2008

\* Under revision

## SUBSTANTIAL DEMAND UNDER RENEWABLE PURCHASE OBLIGATION

Technology	RPO	MU/year	Capacity that can be supported under RPO (MW)	Current Installed Capacity
Wind	6%	2220 MU	1267 MW @ 20% PLF	169 MW
Biomass	2%	740 MU	106 MW @ 80% PLF	25 MW
Others including Solar	2%	740 MU	445 MW @ 19% PLF	Small hydro : 71 MW
<p><b>Total Electricity fed into the grid in M.P. ~ 37000 MU (2009-10)</b></p>				

## Key highlights

- 100 % Power Banking
- Exemption from Open Access Charges
- 4 % subsidy towards Wheeling Charges
- Exemption from Electricity Duty for 5 years
- Captive consumers allowed to reduce the Contract Demand
- No other Biomass project will be allowed within the radius of 25 km
- Third party sale allowed
- Status of Industry
- MPUVN as a facilitator for promotion of renewable energy projects
- Empowered Committee formed for speedy project implementation

### Madhya Pradesh Solar Energy Policy- 2010 (Draft stage)

- Proposed target : 500 MW by 2013
- MPUVN to prepare land bank database in each district
- Govt. land to be provided as per State Govt. policy
- 4 % subsidy towards Wheeling charges
- Exemption from Electricity Duty
- Exemption from Open Access charges
- Draft issued in July 2010 & expected to be finalized soon

## SHP Incentive Policy , 2006

- Banking of 100% of Energy
- 4 % subsidy towards Wheeling charge
- Exemption from Electricity Duty
- Exemption from Open Access charges
- Exemption for payment of Cess on power supplied by SHP
- Eligible for incentives under Industrial Promotion Policy, 2004 as well as Madhya Pradesh Industrial Investment Promotional Assistance Scheme, 2004
- Reduction in contracted demand for SHP consumers
- Machinery & Equipment exempted from entry tax

- State government notification under Section 18 of Energy Conservation Act 2001 for mandatory measures regarding :
  - ▣ Solar Water heating system for specified consumers
  - ▣ Replacement of Incandescent Bulb by energy efficient lights
  - ▣ Energy efficient pumps for water pumping and agriculture purpose – for new installations
  - ▣ Use of foot valve for surface pumps
  
- A State level Demand Side Management cell under MPUVN is also constituted

# Thank You

## Contact:

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