

**GOVERNMENT OF INDIA
NEW AND RENEWABLE ENERGY
LOK SABHA**

UNSTARRED QUESTION NO:1660
ANSWERED ON:19.11.2010
RENEWABLE PURCHASE OBLIGATION
Deora Shri Milind Murlu

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

- (a) the details of the energy potential, in terms of MW of non-solar renewable resources in the country;
- (b) the extent to which this potential is begin utilized;
- (c) whether all the State Electricity Regulatory Commissions (SERCs) have specified guidelines for Renewable Purchase Obligations (RPOs);
- (d) if so, the details thereof; and
- (e) the steps being taken by the Government to ensure that all States meet their RPOs in a timely manner?

Answer

THE MINISTER OF NEW AND RENEWABLE ENERGY (DR. FAROOQ ABDULLAH)

- (a): Details of the estimated potential for power generation in terms of MWeq from various renewable energy sources excluding Solar are given in Annexure-I.
- (b): Renewable Power Generation Capacity of about 18,320 MW (grid-connected) and 460 MWeq (off-grid) from various renewable energy sources has been set up in the country upto 31.10.2010. Resource-wise details thereof are given in Annexure-II.
- (c)&(d): Details of Renewable Power Purchase Obligations (RPO) specified by various State Electricity Regulatory Commissions (SERCs) are given in Annexure-III.
- (e): The Electricity Act 2003 and subsequent guidelines under National Tariff Policy 2006 have made it obligatory upon SERCs to specify RPOs, taking in an account availability of the renewable energy resources in the region and impact on retail tariffs. The Central Electricity Regulatory Commission (CERC) has been mandated to regulate the electricity sector in line with the provisions of the Act/ exercise necessary powers to enforce the same.

Annexure-I

Annexure-I referred to in reply to part (a) of the Lok Sabha Unstarred Question No.1660 for 19.11.2010 regarding Renewable Purchase Obligation.

Details of the estimated potential for power generation in terms of MWeq from various renewable energy sources excluding solar.

S. No. Resource Estimated Potential (In MWeq.)

1. Wind Power	48,5002
2. Small Hydro Power (up to 25 MW)	15,0003
3. Bio-Power:	
Agro-Residues	16,0004
Cogeneration - Bagasse	5,0005
Waste to Energy:	
- Municipal Solid Waste to Energy	1,7006
- Industrial Waste to Energy	1,000
Total	87,2007

MWeq. = Megawatt equivalent;

Note: -

(1): Not all of this potential may be suitable for grid-interactive power for technical and / or economic reasons.

(2): Potential based on areas having wind power density (wpd) greater than 200 W/m² assuming land availability in potential areas @ 1% and requirement of wind farms @ 12 ha/MW. The lower end of the potential might be suitable for off-grid applications.

(3): Technically feasible hydro potential of all sites upto 25 MW station capacity,

(4): Based on surplus agro-residues,

(5): With new sugar mills and modernization of existing ones, technically feasible potential is assessed at 5000 Mwe.

(6): With expansion of urban population post census 2001, current technically feasible municipal waste-to-energy potential is assessed at 1700 MWe,

(7): Estimates do not include potential for solar power that is dependent on future developments that might make solar technology cost-competitive for grid-interactive power generation applications.

Annexure-II

Annexure-II referred to in reply to part (b) of the Lok Sabha Unstarred Question No.1660 for 19.11.2010 regarding Renewable Purchase Obligation.

Resource-wise details of grid connected / off-grid renewable power generation capacity set up upto 31.10.2010 in the country.

Sector Cumulative achievement
up to 31.10.2010.

GRID-INTERACTIVE POWER (CAPACITIES IN MW)

Wind Power	12906.73
Small Hydro Power	2850.25
Biomass Power	979.10
Bagasse Cogeneration	1494.53
Waste to Power -Urban	19.00
-Industrial	53.46
Solar Power (SPV)	17.82
Total	18320.89

OFF-GRID/ CAPTIVE POWER (CAPACITIES IN MWEQ)

Waste to Energy -Urban	3.50
------------------------	------

-Industrial 57.28
 Biomass Cogeneration (Non-bagasse) 267.08
 Biomass Gasifiers -Rural 14.07
 -Industrial 114.09
 Aero-Generators/ Hybrid systems 1.07
 SPV Systems (>1kW) 2.39
 Water mills/micro hydel -
 Total 459.48

Annexure-III

Annexure-II referred to in reply to parts (c) & (d) of the Lok Sabha Unstarred Question No.1660 for 19.11.2010 regarding Renewable Purchase Obligation.

Details of Renewable Power Purchase obligation (RPO) specified by various State Electricity Regulatory Commissions (SERCs).

S.No.	State	Renewable Energy Source	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 1516
1	Gujarat	wind	4.5%	5.0%	5.5%			
		Solar	0.25%	0.5%	1.0%			
		others	0.25%	0.5%	0.5%			
		Total	5%	6%	7%			
2	Maharashtra	Solar	0.25%	0.25%	0.25%	0.50%	0.50%	0.50%
		Non-solar	5.75%	6.75%	7.75%	8.5%	8.5%	8.5%
		Total	6%	7%	8%	9%	9%	9%
3	Uttaranchal	Solar	0.25%	0.5%	1.0%			
		Non-solar	3.75%	4.5%	5.0%			
		Total	4%	5%	6%			
4	Manipur	Solar	0.25%	0.25%	0.25%			
		Non solar	1.75%	2.75%	4.75%			
		Total	2%	3%	5%			
5	Mizoram	Solar	0.25%	0.25%	0.25%			
		Non solar	4.75%	5.75%	6.75%			
		Total	5%	6%	7%			
6	Jammu & Kashmir	Total	1%	3%	5%			
7	Uttar Pradesh	Solar	0.25%	0.5%	1%			
		Non solar	3.75%	4.5%	5.0%			
		Total	4%	5%	6%			
8	Tripura	Solar	0.1%	0.1%	0.1%			
		Total	1%	1%	2%			
9	Jharkhand	Solar	0.25%	0.5%	1%			
		Non solar	1.75%	2.5%	3.0%			
		Total	2%	3%	4%			
10	Himachal Pradesh	Solar	0%	0.1%	0.1%			
		Non solar	10%	11%	12%			
		Total	10.10%	11.10%	12.10%			
11	Orissa	Solar	0.10%	0.15%	0.20%	0.25%	0.30%	
		Non-solar	1.0%	1.2%	1.4%	1.6%	1.8%	2%
		Co-gen	3.50%	3.70%	3.95%	4.20%	4.45%	4.70%
		Total	4.5%	5%	5.5%	6%	6.5%	7%
12	Assam	Solar	0.05%	0.1%	0.15%	0.2%	0.25%	
		Total	1.4%	2.8%	4.25%	5.6%	7%	
13	Tamil Nadu		14%					
14	Delhi		1%					
15	Andhra Pradesh		5%					
16	Karnataka		11%					
17	West Bengal		10%					
18	Rajasthan		9.5%	9.5%				
19	Madhya Pradesh		10%					
20	Punjab		4%					
21	Haryana		10%					

