

Energy generation

*145. SHRI MATILAL SARKAR: Will the Minister of POWER be pleased to state:

- (a) the average daily energy generation in the country during 2007-08 and 2008-09;
- (b) the average daily consumption during the above period;
- (c) the potential of energy generation as surveyed in the country, State-wise; and
- (d) the steps Government is going to take to harness this potential?

THE MINISTER OF POWER (SHRI SUSHILKUMAR SHINDE): (a) The total electricity generation from Utilities/IPPs' Power Plants in the country (including import of power from Bhutan) was 704,469 Million kWh (MU) and 723,794 MU during the years 2007-08 and 2008-09 respectively. The daily average electricity generation during 2007-08 and 2008-09 works out to 1,924.8 MU and 1,983 MU respectively.

(b) The total electricity consumed by the ultimate consumers in the country (Utilities) during the year 2007-08 (latest available) was 501,977 MU. The daily average electricity consumption by the ultimate consumers for the year 2007-08 works out to 1371.5 MU.

(c) The energy reserves in the country, in respect of hydrocarbons, nuclear energy and renewable energy sources, according to the Report of the Expert Committee on Integrated Energy Policy, constituted by the Planning Commission, brought out in August, 2006, are as under:—

Hydro Carbons:

• Proved coal from proved reserves	: 38,114 Mtoe
• Proved Lignite	: 1,220 Mtoe
• Oil (balance recoverable reserves)	: 786 Mtoe
• Gas (balance recoverable reserves)	: 1,101 Mtoe
• Coal Bed Methane	: 765 Mtoe

Nuclear:

• Uranium — metal	: 61,000 t
• Thorium — metal	: 2,25,000 t

Renewable Energy Sources:

Wood	: 620 Mtoe per year
Bio-gas	: 15 Mtoe per year (Community based plants)
Bio-fuels	: 30 Mtoe per year
Solar	: 2,400 Mtoe per year
Wind	: 10 Mtoe per year
Small Hydro	: 5 Mtoe per year
Mtoe = Million tonne of oils equivalent	t = Tonne

The status of hydro power potential in the country in terms of installed capacity as per assessment made by the Central Electricity Authority is given below:—

Identified Hydro Power Potential as per reassessment Study	Capacity (MW)	Percentage (%)
A. Total Potential for Projects above 25 MW capacity*	1,45,320	100
B. Capacity Developed	32,099.8	22.09
C. Capacity under construction	13,675.0	9.41
D. Capacity yet to be developed	99,545.2	68.50

*Hydro Projects upto 25 MW capacity come under the purview of Ministry of New and Renewable Energy (MNRE).

The status of hydro potential development, State-wise, is given in the Statement (See below).

(d) The target for total capacity addition from the conventional energy sources including thermal, hydro and nuclear has been set by the Planning Commission for the Eleventh Five Year Plan as 78,700 MW. Further, about 1,00,000 MW capacity requires to be added for meeting the growing requirement of power during the Twelfth Plan.

The major policy initiatives taken by the Government to harness the energy potential available in the country are as under:—

- (i) Delicensing of thermal generation as per Electricity Act, 2003. Further, captive generation being freely permitted.
- (ii) Development of Ultra Mega Power Projects of 4,000 MW each to reap benefits of economies of scale.
- (iii) Development of Captive coal blocks.
- (iv) Arranging import of coal to meet the shortfall in coal supplies to thermal power stations from indigenous sources.
- (v) New Hydro Policy.
- (vi) 50,000 MW Hydro initiative.
- (vii) Hydro Power Development Plan for twelfth Plan prepared.
- (viii) Allocation of gas from KG Basin (D6) has been made for gas based power stations in the country.
- (ix) Procurement of power through Tariff based competitive bidding.

Statement
Status of Hydro Electric Potential Development
(In terms of Installed Capacity – Above 25 MW)

As on 31.10.2009

Region/State	Identified capacity as per reassessment study above 25 MW	Capacity developed	Capacity under construction	Capacity developed + under construction	Capacity yet to be developed				
	(MW)	(MW)	%	(MW)	(%)	(MW)	(%)	(MW)	%
1	2	3	4	5	6	7	8	9	10
Northern									
Jammu and Kashmir	135.43	2220.0	16.39	779.0	5.75	2999.0	22.14	10544.0	77.86
Himachal Pradesh	185.40	6001.0	32.37	4600.0	24.81	10601.0	57.18	7939.0	42.82
Punjab	97.1	1206.3	100.00	0.0	0.00	1206.3	100.00	0.00	0.00
Haryana	64	0.0	0.00	0.0	0.00	0.0	0.00	64.0	100.00
Rajasthan	483	411.0	85.09	0.0	0.00	411.0	85.09	72.0	14.91
Uttaranchal	17998	3026.4	16.81	1926.0	10.70	4952.4	27.52	13045.7	72.48
Uttar Pradesh	664	501.6	75.54	0.0	0.00	501.6	75.54	162.4	24.46
SUB TOTAL (NR):	52263	13366.3	25.57	7305.0	13.98	20671.3	39.55	31591.8	60.45

	1	2	3	4	5	6	7	8	9	10
Western										
Madhya Pradesh	1970	2395.0	100.00	400.0	20.30	2795.0	100.00	0.0	0.00	
Chhattisgarh	2202	120.0	5.45	0.0	0.00	120.0	5.45	2082.0	94.55	
Gujarat	590	550.0	93.22	0.0	0.00	550.0	93.22	40.0	6.78	
Maharashtra	3314	2487.0	75.05	0.0	0.00	2487.0	75.05	827.0	24.95	
Goa	55	0.0	0.00	0.0	0.00	0.0	0.00	55.0	100.00	
SUB TOTAL (WR):	8131	5552.0	68.28	400.0	4.92	5952.0	73.20	2179.0	26.80	

Southern										
Andhra Pradesh	4360	2060.8	47.26	527.0	12.09	2587.8	59.35	1772.3	40.65	
Karnataka	6459	3585.4	55.51	0.0	0.00	3585.4	55.51	2873.6	44.49	
Kerala	3378	1781.5	52.74	200.0	5.92	1981.5	58.66	1396.5	41.34	
Tamil Nadu	1693	1708.2	100.00	60.0	3.54	1768.2	100.00	0.0	0.00	
SUB TOTAL (SR):	15890	9135.9	57.49	787.0	4.95	9922.9	62.45	5067.2	37.55	

Eastern										
Jharkhand	582	233.2	40.07	0.0	0.00	233.2	40.07	348.8	59.93	
Bihar	40	0.0		0.0	0.00	0.0		40.0	100.00	
Orissa	2981	2049.5	68.75	0.0	0.00	2049.5	68.75	931.5	31.25	

West Bengal	2829	77.0	2.72	292.0	10.32	369.0	13.04	2460.0	86.96
Sikkim	4248	570.0	13.42	2015.0	47.43	2585.0	60.85	1663.0	39.15
Andaman and Nicobar Islands	0	0.0						0.0	
SUB TOTAL (ER):	10680	2929.7	27.43	2307.0	21.60	5236.7	49.03	5443.3	50.97

North Eastern

Meghalaya	2298	156.0	6.79	166.0	7.22	322.0	14.01	1976.0	85.99
Tripura	0	0.0		0.0		0.0		0.0	
Manipur	1761	105.0	5.96	0.0	0.00	105.0	5.96	1656.0	94.04
Assam	650	375.0	57.69	0.0	0.00	375.0	57.69	275.0	42.31
Nagaland	1452	75.0	5.17	0.0	0.00	75.0	5.17	1377.0	94.83
Arunachal Pradesh	50064	405.0	0.81	2710.0	5.41	3115.0	6.22	46949.0	93.78
Mizoram	2131	0.0	0.00	0.0	0.00	0.0	0.00	2131.0	100.00
SUB TOTAL (NER):	58356	1116.0	1.91	2876.0	4.93	3992.0	6.84	54364.0	93.16
ALL INDIA:	145320	32099.8	22.09	13675.0	9.41	45774.8	31.50	99545.2	68.50

Note: In addition to above 4785.6 MW PSS are under operation.