

(b) Following steps have been/are being taken to increase the power availability in the country including Punjab:

- (i) Rigorous monitoring of capacity addition of the on-going generation projects.
- (ii) Development of Ultra Mega Power Projects of 4,000 MW each to reap benefits of economies of scale.
- (iii) Advance planning of generation capacity addition projects for Twelfth Plan.
- (iv) Coordinated operation and maintenance of hydro, thermal, nuclear and gas based power stations to optimally utilize the existing generation capacity.
- (v) Thrust to import of coal by the power utilities to meet the shortfall in coal supplies to thermal power stations from indigenous sources.
- (vi) Allocation of gas from KG Basin (D6) for gas based power stations in the country.
- (vii) Renovation, modernization and life extension of old and inefficient generation units.
- (viii) Strengthening of inter-state and inter-regional transmission capacity for optimal utilization of available power.
- (ix) Promoting energy conservation, energy efficiency and demand side management measures.

Demand and supply of power

1989. SHRI MAHENDRA MOHAN: Will the Minister of POWER be pleased to state:

- (a) whether the demand of power in the country is constantly increasing leading to acute shortage in the country;
- (b) if so, the demand and supply of power in the country during the last three years, year-wise and State-wise;
- (c) the details of power generation from various sources during the last three years;
- (d) the details of structural reforms undertaken to improve power situation along with the success achieved as a result thereof; and
- (e) the other steps taken by Government to improve the power situation?

THE MINISTER OF STATE IN THE MINISTRY OF POWER (SHRI K.C. VENUGOPAL): (a) and (b) During the first three years of the Eleventh Plan, the demand of power in the country has

grown at a Compounded Annual Growth Rate (CAGR) of 6.4% in terms of energy and 5.8% in terms of peak. The energy and peak requirement *vis-a-vis* availability in the country during the Eleventh Plan was as under:

Year	Energy			
	Requirement (MU)	Availability (MU)	Deficit (MU)	(%)
2007-08	7,39,345	6,66,007	73,336	9.9
2008-09	7,77,039	6,91,038	86,001	11.1
2009-10	8,30,594	7,46,644	83,950	10.1
2010-11*#	7,83,057	7,15,795	67,262	8.6

*Upto February, 2011; MU = Million Unit

#Includes provisional figures for the month of February, 2011.

Year	Peak			
	Demand (MW)	Met (MW)	Deficit (MW)	(%)
2007-08	1,08,866	90,793	18,073	16.60
2008-09	1,09,809	96,785	13,024	11.86
2009-10	1,19,166	1,04,009	15,157	12.72
2010-11*#	1,20,575	1,08,212	12,363	10.3

*Upto February, 2011 MW = Mega Watt

#Includes provisional figures for the month of February, 2011.

The State-wise power supply position during the last three years (2007-08, 2008-09 and 2009-2010) and current year (April, 2010 to February, 2011) is given in Statement (See below).

(c) The gross electricity generation in the country from various conventional energy sources, namely thermal, hydro, nuclear and import of hydro power from Bhutan during 2007-08, 2008-09, 2009-10 and 2010-11 (upto February, 2011) was 7,04,469 Million Unit (MU), 7,23,794 MU, 7,71,551 MU and 7,35,369 MU respectively. The year-wise, source-wise details of gross electricity generation are given below:

Source	Gross Energy Generation (Million Unit)			
	2007-08	2008-09	2009-10	2010-11*#
Thermal	5,58,990	5,90,101	6,40,877	6,01,520
Hydro	1,23,424	1,13,081	1,06,680	1,04,984
Nuclear	16,777	14,713	18,636	23,311
Bhutan Import	5,278	5,899	5,358	5,554
TOTAL	7,04,469	7,23,794	7,71,551	7,35,369

*upto February, 2011

#Includes provisional figures for the month of February, 2011.

(d) The major structural reforms undertaken to improve power situation in the country include de-licensing of thermal generation, introduction of ultra-mega power projects (UMPP), investors friendly New Hydro Policy, 2008, initiatives for augmentation of domestic manufacturing capacity of power plant equipment, adoption of super-critical technologies, liberalization of mega power policy, instituting a robust monitoring mechanism, enhancing availability of skilled and trained manpower.

As a result, a capacity of 32,762 MW has been added till 21st February, 2011 in the Eleventh Plan, which is highest ever in any Five Year Plan and is more than 150% of the total capacity added in the 10th Plan.

(e) The other steps taken/being taken by the Government to augment the power situation in the country include the following:

- (i) Rigorous monitoring of capacity addition of the on-going generation projects.
- (ii) Development of Ultra Mega Power Projects of 4000 MW each to reap benefits of economies of scale.
- (iii) Advance planning of generation capacity addition projects for Twelfth Plan.
- (iv) Coordinated operation and maintenance of hydro, thermal, nuclear and gas based power stations to optimally utilize the existing generation capacity.
- (v) Thrust to import of coal by the power utilities to meet the shortfall in coal supplies to thermal power stations from indigenous sources.
- (vi) Allocation of gas from KG Basin (D6) for gas based power stations in the country.
- (vii) Renovation, modernization and life extension of old and inefficient generation units.
- (viii) Strengthening of inter-state and inter-regional transmission capacity.
- (ix) Strengthening of sub-transmission and distribution network as a major step towards loss reduction.
- (x) Thrust to Rural Electrification through Rajiv Gandhi Grameen Vidyutikaran Yojana.
- (xi) Promoting energy conservation, energy efficiency and demand side management measures.

Statement

Power Supply Position from 2007-2011

(a) Power Supply Position for 2007-08 (Revised)

State/System/Region	Energy				Peak			
	April, 2007 - March, 2008				April, 2007 - March, 2008			
	Requirement (MU)	Availability (MU)	Surplus/Deficit (-)		Peak Demand (MW)	Peak Met (MW)	Surplus/Deficit (-)	
			(MU)	(%)			(MW)	(%)
1	2	3	4	5	6	7	8	9
Chandigarh	1,446	1,446	0	0	275	275	0	0
Delhi	22,439	22,301	-138	-0.6	4,075	4,030	-45	-1.1
Haryana	29,353	25,652	-3,701	-12.6	4,956	4,821	-135	-2.7
Himachal Pradesh	8,992	5,814	-178	-3.0	1,061	1,010	-51	-4.8
Jammu and Kashmir	11,782	8,362	-3,420	-29.0	1,950	1,439	-511	-26.2
Punjab	42,372	38,795	-3,577	-8.4	8,672	7,340	-1,332	-15.4
Rajasthan	36,738	35,597	-1,141	-3.1	6,374	5,564	-810	-12.7
Uttar Pradesh	62,628	51,335	-11,293	-18.0	11,104	8,568	-2,536	-22.8
Uttarakhand	7,047	6,845	-202	-2.9	1,200	1,150	-50	-4.2

1	2	3	4	5	6	7	8	9
Northern Region	219,797	196,147	-23,650	-10.8	32,462	29,495	-2,967	-9.1
Chhattisgarh	14,079	13,409	-670	-4.8	2,421	2,188	-233	-9.6
Gujarat	68,747	57,614	-11,133	-16.2	12,119	8,885	-3,234	-26.7
Madhya Pradesh	41,560	35,700	-5,860	-14.1	7,200	6,436	-764	-10.6
Maharashtra	114,885	93,846	-21,039	-18.3	18,441	13,575	-4,866	-26.4
Daman and Diu	1,774	1,580	-194	-10.9	240	215	-25	-10.4
Dadra and Nagar Haveli	3,388	3,372	-16	-0.5	460	424	-36	-7.8
Goa	2,740	2,707	-33	-1.2	457	408	-49	-10.7
Western Region	247,173	208,228	-38,945	-15.8	38,277	29,385	-8,892	-23.2
Andhra Pradesh	64,139	61,511	-2,628	-4.1	10,048	9,162	-886	-8.8
Karnataka	40,320	39,230	-1,090	-2.7	6,583	5,567	-1,016	-15.4
Kerala	15,663	15,284	379	-2.4	2,918	2,730	-188	-6.4
Tamil Nadu	65,780	63,954	-1,826	-2.8	10,334	8,690	-1,644	-15.9
Pondicherry	1,841	1,841	0	0.0	276	276	0	0.0
Lakshadweep	24	24	0	0	6	6	0	0
Southern Region	187,743	181,820	-5,923	-3.2	26,777	24,368	-2,409	-9.0
Bihar	9,155	7,933	-1,222	-13.3	1,882	1,243	-639	-34.0

1	2	3	4	5	6	7	8	9
DVC	13,387	13,039	-348	-2.6	1,852	1,803	-49	-2.6
Jharkhand	5,139	4,458	-681	-13.3	865	787	-78	-9.0
Orissa	18,846	18,500	-346	-1.8	3,142	2,905	-237	-7.5
West Bengal	29,020	27,902	-1,118	-3.9	5,283	4,987	-296	-5.6
Sikkim	284	267	-17	-6.0	69	66	-3	-4.3
Andaman and Nicobar	240	180	-60	-25	40	32	-8	-20
Eastern Region	75,831	72,099	-3,732	-4.9	12,031	10,699	-1,332	-11.1
Arunachal Pradesh	391	302	-89	-22.8	101	75	-26	-25.7
Assam	4,816	4,412	-404	-8.4	848	766	-82	-9.7
Manipur	530	501	-29	-5.5	119	97	-22	-18.5
Meghalaya	1,620	1,232	-388	-24.0	455	279	-176	-38.7
Mizoram	288	246	-42	-14.6	97	58	-39	-40.2
Nagaland	377	334	-43	-11.4	91	88	-3	-3.3
Tripura	777	686	-91	-11.7	171	141	-30	-17.5
North-Eastern Region	8,799	7,713	-1,086	-12.3	1,742	1,347	-395	-22.7
ALL INDIA	739,343	666,007	-73,336	9.9	108,866	90,793	-18,073	-16.6

#Lakshadweep and Andaman and Nicobar Islands are stand-alone systems, power supply position of these, does not form part of regional requirement and availability.

(b) Power Supply Position for 2008-09 (Revised)

State/System/Region	Energy				Peak			
	April, 2008 - March, 2009				April, 2008 - March, 2009			
	Requirement (MU)	Availability (MU)	Surplus/Deficit (-)		Peak Demand (MW)	Peak Met (MW)	Surplus/Deficit (-)	
			(MU)	(%)			(MW)	(%)
1	2	3	4	5	6	7	8	9
Chandigarh	1,414	1,414	0	0	279	279	0	0
Delhi	22,398	22,273	-125	-0.6	4,036	4,036	-2	0.0
Haryana	29,085	26,625	-2,460	-8.5	5,511	4,791	-720	-13.1
Himachal Pradesh	6,260	6,241	-19	-0.3	1,055	1,014	-41	-3.9
Jammu and Kashmir	11,467	8,698	-2,769	-24.1	2,120	1,380	-740	-34.9
Punjab	41,635	37,238	-4,397	-10.6	8,690	7,309	-1,381	-15.9
Rajasthan	37,797	37,388	-409	-1.1	6,303	6,101	-202	-3.2
Uttar Pradesh	69,207	54,309	-14,898	-21.5	10,587	8,248	-2,339	-22.1
Uttarakhand	7,841	7,765	-76	-1.0	1,267	1,267	0	0.0
Northern Region	227,104	201,951	-28,153	-11.1	33,034	29,504	-3,530	-10.7
Chhattisgarh	14,866	14,475	-391	-2.6	2,887	2,830	-57	-2.0
Gujarat	67,482	60,851	-6,631	-9.8	11,841	8,960	-2,881	-24.3

1	2	3	4	5	6	7	8	9
Madhya Pradesh	42,054	34,841	-7,213	-17.2	7,564	6,810	-754	-10.0
Maharashtra	121,901	95,761	-26,140	-21.4	18,049	13,766	-4,283	-23.7
Daman and Diu	1,797	1,576	-221	-12.3	240	215	-25	-10.4
Dadra and Nagar Haveli	3,574	3,457	-117	-3.3	504	443	-61	-12.1
Goa	2,801	2,754	-47	-1.7	466	413	-53	-11.4
Western Region	254,475	213,715	-40,760	-16.0	37,240	30,153	-7,087	-19.0
Andhra Pradesh	71,511	66,673	-4,838	-6.8	11,083	9,997	-1,086	-9.8
Karnataka	43,168	40,578	-2,590	-6.0	6,892	6,548	-344	-5.0
Kerala	17,645	15,562	-2,083	-11.8	3,188	2,751	-437	-13.7
Tamil Nadu	69,668	64,208	-5,460	-7.8	9,799	9,211	-588	-6.0
Pondicherry	2,020	1,773	-247	-12.2	304	275	-29	-9.5
Lakshadweep	24	24	0	0	6	6	0	0
Southern Region	204,012	188,794	-15,218	-7.5	28,958	26,245	-2,713	-9.4
Bihar	10,527	8,801	-1,726	-16.4	1,842	1,333	-509	-27.6
DVC	14,002	13,699	-303	-2.2	2,217	2,178	-39	-1.8
Jharkhand	5,361	5,110	-251	-4.7	889	887	-2	-0.2

1	2	3	4	5	6	7	8	9
Orissa	20,519	20,214	-305	-1.5	3,062	2,987	-75	-2.4
West Bengal	31,289	30,290	-999	-3.2	5,387	5,379	-8	-0.1
Sikkim	343	330	-13	-3.8	97	95	-2	-2.1
Andaman and Nicobar	236	184	-52	-22	40	38	-2	-5
Eastern Region	82,041	78,444	-3,597	-4.4	12,901	11,789	-1,112	-8.6
Arunachal Pradesh	426	271	-155	-36.4	130	79	-51	-39.2
Assam	5,107	4,567	540	-10.6	958	797	-161	-16.8
Manipur	556	477	-79	-14.2	128	95	-33	-25.8
Meghalaya	1,713	1,386	-327	-19.1	457	293	-164	-35.9
Mizoram	330	269	-61	-18.5	100	64	-36	-36.0
Nagaland	475	436	-39	-8.2	95	86	-9	-9.5
Tripura	800	728	-72	-9.0	167	156	-11	-6.6
North-Eastern Region	9,407	8,134	-1,273	-13.5	1,820	1,358	-462	-25.4
ALL INDIA	777,039	691,038	-86,001	-11.1	109,809	96,785	-13,024	-11.9

#Lakshadweep and Andaman and Nicobar Islands are stand-alone systems, power supply position of these, does not form part of regional requirement and availability.

(c) Power Supply Position for 2009-10 (Revised)

State/System/Region	Energy				Peak			
	April, 2009 - March, 2010				April, 2009 - March, 2010			
	Requirement (MU)	Availability (MU)	Surplus/Deficit (-)		Peak Demand (MW)	Peak Met (MW)	Surplus/Deficit (-)	
			(MU)	(%)			(MW)	(%)
1	2	3	4	5	6	7	8	9
Chandigarh	1,576	1,528	-48	-3	308	308	0	0
Delhi	24,277	24,094	-183	-0.8	4,502	4,408	-94	-2.1
Haryana	33,441	32,023	-1,418	-4.2	6,133	5,678	-455	-7.4
Himachal Pradesh	7,047	6,769	-278	-3.9	1,118	1,158	40	3.6
Jammu and Kashmir	13,200	9,933	-3,267	-24.8	2,247	1,487	-760	-33.8
Punjab	45,731	39,408	-6,323	-13.8	9,786	7,407	-2,379	-24.3
Rajasthan	44,109	43,062	-1,047	-2.4	6,859	6,859	0	0.0
Uttar Pradesh	75,930	59,508	-16,422	-21.6	10,856	8,563	-2,293	-21.1
Uttarakhand	8,921	8,338	-583	-6.5	1,397	1,313	-84	-6.0
Northern Region	254,231	224,661	29,570	-11.6	37,159	31,439	-5,720	-15.4
Chhattisgarh	11,009	10,739	-270	-2.5	2,819	2,703	-116	-4.1
Gujarat	70,389	67,220	-3,149	-4.5	10,406	9,515	-891	-8.6

1	2	3	4	5	6	7	8	9
Madhya Pradesh	43,179	34,973	-8,206	-19.0	7,490	6,415	-1,075	-14.4
Maharashtra	124,936	101,512	-23,424	-18.7	19,388	14,664	-4,724	-24.4
Daman and Diu	1,934	1,802	-132	-6.8	280	255	-25	-8.9
Dadra Nagar Haveli	4,007	3,853	-154	-3.8	529	494	-35	-6.6
Goa	3,092	3,026	-66	-2.1	485	453	-32	-6.6
Western Region	258,528	223,127	33,401	-13.7	39,609	32,586	-7,023	-17.7
Andhra Pradesh	78,996	73,765	-5,231	-6.6	12,168	10,880	-1,288	-10.6
Karnataka	45,550	42,041	-3,509	-7.7	7,942	6,897	-1,045	-13.2
Kerala	17,619	17,196	-423	-2.4	3,109	2,982	-127	-4.1
Tamil Nadu	76,293	71,568	-4,725	-6.2	11,125	9,813	-1,312	-11.8
Pondicherry	2,119	1,975	-144	-6.8	327	294	-33	-10.1
Lakshadweep	24	24	0	0	6	6	0	0
Southern Region	220,576	206,544	-14,032	-6.4	32,178	29,049	-3,129	-9.7
Bihar	11,587	9,914	-1,673	-14.4	2,249	1,509	-740	-32.9
DVC	15,199	14,577	622	-4.1	1,938	1,910	-28	-1.4
Jharkhand	5,867	5,407	-460	-7.8	1,088	947	-141	-13.0
Orissa	21,136	20,955	-181	-0.9	3,188	3,120	-68	-2.1

1	2	3	4	5	6	7	8	9
West Bengal	33,750	32,819	-931	-2.8	6,094	5,963	-131	-2.1
Sikkim	338	345	-43	-11.1	96	94	-2	-2.1
Andaman and Nicobar	240	180	-60	-25	40	32	-8	-20
Eastern Region	87,927	84,017	-3,910	-4.4	13,220	12,384	-836	-6.3
Arunachal Pradesh	399	325	-74	-18.5	95	78	-17	-17.9
Assam	5,122	4,688	-434	-8.5	920	874	-46	-5.0
Manipur	524	430	-94	-17.9	111	99	-12	-10.8
Meghalaya	1,550	1,327	-223	-14.4	280	250	-30	-10.7
Mizoram	352	288	-64	-18.2	70	64	-6	-8.6
Nagaland	530	466	-64	-12.1	100	96	-4	-4.0
Tripura	855	771	-84	-9.8	176	173	-3	-1.7
North-Eastern Region	9,332	8,296	-1,036	-11.1	1,760	1,445	-315	-17.9
ALL INDIA	830,594	746,644	-83,950	-10.1	119,166	104,009	-15,157	-12.7

#Lakshadweep and Andaman and Nicobar Islands are stand-alone systems, power supply position of these, does not form part of regional requirement and availability.

(d) Power Supply Position for 2010-11 (Provisional)

State/System/Region	Energy				Peak			
	April, 2010 - February, 2011				April, 2010 - February, 2011			
	Requirement (MU)	Availability (MU)	Surplus/Deficit (-)		Peak Demand (MW)	Peak Met (MW)	Surplus/Deficit (-)	
			(MU)	(%)			(MW)	(%)
1	2	3	4	5	6	7	8	9
Chandigarh	1,413	1,413	0	0.0	301	301	0	0.0
Delhi	23,863	23,800	-63	-0.3	4,810	4,739	-71	-1.5
Haryana	31,762	29,912	-1,850	-5.8	6,142	5,574	-568	-9.2
Himachal Pradesh	6,964	6,713	-251	-3.6	1,278	1,187	-91	-7.1
Jammu and Kashmir	12,427	9,268	-3,159	-25.4	2,500	1,690	-810	-32.4
Punjab	41,226	38,649	-2,577	-6.3	9,399	7,938	-1,461	-15.5
Rajasthan	40,956	40,552	-404	-1.0	7,582	7,408	-174	-2.3
Uttar Pradesh	70,098	59,306	-10,792	-15.4	11,082	10,672	-410	-3.7
Uttarakhand	9,022	8,451	-571	-6.3	1,520	1,520	0	0.0
Northern Region	237,731	218,064	-19,667	-8.3	37,431	34,101	-3,330	-8.9
Chhattisgarh	9,250	9,096	-154	-1.7	2,913	2,759	-154	-5.3
Gujarat	65,217	61,199	-4,018	-6.2	10,786	9,947	-839	-7.8

1	2	3	4	5	6	7	8	9
Madhya Pradesh	43,873	35,018	-8,855	-20.2	8,864	8,068	-796	-9.0
Maharashtra	115,824	96,566	-19,258	-16.6	19,766	15,479	-4,287	-21.7
Daman and Diu	1,987	1,822	-165	-8.3	353	328	-25	-7.1
Dadra and Nagar Haveli	4,047	4,044	-3	-0.1	594	594	0	0.0
Goa	2,856	2,806	-50	-1.8	544	460	-84	-15.4
Western Region	243,054	210,551	-32,503	-13.4	40,502	33,694	-6,808	-16.8
Andhra Pradesh	70,860	68,577	-2,283	-3.2	12,018	11,232	-786	-6.5
Karnataka	44,970	41,600	-3,370	-7.5	8,137	7,815	-322	-4.0
Kerala	16,275	16,052	-223	-1.4	3,295	2,946	-349	-10.6
Tamil Nadu	72,712	68,140	-4,572	-6.3	11,728	10,436	-1,292	-11.0
Pondicherry	1,929	1,847	-82	-4.3	319	300	-19	-6.0
Lakshadweep	22	22	0	0	6	6	0	0
Southern Region	206,746	196,216	-10,530	-5.1	32,214	30,324	-1,890	-5.9
Bihar	11,621	10,007	-1,614	-13.9	2,073	1,659	-414	20.0
DVC	15,045	13,777	-1,268	-8.4	2,206	2,046	-160	-7.3
Jharkhand	5,651	5,482	-169	-3.0	1,012	1,012	0	0.0
Orissa	20,429	20,368	-61	-0.3	3,505	3,468	-37	-1.1

1	2	3	4	5	6	7	8	9
West Bengal	33,349	32,715	-634	-1.9	6,162	6,112	-50	-0.8
Sikkim	361	361	0	9.0	100	99	-1	-1.0
Andaman and Nicobar	220	165	-55	-25.0	40	32	-8	-2.0
Eastern Region	86,456	82,710	-3,746	-4.3	13,767	13,085	-682	-5.0
Arunachal Pradesh	463	394	-69	-14.9	101	85	-16	-15.8
Assam	4,992	4,669	-323	-6.5	971	937	-34	-3.5
Manipur	522	464	-58	-11.1	118	115	-3	-2.5
Meghalaya	1,405	1,225	-180	-12.8	294	284	-10	-3.4
Mizoram	332	282	-50	-15.1	76	70	-6	-7.9
Nagaland	543	485	-58	-10.7	118	110	-8	-6.8
Tripura	813	735	-78	-9.6	220	197	-23	-10.5
North-Eastern Region	9,070	8,254	-816	-9.0	1,913	1,560	-353	-18.5
ALL INDIA	783,057	715,795	-67,262	-8.6	120,575	108,212	-12,363	-10.3

#Lakshadweep and Andaman and Nicobar Islands are stand-alone systems, power supply position of these, does not form part of regional requirement and availability.