



Annual Report 2012-13



सत्यमेव जयते

Ministry of Power

Government of India

www.powermin.nic.in

MAP OF INDIA

SHOWING

INSTALLED GENERATING CAPACITY STATEWISE/MODEWISE

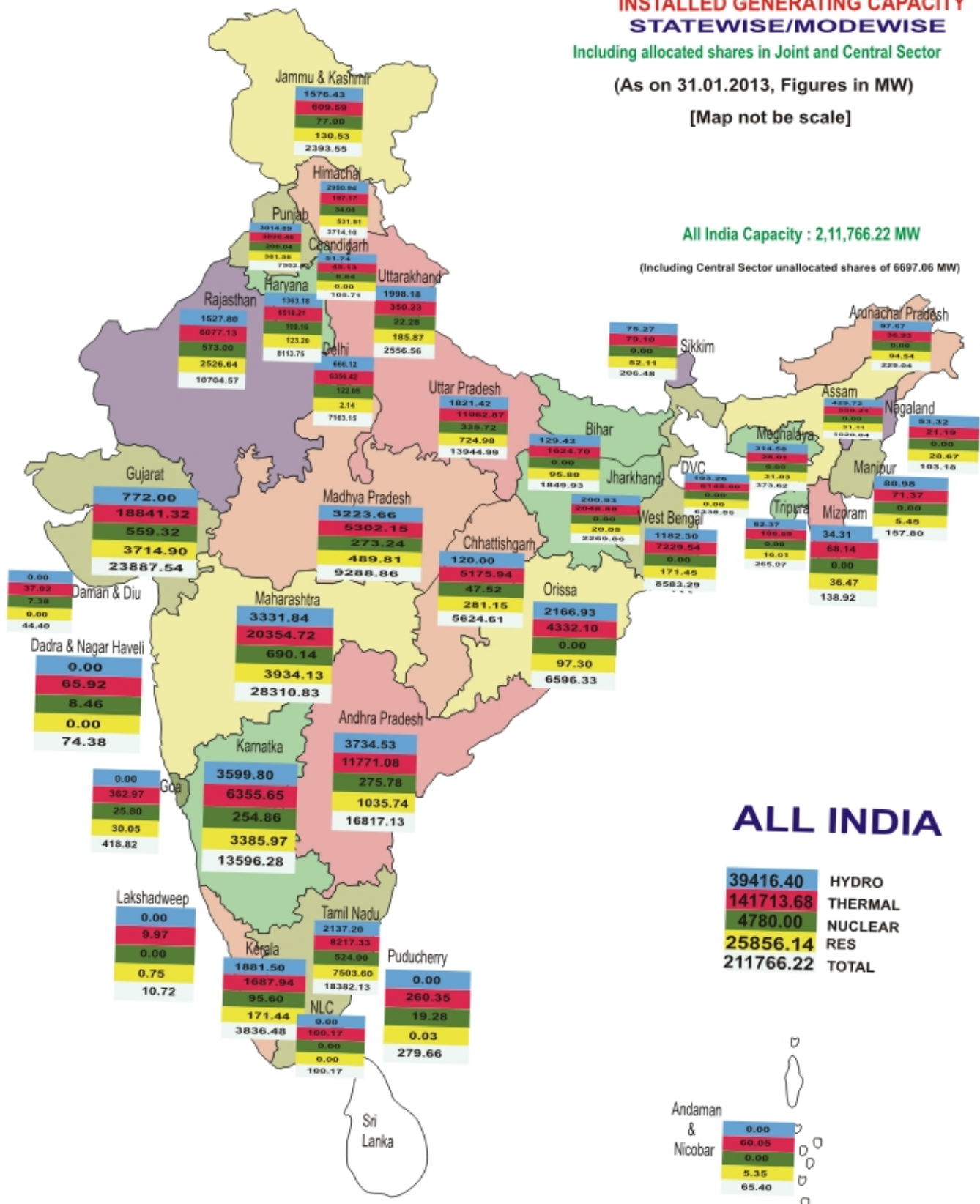
Including allocated shares in Joint and Central Sector

(As on 31.01.2013, Figures in MW)

[Map not be scale]

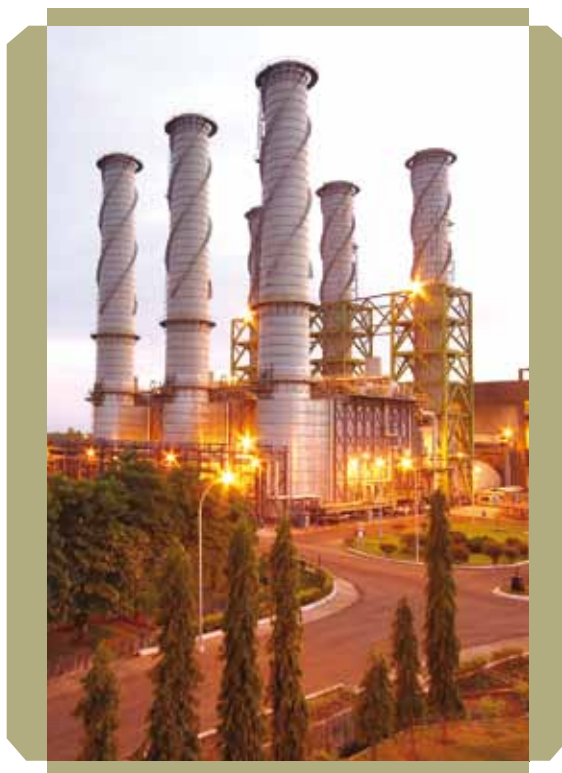
All India Capacity : 2,11,766.22 MW

(Including Central Sector unallocated shares of 6697.06 MW)



Annual Report

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Ministry of Power
Government of India

Shram Shakti Bhawan, Rafi Marg, New Delhi-110 001

Website : www.powermin.nic.in



Shri Pranab Mukherjee, Hon'ble President of India with Shri Jyotiraditya M. Scindia, Hon'ble Union Minister of State for Power (Independent Charge) at the National Energy Conservation Day function

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Shri R N Nayak, CMD, PGCIL presenting RTGS credit advice of Rs. 501.15 crores towards interim Dividend for the year 2012-13 to Shri Jyotiraditya M. Scindia, Hon'ble Union Minister of State for Power (Independent Charge)

CHAPTER-1

PERFORMANCE HIGHLIGHTS

THE ELECTRICITY ACT, 2003

Section 3 (i) Electricity Act 2003 mandates the Central Government to prepare the National Electricity Policy, Tariff Policy in consultation with State Governments and the Central Electricity Authority (CEA).

The National Electricity Policy aims at accelerated development of the power sector, providing supply of electricity to all areas and protecting interests of consumers and other stakeholders keeping in view availability of energy resources technology available to exploit these resources, economics of generation using different resources and energy security issues. Salient features of the Policy are as under :

- Access to Electricity : Available for all householders.
- Availability of Power: Demand to be fully met. Energy and peaking shortages to be overcome and spinning reserve to be available.
- Supply of Reliable and Quality Power of specified standards in an efficient manner and at reasonable rates.
- Per capita availability of electricity to be increased to over 100 units.
- Minimum lifeline consumption of 1 Unit/Household/day as a merit good.
- Financial Turnaround and Commercial Viability of Electricity Sector.
- Protection of consumer's interests.

REGULATIONS ISSUED BY CENTRAL ELECTRICITY REGULATORY COMMISSION (CERC) DURING 2011-12

1. CERC (Sharing of Inter State Transmission Charges and Losses) (First Amendment) Regulations, 2011. (Published Dated 25.11.2011)
2. CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012. (Published Dated 07.02.2012)
3. CERC (Indian Electricity Grid Code) (First Amendment) Regulations 2012 (Published dated 06.03. 2012).
4. CERC (Unscheduled Interchange charges and related matters) (Second Amendment) Regulations 2012 (Published dated 06.03. 2012).
5. CERC (Grant of Connectivity, Long Term Access and Medium-term Open Access in inter-State Transmission and related matters) (Second Amendment) Regulations 2012 (Published dated 22.03. 2012).
6. Corrigendum to CERC (Unscheduled Interchange charges and related matters) (Second Amendment) Regulations 2012 (Published dated 30.03.2012).

7. CERC (Payment of Fees) Regulations, 2012. (Published Dated 30.03.2012)
8. CERC (Sharing of Inter State Transmission Charges and Losses) (Second Amendment) Regulations, 2012. (Published Dated 29.03.2012).
9. CERC (Procedure, Terms and Conditions for grant of trading licence and other related matters) (First Amendment) Regulations, 2012 (Published dated 11.10. 2012).
10. CERC (Standards of Performance of inter-State Transmission Licensees) Regulations, 2012 (Published dated 21.09. 2012).
11. CERC (CORRIGENDUM) (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations 2012 (Published dated 11.10. 2012).

ULTRA MEGA POWER PROJECTS

Four UMPPs namely Mundra in Gujarat, Sasan in Madhya Pradesh, Krishnapatnam in Andhra Pradesh and Talaiya in Jharkhand had already been transferred to the identified developers and the projects are at different stages of development. Four units of Mundra UMPP each of 800MW have been commissioned in March, July, October 2012 and January, 2013. Last unit is likely to be commissioned by September 2013. For Sasan UMPP, first unit is likely to be commissioned in March, 2013. The remaining units of Sasan and other awarded UMPPs are expected in 12th Plan (except last unit of Talaiya UMPP, which is likely to come in 13th Plan).

- Request for Qualification (RfQ) for two UMPPs—at Bedabahal in District Sundergarh, Odisha and in District Sarguja of Chhattisgarh have been issued on 15.3.2010 and 11.06.2010 respectively.
- RfQ bids for Odisha UMPP was opened on 1st August, 2011 and are under evaluation. RfP will be issued after SBDs are revised.
- For setting up of UMPPs, the requisite site at Cheyyur in Kancheepuram District, Tamil Nadu and another site at Nayunipalli village in Prakasham District, Andhra Pradesh Second UMPP have been identified. Efforts are being made to bring them to bidding stage at the earliest. RfQ for Cheyyur UMPP will be issued after SBDs are revised.
- A site at Husainabad, Deoghar Distt. has been identified for setting up of 2nd UMPP in Jharkhand.
- A site at Bijoyapatna in Chandbali Tehsil of Bhadrak District for coastal location and another site at Narla & Kasinga sub division of Kalahandi District for inland location have been identified for setting up of additional UMPPs in Odisha.
- A request has also been received from Bihar Govt. for setting up an UMPP in the state. Site selection is underway.

- The sites in Tamil Nadu & Gujarat for their second UMPPs are being examined by CEA/PFC.

STATUS OF RAJIV GANDHI GRAMEEN VIDUTIKARAN YOJANA (RGGVY)

Considering rural electrification as vital for the development of rural India, Government launched an ambitious programme "Rajiv Gandhi Grameen Vidyutikaran Yojana(RGGVY)" in April 2005. This is one of the flagship programmes of the Government. Government is providing 90% of the project cost as subsidy. So far, Government has made ₹33,000/- Crore capital subsidy available for the scheme.

Under this scheme, it is targetted to electrify over one lakh un-electrified villages and to provide free electricity connections to 2.29 Crore rural BPL households. As on 31st December, 2012, 1,06,335 villages have been electrified and free electricity connections have been provided to 2.04 crores BPL households.

POWER MINISTERS' CONFERENCE

The conference of Power Ministers of States and Union Territories was held on 5th February, 2013 in which the following issues were discussed:

- (i) Access to electricity for all.
- (ii) Distribution sector reforms.
- (iii) Procurement of power to meet demand.
- (iv) Planned and secure transmission.
- (v) Demand side management (DSM) and energy efficiency (EE).

CAPACITY ADDITION

The all India installed power generation capacity as on 30.11.2012 was 2,10,936.72 MW comprising of 1,40,976.18 MW Thermal, 39,324.40 MW Hydro, 4,780.00 MW Nuclear and 25,856.14 MW R.E.S.

CAPACITY ADDITION PROGRAMME AND ACHIEVEMENT DURING 2012-13

The capacity addition target during 2012-13 was 17,956.3 MW, out of which a capacity of 9,839 MW has been commissioned till 30.11.2012.

MEGA POWER POLICY

In order to compensate the disadvantages suffered by the domestic power equipment manufacturing industry on account of higher interest rates, local taxes and infrastructural inadequacies, create a level playing field to the domestic power equipment manufacturing industry vis-à-vis foreign vendors and promote self sufficiency in this vital sector, Ministry of Power proposed imposition of Custom Duty @5%, CVD @12% (as applicable and equal to excise duty on domestic industry from time to time) & SAD @ 4% to be uniformly applicable to the imported equipments of all categories of Power generation projects, viz., Mega Power Projects (including UMPPs) and non-Mega Power Projects. Government approved the proposal on

19.07.12 and Department of Revenue has notified the same on 10.09.2012. Thus, all new power projects will have to pay duty for imported equipments and Mega Power policy stands withdrawn for new projects other than those already issued mega/provisional mega certificates before 19.07.12. 1 power project of capacity 1,320 MW has been granted mega power status and 2 power projects totaling capacity of 2,520 MW have been granted provisional mega power status from April, 2012 to 19th July, 2012.

CAPACITY ADDITION PROGRAMME AND ACHIEVEMENT DURING 2012-13.

The capacity addition target during 2012-13 was 17,956.3 MW, out of which a capacity of 9,839 MW has been commissioned till 30.11.2012. This would be higher than the highest capacity addition ever achieved in a single year of 20501.7 MW in 2011-12.

PROVISION OF SUPPLY OF ELECTRICITY IN 5 KM AREA AROUND CENTRAL POWER PLANTS

The Hon'ble Union Minister of Power announced in the Parliament on 21.07.2009 that the Government is considering supplying of reliable power supply to the villages within radius of 5 km of Power Stations set up by Central Public Sector Undertakings (CPSUs).

In pursuance of the announcement made by the Hon'ble Minister, Ministry of Power issued Guidelines vide Order dated 27th April, 2010 to operationalize the scheme. Salient features are :

1. **Coverage of the scheme:** The scheme will cover all existing and upcoming power plants of CPSUs. The cost of the scheme will be borne by the CPSUs which owns plant.
2. **Agency for implementation and O&M:** The scheme will be implemented by the CPSUs for the area around its plants. Scheme is to supplement the existing infrastructure of the DISCOM to the extent required to operationalize the scheme. State Utility need to Provide Data, Clearances, Access and Space in their existing substations for making the implementation possible. State Utility shall also identify a Nodal Officer for this purpose.
3. **Power supply to the area:** CPSU and State Utility will make an assessment of the power requirement of the area. The assessed amount of power will be made Available/ Allocated to the State Utility from the Central Government unallocated quota over and above the allocated quota. Under the scheme, electricity shall be supplied only for the domestic usage purpose.
4. **Scope of the scheme:** Under the scheme, all revenue villages and habitations, irrespective of their population falling within 5 km. radius from the power house of CPSUs are eligible for electrification. At least one 11 kV radial feeder, if it does not already exist, will be provided by the CPSUs for the area from the nearest existing substation of the state utility. CPSUs will provide free single lamp electricity connections to BPL households. LED bulbs

shall be provided with connections to BPL households. Supply of LED bulbs by CPSUs will be a one time affair.

5. **Implementation of the scheme:** A tripartite agreement is to be signed by State Government, State Utility and the concerned CPSU for implementation of the scheme. Model Tripartite Agreement has been circulated to all to facilitate faster implementation on 03.08.2010.
6. **Tariff for power supply:** The tariff, as decided by the SERC for other villages, shall be applicable for this area. State Utility will take the meter reading of all the consumers, issue bills and collect the tariff as in normal cases.
7. **Monitoring of the scheme:** The implementation and operation of the scheme will be monitored by the concerned CPSU and the Ministry of Power.

GENERATION PERFORMANCE

The electricity generation target for the year 2012-13 was fixed as 930 Billion Unit (BU). The actual generation during April-November, 2012-13 was 607.168 BU as compared to generation target of 610.402 BU for the period and actual

generation of 580.664 BU during April-November, 2011, representing an achievement of 99.47 % and a growth of about 4.56%.

Coal continued to remain the mainstay of electricity generation in the country. During the year 2012-13 (up to Nov'12), the coal based generation contributed more than two third of the total electricity generation of 607.168 BU. Import of coal was resorted to bridge the gap between requirement of coal and its availability from domestic sources. An overview of coal receipt in thermal power stations of Power Utilities during 2012-13 (up to November, 2012) is given below:

Coal Receipt	(Million Tonne)
o Coal India Limited	: 214.7
o Singareni Collieries Company Ltd.	: 24.3
o Captive Mines	: 15.9
o E-auction	: 3.8
o Import	: 37.5

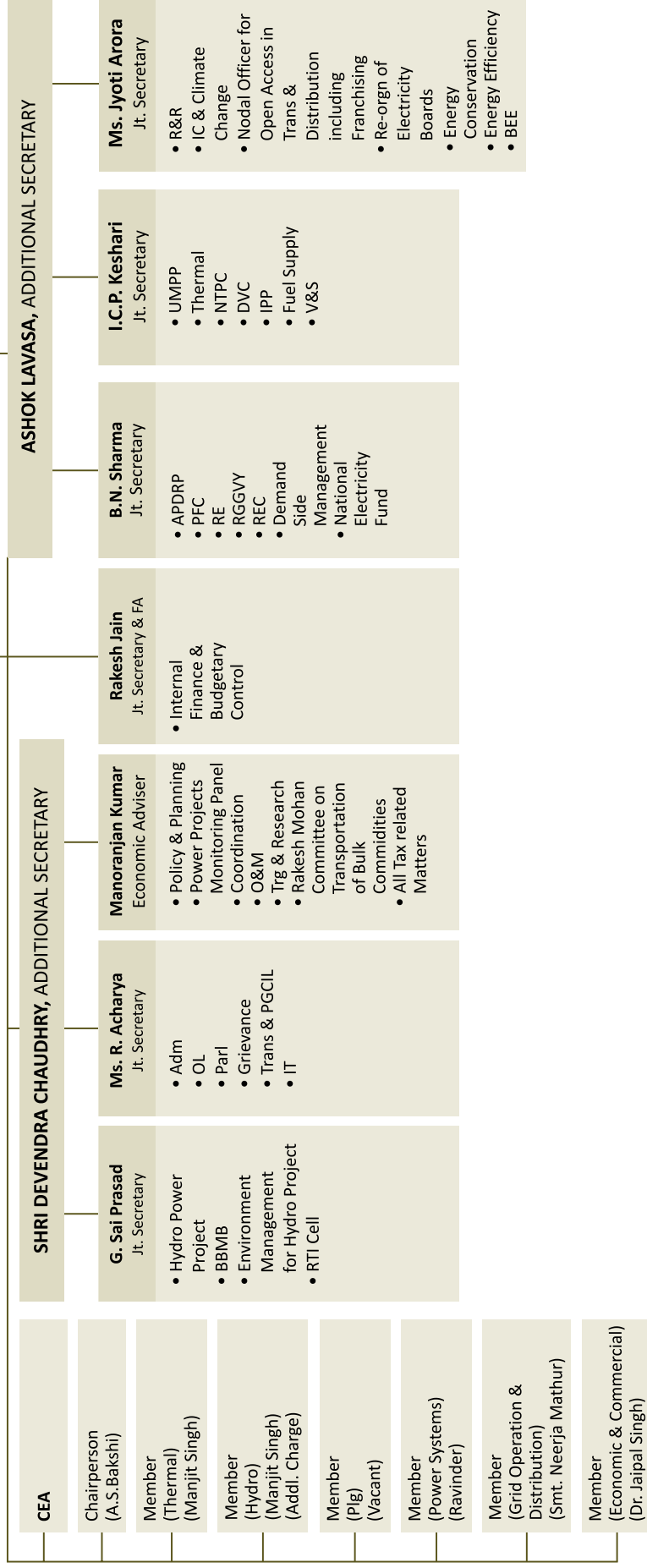


ORGANISATION STRUCTURE

As on 11.03.2013

SHRI JYOTIRADITYA M. SCINDIA
MINISTER OF STATE FOR POWER (INDEPENDENT CHARGE)

SHRI P. UMA SHANKAR
SECRETARY (POWER)



ORGANISATIONAL SET UP AND FUNCTIONS OF THE MINISTRY OF POWER

The Ministry of Power started functioning independently with effect from 2nd July, 1992. Earlier it was known as the Ministry of Energy comprising the Departments of Power, Coal and Non-Conventional Energy Sources.

Electricity is a concurrent subject at entry number 38 in the List III of the Seventh Schedule of the Constitution of India. The Ministry of Power is primarily responsible for the development of electrical energy in the country. The Ministry is concerned with perspective planning, policy formulation, processing of projects for investment decisions, monitoring of the implementation of power projects, training and manpower development and the administration and enactment of legislation in regard to thermal, hydro power generation, transmission and distribution. The Ministry has developed its website **www.powermin.nic.in**.

The main items of work dealt with by the Ministry of Power are as given below:

- General Policy in the electric power sector and issues relating to energy policy and coordination thereof. (Details of short, medium and long-term policies in terms of formulation, acceptance, implementation and review of such policies, cutting across sectors, fuels, regions and intra-country and inter-country flows);
- All matters relating to hydroelectric power (except small/mini/micro hydel projects of and below 25 MW capacity) and thermal power and transmission & distribution system network;
- Research, development and technical assistance relating to hydroelectric and thermal power, transmission system network and distribution systems in the States/UTs;
- Administration of the Electricity Act, 2003, (36 of 2003), the Energy Conservation Act, 2001 (52 of 2001), the Damodar Valley Corporation Act, 1948 (14 of 1948) and Bhakra Beas Management Board as provided in the Punjab Reorganisation Act, 1966 (31 of 1966);
- All matters relating to Central Electricity Authority, Central Electricity Regulatory Commission and Appellate Tribunal for Electricity;
- Rural Electrification;
- Power schemes and issues relating to power supply/development schemes/programmes/decentralized and distributed generation in the States and Union Territories;
- Matters relating to the following Undertakings/Organizations:
 - a. Damodar Valley Corporation;
 - b. Bhakra Beas Management Board (except matters relating to irrigation);

- c. NTPC Limited;
- d. NHPC Limited;
- e. Rural Electrification Corporation Limited;
- f. North Eastern Electric Power Corporation Limited;
- g. Power Grid Corporation of India Limited;
- h. Power Finance Corporation Limited;
- i. THDC India Limited;
- j. Satluj Jal Vidyut Nigam Limited;
- k. Central Power Research Institute;
- l. National Power Training Institute;
- m. Bureau of Energy Efficiency;
- All matters concerning energy conservation and energy efficiency pertaining to Power Sector.

ORGANISATION SET-UP

Shri Sushilkumar Shinde was the Minister of Power. He demitted office on 31.07.2012.

Dr. M. Veerappa Moily assumed additional charge as Minister of Power with effect from 01.08.2012. He demitted office on 28.10.2012.

Shri K.C. Venugopal was the Minister of State for Power. He demitted office on 28.10.2012.

Shri Jyotiraditya M. Scindia assumed charge as Minister of State (Independent charge) for Power with effect from 29.10.2012.

Shri P.Uma Shankar assumed charge as Secretary in the Ministry of Power with effect from the 30th April, 2010. The Ministry has two Additional Secretaries and six Joint Secretaries, including the Financial Adviser and one Economic Adviser.

Shri Ashok Lavasa, Additional Secretary, oversees the work relating to Reforms & Restructuring, International Cooperation and climate Change, Matters relating to Nodal Officer for open Access in Transmission and Distribution including Franchising, Accelerated Power Development and Reforms Programme, Power Finance Corporation, Rural Electrification; Rajiv Gandhi Gramin Vidyutikaran Yojana; Rural Electrification Corporation; Energy Conservation & Efficiency; Demand Side Management and National Electricity fund; Bureau of Energy Efficiency; Ultra Mega Power Project; Thermal; National Thermal Power Corporation; Damodar Valley Corporation; Independent Power Producers and Fuel Supply. Attends meetings in Cabinet Secretariat.

Shri Devendra Chaudhry, Additional Secretary, oversees the work relating to Administration (Official Language & Parliament); Transmission; Power Grid Corporation of India Limited; Information Technology & Public Grievances; Hydro matters including CPSUs namely NHPC, SJVNL, NEEPCO, THDC, Bhakra Beas Management Board; Environment Management for Hydro Project and RTI Cell; Training & Research including CPRI and NPTI, Rakesh Moham Comiitee on Transportation of Bulk Commodities, All Tax Related Matters; Policy & Planning, Power Projects Monitoring Panel, Coordination and Operation & Monitoring. Attends meetings in Cabinet Secretariat.

The allocation of work among the six Joint Secretaries and Economic Adviser (EA) in the Ministry of Power is as under:

- i) Administration (Official Language & Parliament); Transmission; Power Grid Corporation of India Limited; Information Technology & Public Grievances.
- ii) Ultra Mega Power Project; Thermal; NTPC Ltd.; Damodar Valley Corporation; Independent Power Producers and Fuel Supply; Vigilance & Security (Vigilance cases will be submitted directly to Secretary (P).
- iii) Accelerated Power Development and Reforms Programme, Power Finance Corporation, Rural Electrification; Rajiv Gandhi Gramin Vidyutikaran Yojana; Rural Electrification Corporation; Demand Side Management and National Electricity Fund.

- iv) Hydro matters including CPSUs namely NHPC, SJVNL, NEEPCO, THDC, Bhakra Beas Management Board; Environment Management for Hydro Project and RTI Cell.
- v) Internal Finance; Budgetary Control.
- vi) Reforms & Restructuring (including the state Boards restructuring), International Cooperation and Climate Change, Nodal Officer for open Access in Transmission and Distribution including Franchising ; Energy Conservation & Efficiency; Bureau of Energy Efficiency.
- vii) Training & Research including CPRI and NPTI , Rakesh Moham Comiitee on Transportation of Bulk Commodities, All Tax Related Matters; Policy & Planning, Power Projects Monitoring Panel, Coordination and Operation & Monitoring.

There is a Principal Accounts Office headed by the Controller of Accounts who in turn reports to the Financial Adviser in the Ministry of Power. Matters relating to reservations for SC/ ST, Physically Handicapped and Ex-Servicemen in the Ministry including PSUs under its administrative control are dealt with by the Deputy Secretary (Admn.-II) who is also the Liaison Officer for SC/ST and Deputy Secretary (Coord.) is the Liaison officer for OBCs.



*Shri Jyotiraditya M. Scindia, Hon'ble Union Minister of State for Power (Independent Charge)
visited the Project Monitoring Centre (PMC) of NTPC on 14th November, 2012*

CAPACITY ADDITION PROGRAMME IN THE XIIth PLAN

1. The National Electricity Policy (NEP) had stipulated power for all and annual per capita consumption of electricity to rise to 1000 units by 2012. This entailed provision of adequate reliable power, at affordable cost with access to all citizens. Electricity is in the Concurrent List in the Constitution and the primary responsibility of structuring its availability and distribution is that of the States. However, both the Centre and the States have to play a decisive and positive role. While shortages are presently being experienced by each region, it is much more acute in the case of some regions/States.
2. The all India installed power generation capacity as on 30.11.2012 is 2,10,936.72 MW comprising of 1,40,976.18 MW Thermal, 39,324.40 MW Hydro, 4,780.00 MW Nuclear and 25,856.14 MW R.E.S. The Central Sector's share in generation has gradually increased from 12% in 1979 to 30% as on 30.11.2012. On the other hand the share of the State Sector has declined from 82.5% to 41% while the share of Private Sector has gone up from 5.2% to 29% during the same period.
3. To fulfill the objectives of the NEP, a capacity addition of 78,700 MW had been proposed for the 11th Plan. The breakup of the capacity addition target is given as under:

(in MW)

Source	Central	State	Private	Total	Share (%)
Hydro	8654	3482	3491	15627	19.9
Thermal	24840	23301	11552	59693	75.8
Nuclear	3380	-	-	3380	4.3
Total	36874	26783	15043	78700	100
Share (%)	46.9	34	19.1	100	

4. During the mid-term appraisal carried out by the Planning Commission, the capacity addition target for the 11th Plan has been revised to 62,374 MW comprising of 50757 MW Thermal, 8237 MW Hydro, 3380 MW Nuclear.
5. **Capacity addition programme and achievement during 2008-09.**

The capacity addition target for the year 2008-09 was 11061.2 MW which had been revised to 7530 MW because of the revised definition of commissioning of power projects. The achievement as on 31.03.2009 was 3454 MW. The details of programmed and achievement made till 31.03.2009 are as given below:

Capacity Addition during 2008-09

(in MW)

Sector	Thermal		Hydro		Nuclear		Total	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
Central	1750	750	0	0	660	0	2410	750
State	1262.2	852.2	1097	969	0	0	2359	1821.2
Private	2761	882.5	0	0	0	0	2761	882.5
Total	5773.2	2484.7	1097	969	660	0	7530	3453.7

6. Capacity addition programme and achievement during 2009-10

During the year 2009-10, a capacity addition of 14,507MW had been planned, out of which a capacity of 9585MW had been commissioned during 2009-10. The capacity addition targets and achievements during 2009-10 are given in the table below:

(in MW)

Sector	Thermal		Hydro		Nuclear		Total	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
Central	2490	1740	252	0	660	440	3402	2180
State	4679	3079	301	39	0	0	4980	3118
Private	5833	4287	292	0	0	0	6125	4287
Total	13002	9106	845	39	660	440	14507	9585

7. Capacity addition programme and achievement during 2010-11

During the year 2010-11, a capacity addition of 20,359 MW has been planned, out of which a capacity of 12,160.5 MW has been commissioned during 2010-11. The capacity addition targets and achievements during 2010-11 are given in the table below:

(in MW)

Sector	Thermal		Hydro		Nuclear		Total	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
Central	5890	3740	529	320	1220	220	7639	4280
State	6012	2581	597.5	178	0	0	6609.5	2759
Private	5891	4929.5	219.5	192	0	0	6110.5	5121.5
Total	17793	11250.5	1346	690	1220	220	20359	12160.5

8. Capacity addition programme and achievement during 2011-12

During the year 2011-12, a capacity addition of 17601 MW had been planned, out of which a capacity of 20,501.7 MW had been commissioned during 2011-12. The capacity addition targets and achievements during 2011-12 are given in the table below:

(in MW)

Sector	Thermal		Hydro		Nuclear		Total	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
Central	3070	4570	655	200	2000	0	5725	4770
State	4101	3638.2	165	123	0	0	4266	3761.2
Private	6440	10870.5	1170	1100	0	0	7610	11970.5
Total	13611	19078.7	1990	1423	2000	0	17601	20501.7

9. Capacity Addition during XIth Plan

As against the midterm appraisal target of 62,374 MW set for the 11th Plan, a capacity of 54,964 MW has been achieved during the eleventh Plan which is about two & half times of the capacity added during Tenth plan. Sectorwise and Fuel-wise summary of the capacity

addition during the XIth Plan is given in the following table:-

Achievement in 11th Plan

(in MW)

Sector	Thermal			Hydro			Nuclear			Total		
	Org. Tar.	MTA Tar.	Ach.	Org. Tar.	MTA Tar.	Ach.	Org. Tar.	MTA Tar.	Ach.	Org. Tar.	MTA Tar.	Ach.
Central	24840	14920	12790	8654	2922	1550	3380	3380	880	36874	21222	15220
State	23301	18501	14030	3482	2854	2702	0	0	0	26783	21355	16732
Private	11552	17336	21720	3491	2461	1292	0	0	0	15043	19797	23012
All India	59693	50757	48540	15627	8237	5544	3380	3380	880	78700	62374	54964

10. Capacity addition (last five years)

In the last five years the following new capacities have been added:

(in MW)

Year	Central	State	Private	Total
2007-08	3240	5273	750	9263
2008-09	750	1821.2	882.5	3453.7
2009-10	2180	3118	4287	9585
2010-11	4280	2759	5121.5	12160.5
2011-12	4770	3761.2	11970.5	20501.7

Capacity Addition during XIIth Plan

- The installed electricity generation capacity in the country at the end of the 11th Plan was about 2,00,000 MW. The capacity addition programme during the 12th plan period is estimated at 88,537 MW comprising 72,340 MW in the Thermal Sector, 10,897 MW in the Hydro Sector and 5,300 MW in the Nuclear Sector.
- Capacity addition target for the year 2012-13 is **17956.3MW**. As against it, a capacity of 9839MW has been added till 30.11.2012. Sector-wise and Fuel-wise summary of the capacity addition for the year 2012-13 is given in the following table:-

Achievement in 12th Plan

(in MW)

Sector	Thermal		Hydro		Nuclear		Total	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
Central	4023.3	2660	645	264	2000	0	6668.3	2924
State	3951	1350	87	0	0	0	4038	1350
Private	7180	5495	70	70	0	0	7250	5565
Total	15154.3	9505	802	334	2000	0	17956.6	9839

- The Ministry of Power has adopted a robust monitoring system for the capacity addition programmed so as to see that the projects are executed in time. The monitoring mechanism comprises of 3 broad levels at which monitoring of power projects are carried by the Ministry viz. by the Central Electricity Authority; by the Ministry of Power; and through the Power Project Monitoring Panel (PPMP).

14. Monitoring by the Central Electricity Authority

The Central Electricity Authority (CEA) has a nodal officer associated with each on going project which continuously monitors the progress at site through frequent visits and continuous interaction. The respective nodal officer is responsible for submitting a report on the progress of each of the ongoing power project on monthly basis highlighting the critical areas where corrective actions are required. The Chairperson, CEA reviews progress of the ongoing projects with the nodal officers. The CEA also holds quarterly review meeting with the developers and other stakeholders.

15. Monitoring by the Ministry of Power

Intensive reviews are held by the Ministry of Power to review the critical milestones associated with each ongoing project. Meetings with the leading equipment manufacturers, especially, QPRs are also organized separately for each CPSU to review the status of the Central Sector projects. The Capacity Addition Programme is intensively monitored by the Planning Commission and the Cabinet Secretariat as well.

16. Power Project Monitoring Panel (PPMP)

As a follow up to the decision in the Conference of Chief Ministers' held on May 28th, 2007, the Ministry of Power has set up a "Power Project Monitoring Panel" (PPMP) for monitoring of Thermal and Hydro Generation Projects targeted for commissioning during the 11th Plan along with the associated transmission schemes. The PPMP at present comprises five independent project monitoring consultants. Each consultant is given specific projects. The individual consultants make visits to the project sites and furnish their progress report which is compiled by the coordinating consultant and along with the Exception Report is submitted. The progress of implementation of the projects is accordingly reviewed by the Ministry on the basis of the report received from the Monitoring Panel.

LIST OF PROJECTS COMMISSIONED DURING 2012-2013 (12TH PLAN) AS ON 30.11.2012

PROJECT NAME	REGION	SECTOR	STATE	TYPE	COMMISSIONING DETAILS	
THERMAL PROJECTS					Commissioning Date	Capacity (MW)
MAHATMA GANDHI TPP U2	NR	P.S.	HAR	COAL	11.04.2012	660
MOUDA TPP U-1	WR	C.S.	MAHA	COAL	19.04.2012	500
STERLITE(Jharsuguda) TPP U-4	ER	P.S.	ODISHA	COAL	25.04.2012	600
GEPL TPP PH-1, UNIT2	WR	P.S.	MAHA	COAL	28.04.2012	60
RIHAND STPP ST-III UNIT 5	NR	C.S.	UP	COAL	25.05.2012	500
PARICHHA TPP UNIT-5	NR	S.S.	UP	COAL	24.05.2012	250
HARDUGANJ TPP EXT. UNIT-9	NR	S.S.	UP	COAL	25.05.2012	250
SIPATST-I STPP UNIT 3	WR	C.S.	CHAT	COAL	02.06.2012	660
SALAYA TPS UNIT 2	WR	P.S.	GUJ	COAL	13.06.2012	600
VINDHYACHAL STPP ST-IV	WR	C.S.	MP	COAL	14.06.2012	500
KASAIPALLI TPS UNIT 2	WR	P.S.	CHAT	COAL	21.06.2012	135
PRAGATI III GT-3	NR	S.S.	DEL	GAS	27.06.2012	250
SIMHAPURI TPP PH-1 U2	SR	P.S.	AP	COAL	02.07.2012	150
UMPP-MUNDRA UNIT2	WR	P.S.	GUJ	COAL	17.07.2012	800
BINA TPP U-1	WR	P.S.	MP	COAL	12.08.2012	250
BUTIBORI TPP U-1	WR	P.S.	MAHA	COAL	17.08.2012	300
GEPL TPP U1	WR	P.S.	MAHA	COAL	08.09.2012	60
THAMMINAPATNAM TPP I U 1	SR	P.S.	AP	COAL	09.09.2012	150
TIRORA TPP PH i UT-1	WR	P.S.	MAHA	COAL	11.09.2012	660
METTUR TPP EXT U1	SR	S.S.	TN	COAL	11.10.2012	600
UMPP-MUNDRA U 3	WR	P.S.	GUJ	COAL	16.10.2012	800
INDIRA GANDHI (JHAJJAR) STPP U3	NR	C.S.	HAR	COAL	07.11.2012	500
MAHADEV PRASAD STPPU1(ADHYNIK POWER NATURAL RESOURCES LTD.)	ER	P.S.	JHAR	COAL	19.11.2012	270
TOTAL						9505
HYDRO PROJECTS						
BUDHIL UNIT-1	NR	P.S.	HP	HYDRO	30.5.2012	35
BUDHIL UNIT-2	NR	P.S.	HP	HYDRO	26.5.2012	35
CHAMERA III UNIT 3	NR	C.S.	HP	HYDRO	07.06.2012	77
CHAMERA III UNIT 2	NR	C.S.	HP	HYDRO	12.06.2012	77
CHAMERA III UNIT 1	NR	C.S.	HP	HYDRO	28.06.2012	77
CHUTAK HEP UNIT 2	NR	C.S.	J&K	HYDRO	08.11.2012	11
CHUTAK HEP UNIT 3	NR	C.S.	J&K	HYDRO	11.11.2012	11
CHUTAK HEP UNIT 1	NR	C.S.	J&K	HYDRO	22.11.2012	11
TOTAL						334
GRAND TOTAL						9839

LIST OF PROJECTS COMMISSIONED DURING 2007-2008 (11TH PLAN) As on 31.03.2008

PROJECT NAME	COMMISSIONING DATE/ MONTH/ YEAR	REGION	SECTOR	STATE	TYPE	TOTAL CAPACITY (MW)
THERMAL PROJECTS						
SIPAT-II UNIT-4	500 (27/05/2007)	WR	C.S.	CHAT	COAL	500.00
PARAS UNIT-1	250 (31/05/2007)	WR	S.S.	MAHA	COAL	250.00
DHOLPUR CCGT GT -2	110 (16/06/2007)	NR	S.S.	RAJ.	GAS	110.00
BIRSINGPUR UNIT-5	500 (18/06/2007)	WR	S.S.	M.P.	COAL	500.00
DHUVARAN ST	40 (13/08/2007)	WR	S.S.	GUJ.	GAS	40.00
RAIGARH (JINDAL) U-I	250 (02/09/2007)	WR	P.S.	CHAT	COAL	250.00
MEJIA UNIT-6	250 (01/10/2007)	ER	C.S.	DVC	COAL	250.00
RATNAGIRI GAS	740 (28/10/2007)	WR	C.S.	MAHA	GAS	740.00
YAMUNA NAGAR U-I	300 (01/11/2007)	NR	S.S.	HAR.	COAL	300.00
SANTALDIH UNIT-5	250 (07/11/2007)	ER	S.S.	W.B.	COAL	250.00
RAYALSEEMA U-4	210 (20/11/2007)	SR	S.S.	A.P.	COAL	210.00
DURGAPUR DPL U-7	300 (24/11/2007)	ER	S.S.	W.B.	COAL	300.00
BELLARY UNIT-I	500 (03/12/2007)	SR	S.S.	KAR.	COAL	500.00
KORBA EAST EXT. U-2	250 (11/12/2007)	WR	S.S.	CHAT	COAL	250.00
SAGARDIGHI U-1	300 (21/12/2007)	ER	S.S.	W.B.	COAL	300.00
BAKRESHWAR U-4	210 (24/12/2007)	ER	S.S.	W.B.	COAL	210.00
DHOLPUR ST	110 (27/12/2007)	NR	S.S.	RAJ.	GAS	110.00
GHTPS-II (LEH MOH)	250 (03/01/2008)	NR	S.S.	PUN.	COAL	250.00
RAIGARH (JINDAL) U-3	250 (10/02/2008)	WR	P.S.	CHAT	COAL	250.00
RAIGARH (JINDAL) U-2	250 (06/03/2008)	WR	P.S.	CHAT	COAL	250.00
KAHALGAON UNIT-6	500 (16/03/2008)	ER	C.S.	BIH.	COAL	500.00
YAMUNA NAGAR U-2	300 (29/03/2008)	NR	S.S.	HAR.	COAL	300.00
SUB-TOTAL (THERMAL)						6620.00
HYDRO PROJECTS						
PURLIA PSS UNIT-4 (JV)	225 (18/07/2007)	ER	S.S.	W.B.	HYDRO	900.00
PURLIA PSS UNIT-3 (JV)	225 (27/08/2007)					
PURLIA PSS UNIT-2 (JV)	225 (23/11/2007)					
PURLIA PSS UNIT-1 (JV)	225 (20/01/2008)					
OMKARESWAR UNIT-1	65 (21/07/2007)	WR	C.S.	M.P.	HYDRO	520.00
OMKARESWAR UNIT-2	65 (09/08/2007)					
OMKARESWAR UNIT-3	65 (29/08/2007)					
OMKARESWAR UNIT-4	65 (13/09/2007)					
OMKARESWAR UNIT-5	65 (27/09/2007)					
OMKARESWAR UNIT-6	65 (18/10/2007)					
OMKARESWAR UNIT-7	65 (27/10/2007)					
OMKARESWAR UNIT-8	65 (04/11/2007)					
BALIMELA UNIT-7	75 (05/01/2008)	ER	S.S.	ORI.	HYDRO	150.00
BALIMELA UNIT-8	75 (27/03/2008)					

LIST OF PROJECTS COMMISSIONED DURING 2007-2008 (11TH PLAN) AS ON 31.03.2008

PROJECT NAME	COMMISSIONING DATE/ MONTH/ YEAR	REGION	SECTOR	STATE	TYPE	TOTAL CAPACITY (MW)
MANERI BHALI U-4	76 (16/01/2008)	NR	S.S.	UTTA	HYDRO	304.00
MANERI BHALI U-1	76 (21/01/2008)					
MANERI BHALI U-3	76 (25/01/2008)					
MANERI BHALI U-2	76 (10/03/2008)					
TEESTA -V UNIT - 2	170 (06/02/2008)	ER	C.S	SIKK	HYDRO	510.00
TEESTA -V UNIT – 3	170 (20/03/2008)					
TEESTA -V UNIT - 1	170 (28/03/2008)					
JURALA PRIYA U-1	39 (28/03/2008)	SR	S.S.	A.P.	HYDRO	39.00
SUB-TOTAL (HYDRO)						2423.00
NUCLEAR PROJECT						
KAIGA UNIT-3	220 (11/04/2007)	SR	C.S.	KAR.	NUCLEAR	220.00
SUB-TOTAL (NUCLEAR)						220.00
TOTAL (THERMAL+HYDRO+NUCLEAR): (2007-2008)						9263.00



A view of NTPC Talcher

LIST OF PROJECTS COMMISSIONED DURING 2008-2009 (11TH PLAN) AS ON 31.03.2009

PROJECT NAME	COMMISSIONING DATE/ MONTH/ YEAR	REGION	SECTOR	STATE	TYPE	TOTAL CAPAC- ITY (MW)
THERMAL PROJECTS						
BHILAIEXN.TPPUNIT-1	250 (20/04/2008)	WR	C.S.	CHAT	COAL	250.00
VALUTHUR PH-II GTTP	59.8 (6/02/2009)	SR	S.S.	TAM.	GAS	59.8
AMARKANTAK U-5	210 (15/06/2008)	WR	S.S.	M.P.	COAL	210.00
RAIGARH (JINDAL) U-4	250 (17/06/2008)	WR	P.S.	CHAT	COAL	250.00
SAGARDIGHI U-2	300 (20/07/2008)	ER	S.S.	W.B.	COAL	300.00
GHGTPP-II,LEHAR MOB.	250 (31/07/2008)	NR	S.S.	PUN.	COAL	250.00
SIPAT - II U-5	500 (13/08/2008)	WR	C.S.	CHAT	COAL	500
VALUTHUR PH-II ST	32.4 (17/02//2009)	SR	S.S.	TAM.	GAS	32.4
SUGEN BLOCK I	382.5 (4/02/2009)	WR	P.S.	GUJ	GAS	382.5
TROMBAY Extn.	250 (26.03.2009)	WR	P.S.	MAH	COAL	250
SUB-TOTAL (THERMAL)						2484.7
HYDRO PROJECT						
GHATGHAR PSS	125 (13/05/2008)	WR	S.S.	MAHA	HYDRO	125.00
GHATGHAR PSS	125 (01/07/2008)	WR	S.S.	MAHA	HYDRO	125.00
JURALA PRIYA U-2	39 (31/08/2008)	SR	S.S.	A.P.	HYDRO	39.00
BAGLIHAR UNIT-1	150 (19/09/2008)	NR	S.S.	J&K	HYDRO	150.00
BAGLIHAR UNIT-2	150 (26/10/2008)	NR	S.S.	J&K	HYDRO	150.00
BAGLIHAR UNIT-3	150 (14/11/2008)	NR	S.S.	J&K	HYDRO	150.00
VARAHI EXT.UNIT 1	115 (11/01/2009)	SR	S.S.	KAR	HYDRO	115.00
VARAHI EXT.UNIT 2	115 (09/02/2009)	SR	S.S.	KAR	HYDRO	115.00
SUB-TOTAL (HYDRO)						969.00
NUCLEAR PROJECT						
SUB-TOTAL (NUCLEAR)						0.00
TOTAL (THERMAL+HYDRO+NUCLEAR):- (2008-2009)						3453.7

LIST OF PROJECTS COMMISSIONED DURING 2009-2010 (11TH PLAN) AS ON 31.03.2010

PROJECT NAME	COMMISSIONING DATE/MONTH/ YEAR	REGION	SECTOR	STATE	TYPE	TOTAL CAPAC- ITY (MW)
TORANGALLU U-1	(23.4.2009)	SR	P.S.	KAR	COAL	300
SUGEN –BLOCK-2	(7.5.2009)	WR	P.S.	GUJ	GAS	382.5
GAUTAMI	(3.5.2009)	SR	P.S.	A.P.	GAS	464
KONASEEMA GT	(3.5.2009)	SR	P.S.	A.P.	GAS	280
SUGEN BLOCK-3	(8.6.2009)	WR	P.S.	GUJ	GAS	382.5
LANCO AMARKANTAK U-1	(4.6.2009)	WR	P.S.	CHATT	COAL	300
BAKRESHWAR U-5	(7.6.2009)	ER	S.S.	WB	COAL	210

BHILAI U-2	(12.07.2009)	WR	C.S	CHATT	COAL	250
KAHALGAON-II U-7	(31.07.2009)	ER	C.S	BIHAR	COAL	500
MUNDRA PH-I, U-I	(4.8.2009)	WR	P.S.	GUJ	COAL	330
UTRAN GT	(8.8.2009)	WR	S.S.	GUJ	GAS	240
TORANGALLU U-2	(24.8.2009)	SR	P.S.	KAR	COAL	300
SURATGARH U-6	(29.8.2009)	NR	S.S.	RAJ	COAL	250
KOTA U-7	(30.8.2009)	NR	S.S.	RAJ	COAL	195
BUDGE-BUDGE-EX	(29.9.2009)	ER	P.S.	WB	COAL	250
KUTCH LIGNITE U-4	(1.10.2009)	WR	S.S.	GUJ	LIGNITE	75
VIJAYWADA ST. IV U-I	(8.10.2009)	SR	S.S	A.P.	COAL	500
UTRAN CCPP-II ST	(10.10.2009)	WR	S.S.	GUJ	GAS	134
JALIPA LIGNITE U-I	(16.10.2009)	NR	P.S.	RAJ	LIGNITE	135
CHABRA U-I	(30.10.2009)	NR	S.S	RAJ	COAL	250
CHANDRAPUR U-7	(4.11.2009)	ER	C.S.	DVC	COAL	250
LANCO KONDAPALLI ST-II GT	(5.12.2009)	SR	P.S.	A.P.	GAS	233
NCTPP DADRI U-5	(29.01.2010)	NR	C.S.	UP	COAL	490
NEW PARLI EXT U-2	(10.2.2010)	WR	S.S.	MAHA	COAL	250
ROSA ST-I U-1	(10.2.2010)	NR	P.S.	UP	COAL	300
MUNDRA, PH-I, U-2	(17.03.2010)	WR	P.S.	GUJ	COAL	330
LANCO AMARKANTAK U-2	(25.03.2010)	WR	P.S.	CHAT	COAL	300
PARAS EXT. U-2	(27.03.2010)	WR	S.S.	MAHA	COAL	250
CHANDRUPURA U-8	(31.03.2010)	ER	C.S.	DVC	COAL	250
RAJIV GANDHI (HISSAR) U-1	(31.03.2010)	NR	S.S.	HAR	COAL	600
GIRAL LIGNITE U-2		NR	S.S.	RAJ	LIGNITE	125
TOTAL THERMAL						9106
HYDRO PROJECTS						
JURALA PRIYA U-3	(27.06.2009)	SR	S.S.	A.P.	HYDRO	39.0
TOTAL HYDRO						39.0
NUCLEAR PROJECTS						
RAPP U-5	(4.02.2010)	NR	C.S.	RAJ	NUCLEAR	220
RAPP U-6	(31.03.2010)	NR	C.S.	RAJ	NUCLEAR	220
TOTAL NUCLEAR						440
TOTAL (THERMAL+HYDRO+NUCLEAR) (2009-10)						9585

LIST OF PROJECTS COMMISSIONED DURING 2010-2011 (11TH PLAN) AS ON 31.03.2011

PROJECT NAME	COMMISSIONING DATE/MONTH/ YEAR	REGION	SECTOR	STATE	TYPE	TOTAL CAPACITY (MW)
SURAT LIGNITE EXP. TPP, U-3	12.04.2010	NR	S.S	GUJ	LIGNITE	125
SURAT LIGNITE EXP. TPP, U-4	12.04.2010	NR	S.S	GUJ	LIGNITE	125
CHHABRA TPS U-2	04.05.2010	NR	S.S.	RAJ.	COAL	250
KAKATIYA ST-I U-1	27.05.2010	SR	S.S.	A.P.	COAL	500
ROSA PH-I U-2	26.06.2010	NR	P.S.	U.P.	COAL	300
BARSINGSAR LIG. U-1	28.06.2010	NR	C.S.	RAJ.	LIGNITE	125
WARDHA WARORA TPP U-I	05.06.2010	WR	P.S.	MAHA.	COAL	135
RAICHUR. U-8	26.06.2010	SR	S.S.	KAR	COAL	250
KONASEEMA ST	30.06.2010	SR	P.S.	A.P.	GAS/LNG	165
LANCO KONDAPALLI St-II ST	19.07.2010	SR	P.S.	A.P.	GAS	133
UDUPI U-I	23.07.2010	SR	P.S.	KAR	COAL	600
NCTPP DADRI U-6	30.07.2010	NR	C.S	U.P.	COAL	490
JALIPA LIGNITE U -2	8.07.2010	NR	P.S.	RAJ	LIGNITE	135
MUNDRA TPP PH-I, U-3	2.08.2010	WR	P.S.	GUJ	COAL	330
BARAMURA GT EXTN.	3.08.2010	NER	S.S	TRI	GAS.	21
JSW ENERGY RATNAGIRI U-1	24.08.2010	WR	P.S.	MAHA	COAL	300
MEJIA PH II, U-7	30.09.2010	ER	C.S.	WB	COAL	500
RAJIV GANDHI (HISSAR) U-2	1.10.2010	NR	S.S	HAR	COAL	600
STERLITE (JHARSUGUDA) U-2	14.10. 2010	ER	P.S.	ORI	COAL	600
WARDHA WARORA TPP U-2	10.10.2010	WR	P.S.	MAHA.	COAL	135
PRAGATI (BAWANA) CCPP STAGE -III GT-I	24.10.2010	NR	S.S	DEL	GAS	250
INDRA GANDHI STPP (JHAJJAR) U-I	31.10.2010	NR	C.S.	HAR	COAL	500
JSW ENERGY RATNAGIRI U-2	09.12.2010	WR	P.S.	MAH	COAL	300
MUNDRA TPP PH-I,U-4	20.12.2010	WR	P.S.	GUJ	COAL	330
KORBA TPP ST III U-7	26.12.2010	WR	C.S.	CHATT	COAL	500
MUNDRA TPP PH-II U-I	26.12.2010	WR	P.S	GUJ	COAL	660
RAYALSEEMA TPP ST.III U-5	31.01.2011	SR	S.S.	AP	COAL	210
STERLITE (JHARSUGUDA) U-1	29.12.2010	ER	P.S.	ORI	COAL	600
RITHALA CCPP GT-1	9.12.2010	NR	P.S.	DEL	GAS	35.75
RITHALA CCPP GT-2	4.10.2010	NR	P.S.	DEL	GAS	35.75
WARDHA WARORA TPP U-3	21.01.2011	WR	P.S.	MAHA.	COAL	135
BARSINGHSAR LIGNITE U-2	25.01.2011	NR	C.S.	RAJ	LIGNITE	125
PRAGATI (BAWANA) CCPP STAGE -III GT-2	16.02.2011	NR	S.S	DEL	GAS	250
FARAKKA ST III ,U-6	23.03.2011	ER	C.S.	W.B.	COAL	500
SIMHADRI U-3	31.03.2011	SR	C.S	A.P	COAL	500
MEJIA TPS ,PH II U-8	26.03.2011	ER	C.S.	WB	COAL	500
TOTAL THERMAL						11250.5

PROJECT NAME	COMMISSIONING DATE/ MONTH/ YEAR	REGION	SECTOR	STATE	TYPE	TOTAL CAPACITY (MW)
HYDRO PROJECTS						
KUTTIYADI ADDITIONAL EXTN. H.E. U-1	25.05.2010	SR	S.S.	KERALA	HYDRO	50
SEWA II U-1	22.06.2010	NR	C.S.	J&K	HYDRO	40
SEWA II U-2	23.07.2010	NR	C.S.	J&K	HYDRO	40
SEWA-II U-3	23.07.2010	NR	C.S.	J&K	HYDRO	40
JURALA PRIYA U-4	28.08.2010	SR	S.S.	A.P.	HYDRO	39
ALLAIN DUHANGAN U-I	16.09.2010	NR	P.S.	H.P.	HYDRO	96
ALLAIN DUHANGAN U-2	18.09.2010	NR	P.S.	H.P.	HYDRO	96
KUTTIYADI ADDITIONAL EXT.H.E. U-2	23.09.2010	SR	S.S.	KERALA	HYDRO	50
JURALA PRIYA U-5	09.11.2010	SR	S.S.	A.P.	HYDRO	39
KOTESHWAR, U-1, 2	28.03.2011 31.03.2011	NR	C.S.	UTTA	HYDRO	200
TOTAL HYDRO						690
NUCLEAR PROJECTS						
KAIGA U-4	19.01.2011	SR	C.S.	KARNATAKA	NUCLEAR	220
TOTAL NUCLEAR						220
TOTAL (THERMAL+HYDRO+NUCLEAR) (2010-11)						12160.5



A view of Bhakra Dam

LIST OF PROJECTS COMMISSIONED DURING 2011-2012 (11TH PLAN) AS ON 31.03.2012

PROJECT NAME	COMMISSIONING DATE/MONTH/ YEAR	REGION	SECTOR	STATE	TYPE	TOTAL CAPACITY (MW)
UDUPI TPP U-2	16.04.2011	SR	P.S.	KARNATAKA	COAL	600
WARDHA WARORA TPP U-4	30.04.2011	WR	P.S.	MAHA.	COAL	135
JSW ENERGY RATNAGIRI U-3	06.05.2011	WR	P.S.	MAHA	COAL	300
SIPAT-I U-1	28.06.2011	WR	C.S.	CHAT	COAL	660
SANTALDIH ST-II U-6	29.06.2011	ER	S.S.	W.B.	COAL	250
MAITHON RB U-I	30.06.2011	ER	P.S	DVC	COAL	525
KOTHAGUDEM VI	26.06.2011	SR	S.S	AP	COAL	500
DURGAPUR STEEL TPP U-I	29.07.2011	ER	C.S.	WB	COAL	500
KODERMA U-I	20.07.2011	ER	C.S.	JHAR	COAL	500
MUNDRA TPP PH-II U-2	20.07.2011	WR	P.S.	GUJ	COAL	660
KHAPERKHEDA TPS U-5	05.08.2011	WR	S.S	MAHA	COAL	500
STERLITE (JHARSUGUDA) U-3	16.08.2011	ER	P.S.	ORI	COAL	600
RITHALA CCPP ST	04.09.2011	NR	P.S.	DEL	GAS	36.5
HARDUAGANJ U-8	27.09.2011	NR	S.S.	UP	COAL	250
JSW ENERGY RATNAGIRI U-4	08.10.2011	WR	P.S.	MAHA	COAL	300
KHAMBRKHERA U-I	17.10.2011	NR	P.S.	UP	COAL	45
JALIPA KAPURDI U-3	02.11.2011	NR	P.S.	RAJ	LIGNITE	135
MAQSOODPUR IPP U-1	03.11.2011	NR	P.S.	UP	COAL	45
INDRAGANDHI (JHAJJAR) U-2	05.11.2011	NR	C.S.	HARYANA	COAL	500
BARKHERA TPP U-1	06.11.2011	NR	P.S.	UP	COAL	45
MUNDRA TPP PH-III U-I	07.11.2011	WR	P.S.	GUJ	COAL	660
LANCO ANPARA (C) U-1	12.11.2011	NR	P.S.	UP	COAL	600
LANCO ANPARA (C) U-2	12.11.2011	NR	P.S.	UP	COAL	600
KHAMBRKHERA U2	28.11.2011	NR	P.S.	UP	COAL	45
JALIPA KAPURDI U-4	23.11.2011	NR	P.S.	RAJ	LIGNITE	135
KASAIPALLI TPP U-1	13.12.2011	WR	P.S	CHATT	COAL	135
SVPL TPP U-1	07.12.2011	WR	P.S	CHATT	COAL	63
SIPAT-1 U-2	24.12.2011	WR	C.S	CHATT	COAL	660
ROSA ST-II U-3	28.12.2011	NR	P.S	UP	COAL	300
LAKWA W.H	24.12.2011	NER	S.S	ASSAM	GAS	37.2
MAHATMA GANDHI TPP U-1	12.01.2012	NR	P.S	HARYANA	COAL	660
KUNDARKI IPP U-1	10.01.2012	NR	P.S	UP	COAL	45
MAQSOODPUR IPP U-2	21.01.2012	NR	P.S	UP	COAL	45
BARKHERA TPP U-2	28.01.2012	NR	P.S	UP	COAL	45
NLC TPP-2 EXTN	04.02.2012	SR	C.S	TAM	LIGNITE	250
HAZIRA CCPP EXPN	18.02.2012	WR	S.S	GUJ	GAS	351
KATGHORA TPP U-1	14.02.2012	NR	P.S	CHATT	COAL	35
MIHAN TPP U-1TO 4	09.02.2012	WR	P.S	MAHA	COAL	246

KUNDARKI IPP U-2	29.02.2012	NR	P.S	UP	COAL	45
MUNDRA UMPP U-1	25.02.2012	WR	P.S	GUJ	COAL	800
SALAYA TPP U-1	22.02.2012	WR	P.S	GUJ	COAL	600
UTRAULA IPP U-1	21.02.2012	NR	P.S	U.P	COAL	45
PRAGATI (BAWANA) ST-III GT-3	FEB,12	NR	P.S	DEL	GAS	250
DURGAPUR STEEL TPP U-2	23.03.2012	ER	C.S	W.B	COAL	500
ROSA ST-II U-4	28.03.2012	NR	P.S	U.P	COAL	300
BHUSWAL TPS U-5	30.03.2012	WR	S.S	MAHA	COAL	500
BHUSWAL TPS U-4	07.03.2012	WR	S.S	MAHA	COAL	500
SIMHADRI U-4	30.03.2012	SR	C.S	A.P	COAL	500
VALLUR ST-1 PH-1 TPP U-1	28.03.2012	SR	C.S	TAM	COAL	500
SIMHAPURI TPP U-1	24.03.2012	SR	P.S	A.P	COAL	150
BELLARY TPS U-2	23.03.2012	SR	S.S	KAR	COAL	500
UTRAULA IPP U-2	19.03.2012	NR	P.S	U.P	COAL	45
MUNDRA TPP PH-III U-2	03.03.2012	WR	P.S	GUJ	COAL	660
MUNDRA TPP PH-III U-3	09.03.2012	WR	P.S	GUJ	COAL	660
MAITHON RB U-2	MARCH,12	ER	P.S	DVC	COAL	525
TOTAL THERMAL						19078.7
HYDRO PROJECTS						
KARCHAM WANGTOO U-1	24.05.2011	NR	P.S.	H.P.	HYDRO	250
JURALA PRIYA U-6	09.06.2011	SR	S.S	A.P	HYDRO	39
KARCHAM WANGTOO U-2	21.06.2011	NR	P.S.	H.P.	HYDRO	250
MALANA II U-I	06.08.2011	NR	P.S	H.P.	HYDRO	50
MALANA II U-II	14.08.2011	NR	P.S.	H.P.	HYDRO	50
KARCHAM WANGTO U-3,4	13.09.2011	NR	P.S.	H.P.	HYDRO	500
Myntdu (Leshka)	23.11.2011	NR	S.S	MEGH	HYDRO	42
KOTESHWAR U-3	25.01.2012	NR	C.S	UTTA	HYDRO	100
KOTESHWAR U-4	22.03.2012	NR	C.S	UTTA	HYDRO	100
MYNTDU (Leshka) U-2	31.03.2012	NR	S.S	MEGH	HYDRO	42
TOTAL HYDRO						1423
NUCLEAR PROJECTS						0.00
TOTAL NUCLEAR						0.00
TOTAL (THERMAL+HYDRO+NUCLEAR) (2011-12)						20501.7
Capacity addition during 11th plan up to 31.03.2012						54963.9



Northern Regional Load Dispatch Centre

CHAPTER-4

GENERATION & POWER SUPPLY POSITION

GENERATION

The total electricity generation in the country increased from 420.6 Billion Unit (BU) during 1997-98 to 607.168 BU during (April-November, 2012). The overall electricity generation in power utilities in the country as well as import from Bhutan since the beginning of 9th Plan was as under:

Year	Generation (BU)
1997-98	420.6
1998-99	448.4
1999-2000	480.7
2000-01	499.5
2001-02	515.2
2002-03	531.6
2003-04	558.3
2004-05	587.4
2005-06	617.5
2006-07	662.4
2007-08	704.5
2008-09	723.8
2009-10	771.6
2010-11	811.1
2011-12	876.9
2011-12*	580.7
2012-13*	607.2
* April to November (provisional)	

PLANT LOAD FACTOR (PLF)

The Plant Load Factor (PLF) of Thermal Power Stations (TPSs) is an index of utilization of the installed capacity. The average PLF of TPSs of Power Utilities during (April-November, 2012) was 78.03%. The sector-wise and overall PLF since beginning of 9th Plan was as under:

Year	Central (%)	State (%)	Private Utilities (%)	Overall (%)
1997-98	64.7	70.4	60.9	71.2
1998-99	64.6	64.6	60.7	68
1999-00	67.3	67.3	63.7	68.9
2000-01	74.3	65.6	73.1	69.0
2001-02	74.3	67.0	74.7	69.9
2002-03	77.1	68.7	78.9	72.1
2003-04	78.7	68.4	80.5	72.7
2004-05	81.7	69.6	85.1	74.8
2005-06	82.1	67.1	85.4	73.6
2006-07	84.8	70.6	86.3	76.8
2007-08	86.7	71.9	90.8	78.6
2008-09	84.3	71.2	91.0	77.2
2009-10	85.5	70.9	82.4	77.5
2010-11	85.1	66.7	76.7	75.1
2011-12	82.1	68.0	76.2	73.3
2011-12*	79.8	65.7	78.4	71.4
2012-13*	78.0	64.7	80.5	69.2
* April to November (provisional)				

POWER SUPPLY POSITION:

The growth in availability of electricity during the current year has surpassed the growth in requirement of electricity. During the current year (April to November, 2012), peak shortage reduced to 9.0 % from 10.6 % during April to November, 2011 but the energy shortage during the current financial year (upto November, 2012) has increased to 8.6 % from 7.4 % during April to November, 2011.

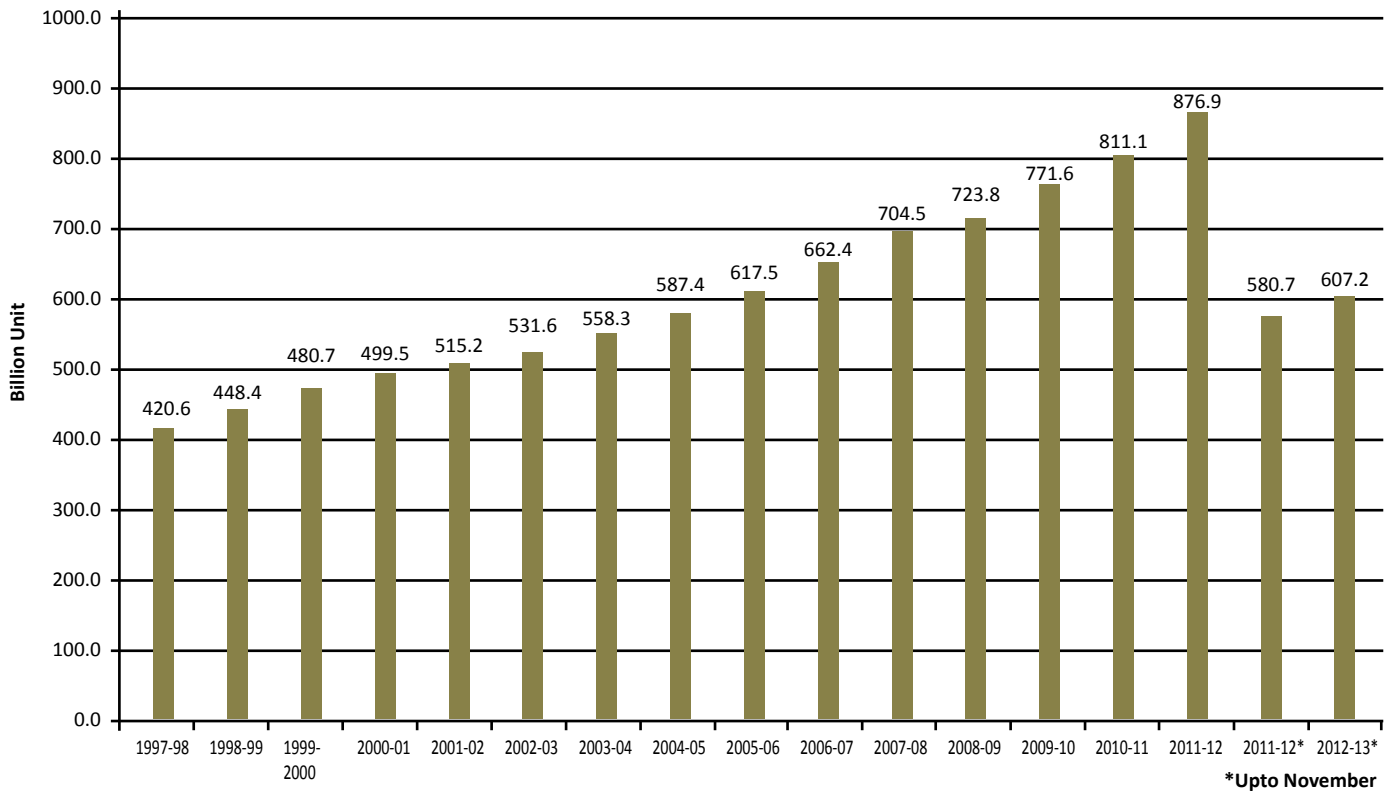
The power supply position since beginning of 9th Plan was as under :

Year	Energy Requirement (MU)	Energy Availability (MU)	Energy Shortage (MU)	Energy Shortage (%)
1997-98	424505	390330	34175	8.1
1998-99	446584	420235	26349	5.9
1999-00	480430	450594	29836	6.2
2000-01	507216	467400	39816	7.8
2001-02	522537	483350	39187	7.5
2002-03	545983	497890	48093	8.8
2003-04	559264	519398	39866	7.1
2004-05	591373	548115	43258	7.3
2005-06	631554	578819	52735	8.4
2006-07	690587	624495	66092	9.6
2007-08	737052	664660	72392	9.8
2008-09	777039	691038	86001	11.1
2009-10	830594	746644	83950	10.1
2010-11	861591	788355	73236	8.5
2011-12	937199	857886	79313	8.5
2011-12*	613399	567713	45686	7.4
2012-13*#	664492	607256	57236	8.6
* Upto November, # Provisional			MU = Million Unit	

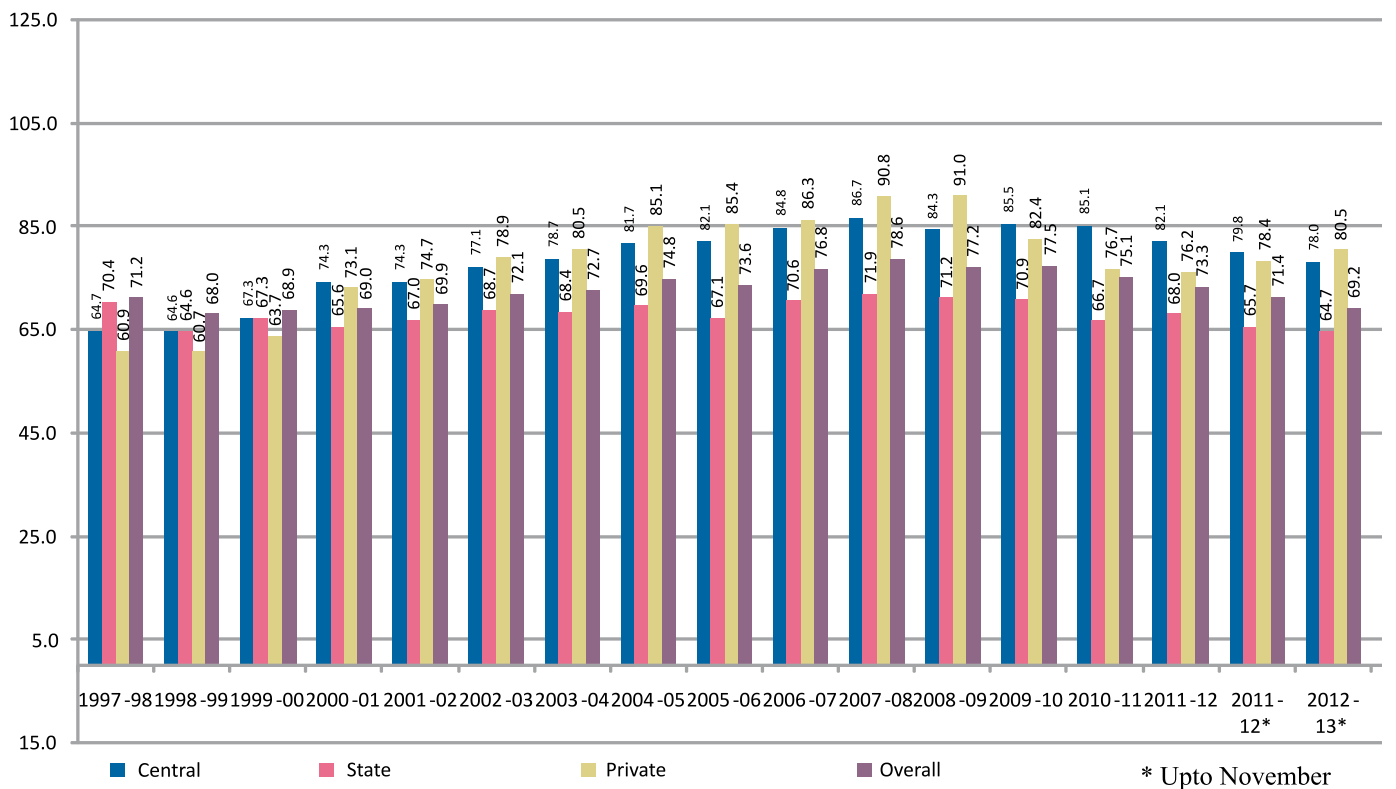
Peak Demand :

Year	Peak Demand (MW)	Peak Met (MW)	Peak Shortage (MW)	Peak Shortage (%)
1997-98	65435	58042	7393	11.3
1998-99	67905	58445	9460	13.9
1999-00	72669	63691	8978	12.4
2000-01	78037	67880	10157	13
2001-02	78441	69189	9252	11.8
2002-03	81492	71547	9945	12.2
2003-04	84574	75066	9508	11.2
2004-05	87906	77652	10254	11.7
2005-06	93255	81792	11463	12.3
2006-07	100715	86818	13897	13.8
2007-08	108866	90793	18073	16.6
2008-09	109809	96785	13024	11.9
2009-10	119166	104009	15157	12.7
2010-11	122287	110256	12031	9.8
2011-12	130006	116191	13815	10.6
2011-12*	127724	114233	13491	10.6
2012-13*#	135453	123294	12159	9.0
* Upto November		# Provisional		

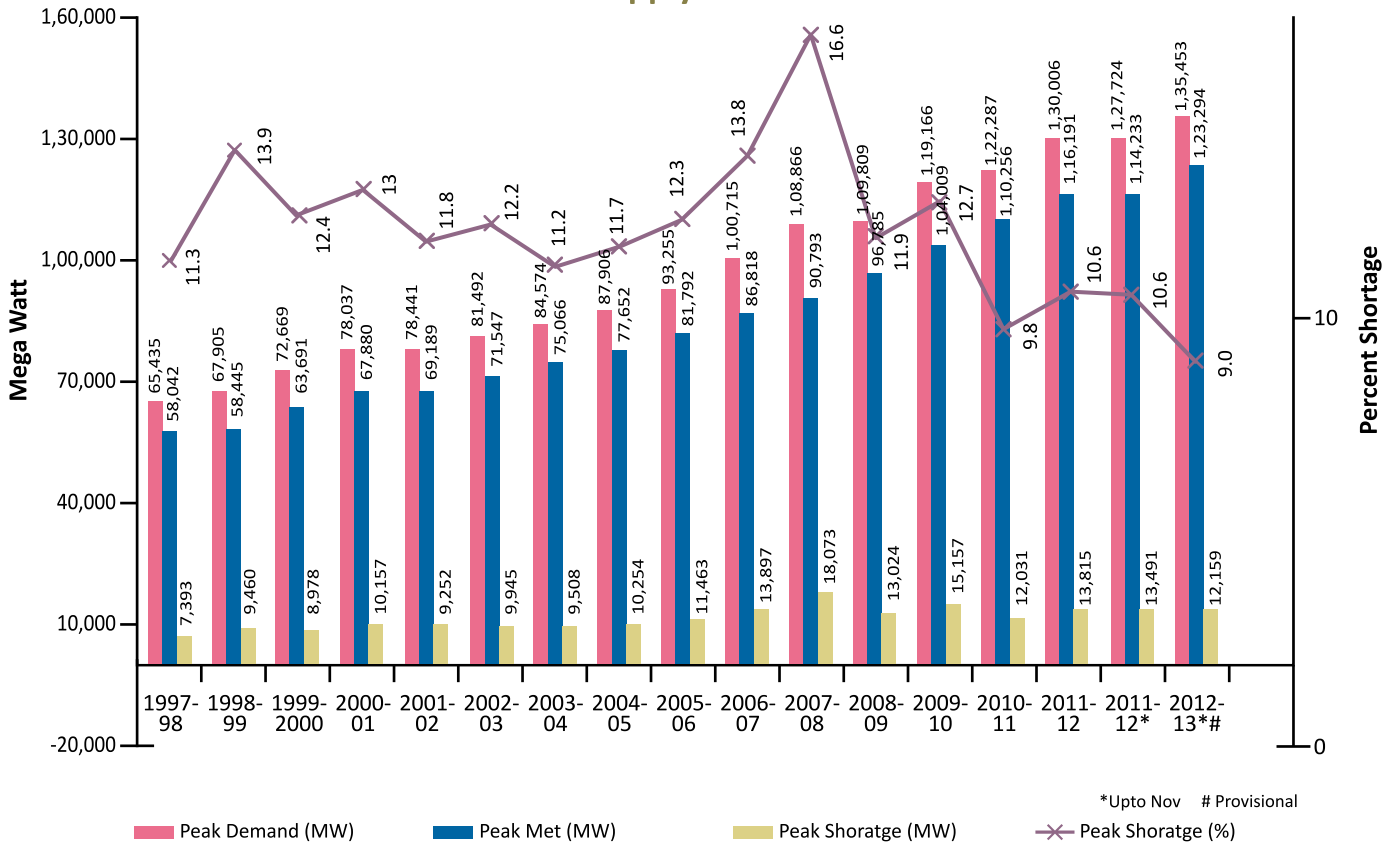
Generation (BU)



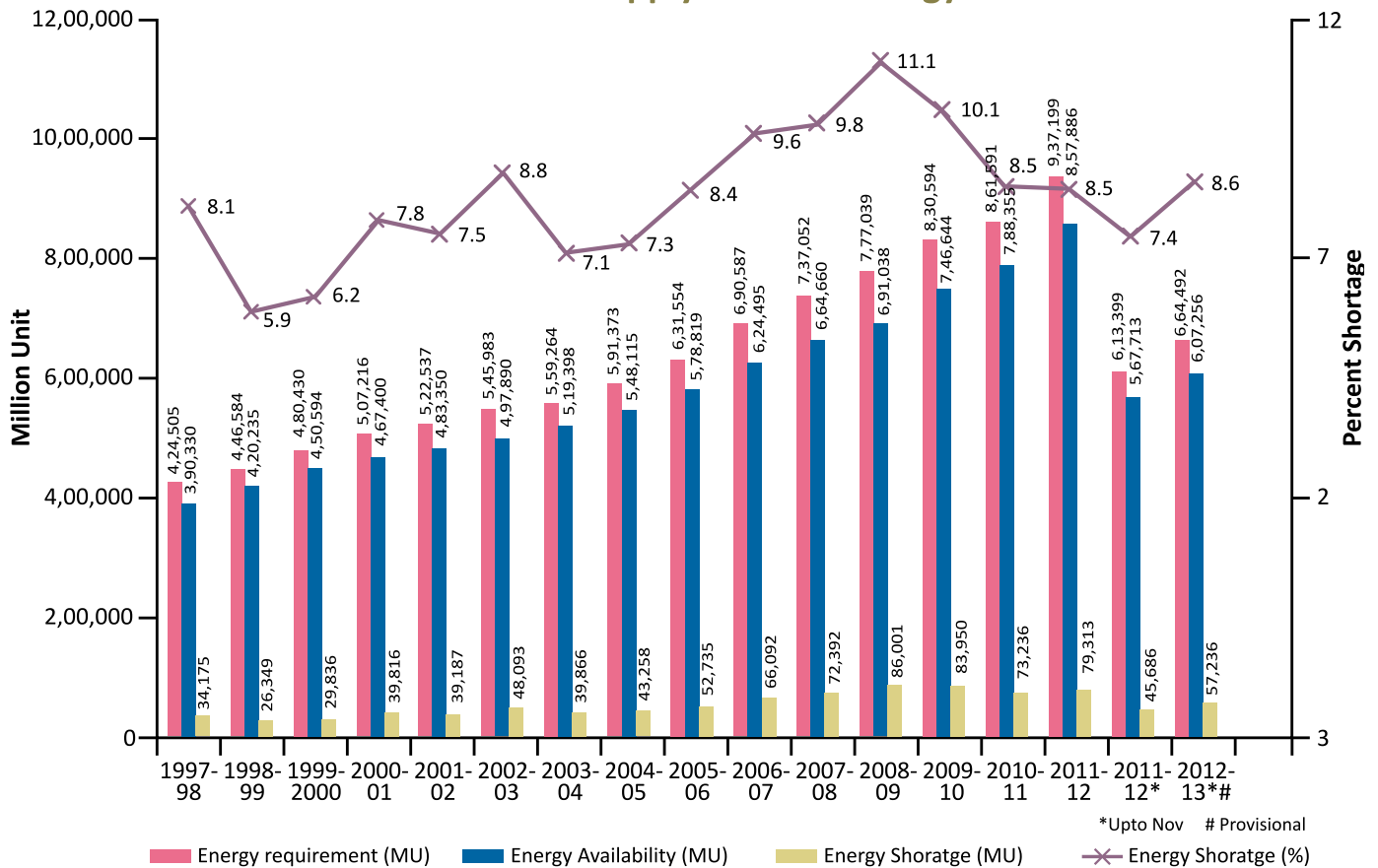
Plant Load Factor



Power Supply Position - Peak



Power Supply Position-Energy



LIST OF CENTRAL SECTOR POWER STATION AS ON 31.01.2013

Sr. No.	Region/ State	Owner	Name of Project	P M	Total Capacity (in MW)
1	Haryana	NTPC	Faridabad CCGT	GT-Gas	137.76
	Haryana	NTPC	Faridabad CCGT	GT-Gas	137.76
	Haryana	NTPC	Faridabad CCGT	GT-Gas	156.07
2	Haryana	APCPL(JV)	Indira Gandhi STPP	Steam	500.00
	Haryana	APCPL(JV)	Indira Gandhi STPP	Steam	500.00
	Haryana	APCPL(JV)	Indira Gandhi STPP	Steam	500.00
3	Himachal Pradesh	NHPC	Baira Siul Hydro Power Station	Hydro	66.00
	Himachal Pradesh	NHPC	Baira Siul Hydro Power Station	Hydro	66.00
	Himachal Pradesh	NHPC	Baira Siul Hydro Power Station	Hydro	66.00
4	Himachal Pradesh	NHPC	Chamera Hydro Power Station-I	Hydro	180.00
	Himachal Pradesh	NHPC	Chamera Hydro Power Station-I	Hydro	180.00
	Himachal Pradesh	NHPC	Chamera Hydro Power Station-I	Hydro	180.00
5	Himachal Pradesh	NHPC	Chamera Hydro Power Station -II	Hydro	100.00
	Himachal Pradesh	NHPC	Chamera Hydro Power Station -II	Hydro	100.00
	Himachal Pradesh	NHPC	Chamera Hydro Power Station -II	Hydro	100.00
6	Himachal Pradesh	NHPC	Chamera Hydro Power Station -III	Hydro	77.00
	Himachal Pradesh	NHPC	Chamera Hydro Power Station -III	Hydro	77.00
	Himachal Pradesh	NHPC	Chamera Hydro Power Station -III	Hydro	77.00
7	Himachal Pradesh	SJVNL	Nathpa Jhakri Hydro Power Station	Hydro	250.00
	Himachal Pradesh	SJVNL	Nathpa Jhakri Hydro Power Station	Hydro	250.00
	Himachal Pradesh	SJVNL	Nathpa Jhakri Hydro Power Station	Hydro	250.00
	Himachal Pradesh	SJVNL	Nathpa Jhakri Hydro Power Station	Hydro	250.00
	Himachal Pradesh	SJVNL	Nathpa Jhakri Hydro Power Station	Hydro	250.00
	Himachal Pradesh	SJVNL	Nathpa Jhakri Hydro Power Station	Hydro	250.00
8	Jammu & Kashmir	NHPC	Dulhasti Hydro Power Station	Hydro	130.00
	Jammu & Kashmir	NHPC	Dulhasti Hydro Power Station	Hydro	130.00
	Jammu & Kashmir	NHPC	Dulhasti Hydro Power Station	Hydro	130.00
9	Jammu & Kashmir	NHPC	Salal Hydro Power Station-I	Hydro	115.00
	Jammu & Kashmir	NHPC	Salal Hydro Power Station-I	Hydro	115.00
	Jammu & Kashmir	NHPC	Salal Hydro Power Station-I	Hydro	115.00
10	Jammu & Kashmir	NHPC	Salal Hydro Power Station -II	Hydro	115.00
	Jammu & Kashmir	NHPC	Salal Hydro Power Station -II	Hydro	115.00
	Jammu & Kashmir	NHPC	Salal Hydro Power Station -II	Hydro	115.00
11	Jammu & Kashmir	NHPC	Chutak Hydro Power Station	Hydro	11.00
	Jammu & Kashmir	NHPC	Chutak Hydro Power Station	Hydro	11.00
	Jammu & Kashmir	NHPC	Chutak Hydro Power Station	Hydro	11.00
	Jammu & Kashmir	NHPC	Chutak Hydro Power Station	Hydro	11.00
12	Jammu & Kashmir	NHPC	Uri Hydro Power Station	Hydro	120.00
	Jammu & Kashmir	NHPC	Uri Hydro Power Station	Hydro	120.00
	Jammu & Kashmir	NHPC	Uri Hydro Power Station	Hydro	120.00
	Jammu & Kashmir	NHPC	Uri Hydro Power Station	Hydro	120.00
13	Jammu & Kashmir	NHPC	Sewa II H E P	Hydro	40.00
	Jammu & Kashmir	NHPC	Sewa II H E P	Hydro	40.00
	Jammu & Kashmir	NHPC	Sewa II H E P	Hydro	40.00

14	Rajasthan	NLC	Barsingsar Thermal Power Station	Steam	125.00
	Rajasthan	NLC	Barsingsar Thermal Power Station	Steam	125.00
15	Rajasthan	NTPC	Anta CCPP	GT-Gas	88.71
	Rajasthan	NTPC	Anta CCPP	GT-Gas	88.71
	Rajasthan	NTPC	Anta CCPP	GT-Gas	88.71
	Rajasthan	NTPC	Anta CCPP	GT-Gas	153.20
	Rajasthan	NTPC	Anta CCPP	GT-Gas	153.20
16	Rajasthan	NPCIL	Rjasthan A P S	Nuclear	100
	Rajasthan	NPCIL	Rjasthan A P S	Nuclear	200
	Rajasthan	NPCIL	Rjasthan A P S	Nuclear	220
	Rajasthan	NPCIL	Rjasthan A P S	Nuclear	220
	Rajasthan	NPCIL	Rjasthan A P S	Nuclear	220
	Rajasthan	NPCIL	Rjasthan A P S	Nuclear	220
17	Uttar Pradesh	NPCIL	Narora A P S	Nuclear	220
	Uttar Pradesh	NPCIL	Narora A P S	Nuclear	220
18	Uttar Pradesh	NTPC	Auriaya CCPP	GT-Gas	109.30
	Uttar Pradesh	NTPC	Auriaya CCPP	GT-Gas	109.30
	Uttar Pradesh	NTPC	Auriaya CCPP	GT-Gas	111.19
	Uttar Pradesh	NTPC	Auriaya CCPP	GT-Gas	111.19
	Uttar Pradesh	NTPC	Auriaya CCPP	GT-Gas	111.19
	Uttar Pradesh	NTPC	Auriaya CCPP	GT-Gas	111.19
19	Uttar Pradesh	NTPC	Dadri CCPP	GT-Gas	130.19
	Uttar Pradesh	NTPC	Dadri CCPP	GT-Gas	130.19
	Uttar Pradesh	NTPC	Dadri CCPP	GT-Gas	130.19
	Uttar Pradesh	NTPC	Dadri CCPP	GT-Gas	130.19
	Uttar Pradesh	NTPC	Dadri CCPP	GT-Gas	154.51
	Uttar Pradesh	NTPC	Dadri CCPP	GT-Gas	154.51
20	Uttar Pradesh	NTPC	National Capital Region Power Station	Steam	490.00
	Uttar Pradesh	NTPC	National Capital Region Power Station	Steam	490.00
	Uttar Pradesh	NTPC	National Capital Region Power Station	Steam	210.00
	Uttar Pradesh	NTPC	National Capital Region Power Station	Steam	210.00
	Uttar Pradesh	NTPC	National Capital Region Power Station	Steam	210.00
	Uttar Pradesh	NTPC	National Capital Region Power Station	Steam	210.00
21	Uttar Pradesh	NTPC	Rihand Thermal Power Station	Steam	500.00
	Uttar Pradesh	NTPC	Rihand Thermal Power Station	Steam	500.00
	Uttar Pradesh	NTPC	Rihand Thermal Power Station	Steam	500.00
	Uttar Pradesh	NTPC	Rihand Thermal Power Station	Steam	500.00
	Uttar Pradesh	NTPC	Rihand Thermal Power Station	Steam	500.00
22	Uttar Pradesh	NTPC	Singrauli Thermal Power Station	Steam	200.00
	Uttar Pradesh	NTPC	Singrauli Thermal Power Station	Steam	200.00
	Uttar Pradesh	NTPC	Singrauli Thermal Power Station	Steam	200.00
	Uttar Pradesh	NTPC	Singrauli Thermal Power Station	Steam	200.00
	Uttar Pradesh	NTPC	Singrauli Thermal Power Station	Steam	200.00
	Uttar Pradesh	NTPC	Singrauli Thermal Power Station	Steam	500.00
	Uttar Pradesh	NTPC	Singrauli Thermal Power Station	Steam	500.00
23	Uttar Pradesh	NTPC	Tanda Thermal Power Station	Steam	110.00
	Uttar Pradesh	NTPC	Tanda Thermal Power Station	Steam	110.00
	Uttar Pradesh	NTPC	Tanda Thermal Power Station	Steam	110.00
	Uttar Pradesh	NTPC	Tanda Thermal Power Station	Steam	110.00

24	Uttar Pradesh	NTPC	Unchahar Thermal Power Station	Steam	210.00
	Uttar Pradesh	NTPC	Unchahar Thermal Power Station	Steam	210.00
	Uttar Pradesh	NTPC	Unchahar Thermal Power Station	Steam	210.00
	Uttar Pradesh	NTPC	Unchahar Thermal Power Station	Steam	210.00
	Uttar Pradesh	NTPC	Unchahar Thermal Power Station	Steam	210.00
25	Uttarakhand	NHPC	Dhauli Ganga Hydro Power Station	Hydro	70.00
	Uttarakhand	NHPC	Dhauli Ganga Hydro Power Station	Hydro	70.00
	Uttarakhand	NHPC	Dhauli Ganga Hydro Power Station	Hydro	70.00
	Uttarakhand	NHPC	Dhauli Ganga Hydro Power Station	Hydro	70.00
26	Uttarakhand	NHPC	Tanakpur Hydro Power Station	Hydro	31.40
	Uttarakhand	NHPC	Tanakpur Hydro Power Station	Hydro	31.40
	Uttarakhand	NHPC	Tanakpur Hydro Power Station	Hydro	31.40
27	Uttarakhand	THDC	Tehri Hydro Power Station	Hydro	250.00
	Uttarakhand	THDC	Tehri Hydro Power Station	Hydro	250.00
	Uttarakhand	THDC	Tehri Hydro Power Station	Hydro	250.00
	Uttarakhand	THDC	Tehri Hydro Power Station	Hydro	250.00
28	Uttarakhand	THDC	Koteshwar Hydro Power Station	Hydro	100.00
	Uttarakhand	THDC	Koteshwar Hydro Power Station	Hydro	100.00
	Uttarakhand	THDC	Koteshwar Hydro Power Station	Hydro	100.00
	Uttarakhand	THDC	Koteshwar Hydro Power Station	Hydro	100.00
29	Delhi	NTPC	Badarpur Thermal Power Station	Steam	95.00
	Delhi	NTPC	Badarpur Thermal Power Station	Steam	95.00
	Delhi	NTPC	Badarpur Thermal Power Station	Steam	95.00
	Delhi	NTPC	Badarpur Thermal Power Station	Steam	210.00
	Delhi	NTPC	Badarpur Thermal Power Station	Steam	210.00
Sub Total N. R.					20496.26



A view of NTPC Dadri

30	Gujarat	NPCIL	Kakarapara A P S	Nuclear	220
	Gujarat	NPCIL	Kakarapara A P S	Nuclear	220
31	Gujarat	NTPC	Gandhar CCPP	GT-Gas	144.30
	Gujarat	NTPC	Gandhar CCPP	GT-Gas	144.30
	Gujarat	NTPC	Gandhar CCPP	GT-Gas	144.30
	Gujarat	NTPC	Gandhar CCPP	GT-Gas	224.49
	Gujarat	NTPC	Gandhar CCPP	GT-Gas	224.49
32	Gujarat	NTPC	Kawas Gas Power Station	GT-Gas	106.00
	Gujarat	NTPC	Kawas Gas Power Station	GT-Gas	106.00
	Gujarat	NTPC	Kawas Gas Power Station	GT-Gas	106.00
	Gujarat	NTPC	Kawas Gas Power Station	GT-Gas	106.00
	Gujarat	NTPC	Kawas Gas Power Station	GT-Gas	116.10
	Gujarat	NTPC	Kawas Gas Power Station	GT-Gas	116.10
33	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	210.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	210.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	210.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	210.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	210.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	210.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	500.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	500.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	500.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	500.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	500.00
	Madhya Pradesh	NTPC	Vindhyachal Thermal Power Station	Steam	500.00
34	Madhya Pradesh	NHDC	Omkreshwar Hydro Power Station	Hydro	65.00
	Madhya Pradesh	NHDC	Omkreshwar Hydro Power Station	Hydro	65.00
	Madhya Pradesh	NHDC	Omkreshwar Hydro Power Station	Hydro	65.00
	Madhya Pradesh	NHDC	Omkreshwar Hydro Power Station	Hydro	65.00
	Madhya Pradesh	NHDC	Omkreshwar Hydro Power Station	Hydro	65.00
	Madhya Pradesh	NHDC	Omkreshwar Hydro Power Station	Hydro	65.00
	Madhya Pradesh	NHDC	Omkreshwar Hydro Power Station	Hydro	65.00
	Madhya Pradesh	NHDC	Omkreshwar Hydro Power Station	Hydro	65.00
35	Madhya Pradesh	NHDC	Indira Sagar Hydro Power Station	Hydro	125.00
	Madhya Pradesh	NHDC	Indira Sagar Hydro Power Station	Hydro	125.00
	Madhya Pradesh	NHDC	Indira Sagar Hydro Power Station	Hydro	125.00
	Madhya Pradesh	NHDC	Indira Sagar Hydro Power Station	Hydro	125.00
	Madhya Pradesh	NHDC	Indira Sagar Hydro Power Station	Hydro	125.00
	Madhya Pradesh	NHDC	Indira Sagar Hydro Power Station	Hydro	125.00
	Madhya Pradesh	NHDC	Indira Sagar Hydro Power Station	Hydro	125.00
	Madhya Pradesh	NHDC	Indira Sagar Hydro Power Station	Hydro	125.00
36	Chhattisgarh	NTPC	Korba Thermal Power Station	Steam	200.00
	Chhattisgarh	NTPC	Korba Thermal Power Station	Steam	200.00
	Chhattisgarh	NTPC	Korba Thermal Power Station	Steam	200.00
	Chhattisgarh	NTPC	Korba Thermal Power Station	Steam	500.00
	Chhattisgarh	NTPC	Korba Thermal Power Station	Steam	500.00
	Chhattisgarh	NTPC	Korba Thermal Power Station	Steam	500.00
	Chhattisgarh	NTPC	Korba Thermal Power Station	Steam	500.00
37	Chhattisgarh	NTPC & Sail	Bhilai Thermal Power Station	Steam	250.00
	Chhattisgarh	NTPC & Sail	Bhilai Thermal Power Station	Steam	250.00

38	Chhattisgarh	NTPC	Sipat Super Thermal Power Station	Steam	500.00
	Chhattisgarh	NTPC	Sipat Super Thermal Power Station	Steam	500.00
	Chhattisgarh	NTPC	Sipat Super Thermal Power Station	Steam	660.00
	Chhattisgarh	NTPC	Sipat Super Thermal Power Station	Steam	660.00
	Chhattisgarh	NTPC	Sipat Super Thermal Power Station	Steam	660.00
39	Maharashtra	NTPC & ONGC	Ratnagiri Gas Power Station	GT-Gas	240.00
	Maharashtra	NTPC & ONGC	Ratnagiri Gas Power Station	GT-Gas	240.00
	Maharashtra	NTPC & ONGC	Ratnagiri Gas Power Station	GT-Gas	260.00
	Maharashtra	NTPC & ONGC	Ratnagiri Gas Power Station	GT-Gas	240.00
	Maharashtra	NTPC & ONGC	Ratnagiri Gas Power Station	GT-Gas	240.00
	Maharashtra	NTPC & ONGC	Ratnagiri Gas Power Station	GT-Gas	260.00
	Maharashtra	NTPC & ONGC	Ratnagiri Gas Power Station	GT-Gas	240.00
	Maharashtra	NTPC & ONGC	Ratnagiri Gas Power Station	GT-Gas	240.00
	Maharashtra	NTPC & ONGC	Ratnagiri Gas Power Station	GT-Gas	260.00
40	Maharashtra	NTPC	Mauda Thermal Power Station	Steam	500.00
41	Maharashtra	NPCIL	Tarapur A P S	Nuclear	160
	Maharashtra	NPCIL	Tarapur A P S	Nuclear	160
	Maharashtra	NPCIL	Tarapur A P S	Nuclear	540
	Maharashtra	NPCIL	Tarapur A P S	Nuclear	540
	Sub Total W.R.				17233.59
42	Andhra Pradesh	NTPC	Ramagundm Thermal Power Station	Steam	200.00
	Andhra Pradesh	NTPC	Ramagundm Thermal Power Station	Steam	200.00
	Andhra Pradesh	NTPC	Ramagundm Thermal Power Station	Steam	200.00
	Andhra Pradesh	NTPC	Ramagundm Thermal Power Station	Steam	500.00
	Andhra Pradesh	NTPC	Ramagundm Thermal Power Station	Steam	500.00
	Andhra Pradesh	NTPC	Ramagundm Thermal Power Station	Steam	500.00
	Andhra Pradesh	NTPC	Ramagundm Thermal Power Station	Steam	500.00



Panoramic view of Tehri Dam

43	Andhra Pradesh	NTPC	Simadri Thermal Power Station	Steam	500.00
	Andhra Pradesh	NTPC	Simadri Thermal Power Station	Steam	500.00
	Andhra Pradesh	NTPC	Simadri Thermal Power Station	Steam	500.00
	Andhra Pradesh	NTPC	Simadri Thermal Power Station	Steam	500.00
44	Karnataka	NPCIL	Kaiga A P S	Nuclear	220
	Karnataka	NPCIL	Kaiga A P S	Nuclear	220
	Karnataka	NPCIL	Kaiga A P S	Nuclear	220
	Karnataka	NPCIL	Kaiga A P S	Nuclear	220
45	Kerala	NTPC	Rajiv Gandhi CCPP	GT-Gas	115.20
	Kerala	NTPC	Rajiv Gandhi CCPP	GT-Gas	115.20
	Kerala	NTPC	Rajiv Gandhi CCPP	GT-Gas	129.18
46	Tamil Nadu	NPCIL	Madras A P S	Nuclear	220
	Tamil Nadu	NPCIL	Madras A P S	Nuclear	220
47	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station(Ext)	Steam	210.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station(Fst)	Steam	210.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station I	Steam	50.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station I	Steam	50.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station I	Steam	50.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station I	Steam	50.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station I	Steam	50.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station I	Steam	50.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station I	Steam	100.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station I	Steam	100.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station I	Steam	100.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station II	Steam	210.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station II	Steam	210.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station II	Steam	210.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station II	Steam	210.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station II	Steam	210.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station II	Steam	210.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station II	Steam	210.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station II	Steam	210.00
	Tamil Nadu	NEYVELI LIGNITE	Neyveli Thermal Power Station Stage-II	Steam	250.00
48	Tamil Nadu	NTPC & TNEB (J/V)	Vallur Thermal Power Station	Steam	500.00
	Sub Total S.R.				9519.58
49	Bihar	NTPC	Kahalgaoon Thermal Power Station	Steam	210.00
	Bihar	NTPC	Kahalgaoon Thermal Power Station	Steam	210.00
	Bihar	NTPC	Kahalgaoon Thermal Power Station	Steam	210.00
	Bihar	NTPC	Kahalgaoon Thermal Power Station	Steam	210.00
	Bihar	NTPC	Kahalgaoon Thermal Power Station	Steam	500.00
	Bihar	NTPC	Kahalgaoon Thermal Power Station	Steam	500.00
	Bihar	NTPC	Kahalgaoon Thermal Power Station	Steam	500.00
50	Bihar	D.V.C	Maithon Hydro Power Station	Hydro	20.00
	Bihar	D.V.C	Maithon Hydro Power Station	Hydro	20.00
	Bihar	D.V.C	Maithon Hydro Power Station	Hydro	23.20
51	Bihar	D.V.C	Panchet Hill Hydro Power Station	Hydro	40.00
	Bihar	D.V.C	Panchet Hill Hydro Power Station	Hydro	40.00
52	Jharkhand	D.V.C	Bokaro Thermal Power Station B	Steam	210.00
	Jharkhand	D.V.C	Bokaro Thermal Power Station B	Steam	210.00

	Jharkhand	D.V.C	Bokaro Thermal Power Station B	Steam	210.00
53	Jharkhand	D.V.C	Chandrapur Thermal Power Station	Steam	130.00
	Jharkhand	D.V.C	Chandrapur Thermal Power Station	Steam	130.00
	Jharkhand	D.V.C	Chandrapur Thermal Power Station	Steam	130.00
	Jharkhand	D.V.C	Chandrapur Thermal Power Station	Steam	250.00
	Jharkhand	D.V.C	Chandrapur Thermal Power Station	Steam	250.00
54	Jharkhand	D.V.C	Maithon Gas Power Station	GT-Gas	30.00
	Jharkhand	D.V.C	Maithon Gas Power Station	GT-Gas	30.00
	Jharkhand	D.V.C	Maithon Gas Power Station	GT-Gas	30.00
55	Orissa	NTPC	Talchar Thermal Power Station(STPS)	Steam	500.00
	Orissa	NTPC	Talchar Thermal Power Station(STPS)	Steam	500.00
	Orissa	NTPC	Talchar Thermal Power Station(STPS)	Steam	500.00
	Orissa	NTPC	Talchar Thermal Power Station(STPS)	Steam	500.00
	Orissa	NTPC	Talchar Thermal Power Station(STPS)	Steam	500.00
	Orissa	NTPC	Talchar Thermal Power Station- II, Unit - 3	Steam	500.00
56	Orissa	NTPC	Talcher Thermal Power Station Old	Steam	62.50
	Orissa	NTPC	Talcher Thermal Power Station Old	Steam	62.50
	Orissa	NTPC	Talcher Thermal Power Station Old	Steam	62.50
	Orissa	NTPC	Talcher Thermal Power Station Old	Steam	62.50
	Orissa	NTPC	Talcher Thermal Power Station Old	Steam	110.00
	Orissa	NTPC	Talcher Thermal Power Station Old	Steam	110.00
57	West Bengal	D.V.C	Durgapur Thermal Power Station	Steam	130.00
	West Bengal	D.V.C	Durgapur Thermal Power Station	Steam	210.00
58	West Bengal	D.V.C	Durgapur Steel Thermal Power Station	Steam	500.00
	West Bengal	D.V.C	Durgapur Steel Thermal Power Station	Steam	500.00
59	West Bengal	D.V.C	Koderma Thermal Power Station	Steam	500.00
60	West Bengal	D.V.C	Mejia Thermal Power Station	Steam	210.00
	West Bengal	D.V.C	Mejia Thermal Power Station	Steam	210.00
	West Bengal	D.V.C	Mejia Thermal Power Station	Steam	210.00
	West Bengal	D.V.C	Mejia Thermal Power Station	Steam	210.00
	West Bengal	D.V.C	Mejia Thermal Power Station	Steam	250.00
	West Bengal	D.V.C	Mejia Thermal Power Station	Steam	250.00
	West Bengal	D.V.C	Mejia Thermal Power Station	Steam	500.00
	West Bengal	D.V.C	Mejia Thermal Power Station	Steam	500.00
61	West Bengal	NTPC	Farakka Thermal Power Station	Steam	200.00
	West Bengal	NTPC	Farakka Thermal Power Station	Steam	200.00
	West Bengal	NTPC	Farakka Thermal Power Station	Steam	200.00
	West Bengal	NTPC	Farakka Thermal Power Station	Steam	500.00
	West Bengal	NTPC	Farakka Thermal Power Station	Steam	500.00
	West Bengal	NTPC	Farakka Thermal Power Station	Steam	500.00
62	West Bengal	NHPC	Teesta Low Dam Hydro Power Station	Hydro	33.00
	West Bengal	NHPC	Teesta Low Dam Hydro Power Station	Hydro	33.00
63	Sikkim	NHPC	Rangit Hydro Power Station	Hydro	20.00
	Sikkim	NHPC	Rangit Hydro Power Station	Hydro	20.00
	Sikkim	NHPC	Rangit Hydro Power Station	Hydro	20.00
64	Sikkim	NHPC	Teesta Hydro Power Station	Hydro	170.00
	Sikkim	NHPC	Teesta Hydro Power Station	Hydro	170.00
	Sikkim	NHPC	Teesta Hydro Power Station	Hydro	170.00
	Sub Total E.R.				14479.20

65	Assam	NEEPCO	Kathalguri CCPP	GT-Gas	30.00
	Assam	NEEPCO	Kathalguri CCPP	GT-Gas	30.00
	Assam	NEEPCO	Kathalguri CCPP	GT-Gas	30.00
	Assam	NEEPCO	Kathalguri CCPP	GT-Gas	33.50
	Assam	NEEPCO	Kathalguri CCPP	GT-Gas	33.50
	Assam	NEEPCO	Kathalguri CCPP	GT-Gas	33.50
	Assam	NEEPCO	Kathalguri CCPP	GT-Gas	33.50
	Assam	NEEPCO	Kathalguri CCPP	GT-Gas	33.50
	Assam	NEEPCO	Kathalguri CCPP	GT-Gas	33.50
66	Assam	NEEPCO	Kopili Hydro Power Station Extn.	Hydro	50.00
	Assam	NEEPCO	Kopili Hydro Power Station Extn.	Hydro	50.00
	Assam	NEEPCO	Kopili Hydro Power Station Extn.	Hydro	50.00
	Assam	NEEPCO	Kopili Hydro Power Station Extn.	Hydro	50.00
67	Manipur	NHPC	Loktak Hydro Power Station	Hydro	35.00
	Manipur	NHPC	Loktak Hydro Power Station	Hydro	35.00
	Manipur	NHPC	Loktak Hydro Power Station	Hydro	35.00
68	Meghalaya	NEEPCO	Khandong Hydro Power Station	Hydro	25.00
	Meghalaya	NEEPCO	Khandong Hydro Power Station	Hydro	25.00
	Meghalaya	NEEPCO	Khandong Hydro Power Station	Hydro	25.00
69	Nagaland	NEEPCO	Doyang Hydro Power Station	Hydro	25.00
	Nagaland	NEEPCO	Doyang Hydro Power Station	Hydro	25.00
	Nagaland	NEEPCO	Doyang Hydro Power Station	Hydro	25.00
70	Tripura	NEEPCO	Agartala Gas Power Station	GT-Gas	21.00
	Tripura	NEEPCO	Agartala Gas Power Station	GT-Gas	21.00
	Tripura	NEEPCO	Agartala Gas Power Station	GT-Gas	21.00
	Tripura	NEEPCO	Agartala Gas Power Station	GT-Gas	21.00
71	Arunachal Pradesh	NEEPCO	Ranganadi Hydro Power Station	Hydro	135.00
	Arunachal Pradesh	NEEPCO	Ranganadi Hydro Power Station	Hydro	135.00
	Arunachal Pradesh	NEEPCO	Ranganadi Hydro Power Station	Hydro	135.00
	Sub Total N.E.R.				1235.00
	Grand Total				62963.63



A view of Sasan Ultra Mega Power Project in Madhya Pradesh

STATUS OF ULTRA MEGA POWER PROJECTS

The Government of India had launched an initiative for the development of coal-based Ultra Mega Power Projects (UMPPs), each with a capacity of 4,000 MW. The objective behind the initiative is to ensure cheaper tariffs utilizing economies of scale, catering to the need of a number of States and to mitigate the risk relating to tie up of land, fuel, water and other statutory clearances etc. The projects are awarded to the successful developers on the basis of tariff based competitive bidding route employing Super Critical Technology. To tie-up for necessary inputs and clearances such as provision of site, fuel through captive mining blocks, water and in-principle environment and forest clearances, project-specific shell companies (SPVs) are set up as wholly owned subsidiaries of the Power Finance Corporation Ltd. (PFC) – the nodal agency for these projects. These SPVs, along with the various clearances etc. are subsequently transferred to the successful developer.

Four UMPPs namely Sasan in Madhya Pradesh, Mundra in Gujarat, Krishnapatnam in Andhra Pradesh and Tilaiya in Jharkhand have already been awarded to the successful bidders and are at different stages of development. A brief details of these projects are as below:

Sl. No.	Name of UMPP	Type	Date of Transfer	Levelling Tariff (in ₹ Per kWh)	Successful developer
1	Mundra, Gujarat	Coastal	23.04.2007	2.264	Tata Power Ltd.
2	Sasan, Madhya Pradesh	Pithead	07.08.2007	1.196	Reliance Power Ltd.
3	Krishnapatnam, Andhra Pradesh	Coastal	29.01.2008	2.333	Reliance Power Ltd.
4	Tilaiya, Jharkhand	Pithead	07.08.2009	1.77	Reliance Power Ltd.

So far, four units of Mundra UMPP have been commissioned (4x800 MW). 1st unit (660 MW) of Sasan UMPP is expected to be commissioned in March 2013.

UMPPs at bidding stage

Chhattishgarh: The site for this UMPP is in District Sarguja. RfQ for this UMPP was issued on 15.3.2010. The last date of submission of RfQ for this project has been extended upto 3rd April, 2013.

Odisha: The site for this UMPP is in village Bedabahal in Sundergarh District. RfQ for this UMPP was issued on 11.06.2010. The responses received for Odisha UMPP were opened on August 1, 2011. RfP will be issued on revised SBDs.

UMPPs in pipeline:

- For setting up of UMPPs, the requisite site at Cheyyur in Kancheepuram District, Tamil Nadu and another site at Nayunipalli village in Prakasham District, Andhra Pradesh for Second UMPP have been identified. Efforts are being made to bring them to bidding stage at the earliest. RfQ for Cheyyur UMPP will be issued after SBDs are revised.
- A site at Husainabad, Deoghar Distt has been identified for setting up of 2nd UMPP in Jharkhand.
- A site at Bijoyapatna in Chandbali Tehsil of Bhadrak district for coastal location and another site at Narla & Kasinga sub division of kalahandi district for inland location have been identified for setting up of additional UMPPs in Odisha.
- A request has also been received from Bihar Govt. for setting up an UMPP in the state. Site selection is underway.
- The sites in Tamil Nadu & Gujarat for their second UMPPs are being examined by CEA/PFC.





Shri Jyotiraditya M. Scindia, Hon'ble Union Minister of State for Power (Independent Charge) dedicated the 1200 kV Ultra High Voltage (UHV) AC National Test Station of Power Grid Corporation of India Limited to the Nation

CHAPTER-6

TRANSMISSION

Transmission projects continue to be accorded a high priority in the context of the need to evacuate power from generating stations to load centres, system strengthening and augmentation of National Grid. Construction targets of POWERGRID's transmission projects for the year 2012-13 and the achievements up to November 30, 2012 are summarized below:

Parameter	MOU Target (Excellent)	Achievement upto Nov. 30, 2012	% of Achievement
Commissioned/ Ckt. Kms. ready for commissioning (GW-Ckms.)	7240	3165	44%
Transformation capacity addition/ ready for commissioning (MVA)	20000	27720	139%

CENTRAL SECTOR TRANSMISSION

POWERGRID, the "Central Transmission Utility", is responsible for establishing the requisite transmission capacity in the central sector matching with generation capacity addition and facilitate inter-State/inter-regional exchange of power to mitigate the situation of surplus/deficit of power in various regions. POWERGRID's transmission lines and sub-stations (MVA addition) completed during the year 2012-13 (upto Nov. 30, 2012) are shown in the following table:

Sl. No.	Name of line/ Sub-station	Voltage Class
I	Transmission lines	
1.	Fatehpur-Agra S/C line line – 701 GW-Ckm	765kV
2.	Bhiwani-Moga S/C line line – 573 GW-Ckm	765kV
3.	Satna - Bina S/C line -II line – 580 GW-Ckm	765kV
4.	Jatikara - Bhiwani S/C line line – 179 GW-Ckm	765KV
5.	Durgapur-Jamshedpur D/C line – 138 GW-Ckm	400kV
6.	LILO of Agra-Jaipur 400kV D/C line at Jaipur South – 76 GW-Ckm	400kV
7.	Manesar-Neemrana D/C line line – 67 GW-Ckm	400kV

8.	Jamshedpur-Baripada D/C line line – 110 GW-Ckm	400kV
9.	Mauda STPS - Wardha D/C line (2nd Ckt) line – 62 GW-Ckm	400KV
10.	Pallatana - Surajmaninagar D/C line (charged at 132KV) line – 4 GW-Ckm	400KV
11.	LILO of 1st Ckt of both ckt of D/C Balia - Lucknow line at Sohawal line – 6 GW-Ckm	400KV
12.	Nabinagar - Sasaram D/C line (Twin) line – 82 GW-Ckm	400KV
13.	LILO of both Ckt of Allahabad - Mainpuri at Fatehpur line – 37 GW-Ckm	400kV
14.	Gandhar - Navsari D/C line line – 102 GW-Ckm	400kV
15.	LILO of both ckt of Bawana/Badadurgarh - Hissar D/C line at Bhiwani- 2nd Ckt (LILO of 1st ckt, 27 Ckm, commissioned in Aug.'11 with contingency arrangement to connect to Mahendragarh- Bhiwani line of M/s ADANI by-passing Bhiwani sub-station) line – 17 GW-Ckm	400KV
16.	LILO of both ckt of Udumalpet-Trichur D/C line at Chulliar(Pallakad)–2nd Ckt line – 25 GW-Ckm	400KV
17.	Mundra - Jetpur D/C line – 1st Ckt (Triple snowbird), total–672Ckm – Contingency arrangement line – 204 GW-Ckm	400KV
18.	LILO of 400kV S/C Meramundali - Jeypore line at Bolangir line – 21 GW-Ckm	400KV
19.	Gurgaon - Manesar D/C (Quad) line line – 27 GW-Ckm	400KV
20.	LILO of 400kV D/C Mundka - Bamnoli at Jhatikara (Quad) line – 21 GW-Ckm	400KV
21.	LILO of 400kV D/C Bareilly - Mandola at Meerut (01 Ckt LILO) line – 55 GW-Ckm	400kV
22.	LILO of 400KV D/C Kahalgaoon-Biharshariff at Banka – 28 GW-Ckm	400kV
23.	LILO of 400KV D/C Barh-Balia at Patna (Q) – 13 GW-Ckm	400kV
24.	Kalpakkam PFBR - Kancheepuram D/C line line – 21 GW-Ckm	230 KV
25.	LILO of Sikar (RVPNL)-Ratnagarh (RVPNL) D/C line at Sikar – 2nd Ckt. line – 1 GW-Ckm	220 kV

26.	LILO of both Ckt of Kawas - Navsari D/C at Navsari line – 11 GW-Ckm	220kV
27.	Silchar-Badarpur D/C line line – 2 GW-Ckm	132kV
28.	LILO of D/C Panchgaram -Dullovclong line at Silcher (contingency arrangement) line – 2 GW-Ckm	132 kV
II	New Sub-Stations	
1.	Bhiwani – 2315 MVA	765/ 400/ 220
2.	Jhatikara S/Stn. – 6000 MVA	765/400
3.	Jaipur (South) – 1000 MVA	400/220
4.	Manesar (GIS) – 1000 MVA	400/220
5.	Sohawal – 630 MVA	400/220
6.	Navsari GIS– 630 MVA	400/220
7.	Bolangir Sub-station – 630 MVA	400/220
8.	Banka Sub-station – 200 MVA	400/132
III	Extension of Sub-Stations	
1.	Augmentation of 400KV Agra S/Stn. To 765KV – 3000 MVA	765/400
2.	Aug. of 400/220KV Moga S/Stn. to 765/400KV Sub station – 3000 MVA	765/400
3.	3rd ICT at Gaya – 1500 MVA	765/400
4.	ICT-I&II at Satna (Augmentation) – 2000 MVA	765/400
5.	3rd ICT at Bilaspur – 1500 MVA	765/400
6.	Aug. of Bina S/Stn. – 1000 MVA	765/400
7.	2nd ICT at Misa – 315 MVA	400/220
8.	Pole-II of Balia-Bhiwadi HVDC Terminals – 3000 MVA	

Balance addition of 4075 GW-ckt kms. of transmission lines is expected to be completed by Mar.'13.

DEVELOPMENT OF NATIONAL GRID

India's natural resources are unevenly distributed such as, coal resources are abundant in Bihar/Jharkhand, Odisha, West Bengal, hydro resources are mainly concentrated in Northern and North-Eastern Region, etc., far away from the demand centers. Further, acquiring Right-of-Way (ROW) for constructing transmission system is increasingly becoming difficult. These necessitated creation of high capacity "Transmission Highways", so that, constraints in RoW do not become bottleneck in harnessing natural resources.

POWERGRID is strengthening its transmission network to establish inter-State and inter-regional links for enhancing the capacity of National Grid in a time bound manner to ensure optimal utilization of uneven distribution of energy resources. As on November 30, 2012, National Grid with inter-regional

power transfer capacity of about 27,750MW has been established. List of existing Inter-Regional links is attached at Annexure-I.

FORMATION OF SAARC GRID

India being centrally placed in South Asian region, sharing political boundaries with **SAARC countries**, namely, Bangladesh, Bhutan, Nepal & Sri Lanka, is playing a major role in facilitating interconnection with these countries leading to formation of SAARC Grid for effective utilization of regional resources.

Presently, various interconnections upto 400kV voltage level already exists between **India & Nepal** and **India & Bhutan**. For further evacuation of power from various HEPs coming up in near future in Bhutan, 400 kV double circuit (D/c) line from Punatsangchu-I HEP (in Bhutan) to Alipurduar (in India) is under implementation and expected to be completed by 2015. Further, interconnection between **India & Bangladesh** through 400kV D/c line from Baharampur (India) to Bheramara (Bangladesh) - along with HVDC Back to Back terminal at Bheramara (Bangladesh) is under implementation and expected to be completed by 2013.

For bulk transfer of power, interconnection between India and Nepal, another 400 kV D/c line from Dhalkebar (in Nepal) to Muzaffarpur (in India) is being planned. In addition, an interconnection between India and Sri Lanka through HVDC bipole link which includes submarine cable for sea portion is under finalization. Thus, efforts are being made to strengthen interconnections amongst the SAARC countries.

Development of High Capacity Power Transmission Corridors (HCPTC)

Being the nodal agency for grant of Long Term Access (LTA) to private producers, POWERGRID has undertaken development of high capacity transmission corridors for evacuation of large quantum of power from various Independent Power Producers (IPPs) mainly coming-up in resource rich States/ costal locations, i.e. Odisha, Jharkhand, Sikkim, Madhya Pradesh, Chhattisgarh, Tamil Nadu, Andhra Pradesh etc. and this power is required to be transmitted to load centers located across the States and Regions. Accordingly, implementation of 11 nos. High Capacity Power Transmission Corridors (HCPTCs) have been planned by the Company in consultation with CEA, IPPs & beneficiaries. CERC has already granted regulatory approval for 11 nos. of High Capacity Power Transmission Corridors at an estimated cost of about **₹75,000 Crore**. Implementation of these corridors is taken up in a phased manner by POWERGRID/ through private sector participation matching with progress of generation projects. This shall go a long way in integrated development of transmission system in the country.

PRIVATE SECTOR PARTICIPATION IN TRANSMISSION

Promotion of competition in the electricity industry in India is one of the key components of the Electricity Act, 2003. As per the provisions under Section 63 of the Electricity Act, 2003 and the National Electricity Policy, Ministry of Power, on April

13, 2006 issued “Guidelines for Encouraging Competition in Development of Transmission Projects” and “Tariff Based Competitive Bidding Guidelines for Transmission Services”. These guidelines aim at laying down a transparent procedure for facilitating competition in the transmission sector through wide participation in providing transmission services and tariff determination through a process of tariff based competitive bidding.

As envisaged in the Guidelines, Ministry of Power had constituted an Empowered Committee under the chairmanship of Member, CERC with representatives from Ministry of Power, CEA, CTU (i.e., POWERGRID), Planning Commission and two experts in power sector for development of inter-state transmission lines by the Private Sector on tariff based competitive bidding route. Since January 06, 2011, all the ISTS transmission schemes are to be implemented through tariff based competitive bidding as given in the Tariff Policy. Selection of developer for implementation is through the bidding process.

The Ministry of Power has also issued Standard Bidding Documents (SBDs), viz. Request for Qualification (RfQ), Request for Proposal (RfP) and Transmission Service Agreement (TSA). As provided in the Guidelines, Ministry of Power has appointed Power Finance Corporation (PFC) and Rural Electrification Corporation (REC) as the Bid Process Coordinators (BPC) for carrying out the bidding process.

At present, the following eight schemes are under implementation by the Transmission Service Providers selected through the bidding process. Out of these eight (8) schemes, six schemes are awarded to private sector and two schemes are awarded to POWERGRID (a central sector company).

- (i) Scheme for enabling import of NER/ER surplus by NR (Sterlite Technologies Limited)
- (ii) System Strengthening in NR for import of power from North Karanpura and other projects outside NR and System Strengthening in WR for import of power from North Karanpura and other projects outside Western

Region and also for projects within Western Region. (Reliance Power Transmission Company Limited)

- (iii) Talcher-II Augmentation System. (Reliance Power Transmission Co. Limited)
- (iv) System strengthening common for WR and NR (Sterlite Transmission Projects Private Limited)
- (v) Transmission System Associated with Krishnapattanam UMPP- Synchronous interconnection between SR and WR (Part-B) (Consortium of Patel-Simplex- BStanscomm).
- (vi) System Strengthening for WR (Sterlite Transmission Projects Private Limited)
- (vii) Transmission system associated with IPPs of Nagapattinam/ Cuddalore Area – Package A (Power Grid Corporation of India Limited)
- (viii) Transmission System associated with IPPs of Vemagiri Area- Package A (Power Grid Corporation of India Limited)

In addition to the above eight projects, bidding process is in progress for the following ten projects:

- (i) Transmission System associated with DGEN TPS (1200 MW) of Torrent Power Limited
- (ii) System Strengthening in Southern region for import of power from Eastern region
- (iii) Bairasuil HEP – Sarna 220kV line
- (iv) Transmission System for Patran 400kV S/S
- (v) ATS of Unchahar TPS
- (vi) Part ATS for RAPP U-7&8 in Rajasthan
- (vii) Transmission System for Connectivity for NCC Power Projects Limited (1320 MW)
- (viii) Transmission System required for evacuation of power from Kudgi TPS 3x800 MW in Phase-I) of NTPC Limited.
- (ix) Eastern Region System Strengthening Scheme-VI
- (x) Eastern Region System Strengthening Scheme-VII

Annexure – I

EXISTING INTER-REGIONAL POWER TRANSFER CAPACITY (MW)

Name of link	Existing (Nov.'12)
EAST-NORTH	
Dehri-Sahupuri 220 kV S/c	130
Sasaram HVDC back-to-back	500
Muzaffarpur-Gorakhpur 400 kV D/c (with Series Cap+TCSC)	2000
Patna – Balia 400kV D/c (Quad)	1600
Biharshariff – Balia 400kV D/c(Quad)	1600
Barh – Balia 400kV D/c (Quad) [Barh Tr. System]	1600
Sasaram - Fatehpur 765kV S/c [DVC,NK, Maithon Tr. System]	2100

Gaya - Balia 765kV S/c [DVC,NK, Maithon Tr. System]	2100
Sasaram bypassing (additional capacity)	500
Sub-total	12130
EAST-WEST	
Budhipadar-Korba 220 kV 3 ckts.	390
Rourkela-Raipur 400 kV D/c with series comp.+TCSC	1400
Ranchi –Sipat 400 kV D/c with series comp.	1200
Rourkela-Raipur 400 kV D/c (2nd) [East-West Strengthening] (without series Comp.)	1400
Sub-total	4390
WEST- NORTH	
Vindhyachal HVDC back-to-back	500
Auraiya-Malanpur 220 KV D/c	260
Kota - Ujjain 220 KV D/c	260
Gwalior-Agra 765 kV S/c	1100
Gwalior-Agra 765 kV S/c 2nd ckt [NR-WR inter-regional strengthening scheme]	1100
Zerda-Kankroli 400kV D/c [NR-WR inter-regional strengthening scheme]	1000
Sub-total	4220
EAST- SOUTH	
Gazuwaka HVDC back-to-back	1000
Balimela-Upper Sileru 220kV S/c	130
Talcher-Kolar HVDC bipole	2000
Upgradation of Talcher-Kolar HVDC Bipole	500
Sub-total	3630
WEST- SOUTH	
Chandrapur HVDC back-to-back	1000
Kolhapur-Belgaum 220kV D/c	260
Barsur – L. Sileru 220kV HVDC Monopole *	200*
Ponda – Nagajhari 220kV D/c	260
Sub-total	1520
EAST- NORTH EAST	
Malda - Bongaigaon 400 kV D/c	1000
Birpara-Salakati 220kV D/c	260
Sub-total	1260
Various 132kV inter-regional links	600
TOTAL	27,750
* 200 MW HVDC Monopole is currently not in operation	



STATUS OF POWER SECTOR REFORMS

THE ELECTRICITY (AMENDMENT) ACT, 2007

The Electricity (Amendment) Act, 2007, amending certain provisions of the Electricity Act, 2003, was enacted on 29th May, 2007 and brought into force w.e.f 15.6.2007. The main features of the Amendment Act are:

- Central Government, jointly with State Governments, to endeavour to provide access to electricity to all areas including villages and hamlets through rural electricity infrastructure and electrification of house-holds.
- No License required for sale from captive units.
- Definition of theft expanded to cover use of tampered meters and use for unauthorized purpose.
- Theft made explicitly cognizable and non-bailable.
- Deletions of the provision for elimination of cross subsidies. The provision for reduction of cross subsidies would continue.

AMENDMENT IN TARIFF POLICY

In compliance of section 3 of the Electricity Act, 2003, the Government of India has notified the Tariff Policy on 6th January, 2006. The Tariff Policy has been amended from time to time.

- The Ministry of Power has amended para 6.4(1) of Tariff Policy on 20.1.2011 fixing a minimum percentage of the total consumption of electricity in the area of a distribution licensee from solar energy also in accordance with the National Solar Mission strategy.
- The provisions of Tariff Policy notified under section 3 of the Electricity Act, 2003 on 6th January, 2006 made mandatory procurement of power through competitive bidding process by distribution licensees with effect from 6th January, 2011 even for public sector projects as brought out in para 5.1 and 7.1 of the policy and clarified from time to time. The Tariff Policy was amended on 08.07.2011 to exempt hydro projects and certain transmission projects from the mandatory tariff based competitive bidding.

OPERATIONALISATION OF OPEN ACCESS

Open access is one of the key features of the Electricity Act, 2003. Open access in inter-state transmission is fully operational. To give a fresh impetus to implementation of open access over transmission lines of State utilities and over the distribution networks, a Power Ministers' Conference was held on 28.4.2010 in which it was resolved that non-discriminatory open access in intra-State transmission and distribution system would be provided in letter and spirit as per the provisions of the Electricity Act and the National Policies. This was followed by a Working Session on Open Access in distribution sector of electricity held on 16.7.2010. The issue of open access was also emphasized in the Group of Ministers on Power Sector Issues in its meeting held on 29.10.2010 and 13.7.2011 under the chairmanship of Minister of Power.

The Ministry of Power in consultation with M/o Law & Justice/Ld. Attorney General of India has issued clarification vide letter dated 30.11.2011 that "all 1MW and above consumers are deemed to be open access consumers and that the regulator has no jurisdiction over fixing the energy charges for them". All concerned have been requested to take necessary steps for implementing the provisions relating to open access in the Electricity Act, 2003 in light of the said opinion.

A workshop was also held under the chairmanship of Secretary (Power) on this issue on 29.2.2012 where the officers of State Government and Power Utilities also participated.

Task Force on Measures for Operationalizing Open Access in the Power Sector

The 2nd Task Force on measures for operationalizing open access in power sector constituted under the chairmanship of Member (Energy), Planning Commission has submitted its report. The Ministry has initiated action on the recommendations of the Task Force.

REORGANIZATION OF THE STATE ELECTRICITY BOARDS

Before enactment of the Electricity Act, 2003, various states have enacted State Electricity Acts, which provided for reorganization of their State Electricity Board (SEB).

Section 172 (a) of the Electricity Act, 2003 provides that the SEB shall be deemed to be the State Transmission Utility (STU) and a licensee under the provisions of the Act, for a period of one year from the appointed date, i.e. 10th June, 2003. However an SEB can continue for some more time as agreed to mutually by State and Central Government.

So far nineteen States, except Jharkhand and Kerala, have reorganized their SEBs. Ten States (Orissa, Haryana, Andhra Pradesh, Karnataka, Uttar Pradesh, Uttarakhand, Rajasthan, Delhi, Gujarat and Madhya Pradesh) reorganized their SEB under their State Reforms Acts enacted before enactment of the Electricity Act, 2003. Assam, Chhattisgarh, Maharashtra and West Bengal have reorganized their SEBs under the provisions of the Electricity Act, 2003. Tamil Nadu and Meghalaya have also reorganized their SEBs. Punjab, Himachal Pradesh and Bihar also have issued transfer scheme.

GUIDELINES FOR SHORT-TERM PROCUREMENT OF ELECTRICITY BY DISTRIBUTION LICENSEES THROUGH TARIFF BASED BIDDING PROCESS

The Central Government has issued Guidelines for short-term procurement of electricity i.e. for a period of less than or equal to one year under section 63 of the Electricity Act, 2003 and Resolution to this effect has been published in the Gazette of India, Extraordinary on 16 May, 2012.

Competitive procurement of short-term power requirement by the Distribution Licensees is expected to reduce the overall cost of procurement of power and will lead to significant benefits for consumers.

FOREIGN INVESTMENT IN POWER TRADING EXCHANGES

As a boost to the power sector, the Cabinet Committee on Economic Affairs (CCEA) on September 14, 2012 has approved the foreign investment, upto 49% (FDI) limit of 26% and an FII limit of 23 % of the paid-up capital), in Power Trading Exchanges, registered under the Central Electricity Regulatory Commission (Power Market) Regulations, 2010, and in compliance with SEBI Regulations; other applicable laws/regulations; security and other conditionalities. FII investments would be permitted under the automatic route and FDI would be permitted under the government approval route. FII purchases shall be restricted to secondary market only; and no-non-resident investor/entity, including persons acting in concert, will hold more than 5% of the equity in these companies.



Benefiting education of girls through electricity under Rajiv Gandhi Gramin Vidyutikaran Yojna

RURAL ELECTRIFICATION PROGRAMME

Rural electrification has been regarded as a vital programme for the development of rural areas. In 1947, only 1500 villages were electrified in India. The per capita consumption was 14 units. The initial focus was on 'electrification for irrigation' to enhance agricultural produce which was reflected in the definition of village electrification accepted till 1997 – that "a village was deemed to be electrified if electricity is being used within its revenue area for any purpose whatsoever".

This definition of village electrification was reviewed in consultation with the State Governments and State Electricity Boards and following new definition was adopted after 1997:

"A village will be deemed to be electrified if electricity is used in the inhabited locality within the revenue boundary of the village for any purpose whatsoever.

In February, 2004, the definition was made even more encompassing as also target specific. "A village would be declared electrified, if :

- (i) Basic infrastructure such as distribution transformer and distribution lines are provided in the inhabited locality as well as the dalit basti/ hamlet where it exists. (For electrification through Non-conventional Energy Sources a distribution transformer may not be necessary).
- (ii) Electricity is provided to public places like schools, panchayat offices, health centres, dispensaries, community centres, etc. and
- (iii) The number of households electrified should be at least 10% of the total number of households in the village.

Government of India from time to time had launched the following programmes for electrification of rural areas in the country :

i) Rural Electrification under Minimum Needs Programme (MNP)-

This was started in 5th Five Year Plan with rural electrification as one of the components of the programme. Under this programme funds were provided as Central assistance to the states in the form of partly grants and partly loans. Since the inception of the MNP, the component that relates to rural electrification had been set off against the loan component of MNP. The areas covered under the MNP for the purposes of rural electrification were remote, far flung and difficult villages with low load potential. The scheme has been discontinued from 2004 onwards and has been subsequently merged with the new scheme, Rajiv Gandhi Grameen Vidyutikaran Yojana.

ii) Pradhan Mantri Gramodaya Yojana(PMGY)-

This scheme was launched in 2000-01 but rural electrification component was added in the next financial year-2001-02. It was being implemented by State Electricity Boards/ Electricity Departments/Power Utilities which

were designated as implementing agencies. Funds were being released by State Government to the implementing agencies, Funds under the programme were provided to the states as Additional Central Assistance which followed the normal pattern of central assistance i.e. 90% grant & 10% loans for special category states, 30% grant & 70% loan for other states. The scheme has been discontinued from 2005-06 onwards.

iii) Kutir Jyoti Scheme-

This programme was launched in 1988-89 to provide single point light connections to households of rural families below the poverty line including harijans and adivasi families. The allocation amongst the States was based on the size of rural population below the poverty line and level of village electrification in the State, with higher weightage given to States having larger population of rural poor and low electrification levels. This scheme has been now merged with RGGVY.

(iv) Accelerated Rural Electrification Programme (AREP)-

The scheme was introduced in the year 2003-04 under which interest subsidy of 4% was to be provided on loans availed by State Governments/Power Utilities from Financial Institutions for carrying out rural electrification programme. The assistance was limited to electrification of un-electrified villages, electrification of hamlets/dalit bastis/tribal villages and electrification of households in villages through both conventional and non-conventional sources of energy.

(v) Accelerated Electrification of One lakh villages and One crore households-

Government of India in 2004-05 introduced a scheme "Accelerated Electrification of One lakh villages and One crore households" by merging the interest subsidy Scheme-AREP (Accelerated Rural Electrification Programme) and Kutir Jyoti Programme. Under this scheme there was a provision for providing 40% capital subsidy for rural electrification projects and the balance as loan Assistance on soft terms from REC. The scheme has now been merged with the new scheme RGGVY.

(vi) Rajiv Gandhi Grameen Vidyutikaran Yojana(RGGVY)-

This Scheme of Rural Electricity Infrastructure and Household Electrification has been introduced in April, 2005 for achieving the National Common Minimum Programme objective of providing access to electricity to all Rural Households over a period of four years. Rural Electrification Corporation (REC) is the nodal agency for the programme. An amount of ₹5000 crore was provided for remaining years of X Plan period.

Under this scheme 90% Capital Subsidy will be provided for rural electrification infrastructure through: -

- (i) Creation of Rural Electricity Distribution Backbone (REDB) with one 33/11 kV (or 66/11 kV) substation in every block where it does not exist.
- (ii) Creation of Village Electricity Infrastructure (VEI) for electrification of all un-electrified villages/habitations and provision of distribution transformer(s) of appropriate capacity in every village/habitation.
- (iii) Decentralized Distributed Generation (DDG) and Supply System from conventional sources for Villages/Habitations where grid supply is not cost effective and where Ministry of Non-Conventional Energy Sources would not be providing electricity through their programme(s).

Balance 10% will be loan assistance on soft terms by REC.

The scheme inter-alia provides for funding of electrification of all un-electrified Below Poverty Line (BPL) households with 100% capital subsidy.

The scheme aims at electrifying all un-electrified villages over a period of four years and provide access to electricity to all rural households.

The official website of RGGVY is rggvv.gov.in.

The scheme has been continued during XI Plan with capital subsidy of ₹28,000 crore.

Decentralized Distribution Generation(DDG) under RGGVY

There is a provision of subsidy of ₹540 crore for DDG during XI Plan period which is included in capital subsidy of ₹28,000 crore available for RGGVY in XI Plan period. The guidelines on DDG has been finalized and an order in this regard has been issued on 12.1.2009. Ministry of Power has also issued modified guidelines on 5.1.2011 to take of difficulties mentioned by various Stake holders. As on 31.12.2012, under DDG component, 276 projects have been sanctioned in the States of Chhattisgarh, West Bengal, Andhra Pradesh, Uttarakhand, Uttar Pradesh, Bihar and Madhya Pradesh covering 647 villages/habitations with total sanctioned cost of about ₹178.64 crore.

STATUS OF RURAL ELECTRIFICATION UNDER RAJIV GANDHI GRAMEEN VIDYUTIKARAN YOJANA (RGGVY)

All the states except Delhi & Goa have signed Agreements under RGGVY. CPSUs are implementing the scheme in 138 districts. 235 Projects were taken up for implementation in X Plan and 341 projects have been sanctioned for implementation during Phase-I of XI Plan. The total coverage of these 576 projects is to electrify 1,10,886 un-electrified villages, intensive electrification of 3.42 lakh partially electrified villages and release of free connections to 2.29 crore BPL households. In addition to this, 72 projects covering electrification of 1,909 un-electrified villages, intensive electrification of 53,505 partially electrified villages and release of free electricity connections to 45,59,141 BPL households have been sanctioned under Phase-II of XI Plan.

In 2012-13, upto 31.12.2012, 1,839 un-electrified villages have been electrified, 37,486 partially electrified villages have been intensively electrified and free electricity connections to 10,18,276 BPL households have been released.

Since April, 2005, till 31st December, 2012, the cumulative achievement is electrification of 1,06,335 un-electrified villages, intensive electrification of 2,86,232 partially electrified villages and release of free electricity connections to 2,04,47,594 BPL households. Till 31.12.2012, 99,435 villages have been energized. The year-wise electrification of villages is at **Annexure-I. Bharat Nirman target of electrification of 1 Lakh un-electrified villages and connections to 1.75 Crore BPL households have been achieved by 31st December, 2011 well before March, 2012.**

Franchisees are in place/operation in 18 states namely Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Nagaland, Orissa, Rajasthan, Tripura, Uttar Pradesh, Uttarakhand and West Bengal covering 2,08,896 villages. Revenue collection and consumer services have improved in the states where franchisees are in operation. The Ministry in collaboration with REC is organizing training for franchisees and C&D employees.

All the 27 states participating in RGGVY have notified constitution of District Committees to, inter-alia, monitor the implementation of RGGVY & all States have notified rural areas to take the advantage of the exemptions provided in the Act for setting up Decentralized Distributed Generation.

Annexure-I

Year Wise Village Electrification

Sl.	Years	Nos. of Villages Electrified	Remarks
1	1990-91	10286	
2	1991-92	6046	
3	1992-93	3669	
4	1993-94	3352	
5	1994-95	3554	
6	1995-96	4086	
7	1996-97	3843	
	8th Plan Total	34836	
8	1997-98	3207	
9	1998-99	2780	
10	1999-00	2093	
11	2000-01	1218	
12	2001-02	4118	
	9th Plan Total	13416	
13	2002-03	2626	
14	2003-04	3352	
15	2004-05	3884	RGGVY
16	2005-06	9819	RGGVY
17	2006-07	28706	RGGVY
	10th Plan Total	48387	
18	2007-08	9301	RGGVY
19	2008-09	12056	RGGVY
20	2009-10	18374	RGGVY
21	2010-11	18306	RGGVY
22	2011-12	7934	RGGVY
23	2012-13 (upto 31.12.2012)	1839	RGGVY

NOTE: Definition of village electrification was changed in 2004-05.

RE-STRUCTURED ACCELERATED POWER DEVELOPMENT AND REFORMS PROGRAMME (R-APDRP)

Cabinet Committee on Economic Affairs (CCEA) approved the “Re-structured APDRP” for XI Plan as a Central Sector Scheme in its meeting held on 31.07.2008. The focus of the programme is on actual, demonstrable performance in terms of AT&C loss reduction. Projects under the scheme are taken up in two parts in urban areas-towns and cities with population of more than 30,000(10,000 in case of special category states). Projects executions under the scheme are taken up in Two Parts. **Part-A** includes the projects for establishment of baseline data and IT applications for energy accounting/auditing & IT based consumer service centers. **Part-B** includes regular distribution strengthening projects. The activities covered under each part are as follows:

- **Part – A:** Preparation of Base-line data for the project area covering Consumer Indexing, GIS Mapping, Metering of Distribution Transformers and Feeders, and Automatic Data Logging for all Distribution Transformers and Feeders and SCADA / DMS system for big cities only. It would include Asset Mapping of the entire distribution network at and below the 11Kv transformers and include the Distribution Transformers and Feeders, Low Tension lines, poles and other distribution network equipment. It will also include adoption of IT applications for meter reading, billing & collection, energy accounting & auditing, redressal of consumer grievances, establishment of IT enabled consumer service centers etc. The base line data shall be verified by an independent agency appointed by the Ministry of Power.
- **Part – B:** Renovation, modernization and strengthening of 11 kV level Substations, Transformers/Transformer Centers, Re-conductoring of lines at 11kv level and below, Load Bifurcation, Load Balancing, HVDS, installation of capacitor banks and mobile service centers etc. In exceptional cases, where sub-transmission system is weak, strengthening at 33 kV or 66 kV levels may also be considered.
- Expected investment in Part-A (Baseline System) is ₹10,000 crore and that in Part-B is ₹ 40,000 crore.
- Initially 100% funds for Part A and 25% (90% for special category states) funds for Part B projects shall be provided through loan from the Govt. of India. The balance funds for Part B projects shall be raised from financial institutions.
- The entire amount of loan for Part-A projects shall be converted into grant once the establishment of the required Base-line data system is achieved and verified by an independent agency appointed by MoP.
- Up-to 50% (90% for special category States) of the project cost of Part-B projects shall be converted into grant in five equal tranches on achieving the 15% AT&C loss in the project area on a sustainable basis for a period of five years. In addition, utility level loss reduction (AT&C losses) @3% per annum for utilities with baseline loss levels exceeding 30% and @ 1.5% for utilities with baseline loss levels less than 30% have to be achieved.
- Part C of the programme is an enabling component for the implementation of APDRP. Provision of ₹1,177 Crore through GBS has been provided in the scheme. This part is to be implemented by Ministry of Power/Nodal Agency. PFC has been appointed as nodal agency for operationalising the programme. The following activities are included in Part C:
 - **Preparation of a template for System Requirement Specifications** for sub-division automation and for customer relations management module, as well as for automated baseline data collection systems,
 - **Validation of the Base-line Data** to be done by independent agencies identified through bidding process by the Ministry or its nominee. Independent agencies will also verify the AT&C losses and monitor quality of works to be executed under Part-B.
 - **Project Advisors and Project Management Consultants**– Advisor cum Consultants will be appointed to assist the Ministry in monitoring of APDRP and to validate the project proposals submitted by the Distribution companies. Project Management Consultants will assist distribution companies in formulating the DPRs, in standardization of bidding/contract documents, managing the bid process, monitoring of progress, quality assurance etc. They will also facilitate the Management Information system and assist the Distribution Reforms Committees formed at the State level.
 - **Project Evaluation** by Third Party will be the basis of computation of the extent of conversion of loan into grant for the specific project. A panel of Project evaluators will be finalized through a bidding process.
 - **Capacity Building and development of franchisees** in Distribution Sector will be a major focus area to provide training to employees of the Distribution companies and existing & prospective franchisees in management, technical, commercial and consumer related areas, exposure to latest developments in electricity distribution, loss reduction, theft and pilferage control within India and abroad, dissemination of knowledge through Best Practice Workshops and Conferences, standardization of specifications of equipment required in electricity distribution network, standardization of contractual documents for outsourcing project management, turnkey jobs, franchising etc.

- **Consumer Attitude Survey** will be carried out to assess the impact of the measures taken in the distribution sector towards improving of service.
 - Under Part D of the scheme, there is provision for incentive for utility staff in towns where AT&C loss levels are brought below the base line levels. An amount equivalent to 2% of the grant for Part-B projects (₹400 crore) is proposed as incentive of utility staff in project areas where AT&C loss levels are brought below 15%.
 - **Capacity Building under R-APDRP:** In order to reap the benefits of the R-APDRP program, the Capacity Building of Power Utility personnel at various levels has been identified as an essential part of R-APDRP. This portion has been extensively covered under Part-C of R-APDRP's guidelines with focus on enhancing skills of utility personnel at various levels for efficient management and operation. Ministry has also constituted an Advisory Committee for R-APDRP Capacity Building to advise PFC for developing a comprehensive Capacity Building Plan for employees of distribution utilities under R-APDRP. PFC is in the process of empanelling Partner Training Institutions and Resource Institutes who shall be associated in delivering training to the utility personnel.
- Implementation of Re- Structured APDRP:**
- A Steering Committee under Secretary (Power) comprising of representatives of Ministry of Finance, Planning Commission, Central Electricity Authority, Power Finance Corporation, Rural Electrification Corporation, selected State Governments (on one year rotation basis) and of Ministry of Power has been constituted. The Steering Committee will –
 - (a) Sanction projects, including modification or revision of estimates; Monitor and review the implementation of the Scheme;
 - (b) Approve the guidelines for operationalisation of various components of the scheme including the approval of the charges to be paid to the nodal agency;
 - (c) Approve and sanction activities to be taken up by the Ministry under Part C of the Scheme;
 - (d) Appoint agencies for verification and validation of base-line data systems, for verifying the fulfilment of programme conditions by utilities;
 - (e) Approve conversion of loan into grant upon fulfilment of the necessary conditions.
- The present status as on 30.11.2012 of the R-APDRP scheme is given below:**
- Part-A (IT) projects worth ₹5196.50Cr covering almost all the eligible towns (1402 Nos) in 29 states / UTs have been sanctioned. Details are placed at annexure-I.
 - Part-A (SCADA) projects worth ₹1442.29Cr covering all the eligible towns (63 Nos.) in 15 States have been sanctioned. Details are placed at annexure-I.
 - So far 1132 Part-B projects worth ₹25684.91Cr in 20 States have been sanctioned. Details are placed at annexure-II.
 - So far 58 Towns are declared Go Live under R-APDRP. Detail status of Go Live of towns under R-APDRP is placed at Annexure-III.
 - Budget allocation for the current year (FY 2012-13) is ₹3114 Crore (₹2997Crore as loan and ₹117Crore as grant).



National Workshop on Review Meeting for implementation of R-APDRP held at New Delhi on 1st October, 2012

Annexure-I

DETAILS OF PROJECTS SANCTIONED UNDER PART-A (IT) OF R-APDRP

Sl. No.	State	No. of Projects Sanctioned	Sanctioned Project Cost (₹ in Cr.)
Non-special Category States			
1	Andhra Pradesh	113	388.81
2	Bihar	71	194.60
3	Chandigarh	01	33.34
4	Chhattisgarh	20	122.45
5	Goa	04	110.74
6	Gujarat	84	230.72
7	Haryana	36	165.63
8	Jharkhand	30	160.61
9	Karnataka	98	391.14
10	Kerala	43	214.40
11	Madhya Pradesh	83	228.89
12	Maharashtra	130	324.42
13	Puducherry	04	27.53
14	Punjab	47	272.85
15	Rajasthan	87	315.93
16	Tamil Nadu	110	417.00
17	Uttar Pradesh	169	650.68
18	West Bengal	62	164.37
Sub-Total		1192	4414.11
Special Category States			
19	Arunachal Pradesh	10	37.68
20	Assam	67	173.78
21	Himachal Pradesh	14	96.41
22	J & K	30	151.99
23	Manipur	13	31.55
24	Meghalaya	9	33.99
25	Mizoram	9	35.12
26	Nagaland	9	34.58
27	Sikkim	2	26.30
28	Tripura	16	35.18
29	Uttarakhand	31	125.82
Sub-Total		210	782.39
TOTAL		1402	5196.50

Annexure-I

DETAILS OF SCADA PROJECTS SANCTIONED UNDER PART-A OF R-APDRP

Sl. No.	State	Eligible towns	No of Projects Sanctioned	Sanctioned Project Cost (₹ in Crore)
1	Andhra Pradesh	5	5	116.81
2	Assam	1	1	21.82
3	Bihar	1	1	22.02
4	Chhattisgarh	2	2	41.06
5	Gujarat	6	6	138.51
6	Jammu & Kashmir	2	2	52.89
7	Kerala	3	3	83.15
8	Madhya Pradesh	5	5	102.94
9	Maharashtra	8	8	161.62
10	Punjab	3	3	52.36
11	Rajasthan	5	5	150.90
12	Tamilnadu	7	7	182.17
13	Uttar Pradesh	11	11	266.55
14	Uttarakhand	1	1	16.55
15	West Bengal	3	3	32.94
Total		63	63	1442.29

Annexure-II

DETAILS OF PROJECTS SANCTIONED UNDER PART-B OF R-APDRP

Sl. No.	State	Projects Sanctioned	Sanctioned Cost (₹ in Crore)
1	Andhra Pradesh	42	1056.59
2	Assam	67	644.05
3	Bihar	64	1155.21
4	Chhattisgarh	19	710.24
5	Gujarat	63	993.78
6	Haryana	29	673.58
7	Karnataka	86	948.99
8	Himachal Pradesh	14	338.97
9	J & K	30	1665.27
10	Kerala	43	1078.30
11	Madhya Pradesh	82	2036.43
12	Maharashtra	123	3468.74
13	Punjab	42	1509.73
14	Rajasthan	82	1540.47
15	Sikkim	2	68.46
16	Tamil Nadu	87	3279.56
17	Tripura	16	165.09
18	Uttar Pradesh	161	3283.59
19	Uttarakhand	30	392.63
20	West Bengal	50	675.23
Total		1132	25684.91

Annexure-III

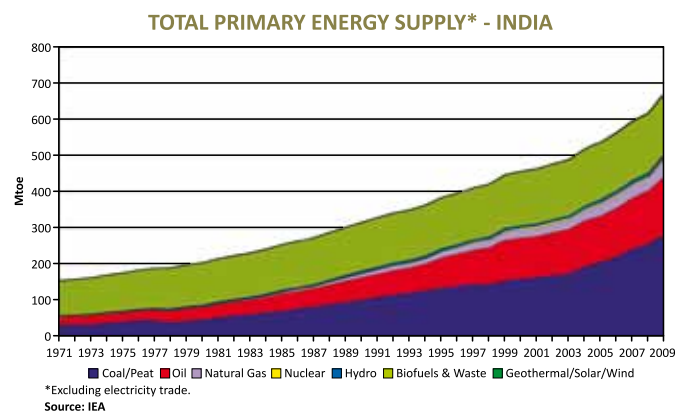
STATUS OF GO-LIVE OF TOWNS UNDER R-APDRP

SL.NO.	STATE	NO. OF TOWNS	NO. OF TOWNS DECLARED 'GO LIVE'
1	Gujarat	84	27
2	West Bengal	61	14
3	Uttarakhand	31	2
4	Madhya Pradesh	83	15
TOTAL			58



ENERGY CONSERVATION

The growth in Indian economy was very significant during the 11th Plan and GDP growth is likely to average 8.2% during the plan period. Energy is one of the major drivers of a growing economy and plays an essential building block of economic development. In an effort to meet the demands of a developing nation, the Indian energy sector has witnessed a rapid growth. Areas like the resource exploration and exploitation, capacity additions and energy sector reforms have been revolutionized.



However, resource augmentation and growth in energy supply have failed to meet the ever increasing demands exerted by the multiplying population, rapid urbanization and progressing economy. Hence, serious energy shortages continue to plague

India, forcing it to rely heavily on energy imports.

Improving the efficiency with which energy is used to provide economic services meets the dual objectives of promoting sustainable development and of making the economy competitive.

Over the past one decade, energy efficiency in India has been increasing at a good trot, and energy intensity declined by about 20-25%. Yet, there are places where energy efficiency opportunities continue to exist largely because of a range of market failures: information, risks and split incentives. This has led the Government of India through the Energy Conservation Act, 2001 and the Bureau of Energy Efficiency to launch several programs.

The Energy Conservation Act, 2001 is the most important multi-sectoral legislation in India and is intended to promote efficient use of energy in India. The Act specifies energy consumption standards for equipment and appliances, establishes and prescribes energy consumption norms and standards for consumers, prescribes energy conservation building codes for efficient use of energy in commercial buildings, and establishes a compliance mechanism for energy consumption norms and standards. Large scale energy savings can be realized through strengthening of the existing policies, schemes as well as expanding and reaching out to new areas in 12th Plan.



Shri Pranab Mukherjee, Hon'ble President of India giving away National Energy Conservation Award 2012.

During the XIth Plan Period, the Government of India initiated a number of programmes to promote energy efficiency, with the goal of achieving savings that would result in avoided generation capacity of 10,836 MW. Specifically, the Bureau of Energy Efficiency (BEE) and the Ministry of Power (MoP) had introduced a number of schemes during 11th Five Year Plan for promoting energy efficiency in India. The schemes of BEE include Standards and Labeling (S&L) programme, Energy Conservation Building Code (ECBC) & Energy Efficiency in Existing Buildings, Bachat Lamp Yojana (BLY), SDA strengthening programme, Small and Medium Enterprises (SMEs), Agriculture & Municipal DSM and Contribution to State Energy Conservation Fund (SECF). The schemes of the Ministry of Power (MoP) include Energy Conservation Awareness, Awards & Painting Competition and National Mission for Enhanced Energy Efficiency (NMEEE). In the 11th Five Year Plan (2007–12), it was proposed to achieve the energy saving of 5% of the anticipated energy consumption level in the beginning of the 11th Plan.

Some of the principal programmes that have been launched are:

- **Standards and Labeling of Equipment & Appliances:** Labeling has been introduced for 14 major energy-consuming appliances, providing users with information on the energy use of a model, and the relative efficiency of that model compared to others in the market. Labeling has been made mandatory for 4 products – air-conditioners, frost free refrigerators, distribution transformers, and fluorescent tube lights.
- **Energy Efficiency in Buildings:** A National Energy Conservation Building Code (ECBC) has been prepared for the design of new commercial buildings. Training programmes for working architects and engineers as well as for architecture students have been launched, and over 700 ECBC-compliant buildings are at various stages of construction. Two states have adopted ECBC, making it mandatory for all new, large-commercial buildings to comply with the Code. In addition, performance contracting through Energy Service Companies (ESCOs) is being promoted to enable the retrofit of existing buildings so as to reduce their energy consumption.
- **Energy Efficiency in Industry:** 478 industrial units from 8 sectors have been declared as Designated Consumers. Together they account for about 35% of the total energy consumption in India. Each of these designated consumers has been notified for specific energy consumption reduction target, to be achieved by 2014-15. Designated consumers who exceed their targets would be provided Energy Saving Certificates for their excess savings, which could be used for compliance by other designated consumers, who find it expensive to meet their targets only through their own actions. In addition, a major programme to enhance energy efficiency of small and medium enterprises is also being launched, focusing on SME clusters, and the development of local consultants, equipment vendors, and financial institutions through replicable pilot projects.
- **Residential Lighting:** The penetration of energy-efficient compact fluorescent lamps (CFLs) in the domestic sector has been relatively limited because of the high costs of CFLs as compared to incandescent lamp (ICL). Under the BLY scheme, Distribution Companies select qualified investors to distribute long-life, quality CFL to grid-connected residential households in exchange of an incandescent lamp and ₹15. Each household gets a maximum of four self-ballasted CFLs under the scheme. Approximately 600,000 CFLs can be distributed within a single project. Under this scheme, the investors earn carbon credits due to energy savings occur by the CFL.

The Programme of Activity (PoA) has been registered with UNFCCC on 29th April, 2010. This PoA is one of the largest CDM PoA by scale and the third PoA registered by UNFCCC. Further, as a result of BEE's efforts to promote energy efficient lighting in household sector, 50 BLY projects from various parts of India have been included in this registered umbrella framework and 40 projects have been implemented so far. 26 million CFLs have been distributed in the included projects in the XIth plan period and CFL distribution is in progress in some of the included project areas. An Avoided Generation Capacity of 324.3 MW has been achieved by the CFL distribution till December 2011 during XIth plan.

AGRICULTURE AND MUNICIPAL DSMs

In order to accelerate DSM measures in agriculture sector, BEE has initiated an AgDSM programme in which pump set efficiency upgradation would be carried out through Public-Private Partnership mode. The objective of the programme is to create appropriate framework for market based interventions in the Agriculture Pumping Sector by facilitating a conducive policy environment to promote Public-Private Partnership (PPP) to implement the project. The Detailed Project Reports (DPRs) of the pilots in the States of Maharashtra, Haryana, Gujarat, Punjab, Rajasthan and Madhya Pradesh have been prepared. The implementation of the first pilot at Solapur District in Maharashtra has commenced and as of date, 2000 pumps have been replaced in Solapur region. Pilot study of fixing the baseline of energy savings by replacing the inefficient pumpsets with Energy Efficient BEE Star Labelled pumpsets in 2 other States (Andhra Pradesh and Karnataka) has also been completed and discussions with DISCOMs & Regulatory Authority/ State Government have been held for implementation by ESCOs. Under this scheme, total 11 DPRs have been prepared for 87 feeders in 8 States. These DPRs are indicating potential saving of 97MU.

Municipalities are spending large amount of their revenue on purchasing energy for providing local public services such as street lighting and water supply. Energy efficiency in municipal water supply systems can save water and energy while reducing costs and improve service at the same time. For those bearing the financial responsibility for local public services, efficiency in the provision of energy and water is one of the few cost-effective options available for meeting growing demands for vital services such as electricity, water and wastewater treatment. A shelf of 138 Detailed Project Reports (DPRs) was prepared during the XIth plan which

included energy conservation measures and estimated savings potential.

STATE DESIGNATED AGENCIES

In order to kick start the energy conservation activities at the state level with an emphasis on building institutional capacities of the SDAs, Ministry of Power had approved the scheme of Providing financial assistance to the State Designated Agencies for strengthening their institutional capacities and capabilities during the XI plan. The total outlay of the scheme was ₹70.23 crores. The major activities under which financial support was provided were:

- Annual Action Plan which includes creation of database for Energy Managers/ Energy Auditors/ Designated Consumers, organizing training programmes/ workshops, awareness campaigns etc.
- Demonstration Projects on energy efficient street lighting, revamping of drinking water pumping system and energy efficiency in SME cluster
- Investment Grade Energy Audit of Govt. Buildings
- LED Village Campaign

CONTRIBUTION TO STATE ENERGY CONSERVATION FUND SCHEME

The scheme on Contribution to State Energy Conservation Fund (SECF) by the Bureau of Energy Efficiency was approved by MOP during the XI Five Year Plan with a total outlay of ₹66.00 crores. The objective was to facilitate creation of new SECFs and strengthen the existing SECFs. The scheme was for contribution to all the State/UTs with a maximum ceiling of ₹ 4.00 crores for any State/UT to be provided in two installments of ₹2.00 crores each to those State Govt. /UT Administration who have created their SECF and finalized the rules and regulations to operationalise the same. The second installment was released only after the states have provided a matching contribution to the BEE's first installment.

NATIONAL ENERGY CONSERVATION AWARDS, 2012

One of the voluntary innovative schemes initiated by the Government of India, Ministry of Power to promote energy conservation has been the National Energy Conservation Awards. BEE coordinates the National Energy Conservation Awards Scheme of Ministry of Power.

These annual awards recognize innovation and achievements in energy conservation by the Industries, buildings, hotels hospitals, railways, state designated agencies, aviation, manufacturers of BEE star labeled appliances, municipalities and thermal power stations and also raise awareness that energy conservation plays a big part in India's response to reduce global warming through energy savings. The Awards were given away for the first time on December 14, 1991, which is celebrated as 'National Energy Conservation Day' through-out the country.

The responses among the industrial and commercial units have become very encouraging as is evident from the increasing participation level (from 123 in 1999 to 773 in 2012). The Award Scheme has motivated the participating units to undertake serious efforts in saving energy and

environment. The participating units of EC Awards, 2012 have collectively invested ₹1948 crores in energy conservation measures, and achieved a monetary savings of ₹2886 crores last year, implying a payback period of 8 months only, once again proving the fact that energy conservation is a least cost option. The participating units have also saved electrical energy of 4177 Million KWh, which is equivalent to the energy generated from a 616 MW thermal power station at a PLF of 0.775. In other words, these participating units have avoided the installation of power generating capacity equivalent to 616 MW thermal power stations in 2011-12, which would otherwise have been required to meet the power demand of these units.

PAINTING COMPETITION ON ENERGY CONSERVATION, 2012

Ministry of Power and Bureau of Energy Efficiency have undertaken National Campaign on Energy Conservation 2012. Under this campaign, Painting Competition on Energy Conservation at School, State and National level were organized for the students of 4th, 5th and 6th standards. The National level Painting Competition on Energy Conservation 2012 was a resounding success. In the year 2012, 72532 schools and 30.90 lakhs children participated in the School level Competition across the country as compared to 58855 schools and 20.72 lakh children in 2011. Thus, there is an increase of around 50% in student participation in 2012.

NATIONAL MISSION FOR ENHANCED ENERGY EFFICIENCY (NMEEE)

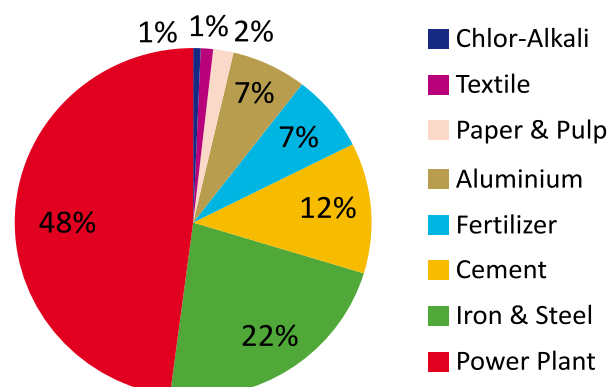
The Cabinet approved the National Mission for Enhanced Energy Efficiency (NMEEE) in May, 2010 with a financial outlay of ₹235.35 crores and creation of 16 new posts in BEE.

The Ministry of Power (MoP) and Bureau of Energy Efficiency (BEE) have been entrusted with the task of preparing the implementation plan for the NMEEE. NMEEE is working in the following four initiatives, in addition to the policies and programmes for energy efficiency being implemented by BEE. These initiatives are as follows:

- Perform Achieve and Trade (PAT)
- Market Transformation for Energy Efficiency (MTEE)
- Energy Efficiency Financing Platform (EEFP)
- Framework for Energy Efficient Economic Development (FEEED)

The outcome of all BEE schemes are quite encouraging and have resulted in savings in avoided power capacity of 10,836 MW up to March, 2012 during the 11th Plan period.

National Energy Saving Targets under PAT (%) (2012-15)



VERIFIED SAVINGS FOR 2011-12 (UPTO DECEMBER, 2011)

1. The Standards and Labeling (S&L) Programme have resulted in avoided generation capacity of 2264.6 MW.
2. The National Energy Conservation Award Programme has resulted in electricity saving of 3371 Million units, equivalent to avoided generation capacity of 513.2 MW.
3. Energy Conservation initiatives by various States have shown, equivalent to avoided generation capacity of 92 MW.
4. The Bachat Lamp Yojna (BLY) Scheme has resulted an avoided generation capacity of 85.3 MW.

POTENTIAL SAVINGS

The ECBC programme has stimulated construction of commercial buildings. The Green Rating for Integrated Habitat Assessment (GRIHA) & Leadership in Energy & Environmental Design (LEED) rating system have also incorporated the requirements of ECBC for attaining these ratings. Thus for compliant to the ECBC is about 10 million sq. mtrs, with a potential avoided capacity of 484 MW.

ENERGY CONSERVATION INITIATIVES DURING 12TH PLAN

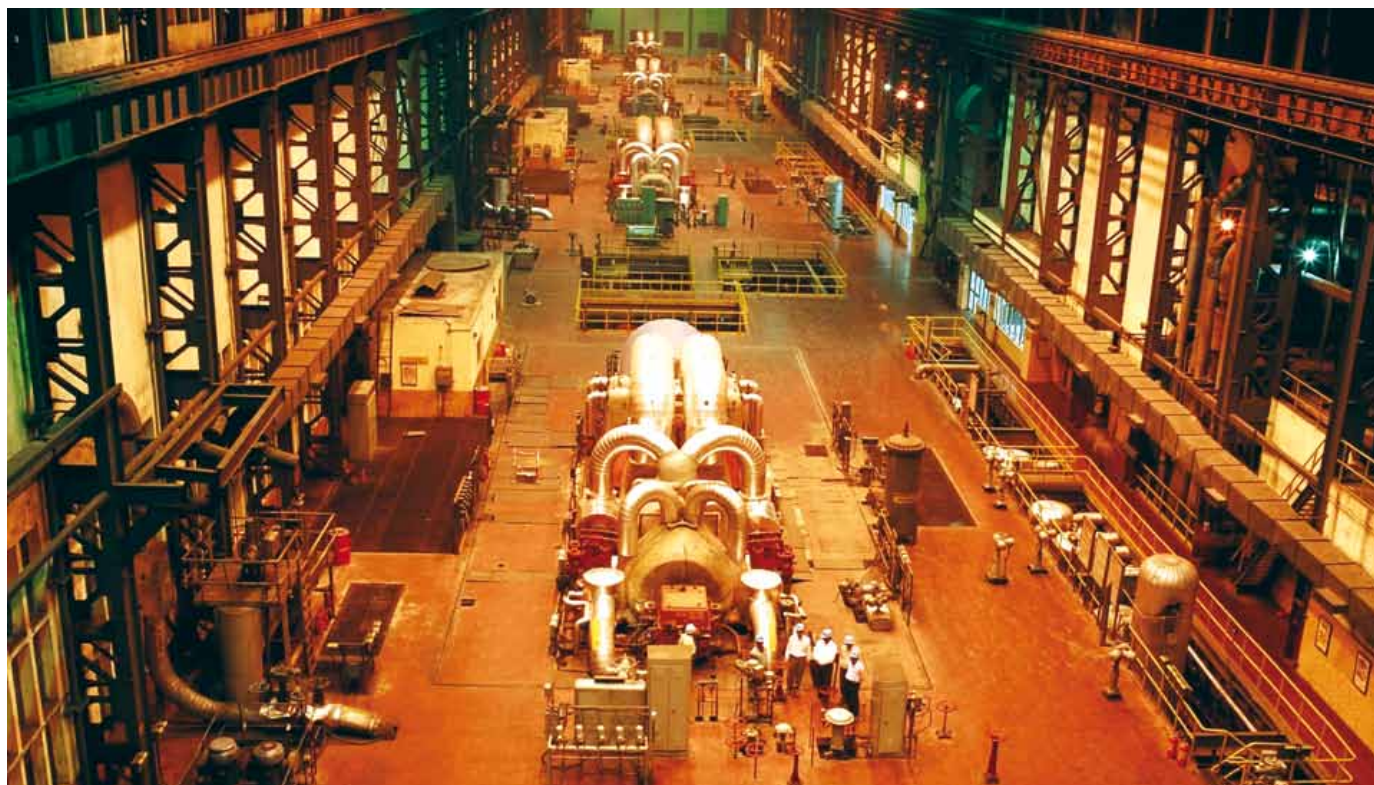
During the 12th Plan, for realization of large scale energy savings, it is proposed to take forward all the schemes so as to continue to achieve the energy savings due to the regulatory, financial, and facilitative activities by strengthening the existing schemes in industrial, commercial, residential and agriculture sectors as well as expanding and reaching out to new areas.

New schemes are also being proposed to promote research,

development, and deployment of identified energy-efficient products (which have potential to have large-scale impact on energy use) by public and private sector enterprises. It is also proposed to enhance the quantity and capacity of trained manpower for implementation of energy efficiency projects in industry, buildings, and power stations and implement utility based Demand Side Management (DSM) measures. New schemes are also being proposed to fast-forward the introduction of “Super-Efficient Equipment Programme (SEEP)” like ceiling fans, LED tube lights and bulbs which will be incentivized so as to accelerate their development and adoption to enable lower the rate of growth of electricity demand while enhancing services to households.

Initiatives to promote energy conservation activities including innovative fiscal instruments and policy measures like the Partial Risk Guarantee Fund (PRGF) and Venture Capital Fund for Energy Efficiency (VCFEE), Public Procurement of energy efficiency goods and services, etc are also being introduced under National Mission for Enhanced Energy Efficiency (NMEEE). PGRF will promote entry of domestic financial institution in the Energy Efficiency financing market through risk sharing mechanism lowering the risk to the lender by substituting part of risk through guarantees. VCFEE would provide risk capital support to energy efficiency investments in the form of equity in companies and/or energy efficiency projects implemented under performance contracting mode.

Through these proposed activities, it is anticipated that an avoided peak capacity of 12350 MW would be achieved in the 12th Five Year Plan.



A view of NTPC's Tanda Thermal Power Station

RENOVATION AND MODERNISATION OF THERMAL POWER STATIONS

Renovation & modernization (R&M) is seen as a cost-effective option to maximise generation from the existing thermal power stations and better asset management. R&M, as a structured programme, was first taken up in September 1984 for execution during the Seventh Plan. The programme had since been continuing with varying degree of success. In the initial phase up to 9th Plan period there had been significant improvement in plant performance resulting in increased generation, however, there has been limited success thereafter.

1.0 R&M PROGRAMME DURING 11TH PLAN

During the 11th Plan period, LE works on 10 units (1024 MW) had been completed in state sector. In central sector life extension works on 3 units of Anta Gas Turbine of NTPC (3x89 MW) had also been completed. Similarly, R&M works on 20 units (4485 MW) in state sector, 2 units (350 MW) of DVC and 37 units (10030 MW) of NTPC under central sector had been completed (details furnished below).

Sl. No.	Particulars	State sector		Central sector		Total (State + Central)	
		No. of units	Capacity (MW)	No. of units	Capacity (MW)	No. of units	Capacity (MW)
A)	LE works						
1.	Completed during 11 th Plan	10	1024	3	267	13	1291
B)	R&M works						
2.	Completed during 11 th Plan	20	4485	39	10370	59	14855
	Total	30	5509	42	10637	72	16146

2.0 R&M PROGRAMME DURING 12TH PLAN (2012 - 2017)

Break-up of LE and R&M works of 29367 MW, identified during 12th Plan in terms of Central/State sector-wise is furnished below :

Sl. No.	Particulars	Revised Tentative LE/ R&M works during 12th Plan on account of slippage from 11th Plan		Total (State + Central Sector)
		State Sector	Central Sector	
		No. of units & capacity (MW)	No. of units & capacity (MW)	
1	2	3	4	5
1.	LE	38 (6820)	32 (5246)	70 (12066)
2.	R&M	20 (4150)	45 (13151)	65 (17301)
	Total	58 (10970)	77 (18397)	135 (29367)

2.1 Achievement of LE programme during the 12th Plan up 31st January 2013: During 12th Plan, LE works have

been completed in 1 units in the state sector as details furnished below:-

State Sector (1 No. of unit)

1. Bathinda TPS Unit – 3 (110 MW) - Synchronised on 05.08.2012.

Central Sector (1 No. of unit)

2. Kawas GT- 1 (106MW) - Synchronised on .21.01.2013.

Sub total (LE) - 2 Unit (216 MW)

- #### 2.2 Achievement of R&M Programme during the 12th Plan up 31st January 2013: During 12th Plan, R&M works have been completed in 2 units in the state sector as details furnished below:-

State Sector (2 Nos. of units)

1. DPL TPS Unit – 6 (110 MW) - Synchronised on 07.05.2012.
2. Patratu TPS Unit – 10 (110 MW) - Synchronised on 24.05.2012.

Central Sector (1 no. unit)

1. Tanda TPS Unit - 2 (110 MW) - Synchronised on 15.09.2012

Sub total (R&M) - 3 Units (330 MW)

Total (LE and R&M) - 5 Units (546 MW)

- #### 2.3 Expected achievement during remaining period of 2012-13 upto March 2013.

LE works on following units are likely to be completed:

1. Muzaffarpur TPS unit no. 1 (110MW)

R&M works on following units are likely to be completed:

1. Patratu TPS unit no. 9 (110 MW)

3.0 EXTERNAL CO-OPERATION FOR R&M OF TPS

World Bank and KfW-Germany have provided an aid for energy efficiency R&M of coal based thermal units at few identified thermal power stations in India. Also, JCOAL (Japan) have shown interest to take up R&M related activities in India.

3.1 KfW funded EE R&M Programme

Under Energy Efficiency R&M Programme, KfW Development Bank-Germany has provided a soft loan of Euro 90 million for the implementation of Energy Efficiency R&M works at two units of 210 MW viz. Unit-3 of Nasik TPS of Mahagenco and Unit-3 of Kolaghat TPS of WBPCL.

In addition to the above, KfW has also provided a grant of Euro 1.3 million for preparation of feasibility reports/

Detailed Project Report (DPR) to identify & finalize the scope of R&M/LE works for the following seven(07) units:

- i) Nasik TPS, U-3 (210 MW) of Mahagenco.
- ii) Kolaghat TPS, U-1,2 & 3 (3x210 MW) of WBPDC.
- iii) Bokaro 'B' TPS, U-1, 2 & 3 (3x210 MW) of DVC.

The final DPRs prepared by M/s Evonik in respect of Unit-3 of Nasik TPS and Unit-1,2&3 of Kolaghat TPS has been accepted by MAHAGENCO and WBPDC respectively. The final DPRs in respect of Unit-1of Bokaro 'B' TPS was prepared in March,2012 and sent to DVC for their acceptance. The acceptance of DVC is still awaited.

3.2 Coal-Fired Generation Rehabilitation Project Funded by World Bank.

The World Bank has financed the "Coal-Fired Generation Rehabilitation Project" for demonstrating Energy Efficient Rehabilitation and Modernization (EE R&M) of coal fired generating units. The project is funded through IBRD loan of USD 180 million and GEF grants of USD 45.4 million. The project has two components:-

Component-1. Energy Efficiency R&M at Pilot Projects

This component would fund Energy Efficient R&M of 640 MW capacity comprising Bandel TPS Unit-5(210 MW) of WBPDC, Koradi TPS Unit-6(210 MW) of Mahagenco and Panipat TPS Unit-3&4 (2x110 MW) of HPGCL. The World Bank has earmarked USD 180 million of IBRD loan and USD 37.9 million of GEF grants for the Component-1.

Component-2. Technical Assistance to address Critical Barriers to EE R&M

The Technical Assistance component of the project is aimed at providing support in implementation of EE R&M pilots, developing a pipeline of EE R&M interventions, addressing barriers to EE R&M projects and strengthening institutional capacities of implementing agencies for improved operation and maintenance practices. The World Bank has earmarked US \$ 7.5 million GEF grant for the Component-2.

3.2.1 World Bank funded EE R & M Pilot Projects

i) Bandel TPS, U-5

R&M project at Bandel TPS,U-5 consists of four package i.e. BTG, BOP, CHP & Electrical System packages. BTG package has been signed with M/s Doosan Heavy Industries & Construction (DHIC) on February 29, 2012. For CHP package, contract was signed with M/s Vinar systems on 03.01.2013. For AHP Package bid evaluation is in process. For Electrical system, the contract was signed with M/s Alstom T&D India Ltd. on 28.12.2012.

ii) Koradi TPS, U-6

R&M project at Koradi TPS, U-5 consists of three package i.e. BTG, Electrical & BOP packages. Bids (2nd stage) were opened on 23-08-2012 and bid evaluation report has been completed and the same is being reviewed at Head Quarter,Mahagenco.

For Electrical Package LOA issued to M/s ABB Ltd on March 19, 2012.For BOP Package, LOA has been issued to M/s Tecpro Systems Ltd. on July 16, 2012.

iii) Panipat TPS, U-3 & 4

In view of past experience of R&M of U-1&2 and high sensitivity of returns on Station Heat Rate (SHR), HPGCL has requested World Bank to consider foreclosure of the Loan Agreement. However, in line with the discussion held with World bank team on 16-07-2012, HPGCL would like to avail the unutilized GEF Grants to the tune of ₹497.65 lacs for carrying out assessment of O&M practices.

3.2.2 Technical Assistance to CEA

The World Bank is providing technical assistance of US\$ 1.1 million as a part of GEF grant under "Coal Fired Generation Rehabilitation Project-India" to CEA for addressing the barriers to Energy Efficient R&M in India. The scheme would be implemented through appointment of consultants for carrying out the following studies:

S. No.	Consultancy Services	Status
1.	Implementation Support Consultancy (ISC)	M/s ABPS Infrastructure was appointed as ISC on 28.10.2010 for assisting CEA in implementing the project. The contract period of ISC has been extended up to March, 2014.
2.	Study on Review of institutional capacity and Strengthening of Institutional capacity at CEA	M/s KPMG have been appointed to carry out the study on 16-07-2012. They have submitted the Inception Report. The Inception Workshop was held in October,2012 in CEA.
3.	Study on Reduction of Barriers for implementation of EE R&M projects in TPS in India	M/s Mercados Energy Market India has been appointed as a consultant w.e.f. 24.04.2012. They submitted two draft guidelines i.e.'Risk identification & mitigation measures in R&M projects' and 'Early identification of potential technical surprises & way of addressing them'.
4.	Study on Developing Markets for implementation of R&M schemes in TPS	M/s Mercados Energy Market India has been appointed as a consultant w.e.f. 14.05.2012. They have submitted the draft report on "Estimation of R&M potential in India during XII and XIII Five Year Plan" in January 2013.
5.	Study on Review of Experience from Pilot R&M projects interventions in TPS in India	M/s WAPCOS Ltd. has been has been appointed as a consultant w.e.f. 23-07-2012. M/s WAPCOS submitted inception report on 06-09-2012.

3.3 Financial Assistance by World Bank under GEF Grant for 12th Five Year Plan

World Bank has provided GEF Grant for various studies viz. Project Design, Environment Audit & Due Diligence (EADD) and Rapid Social Assessment (RSA) for R&M/LE works under 12th Five Years Plan at various thermal units of Mahagenco. The units of Mahagenco proposed for

above mentioned studies are:

- i) Units-1&2 (2x210MW) of ChandrapurTPS.
- ii) Unit-2 (210 MW) of Bhusawal TPS
- iii) Unit-3 (210 MW) of Parli TPS.

Rapid Social Assessment Study (for three plants Chandrapur, U-1&2, Bhusawal U-2 & Parli U-3): Final RSA report was submitted by the consultant on 02.07.2012. Based on the discussions with World Bank officials held on 30.07.2012 at MSPGCL Head Office, the RSA reports are to be modified. Accordingly, the final RSA report for Bhusawal TPS has been submitted 11.01.2013.

Chandrapur TPS, Unit - 1 & 2

- a) Design Consultant : Contract was signed on 11-10-2010 with M/s Energo. RLA and Energy Audit has been completed and reports are being finalized by the consultant based on the comments received from the CSTPS. DPR with Options is under preparation. The contract is extended up-to 10.05.2013.
- b) EADD Report: Contract was signed on 12-10-2010 with M/s Ernst & Young Ltd. The consultant have submitted the revised final EADD Report to CSTPS.

Bhusawal TPS, Unit-2

- a) Design Consultant: Contract was signed on 14-06-2011 with M/s Energo. RLA study is completed. Energy Audit Report & Assessment Report of all systems are being reviewed and expected to be completed shortly. The DPR with various options is under preparation.
- b) EADD Report: Contract was signed on 17-06-2011 with M/s Enzen Global Solutions Pvt. Ltd. Final EADD Report has submitted on 25-05-2012. Modified final report is received.

Parli TPS, Unit-3

- a) Design Consultant: Contract was signed on 05-09-2011 with M/s Energo. RLA study & Energy audit completed and report are received. These reports are being reviewed by PTPS. Assessment report of all systems is under progress and is expected to be completed shortly. DPR corrections/finalization is under process.
- b) EADD Report: Contract was signed on 05-08-2011 with M/s Enzen. The revised report received by Parli TPS and forwarded to World Bank on 05.11.2012.

3.4 Development of the Tendering Procedures and Model Contract for the R&M of Fossil Fuel Based Power Plants in India.

Under Indo-German Energy Forum (IGEF), standardization of tendering procedures and preparation of the model documents / templates of contract for the R&M of Fossil Fuel Based Power Plants in India have been taken up. The work was envisaged to be carried out in two phases. Under Phase - I, a report on assessment of

tendering procedures being followed by Power Utilities for R&M projects in India was prepared by GTZ through consultant-M/s Evonik. To carry out the Phase - II CEA have appointed M/s Lahmeyer International (India) Pvt. Ltd. as a consultant. The contract between CEA & M/s Lahmeyer was signed on 16-03-2012. M/s Lahmeyer has submitted Inception Report. They have also submitted revised draft Model Feasibility Report and revised draft RLA/ CA document.

3.5 Japan-India co-operation for Pre-Primary study of Efficiency and Environmental improvement of Coal fired stations.

A MOU between Central Electricity Authority and Japan Coal Energy Centre (JCOAL) for preliminary study of Efficiency and Environment improvement study in coal fired power plants was signed on 30.4.2010 to carryout necessary diagnostic activities in few candidate coal-fired power plants pertaining to Energy Efficient Renovation & Modernisation works and finding out measures to overcome barriers for promoting R&M, towards carrying out efficiency and environmental improvement of coal-fired power plants in India. Accordingly studies were taken up in Ukai and Wanakbori TPS (GSECL), Ramagundem STPS (NTPC) and Vijaywada TPS (APGENCO) for pre – primary studies. After Pre-Primary Studies, JCOAL finalized 3 units viz., Vijaywada TPS Unit-1 (210MW) of APGENCO, Wanakbori TPS Unit-1 (200 MW) of GSECL and Kahelgaon STPS Unit-2 (210 MW) of NTPC for full-fledged diagnosis. The final report had been submitted.

The 2nd Phase MOU between CEA and JCOAL has been signed on 11.06.2012 for carrying out detail diagnostic study for energy efficiency oriented R&M activities in three nos. of units viz. Durgapur TPS unit no.4 (210 MW LMZ Unit) and one unit each from Badarpur TPS and Unchahar TPS were selected for studies. JCOAL team visited these stations during December, 2012. A workshop was held on 27.11.2012 on “Project on Efficiency and Environmental Improvement of Coal Fired Power Stations-Towards sustainable, stable and low carbon supply of electricity

3.6 JICA

A study on Renovation & modernization complete replacement of State sector old inefficient coal based thermal power station in India was assigned to JICA by Government of India in respect of the following State sector power station:

- a) Obra A TPS Unit No. 1 to 8 (U.P) – complete replacement.
- b) Satpura TPS Unit No. 1 to 5 (M.P) – complete replacement.
- c) Bhusawal TPS Unit No. 2 & 3 (Maharashtra) – complete replacement.
- d) Parli TPS Unit No. 3 to 5 (Maharashtra) – complete replacement or R&M.

JICA had conducted site visit in the month of March-April 2012 in above all the TPS and the Final Report of their observation has been submitted on 21.06.2012.



Mundra Thermal Power Project (4x300+5x660 MW) of Adani Power Limited

PRIVATE SECTOR PARTICIPATION IN POWER SECTOR

1.0 POLICY ON PRIVATE SECTOR:

Ministry of Power recognizes the fact that private investors have important role to play in the power sector growth map of India. The stipulation under section 63 of Electricity Act 2003 has provided impetus to the participation of private sector in Generation and Transmission. Provision of open access and tariff framework under Tariff Policy has been put in place to create an enabling environment for the private investors.

2.0 RESPONSE FROM THE PRIVATE SECTOR:

The private investors have responded to the policy initiatives very positively. As a result, a capacity of 5495 MW has already been commissioned (till 30.11.12) out of the targeted capacity of 7180 MW during 2012-13.

3.0 MAJOR POLICY INITIATIVES TO STREAMLINE THE PROCESS OF PROJECT DEVELOPMENT:

To accelerate capacity addition several policy initiatives have been undertaken by Ministry of Power. Some of the prominent policies which have boosted the private players' confidence in the sector are:

- National Electricity Policy.
- Ultra Mega Power Project Policy.
- Mega Power Policy (withdrawn after 19.07.2012).
- Tariff Policy.
- New Hydro Policy 2008

3.1 Captive Power Plants:

The Electricity Act, 2003 does away with the requirement of approval / clearance of any authority for setting up a captive generating plant. The new law (as amended) also ensures non-discriminatory open access for transmission

of electricity generated from a captive generating plant to the destination of its use, subject to availability of transmission capacity. The surcharge and cross subsidies are being progressively reduced in a manner as may be specified by the State Regulatory Commission. Any person setting up a captive power plant can also establish and maintain dedicated transmission lines.

3.2 Open access to transmission:

Under the new Electricity Act, 2003, non-discriminatory open access in Transmission and Distribution has been envisaged. The move is intended to encourage competition amongst generators and distributors and trading in power from surplus to deficit regions.

3.3 Generating Company permitted to distribute electricity in Rural Areas:

Section 14 of the Electricity Act, 2003 allows any generator of electricity to distribute electricity in a rural area without the requirement of any license, subject to compliance with the measures as may be specified by the Central Electricity Authority under Section 53. Under the provisions of Section 4 of the Act, the Central Government, in consultation with the State Governments, has prepared and notified a National Policy, facilitating stand alone systems (including those based on renewable sources of energy and other non-conventional sources of energy) for rural areas.

3.4 Automatic approval for FDI:

Automatic approval (RBI route) for 100% foreign equity is permitted in generation, transmission, and distribution and trading in power sector without any upper ceiling on the quantum of investment.





2340MW Kahalgaon Power Station of NTPC in Bihar

INTERNATIONAL COOPERATION

INTERNATIONAL COOPERATION

IC Division works for enhancing Cooperation with various countries in the Power Sector. During 2012-13, Minister level visits were undertaken to USA, Turkey, Germany and Switzerland. Further, active interest has been taken in enhancement of Cooperation with Bangladesh, Bhutan, Canada, China, Myanmar, Nepal, Sri Lanka, Germany, Japan, United States of America, European Union, SAARC, BIMSTEC and International Energy Agency.

Representatives of many countries regularly visit Ministry of Power, which demonstrates their confidence in the policies of our sector.

BILATERAL COOPERATION:

Bangladesh

Government of India has signed an MoU with Government of Bangladesh on 11.01.2010 to enhance bilateral cooperation in Power Sector. Pursuant to signing of an MoU between Government of India and Government of Bangladesh for Cooperation in Energy Sector, NTPC signed an MoU for Cooperation in Power Sector with Bangladesh Power Development Board (BPDB) on 30.08.2010 which, inter alia, includes possibility of setting of a 1320 MW coal based power project in Bangladesh, through a 50:50 Joint Venture company "Bangladesh India Friendship Power Company Ltd." between NTPC and BPDB. A site at Khulna has been identified by BPDB for development of a 1320 MW power project, based on imported coal.

The MoU on Energy Cooperation signed between Government of India (GoI) and Government of Bangladesh (GoB) contained a portion for supply of power from India to Bangladesh. NTPC Vidyut Vyapar Nigam Ltd. (NVVN) has been designated as a nodal agency for cross boarder trading of power with Bangladesh by Ministry of Power, Government of India. PPA has been signed between NVVN and BPDB on 28th February 2012 for supply of 250 MW power to Bangladesh from unallocated quota of Govt. of India from central generating stations. Further, NVVN has furnished master agreement for additional 250 MW power to BPDB from Indian electricity market. The interconnection between the electrical grids of India and Bangladesh would facilitate transfer of 500 MW power in either direction. The details on the interconnection link between India and Bangladesh have been finalized. The Indian portion would be executed by Power Grid, while the Bangladesh portion would be executed by Power Grid Company of Bangladesh Ltd. (PGCB). The project is likely to be completed by July, 2013.

The last Indo-Bangladesh Joint Working Group meeting was held on 30.01.2013 and Joint Steering Committee meeting was held on 31.01.2013 in Dhaka, Bangladesh.

Bhutan

The Indo-Bhutan Energy cooperation aims to strengthen energy security, promote stable energy markets and manage Green House Gas emissions. The cooperation continues to promote adequate energy and affordable supplies to support sustained economic growth while addressing relevant environmental concerns through activities leading to increased trade and investment and the deployment of clean and efficient technologies.

About 1400MW power from the existing hydro projects in Bhutan e.g. Chukha HEP (336 MW), Kurichu HEP (60 MW) and Tala HEP (1020 MW) is being imported to India through following transmission lines of POWERGRID (Indian portion) :

- Chukha HEP - Birpara 220kV 3 circuits
- Kurichu HEP - Geyleghug - Salakati 132kV S/c (Geyleghug – Salakati section is under POWERGRID)
- Tala HEP- Siliguri 400kV 2xD/c

As per the MOU signed between Govt. of India and Royal Govt. of Bhutan in December, 2009, 10 no. of hydro projects with the total capacity of about 11,000MW are to be developed in the different basins of Bhutan progressively by 2020. These projects are to be developed either as inter-governmental model or as a JV of PSU in India and corresponding organization in Bhutan. The DPRs of the above generation projects are being prepared by NTPC, NHPC, SJVNL, THDC, WAPCOS etc. Among the future generation projects in Bhutan, **Punatsangchu-I(1200 MW)** is the first project and like to come up in **March'15**.

Myanmar

India has been assisting Myanmar for the development of its hydro potential. Designing and Engineering of Sedawyagi HE Project (25MW) was provided by India. In additional, Tamanthi MPP (1200MW) and Shwezaye (642MW) hydroelectric projects have been identified as mutual benefit projects between India and Myanmar. NHPC has submitted final DPR of Tamanthi (1200 MW) project on 07/10/2011 and the final DPR of Shwezaye (660 MW) project has been submitted by NHPC on 30/04/2012.

Nepal

India has been assisting Nepal in the development of its hydro power potential and four HE schemes viz., Pokhara (1MW), Trisuli (21MW), Western Gandak (15MW) and Devighat (14.1MW) have been implemented with India's assistance. In addition, four major water resources projects in Nepal viz., Pancheshwar (5600MW), Saptakoshi (3300MW), Naumure (225MW) and Karnali (10800MW) are under discussion at various levels as mutual interest projects. Two more projects viz., Upper Karnali HEP (300MW) and Arun III HEP (900MW) are under development by Indian CPSUs/IPPs.

The Implementation and Transmission Service Agreement (ITSA) has been also signed between Nepal Electricity Authority (NEA) and Cross Border Transmission Company (CPTC) and NEA and Power Transmission Company Limited (PTCN), Nepal. The Share holder agreement (SHA) for the Indian portion amongst PGCIL, SJVN, IEDCL, NEA & CPTC was signed on the 9th July '12. For the Nepal portion amongst NEA, PGCIL, IEDCL & PTCN, Share Holder's Agreement (SHA) was also signed on the 9th July '12.

Power Sale Agreement (PSA) between NEA and PTC has been signed for import of 150MW for 25 years. For initial 5-7 years, it is estimated that Nepal will have a power deficit to the tune of 200-300 MW and this shortfall is likely to be met by import from Indian Electricity market through the 400kV Muzaffarpur-Dhalkebar D/C line to be initially operated at 220 kV. In the next 7-10 years, hydro power projects in Nepal such as Upper Marsyangdi (600MW) Upper Karnali (900 MW), Arun-III (900MW), Tamakoshi (800 MW) etc., are likely to be materialized. NEA would have huge surplus for export to India after meeting their internal load demand. In order to evacuate and transfer of power to India, additional high power density 400kV AC (Quad) cross border links in Upper Karnali- Berilly, Upper Marsyangdi – Gorakhpur, Arun-III- Muzaffarpur, Butwal-Gorakhpur corridors are being planned to be developed, matching with the commissioning of the above hydro projects in Nepal.

Sri Lanka

A Joint Venture Agreement between NTPC and CEB to set up a 2x250 MW Coal based power project in Trincomalee, Sri Lanka, was signed on 6th September 2011 in Sri Lanka. A Joint Steering Committee has been constituted at the level of Power Secretaries of India and Sri Lanka. The first meeting of India-Sri Lanka JSC was held on 6th September 2011. Power Purchase Agreement (PPA), Implementation Agreement (IA) and Board of Investment (BoI) Agreements have been finalized and IA and BoI have been approved by Trincomalee Power Company Ltd. (TPCL) on 27th June, 2013. There is significant progress for inter grid connection between India and Sri Lanka. Power Grid has completed the technical part of the Feasibility Study report including route, BOQ and estimated cost.

United States of America

India and US had agreed in 2005 to have an Indo US Energy Dialogue (co-chaired by Deputy Chairman, Planning Commission of India and the US Energy Secretary). Following this, five Working Groups under the Energy Dialogue have been constituted. i) Oil and Gas ii) **Power and Energy Efficiency** iii) Coal iv) Non-Conventional and Renewable Energy v) Civil Nuclear Energy. **Ministry of Power is leading the Working Group on Power and Energy Efficiency.** Four meetings of the Working Group have been held so far.

The Power & Energy Efficiency Working Group (PEEWG) meeting was co-chaired by U.S. Department of Energy (DOE), Deputy Assistant Secretary, Dr. Phyllis Yoshida and Joint Secretary, Indian Ministry of Power, Ms. Jyoti Arora on 25th September, 2012 followed by Indo-US Energy Dialogue on 27th & 28th September, 2012 in Washington DC.

During the US-India Energy Dialogue, JS(IC) also participated in the summit devoted for Industry Round Table on 27.09.2012 on 'The Changing Calculus of Energy Security'.

An MoU on Clean Energy, Energy Security and Climate Change has been signed on 24th Nov. 2009. The MoU has identified bilateral cooperation areas - energy efficiency, smart grid, clean coal technologies including CCS, sustainable transportation, bio fuel and solar energy.

PACE-D: In pursuance of MoU on clean energy, energy security and climate change, a Partnership Agreement was signed between USAID and Government of India on 30.09.2010 for "Energy Efficiency Technology Commercialization and Innovation Project". Ministry of Power and USAID are jointly working on Partnership to Advanced Clean Energy Deployment (PACE-D) programme. The five year bilateral program, PACE-D has been awarded by USAID to M/s Nexant Inc on 30th May 2012.

The key highlights of the PACE-D programme are improving Industrial Efficiency, providing support to BEE on PAT scheme, improving the penetration of waste heat utilization, supporting BEE in ECBC update with the vision to move to Net Zero Energy Building, support design and implementation of interoperability standards for smart grid technologies and capacity building via workshops and training, identification of advanced Heat Ventilation and Air Conditioning technologies, capacity building and Institutional and Policy development of two states, heat rate improvement in two utilities and development of a concept of model power plant.

The PACE-D programme has already been launched. Four executive committees have been set up for coordinating the work plan under the agreement. A project advisory committee has been set up to continuously review the project implementation and provide oversight and policy inputs.

PACE-R: Department of Bio-technology is coordinating the implementation of MoU from the Indian side. Research areas in Energy Efficiency of Buildings, second generation bio-fuels, and solar energy are under discussion.

Distribution Reform Upgrade Management (DRUM) Programme:

Distribution Reform Upgrade Management (DRUM) Program, a collaborative initiative of Ministry of Power, Government of India and USAID, India had three primary components (i) Capacity building and Training (ii) Development of Pilot projects and (iii) Experience sharing with Rural Utility Services (RUS), US.

While the Pilot projects and RUS components have closed, the Training component which has institutionalized capacity building in distribution sector in the country has been extended up to March '13.

Keeping pace with the technology advances and objectives of the ongoing R-APDRP program of Government of India, the Training component is now focusing on developmental activities covering Business Process Re-Engineering, Smart Grid and Distribution system Equipment training and

operation. As part of the developmental activities, Study trips to showcase technical advances in Smart Grid application are being arranged for exposure to distribution utilities to enable them to reorient the organization processes and procedures so as to adapt to the changing requirement and improve operational efficiency.

NETL-NTPC Strategic Partnership: Collaboration was proposed between NTPC's NETRA and USDOE's National Energy Technology Laboratory (NETL). For this purpose, NTPC, CMD had visited NETL which was followed by the visit of NETL's experts to NTPC. Subsequent to the above, a draft MOU between NTPC and NETL was exchanged. Draft MOU broadly covered assistance of NETL in setting up lab facilities in NTPC's NETRA generally covering development of clean coal technologies.

During INDO-US working group meeting two projects have been identified for collaboration.

- (i) Computational Fluid Dynamics (CFD)-Artificial Neuro Network (ANN) Modelling.
- (ii) Optical and Thin film sensor development.

Building Business-to-Business relationships between US and India for the Energy Service Companies: The India side had conveyed that the US ESCOs could collaborate with EESL or Energy Service Companies (ESCOs).

Smart Grid Technology: Smart Grid Knowledge Centre is planned to be set up under initiative of India Smart Grid Task Force (ISGTF). Smart Grid Pilots are being undertaken under ISGTF initiative. The Request for Proposal (RfP) was prepared mainly by POWERGRID team, in consultation with US consultant. National Wide Area Measurement System Plan is under preparation by PGCIL.

Energy Efficiency Technology Cooperation: US and India are participating in the SEAD (Superefficient Equipment Appliances Deployment) program. Under this initiative many equipment have been taken under various taskforces and the first SEAD equipment i.e., Colour Television have been put under the Global Energy Efficiency Award.

European Union (EU)

At the 5th India-EU Summit held in November, 2004 India and EU agreed to set up a Joint Energy Panel with a view to coordinate their actions in the field of energy and all related fuel chains. The Panel is co-chaired by the Foreign Secretary from Indians. The Panel met for the first time in Brussels. The energy panel has following 5 Working Groups.

- (i) Coal.
- (ii) Clean Coal Technologies.
- (iii) Energy efficiency and renewable energies.
- (iv) Fusion energy including India's participation in IETR.
- (v) Petroleum and Natural Gas.

Out of above, Working Groups on Clean Coal Technologies and Energy efficiency and renewable energies are related to

Ministry of Power. The last meeting of Indo-EU Working Group on energy efficiency and renewable energy was held on 7th September, 2011 at Madrid. The Working Group have zeroed-in on the following potential areas of cooperation:

- a. Energy Efficiency in building sector.
- b. Energy Efficiency for SMEs.
- c. Super-Efficient Appliances.
- d. Smart Grid and Demand Side Management.

A joint working Group Meeting and workshop on Clean Coal Technology was convened on 31.01.2012 and 01.02.2012 in Delhi. Research Cooperation in the field of IGCC, Circulating fluidized bed combustion and advanced ultra-super critical power plants has been identified as way forward. An India – EU summit was held in New Delhi on 10th Fe.2012 wherein a joint declaration for enhanced co-operation on Energy was signed. The Joint Declaration covered the following areas related to Energy Efficiency :

- (i) Development and Deployment strategies for Clean Energy Production, inter alia, Clean Coal Technologies and Advanced Coal mining.
- (ii) Improved Energy Efficiency of products.
- (iii) Improved Energy Efficiency in the Buildings Sector.
- (iv) Development of Smart Power Grids, including the integraton of renewable energy sources.

Germany

The Indo-German Energy Forum (IGEF) aims at promoting cooperation in energy security, energy efficiency including energy conservation, renewable energy, investment in energy projects and collaborative research and development in identified areas taking into account the environmental challenges of sustainable development.

The Indo-German Energy Forum is co-chaired by Secretary (Power) from Indian side. So far five meetings of the Forum have been held. The 4th meeting was held in November, 2010 in India. The meeting deliberated on the reports of the four Sub-Groups and on-going activities of development and cooperation, permanent office of IGEF etc. The last meeting of the Indo-German Energy Forum was held on 13th February 2013 in Berlin, Germany.

Following four Sub-Groups have been constituted under the Forum:

1. **Sub Group-I:** Efficiency enhancement in Fossil Fuel based Power Plants [co-chaired by JS (Thermal)]
2. **Sub Group-II:** Decentralized Distributed Generation based on Biomass and other Renewable [co-chaired by JS, MNRE]
3. **Sub Group-III:** CDM Projects in Energy Sector and Demand Side Energy Efficiency [co-chaired by JS (EC)]
4. **Sub Group-IV:** Research Cooperation in the Energy Sector [co-chaired by JS, DST]

Out of these, the Sub-Group- I and III is led by Ministry of Power. Our emphasis is to increase the efficiency of our coal based power generation and to decrease the coal consumption and consequent CO2 emission per unit of electricity generated from these plants. The sub- Group- I of IGEF has undertaken activities in this direction. Excellence Enhancement Centre (EEC) for Indian Power Sector has been launched on 02.02.2012.

Besides improving the supply side efficiency, efforts have been undertaken to enhance efficiency in Demand Side Management for substantial energy savings, and reducing the emission intensity. The Sub- Group- III of IGEF focuses on various activities for improving energy efficiency in India.

The progress on sub-groups I & III under IGEF is as follows:

Sub-Group-I: The last meeting of the Sub-Group-I was held on 12th February 2013:

- **The Excellence Enhancement Centre (EEC):**
 - o EEC for Indian Power Sector has been launched on 02.02.2012. The EEC has been registered as a Society.
 - o EEC has been housed in CEA.
 - o The objective of EEC is to facilitate performance improvements especially with respect to efficiency and reliability in Indian power sector by promoting the deployment of most advanced solutions regarding technology, processes and personnel skills.
 - o As a “best practice platform” the EEC is functioning as a pacemaker and know-how hub in the power generation and transmission. The EEC would look into the complex operational problems arising from the power sector and will act as a focal point where latest state of the art technologies, problems and remedial actions can be shared effectively among power utilities and professionals.
 - o Workshops have been conducted in Delhi & Kolkata to spread the idea of the EEC, and staff has been trained with the support from VGB.
 - o The German Government has committed a Technical Assistance of upto Euro 1.66 million, in the form of services for smooth operation of EEC. The Technical Assistance is valid till 30th September, 2014.
- Contract between CEA and Lahmeyer International has been signed on 16.03.2012 for harmonization of tender documents for Renovation & Modernization of Thermal Power stations.
- Knowledge sharing in the areas of design, manufacture, operation and transfer of Ultra Super Critical Technology in India has been agreed;
- Techno-Economic feasibility of Flue Gas Desulphurization (FGD) in India will be worked out by NTPC, CEA and Hitachi.
- IGCC and Ultra Super Critical technology have been identified as future co-operation areas.

Sub Group-III: The last meeting of this Sub-Group was

held on 12.02.2013 in Germany prior to the IGEF meeting. Progress on various identified areas is as follows:

- **Energy Efficiency of Buildings :** An overview of German experience with incentive schemes and promotional activities to encourage enhanced building energy efficiency is under preparation. Further, a project concept was proposed by M/s EVI on “Creating a web-based information portal for promoting RE & EE building solutions in India”.
- **Networking Platform for Energy Efficiency in Indian Industries:** The possibility of creating Efficiency Enhancement Centres (EECs) for various Industry sub-sectors is being explored.
- **Utilization of Waste Heat Recovery in India:** A consultant is being appointed to conduct a market study for Waste Heat Recovery potential in India for improving energy efficiency of industries by Organic Rankine/Kalina process in India. The study will also identify market potential for various international waste heat recovery technologies in Indian context.
- **Trigeneration:** A TRIGEN plant has been inaugurated in Jai Prakash Narayan Apex Trauma Centre on 31st October 2012. A concept note on how to further disseminate the technology will be prepared.
- **Bridging the information gap on Energy Efficiency:** BEE agreed to work with the Wuppertal Institute of Germany on this initiative. The initiative aims at developing an international based knowledge platform in buildings, building related technologies and appliances. The platform will provide information on technical solutions, potentials and cost effectiveness of energy efficiency in buildings as well as information on policy instruments and good practices.
- Fraunhofer institute and TERI have jointly developed an Energy Performance assessment tool for calculating energy saving potential for various energy efficiency measures in the residential buildings in India.
- As far as cooperation in the ESCO area is concerned, work on two projects namely conducting of baseline studies in a scientific manner and standardization of documents for performance contracting which were identified as barriers for successful operationalization of ESCOs in India are underway and are at various stages of completion. A workshop with the German ESCO association was organised, some innovative models in terms of aggregation of project entities to have a viable benchmark has been suggested which can be experimented.
- The group has mutually decided to rename the Sub Group 3 as “Demand side energy efficiency and low carbon growth strategies” instead of CDM Projects in the Energy Sector and Demand Side Energy Efficiency in view of changed world situation of the CDM market.

Japan

An Indo-Japan Energy Dialogue (IJED) to promote cooperation in Energy Sector was set up in 2007. The Deputy Chairman, Planning Commission is the co-chair from the Indian side. The Ministry of Power is heading the Working Groups on “Energy Efficiency” and “Power Generation and Electricity”. Enhanced Indo-Japan bilateral cooperation in the Power Sector is the focus of this Energy Dialogue.

The 5th Meeting of the IJED was held in New Delhi on 30th April, 2012 under the co-chairmanship of Dr. Montek Singh Ahluwalia, Deputy Chairman of the Planning Commission of India and H.E. Mr. Yukio Edano, Minister of Economy, Trade and Industry of Japan. It was decided to intensify cooperation in energy efficiency and conservation sector as well as environmental issues. It was decided to consider the possibility of further cooperation in the establishment of statistics database in the sector concerned, including high energy consuming industries where energy consumption have been growing in India in recent years (transport sector). Both sides recognized the importance to closely cooperate in the development of infrastructure in the Electricity and Energy sector, such as deployment of highly efficient coal fired power generation, pumped storage power generation and power transmission system.

The 6th Meeting of IJED was held in Tokyo, Japan on 10th October, 2012. Prior to the 6th meeting of IJED, the Working Group meetings of “Energy Efficiency” and “Power Generation and Electricity” were also held in Tokyo, Japan on 9th October, 2012.

A Joint Statement on the Occasion of the 6th IJED between the Ministry of Economy, Trade and Industry of Japan and the Planning Commission of India was issued. Following cooperation areas in Energy Efficiency and Conservation were agreed:

- (i) Enhancement of the capabilities of Regional State Designated Agencies (SDA) to execute the Energy Conservation Act and the developments of guides for dissemination of total energy management systems in SMEs through the dispatch of experts and the acceptance of trainees.
- (ii) Technical support for setting up of Regional Energy Efficiency Centers (REEC) besides the already established Chennai center.
- (iii) Both sides agreed to study the possibility of further cooperation in establishing statistics in the sectors in India where consumption of energy has been growing including SMEs.
- (iv) Japan commended India's initiatives to promote Energy Conservation through PAT scheme. Both sides agreed for conducting vigorous activities under International Partnership for Energy Efficiency Cooperation (IPEEC) framework and praised the activities of Global Superior Energy Performance Partnership (GSEP) with the aim of promoting best practices and spreading high-efficient and low-carbon technologies in the industrial sectors (steel, cement and power) under public-private partnership.

Following cooperation areas in Power Generation and Electricity were agreed:

- (i) Both sides agreed to collaborate in the development of infrastructure in the electricity and energy sector such as deployment of high efficiency coal fired generation and development of pumped storage power generation, as well as electrical power transmission and distribution systems.
- (ii) Both sides welcomed the mutual cooperative efforts for the transfer of Clean Coal technologies and to consider the possibility of cooperation for the development of an Integrated Gasification Combined Cycle (IGCC) plant in India.

Canada

Indo-Canada bilateral cooperation in the power sector has taken off in a significant way through the signing of an MOU on cooperation in Energy during the visit of the Canadian Prime Minister in November, 2009. The MOU envisages enhanced cooperation in energy matters, renewable energy and energy efficiency, power generation, transmission distribution and end use, energy research and development, oil and natural gas. Subsequently, an Indo-Canada Energy Forum was held in New Delhi in May, 2010. The second meeting of Indo-Canada Energy Forum was held in New Delhi on 5th October, 2012. Following Working Groups have been formulated under Indo-Canada Energy Forum:

- (i) Clean Coal, Oil & Gas; &
- (ii) Electricity (including renewables and Energy Efficiency)

Following areas of cooperation have been identified by the Working Group:

Prospect of securing LNG from Canada, Development of shale gas sector, Small Hydro and Run of River Velocity Turbines and in the field of Grid integration of renewables.

China

Indian and the Chinese Prime Ministers have agreed to establish the Strategic Economic Dialogue (SED) during the Chinese Prime Minister's visit to India in December, 2010. In pursuance of this decision, the first India-China SED was held on 26-27 September 2011 in Beijing. The Dialogue was led by Deputy Chairman, Planning Commission from Indian side.

The 2nd India-China SED was held on 26 November 2012 in New Delhi. During this Dialogue, meetings on the following five working groups were held:

- (i) Working Group on Infrastructure (Railways);
- (ii) Working Group on Energy;
- (iii) Working Group on Environmental Protection (Energy Efficiency and Water);
- (iv) Working Group on Hi-Tech (ICT); and
- (v) Working Group on Policy Coordination.

The Working Group on Environmental Protection was led by JS(IC), Ministry of Power and the Working Group on Energy was

led by JS(IC), Ministry of New and Renewable Energy. During the 2nd India-China SED a Memorandum of Understanding (MoU) on Energy Efficiency was signed.

With this MoU, India and China agreed for cooperation in the area of energy efficiency that shall be beneficial to both countries and the main cooperation area shall be the development of energy efficiency programmes in which both countries may have mutual interest.

MULTILATERAL COOPERATION

Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC):

BIMSTEC has emerged as an important regional grouping for technical and economic cooperation. Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka and Thailand are the members of BIMSTEC. A virtual BIMSTEC Energy Centre is in operation at www.bimstecenergycentre.org w.e.f. August, 2007 with following objectives :

- (i) To create, manage and evaluate energy related data-base relevant to the region; and taking into view various on-going activities suggest a road map for meaningful intra-BIMSTEC Cooperation.
- (ii) To prepare and operationalize a framework for networking among the national level institutions in the region.
- (iii) To prepare the groundwork, such as feasibility studies, data collection etc. for intra-BIMSTEC energy related projects.
- (iv) To study, compile and disseminate the prevailing policies of the BIMSTEC member countries in different areas of energy sector.
- (v) To enhance cooperation for capacity building and sharing of experiences on best practices, including reforms, regulation and energy efficiency.

A memorandum of Association for setting up of BIMSTEC Energy Centre in India was signed on 22.01.2011 at Myanmar by the member States. A meeting of the Task Force for early operationalization of the Energy Centre and a site visit to Bangalore was held on 07.02.2011. The meeting was followed by a meeting of senior officials on energy on 08.02.2011 at New Delhi. As intimated by MEA, a JWG meeting on establishment of BIMSTEC Permanent Secretariat was held on May 30-31, 2011 at Dhaka. As requested by MEA, the Ministry of Power has submitted to them a Master Plan with the detailed Estimate of ₹15 Crores for establishment of permanent BIMSTEC Energy Centre at CPRI Campus, Bengaluru, with request to make available the funds towards capital expenditure. Based on some of the queries raised by MEA. The proposal has been revised by Ministry of Power and submitted to MEA for release of funds.

South Asian Association for Regional Co-Operation (SAARC)

SAARC was established in 1985. Meetings of the Technical Committee on Energy were held in 2002 and in 2003. Cooperation framework was restructured and five Working

Groups were constituted in 2004. One of the Working Groups is on Energy. Three meetings of the Working Group have been held in year 2004, in year 2005 and in year 2007. First SAARC Energy Ministers meeting and the Senior Officials Meeting were held in Islamabad in year 2005. Regional trade in energy and development of trans-national energy lines have emerged as focus areas for cooperation.

The fourth Meeting of SAARC Energy Ministers was held in Dhaka on 15th September, 2011 which was attended by Hon'ble Minister of Power. The seventh Meeting of the SAARC Working Group on Energy is scheduled to be held in on 15-16 March, 2013 in Sri Lanka.

International Energy Agency (IEA)

Secretary(Power) participated in the IEA Governing Board meeting in October, 2012 as a special invitee and took an intervention on "Meeting Growing Energy Demand Under Climate Constraints". In accordance with the Joint Statement, IEA held discussions with Ministry of Power on Energy Technology Perspective, 2012.

World Energy Council (WEC)

WEC India, functioning under the patronage of the Ministry of Power, is the country member of **World Energy Council (WEC)**, a global and inclusive body (estd.1923 with over 90 country members) for thought leadership and tangible engagement in the pursuit of sustainable supply and use of energy covering the entire energy spectrum from conventional to renewables.

Hon'ble Minister of Power is the Patron of WEC India and Secretary Power the ex-officio Chairman. The WEC India Secretariat functions under the aegis of NTPC with CMD NTPC as Member Secretary. **WEC India** is supported by all energy ministries and leading organisations in the energy sector. WEC India is gearing up to assume newer and greater roles in the Indian energy sector and the recast vision in alignment with this is "**to be the foremost energy think tank in the country and the voice of the sector**".

India Energy Congress, the flagship event of WEC India, is an annual apex congregation of energy professionals. The 5th edition of **India Energy Congress** was successfully held on 7th & 8th February, 2013 in New Delhi on the theme "**Securing Tomorrow's Energy Today: Policy and Regulation**". Over 300 delegates from across the sector participated in the Congress. The event drew significant international participation by way of speakers and delegates. The Congress was addressed by Hon'ble Minister for New & Renewable Energy, Dr Farooq Abdullah, Hon'ble Minister for Coal, Shri Sriprakash Jaiswal, Dy Chairman Planning Commission, Shri Montek Singh Ahluwalia and Minister of State for Power (Independent Charge), Shri Jyotiraditya M. Scindia.

The third World Energy Leaders' Summit (WELS), organized by WEC and co hosted by Ministry of Power, was held on 6th February 2013 in New Delhi, on the theme '**Energy Trilemma: How Can We Energise Social Innovation**'. WELS is an ongoing high level international dialogue on critical issues held twice a year, in countries of critical interest to the world energy

situation. Hon'ble Minister for New & Renewable Energy, Dr. Farooq Abdullah and Minister of State for Power (Independent Charge), Shri Jyotiraditya M. Scindia addressed WELS.

Carbon Sequestration Leadership Forum (CSLF)

The Carbon Sequestration Leadership Forum (CSLF) is a framework for international cooperation in Research and Development (R&D) for the separation, capture, transportation and storage of Carbon Dioxide. The CSLF seeks to realize the promise of Carbon capture and storage over the coming decades, making it commercially competitive and environmentally safe.

India's stand on Carbon Capture and Storage (CCS) is:

"India supports global efforts at R&D technologies aimed at reducing CO₂ emissions from coal-based industries. In this regard India supports R&D into CCS technologies which, at this time, still remain unproven. We have reservations as to its safety, cost, and permanence of CO₂ storage and consequence of leakages. However; India will continue to participate in Research and Development (R&D) activities and is willing to work on CCS technologies by deputing its scientists and engineers to sites in other countries where R&D into these technologies are being undertaken. We also support R&D into activities that seek to fix CO₂ convert it into productive uses."

India has signed the revised charter of CSLF, which emphasizes the Carbon Capture Use and Storage.

International Climate Change Negotiations

Subsequent to Conference of Parties (COP)-17 meeting at Durban, a delegation from Ministry of Power participated to the United Nations Framework Convention on Climate Change (UNFCCC) preparatory meetings at Bonn in May 2012 and at Bangkok in August, 2012 and assisted Ministry of Environment and Forests (MoEF) in strong representation from India in Climate Change negotiations. The Kyoto protocol has been extended beyond Dec.2012. The COP-18 meeting at Doha in November, 2012 resulted in bringing back the issue of Intellectual Property Right (IPR) in context of Technology development and transfer to the negotiating table. The hosting arrangement for operationalization of Climate Technology Centre and Network (CTCN) has been finalized.

International Funding

During 2012-13, following power projects are ongoing with international funding:

1. Generation Projects:

- a. 2* 800 MW Krishnapatnam TPP (1600 MW) / APPDCL / KfW (Euro 281.06 million).
- b. Keshang – I, II, III (195 MW), SawraKuddu (111 MW), Sainj (100 MW) and ShongtomKarcham (450 MW) HEPs / HPPCL/ ADB (tranches – I, II, III& IV) (USD 732.10 million) + KfW (Euro 150 million exclusively for ShongtomKarcham HEP).
- c. Pare HEP (110 MW) / NEEPCO / KfW (Euro 80 million)

- d. Rampur HEP (412 MW) / SJVNL / World Bank (USD 400 million)
- e. Vishnugad Pipalkoti HEP (444 MW)/ THDC/ World Bank (USD 648 million)

2. Renovation and Modernization of old thermal and hydro power stations:

- a. Coal Fired Generation Rehabilitation Project – Bandel (210 MW) / WBPDC and Koradi (210 MW) / MSPGCL/ World Bank (USD 180 million) + GEF grant (USD 45.4 million).
- b. R&M of 6 HEPs in Uttarakhand – Tiloth (90 MW), Chibro (240 MW), Khodri (120 MW), Dhakrari (33.75 MW), Dhakuyor (51 MW) and Kulhal (30 MW) / PFC- UJVNL / KfW(Euro 103.59 million).

3. Transmission and Distribution Projects :

- a. Power Sector Development Project – IV / PGCIL / World Bank (USD 600 million)
- b. Additional Financing for Power Sector Development Project – IV / PGCIL / World Bank (USD 400 million)
- c. Power Trans. Sector Project – III / PGCIL / ADB (USD 400 million)
- d. Power Trans. Sector Project – IV / PGCIL / ADB (USD 400 million)
- e. Power Trans. Sector Project – V / PGCIL / ADB (USD 200 million)
- f. Transmission System Modernization in Hyderabad / APTRANSCO / JICA (JY 23697 million).
- g. Assam Power Inv. Enhancement Project / ASEB / ADB (USD 200 million)
- h. Bangalore Distribution Upgradation Project / BESCOM / JICA (JY 10643 million)
- i. Bihar Power System Improvement Project / BSEB / ADB (USD 132.20 million)
- j. Haryana Power Sector Development Programme / HVPNL+ DHBVNL / World Bank (USD 330 million).
- k. EHV Transmission System in Haryana / REC+ HVPNL / JICA (JY 20902 million)
- l. High Voltage Distribution System in Haryana/ REC + UHBVNL / KfW (Euro 70 million)
- m. Gujarat Solar Power Transmission Project / GETCO / ADB (USD 100 million)
- n. H.P. Clean Energy Transmission Project / HPPTCL / ADB (USD 150 million)
- o. M.P. Power Sector Investment Programme Tranche- I & III/ MPPTCL / ADB (USD 250 million)
- p. M.P. Power Sector Investment Programme Tranche- II, IV, V & VI/ Discoms- East, West and Central / ADB (USD 370 million)

- q. M.P. Transmission System Modernization Project/ MPPTCL / JICA (JY 18475 million).
 - r. M.P. Energy Efficiency Improvement Invest. Programme (Feeder Separation Programme) / Discoms - East, West and Central / ADB (USD 400 million)
 - s. Maharashtra EHV Transmission System / MSETCL / JICA (JY 18475 million)
 - t. Uttarakhand Power Sector Inv. Programme Tranche- II, III/ PTCUL/ ADB (USD 93 million)
 - u. Tamil Nadu Transmission System Improvement Project/ TNEB/JICA (JY60740 million)
- 4. Rural Electrification projects:**
- a. Rural Electrification Programme in A.P, M.P. and Maharashtra / REC / JICA (JY 20629 million)
 - b. A.P. Rural High Voltage Distribution System / APTRANSCO+ Discoms / JICA (JY 18590 million).
 - c. Rural Clean Energy Development Project/REC/KfW (Euro 100 million)



Boring of Head Race Tunnel (Face-VII) of Kameng H.E. Project in Arunachal Pradesh

POWER DEVELOPMENT ACTIVITIES IN NORTH-EASTERN REGION

The status of on-going projects which are likely to yield benefits during 12th plan and beyond is as under:

1.0 HYDRO ELECTRIC PROJECTS

1.1 CENTRAL SECTOR PROJECTS

1.1.1 NEEPCO Project (Hydro):

(i) Kameng HEP (4 x 150 = 600 MW), Arunachal Pradesh

Kameng H.E. Project is located in West Kameng District of Arunachal Pradesh with an installed capacity of 4x150 MW. The project is being executed by NEEPCO Ltd. The project envisages utilization of flows of Bichom & Tenga rivers (both tributaries of river Kameng) at a head of about 500 m available in an U – bend of the river, down stream of confluence of river Bichom with Kameng. The TEC was accorded by CEA on 30.04.1991. The CCEA clearance was accorded on 02.12.2004. The approved cost of the project is ₹2496.90 crores (at March, 2004 price level). The design annual energy is 3592 Gwh in a 90% dependable year. The environmental and forest clearance was obtained on 29.03.2001 & 03.8.2000 respectively.

The project envisages construction of 2 nos. concrete gravity dams i.e. Bichom Dam and Tenga Dam, Head Race Tunnel, surge shaft, and surface power house having vertical Francis Turbines for 6 units of 150 MW each. All the civil, HM & EM works have been awarded. Major civil works are under progress.

The project is scheduled for commissioning in year 2016-17.

(ii) Pare HEP (2x55 = 110 MW), Arunachal Pradesh

The Pare H E Project is located in the Papum Pare District of Arunachal Pradesh on river Dikrong which is tributary of river Brahmaputra. The CEA concurrence was accorded on 24th Sept., 2007. The CCEA clearance was accorded on 4.12.2008. The estimated cost of the project is ₹573.99 crores. The project would generate annual energy of 506.42 Gwh.

The project envisages construction of concrete gravity Dam, HRT, diversion tunnel and surface power house having Vertical Francis turbine for 2 units of 55 MW each.

Civil works has been awarded on 31.8.2009 to M/s H.C.C. Civil works are in progress. HM works have been awarded to M/S Precision Infratech Ltd, Ahmdabad and EM work has been awarded to M/S Andritz Hydro Pvt Ltd & M/S Areva T&D India Ltd.

The project is scheduled for commissioning in year 2014-15.

(iii) Tural HEP (2x30= 60 MW), Mizoram

Tural HEP is located in the boarder of Aijwal district of Mijoram adjoining Cachar District of Assam. The project envisage a 75 m high zoned-earth filled dam,

two diversion tunnel of Dia8 m and length 770 m, power tunnel modified horse shoe shaped, open chute spillway with crest elevation of ogee weir at 76.60 m and a powerhouse with vertical Francis turbine operating under a head 56m and a tail race joining in to the main river.

The CCEA clearance of the project was accorded on 07.07.1998 with commissioning schedule in July, 2006. Original approved project cost (at june,1997 PL) was ₹368.72 Crs.

After completion of about 30% of the project activities, the work had totally stopped w.e.f. 09.06.04 due to local unrest and subsequent increase in project rendering the project unviable.

The CCEA approval of the revised cost estimate of the project (₹913.63 crs at March, 2010 PL) has already been accorded on 14.01.2011. The revised commissioning schedule of the project is 2015-2016.

NHPC Projects (Hydro)

(i) Subansiri Lower (8x250 = 2000 MW), Arunachal Pradesh

The project is located in the districts Lower Subansiri/ Dhemaji in Arunachal Pradesh/Assam on river Subansiri. The project was Techno-Economically cleared by CEA on 13.01.2003. The CCEA clearance was accorded on 09.09.2003 for an estimated cost of ₹6285.33 crores with the schedule commissioning of the project in September, 2010. The design energy is 7421.59 Gwh.

The Project envisages construction of concrete gravity dam, horse shoe type head race tunnels, circular steel lined pressure shaft and surface power house having Francis turbine driven 8 nos. generating sets of 250 MW each.

Major civil works have been awarded to M/s. BGS-SGS-Soma Joint Venture and Larsen & Toubro Ltd. Chennai respectively on 19.12.2003. E&M works has been awarded to Consortium of M/s Alstom Power Hydraulique, France and Alstom Projects India Ltd. New Delhi on 11.02.2005. Hydro-Mechanical Package awarded to Texmaco on 19.06.2006. River diverted on 25.12.2007, Civil works of Dam, Power House & HRT, surge tunnel, presume shaft etc. are in progress.

Four units of the project are now scheduled for commissioning in year 2016-17 and next four units in 2017-18.

STATE SECTOR PROJECTS

(i) Myntdu (2x42+1x42 = 126 MW), Meghalaya, MeECL

Myntdu H.E. Project is located in Jaintia Hills District of Meghalaya. The project is under execution by

Meghalaya Energy Corporation Ltd. (MeECL) (Formerly Meghalaya State Electricity Board). TEC was accorded on 20.09.1999 at an estimated cost of ₹391.33 crores (completion cost at 01/99 PL) for two units of 42 MW each, with the commissioning target by December, 2006. The Administrative approval was accorded by State Government on 09.06.2003. Forest clearance for the project was obtained on 26.06.2001.

The Project envisages construction of concrete gravity dam, high pressure tunnel, penstock and Surface power house having Francis-V- shaft turbine for 3 units of 42 MW each.

Unit #1: Unit commissioned on 23.11.2011.

Unit #2: Unit commissioned on 31.03.2012

Unit #3: Unit boxed up and likely to be commissioned by March 2013.

(ii) New Umtru (2x20 = 40 MW), Meghalaya, MeECL

New Umtru H.E. Project is located in Ri-Bhoi District of Meghalaya. The project is under execution by Meghalaya Energy Corporation Ltd. (MeECL). Estimated cost of the project is ₹226.40 crores.

The Project envisages construction of a Masonry dam, horseshoe type HRT, penstock, Deep set power house having Francis turbine for 2 units of 20 MW each.

All major civil & HM works and E&M works have been awarded. Civil works have been awarded in December, 2007 but due to land acquisition problem, works could be started only in December, 2008. Order for HM works has been placed in January, 2009. The civil works for tunnel, power house are in progress. The project is likely to be commissioned in year 2014-15.

PRIVATE SECTOR PROJECT

(i) Chuzachen HE Project (2x49.5= 99 MW) in Sikkim

The project is located in East Sikkim District of Sikkim. The project is under execution in Private Sector by M/s Gati Infrastructure Limited. The project was cleared by the State Government on 30.11.2004. Environment clearance and Forest clearance was obtained on 09.09.2005 & 09.01.2006 respectively. Financial closure has been achieved on 14.3.2007. The estimated cost of the project is ₹1044.50 crores.

The Project envisages construction of two dams i.e. Rangpo dam & Rongli dam, HRT, Surge shaft, penstocks and Outdoor power house having Vertical Shaft Francis Turbine for 2 units of 49.5 MW each.

Civil works awarded to M/s SEW PRASAD (Joint Venture) on 9.3.2006. E&M works awarded to M/s Alstom Project (I) Ltd. on 26.2.2006 & HM works awarded to M/s PES Engineers Pvt. Ltd. on 11.12.2007. The project is in advance stage of completion.

The project is likely to be commissioned in the year 2013-14.

(ii) Teesta Stage-III HE Project (6 x200 = 1200 MW), Sikkim

The Project is located in North District of Sikkim. The project is under execution in Private Sector by M/s. Teesta Urja Ltd. State clearance to the project was obtained on 18th July ,2005. Techno-Economically cleared by CEA on 12.05.2006. Environment & Forest clearance was obtained on 3.8.2006 and 2.11.2007 respectively. Latest cost of the project is ₹5705.55 crores.

The Project envisages construction of Concrete Face Rock Fill Dam, circular HRT, Underground power house having Pelton wheel coupled with vertical shaft turbine for 6 units of 200 MW each.

LOA for turn-key execution of the project has been placed on the EPC consortium led by M/s. Navayuga Engineering Company, Hyderabad on 18.4.2007. The electro-mechanical works have been awarded to consortium led by M/s. VA tech Hydro and the contract has been signed on 18.10.2007. Financial closure achieved on 14th August, 2007. River diversion achieved on 15th January 2010. Civil works for Power House, Surge Shaft, Head Race Tunnel etc. are in progress.

The project is likely to be commissioned in the year 2014-15.

(iii) Teesta Stage-VI HE Project (4x125=500 MW), Sikkim.

Teesta Stage-VI HE Project (4x125MW) is located in South Sikkim District in Sikkim. The Project is being executed in Private Sector by M/s. Lanco Energy Private Limited. The project envisages diversion of Teesta water by constructing a Barrage on the river at 500 mt. downstream of the LD Kazi Bridge on river Teesta at Sirwani. The Techno-Economic concurrence was accorded by Central Electricity Authority (CEA) at an estimated completed cost of ₹3283.08 crores including IDC&FC of ₹415.73 crores on 27.12.2006 with completion period of five years from the date of financial closure. Environment clearance and Forest clearance was obtained on 21.09.2006 and 25.04.2008 respectively. The annual energy of 90% dependable year is 2440 MU.

The Project envisages construction of Barrage, circular HRT, Underground power house having Francis Vertical Shaft turbine for 4 units of 125 MW each.

EPC contract awarded to M/s Lanco Infratech Ltd. in March 2007. Civil works of Barrage, Power House, HRT, surge tank, presume shaft & TRT etc. are in progress.

The project is likely to be commissioned in year 2015-16.

(iv) Rangit-IV HE Project (3x40 = 120 MW) - Sikkim

The Rangit-IV HE Project is located in West Sikkim District in Sikkim. It is a run-of river (ROR) scheme. The project would afford an annual energy generation of 513 Gwh in a 90 % dependable year. The estimated cost of the project is ₹726.16 crores (Aug 2007 Price levels). Environment clearance and Forest clearance was obtained on 16.05.2007 and 26.12.2007 respectively.

The project envisages construction of Concrete Gravity Dam, horse shoe type HRT, Surge shaft, Pressure shaft, Surface power house having Vertical Francis turbine for of 3 units of 40 MW each.

All major civil works including HM and E&M works already have been awarded. Civil works of Dam, Head Race Tunnel, Power House, Surge Shaft, etc. are in progress.

The project is likely to be commissioned in the year 2014-15.

(v) Jorethang Loop HE Project (2x48 = 96 MW)- Sikkim

The Jorethang Loop HE Project is located in South/West Sikkim District in Sikkim. The Project is being executed in Private Sector by Dans Energy Private Limited. Environment clearance and Forest clearance was obtained on 26.07.2007 and 12.05.2008 respectively.

The project envisages construction of Gravity floor on permeable foundation Barrage, Modified Horse shoe type HRT, Surge shaft, Pressure shaft, Surface power house installation of 2 units of 48 MW each.

Civil and HM works awarded to M/s Sew Infrastructure Pvt. Ltd. and E&M works awarded as Turnkey Contractor Alstom Projects India Ltd. Civil works of Barrage, Head Race Tunnel, Surge Shaft etc. are in progress.

The project is likely to be commissioned in the year 2014-15.

(vi) Bhasmey HE Project (2x25.5 = 51 MW)- Sikkim

The Bhasmey HE Project is located in East Sikkim District in Sikkim. The Project is being executed in Private Sector by Gati Infrastructure Bhasmey Power Pvt. Ltd. The project was cleared by the State Government in Dec., 2008.

Civil and E&M works awarded in Dec., 2009 and March, 2010. Project works are in progress.

The project is likely to be commissioned in the year 2015-16.

(vii) Tashiding HEP, (2x48.5= 97 MW), Sikkim:

The Tashiding Hydro Electric Project is located in West district of Sikkim with an installed capacity of 97 MW (2x48.5) at surface power house, just down stream of Ting Ting HEP. The project is being executed by private sector Shiga Energy Pvt Ltd. The project envisages utilization of water of Rathong Chhu a tributary of Rangit river near Tashiding village. The latest cost of the project is Rs 465.95 crores.

The project envisages a barrage about 12 M heights from the crest level on the main Rathang Chu river, about 140 m down stream of the confluence of Rimbi Khola with Rathang Chu, with 5 No gates of 6.5m width and 9.0m high spillway and under sluice gates. The power will be evacuated through a 2x220kv single circuit line to the pooling station at Melli. The gross and rated head of the scheme are 226 m and 213.33 m respectively and design discharge is 49.6 cumec. The environment clearance was obtained from ministry of environment & forest Government of India on 29.7.10.

At project site all infrastructure work have been completed and all the civil, HM and Electro mechanical work have already been awarded and work is going on at all fronts. The project is scheduled for commissioning during year 2017-2018.

(viii) Rongnichu HEP, (2x48= 96 MW), Sikkim:

The Rongnichu Hydro Electric Project is located in East district of Sikkim with an installed capacity of 96 MW (2x48). The project is being executed by private sector Madhya Bharat Power Corporation Ltd. The project is on the confluence of river and surface power house is on the river Rongpo and barrage near village Namli. The latest estimated cost of the project is ₹491.32 crores.

The project envisages a barrage about 14M height from the crest level on the river with 3 No of gates having width 12.2m and 6.5m high spillway with sluice gates. The Surface power house will be constructed on Rongpo river having dimensions 61.5x45.75x38M with Pelton turbine along with vertical shaft. The power benefit at 90% dependable energy at 95% availability will be 383.87 GWH. The environment clearance were obtained from Ministry of Environment & Forest, Government of India on 04.04.2007.

At project all three packages of Civil work have been awarded to SEW infrastructure Ltd and electromechanical work have been awarded to Voith Hydro Power Pvt Ltd. The project is scheduled for commissioning in the year 2017-2018.

(ix) Rangit-II HEP, (2x33= 66 MW), Sikkim

The Rangit-II Hydro Electric Project is proposed on the Rimbi Khola River near Rimbi village, near the Geyzing town in west sikkim. The total catchments area upto the proposed dam site is 120 km. The project is purely run-off the river scheme and the storage provided is to meet the diurnal variations and the station shall operate as a peaking station. The installed capacity of scheme is 66 MW (2x33) and the energy generation will be 286.07 MU annually on an average basis. The project is being executed by private sector Sikkim Hydro Power Venture Ltd. The project can be approached from Bagdogra, Gangtok through national and state highway. The nearest rail head is at Siliguri/New Jalpaiguri. The nearest airport is the Bagdogra. The latest estimated cost of the project is ₹497.17 crores.

The project envisages a concrete gravity dam having height 47.0 M from the crest level on the river Rimbi with 2 No of gate width 7.5m and 9.0m high spillway with bottom sluice gates. The Surface power house will be constructed having dimensions 64.7x34.3x31M with Pelton turbine along vertical shaft. The power benefit at 90% dependable energy at 95% availability will be 272.0 GWH. The environment clearance were obtained from Ministry of Environment & Forest, Government of India on 16.04.2010.

At project, all Civil and hydro mechanical work has been awarded to M/S Costal Projects Ltd. The infrastructure works at site are going on along with major civil works. The project is scheduled for commissioning in the year 2017-18.

(x) Dikchu HEP, (3×32= 96 MW), Sikkim

The Dickchu Hydro Electric Project with a proposed installed capacity of 96 MW(3×32) is located in east & north district of Sikkim which envisages utilization of the flow of the river Dickchu, a tributary of river Teesta for power generation on a run-off river type development, harnessing a head of about 35.0 M. The project is being executed by the private agency Sneha Kinetic Power Projects Pvt Ltd. The latest estimated cost of the project is ₹639.57 crores.

The project envisages a concrete gravity dam at village Dickchu which is located about 140Km from New Jalpaiguri railway station and 145KM from Bagdogra airport. The under ground power house is proposed to be located about 1.5KM upstream of Dickchu-teesta confluence for the reasons of geology, economy, land availability and construction ease. Power generated from DHEP is proposed to be evacuated through 132kv transmission lines to the Mangan pooling station. The length of transmission line is about 26km. The Dickchu HE project would afford design energy of 518GWh in a 90% dependable year.

At project site all infrastructure work has been completed and the construction activity at all civil fronts is going on. Award of HM and Electro mechanical works are under progress. The project is scheduled for commissioning in the year 2017-18.

2.0 THERMAL PROJECTS

2.1 Central Sector Projects

2.1.1 NTPC PROJECTS

i) Bongaigaon TPS (3 x 250 MW) - Assam

The project is being executed by NTPC. The main plant order was placed on BHEL in February, 2008 with an original commissioning schedule of Jan, 2011 for Unit-1, May, 2011 for Unit-2 and Sept., 2011 for Unit-3. But due to Law and Order problem, heavy rain & delay in completion of civil works for main plant, the project has been delayed. NTPC re-awarded the civil works for Unit-2 & 3 to a new contractor in July, 2011. NTPC now envisages the project commissioning in June, 2014, May, 2015 and October, 2015 for Unit-1, 2 and 3 respectively. For U-1 Boiler & TG erection already started but for U-2 & U-3 Boiler erection started and TG erection is expected to start by November 2013 and May 2014 respectively.

2.1.2 NEEPCO Projects

i) Monarchak Gas Based Power Project (101 MW) – Tripura

The project is being executed by NEEPCO in Tripura. LOI for the main plant was placed on BHEL in July, 2010 with original commissioning schedule of May, 2013.

Order for BOP packages was placed on to M/s. NBPPL and 87/108 packages have already been awarded to different sub-vendors. All clearances are available. Water & Power supply arrangements for construction have been made. Foundation for GT, GTG, HRSG and STG has been completed. Civil works in CW pump house, cooling tower, compressor house, switchyard etc. are in progress. Erection of HRSG column and chimney are in progress. The project is likely to be commissioned during 2013-14.

2.2 Joint Venture Projects

i) Palatana CCPP (2 x 363.3 MW) OTPC - Tripura

Palatana project is being executed by OTPC, a Joint Venture of ONGC, Govt. of Tripura and Infrastructure Leasing and Finance Services (IL & FS) at Palatana, Tripura. Main Plant order was placed on BHEL in June 2008 on EPC basis. Logistic contract for movement of ODC through Ashuganj port in Bangladesh was released by BHEL. Most of the material is available at site. 132 KV S/Yard back charged in August, 2011 for start up power. Block-I was Synchronized with NER Grid in CC mode on 22.10.12 and achieved full load on 03.01.13. COD of unit-1 will be declared after completion of final reliability run. For Block-II Super structural work is under progress. GT & GTG, ST & STG, Condenser shell, tube support plates, baffle plates etc are installed. GTG transformer, STG transformer, HT Switch gear, LT Switch gear, GRP panels, fast bus transfer panels etc are under progress. HRSG structure, casing, drum and module erection completed. GT oil flushing completed & barring gear is expected in mid Feb, 2013. ST Oil flushing is expected to start in first week of Feb, 2013. BFP piping, CW piping, condenser tube insertion work and cable laying are under progress. Now Block-II is expected to be commissioned in first quarter of 2013-14.

2.3 State Sector Projects

i) Lakwa WHRU Project/Steam Turbine (37.2 MW) - Assam

Lakwa WHRU Project/Steam Turbine power project being executed by Assam Power Generation Corporation Ltd. (APGCL). The order was placed on BHEL in March, 2006 on EPC basis with original commissioning schedule of May, 2008. The unit was synchronized on 17.08.2011 and commissioned in Dec'2011.

ii) Namrup CCGT (70 MW GT + 30 MW ST) – Assam

Namrup CCGT 100 MW is a replacement power project being executed by Assam Power Generation Corporation Ltd. (APGCL) in District Dibrugarh, Assam. EPC contract was awarded to BHEL in February, 2009 with target date of commissioning as January, 2012. Switchyard civil works order has been placed. Main plant civil works were started in April 2010 but progress is slow. HRSG – Civil works completed & erection is in progress. Chimney– Civil work completed & erection is in progress. GTG foundation completed and ready for placement of GT & GTG. BHEL have requested for provisional time extension up to Dec' 2013. However, APGCL approved provisional

time extension only up to June' 2013. The project is now expected to be commissioned during 2013-14.

iii) Baramura gas Based project, Unit-5 (1 x 21 MW) - Tripura

The project is an extension unit being executed by Tripura State Electricity Corporation Ltd (TSECL) in District Agartala, Tripura. EPC contract was awarded to BHEL in March, 2008 with a target date of commissioning as November 2009. The unit was commissioned on 3rd Aug, 2010.

4.1 HYDRO PROJECTS

151 H.E. Projects (above 25 MW capacity) with aggregate capacity of 57288 MW have been identified for implementation in N.E. Region which are yet to be taken up for construction for benefits during 12th Plan and beyond. Out of these, 13 schemes with aggregate capacity of 8977 MW have been allotted to Central Sector and 107 schemes with aggregate capacity of 34777 MW have been allotted to Private Sector. Remaining H.E. Projects are either in State Sector or are yet to be allotted. Category-wise, these schemes are summarized below:-

Name of State	Central		Private		Unallocated/State		Total	
	No.	I.C. (MW)	No.	I.C. (MW)	No.	I.C. (MW)	No.	I.C. (MW)
Ar. Pradesh	3	4400	89	31872.5	4	10951	96	47223.5
Assam	-	-	-	-	7	513	7	513
Manipur	2	1566	-	-	7	573	9	2139
Meghalaya	1	85	5	974	9	1155	15	2214
Mizoram	5	2196	-	-	1	80	6	2276
Nagaland	-	-	1	186	2	190	3	376
Total (NER)	11	8247	95	33032.5	30	13462	136	54741.5
Sikkim	2	730	12	1744.5	1	72	15	2546.5
Total (NER & Sikkim)	13	8977	107	34777	31	13534	151	57288

4.2 NEW THERMAL PROJECTS

i) Margherita TPP 500 MW

M/s Assam Power Generation Corporation has a proposal to set up a 2x250 MW Thermal Power Project in Distt. Tinsukia in Assam as a joint Venture with NTPC. The essential inputs and clearances for the project i.e. availability of land, water availability and Terms of Reference from MOE&F for the EIA study are yet to be tied up for the project.

ii) Garo Hills – 500 MW NEEPCO

NEEPCO has a proposal to set up a coal based power plant at Garo Hills in Meghalaya. As informed by NEEPCO, MOA between State Govt. and NEEPCO has been signed for development of the project. The essential inputs and clearances for the project i.e. availability of land, water availability and Terms of Reference from MOE&F for the EIA study are yet to be tied up for the project.

iii) Bongaigaon TPP unit IV (250MW) NTPC

NTPC has a proposal to set up one more Unit of 250 MW at Bongaigaon TPP where 3x250 MW are under construction by them. NTPC has submitted an application on 6-5-2010 to Ministry of Coal for coal linkage. Ministry of Power vide letter dated 30-12-2011 has recommended the proposal to Ministry of Coal along with the other proposals for accord of coal linkage. The project was prequalified and prioritized by CEA for accord of coal linkage and details were sent to Ministry of Power vide letter dated 08-08-2012.

iv) Globe Power & Steel TPP (2x660MW), Globe Power & Steel Limited.

M/s Globe Power & Steel Limited has submitted a proposal for coal linkage for their proposed 2x660 MW TPP in Kamrup Distt. of Assam. The developer has submitted an application for coal linkage to Ministry of Coal. The project was not prequalified as the financial documents furnished were not as per the requirements.

v) Revival of Chandrapur TPS (2x300MW) JV of IAPL & APGCL

This is an existing power plant based on liquid fuel and was under shut down since June, 99 due to exorbitant cost of fuel. It is proposed by APGCL to revive the plant by replacing the existing boiler by fluidized bed boiler based on coal firing using existing turbines through joint venture mode. APGCL as formed a joint venture company with Imperial group of companies in the name of M/s Imperial APGCL Power Limited (IAPL) for revival of CTPS on coal Public Private Participation (PPP) mode. IAPL has carried out the comprehensive RLA study of the existing Turbines & Generators and other associated auxiliaries & equipments of CTPS.

The RLA study report suggested extended turbine life of another 20 to 25 years after conducting various NDT tests and other related RLA tests. M/s IAPL is in the process of obtaining environmental clearances for the project. Govt.

of Assam has requested Ministry of coal for allocating coal linkage for the project. CEA vide letter dated 3-5-2012 intimated Ministry of Power to consider recommending coal linkage for Chandrapur TPP 2x30 MW to Min. of Coal subject to transfer of 67 acres of land and 6 cusecs of water required for Chandrapur TPP in favour of M/s IAPL

(vi) Lakwa Replacement TPP (70 MW) by M/S APGCL:

M/s APGCL has a proposal to set up a 70 MW gas based Power Plant at Lakwa as replacement of old units. Land, water and fuel linkage is stated to be already available from the existing units. DPR are under finalization.

(vii) Golaghat TPP (12 MW) by M/S APGCL:

M/s APGCL has a proposal to set up a gas based Power Plant in Golaghat District. DPR is under preparation. Tie up of Land and fuel is under process. Water is stated to be sourced from borewell in the plant area.

(viii) Cachar TPP (30 MW) by APGCL:

M/s APGCL has a proposal to set up a gas based Power Plant in Cachar District. DPR is under preparation. Tie up of Land and fuel is under process. Water is stated to be sourced from borewell in the plant area.

(ix) Amguri TPP (100 MW) by APGCL:

M/s APGCL has a proposal to set up a gas based thermal power Plant in Assam. PFR has been prepared. DPR will be finalized once gas linkage is confirmed. Land is already available. Availability of water is under process.

Renovation and Modernisation of Kathalguri Gas Turbines (210MW) have been identified by NEEPCO during the 12th Plan period.

POWERGRID'S TRANSMISSION SYSTEM FOR DEVELOPMENT OF NORTH EASTERN REGION (NER)

At present, POWERGRID has a transmission network at different voltage levels viz. 400kV, 220kV and 132kV level for dispersal of power from various central sector generating stations to different States in North-Eastern Region as well as for Export/Import of power with neighboring States/region. POWERGRID's transmission system in NER consists of about 5,000 ckt. kms. of transmission lines including 864 ckt. km. of inter-regional lines between NER & ER and 15 sub-stations. The transmission system comprises of high capacity lines viz. 400kV D/c Misa – Balipara – Bongaigaon – Siliguri corridor, which is operational since early 2000. Recently, 2x200 MVA, 400/132kV substation at Silchar alongwith associated evacuation lines has been commissioned for evacuation of power from Pallatana generation project.

The Company has also executed 132kV Ziro-Daporijo-Along transmission system and 220kV Kathalguri-Deomali transmission system as deposit work of Arunachal Pradesh, Balipara-Khupi-Kimi 132kV line as a deposit work of NEEPCO and 220 kV Misa – Byrnihat transmission line alongwith 2x160MVA, 220/132kV sub-station at Byrnihat as a deposit work of Meghalaya. Another 2x315 MVA, 400/220 kV new sub-station at Byrnihat is also under implementation as

deposit work of Meghalaya. One more scheme namely “NER Strengthening Scheme-I”, which involves construction of 132 KV Kopli - Khandong Single circuit line, LILO of 132KV Dimapur-Kohima line at Dimapur(POWERGRID) and extension of 220/132 kV sub-stations at Kopili, Dimapur & Khandong with a total cost of ₹60 Crore, has been completed.

Govt. of India, in a major initiative towards development of hydro potential in the North-Eastern Region has earmarked a number of power projects having a total capacity of about 50,000MW. Accordingly, an outline of Transmission system has been made for evacuation of power from future projects of about 50,000MW in NER and 15,000MW in Sikkim/ Bhutan in view of the fact that power from the above mentioned projects would be utilized partly in NER, Sikkim and Bhutan while major part of this power would have to be exported to power deficit regions like Northern Region & Western Region. Transmission lines from these generating sources will be traversing through the narrow transmission corridor of Chicken Neck Area, in the north of West Bengal, between the international borders of Bangladesh and Nepal, having a length of about 18 km and a width of only about 22 km. Keeping in view the generation and growth of power demand in NER and Sikkim/Bhutan, the capacity of transmission system required through the chicken neck area would be of the order of 50,000 MW. As a large quantum of power is to be transferred through the limited corridor in Chicken Neck area, it is envisaged that the power transfer capacity of each of the transmission corridor should be of at least 5000-6000MW capacity. After detailed study of various alternatives in this regard, it is found that the hybrid system of ± 800 kV HVDC with 765kV/ 400kV high capacity AC lines is the most optimal one considering the Right-of-Way requirement, transmission cost and line losses. Looking at the total power evacuation requirement through Chicken Neck area, it is found that to meet the contingency & reliability needs, about 5-6 nos. of high capacity HVDC and 3-4 nos. of high capacity EHVAC corridors would have to be established through Chicken Neck Area.

Transmission system for evacuation of power from the future projects to be commissioned in XI/XII plan has also been developed. The power from the projects like Kameng HEP (600 MW) of NEEPCO and Lower Subansiri (2000 MW) of NHPC has been planned to be pooled to a common substation in NER for onward transmission to NR/WR via hybrid system of ± 800 kV, 6000MW HVDC and 400kV AC links. The transmission system is under implementation and expected to be commissioned by 2014-15. The transmission system also includes 4 nos of high capacity corridors, each of 6000MW capacity in the Chicken Neck area, thereby reserving total transmission capacity of 24,000MW in this constraint corridor. For evacuation of Pallatana Gas Based Power Project (726 MW) in Tripura and Bongaigaon TPS (750MW) in Assam, separate 400kV transmission corridor has been planned and is presently under implementation.

In addition to this, a Comprehensive Scheme for Strengthening of Transmission & Distribution System in NER & Sikkim has been evolved in consultation with Central Electricity

Authority and representatives of all concerned States. Under this scheme, the transmission and sub-transmission system for NER States are planned in two parts viz. intra-State and inter-State lines. The scheme has been evolved keeping in view the long term requirement of NER so as to ensure secure and reliable supply of power and cater to the load growth for more than 10 years. POWERGRID was assigned the task (by Ministry of DONER) of preparation of Detailed Project Reports

for the transmission and distribution system (upto 33kV). The DPR has been prepared and submitted to Ministry for DONER, Planning Commission, Ministry of Power and Central Electricity Authority. Total estimated cost of the scheme is ₹ 11,411 Crore. Ministry of Power and Dept of Economic Affairs, Ministry of Finance have taken up the matter further, for arrangement of funds through Govt. of India and The World Bank.





6th Conference of Power Ministers of States /UTs held at New Delhi on 5th February, 2013

CENTRAL ELECTRICITY AUTHORITY

1. Constitution of CEA

The Central Electricity Authority (CEA) is a statutory organization constituted under Section 3(1) of the repealed Electricity (Supply) Act, 1948 and continued under Section 70 of the Electricity Act, 2003. It was established as a part – time body in the year 1951 and made a full-time body in the year 1975.

As per section 70(3) of the Electricity Act, 2003, the Authority shall consist of not more than 14 members, including its Chairperson of whom not more than 8 shall be full-time members to be appointed by the Central Government.

CEA is headed by a Chairperson who, as the Chief Executive of the Authority, oversees largely the development of Power Sector in the country. A Secretary, appointed by the Authority with the approval of the Central Government under section 72 of Electricity Act 2003, assists the Chairperson in the discharge of CEA's statutory functions. The Secretary also assists him in all matters pertaining to administration and technical matters including Human Resource Development and Techno-Economic Appraisal and concurrence of power projects etc. Presently, there are six wings namely Planning, Hydro, Thermal, Grid Operation & Distribution, Economic & Commercial and Power System each headed by a Member of the Authority. Under each Member, there are technical divisions, each headed by an officer of the rank of Chief Engineer. At present, there are 29 divisions in CEA Headquarters at New Delhi. In addition, CEA has 14 subordinate offices viz. five – Regional Inspectorial Organizations, four – Regional Power Survey Organizations and five – Regional Power Committees located in various parts of the country. The CEA is responsible for overall power sector planning, coordination, according concurrence to hydro-electric schemes, promote & assist in timely completion of projects, specifying of technical standards, safety requirements, Grid Standards as well as conditions for installation of meters applicable to the Power Sector of the country. CEA advises the Central Governments on the National Electricity Policy and formulates short term Prospective Plans for development of the electricity system. It also advises the Central and State Government as well as the Electricity Regulatory Commissions on all technical matters relating to generation, transmission & distribution of electricity. It also has the mandate to collect, record and make public, data related to all segments of the electricity sector, carry out investigations and promote research.

2. Functions of CEA

The functions and duties of the Authority are delineated under Section 73 of the Electricity Act, 2003. Besides, CEA has to discharge various other functions as well under Sections 3, 8, 34, 53, 55 and 177 of the Act.

As per section 73 of the Electricity Act. 2003, the Central

Electricity Authority shall perform such functions and duties as the Central Government may prescribe or direct, and in particular to -

- a) advise the Central Government on the matters relating to the National Electricity Policy, formulate short-term and perspective plans for development of the electricity system and coordinate the activities of the planning agencies for the optimal utilization of resources to sub serve the interests of the national economy and to provide reliable and affordable electricity to all consumers;
- b) specify the technical standards for construction of electrical plants, electric lines and connectivity to the grid;
- c) specify the safety requirements for construction, operation and maintenance of electrical plants and electric lines;
- d) specify the Grid Standards for operation and maintenance of transmission lines;
- e) specify the conditions for installation of meters for transmission and supply of electricity;
- f) promote and assist in the timely completion of schemes and projects for improving and augmenting the electricity system;
- g) promote measures for advancing the skills of persons engaged in electricity industry;
- h) advise Central Government on any matter on which its advice is sought or make recommendation to that Government on any matter if, in the opinion of the Authority, the recommendation would help in improving the generation, transmission, trading, distribution and utilization of electricity;
- i) collect and record the data concerning the generation, transmission, trading, distribution and utilization of electricity and carry out studies relating to cost, efficiency, competitiveness and such like matters;
- j) make public from time to time the information secured under this Act, and provide for the publication of reports and investigations;
- k) promote research in matters affecting the generation, transmission, distribution and trading of electricity;
- l) carry out, or cause to be carried out, any investigation for the purpose of generating or transmitting or distributing electricity;
- m) advise any State Government, licensees or the generating companies on such matters which shall enable them to operate and maintain the electricity system under their ownership or control in an improved manner and where

necessary, in coordination with any other Government, licensee or the generating company- owning or having the control of another electricity system;

- n) advise the appropriate Government and the appropriate Commission on all technical matters relating to generation, transmission and distribution of electricity; and
- o) discharge such other functions as may be provided under this Act.

In addition to above functions and duties, CEA has to perform the following functions in terms of the under-mentioned sections of the Electricity Act. 2003:-

Section 3 - National Electricity Policy and Plan

- (1) The Central Government shall, from time to time, prepare the National Electricity Policy and Tariff Policy, in consultation with the State Governments and the Authority for development of the power system based on optimal utilization of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy.
- (2) The Central Government shall publish the National Electricity Policy and Tariff Policy from time to time.
- (3) The Central Government may, from time to time, in consultation with the State Governments and the Authority, review or revise the National Electricity Policy and Tariff Policy referred to in sub-section (1).
- (4) The Authority shall prepare a National Electricity Plan in accordance with the National Electricity Policy and notify such plan once in five years.

PROVIDED that the Authority while preparing the National Electricity Plan shall publish the draft National Electricity Plan and invite suggestions and objections thereon from licensees, generating companies and the public within such time as may be prescribed;

PROVIDED FURTHER that the Authority shall -

- (a) notify the plan after obtaining the approval of the Central Government;
- (b) revise the plan incorporating therein directions, if any, given by the Central Government while granting approval under clause (a).
- (5) The Authority may review or revise the National Electricity Plan in accordance with the National Electricity Policy.

Section 8 - Hydro-Electric Generation

- (1) Any generating company intending to set up a hydro-generating station shall prepare and submit to the Authority for its concurrence, a scheme estimated to involve a capital expenditure exceeding such sum, as may be fixed by the Central Government, from time to time, by notification.
- (2) The Authority shall, before concurring in any scheme

submitted to it under sub-section (1) have particular regard to, whether or not in its opinion :

- a) the proposed river-works will prejudice the prospects for the best ultimate development of the river or its tributaries for power generation, consistent with the requirements of drinking water, irrigation, navigation, flood control or other public purposes, and for this purpose the Authority shall satisfy itself, after consultation with the State Government, the Central Government, or such other agencies as it may deem appropriate, that an adequate study has been made of the optimum location of dams and other river-works;
 - b) the proposed scheme meets, the norms regarding dam design and safety.
- (3) Where a multi-purpose scheme for the development of any river in any region is in operation, the State Government and the generating company shall co-ordinate their activities with the activities of the persons responsible for such scheme in so far as they are inter-related.

Section 34 - Grid Standards

Every transmission licensee shall comply with such technical standards, of operation and maintenance of transmission lines, in accordance with the Grid Standards, as may-be specified by the Authority.

Section 53 - Provision Relating to Safety and Electricity Supply

The Authority may, in consultation with the State Government, specify suitable measures for:-

- a) protecting the public (including the person engaged in the generation, transmission or distribution or trading) from dangers arising from the generation, transmission or distribution or trading of electricity, or use of electricity supplied or installation, maintenance or use of any electric line or electrical plant;
- b) eliminating or reducing the risks of personal injury to any person, or damage to property of any person or interference with use of such property;
- c) prohibiting the supply or transmission of electricity except by means of a system which conforms to the specification as may be specified;
- d) giving a notice in the specified form to the appropriate Commission and the Electrical Inspector, of accidents and failures of supplies or transmission of electricity;
- e) keeping by a generating company or licensee the maps, plans and sections relating to supply or transmission of electricity;
- f) inspection of maps, plans and sections by any person authorized by it or by Electrical Inspector or by any person on payment of specified fee;
- g) specifying action to be taken in relation to any electric

line or electrical plant, or any electrical appliance under the control of a consumer for the purpose of eliminating or reducing the risk of personal injury or damage to property or interference with its use.

Section 55 - Use etc. of Meters

- 1) No licensee shall supply electricity, after the expiry of two years from the appointed date, except through installation of a correct meter in accordance with the regulations to be made in this behalf by the Authority:

Provided that the licensee may require the consumer to give him security for the price of a meter and enter into an agreement for the hire thereof, unless the consumer elects to purchase a meter:

Provided further that the State Commission may, by notification, extend the said period of two years for a class or classes of persons or for such area as may be specified in that notification.

- 2) For proper accounting and audit in the generation, transmission and distribution or trading of electricity, the Authority may direct the installation of meters, by a generating company or licensee at such stages of generation, transmission or distribution or trading of electricity and at such locations of generation, transmission or distribution or trading, as it may deem necessary.
- 3) If a person makes default in complying with the provisions contained in this section or the regulations made under sub-section (1), the appropriate Commission may make such orders as it thinks fit for requiring the default to be made good by the generating company or licensee or

by any officer of a company or other association or any other person who is responsible for its default.

Section 177- Powers of Authority to make Regulations

- 1) The Authority may by notification, make regulations consistent with this Act and the rules generally to carry out the provisions of this Act.
- 2) In particular and without prejudice to the generality of the power conferred in sub-section (1), such regulations may provide for all or any of the following matters, namely :-
 - a) the Grid Standards under section-34;
 - b) suitable measures relating to safety and electricity supply under section-53;
 - c) the installation and operation of meters under section-55;
 - d) the rules of procedure for transaction of business under sub-section (9) of section-70;
 - e) the technical standards for construction of electrical plants and electric lines and connectivity to the grid under clause (b) of section-73;
 - f) the form and manner in which and the time at which the State Government and licensees shall furnish statistics, returns or other information under section-74;
 - g) any other matter which is to be, or may be, specified;
- 3) All regulations made by the Authority under this Act shall be subject to the conditions of previous publication.



A view of NTPC Kaniha Project



16th Meeting of Central Advisory Committee of CERC held on 14th March, 2012 at New Delhi

CENTRAL ELECTRICITY REGULATORY COMMISSION

INTRODUCTION

The Central Electricity Regulatory Commission (CERC) an independent statutory body with quasi-judicial power, was constituted on 25th July, 1998 under the Electricity Regulatory Commission Act, 1998 and has been continued under the Electricity Act, 2003. The Commission consists of a Chairperson, three full time Members and the Chairpersons of the Central Electricity Authority (CEA) as Ex-officio Member.

THE FUNCTIONS OF CERC

As entrusted by the Electricity Act, 2003 the Commission has the responsibility to discharge the following functions:-

- (i) To regulate the tariff of generating companies owned or controlled by the Central Government;
- (ii) To regulate the tariff of generating companies other than those owned or controlled by the Central Government specified in clause (i), if such generating companies enter into or otherwise have a composite scheme for generation and sale of electricity in more than one State;
- (iii) To regulate the inter-State transmission of electricity;
- (iv) To determine tariff for inter-State transmission of electricity;
- (v) To issue licenses to persons to function as transmission licensee and electricity trader with respect to their inter-State operations;
- (vi) To adjudicate upon disputes involving generating companies or transmission licensee in regard to matters connected with clauses (i) to (iv) above and to refer any dispute for arbitration;
- (vii) To levy fees for the purposes of the Act;
- (viii) To specify Grid Code having regard to Grid Standards;
- (ix) To specify and enforce the standards with respect to quality, continuity and reliability of service by licensees;
- (x) To fix the trading margin in the inter-State trading of electricity, if considered, necessary;
- (xi) To discharge such other functions as may be assigned under the Act.
- (xii) To advise the Central Government on:
 - a. Formulation of National Electricity Policy and Tariff Policy;
 - b. Promotion of competition, efficiency and economy in the activities of the electricity industry;
 - c. Promotion of investment in electricity industry;
 - d. Any other matter referred to the Central Commission by the Central Government.

MAJOR ACTIVITIES DURING THE YEAR 2012-13 (UPTO 30TH NOVEMBER 2012)

1. The Central Electricity Regulatory Commission (Standards of Performance of inter-State transmission licensees) Regulations, 2012.

The Central Commission has notified the Central Electricity Regulatory Commission (Standards of Performance of inter-State transmission licensees) Regulation, 2012 (hereinafter "the SoP Regulations") on 21.9.2012.

The objectives of SoP Regulations are to ensure compliance of the Standards of Performance by the inter-State transmission licensees so as to provide for an efficient, reliable, coordinated and economical system of electricity transmission, non-adherence of which would entitle the affected parties to seek compensation from the transmission licensees. Under the SoP Regulations, element-wise minimum availability norms have been specified for various elements of the transmission system.

The SoP Regulations further provide for the maximum restoration time for different types of failures of transmission line and Inter-Connecting Transformer (ICT) and reactors.

The SoP Regulations further provide detailed methodology for awarding compensation to affected person(s), and information to be furnished monthly in the prescribed format by the inter-State transmission licensees. The inter-State transmission licensees are also required to display on their web-site their actual performance against the specified standards of performance on monthly basis and the aggregate amount of compensation paid.

2. Central Electricity Regulatory Commission (Procedure, Terms and Conditions for grant of trading licence and other related matters) (First Amendment) Regulations, 2012.

The Central Commission has notified the Central Electricity Regulatory Commission (Procedure, Terms and Conditions for grant of trading licence and other related matters) Regulations, 2009, (hereinafter "the Trading Licence Regulations") on 2nd June, 2009. In order to keep pace with the dynamic market conditions in electricity sector, the Commission notified the Central Electricity Regulatory Commission (Terms and Conditions for grant of trading licence and other related matters) (First Amendment) Regulations, 2012 on 11.10.2012.

The amendment included revised definition of "Inter-State trading", reporting of intra-State trading volume for the purpose of computation of the net worth and provision for 'contraventions and penalties' in order to address the various instances of contraventions by the trading licensees.

3. Benchmark Capital Cost for Thermal Generating Stations

The capital cost (Hard cost) benchmarking model for the coal based Thermal Power Stations under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 was approved vide order dated 04.06.2012. The salient features of the model include benchmark hard cost determined for thermal power plants of 500/600/660/800 MW with December 2011 indices as base.

The model would be useful to carry out the prudence check of several projects in the transitory phase for which PPA's would have been entered into by the project developer prior to deadline date set for transition to competitive bidding and would have to be dealt with on cost plus basis. The benchmark cost may be reviewed and updated on 6 monthly basis or at such interval as may be decided by the Commission.

4. Notification of escalation Factors and other parameters for the purpose of bid evaluation and payment

Under Clause 5.6 (vi) of Ministry of power guidelines "Guidelines for Procurement of tariff by Bidding Process for Procurement of power by Distribution Licensees" dated 19.01.2005 (as amended from time to time), the Central Commission which notifies every six months various escalation factors and other parameters for the purpose of bid evaluation and payment, had notified the same on 07.10.2011 for the period from 01.10.2012 to 31.03.2012.

5. Tariff Determination

The Central Commission regulates the tariff of central sector power generating companies namely NTPC Ltd., NHPC Ltd., Power Grid Corporation of India Ltd. (PGCIL), North Eastern Electric Power Corporation Ltd. (NEEPCO), Neyveli Lignite Corporation (NLC), Damodar Valley Corporation (DVC) and Joint venture Companies involving CPSU's.

5.1 Tariff Period 2004-09

5.1.1 Thermal Generation

The Commission approved revised fixed charges for Talchar TPS (460 MW) considering additional capitalization for the years 2007-08 and 2008-09. The Commission revised its tariff orders in respect of Faridabad GPS (431.586 MW) of NTPC Ltd. and Mejia Thermal Power Station Extension Unit No. 5 and Unit No.6 (2x250 MW) of Damodar Valley Corporation in the light of judgments of Appellate Tribunal for Electricity in various appeals. The Commission vide order dated 21.08.2012 in Petition No. 300/2009 disallowed recovery of fixed charges on account of capital expenditure incurred at the various offices of NTPC between 1.4.2004 and 31.3.2009.

5.1.2 Hydro Power Projects

The Commission also approved revised generation

Tariff of Omkareshwar Hydro Power Station (8X 65 MW) of NHDC for the period of 20.8.2007 to 31.03.2009.

5.2. Final Tariff for the Period 2009-14

5.2.1 Thermal Power Projects

The Commission approved the final tariff for Kahalgaon Super Thermal Power Station Stage-II (3x500 MW), Ramagundam STPS Stage-III (500 MW), Korba STPS Stage-III (500 MW), Kahalgaon TPS Stage-I (840 MW), Badarpur TPS (705 MW), Feroze Gandhi Unchahar TPS Stage-III (210 MW), Vindhyachal STPS Stage-II (1000 MW), Vindhyachal STPS Stage-III (1000 MW), Feroze Gandhi Unchahar TPS Stage-I (420 MW), Rihand STPS Stage-I (1000 MW), Farakka STPS Stage-I & II (1600 MW), Talchar STPS Stage-I (1000 MW), National Capital TPS Dadri Stage-I (840 MW), Feroze Gandhi Unchahar TPS Stage-II (420 MW), Rihand STPS Stage-II (1000 MW), Singrauli STPS (2000 MW), Simhadri STPS Stage-I (1000 MW), Ramagundam Stage-I & II (2100 MW), Rajiv Gandhi Combined Cycle Power Project Stage-I (359.58 MW), Vindhyachal STPS Stage-I (1260 MW), Faridabad Gas Power Station (431.586 MW), Simhadri STPS Stage-II (2x500 MW) for the period from 1.4.2011 to 31.3.2014, Korba STPS Stage-I & II (2100 MW), Tanda TPS (440 MW), NLC Thermal Power Station Stage-I (600 MW)

Many of the review petitions against the Commission's tariff orders for the period 2009-14 of the NTPC generating stations filed by NTPC have also been disposed off.

5.3. Provisional Tariff for Thermal stations for the period 2009-14

The Commission has approved provisional tariff for 8 Thermal Power Stations of NTPC, DVC, NLC, Joint Venture Companies and Independent Power Producers (IPPs).

5.4. Tariff for Hydro Power Projects for the period 2009-14

The Commission approved the generation tariff for the period of 2009-14 of Indira Sagar Hydro Power Station (8x125 MW) of NHDC. The annual fixed charges were revised for the Loktak (3x35 MW), Uri (4x120 MW), Bairasiul (3x60 MW), Chamara-I (3x180 MW), Chamara - II (3x100 MW), Salal (6x115= 690 MW), Tanakpur (3x31.4 MW) and Rangit (3x20 MW).

6. Other issues handled by the Commission

- 6.1 The Commission approved the relaxation of Heat Rate norms of Assam Gas Based Power Project and Agartala Gas Turbine Project w.e.f 26.05.2011. The Heat Rate norms of Assam Gas Based Power Project were revised from 2400 kCal/kWh to 2500 kCal/kWh (Combined Cycle) and that of Agartala Gas Turbine was revised from 3500 kCal/kWh to 3700 kCal/kWh (Open Cycle).

6.2 The Commission allowed the recovery of additional cost incurred consequent to pay revision of employees w.e.f 01.01.2007 to 31.03.2009 and that on account of Central Industrial Security Force(CISF) and Kendriya Vidyalaya staff during 01.01.2006 to 31.03.2009.

7. Guidelines for Commissioning Schedule of Hydro Electric project

7.1 The Commission had invited comments in 2010 on the draft “Guideline for Commissioning Schedule of Hydro Electric Projects” not being State controlled or owned i.e. private sector projects. Due to Ministry of Power Resolution dated 8.07.2011, the Central Commission decided to revise the draft guide line to make them applicable for CPSUs also. Revised guidelines had been posted on the web site of the Commission for inviting the comments of the stake holders. Commission is presently in the process of notifying the “Guideline for Commissioning Schedule of Hydro Electric Projects” after incorporating the suggestions of the stake holders.

8. Power Market Monitoring

A well-functioning electricity market requires an effective market monitoring process. As part of the electricity market monitoring process; Central Electricity Regulatory Commission (CERC) has prepared three kinds of reports. These are:-

- (1) Monthly report on short-term transactions of electricity since August 2008 with the objectives:
 - (i) to observe the trends in volume and price of the short-term transactions of electricity;
 - (ii) to analyses competition among the market players; and
 - (iii) to disclose / disseminate all relevant market information;

Here, “short-term transactions of electricity” refers to contracts of less than one year period, for electricity transferred under bilateral transactions through Inter-State Trading Licensees (only inter-state part) and direct by the Distribution Licensees, Power Exchanges [Indian Energy Exchange Ltd (IEX) and Power Exchange India Ltd (PXIL)], and Unscheduled Interchange (UI).

- (2) Monthly report on Over the Counter (OTC) contracts .i.e. bilateral contract through inter-state trading licensees since August 2010 with the objective :

- (i) To create a three months forward curve on electricity prices based on the price of OTC contracts; and
- (ii) To make comparative analysis of price of OTC contract and the actual price discovered in the power exchange.

- (3) Annual Report on the short-term power market in India since the year 2009. In July 2011, the report for the year 2010-11 has been prepared. The analysis of the report includes :-

- (i) Yearly, monthly and daily trends in short-term transaction of electricity;
- (ii) Analysis of open access consumers on power exchanges;
- (iii) Major Sellers and buyers of electricity through Licensed Trade and Power Exchanges;
- (iv) Effects of congestion on Volume of Electricity transferred through Power Exchange; and
- (v) Comparison of short-term price with tariff of longterm sources of power for various distribution companies.

9. Major Target likely to be achieved up to 31st March, 2013

- ◆ Finalisation of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Third Amendment) Regulations, 2012.
- ◆ Review of UI charges including UI cap rate of the Central Electricity Regulatory Commission (Unscheduled Interchange charges and related matters) Regulations, 2009 as amended from time to time.
- ◆ Proposal for introduction of Ancillary market.
- ◆ Regulations on Prevention of Market Domination under Section 60 of the Act.
- ◆ Review of REC framework.





Participants in the Interactive Conference of Appellate Tribunal for Electricity (APTEL) with Central & State Electricity Regulators held on 5th June, 2012 at New Delhi

APPELLATE TRIBUNAL FOR ELECTRICITY (APTEL)

1. The Appellate Tribunal for Electricity (APTEL) has been set up under the provisions of the Electricity Act 2003 (Section 110) with all India Jurisdictions (except the state of J&K) and has been established on 13th May 2005. It started accepting appeals w.e.f. 21st July 2005. The Tribunal is presently located at 7th Floor, Core-4, SCOPE Complex, Lodhi Road, New Delhi- 1 1 0003.
2. APTEL is headed by a Chairperson who has a status of a sitting judge of the Supreme Court. Hon'ble Mr. Justice M.Karpaga Vinayagam is the Chairperson of the Tribunal. The Tribunal is also having the posts of one Judicial Member and two Technical Members. Hon'ble Mr. Justice Partha Sakha Datta is the Judicial Member and Hon'ble Shri Rakesh Nath and Shri V.J. Talwar are the Technical Members of the Tribunal.
3. The Tribunal has also been conferred jurisdiction under the Petroleum and Natural Gas Regulatory Board Act, 2006 to hear appeals against the orders/decisions of the Petroleum and Natural Gas Regulatory Board set up under the Act. Hon'ble Mr. N.M. Borah is the Technical Member (P&NG).
4. At present the Registrar of the Tribunal is a member of Higher Judicial Service in the rank of District Judge.
5. APTEL hears and disposes of appeals filed against the orders of the Central Electricity Regulatory Commission, State Electricity Regulatory Commissions, Joint Commissions and Adjudicating Officers. Subsequent to the setting up of APTEL, the appeals pending in the High Courts of all States Except the State of Jammu & Kashmir on the subject were also transferred to this tribunal.
6. Proceedings are conducted in two Courts, each Court consisting of one Judicial Member and a Technical Member.
7. As on 30th November, 2012 of **4169** appeals/petitions/matters etc. that have been filed out of which **3640** have been disposed of.
8. Thus, within a short span of its operating, APTEL has become fully operational and has been successful in disposing of a large number of matters, thus expediting justice. The Tribunal is also taking efforts for having Circuit Bench sittings in Mumbai and Kolkata. The sitting of the Chennai Circuit Bench has been operational w.e.f. 17th August, 2012. The website of the Tribunal (**www.aptel.gov.in**) is providing easy access to the daily cause lists and judgments/orders.





Foundation Stone Laying Ceremony of Mouda Super Thermal Power Station, Stage-II on 4th January, 2013

PUBLIC SECTOR UNDERTAKINGS

CHAPTER-18

NTPC LIMITED

1.0 NTPC Limited, a Maharatna Company of the Government of India, is the largest power generator in India with comprehensive in-house capabilities in building and operating power projects. NTPC has authorized share capital of ₹10,000 crores, Paid up capital is ₹8,245.5 crores. 84.5% of this is held by the Government of India.

NTPC has a Vision “To be the world’s largest and best power producer, powering India’s growth” and a Mission to “Develop and provide reliable power, related products and services at competitive prices, integrating multiple energy sources with innovative and eco-friendly technologies and contribute to society”.

Core Values of NTPC are Business Ethics, Environmentally & Economically Sustainable, Customer Focus, Organizational & Professional Pride, Mutual Respect & Trust, Motivating Self & others, Innovation & Speed, Total Quality for Excellence, Transparent & Respected Organization, Enterprising and Devoted – in short “BE COMMITTED”.

Over the years, NTPC has attained a global Stature. In the Platts Top 250 Global Energy Companies for 2012, NTPC has been ranked No.1 Independent Power Producer in the world. NTPC ranked 337th largest company in the World among ‘Global 2000’ list of companies compiled by Forbes for 2012.

2.0 NTPC PERFORMANCE HIGHLIGHTS FOR THE YEAR 2012-13 (up to 30th Nov.’12)

- Generation of 150.606 BUs was achieved from NTPC stations at an average PLF of 80.97% of coal based power stations, as against 69.16% for all India average for coal based power stations. Target generation for full year is 232 BUs.
- Nine NTPC coal stations achieved more than 80% PLF: Talcher Th. (94.08%), Unchahar (91.83%), Singrauli (88.42%), Korba (87.78%), Ramagundam (87.35%), Vindhyachal (87.26%), Rihand (84.87%), Dadri (81.49%), and Simhadri (80.49%).
- During the Half Year 2012-13 (Apr.-Sept.’12), NTPC recorded a total income of ₹34,012.77 crores (unaudited), and net profit after tax of ₹5,641.02 crores (unaudited).
- Capacity addition of 2,660 MW was achieved which comprises of Mouda U#1 (500 MW), Rihand U#5 (500 MW), Sipat U#3 (660 MW), Vindhyachal U#11 (500 MW) and Jhajjar U#3 (500 MW). Installed capacity reaches 39,674 MW (including 4864 MW under JVs). Construction work is in progress at 17 project locations with an aggregate capacity of 16,309 MW.
- 3,820 MW was declared commercial, comprising Farakka U#6 (500 MW), Simhadri U#4 (500 MW), Sipat U#2 (660 MW), Sipat U#3 (660 MW), Jhajjar U#2 (500 MW), Rihand U#5 (500 MW) and Vallur U#1 (500 MW). This is substantially high against 1,160 MW achieved last year and is highest ever achieved so far in a year.
- Awards were made for 4,631 MW projects – Vindhyachal-V (500 MW), Meja (1,320 MW), Mouda-II (1,320 MW), Solapur (1,320 MW) and Lata Tapovan (171 MW).
- Investment approval of 1,600 MW Lara-I has been done, award shall be made on receipt of Environment clearance expected shortly. Investment approval of 5,680 MW is likely to be done shortly for the projects – Nabinagar-JV with BSEB (1,980 MW), Darlipalli-I (1,600 MW), Unchahar-IV (500 MW) and Gadawara (1,600 MW).
- Various Govt. clearances/commitments including Forest and Environment clearance for Lara STPP; Environment clearance for Vindhyachal-V project; CWC concurrence for Darlipalli STPP, Gajmara STPP, Khargone STPP, Gadawara STPP; NOC from AAI for Adra STPP, Nabinagar-II, Solapur STPP, Bilhaur STPP were obtained.
- NTPC has received 90.5 MMT of domestic coal @ materialization 103 %. Last year during the same period, NTPC had received 77.3 MMT of domestic coal @ materialization of 93% . There is an increase of 17 % in coal receipt.
- In addition to FSA, following bilateral MoUs have been signed to augment domestic coal supply at different NTPC stations :
 - ⇒ 4.0 MMT coal from SCCL for Ramagundam & Simhadri
- LOA obtained for supply of 0.4 MTPA of coal to Bongaigaon U#1&2 (2x250 MW) from ECL. MoUs for coal supply to Mouda U#1 (500 MW) & Simhadri U#4 (500 MW) have been signed during the year.
- Feasibility Report for Kerandari Coal Mine (6 MTPA) was approved by NTPC Board and Feasibility Report for Dulanga Coal Mine (7 MTPA) & Talaipalli Coal Mine is in process of approval.
- Mine closure plan of Pakri-Barwadhih coal block approved by MoC on 20.04.12. Section 4 Notification under LA Act for acquisition of land for Railway Yard in Pakri-Barwadhih coal block issued on 22.05.12. Clearance for Construction of Explosive Magazine for Pakri-Barwadhih coal block has been issued by Chief Controller of Explosives on 22.05.12. Section 7 Notification under CBA Act for Phase -V land of Pakri-Barwadhih coal block issued by MoC on 12.06.12.

- Socio-economic survey of Chatti-Bariatu (South) coal block completed on 18.08.12.
- Administrative approval by Ministry of Steel and Mines, Govt. of Odisha accorded on 10.05.12 for acquisition of private land under LA Act for Infrastructure and R&R colony through IDCO in Dulanga coal block. Section 4 notification for acquisition of land for R&R and CISF colony in Dulanga Coal block issued on 30.07.12. Revised Mining Plan of Dulanga Coal block, in view of being taken out of this block from 'No-Go' area of MoEF, approved by MoC on 06.09.12.
- Stage I forest clearance accorded by MoEF for Talaipalli Coal block on 05.11.12.
- Government of India has allocated 4.46 MMSCMD KG D6 gas to NTPC's NCR gas stations, viz. Anta, Auraiya, Dadri & Faridabad. Out of 4.46 MMSCMD, 2.30 MMSCMD has been contracted and the balance 2.16 MMSCMD is under discussion for tie up.
- Shri Sushilkumar Shinde, the then Hon'ble Union Minister of Power laid the foundation Stone of Stage-I (3x800 MW) Kudgi Super Thermal Power Project of NTPC in Bijapur District of Karnataka.
- Shri Sushilkumar Shinde, the then Hon'ble Union Minister of Power, inaugurated the Solar Thermal Heating Ventilation & Air Conditioning System at NTPC – NETRA.
- Shri K C Venugopal, the then Hon'ble Minister of State for Power (GoI) visited the NTPC Koldam Hydro Power Project on 3rd July 2012 and inaugurated the Spillway Control Room to be setup at Koldam Hydro Power Project.
- Shri K C Venugopal, the then Hon'ble Minister of State for Power (GoI) laid the foundation stone for a training centre at Govt. Women's Polytechnic, Kayamkulam on 4th April 2012. The Polytechnic College will have a double storey building to be constructed by NTPC Kayamkulam under its CSR-CD programme with an expenditure of ₹2.3 crores.

3.0 NTPC STATIONS & GENERATION PERFORMANCE

The gross generation from NTPC stations, excluding joint ventures, during the year 2012-13 (up to 30th Nov.'12) has been 150,606 MUs. During the period, NTPC coal based stations achieved a PLF of 80.97% with availability of 87.77%, and NTPC gas stations achieved a PLF of 61.03% with availability of 77.09% (91.96% DC).

NTPC is likely to generate a total of around 232 BUs during the year 2012-13.

4.0 FINANCIAL PERFORMANCE

NTPC has been maintaining sound financial performance. NTPC recorded a total income of ₹34,012.77 crores (unaudited) and net profit after tax of ₹5,641.02 crores (unaudited) during the Half Year 2012-13 (Apr.-Sept. '12), as compared to total income of ₹31,554.76 crores (unaudited) and net profit after tax of ₹4,499.90 crores (unaudited) during the Half Year

2011-12 (Apr.-Sept. '11) respectively, thus registering an increase of 8% in the unaudited total income and 25% in the unaudited PAT.

5.0 COMMERCIAL PERFORMANCE

5.1 Billing and Realisation: NTPC has been able to consistently maintain 100% realization of bills for the last 9 years starting from 2003-04. NTPC expects to realize 100% of the bills in the year 2012-13 also. As per the provisional figures, during the current financial year 2012-13, the amount billed up to Nov.'12 is ₹44,253 crore and realization against this is ₹40,298 crore. The balance payment is expected to be realized in Dec.'12, thus leading to 100% realization so far.

All the customers have opened and are maintaining letter of credit (LC) equal to 105% of average monthly billing as per one-time settlement scheme and are making full payment of current bills.

RBI on behalf of State Governments serviced redemption due on bonds and half-yearly Installments on bonds in time as per One-Time Settlement Scheme.

5.2 Customer Relationship Management: Customer Focus has been central to NTPC's commercial philosophy. This is in line with the core values of NTPC, which contains Customer Focus as a key element.

To intensify the customer focus, several initiatives have been taken by NTPC. Customer Relationship Management (CRM) is one of the key initiatives undertaken to strengthen the relationship with customers.

Under CRM, regular structured interactions with customers take place for getting feedbacks from the customers and understanding their expectations. Based on these interactions, NTPC identifies potential areas of cooperation and provides various support services to them. This also provides an opportunity for sharing of each other's best practices.

In the financial year 2011-12, a total of 65 such services have been provided and in the financial year 2012-13 (Upto November, 2012), 31 such services have already been provided.

Further under CRM initiatives, NTPC is offering training for Customer's officials at Power Management Institute (PMI) of NTPC. Under this initiative, two seats are kept free of cost for Customer's officials in identified Training programmes conducted by PMI. In the year 2011-12, a total of 126 participants and in year 2012-13 (till Nov.'12), a total of 104 participants from customers have attended various programmes under this scheme.

In addition to Annual Regional Customers Meets, new initiatives like State Specific 'Business Partner Meets', state level GENCOs Meets etc. have also been held for better interaction and sharing experiences.

5.3 Commercial Capacity Addition: In the year 2012-13 (up to 30.11.12), NTPC has declared commercial operation

of 3,820 MW consisting of the following units :

Sl. No.	Unit	Capacity (MW)
1	Sipat Unit-2	660
2	Sipat Unit-3	660
3	Jhajjar Unit-2	500
4	Farakka Unit-6	500
5	Simhadri Unit-4	500
6	Rihand Unit-5	500
7	Vallur Unit-1	500
TOTAL		3,820

5.4 5 Km. Electrification Scheme: As part of the scheme of Govt. of India for provision of supply of electricity in 5 Km. area around Central Power Plants, NTPC has initially identified 29 projects around its operations stations and under construction projects. States corresponding to 08 projects have not shown inclination towards implementation of the scheme. For balance 21 projects, Detailed Project Reports (DPR) have been approved for 19 projects by State Governments and is under the process of approval for 02 more projects. Award has been placed at 08 projects i.e. Talcher Thermal Power Station, Talcher Super Thermal Power Station, Kahalgaon Super Thermal Power Station, Firoz Gandhi Unchahar Thermal Power Station, Tanda Thermal Power Station, Rihand Super Thermal Power Station, Singrauli Super Thermal Power Station and Vindhyachal Super Thermal Power Station. Work in these 08 awarded projects is in progress and are expected to be completed by March, 2013.

6.0 GROWTH

Under Long Term Planning, NTPC prepares Corporate Plans which are co-terminus with the national five year plans. In view of the changes in the business environment, NTPC has prepared its Corporate Plan 2010-32 which lays the broad roadmap for NTPC's growth for the period 2010-32.

NTPC envisages to have an installed capacity of 128,000 MW by the year 2032 with a well diversified fuel mix comprising 56% coal, 16% gas, 11% nuclear energy, 9% renewable energy and 8% hydro power based capacity.

As such, by the year 2032, 28% of NTPC's installed generating capacity will be based on carbon free energy sources. Further, the coal based capacity will increasingly be based on high-efficient-low-emission technologies such as Super-critical and Ultra-Super-critical. Along with this growth, NTPC will utilize a strategic mix of options to ensure fuel security for its fleet of power stations. NTPC has formed various Joint Venture Companies and Subsidiaries for pursuing growth. Details of these companies are enclosed at **Annexure-I**.

6.1 Capacity Addition Programme :

Against a target of 4,160 MW (including 1,000 MW under JVs) for the year 2012-13, 2,660 MW (including 500 MW under JV) has already been added till 30th

Nov.'12. In the 11th Plan period (2007-12) capacity of 9,610 MW (including 3,310 MW under JVs/ Subsidiaries) was commissioned against a target of 9,220 MW. As on 30th Nov.'12, operating capacity of NTPC is 39,674 MW (including 4,864 MW under JVs/ Subsidiaries) comprising of 33,779 MW coal based stations at 22 locations and 5,895 MW gas based stations at 8 locations. Details of NTPC's installed capacity as on 30th Nov.'12 are enclosed at **Annexure-II**.

As on 30th Nov.'12, construction work is in progress for 16,309 MW capacity at 17 project locations including JVs & Subsidiaries. Further, NTPC has identified a number of projects for its capacity addition programme for XII and XIII Plan. Bids for Main Plant have already been received/ invited for 8,800 MW capacity and Feasibility Reports/ Detailed Project Reports have been approved for 15,820 MW capacity. Details of these projects are given at **Annexure-III**. NTPC is also pursuing other new projects for benefits beyond 12th Plan and the same are under various stages of planning, clearances and approvals.

NTPC's Project Management capabilities have been recognized internationally. During the year 2011, NTPC has achieved highest status of "Prize Winner" in Award Category Project Excellence in Mega-Sized Projects by IPMA International for Dadri Stage II (2x490 MW).

Earlier, NTPC had received the IPMA-2008 Silver Medal for Vindhyachal, Stage-III (2x500 MW) and IPMA-2005 Award for Project Excellence for Simhadri Stage-I (2x500 MW) project.

To achieve ERP implementation successfully across NTPC, the company has initiated Project Monitoring through e-monitoring. In this regard e-monitoring has been planned to be rolled out as a pilot project hence forth all the networks for future Power projects shall be linked to PS Module and Monitoring shall be done through Master Network (MNW) and Level-2 (L2) Networks for all projects. The e-monitoring system which is in the process of initiation has the following advantages compared to earlier system :

- Facilitates systemwise network activity identification.
- Focused monitoring of Engg. activities w.r.t system/ milestone.
- Logical linkage between Milestone systems & Billing Break Up (BBU) items.
- Automated Purchase Order (PO) creation/ amendment and delivery date maintenance w.r.t L2 Networks activities.
- Key manufacturing stage status update of BBU items based on vendor information.
- Focused monitoring for readiness of civil fronts at project site.
- Linkage of site progress with Milestone/ system.

H. Uniform Reporting.

Web based Monitoring system has already been introduced to facilitate real time monitoring of power projects. Through some advanced features like Web based Milestone Monitoring system (WEBMILES), Project Review and Internal Monitoring System (PRIMS) and Enterprise-wide Issue Tracking System. Webmiles facilitates monitoring of key project milestones by external stakeholders like CEA, Ministry of Power and Ministry of Statistics and Programme implementation. PRIMS is a decision support system and facilitates the top Management to take stock of various project related activities. The system is interfaced with leading project management systems like Primavera and SAP-PS. The system is currently configured for monitoring of key milestones pertaining to New and Ongoing Power Projects as well as project related MoU Milestones.

Video-conferencing is being used extensively for Management Committee meetings and Projects Monitoring on regular basis. This facility at PMI is also now being used (Super 30) for conducting virtual class room coaching for students located at NTPC sites.

6.2 Capacity Addition through Joint Ventures/ Take Overs/ Subsidiaries :

As a capacity addition initiative. NTPC has formed various JVs and Subsidiaries for power generation business such as NSPCL (NTPC-SAIL Power Company Private Limited), Ratnagiri Gas and Power Private Limited (RGPPL), NTPC Tamil Nadu Energy Company Limited (NTECL), Bharatiya Rail Bijlee Company Limited, Kanti Bijlee Utpadan Nigam Limited (formerly Vaishali Power Generating Company Limited), Nabinagar Power Generating Company Private Limited, Meja Urja Nigam Private Limited, Trincomalee Power Company Limited and Aravali Power Company Private Limited. Details of Joint Ventures and their area of operation are given in **Annexure-I(A)**.

6.3 Global Initiatives for Capacity Addition :

NTPC is planning to have generating capacity overseas also. The Joint Venture Agreement between NTPC and Ceylon Electricity Board (CEB) was signed on 6th September 2011 in Colombo for development, construction, establishment, operation and maintenance of a coal fired electricity generation station of 2x250 MW capacity at Trincomalee, Sri Lanka. JV Company was incorporated in Colombo on 26th September 2011, by the name "Trincomalee Power Company Limited". Further, a 1,320 MW coal based power project in Bangladesh is being pursued.

NTPC is providing consultancy services to Trincomalee Power Company Limited (A JV Company between NTPC and CEB) for Site Selection, Site Specific Studies and preparation of Feasibility Report (FR) of Trincomalee Coal Power Project, Sri Lanka (2x250 MW).

NTPC is also providing consultancy services to Bangladesh Power Development Board (BPDB) for feasibility studies

for proposed coal based power projects Khulna Thermal power project, Bangladesh (2x660 MW) at Khulna FRs for both the projects have been submitted to clients.

6.4 Lateral Integration

6.4.1 Emphasis on Hydro: Although coal will remain the mainstay for power generation owing to its abundant reserves in the country, NTPC is progressively diversifying its fuel mix to increase the share of non fossil fuel with a view to promote sustainable energy development and reduce CO₂ intensity of power generation. At present, Hydro Electric Power Projects (HEPPs) of 1,320 MW capacity are under construction, comprising of 800 MW (4x200 MW) Koldam in Himachal Pradesh and 520 MW (4x130 MW) Tapovan Vishnugad in Uttarakhand. Government has decided closure of the 600 MW (4x150 MW) Loharinag Pala which was under construction in Uttarakhand.

Other hydroelectric power projects being taken up for implementation were 261 MW (3x87 MW) Rupsiabagar-Khasiabara HEPP in Uttarakhand and 460 MW (4x115 MW) Kolodyne HEPP in Mizoram. However, FAC in its meeting held on 26-27.11.2012 reiterated their earlier recommendation to decline Forest clearance of the Project land for Rupsiabagar-Khasiabara HEPP. Accordingly, Project is being closed and assets are being shifted.

Apart from this, the work of preparation of DPR for Amochu Reservoir Project in Bhutan has been allocated to NTPC. Draft DPR with installed capacity envisaged as 540 MW has been prepared by NTPC as per schedule and has been submitted to Royal Government of Bhutan (RGoB) and CEA also for their appraisal.

For NTPC, 171 MW (3x57MW) Lata Tapovan HEPP in Uttarakhand through its wholly owned subsidiary NTPC Hydro Limited (NHL), Investment approval has been accorded on 27.07.12 and Main Plant contract was awarded on 17.08.12. Further, 120 MW (3x40 MW) Rammam-III HEPP in West Bengal which is also with wholly owned subsidiary NTPC Hydro Limited (NHL), is under process of tendering & award. NHL is being merged with NTPC.

6.4.2 Renewable Energy - Sustainable Energy Development: NTPC has adopted the following vision statement on sustainable energy development :

"Going Higher on Generation, lowering GHG intensity"

In NTPC, Renewable Energy (RE) is being perceived as an alternative source of energy for "Energy Security" and subsequently "Energy Independence" by 2020. Renewable energy technologies provide not only electricity but offer an environmentally clean and low noise source of power.

NTPC plans to broad-base generation mix by evaluating conventional and alternate sources of energy to ensure long term competitiveness and mitigate fuel risks. NTPC

has taken various initiatives to implement the Renewable Energy Projects. The brief status of these initiatives is as given below :

(i) Solar projects (Photo Voltaic (PV) and Thermal)

- Under Execution : 10 MW (PV)
- Under Tendering : 100 MW (PV)
- Feasibility Report(FR) stage : 350 MW (PV & Thermal)

(ii) Wind Power Projects

- Under Tendering : 80 MW
- MOU signed
 - a. With Govt. of Karnataka : 500 MW
 - b. With Govt. of Kerala : 200 MW
 - c. With Govt. of Gujarat : 500 MW

(iii) Small Hydro Projects

- Under Execution : 8 MW
- Under FR stage : 3 MW

(iv) Geothermal based power Projects

MoU has been signed with National Geophysical Research Institute Hyderabad to identify potential sites for geothermal based projects and preparation of FR.

(v) Distributed Generation (DG)

MoU with Swiss Agency for Development and Cooperation to plan and implement Renewable Energy and Distributed Generation projects. The main focus is on technologies like biomass gasification including two stage gasifier, small hydrosystems and solar energy.

Further NTPC has formed a joint venture company under the name 'Pan-Asian Renewables Private Ltd' with Asian Development Bank (ADB) and Kyuden International Corporation, a wholly owned subsidiary of Kyushu Electric Power Company Inc. (Kyushu), Japan as partners. The company has been incorporated to develop renewable energy projects and initially establish over a period of three years a portfolio of about 500 MW of renewable power generation resources in India. Details of JV company are enclosed at Annexure-I(B).

6.4.3 Nuclear Power: NTPC Limited has formed a JV company with Nuclear Power Corporation of India Limited (NPCIL) with equity holding 49% and 51% respectively to set up Nuclear Power Projects. This JV company named "Anushakti Vidyut Nigam Limited" has been incorporated on 27th Jan.'11 and proposes to set up its first nuclear plant (2x700 MW) at Hissar district in Haryana. Details of the JV company are enclosed at Annexure-I(B).

6.5 Forward Integration

NTPC has formed following Subsidiaries/ Joint Ventures for related power business :

- (i) NTPC Electric Supply Company Limited (NESCL)

- (ii) NTPC Vidyut Vyapar Nigam Limited (NVVN)

- (iii) National Power Exchange Limited (NPEX)

Details enclosed at **Annexure-I(C).**

6.6 Backward Integration

6.6.1 Development of Captive Coal Mines: Coal mining is integral to NTPC's fuel security strategies. NTPC realizes that greater self reliance on coal will go a long way in ensuring the sustained growth of generation.

NTPC has been allotted six coal blocks namely Pakri-Barwadih, Chatti-Bariatu, Kerendari, Dulanga, Talaipalli and Chatti-Bariatu (South). These coal blocks are being developed with a targeted coal production of 3 MTPA by 2014, which shall be raised to 37 MTPA by 2017. Subsequently, these coal blocks shall achieve their full production potential of 53 MTPA, which will cater to around 10840 MW of NTPC's coal based generation capacity.

However, in case of Chatti-Bariatu, Kerendari and Chatti-Bariatu (South), the timeline stipulated by Ministry of Coal for development of these blocks could not be met for reasons beyond the control of the Company. Accordingly, Ministry of Coal had de-allocated these coal blocks on 14.06.2011. NTPC made representation to Ministry of Coal. Ministry of Coal through letter dated 27.01.2012 had conveyed in-principle approval for withdrawal of de-allocation, but the formal communication is still awaited.

Apart from this, Brahmini and Chichro-Patsimal coal blocks with estimated Geological Reserves of about 2 Billion Tonnes were earmarked by Ministry of Coal for joint operation by a 50:50 JV between NTPC and CIL under Ministry of Coal. These blocks have production potential of about 20 MTPA. A JV company named as M/s CIL-NTPC Urja Private Ltd. has been incorporated and CMPDIL has been entrusted with the job of detailed exploration & preparation of GR.

In case of Brahmini and Chichro-Patsimal coal blocks, allocated to CIL NTPC Urja Private Limited, though there was no schedule stipulated with the allotment letter, Ministry of Coal had de-allocated these blocks for delay in their development.

In addition to above, Ministry of Coal has given in-principle approval for allotment of coal blocks to NTPC for power projects of 8460 MW capacity to be developed in 12th and 13th plans. NTPC is regularly following up with Ministry of Coal for allocation of these coal blocks.

6.6.2 Coal Import: To overcome the shortfall of domestic coal supply, NTPC is importing coal since 2005-06. For the year 2012-13 target for coal import is 16 MMT. Till year 2011-12, NTPC was importing coal through PSU route i.e. through MMTC & STC. NTPC started direct import of coal on multi-packages based on geographical location of its power plants w.e.f February 2012. Change in procurement strategy has resulted in reduction in import coal prices.

Against the target of 16 MMT, 5.97 MMT of coal has already been received up to Nov.'12. Orders for 9.4 MMT have been placed upto Nov.'12. Further, techno-commercial bid for 7.0 MMT have been opened in the month of November, 2012 and would go to the Board in Dec.'12/ Jan.'13.

As new initiative, NTPC started procuring low GCV imported coal on trial basis for its Simhadri station. Contract for supply of 0.4 MMT of low GCV coal to Simhadri has been awarded in September, 2012. Cost of this coal is cheaper in comparison with high GCV imported coal and presently comparable to domestic coal price. Performances of the units of Simhadri station are under evaluation while using the low GCV coal.

6.6.4 Inland Waterways: Transportation of imported coal through Inland Waterways to Farakka project – Activities such as procurement of transshipper, barges, cranes etc. are in progress. Construction activities of jetty at Farakka project, Unloading system, conveyor system etc are also in progress. Project is expected to become operational during last quarter of 2012-13, 2.0 LMT for transportation through waterways has been earmarked in the tender for procurement of imported coal for Farakka project, under 7 MMT multi-packages.

6.6.4 Sourcing of Liquefied Natural Gas (LNG)/ Natural Gas (NG): NTPC, in its efforts towards long term fuel security for its gas based stations, has been exploring opportunities for participation in different elements of LNG/ Gas value chain with prospective partners in India and potential target countries. This includes participation in exploration, liquefaction, shipping ventures, re-gasification etc.

NTPC has signed Production Sharing Contracts (PSCs) with the Government of India for four Oil/ Gas exploration blocks awarded under eighth round of bidding under New Exploration Licensing policy (NELP-VIII), including one with 100% Participating interest. Oil & Gas exploration activities are under progress in all the four awarded blocks.

6.6.5 Strategic Alliance: NTPC has formed following companies with strategic partners for securing thermal coal assets in India and abroad:

- (i) International Coal Ventures Pvt. Ltd.
- (ii) NTPC-SCCL Global Venture Pvt. Ltd.
- (iii) CIL NTPC Urja Pvt. Ltd.

Details are enclosed at Annexure-I(D).

6.6.6 Strategic Diversification Initiatives: NTPC has taken several strategic diversification initiatives and joined hands with experts in power equipment manufacturing areas. These include varying stakes in "NTPC BHEL Power Projects Private Limited" (NBPPL), "BF-NTPC Energy Systems Limited", and "Transformers and Electricals Kerala Limited" (TELK). Details are enclosed at Annexure-I(E).

6.7 Services Business

6.7.1 Consultancy : Consultancy Wing of NTPC was set up in 1989 with a view to Share Company's varied experience and proven systems. It provides Consultancy Services to Domestic and International clients in various phases of power plants. The services covers "From Concept to Commissioning and beyond...." such as Owners Engineer Service, Lender's Engineer Service, Project Management & Construction Supervision Services, O&M Services including Performance enhancement, Renovation & Modernization Services, QA, Inspection, Training & IT related Services, etc. Our major clientele in domestic sector includes various state utilities / PSU's like MSPGCL, UPRVUNL, MPPGCL, GSECL, DVC, DPL, WBPDC, RRVUNL, HPGCL, APGENCO, GMDC, GIPCL, TVNL, KPCL, REC, PFC, PPCL & IPGCL, NALCO etc and private sector companies like Hindustan Zinc, Jindal Power, ST-CMS, Abhijeet, Lanco, Shree Cements etc. In International arena major clientele are EGCB (Bangladesh), KenGen (Kenya), Yusuf Bin Ahmed Kanoo (Saudi Arabia), Dubai Electricity & Water Authority, (UAE), Ceylon Electricity Board (Sri Lanka), Alghaniem (Kuwait), ALBA(Bahrain), Royal Govt. of Bhutan etc.

As on date Consultancy Wing is involved in execution of around 15,000 MW apart from 7,690 MW in NTPC-JV projects as below :

- Owner's Engineers Services & Project Monitoring Services- 5,900 MW
- O&M Services / O&M studies (PIP & Gap Analysis) – 7,470 MW
- R&M Services – 1,550 MW

NTPC-Consultancy Wing has received order from Electricity Generation Company of Bangladesh Ltd under International Competitive Bidding financed by World Bank for O&M Services for 2x120 MW Siddhirganj Peaking Power Plant located near Dhaka in Bangladesh. This assignment has commenced w.e.f. 01.10.2012 by deputing experts at site.

During the year 2012-13 (till 30.11.2012) NTPC – Consultancy Wing has secured 17 nos. orders.

6.7.2 NTPC has also formed following companies in Joint Venture in Service Sector:

- (i) Utility Powertech Limited (UPL)
- (ii) NTPC- Alstom Power Services (Pvt.) Limited (NASL)
- (iii) National High Power Test Laboratory (Private) Limited (NHPTL)
- (iv) Energy Efficiency Services Limited (EESL)

Details are enclosed at Annexure-I(F).

7.0 TECHNOLOGY INITIATIVES

- NTPC Ltd has pioneered the adoption of several new technologies including combined cycle gas-fired power

stations, MGR (Merry Go Round), DDCMIS (Distributed Digital Control & Management Information System), HVDC (High Voltage Direct Current) transmission, Sliding Pressure Operation of SG, Dry ash Extraction and Disposal, 765 KV Switchyard, Ash water recirculation, Liquid waste management systems, PADO (Performance Analysis and Diagnostic Optimization), Tunnel Boring Machines, and Supercritical technology. These technologies have contributed to increased efficiency and greater environmental protection in its operations, and these have been adopted widely in the Indian power industry, as well

- Large capacity addition programme puts pressure on our already constrained and limited primary energy resources. A major stress must, therefore, be laid on energy efficiency and conservation, with particular emphasis on efficiency of electricity generation, transmission, distribution and end-use. To take care of the generation side efficiency improvement, we have introduced super critical technology for our Sipat Plant with Steam parameters of (247 Kg/cm²/ 5370°C / 5650°C).
- In order to improve the efficiency further, we have adopted even higher steam parameters of (247 Kg/cm²/ 5650°C/ 5930°C) for Barh Extension project and all 660/ 800 MW being taken up thereafter. The improved heat rate at these parameters will result in 5.79% gain in efficiency over the efficiency of conventional Sub-Critical 500 MW Unit considering similar coal.
- For the sub-critical 500 MW units also, reheat temperature has been increased to 5650°C for all new units (resulting in about 0.7% gain in efficiency).
- To meet future challenges of meeting India's electricity needs at affordable cost with minimum environmental impact, NTPC has drawn a long term Technology Roadmap up to 2032 which involves development, adoption and promotion of safe efficient and clean technologies for entire value chain of power generation business. Some of the target technologies are :
 - Setting up of Coal Fired Units with Ultra Supercritical Parameters targeting efficiency comparable to the best available technology in the world.
 - Establishment of Indian Coal Based Gasifier & Gas cleaning System for IGCC.
- It was decided to implement 100 MW IGCC Technology Demonstration Project at NTPC Dadri in two stages, with Stage-I comprising of installation and stabilization of coal gasifier, gas clean up and other associated systems and Stage-II comprising of combined plant.
- **Development of Advance Ultra Super Critical technology:** Under National Mission on Clean Coal (Carbon) Technologies, NTPC, BHEL and Indira Gandhi Centre for Advanced Research (IGCAR) have entered into MOU for indigenous development of advance ultra super critical technology which will have enhanced efficiency of above

45% and about 15-17% less CO₂ emission as compared to conventional 500 MW sub-critical thermal power plants.

Hybrid solar thermal plant: Detailed project report being prepared for hybrid solar thermal plant of about 5 MW by integration of solar heat with 210 MW coal based unit at Dadri. Solar heat is being integrated along with feed heaters in the turbine cycle for conversion of solar heat to electrical power with the help of existing steam cycle of 210 MW unit. This technology has been pioneered by NTPC for the first time in India.

8.0 NTPC ENERGY TECHNOLOGY RESEARCH ALLIANCE (NETRA)

NETRA is working on research & technology development projects in its focus area of Efficiency & Availability Improvement & Cost reduction; New & Renewable Energy; Climate change & Environmental Protection, Scientific Support to the Stations.

NETRA continues to provide technical support to all NTPC stations and various departments of NTPC as well as other utilities. This support has played a definite role in increasing the availability & reliability of the stations.

NETRA has undertaken many research & technology development projects such as :

- Waste Heat Recovery from Flue Gas;
- CFD Analysis of Boilers
- VFD Retrofitting in cooling water fans
- AI based System for Performance Improvement
- AI based Online Boiler Water Chemistry Monitoring;
- Solar Thermal based HVAC;
- Solar Hybrid with Steam Cycle
- Integrated Bio-Diesel
- Robotic Inspections of LTSH tubes
- RFID technique for detection of fish plate removal
- CO₂ Capture / Utilization Technology by PSA, Micro-Algae, Ash Mineralization; etc.

NETRA has two advisory bodies namely i) Research Advisory Council (RAC) which have nominated Members from National & International academicians & professionals with Dr. V. K. Saraswat, Scientific Advisor to RM & Secretary, DRDO as Chairman, to advice & guidance on research projects ii) Scientific Advisory Council (SAC): D (T), D (O) with Regional EDs, ED (Engg.), ED(OS) & ED (NETRA) as its Members to guide on Station related issues.

NETRA laboratories are ISO-17025 accredited and provide high end scientific services to all the Company stations as well as many outside stations NETRA laboratories are also recognized as "Well known Remnant Life Assessment Organisation under the Boiler Regulations, 1950".

The 40 TR Solar HVAC system at NETRA was Inaugurated on

29th June 2012 by the then Union Minister of Power, Shri Sushilkumar Shinde in presence of Addl. Secy. (P), CMD & Directors of NTPC.

A US-AID team visited NETRA on 16th July 2012. An overview of NETRA's activities was given to the US-AID team. Discussions were held on various projects which can be taken up under Partnership to Advance Clean Energy-development (PACE-D).

NETRA is involved as a Member of the Sectoral Innovation Council for Power Sector for preparation of Roadmap for Innovation & its implementation in Power Sector. Draft input has been provided to CEA/MoP.

The inter Solar Award 2012 was presented to NTPC Ltd. in Nov.'12 for the project "Solar HVAC System at NTPC NETRA complex" in the Industrial application of solar category.

NETRA organized Round Table Conference on Carbon Capture and Storage (CCS) on 7th Sep.'12 to deliberate on an important aspect to assess the carbon cost of entire CCS chain, including capture and other issues related to CCS.

NETRA has networked with National Institutes like NML, IOCL R&D, IITs, BARC, CSIR labs, IGCAR, etc. Further International networking with DLR & ISE Fraunhofer of Germany and NETL of US DOE; etc. is in advanced stage of collaboration.

9.0 SUSTAINABLE DEVELOPMENT

Sustainability, in context of NTPC Ltd. is ensuring long term growth & profitability without compromising resources for future generations. The sustainability agenda of NTPC Ltd. encompasses all aspects of ethical business practices, addressing major social, environmental and policy issues responsibly and cost-effectively.

Department of Public Enterprises issued "Guidelines on Sustainable Development for CPSEs" in September, 2011. These guidelines envisage NTPC Ltd. to allocate "₹50 Lakhs + 0.1% of the PAT exceeding ₹100 Crores" for Sustainable Development activities.

NTPC Ltd. is fully committed to implement these guidelines in letter and spirit.

NTPC Ltd. is also in the process of preparing a "Sustainability Report" based on various initiatives taken by it in the area of Environment, Economic, Labour Practices, Human Rights, Society and Product responsibility. The report is being made in line with the internationally accepted "Global Reporting Initiative (GRI)" Guidelines.

- NTPC Ltd. is a member of "TERI – Business Council for Sustainable Development – India (TERI-BCSD)" since August 2001, which is the Indian partner of the WBCSD (World Business Council for Sustainable Development), Geneva. NTPC Ltd. had also become a member of Global Compact in 2001, a voluntary initiative of the United Nations for Corporate Social Responsibility. These forums provide NTPC an independent and credible platform to address issues related to sustainable development and promote leadership in environmental management, social responsibility, and economic performance (the triple bottom line).

9.1 CenPEEP: 'Center for Power Efficiency and Environmental Protection' (CenPEEP), was set up to take initiatives to address climate change issues. It is a symbol of NTPC's voluntary proactive approach towards Greenhouse Gas (GHG) reduction and its commitment towards environmental protection. The centre has been entrusted with some of the strategic initiatives such as improvement in efficiency and reliability. Various state-of-the-art technologies and practices for improvement in efficiency and reliability have been demonstrated in local conditions and disseminated to power stations through hands-on training, guidelines and workshops. The activities include use of thermal cycle audit, performance optimization of cooling tower, steam & gas turbine, technology application development for strengthening 'Predictive Maintenance Program', and Failure mode analysis through Reliability Centered Maintenance (RCM) and risk evaluation.

CenPEEP has also shared its knowledge and expertise, demonstrated best practices and provided training at SEBs in order to improve their efficiency and reduce carbon footprint.

In recognition of its efforts in GHG reduction in power plants, CenPEEP has been conferred Times of India Earth Care Award 2012.

A study on 'Efficient and clean use of Coal' in Asia Region was also initiated under the Asia region work programme of World Energy Council with involvement of Japanese experts in Indonesia.

9.2 Energy Conservation : In its concern for climate change and sustainable development, NTPC continued its commitment towards energy conservation through proper monitoring of power consumption of major equipments and by maintaining good operational & maintenance practices. During the financial year 2012-13 (up to Nov.'12), a total of 61 energy audits of various systems were conducted at different NTPC power stations. In the remaining period of 2012-13, 31 energy audits have been planned at different NTPC stations.

NTPC has completed installation of Online Energy Management System in its 17 stations and these stations have started using information captured through this system for monitoring power consumption of major equipments. Other stations are in advanced stage of installation of the system.

9.3 Clean Development Mechanism (CDM) : NTPC is pioneer in undertaking climate change issues. The company has taken several initiatives in CDM Projects in Power Sector. 10 (Ten) of its projects viz. North-Karanpura STPP, Loharinagpala HEPP, Tapovan Vishnughad HEPP, energy efficiency projects at NTPC-Singrauli, energy efficiency projects at NTPC-DADRI, and more recently small hydro project at NTPC-Singrauli, 5 MW Solar PV at NTPC-DADRI, 15 MW Solar (Thermal) at Anta, 5 MW Solar PV at Faridabad & 5 MW Solar PV at Andaman & Nicobar Islands have got Host Country Approval from National

CDM Authority. The methodology prepared by NTPC viz. 'consolidated base line and monitoring methodology for new grid connected fossil fuel fired power plants using less GHG intensive technology', for Super Critical technology has been approved by 'United Nations Framework Convention on Climate Change (UNFCCC)' under 'Approved Consolidated Methodology 13'. More green field energy efficiency CDM projects are in pipeline.

9.4 Environment Management : NTPC since inception has been proactive in addressing environmental concerns. NTPC has identified Environment Management as a thrust area to achieve excellence and aims to strengthen its position as a leader in environment protection area. To meet the environmental challenges of 21st century and beyond, we have adopted sound environment management practices and advanced environment protection system to minimize impact of power generation on environment.

All NTPC Stations are equipped with advanced environmental protection and pollution control systems such as High Efficiency Electrostatic Precipitators in its coal based units. Ash Water Re-circulation Systems (AWRS), Liquid Waste Treatment Plant (LWTP) and Sewage Treatment Plant (STP) are available in most of the power stations. By adopting above measures NTPC is able to conserve water in its various units while following the principle of "3 R's" (Reduce, Recycle and Reuse).

All NTPC units have been ISO-14001 certified by reputed National/International certifying agencies. In order to monitor key environmental parameters of Ambient Air and Stack Emissions continuously on real time basis, Automation in Monitoring Techniques has been taken up in NTPC. NTPC is a leader in the installation and operation of 61 nos. of Ambient Air Quality Systems to monitor air quality around its power plants and access of data has been provided to CPCB on real time basis.

NTPC is also taking steps to provide Continuous Emission Monitoring System (CEMS) to monitor emissions of SO₂, NO_x and CO₂ in all its units on real time basis. NTPC has planted a total of around 19 million trees for protection of environment around its stations which act as CO₂ sink and also help in absorption of pollutants.

In order to develop scientific data base for betterment of environment protection around its power projects, Human Health Risk assessment and Source Apportionment studies are being taken at all NTPC stations.

More than half of the ash produced at coal based stations is utilized in the areas of manufacturing cement, concrete, ash based products, asbestos sheets, construction of road embankment, ash dyke raising, mine filling and land development.

9.5 Corporate Social Responsibility: NTPC, a socially responsible corporate citizen since inception, takes up Initial Community Development (ICD) activities at the locations where new greenfield projects or project extensions are proposed under ICD Policy. During the

project phase, community development initiatives in the form of R&R program are further taken up which aim to improve the overall economic status of persons affected by projects. Each R&R programme is based on specific local requirements and is guided by extensive socio-economic surveys. The community development activities are continued at stations after closure of R&R program under CSR-CD Policy.

NTPC CSR-CD Policy was brought out in July 2004 and revised in August 2010 in view of the changed business environment, global practices and detailed guidelines issued from Department of Public Enterprises, Min. of Heavy Industries, Govt. of India. NTPC Board of Directors has approved overall expenditure of 0.5% of Net Profit of the previous years for CSR, in line with DPE Guidelines.

Community Development activities are taken up by NTPC in line with CD Policy mostly in the neighbourhood of operating stations, located in remote rural areas, socio-economically backward and deficient in the basic civic amenities. NTPC CSR activities are in the areas of Education, Community Health & Family Welfare, Sanitation, Water, Roads, Other Infrastructure, Solar Lighting System, Vocational Training, Women Empowerment, Support to Physically Challenged Person, Rural Sports and Culture, Support during Natural Calamities etc.

Keenly conscious of its social responsibilities, NTPC became a member of Global Compact, the largest voluntary initiative of the UN. NTPC confirms its involvement in various CSR activities in line with 10 Global Compact principles and shares its experience with the representatives of the world through "Communication on Progress".

During 2012-13 NTPC received Golden Peacock Award, Greentech Award and Appreciation Plaque from FICCI for CSR.

9.6 Rehabilitation & Resttlement (R&R) : NTPC is committed to help the populace displaced for execution of its projects and has been making efforts to improve the socio-economic status of Project Affected Persons (PAPs). In line with its social objectives, the company has focused on effective Rehabilitation and Resettlement (R&R) of PAPs and also on community development works in and around its projects.

NTPC facilitated training in construction trades in the area of masonry for under-matriculate PAPs and their dependents at its Lara project through 'Construction Industry Development Council (CIDC)', New Delhi for improving their employability for gainful employment with agencies during construction of the projects.

NTPC provided financial assistance to Govt of Odisha for Renovation and Refurbishment of 'Sundargarh District Hospital' as part of advance R&R activities of Darlipalli project.

Rehabilitation and Resettlement (R&R) Plan for Kudgi and Lara projects covering R&R obligations and community development facilities in the area of Health, Education,

Sanitation, Drinking Water, Infrastructure facilities approved during the year and their implementation is under progress.

R&R packages for Khargone, Gadarwara and Barethi projects finalized in consultation with stakeholders and approved by Govt of Madhya Pradesh.

Implementation of R&R/CD Plans for Barh, Koldam, Mouda, Solapur, Tapovan-Vishnugad, Bongaigaon and Simhadri-II projects is under progress.

Initial Community Development (ICD) Plans for Lara, Khargone and Dulanga projects covering activities in the area of Health, Education, Sanitation, Drinking Water, Infrastructure facilities etc revised.

For the benefit of project affected persons and neighbouring population Mobile Health Clinics were started at Kudgi and Nabinagar (JV with Govt. of Bihar) projects and earlier started Mobile Health Clinics at Pakri-Barwadiah, Nabinagar (BRBCL) and Gajmara projects continued during the year.

SES was completed for Darlipali, Lara, Khargone and Dhuvran projects. SES for Bilhaur, Gajmara, Barethi and Gadarwara projects is under progress. Impact assessment of traditional fishing community at Kayamkulam project completed as desired by MoEF. Financial assistance for setting up a hospital and medical college at Raigarh is being extended by NTPC.

10.0 CORPORATE GOVERNANCE

NTPC has scripted its Corporate Governance philosophy as under:

“As a good corporate citizen, the Company is committed to sound corporate practices based on conscience, openness, fairness, professionalism and accountability in building confidence of its various stakeholders in it thereby paving the way for its long term success.”

The Company is fully compliant of Clause 49 of the Listing Agreement pertaining to Corporate Governance. The Company was conferred ‘Golden Peacock Global Award for Excellence in Corporate Governance’ for the year 2012 organised by Institute of Directors.

11.0 SAFETY

Occupational Safety and Health at workplace is one of the prime concerns of NTPC Management and utmost importance is given to provide safe working environment and to inculcate safety awareness and culture among the employees. NTPC have 3-tier monitoring system of safety management, i.e.- at Site level, at Regional Head Quarters and at Corporate Centre.

Regular plant inspection and internal & external safety audits are carried out at each Project/Station to find out unsafe conditions and their elimination. Safe methods are practiced in all areas of Operation and Maintenance (O&M) and Construction & Erection (C&E) activities. Safety task force for O&M and Construction activities, height permit and height check list are implemented at all our plants. Qualified

safety officers are posted at all plants as per statutory rules/provisions to look after safety of men & materials. All our operating plants are certified by IS-18001.

Through our continuous efforts and enforcement in safety, the culture of safety has been improved at site. NTPC’s effort have won many safety awards to the company’s units from reputed institutions, namely Ministry of Labour, Government of India, National Safety Council, Mumbai, Institution of Engineers, Greentech Foundation as well as local State Governments.

12.0 RISK MANAGEMENT

NTPC, a Maharatna Company has drawn an ambitious Corporate Plan up to the year 2032 with diversified power generation portfolio based on thermal, hydro, nuclear and renewable energy sources. Though growth strategies of the company are built upon the inherent strengths of the company, various activities undertaken to achieve the targets make NTPC susceptible to various risks. The Company recognizes that risks are not merely the hazards to be managed but in many cases offer opportunities to enhance shareholder’s value.

NTPC is fully compliant with clause 49 of the listing agreement with NSE/BSE, except clause 49-IA regarding Independent Directors. However, in order to imbibe the best practices prevalent in the industry, the company has further implemented Enterprise Risk Management (ERM) framework. As part of ERM framework Company has Enterprise Risk Management Committee in place comprising of Executive Directors of various functions and regions of NTPC which meets to review the risk portfolio on quarterly basis.

13.0 BUSINESS EXCELLENCE

NTPC has deployed its own business excellence framework across generating stations known as NTPC Business Excellence Model. The Model which is based on international standards is meant for internal assessment of SBUs (generating stations of NTPC). Outputs of assessment are ‘Score’, ‘Strength’ & ‘Opportunities for Improvement’ (OFIs) for each station. Depending upon score, there is nine levels of excellence identified. The whole idea is to work on OFIs and take organization to higher level of excellence. In this financial year ten stations are being assessed through NTPC BE Model. The assessment results will be shared on 13th February 2013 during O&M Conference after Jury Meeting in January 2013.

For automating Corporate Performance Management an IT tool based, “Hybrid Balanced Score Card” system has been conceptualized after detailed study in one of NTPC Station. Proposal is under process of approval so as to enable tendering in the financial year 2012-13.

Other contemporary TQM concepts and techniques like ISO, Quality Circles, Professional Circles, 5S etc. have been deployed across the organisation and these are now being revamped or refined through suitable policy interventions to leverage full potential. Quality Circle team (1 No.) of NTPC Talcher Thermal had participated in International QC Convention held at Malaysia in October 2012. All NTPC generating stations are ISO certified.

14.0 USING INFORMATION AND COMMUNICATION TECHNOLOGY FOR PRODUCTIVITY ENHANCEMENT

NTPC has implemented Enterprise Resource Planning (ERP) application and has transformed covering maximum possible processes across the organization including subsidiaries to streamline company's operation. In addition to the core business processes and Employee Self Service (ESS) functionality, the ERP application solution also includes e-procurement, Knowledge Management, Business Intelligence, Document Management, Workflow, PI System for real time performance monitoring of Plant operations.

The e-procurement application is being extensively used and NTPC is targeting to cover all procurements through it. A Business Partnering Vendor collaboration portal "Team Up" has been implemented with front end access to Business partners and Vendors, for direct uploading of Project drawings, quality plans, etc. for engineering application. All remotely located personnel of NTPC and those who are mobile or on tour are allowed ESS application with secured access using two factor authentication mechanisms. Also, another enterprise portal (EP2) through same secured setup access has been implemented to conduct Pre-dispatch Inspection process in order to issue online Customer Hold point (CHP) and material dispatch clearance certificate (MDCC) directly from manufacturer's premises. As part of IT enablement several other business processes such as Hospital management system, Right to information system, Guest house booking, parliament queries monitoring system, Material Gate pass/photo Gate pass for visitors are also in operation.

In order to take care of superannuating NTPC employees' a web based application www.ntpcemployees.co.in has been published to facilitate them providing with claim payment status, latest NTPC news, details of their colleagues, etc. A companywide Intranet and NTPC website www.ntpc.co.in are in operation and are regularly updated including link for payment to vendors. www.ntpc.tender.com is being used for publishing all open tender notices.

To successfully deploy business applications with speedy & faster IT services, the Multi Protocol Labeled Switching-Virtual Private Network (MPLS-VPN) hired from BSNL has been augmented with double the bandwidth on each link. The network is further being strengthened for high reliability and availability, and to avoid dependency on single service provider a parallel MPLS network facility is under implementation from an alternate service provider. In order to avoid any interruption of IT-ERP services the data replication has been enabled separately providing high availability network connectivity between the Datacenter and Disaster recovery sites of NTPC.

To address IT Security concerns IT security Policies have published on intranet and is being reviewed/updated from time to time. A comprehensive IT security infrastructure has been planned for implementation at NTPC Data center and at Disaster Recovery site in line with "Crisis Management Plan to counter Cyber Security threats" forwarded by MoP. Additionally in line with National Protection Plan of Thermal and Hydro Plants issued by CEA, the Physical Security measures are being implemented at NTPC project/plant locations.

The Video conferencing (VC) facilities implemented at all NTPC locations on MPLS Network of NTPC have now been extended on public IP (Internet) to hold Video conference globally. The VC setup has also enabled the company's Power Management Institute to utilize the facility for e-learning across NTPC locations.

The Information Technology Department of NTPC has received an ISO 9001:2008 certification for providing IT Enabled Services.

The use of IT at NTPC for increasing productivity has been highly commended by the Hon'ble Minister of State for Power (I/C) during his recent visit in November, 2012 - "It is a pleasure to visit the "Maharatna" of our Republic! I am awestruck to see the amazing use of IT to better our productivity".

15.0 SUPPORT TO THE SECTOR

NTPC has extended its services for the development of Indian Power Sector in several programmes of the Government of India such as Jawaharlal Nehru National Solar Mission (JNNSM), Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY), 5 Km. Electrification Scheme etc. Some of the highlights of NTPC's role in India's power sector development are as below:

JNNSM: GoI designated NTPC Vidyut Vyapar Nigam Limited (NVVN) as the Nodal Agency for purchase of power from the solar power projects connected at 33 KV and above grid at tariff regulated by CERC and for sale of such power bundled with the power sourced from NTPC coal power stations to Distribution Utilities, under Phase-I (2010-13) of JNNSM.

- Power Purchase Agreements for Grid connected solar power projects of 1,039 MW aggregate capacity were entered into by NVVN under Phase-I of JNNSM consisting of 539 MW of Solar PV and 500 MW of Solar Thermal Projects.
- Out of this, 178 MW of Solar PV have been commissioned and sale of bundled power to State Utilities has commenced. Out of the balance capacity, 340 MW Solar PV & 30 MW Solar Thermal is scheduled to be commissioned during 2012-13 and 470 MW of Solar Thermal capacity is scheduled for commissioning in 2013-14.

RGGVY: Work is currently going on in 5 states namely Odisha, West Bengal, Chhattisgarh, Jharkhand & Madhya Pradesh for electrification under RGGVY. Out of the present scope of 14,714 Un-electrified/ De-electrified (UE/DE) villages, 13,470 villages have been energised and 25.88 Lakh Below Poverty Line (BPL) connections have been provided out of the present scope of 26.34 Lakhs BPL connections.

R&M Consultancy to State Utilities: NTPC is providing consultancy services to electricity boards/ power utilities of the states for R&M work of their thermal stations. R&M works are going on for a total capacity of 1,550 MW at 4 thermal power stations in the States of U.P. and Bihar.

Development of Technical Manpower: NTPC has adopted 17 ITIs located in the vicinity of its projects and is setting up 9 new ITIs including Solapur Power Industrial Training Institute. NTPC is also setting up an International Institute of Information

Technology (IIIT) at Raipur in Chhattisgarh. We are also funding setting up an Engineering college in HP.

5 Km. Electrification Scheme : As part of the scheme of Govt. of India for provision of supply of electricity in 5 Km. area around Central Power Plants, NTPC has initially identified 29 projects around its operations stations and under construction projects. States corresponding to 08 projects have not shown inclination towards implementation of the scheme. For balance 21 projects, Detailed Project Reports (DPR) have been approved for 19 projects by State Governments and is under the process of approval for 02 more projects. Award has been placed at 08 projects i.e. Talcher Thermal Power Station, Talcher Super Thermal Power Station, Kahalgaon Super Thermal Power Station, Firoz Gandhi Unchahar Thermal Power Station, Tanda Thermal Power Station, Rihand Super Thermal Power Station, Singrauli Super Thermal Power Station and Vindhyachal Super Thermal Power Station.

16.0 HUMAN RESOURCE DEVELOPMENT

NTPC takes pride in its highly motivated and trained Human Resource that has contributed its best to bring NTPC to its present height. The company has continuously added to its installed capacity and the Man-MW ratio has been consistently improving. The total strength of employees of the Corporation stands at 25,712 including JVs and subsidiaries as on 30.11.12 as against 25,733 as on 30.11.11 (excluding ETs).

All efforts were made to improve the manpower utilization. The overall Man-MW ratio for the year 2011-12 is 0.74 excluding the capacity of JVs and Subsidiaries and 0.69 including the capacity of JVs & Subsidiaries. The attrition rate of the executive during the year was 1.0%.

16.1 Strong Induction Plans: Several initiatives have been taken to ensure a robust talent pipeline in order to meet the increasing requirement of manpower for the Company's growth programme. Considering the huge capacity addition plan by not only recruiting executive trainees through All-India tests (GATE) but also undertaking campus recruitment at the premier institutes of the country like IITs & NITs.

16.2 Training & Development: The Power Management Institute (PMI) which is NTPC's apex training and development centre is playing a pivotal role in providing training and learning opportunities to power sector professionals. During 2012-13 (upto November 30, 2012), PMI has conducted a total of 279 training programmes, simultaneously achieving actual 30,346 training mandays. In the remaining four months of FY 2012-13 approximately 75 more training programmes will be conducted and 10,000 additional mandays are to be achieved.

A special industry initiative for the youth of Jammu and Kashmir was launched on November 20, 2012 under the project name "UDAAN" in which 41 nos. young engineers were inducted for a 36 weeks training programme in power plant operation and maintenance. The induction programme was inaugurated by Honourable MoSP Shri Jyotiraditya Madhavrao Scindia.

A national conference on Cases & Research in Power and Energy Sector has been conducted from November 22 to 23, 2012. This conference enabled practicing managers, academicians and research scholars to develop, contribute and present real life cases and action research from various facets of business practices in power and energy sector.

PMI will impart hands-on training to participants from power utilities on supercritical technology during 2012-13 through the 660 MW simulator hall.

The MTech programme with IIT Delhi and Advanced Management Programme with ASCI, Hyderabad continued during 2012-13 for providing higher technical and managerial education and skills.

PMI is mandated to bolster the skill development initiative of NTPC. In line with this, PMI is looking after adoption of existing Government ITIs and setting up of new ITIs in different parts of the country covering 16 states. Up till now, NTPC has adopted 17 Government ITIs and set up 09 new ITIs near its power stations. Cumulatively, 14,976 persons have been benefited by this initiative.

17.0 AWARDS AND ACCOLADES

NTPC employs over 25,000 persons, has a strong work ethics and lays great emphasis on culture building. NTPC has been consistently getting various Productivity, Shram, Environment and Safety Awards. NTPC has been recipient of various other awards also. Some of the awards received by NTPC during the year are as follows :

- NTPC Ltd. and NTPC-Unchahar TPS have been awarded by prestigious PowerLine Magazine in the 'Best Performing Generation Company – Thermal' and 'Best Performing Thermal Power Station' categories. An eminent jury comprising luminaires from power sector decided the award winners.
- NTPC stations have bagged eight National Meritorious Performance Awards instituted by Ministry of Power, GoI for 2009-10 and 2010-11.
- NTPC was given the SCOPE Excellence Award Gold Trophy in Institutional category for the year 2009-10.
- 6th Enertia Awards 2012, India's Awards for Sustainable Energy & Power instituted by Falcon Media Group awarded to NTPC-Ramagundam STPS for the "Best Performing Super Thermal Power Plant in the country for 2012".
- Shri Arup Roy Choudhury, CMD, NTPC has been honoured with "Asian CEO of the Year" Award by Terrapinn, a business media company with a presence in five continents doing significant work in Energy Dialogue, during their "3rd Annual Asian Utility Industry awards 2012" at "Power and Electricity World Asia" conference held at Singapore on 17th April 2012.
- The Institution of Engineering and Technology (U.K.) Delhi Network honoured Shri Arup Roy Choudhury, CMD, NTPC with "Outstanding Engineers award" in recognition

of his unfailing commitment to Excellence in Project Management.

- NTPC has received the Infrastructure Company of the Year Award at “ D&B-Axis Bank’s Infra Awards 2012”, under the category of Power Generation. Awards were presented to the leading infrastructure companies who have delivered exemplary performance.
- NTPC ranked No. 3 in India’s Best Companies to work for in the year 2012 by The Great Place to work and The Economic Times. NTPC has also been ranked 1st among PSU’s, 1st amongst large organizations (more than 10,000 employees) and 1st amongst manufacturing and production industries.
- Shri Madan Lal Dogra, an employee of NTPC-Badarpur Thermal Power Station has been conferred with *Mukhyamantri Shramik Puraskar* and *Delhi Shramik Puraskar – 2012*.
- Six employees of NTPC, were conferred prestigious Prime Minister’s *Shram Award*.
- NTPC has been given the top honour for climate change initiatives by its Centre for Power Efficiency & Environmental Protection (CENPEEP) at the Times of India Earthcare Award 2012.
- NTPC News and the book on CSR initiative “Making a Difference” received awards from Public Relations Society of India (PRSI) in the Newsletter and Special Publication categories.
- Ranked 337th in the Forbes 2012 list of World’s 2000

largest companies and 3rd largest in Asia amongst Global Electricity Utilities.

- Ranked No. 1 IPP in the world in 2012 by Platts- a division of McGraw-Hill companies.
- Most Admired Company in the Indian power sector by Hay Group in collaboration with Fortune magazine in India.
- NTPC has been honored with NDTV Business Leadership Award in the Power Sector.
- Power Management Institute (PMI), NTPC was awarded International Star Award for Quality in the Gold Category in recognition for commitment to Quality, Leadership, Technology and Innovation. This recognition is based on the criteria of the QC100 quality model, implemented in over 100 countries.
- NTPC was conferred Indira Gandhi Rajbhasha Award.
- NTPC – Dadri has bagged Good Green Governance Award-2011 by Srishti Group.
- ‘Golden Peacock Global Award for Excellence in Corporate Governance’ for 2012 has been conferred upon NTPC.
- NTPC has been bestowed with Golden Peacock Award for Corporate Social Responsibility (CSR) 2012.
- NTPC Corporate Centre has been awarded Greentech Safety Gold Award - 2012 for its commendable safety performance. Ramagundam, Simhadri and Talcher (Thermal) also received the Greentech Safety Award 2012.

ANNEXURE-I

Sl. No.	Name of the JV/ Subsidiary Co. (Incorporated on)	Equity Holding as on 30.11.2012	Area(s) of Operation/ Status
(A)	Capacity Addition through Joint Ventures / Take-overs / Subsidiaries		
1	NTPC-SAIL Power Company Pvt. Ltd. (08.02.1999)	NTPC-50% SAIL-50%	Owens and operates a capacity of 814 MW as captive power plants for SAIL’s steel manufacturing facilities located at Durgapur, Rourkela and Bhilai.
2	Ratnagiri Gas and Power Pvt. Ltd. (08.07.2005)	NTPC, GAIL-32.47% each IFIs-18.13% MSEB Holding Co.-16.93%	Company has taken over gas based Dabhol Power Project along with LNG terminal. Entire 1940 MW Power Blocks of the gas power project are under commercial operation and Gol has allocated full quantum of gas required for Power Blocks. Construction work of LNG terminal is under progress.
3	NTPC Tamil Nadu Energy Company Ltd. (23.05.2003)	NTPC-50% TNEB-50%	Setting up a coal-based power station of 1500 MW capacity, at Vallur, using Ennore port infrastructure facilities. Unit#1 was commissioned on 28.03.12 and is under commercial operation since 29.11.12. Construction work for Unit#2 & 3 is under progress.
4	Bhartiya Rail Bijlee Company Ltd. (22.11.2007)	NTPC-74% Indian Railways-26%	To Undertake various activities related to setting up a 1000 MW coal based thermal power plant (4x250 MW) at Nabinagar, District- Aurangabad, Bihar. 90% power from this project is to be supplied to Railways to meet the traction and non-traction power requirements of Railways. Construction work is under progress.
5	Kanti Bijlee Utpadan Nigam Ltd. (06.09.2006)	NTPC-65% BSEB-35%	The company owns and operates 2x110 MW Muzaffarpur Thermal Power Station. Unit#1 & 2 are priestly under R&M. Expansion project Stage-II consisting of two units of 195 MW each is under construction.
6	Nabinagar Power Generating Company Private Ltd.(09.09.2008)	NTPC-50% BSEB-50%	To set-up a coal based power project having capacity of 1980 MW (3x660 MW) and operation & maintenance thereof at Nabinagar in district Aurangabad in the State of Bihar. Project was under Bulk Tendering of 660 MW units and LOA for Main Plant is anticipated to be awarded by Q3/Q4 ’12-13 after land acquisition.

7	Meja Urja Nigam Private Ltd. (02.04.2008)	NTPC-50% UPRVUNL-50%	To set-up a power plant of 1320 MW (2x660 MW) at Meja Tehsil of Allahabad district in the state of Uttar Pradesh. Project was under Bulk Tendering of 660 MW units and is presently under construction.
8	Aravali Power Company Private Ltd. (21.12.2006)	NTPC-50% IPGCL-25% HPGCL-25%	Setting up 1500 MW (3x500 MW) Indira Gandhi STPP at Jharli in Distt. Jhajjar, Haryana. All the 3 units have been commissioned and Unit#1 & 2 are under commercial operation.
9	Trincomalee Power Company Limited (26.09.2011)	NTPC-50% CEB-50%	The Joint Venture Company has been formed to undertake the development, construction, establishment, operation and maintenance of coal based electricity generating station of 2x250 MW capacity at Trincomalee in Srilanka.
(B) Joint Ventures / Subsidiaries – Lateral Integration			
1	NTPC Hydro Ltd. (12.12.2002)	NTPC-100%	To undertake development of small hydro projects having capacity of 250 MW. The Company is being merged into NTPC.
2	Anushakti Vidhyut Nigam Limited (27.01.2011)	NTPC-49% NPCIL -51%	<p>To set up Nuclear Power Project with two reactor units of mutually agreed capacity and at a mutually agreed location, which may be extended to setting up additional NPPs at the same location or elsewhere, as may be mutually discussed and agreed between the parties, subject to establishment of techno-commercial viability.</p> <p>JVC may also explore the possibilities of entering into business activities related with the Nuclear Power generation and front-end fuel cycle such as uranium mining, setting up of ancillary facilities, etc. at an appropriate stage.</p>
3	Pan-Asian Renewables Private Limited (14.10.2011)	NTPC-50% ADB-25% Kyushu-25%	<p>The JVC shall endeavor to Develop Projects and establish over a period of three (3) years a portfolio of about 500 MW of Renewable Power Generation resources in India. In the long term, the JVC shall endeavor to Develop Projects up to an aggregate capacity of 2,500 MW or more.</p> <p>Initially, the JVC shall primarily Develop wind power and Small Hydroelectric Power Projects in accordance with the Business Plan. The JVC may also develop other Renewable Power Generation resources.</p> <p>In the future, the JVC may Develop Projects outside India, provided always that the JVC shall only Develop Projects in Developing Member countries.</p>
(C) Joint Ventures / Subsidiaries – Forward Integration			
1	NTPC Electric Supply Co. Ltd. (21.08.2002)	NTPC-100%	<p>To acquire, establish and operate Electricity Distribution Network in various circles/ cities across India. Company was also mandated to take up consultancy and other assignments in the area of Electrical Distribution Management System.</p> <p>Maiden entry into power distribution by forming 50:50 JV company KINESCO Power and Utility Private Ltd. with Kerala Industrial Infrastructure Development Corporation (KINFRA), already distributing power in KINFRA owned industrial theme parks.</p> <p>Company is also making efforts to make foray into the distribution sector in collaborative manner with existing power distribution players.</p> <p>Company has been involved in the execution of work on turnkey basis under GoI's rural electrification program namely Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) in 29 districts in 5 states.</p> <p>Company is also executing GoI scheme for Supply of electricity in 5 Km area around NTPC Power Stations.</p>
2	NTPC Vidyut Vyapar Nigam Ltd. (01.11.2002)	NTPC-100%	<p>To undertake business of sale and purchase of electric power and effective utilization of available capacity in the country, thereby enabling development of wholesale market in India The Company holds Category-I license (Highest category with no trading limits) for inter-state trading of electricity. NVVN traded 5882 MUs of power during 2012-13 (up to Nov.'12). The Company is also engaged in ash business. NVVN sold 26.13 LMT of Fly Ash and 95 MTs of Cenosphere during 2012-13 (up to Nov.'12).</p> <p>Company has been designated as the nodal agency for cross border trading with Bhutan and Bangladesh. NVVN has signed an agreement with Bangladesh for supply of 250 MW power from NTPC stations for 25 years on 28th February, 2012.</p> <p>NVVN has been designated as the Nodal Agency by the Ministry of Power, Govt. of India for purchase and sale of grid-connected solar power up to 1,000 MW as a part of Phase-I (2009-13) of the Jawaharlal Nehru National Solar Mission (JNNSM). Power Purchase Agreements for 1039 MW with Solar Power Developers have been entered into. Out of this 178 MW of Solar PV Projects have already been commissioned and sale of bundled power to State Utilities commenced. The commissioned capacity is likely to reach 500 MW by close of this Financial Year. Till Nov.'12, bundled power of 933 MUs have been sold.</p>

3	National Power Exchange Ltd. (11.12.2008)	NTPC-16.67% NHPC-16.67% PFC-16.66% TCS-19.04% BSE-16.66% IFCI-5.72% Meenakshi Energy-4.77% DPSC-3.81%	To facilitate nationwide trading of all forms of contract for buying and selling of all forms of electrical energy for clearing and settlement of trade in a transparent, fair and open manner. By-laws of National Power Exchange have been approved by CERC on 24.04.12.
(D) Joint Ventures / Subsidiaries – Strategic Alliance			
1	International Coal Ventures Pvt. Ltd. (20.05.2009)	NTPC-14.28% SAIL, CIL-28.58% each RINL, NMDC- 14.28% each	Acquisition of stake in coal mines/ blocks/ companies overseas for securing coking and thermal coal supplies. NTPC has opted out of the JV and NTPC exit from ICVL is under process.
2	NTPC-SCCL Global Venture Pvt. Ltd. (31.07.2007)	NTPC-50% Singareni Collieries Co. Ltd.-50%	Acquisition and/ or development, mining, beneficiation, processing, operation and maintenance coal/ lignite mining block(s), and selling the coal/ lignite produced thereof. Development and operation and maintenance of integrated coal based power plant(s) and selling the Electricity generated thereof. Providing consultancy services related to activities mentioned above.
3	CIL NTPC URJA PRIVATE LIMITED (27.04.2010)	NTPC-50% CIL-50%	To undertake development of Brahmini and Chichro Patsimal coal mine blocks in Jharkhand for Farraka and Kahlgaon expansion Projects and integrated coal based power project with the excess available coal.
(E) Joint Ventures / Subsidiaries – Strategic Diversification			
1	NTPC BHEL Power Projects Pvt Ltd. (28.04.2008)	NTPC-50% BHEL-50%	The company seeks to explore, secure and execute EPC contracts for power plants and other infrastructure projects in the AGREED MARKET in India and abroad including plant engineering, project management, quality assurance, quality control, procurement, logistics, site management, erection and commissioning services. The company is also to engage in manufacturing and supply of equipment for power plants and other infrastructure projects in India and Abroad. Company has prepared its Business Plan in two phases. Under Phase-I, company shall take up EPC contracts and manufacturing of BOPs. In Phase-II, company shall create manufacturing facility for Boilers, Turbines and Generators. The Company is to set up its manufacturing facility at Mannavaram in Andhra Pradesh and the construction work is in progress. The Company is also exploring EPC Contracts from BHEL on nomination basis.
2	BF-NTPC Energy Systems Ltd. (19.06.2008)	NTPC-49% Bharat Forge Ltd.-51%	To establish a facility to take up manufacturing of castings, forgings, fittings and high pressure piping required for power projects and other industries, Balance of Plant (BOP) equipment for the power sector etc. including technological tie-ups tie up of strategic partners etc. Site of Solapur, Maharashtra has been identified for setting up the manufacturing facility.
3	Transformer & Electricals Kerala Ltd. (19.12.1963)	NTPC-44.60% Govt. of Kerala-54.56% Others-0.84%	NTPC took over 44.6% stake in TELK for entry into manufacturing and repair of high voltage power transformers and associated equipment. For expansion and up gradation of the facility, technology tie up is being pursued.
(F) Joint Ventures / Subsidiaries – Service Business			
1	Utility Powertech Ltd.(23.11.1995)	NTPC-50% Reliance Infrastructure Ltd.-50%	To undertake O&M Services, Power distribution, Construction, RLAB studies, Non-conventional energy projects etc. for power and other sectors in India and abroad. The company is executing PSMA and Non-PSMA contracts.
2	NTPC-Alstom Power Services Private Ltd. (27.09.1999)	NTPC-50%, Alstom Power Gen. AG-50%	Company is engaged in undertaking works of Renovation & Modernization of Power Plants for plant life extension, performance optimization and improvement of availability & efficiency.
3	National High Power Test Laboratory (Private) Ltd. (22.05.2009)	NTPC-20% NHPC-20% PGCIL-20% DVC-20% CPRI-20%	To establish research and test facility for power sector such as "Online High Power Test Laboratory" for short circuit testing and other facilities as may be required for the same in the country. The Lab is being set up at Bina, MP.
4	Energy Efficiency Services Ltd. (10.12.2009)	NTPC-25%, PFC-25%, PGCIL-25% REC-25%	To carry on and promote the business of Energy Efficiency and climate change including manufacture and supply of energy efficiency services and products.

Annexure-II

LIST OF NTPC COMMISSIONED STATIONS/ PROJECTS (up to 30.11.2012)

Sl.No.	Project	State	Capacity (MW)			
			End X Plan	XI Plan	XII Plan	Total Installed
I.	COAL BASED PROJECTS					
1.	Singrauli-I & II	UP	2000	-	-	2000
2.	Korba-I, II & III	Chhattisgarh	2100	500	-	2600
3.	Ramagundam-I, II & III	AP	2600	-	-	2600
4.	Farakka-I, II & III	WB	1600	500	-	2100
5.	Vindhyachal-I, II & III	MP	3260	-	500	3760
6.	Rihand-I & II	UP	2000	-	500	2500
7.	Kahalgaoon-I & II	Bihar	1340	1000	-	2340
8.	NCTPP-I & II, Dadri	UP	840	980	-	1820
9.	Talcher (K)-I & II	Odisha	3000	-	-	3000
10.	Talcher TPS	Odisha	460	-	-	460
11.	Unchahar-I, II & III	UP	1050	-	-	1050
12.	Simhadri-I & II	AP	1000	1000	-	2000
13.	Tanda TPS	UP	440	-	-	440
14.	Badarpur	Delhi	705	-	-	705
15.	Sipat-I & II	Chattisgarh	-	2320	660	2980
16.	Mouda-I	Maharashtra	-	-	500	500
Total (Coal)			22395	6300	2160	30855

II.	COMBINED CYCLE GAS/ LIQUID FUEL BASED PROJECTS					
1.	Auraiya-I	UP	652	-	-	652
2.	Anta-I	Rajasthan	413	-	-	413
3.	Kawas-I	Gujarat	645	-	-	645
4.	Dadri	UP	817	-	-	817
5.	Jhanor-Gandhar-I	Gujarat	648	-	-	648
6.	RGCCPP Kayamkulam-I	Kerala	350	-	-	350
7.	Faridabad	Haryana	430	-	-	430
Total (Gas)			3955	-	-	3955

III.	POWER PROJECTS UNDER JOINT VENTURES					
1.	Rourkela (NSPCL)	Odisha	120	-	-	120
2.	Durgapur (NSPCL)	West Bengal	120	-	-	120
3.	Bhilai (NSPCL)	Chhattisgarh	74	500	-	574
4.	Ratnagiri (RGPPL)	Maharashtra	740	1200	-	1940
5.	Muzaffarpur (KBUNL)	Bihar	-	110	-	110
6.	Jhajjar (APCPL)	Haryana	-	1000	500	1500
7.	Vallur (NTECL)	Tamil Nadu	-	500	-	500
Total (under JVs)			1054	3310	500	4864
GRAND TOTAL (I+II+III)			27404	9610	2660	39674

Annexure-III

DETAILS OF ONGOING AND NEW PROJECTS OF NTPC AS ON 30.11.2012

Sl. No.	Name of the project (Fuel)/ State	Capacity (MW)
A	Ongoing projects	
1	Bongaigaon (Coal)/ Assam	750
2	Mouda-I & II (Coal)/ Maharashtra	1820
3	Rihand-III (Coal)/ Uttar Pradesh	500
4	Vindhyachal-IV & V (Coal)/ Madhya Pradesh	1000
5	Barh-I & II (Coal)/ Bihar	3300
6	Koldam (Hydro)/ Himachal Pradesh	800
7	Tapovan Vishnugad (Hydro)/ Uttarakhand	520
8	Kudgi-I (Coal)/ Karnataka	2400
9	Singrauli CW Discharge HEPP (Small Hydro)/ Uttar Pradesh	8
10	A & N Solar PV/ Andaman & Nicobar	5
11	Dadri Solar PV/ Uttar Pradesh	5
12	Solapur (Coal)/ Maharashtra	1320
13	Lata Tapovan (Hydro)/ Uttarakhand (by subsidiary NHL)	171
14	Vallur Phase-I & II (Coal)/ Tamil Nadu - JV with TNEB	1000
15	Nabinagar (Coal)/ Bihar – JV with Railways	1000
16	Muzaffarpur Exp. (Coal)/ Bihar - JV with BSEB	390
17	Meja (Coal)/ Uttar Pradesh – JV with UPRVUN	1320
	Sub Total – A	16309
B	Projects for which Main Plant bids have been received/ invited	
1	Lara-I (Coal)/ Chattisgarh	1600
2	Nabinagar (Coal)/ Bihar - JV with BSEB	1980
3	Darlipalli-I (Coal)/ Odisha	1600
4	Gajmara-I (Coal)/ Odisha	1600
5	Tanda-II (Coal)/ Uttar Pradesh	1320
6	Unchahar-IV (Coal)/ Uttar Pradesh	500
7	Ramagundam Ph 1 (Solar PV)/ Andhra Pradesh	10
8	Talcher Kaniha (Solar PV)/ Odisha	10
9	Rajgarh (Solar PV)/ Madhya Pradesh	50
10	Unchahar (Solar PV)/ Uttar Pradesh	10
11	Rammam-III (Hydro)/ West Bengal (by subsidiary NHL)	120
	Sub Total – B	8800

C	Projects for which FR/ DPR approved	
1	Khargone (Coal) / Madhya Pradesh	1320
2	Gidderbaha (Coal)/ Punjab	2640
3	Singrauli-III (Coal) / Uttar Pradesh	500
4	Talcher TPS Exp. (Coal)/ Odisha	1320
5	Gadarwara-I (Coal)/ Madhya Pradesh	1320
6	Bilhaur (Coal)/ Uttar Pradesh	1320
7	Kolodyne-II (Hydro) / Mizoram	460
8	RGCCPP-II (Gas)/ Kerala	1050
9	Badarpur CCPP (Gas)/ Delhi	1050
10	Ratnagiri Expansion (Gas)/ Maharashtra - JV with GAIL, MSEB, IFIs	2100
11	Kawas CCPP-II (Gas)/ Gujarat	1300
12	Jhanor Gandhar CCPP-II (Gas)/ Gujarat	1300
13	Guledagudda (Wind)/ Karnataka	100
14	Ramakkalmedu Ph.-I (Wind)/ Kerala	20
15	Anta (Solar Thermal)/ Rajasthan	15
16	Faridabad (Solar PV)/ Haryana	5
	Sub Total – C	15820*
	GRAND TOTAL A+B+C	40929

* Excluding 1980 MW North Karanpura for which FR is approved but coal linkage restoration yet to be done by MOC and 261 MW Rupsiabagar Khasiabara for which FR is approved but FAC in its meeting held on 26-27.11.2012 reiterated their earlier recommendation to decline Forest clearance of the Project land for Rupsiabagar-Khasiabara HEPP. Accordingly, Project is being closed and assets are being shifted.

SAFE AND GAINFUL UTILISATION OF FLY ASH IN ECO-FRIENDLY MANNER

1.0 POWER GENERATION SCENARIO

Coal/ Lignite based thermal Power Generation has been the backbone of power generation in India due to its abundant availability as compared to other fuels. Out of total installed capacity of 1, 99,877 MW as on 31.03.12, the coal based capacity was 1,12,022 ME which constitutes 56.05 % of total installed capacity in the country.

Coal is likely to remain the main fuel source for the domestic energy market over the next few decades. Indian coal is of low grade having high ash content upto 40% in comparison to imported coals which have ash content of the order of 10-15 % only.

Large quantity of ash is being generated at coal/lignite based Thermal Power Stations in the country, which has been one of the sources of pollution of both air and water. Considering the high ash content of Indian coal and the continued dependence on coal for capacity addition requires taking into account the capabilities to ensure safe utilization of fly ash including bottom ash and Pond ash.

2.0 FLY ASH AS A RESOURCE MATERIAL

Traditionally, ash (Fly ash & bottom ash) generated at coal/lignite based thermal power stations has been disposed off in ash ponds as waste material and required very large land area for its disposal. The utilization of ash for useful purposes in environment friendly manner on continuous and sustainable basis is a matter of concern.

A large number of technologies have been developed for gainful utilization and safe management of fly ash since 1994 under the concerted efforts of Fly Ash Mission of Govt. of India and initiatives taken by power utilities. Due to these efforts, fly ash was moved from 'hazardous industrial waste' to 'waste material' category during the year 2000 and it has now become a saleable commodity as per Ministry of Environment & Forest's notification of 3rd November, 2009. Ash has now been recognized as a 'resource material' for 'useful commodity', capable of being utilized in manufacturing of cement and most of the civil construction activities in eco-friendly manner.

The dry fly ash constitutes about 80 percent of the ash being generated at the coal/lignite based thermal power plants. Fly ash has pozzolanic properties and has large number of applications. It is now being utilized in

manufacturing of cement and in various construction activities depending upon its characteristics and engineering properties. The important areas in which ash is being utilized are as under :

Important Areas of Ash Utilistion

- In manufacturing of Portland Pozzolana cement ;
- As a part replacement of cement in concrete;
- In making fly ash based building products like bricks, blocks, tiles, road blocks, Kerb Stones etc;
- In the construction of highways/ roads, flyovers, embankments, ash dykes etc;
- In construction of Roller Compacted Concrete Dams in Hydropower Sector;
- In reclamation of low lying areas and raising of ground level;
- Backfilling / stowing of mines; and
- In agriculture and waste land development.

3.0 ASH GENERATION & UTILISATION SCENARIO DURING THE YEAR 2011-12

Central Electiricty Authority, on behalf of Ministry of Power, is monitoring fly ash generation and its utilization at coal/ lignite based thermal power stations in the country since 1996.

Fly ash generation & utilization data for the year 2011-2012 was received from 124 (One Hundred Twenty Four) coal/ lignite based thermal power stations of various power utilities in the country with a total installed capacity of about 1,05,925 MW. A brief summary of status of Ash generation & utilization during 2011-12 is given below:

- * Nos. of Coal/ Lignite : 124 Nos.
- beased Thermal Power Stations from which data was received
- * Installed capacity : 1,05, 925 MW
- * Coal consumed : 437.40 Million – Tonne
- * Average Ash content : 33.25 %
- * Total Ash generated : 145.42 Million- Tonne
- * Total Ash Utilisation : 85.04 Million- Tonne
- * Percentage Utilisation : 58.48 %

3.1 Modes of Ash Utilisation during 2011-2012

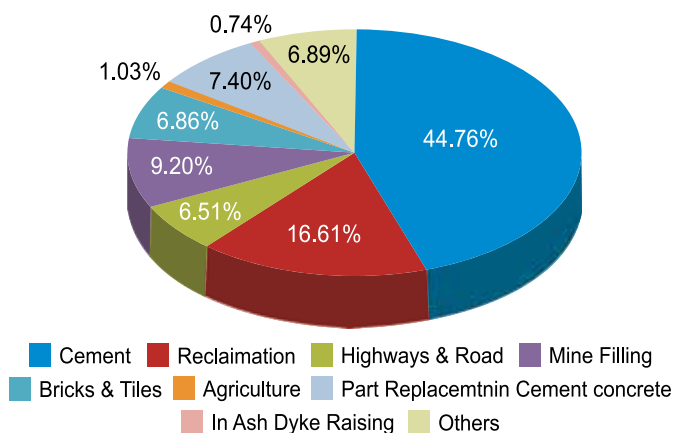
The major modes in which ash was utilized during the year 2011-12 are given in the table below:

MAJOR MODES OF FLY ASH UTILISATION DURING THE YEAR 2011-12

Sl. No.	Mode of utilization	Utilisation in (Million Tonne)	Percentage Utilisation
1	2	3	4
1	Cement	38.08	44.76
2	Reclamation of low lying areas	14.13	16.61

3	In construction of high-ways & Raod includes Flyovers	5.54	6.51
4	Mine filling	7.83	9.20
5	Brick & Tiles	5.84	6.86
6	Agriculture	0.88	1.03
7	Part Replacement in Cement concrete	6.29	7.40
8	In Ash dyke raising	0.63	0.74
9	Others	5.86	6.89
	Total	85.08	100.00

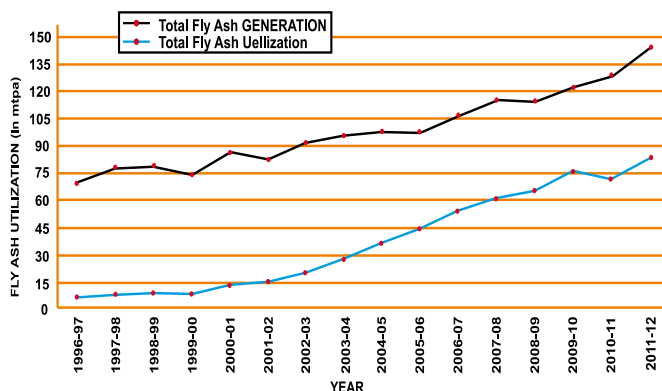
A pie diagram showing the mode of utilization of ash during 2011-2012 given below:-



The maximum utilization of fly ash during 2011-12 to the extent of 44.76% has been in Cement Industry followed by 16.61 % in relamation of low laying areas , 9.20 % in mine filling, 6.86 % in making of fly ash based building products like brick, tiles, 6.51% in construction of highways/ Roads/ Flyovers etc.

4.0 PROGRESSIVE FLY ASH GNERATION & UTILISATION DURING THE PERIOD FOR 1996- 97 TO 2011-12

The fly ash utilization has increased from 6.64 million tones in 1996-97 to a maximum level of 85.05 million tonne in 2011-12. A graph showing progressive ash generation and its utilization for the period from 1996-97 to 2011-12 is given below:



There has been significant increase in utilization of Fly ash in various sectors during the period from 1998-99 to

2011-12. It has increased :

- From 2.45 million tonne to 38.08 million tonne in Cement Industry ;
- From 0.70 million tonne to 5.84 million tonne in fly ash based Brick/ Tiles et.;
- From 1.06 million tonne to 5.54 million tonne in Road & Embankment ;
- From 4.17 million tonne to 14.13 million tonne in Reclamation of low lying area;

- From 0.65 million tonne to 7.83 million tonne in Mine filling; and
- From 0.13 million tonne to 0.88 million tonne in Agriculture.

A lot of efforts are being made by Government as well as by all the stake holders for increasing the ash utilization in an eco-friendly manner and achieving the target of 100% ash utilization as mandated by MoEF's Amendment Notification of 3rd November, 2009.



231 MW Chamera-III Power Station (Himachal Pradesh) - Power House

CHAPTER-19

NHPC LIMITED

NHPC Limited (earlier known as National Hydroelectric Power Corporation Ltd.) is a Schedule "A" Mini-Ratna Enterprise of the Government of India with an authorized share capital of ₹15,000 Crore and an investment base of more than ₹40,471 crores. NHPC was set up in 1975 and has now become the largest organization for hydro power development in India, with capabilities to undertake all the activities from conceptualization to commissioning of Hydro Projects. The main objects of NHPC include, to plan, promote and organize an integrated and efficient development of power in all its aspects through Conventional and Non-conventional Sources in India and abroad and transmission, distribution, trading and sale of power generated at stations. The Company is also listed with the Bombay Stock Exchange and National Stock Exchange. NHPC has signed an MoU with Rural Electrification Corporation Ltd. (REC) for accelerated electrification of one lakh villages and provide connection to one crore households and with the Ministry of Rural Development for development and maintenance of rural access roads in six districts of Bihar. Works are in progress on these schemes. At present nine projects are under construction with total installed capacity of 4271 MW, out of which, six projects are scheduled to be commissioned by the end of next financial year.

Projects under Operation

NHPC has so far commissioned 15 hydroelectric projects with an aggregate installed capacity of 5526 MW which includes 2 projects with total installed capacity of 1520 MW in Joint Venture with Govt. of Madhya Pradesh as per details below.

S. No.	Name of Project	State	Installed Capacity (MW)
1	Bairasiul	Himachal Pradesh	180
2	Loktak	Manipur	105
3	Salal-I&II	Jammu & Kashmir	690
4	Tanakpur	Uttarakhand	120
5	Chamera-I	Himachal Pradesh	540
6	Uri-I	Jammu & Kashmir	480
7	Rangit	Sikkim	60
8	Chamera-II	Himachal Pradesh	300
9	Dhauliganga-I	Uttarakhand	280
10	Dulhasti	Jammu & Kashmir	390
11	Teesta-V	Sikkim	510
12	Sewa-II	J&K	120
13	Chamera-III	Himachal Pradesh	231
14	Indirasagar (JV)	Madhya Pradesh	1000
15	Omkareshwar (JV)	Madhya Pradesh	520
	Total		5526

Besides, three Units (33 MW) out of 4 Units of Chutak HEP (44 MW) have also been commissioned in Nov'12 and one Unit (15 MW) out of 3 Units of Nimmo Bazgo HEP (45 MW) has also been recently synchronized.

In addition to above, NHPC has commissioned 3 projects namely Kalpong (5.25 MW) in Andaman & Nicobar Islands, Sippi (4 MW) & Kambang (6 MW) in Arunachal Pradesh on turnkey/deposit basis. NHPC has also commissioned 2 projects viz. Devighat at Nepal with a capacity of 14.1 MW and Kurichu at Bhutan with a capacity of 60MW (aggregate capacity of 74.1 MW) on deposit / turnkey basis.

ANTICIPATED /ACTUAL GENERATION FOR THE YEAR 2012-13

POWER STATION	Installed Capacity	ACTUAL GENERATION UPTO 30.11.2012 (Including Auxiliary Consumption and Transformation loss)	LIKELY TO BE GENERATED IN BALANCE PERIOD i.e DEC'12 to MAR'13	TOTAL EXPECTED GENERATION DURING 2012-13
BAIRA SIUL	180	600	116	716
LOKTAK	105	409	115	525
SALAL	690	2739	292	3031
TANAKPUR	94.2*	388	77	466
CHAMERA -I	540	2124	366	2490
URI	480	2237	538	2775
RANGIT	60	271	53	324
CHAMERA-II	300	1246	249	1495
DHAULIGANGA	280	1007	102	1109
DULHASTI	390	1824	277	2101
TEESTA-V	510	1985	397	2382
SEWA-II	120	324	104	428
CHAMERA-III	231	610	133	743
TOTAL	3980.2	15766	2819	18585

*Installed capacity of Tanakpur Power station is 120MW which has been de-rated to 94.20 MW

NOTE

1. Anticipated Generation from Dec'12 to Mar'13 has been considered as per "Very Good" MOU target for the year 2012-13 for existing power stations except Bairasuil, Salal, Dhauliganga, Dulhasti, Teesta-V, Sewa-II & Chamera-II, where 85% of "Very Good" MOU target for the year 2012-13 has been considered keeping in view present trend of generation in Nov'12.

2. Anticipated generation for new projects have not been considered.

PLANT AVAILABILITY FACTOR OF NHPC POWER STATIONS

Figures in %

NAME OF POWER STATION / PROJECT	PLANT AVAILABILITY FACTOR UPTO NOV'12	LIKELY PLANT AVAILABILITY FACTOR IN BALANCE PERIOD i.e. DEC'12 TO MAR'13 (ANTICIPATED)	TOTAL EXPECTED PAF DURING 2012-13
BAIRA SIUL	98.2	90.3	95.6
LOKTAK	91.7	85.3	89.6
SALAL	77.3	11.0	55.3
TANAKPUR	78.2	29.0	61.9
CHAMERA-I	98.8	83.3	93.7
URI	87.6	52.9	76.1
RANGIT	99.5	72.3	90.5
CHAMERA-II	100.0	83.3	94.5
DHAULIGANGA	98.5	79.7	92.3
DULHASTI	100.8	54.5	85.5
TEESTA-V	91.7	83.8	89.1
SEWA-II	76.0	74.1	75.4
CHAMERA-III	94.1	85.2	91.1
TOTAL	91.4	62.8	81.9

NOTE:

1. PAF for period up to Nov'12 is provisional.
2. Expected month wise PAF for the period Dec'12 to Mar'13 have been calculated on expected annual maintenance period of Pondage type Power Stations & PAF corresponding to anticipated generation of ROR Power Station for 2012-13.

PROJECTS UNDER GOVT. CLEARANCE / SANCTION

Projects with aggregate capacity of 8801 MW are awaiting Govt. Approval / statutory clearances. Brief details of these projects are as under:

STATUS OF PROJECTS UNDER GOVT. CLEARANCE

Kotli Bhel IA (195 MW)

All statutory clearances for projects have been accorded by the concerned agencies. CEA had extended the validity of concurrence of Kotli Bhel-IA, project till 02.10.14. Process for seeking investment sanction is in progress.

An appeal was filed by Vimal Bhai & Ors before National Green Tribunal against the Stage – 1 Forest Clearance. The appeal was heard on 20.11.2012 wherein the appeal was disposed of by NGT as premature. This Tribunal in the said judgment held that the order granting Stage-I Forest Clearance by the MoEF cannot be assailed in Appeal before this Tribunal.

Dibang Multipurpose (3000 MW), Arunachal Pradesh:

The concurrence to this project was granted on January 23, 2008 by the CEA and PIB recommended the project for

investment sanction on January 28, 2008. CEA had extended the validity of concurrence up to 22.01.2013. Ministry of Defence has accorded Defence Clearance vide letter dated 31.12.2010. State Forest Dept. Vide letter dated 16.07.2012 has submitted requisite map & information to Regional Office of MOEF. NHPC vide letter dated 31.08.2012 took up the matter of pending site inspection with MoEF. NHPC, vide letter dated 03.09.2012, 28.09.2012 & 28.11.2012 requested Addl. PCCF, MoEF's RO, Shillong for communicating the suitable date for site inspection. Site inspection by MoEF's Regional Office, Shillong is yet to be carried out. NHPC vide letter dated 27.11.2012 requested Deputy Commissioners of Lower Dibang Valley and Dibang Valley Districts for finalizing the dates for public hearings, which is a pre-requisite for Environment clearance by MoEF.

Teesta-IV (520 MW) Sikkim:

CEA in May'10 accorded concurrence to the project. Process for seeking investment sanction is in progress. Ministry of Defence has accorded Defence Clearance vide letter dated 11.01.2011. Public hearing has been successfully conducted on 29.03.2012. For environment clearance the project was discussed by EAC in its meeting held on 08.09.2012. EAC desired certain additional information, which were furnished to MoEF. The project was re-discussed by EAC on 24.11.12. Minutes of meeting is awaited.

Forest proposal has been forwarded by State Govt. to MOEF, Govt. of India on 03.05.2011 and site inspection was carried out by MOEF, Shillong Regional Office on 1/2.05.2012.

Tawang-I (600 MW) and Tawang-II (800 MW), Arunachal Pradesh:

CEA has accorded concurrence to Tawang-II HEP (800 MW) vide OM dated 22.09.2011 and to Tawang I (600 MW) HEP vide OM dated 10.10.2011. MOEF has accorded Environment Clearance to Tawang I and Tawang II projects vide letter dated 10.06.11. Ministry of Defence has accorded Defence Clearance vide letter dated 14.12.2010. State Govt. has forwarded the forest proposals of Tawang-I & Tawang-II to MoEF vide letters dated 21.09.2011 and 20.09.2011 respectively for forest clearance. Regional Office of MoEF, Shillong has undertaken the site inspection on 15th & 16th Jan'2012. The case was discussed in FAC meeting held on 02.04.2012. Forest proposal was reconsidered by reconstituted FAC in its meeting on 17th-18th Sept'12. FAC had adhered to its previous decision that forest clearance will be reconsidered only after completion of cumulative biodiversity study of Tawang basin. Number of correspondences has been made with Principal Secretary (Env. & Forests), GoAP by NHPC to expedite the award of cumulative biodiversity study.

State Forest Deptt. vide letter dated 18.10.2012 sought the willingness from NEHU, Shillong for undertaking the biodiversity study of Tawang Basin.

State Forest Deptt. vide letters dated 19.11.2012 invited proposals from NIH, Roorkee; IIT, Guwahati; ICFRE, Dehradun and NEHU, Shillong for undertaking the biodiversity study of Tawang Basin.

JV PROJECTS

Loktak Downstream (66 MW) Manipur:

The project is being executed on Joint Venture basis by the JVC Loktak Downstream Hydroelectric Corporation Ltd. (LDHCL) formed between NHPC and Govt. of Manipur with a shareholding of Government of Manipur (26%) and NHPC (74%). CEA vide letter dated 06.08.2012 has transferred the TEC in favour of M/s LDHCL. In-Principle (stage-I) forest clearance has been accorded by MoEF. EAC has recommended the project for grant of environmental clearance. The formal environmental clearance is awaited. Defense clearances are under process. Survey of India has started mobilizing for taking up survey works at LDHCL.

Pakal Dul and other hydroelectric projects, aggregate 2220 MW in J&K:

Pakal-Dul and other hydroelectric projects in the Chenab River Basin of J&K with an aggregate installed capacity of 2220 MW are to be developed through Joint Venture Company "Chenab Valley Power Projects (Private) Limited" amongst JKSPDC, NHPC Ltd. and PTC with equity interests of 49%, 49% and 2%, respectively.

Pakal Dul (1000MW)

Clearances under Indus Water Treaty, TEA (Techno Economic Appraisal), Forest Clearance and Environmental clearance have been given. A Draft PIB Memorandum has been submitted to MoP. The PIB Note has been circulated by MOP on 30.11.2012. The JVC has floated tenders for execution of Pakal Dul project on turnkey basis. The turnkey bids are under evaluation through consultant appointed by CVPP for the purpose.

Kiru(600MW)

DPR of project with revised installed capacity of 660 MW was submitted in CEA by CVPPL on 08.08.2012 and is under appraisal.

Kwar(520MW)

DPR of project with revised installed capacity of 560 MW was submitted in CEA by CVPPL on 25.07.2012 and is under appraisal.

Tipaimukh (1500 MW), Manipur:

MOU amongst NHPC, SJVNL and Govt. of Manipur has been signed in April 2010 with shareholding of 69%, 26% and 5% respectively. Promoter's Agreement for setting up a Joint Venture Company amongst NHPC Limited, SJVN Limited and Government of Manipur for implementation the project was signed on 22.10.2011. Finalization of Memorandum of Association (MoA) & Article of Association (AoA) by JVC Partners and other formalities for registration in progress. In view of NEEPCO's presence in that area, it has now been decided to induct NEEPCO as the Joint Venture partner with 26% share in place of SJVNL.

Environment Clearance accorded by MoEF vide letter dated 24.10.2008 in favour of NEEPCO is required to be transferred in

favour of the JVC after its formation. Application for diversion of forest lands falling in Manipur and in Mizoram submitted on 29.11.10 & 14.07.10 to respective state Governments. Forest Clearance proposals have been forwarded by State Govt. to MOEF. Forest Clearances are awaited.

CEA on 02.07.2003 accorded concurrence to the project. The proposal for the project would require resubmission for consideration of PIB after receipt of all statutory clearances and transfer of TEC in favour of JV.

Other Projects

Beside above projects under clearance, two projects namely Kotlibhel Stage 1B (320 MW) and Kotlibhel Stage II (530 MW) in Uttarakhand were under clearance stage. CEA had concurred these schemes and PIB had also recommended the projects in 2007. However, Environmental Clearance of Kotli Bhel- IB has been withdrawn by MOEF. In this context NHPC has filed a civil Appeal before Hon'ble Supreme Court. Further, MOEF has also declined permission for diversion of Forest land for construction of KB-1B and KB-II HE Project. NHPC has been taking up the issue of reconsideration of Forest clearance of these projects with MOEF/MOP/State.

Projects under FR/ DPR Preparation

The process for conducting Survey & Investigation for preparation of FR / DPR of following 7 projects with an installed capacity of 2485 MW is in progress.

1. Bursar (1020 MW) J&K
2. Lachen (210 MW) Sikkim
3. Chungar Chal (240 MW) Uttarakhand
4. Garba Tawaghat (630 MW) Uttarakhand
5. Kharmoli Lumti Tulli (55 MW) Uttarakhand
6. Dhauliganga Intermediate (210 MW), Uttarakhand
7. Gori Ganga IIIA (120 MW), Uttarakhand

For the preparation of DPR of Bursar Project considering both the options namely Hanzal and Pakal Sites MOEF vide letter dated 5.10.2012 has been accorded clearance for pre-construction activities & approval of TOR to both alternatives. NHPC vide letter dated 06.11.2012 requested for release of funds (₹104.13 Crores) MoWR to intimate a convenient date and Venue suitable to sign the MOU, so that for preparation of DPR of Bursar HEP could be started.

Further, the work for the preparation of DPR for Chungar Chal, Garba Tawaghat and Karmoli Lumti Tulli has been held up as the projects are falling under Askot Musk Deer Sanctuary and will be resumed on receipt of clearance from NBWL /Hon'ble Supreme Court of India due to its locations in environmentally sensitive area.

DPR of Lachen project is not being taken due to non-availability of MOEF Clearance.

For the execution of Dhauliganga Intermediate & Goriganga IIIA projects Implementation agreement between NHPC and GOUK is under process.

Other Joint Venture Initiatives by NHPC

1. **NHDC:** NHPC had signed an MOU with Govt. of MP in August 2000 for formation of Joint venture company i.e. Narmada Hydroelectric Development Corporation Ltd. (NHDC) for implementation of Indira Sagar (1000 MW) and Omkareshwar (520 MW) Projects in M.P in which NHPC has the major stake (51%). Both these projects have been commissioned by NHDC ahead of schedule.
2. **National Power Exchange (NPEX):** NHPC, NTPC, PFC & TCS have entered into a Joint Venture agreement for incorporation of a company to set up & operate a Power Exchange at National Level to be known as National Power Exchange (NPEX). Equity share of NHPC, NTPC, and PFC & TCS is 16.67%, 16.67%, 16.66% & 50% respectively. The NPEX has been incorporated under the provisions of the Companies Act 1956 with authorized capital of ₹50 crores. Initial paid up capital of the Company is ₹5 crores (50 lacs equity share of ₹10 each) which have been subscribed by NHPC, NTPC, PFC & TCS in 16.67%, 16.67%, 16.66% & 50% stake holding respectively. CERC has granted in principle approval to NPEX recently.
3. **National High Power Test Laboratory Private Limited (NHPTLPL):** A Joint Venture has been formed in May-09

amongst NTPC, NHPC, PGCIL & DVC having share holding of 25% each.

Other Initiatives by NHPC

1. Further, NHPC Ltd. signed a MoU with JSC RusHydro, Russia's largest generating firm on 23.5.2011. The pact signed by the two firms sets the stage for technical cooperation on a "case-to-case basis" on pre-specified projects, including those bagged by NHPC outside India.
2. JV with DGPC for implementation of CHAMKHARCHHU-I PROJECT 670 MW) is in initial stage. Talks are on with MOP/MEA/RGOB/INDIAN PSUs and BHUTANESE PSU for reaching an agreement on the common JV MOU for 4 Projects to be taken up in JV with Indian PSUs.
3. NHPC holds 4.17% of paid-up capital of PTC India Limited.
4. Thermal Power:-NHPC through its subsidiary i.e. NHDC has already taken up Thermal Power Projects in Madhya Pradesh and is engaged in preparation of Detailed Project Report of 1320 MW Reva Thermal Project in MP. Now, GoI has conveyed its approval for change in object clause 1(a) of the Memorandum of Association of NHPC which inter-alia allows NHPC to plan, promote and organize an integrated and efficient development of power in all



45 MW Nimoo Bazgo Project (Jammu & Kashmir) - Dam

its aspects through conventional and non-conventional sources in India and abroad. With this approval, NHPC will endeavor to take up Thermal Projects in the country on its own. Presently, NHPC is exploring the possibilities for coal linkage for establishing Thermal Power Plants of 1320 MW each in Jharkhand, Bihar and Maharashtra. In this connection, Secretary, Energy Deptt, Govt. of Bihar conveyed the acceptance for setting up the Kakhisarai Thermal Power Project (1320MW) in Bihar through JV mode. A draft MOU has been forwarded to NHPC on 19.11.2012. Finalization of MOU is under process.

COMMERCIAL PERFORMANCE OF THE CORPORATION

Performance Highlights for the year 2012-13(up to 30.11.2012)

Against the MoU sales target of ₹4747.00 crores (Excellent) for the year 2012-13, the actual sales up to 30.11.2012 is ₹3067.37 crores(Provisional) excluding water usages charges, UI charges, RLDC charges etc. during the year 2012-13.

Achieved Cumulative Billing of ₹3864 Crs. upto 30.11.2012 during the year 2012-13.

Achieved cumulative realization of ₹3599 Crs. upto 30.11.2012 during the year 2012-13 which is 16.31 % higher than the cumulative Realization of ₹3012 Crs. achieved during the corresponding period of the previous year.

Dues outstanding for more than 60 days are ₹1199 crores as on 30.11.2012, in respect of PSPCL (Punjab): ₹39.86 Crs., UPPCL (Uttar Pradesh): ₹304.29 Crs., HPSEB(Himachal Pradesh): ₹29.21 Crs, PDD(J&K): ₹346.42 Crs, JVVNL (Rajasthan): ₹35.35 Crs., AVVN(L(Rajasthan): ₹12.71 Crs., JVVNL(Rajasthan): ₹10.37 Crs., BRPL (Delhi): ₹143.44 Crs., BYPL (Delhi): ₹99.16 Crs., APDCL (Assam): ₹5.97 Crs., BSEB(Bihar): ₹109.15 Crs., GRIDCO(Orissa): ₹27.90 Crs., JUSEB(Jharkhand): 20.62 Crs., Power & Electricity Deptt., Mizoram ₹1.62 Crs., & MeECL (Meghalaya): ₹12.95 Crs.

CONSULTANCY SERVICES

NHPC is providing consultancy services in the various fields of hydro power viz. river basin studies, survey works, design and engineering, geological studies, geotechnical studies, hydraulic transient studies, hydrological studies, contract management, construction management, equipment planning, underground construction, testing commissioning,

operation & maintenance etc. to leading organisations of the country. The organisations to whom consultancy services are currently being given include A&N Administration, MEA (for hydro projects in Union of Myanmar – Department of Hydropower, Govt. of Union of Myanmar, Implementation and Renovation & Modernization of Varzob-I Power Station in Tajikistan), Deptt. of Energy, Royal Govt. of Bhutan, Dangote Industries, Nigeria, PGCIL, WBREDA, WBPDC, JKPDC.

NHPC has earlier given consultancy services to BBMB, BSHPC, CEA, CSEB, CWC, DVC, Govt. of Arunachal Pradesh, Govt. of Bihar, Govt. of Goa, Govt. of Mizoram, Govt. of Nagaland, KPA, KSEB, LAHDC, Northern Railways, NTPC, REC, THPA, SJVN, THDC, UJVNL, CES, ICICI, IFCI and Jaiprakash Hydro Power Ltd.

NHPC is registered with World Bank, Asian Development Bank, African Development Bank and Kuwait Fund and Arab Economic Development as a Consultant in the area of hydropower.

STATUS OF RURAL ELECTRIFICATION WORKS UNDER RAJIV GANDHI GRAMIN VIDYUTIKARAN YOJNA (RGGVY)

NHPC is implementing Rural Electrification projects under RAJIV GANDHI GRAMIN VIDYUTIKARAN YOJNA (RGGVY) in 27 districts spread over five states of West Bengal, Bihar, J&K, Chhattisgarh and Odisha at an estimated cost of approx. ₹ 2800 crore. The scope of work includes electrification of 29249 villages (9310 unelectrified/de-electrified (UE/ DE) and 19939 Partially Electrified (PE) villages and providing service connections to 20.74 lacs BPL households.

During 2012-13(up to 30.11.2012), NHPC has completed 9110285 un-electrified/de-electrified villages and 17532 partially electrified provided villages and provided service connections to 18.31 lacs BPL households.

RURAL ROAD UNDER PMGSY:

NHPC has signed a MOU with Ministry of Rural Development, Government of India and Government of Bihar for constructing rural roads in six districts of Bihar under the Pradhan Mantri Gram Sadak Yojna (PMGSY). These roads will also be maintained by NHPC for five years.

Under this scheme, 759 roads of 3232.31 km. with a cost of ₹1728.60 crores have been cleared by Ministry of Rural Development, GOI. As on 30.11.2012, 654 roads of 2832.18 km. length have been completed.





World's Highest Voltage Level 1200kV AC Sub-Station at Bina in Madhya Pradesh

POWER GRID CORPORATION OF INDIA LIMITED (PGCIL)

Power Grid Corporation of India Limited (POWERGRID) was incorporated on October 23, 1989 as a public limited company. POWERGRID is a notified Central Transmission Utility since 1998. The Corporation, apart from providing transmission system for evacuation of central sector power, is also responsible for Establishment and Operation of Regional and National Power Grids to facilitate transfer of power within and across the regions with Reliability, Security and Economy on sound commercial principles.

ACHIEVEMENTS OF POWERGRID

POWERGRID, the Central Transmission Utility of the country, has been contributing significantly towards development of Indian power sector by undertaking coordinated development of power transmission network along with effective and transparent operation of regional grids and through continuous innovations in technical & managerial fields. Recognising the contribution of Company for overall development of power sector, it has been conferred with 'Navratna' status by Govt. of India in May, 2008.

In September, 2007 Company entered into Capital Market through an IPO and subsequently through Follow-On Public Offer issue in FY 2010-11. With this public holding in the Company is 30.58% and the balance 69.42% is held by Govt. of India.

The company has been receiving highest rating i.e., "Excellent" under MoUs since signing of first MoU in 1993-94.

National Awards for Meritorious Performance in Power Sector have continuously been received since its inception, a Comprehensive Award Scheme introduced by Central Electricity Authority for improving the overall performance of the Power Sector for recognition of meritorious performance in Transmission and Distribution as well as for early completion of Transmission Projects.

In recognition of its continued efforts to provided secure & reliable transmission system, POWERGRID was conferred with 'Power Line Awards 2012' in the category "Best Performing Transmission Company".

'Environmental Excellence & Sustainable Development award-2011' by the Indian Chamber of Commerce and '4th India Power Awards 2011' under the 'Largest CPU in Transmission Sector' and 'Overall Utility Performance-Transmission' categories were conferred on the Company for its outstanding performance.

The Company is certified with **Integrated Management System** as per **Publicly Available Specification, PAS 99:2006** integrating requirement of ISO 9001:2008 (Quality), ISO 14001:2004 (Environment) and OHSAS 18001:2007 (Occupational Health & Safety Management System). All the establishments of the Company have been audited for **Social Accountability System, SA 8000:2008**.

As at the end of November 30, 2012, the Company owns & operates a transmission network **around 96,300 ckt. kms.** of transmission lines along with **159 Extra High Voltage (EHV) AC & DC sub-stations**, spread over the length and breadth of the country. Company has been able to display its capability in consistently maintaining the availability of this gigantic transmission network over 99%, comparable with the best international standards. POWERGRID carries more than 50% of total power generated in the country through its transmission network.

During FY 2011-12, availability of **99.94%** was achieved for the transmission system, **highest ever in the history of the Company**. Also no. of trippings per line was restricted to 0.59. To enhance the efficiency of its operations, Hot Line Maintenance, Washing of Insulators hotline with the use of helicopters, Equipment Condition Monitoring techniques including Dynamic Testing of relays, Thermo-vision Scanning, Frequency Response Analysis (FRA) for transformers and reactors, large scale automation of sub-stations, etc. have been deployed. Presently, **39** sub-stations of the Company are being operated remotely and many new sub-stations are being designed for remote operation. For further improvement in operational efficiency, a "National Transmission Asset Management Centre" is being established to facilitate centralised operation, monitoring & control of sub-stations remotely.

The Company has recorded an impressive financial performance during FY 2011-12, achieving a turnover of **₹10,785 Crore** and Net Profit of **₹3,255 Crore** as compared to **₹9,099 Crore** and **₹2,697 Crore** respectively during FY 2010-11. The gross asset base of the Company has been enhanced to **₹63,387 Crore** from **₹50,343 Crore** in 2010-11, an increase of about **25.9%**.

At the end of FY 2011-12, the company has a Networth of **₹23,488 Crore** and Capital Employed of **₹42,470 Crore**. There has been an impressive growth in the earning potential of the company, which is reflected by the steady growth of return on Net Worth from the level of 5.63% in 1992-93 to 13.78% in 2010-11.

During half yearly period of FY 2012-13 (upto September 30, 2012), company achieved a turnover of about **₹5,974 Crore** (Unaudited) and Net Profit of **₹1,996 Crore** (Unaudited). Total fixed assets of the company have grown to **₹72,608 Crore** (Unaudited) till September 30, 2012.

The company made an investment of **₹17,814 Crore** during the year 2011-12 for implementation of various transmission projects, an increase of about 48% over the investment made in last year (₹12,077 Crore). The requisite funds were mobilised from domestic market and proceeds of ongoing loans from multilateral funding agencies, The World Bank (WB) and Asian Development Bank (ADB) were utilised, besides internal resources.

During FY 2012-13, out of envisaged investment of ₹20,000 Crore, an investment of ₹10,585 Crore (Unaudited) has been made till November, 2012 for implementation of various projects.

The Company displayed excellent performance on project implementation front during FY 2011-12. Transmission projects worth about ₹14,021 Crore were commissioned during the year 2011-12, which comprises of about 10,600 Circuit Kms, 15 EHV AC & HVDC sub-stations and transformation capacity of more than 30,000 MVA. During FY 2012-13, POWERGRID has planned an addition of 7,240 GW-Ckm of transmission lines and 20,000 MVA of transformation capacity. Upto November 30, 2012, about **3,165 GW-Ckm.** of transmission lines, **08 nos** of new sub-stations with transformation capacity of about **27,720 MVA** has been completed.

BUSINESS DEVELOPMENT

In-house expertise has been acquired by the company at par with global standards in the field of Planning, Design, Engineering, Load Despatch and Communication, Telecommunication, Contracts, Finance and Project Management. Utilising this expertise, consultancy is being offered at national & international level.

In international arena, the Company is working in **11 countries** viz. Nepal, Bhutan, Bangladesh, Afghanistan, Sri Lanka, Myanmar, UAE, Nigeria, Ethiopia, Kenya & Tajikistan.

On the domestic front, during FY 2011-12, the Company has bagged **41** new assignments having project cost of **₹1002 Crore.** Further, the Company has been appointed as Design cum Implementation Supervision Consultant for strengthening of Transmission & Distribution System of 6 States of NER having Project cost of around **₹8400 Crore.**

GRID MANAGEMENT

M/s Power System Operation Corporation Limited (POSOCO), a 100% subsidiary of the company has been successfully managing the National and Regional electricity Grids.

To have reliable and stable operation of regional power grids while ensuring economy & efficiency in operation. Load Despatch Centres of the company are operating with the state-of-the-art technology implemented by the company and are greatly contributing to bring quality and economy in operation of power system besides improving data availability, visibility and transparency.

The electricity grid experienced two major disturbances consecutively on 30th and 31st July, 2012. While the first disturbance affected only the Northern Region, the second one affected Northern, Eastern, and North-Eastern Regions. However, the essential loads were restored within 2 to 3 hours of the incidents, which is one of the quickest restoration ever carried out internationally and power supplies were normalized completely on the same day of incident(s). For effective supervision & control over inter-State Transmission System, all possible corrective steps are being taken in line with the Electricity Act, 2003 and the Indian Electricity Grid Code to ensure that such incidents do not occur in future. Mechanisms like Special Protection Scheme for load shedding

protocol have been devised and Utilities/Generators have been sensitised about the need to draw / inject as per schedule irrespective of system frequency, which is pre-requisite for effective integrated safe operation of grids. POWERGRID is also working for installation of Grid Security Expert System to have a fail-safe and reliable operation of the grid. As a step towards maintaining higher grid security, the grid frequency band has been further tightened from 49.5-50.2 Hz to 49.7-50.2 Hz w.e.f. 00:00 hours of September 17, 2012 with the implementation of CERC (Indian Electricity Grid Code) (1st Amendment) Regulations and CERC (UI changes & related matters) (2nd Amendment) Regulations.

TECHNOLOGY DEVELOPMENT

For efficient utilisation of precious RoW, the Company is deploying state-of-the-art technologies such as high temperature low sag Conductors, series compensation including Thyristor Control, Multi Circuits, Compact & Tall Towers, High Surge Impedance Loading Lines, etc.. The Company gives priority to research activities with potential for societal, environmental & national benefits by application of advance technologies and finding solutions to gear up for future challenges.

Experienced with construction of 765kV EHVAC & ±500kV HVDC transmission system, POWERGRID is now working on next higher transmission voltages of **±800kV HVDC & 1200 kV UHVAC System** to achieve efficient utilization of RoW and increased power transfer capability for transfer of bulk power over long distances. ±800kV, 6000 MW HVDC, multi-terminal bi-pole of length around 2000 km is under construction, and upon completion, it shall be the amongst longest HVDC line in the world. 1200kV UHVAC technology is being developed by the Company with the participation from indigenous manufacturers of equipment for the first time in the world and towards this direction, the 1200kV lines were test charged.

Further, POWERGRID has taken the initiative for implementation of Smart Grid Technology in the country and has implemented Phasor Measurement Units (PMUs) using wide area measurement systems (WAMS) in Northern Region Grid, for the first time in India. Unified Real Time Dynamic State Measurement (URTDMS) project for installation of PMUs, Phasor Data Concentrators (PDCs) etc. has been formulated. The first test lab for PMU and PDC testing in India is being established at Bhiwadi in Northern Region.

CONTRIBUTING TO DISTRIBUTION REFORMS

To derive benefit of additions in generation & transmission by end consumers, Govt. of India has launched Accelerated Power Development & Reforms Programme (APDRP) and Rajiv Gandhi Grameen Vidhyutikaran Yojana (RGGVY), which are aimed at bringing qualitative improvement in sub-transmission and distribution sector and expected to achieve reduction of AT&C losses.

POWERGRID is playing a significant role in carrying forward the distribution reforms through undertaking APDRP works on behalf of Govt. of India in various parts of the country. Most of these schemes have been commissioned/ are nearing completion. Under Rajiv Gandhi Grameen Vidhyutikaran Yojana

(RGGVY) cumulatively, till Nov.'2012, infrastructure has been created for electrification of **67,566 villages** and service connections to about **34.38 Lakh BPL households** have also been released.

LEVERAGING HUMAN CAPITAL TO ACHIEVE EXCELLENCE

Company believes that its human resource consisting of about 9,487 employees (as on November 30, 2012) is the most important asset and accordingly, its policies are focused on development of human potential through skill upgradation, career enhancement and job rotation to achieve organizational objectives. An effective work culture has been established in the organization through empowerment, transparency, decentralization, practice of participative management etc.

In order to align the human resource development strategy with the business objectives, the Company conducted Organization Need Assessment (ONA) capturing the organizational requirement for competency enhancement of employees and then conducted online Training Need Assessment (TNA) for individual employees. Apart from focussed functional and behavioural development of its employees, the Company conducted series of certified Learning & Development Program on Regulatory Framework in Power Sector and certified workshop on Earned Value Management System for top and senior level executives as part of their strategic development.

New initiative of Mentorship Development has been taken under which young executives are guided by the mentors who nurture, guide and direct them to integrate with the system and values of the organization and counsel them on regular basis. Setting the tone for new business areas in Energy Auditing, the Company has trained a group of executives for going through the process of National Certification Examination for Energy Auditors and subsequent accreditation by Bureau of Energy Efficiency (BEE).

As part of Organizational feedback mechanism, the Company has been conducting **(expected to be completed by March 2013)** Organizational Climate Survey among all employees which will be instrumental to make the Company a great place to work for challenging growth. The Competency Assessment & Skill Gap Analysis for middle level of employees was conducted to derive their development plan as per the needs of changing business scenario.

The Company has set up its own Hot Line Training Centre at Hyderabad duly accredited by Central Electricity Authority (CEA). This centre is the only accredited Hotline Training Centre in India and has been set up to provide in-depth approach and training for technical and practical know-how of live line maintenance.

CITIZEN'S CHARTER

The Company has formulated its Citizen's Charters providing a visible front of its objectives, mission, commitments, terms of service and its obligation to various stakeholders. Information about its schemes, policies, project plans of the Corporation and issues of general interest to stakeholders is available in the offices.

SOCIAL JUSTICE

The Corporation has implemented the Govt. directives to take care of the interests of Scheduled Castes, Scheduled Tribes and Other Backward Classes. For monitoring the same, Liaison Officers has been nominated in the Corporate Centre and Regional Establishments. Appropriate funds have been earmarked for the welfare of the SC/ST community and a number of welfare schemes have been implemented in the SC/ST populated villages near its establishments.

MANAGEMENT OF ENVIRONMENTAL AND SOCIAL ISSUES

Creating Sustainable Corporate Values

Power, today drives all the economic activities in the society. POWERGRID, as the provider of inter-state transmission facilities and as operator of the countrywide electrical grids, has a pivotal role in country's power sector.

The sustainability of corporate values is proven by the fact that they are in consonance with the values cherished by the society. Objectives of the Company are in alignment with the requirements of its stakeholders. End results of such value system are witnessed in all-round performance of the company, which has surpassed the targets. The company continues to make conscious efforts not only for sustaining such value-system but also inculcating desirable values.

Environment and Social Management

Electricity plays the pivotal role in economic development of the country. While, its use has sharply benefited the quality of life, its generation has raised several social, environmental, economical and political issues, which need to be understood in its right perspective and addressed accordingly. Though transmission projects are non polluting, a detailed corporate strategy document **"Environmental and Social Policy and Procedures (ESPP)"** has been developed in 1998 and upgraded it from time to time through wide consultations with social bodies, local communities, Govt. agencies, etc. in line with International best practices. The policy outlines the Company's approach and commitment to deal with environmental and social issues, relating to transmission projects, and lays out management procedures and protocols to address the same. The policy is applauded by the multilateral funding agencies like The World Bank & ADB and the Company applies the same for all projects across the country.

The World Bank has selected the Company's ESPP as the 1st candidate for Use of Country Systems (UCS) in India as it meets legal requirement of Indian law and other multilateral funding agencies. The Company is the first Power Company in India, which has come out with the Sustainability Report in March, 2010 and is giving shape to sustainability reporting process so as to establish a procedure for information disclosure and communication to stakeholders. Sustainability reporting benefits the Company in the long run by establishing a system of measuring, monitoring and reporting environmental and social performance.

The second Sustainability Report, 2009-11 is being drafted following Global Reporting Initiative (GRI)-G3 guidelines. Social, Economic & Environmental disclosures have been

made and to further enhance the acceptability of report and to meet the international benchmark, the report shall be validated by a recognized and approved third party assurance provider.

POWERGRID also installed a waste/used paper recycling plant at Gurgaon. It has been decided to use office stationery items made from recycled paper generated from the plant. To start with, all New Year cards for 2013 have been made using this recycled paper.

Besides, National Transmission Asset Management Centre (NTAMC) being constructed at Manesar, has been designed on the concept of a green building based on Green Rating for Integrated Habitat Assessment (GRIHA) guidelines. This will result in up to 30% reduction in energy consumption, limited waste generation due to recycling, less consumption of water and reduced pollution. POWERGRID has also undertaken Rain Water Harvesting systems in sub-stations, to contribute to the endurance / recharge of ground water resources.

Corporate Social Responsibility

Various projects/ schemes as a part of its Corporate Social Responsibility has been undertaking, over and above the statutory obligations, in different locations across India either on its own or through external agencies on a continuous basis primarily to ensure Socio-Economic development of weaker sections of Society and for overall conservation of Environment and improvement of Ecological imbalance.

In this direction '**Corporate Social Responsibility policy**' has been formulated which addresses the issue of Community Development in the neighbourhood areas around its offices/ sub-stations where the Resettlement and Rehabilitation (R&R) activities under ESPP have been completed and closed. It also addresses the Socio-Economic issues at National level like employment, conservation and environment etc.

One percent (1%) of Profit After Tax (PAT) for the preceding year has been earmarked as non lapsable budget for CSR

activities. During FY 2010-11, a major portion of CSR budget was spent on different thrust areas like education, health, infrastructure development & sports etc.. Being of long lasting value, these facilities have played a pivotal role in improving the standard and quality of life of local people around our establishments. The efforts made by the Company have been applauded and earned the goodwill of the local inhabitants.

The Company sponsored ten students, who are meritorious but under privileged for taking coaching for preparation of IIT-JEE entrance exam-2011 in "Utkarsh Super-30, Delhi Centre", as a part of Corporate Social Responsibility. It is heartening to know that six out of ten students got into IITs and rest four students qualified for other reputed engineering institutes.

TELECOM BUSINESS

In order to shore up its revenue base, POWERGRID spotted the opportunity of convergence between transmission & telecom, and thereby entered into telecom business to utilize spare telecommunication capacity of its unified Load Despatch Centre schemes, leveraging its country wide transmission infrastructure.

The Company holds National Long Distance (NLD), Infrastructure Provider Category – I (IP-I) and Internet Service Provider (ISP) Category 'A' licenses. POWERTEL offers services such as Domestic Leased Lines (both annual and long term contracts), Internet Services, and Multi-Protocol Label Switching (MPLS). The Company owns & operates a telecom network of about 21,000 kms providing connectivity to all metros, major cities & towns including remote areas of J&K & North-east States and offering value added services to prime telecom companies & Government organizations. Company is partner in National Knowledge Network (NKN) project connecting educational institutions. Govt. of India is in the process of finalization of modus operandi for implementation of National Optic Fiber Network for providing connectivity to 2,50,000 Gram Panchayats in the country. POWERGRID sees this as an emerging business opportunity in telecom segment.



POWER FINANCE CORPORATION LTD. (PFC)

1.0 OVERVIEW OF PFC

1.1 Introduction

PFC was incorporated on July 16, 1986, as a part of Government of India's initiative to enhance funding to power projects in India, with an objective to provide financial resources and encourage flow of investments to the power and associated sectors. It was declared a Public Financial Institution (PFI), under Section-4A of Companies Act, in 1990.

Power Finance Corporation Limited (PFC) is a leading Power Sector Public Financial Institution and a Non-Banking Financial Company, providing fund and non-fund based support for the development of Indian Power Sector.

PFC is a Schedule-A, Navratna CPSE in the Financial Services Sector, under the administrative control of the Ministry of Power, with 73.72% shareholding by the Government of India. Its Registered and Corporate Offices are at New Delhi.

The Corporation has been conferred with the status of 'Navratna' by Govt. of India on June 22, 2007. RBI has reclassified PFC from a 'Loan Company' to an 'Infrastructure Finance Company' (IFC) on July 28, 2010.

1.2 PFC's Clients and Products

PFC provides a comprehensive range of financial products and related advisory and other services from project conceptualization to the post-commissioning stage for its clients in the power sector, including for generation (conventional and renewable), transmission and distribution projects as well as for related renovation and modernization projects. PFC provides various fund based financial assistance, including project finance, short term loans, buyer's line of credit and debt refinancing schemes, as well as non-fund based assistance including default payment guarantees and letters of comfort. PFC also provides various fee-based technical advisory and consultancy services for power sector projects through 100% owned subsidiary, namely, PFC Consulting Limited.

PFC has well established relationships with the GoI and State governments, regulatory authorities, major power sector organizations, Central and State power utilities, as well as private sector power project developers.

1.3 PFC's association with Govt. of India

PFC is involved in various GoI programs for the power sector, including acting as the Nodal agency for the UMPP and the R-APDRP program and as a bid process



Shri Satnam Singh, CMD, PFC presenting RTGS credit advice of Rs. 583.83 crores towards interim Dividend for the year 2012-13 to Shri Jyotiraditya M. Scindia, Hon'ble Union Minister of State for Power (Independent Charge)

coordinator for the ITP schemes and implementation partner of DRUM. PFC also has operated Gol's AG&SP scheme and played a key role in APDRP program.

1.4 Joint Ventures and Subsidiaries

As a Corporate Strategy, PFC is focusing on various specific business opportunities and areas of operations such as consultancy, renewable, equity finance, etc. and is progressively carving out wholly-owned subsidiaries in respect of these verticals. PFC is also entering into joint venture collaborations in areas of national interest leading to environmental preservation as well as development of power markets such as 'Energy Efficiency Services Limited', Power Exchanges like 'Power Exchange India Limited' and 'National Power Exchange Limited'.

1.5 Expansion and Diversification Strategy

PFC has also strategically expanded its focus areas to include projects that represent forward and backward linkages to the core power sector projects, including procurement of capital equipment for the power sector, fuel sources for power generation projects and related infrastructure development.

2.0 PFC'S STRENGTHS

2.1 Memorandum of Understanding with Govt. of India

PFC has been signing MoU with the Govt. of India since 1993-94 and has consistently been rated 'Excellent' based on MoU targets in respect of various performance parameters. ('Very Good' in FY 2004-05).

2.2 MoU Excellence Award

PFC has received the prestigious "MoU Award for Excellence in Performance" eight times, the latest being for the year 2009-10.

2.3 Navratna Status

On June 22, 2007, PFC was notified as a Navratna company by the Gol. As a Navratna company, PFC is eligible for enhanced delegation of powers to the Board, including (a) the power to incur capital expenditure without governmental approval upto a specified limit; (b) ceiling on equity investment to establish financial joint ventures and wholly owned subsidiaries in India or abroad to be 15% of the net worth of our Company in a single project limited to ₹1,000 Crores and the overall ceiling on such investments in all projects put together to be 30% of the net worth of the Company; (c) power to enter into mergers and acquisitions, subject to certain conditions; and (d) the Board has the power to further delegate the powers relating to human resource management (appointments, transfers, postings, etc.) of executives below Board level to sub-committees of the Board or to executives of the Company as may be decided by the Board.

2.4 Favourable Credit Rating and Access to Various Cost-competitive Sources of Funds

Excellence in performance is also reflected in consistently obtaining the highest Credit Rating from domestic as well as international credit rating agencies.

PFC Credit Ratings		
Rating Agency	Long Term Borrowings	Short Term Borrowings
Domestic Rating		
CRISIL	'AAA' (Stable)	'A1+' (Highest Rating)
ICRA	'AAA'	'A1+' (Highest Rating)
International Rating (at par with 'Sovereign' rating)		
Moody's	Baa3	
Standard & Poor's	BBB-	
FITCH	BBB-	

2.5 Effective Resource Mobilization

PFC raises the funds through market borrowings of various maturities and currencies. PFC accesses domestic debt markets through various instruments which include Long Term Infrastructure Bonds, Tax Free Bonds, Long Term and Short-term Loans, Commercial papers, Inter-corporate deposits etc. from various Bank and Financial Institutions. PFC also raises its funds from international market through ECBs and Loans from Bilateral and Multilateral Agencies.

2.6 Experienced and Committed Human Capital

PFC has an experienced, qualified and committed management and employee base. Many of PFC's employees, particularly senior management, have worked with PFC for significantly long periods. PFC has an efficient and lean organizational structure relative to the size of its operations and profitability. PFC's personnel policies are aimed towards recruiting talented employees and facilitating their integration into the Company and encouraging the development of their skills.

PFC's management has significant experience in the power sector and the financial services industry, which has enabled it to develop a comprehensive and effective project appraisal process, implement a stringent risk management framework, identify specific requirements of power sector projects and offer comprehensive financing solutions and advisory assistance to such projects.

2.7 High Network

Most projects in the Power Sector are highly capital intensive and are large size projects, which require considerable amount of financial resources. Considering the RBI regulatory regime, lending towards each such project is dependent upon the total permissible exposure in respect of the specific borrower. Since PFC has considerably high network, it is able to take significant exposure in projects of each borrower. This, in turn, leads to an early financial closure leading to faster capacity addition.

2.8 Low NPAs

Due to PFC's healthy asset quality driven by robust credit

appraisal methodology (ISO 9001:2008 certified), it has virtually non-existent non-performing assets. PFC has one of the lowest NPA levels in the Industry (0.93% of Loan Assets) as on March 31, 2012.

2.9 Robust Appraisal Methodology

PFC has developed extensive knowledge and experience in the Indian power sector, and have comprehensive credit appraisal policies and procedures, which enable PFC to effectively appraise and extend financial assistance to various power sector projects. PFC follows a systematic institutional and project appraisal process to assess and mitigate project and credit risk. PFC's internal processes and credit review mechanisms reduce the number of defaults on loans and contribute to profitability.

2.10 ISO Certification

PFC was awarded the 'ISO 9001:2008' Certification with effect from January 07, 2010 valid till January 06, 2013, with respect to its operations.

3.0 PERFORMANCE HIGHLIGHTS

- 3.1 PFC has been a profit-making enterprise right since inception and has registered impressive growth in its net profit every year. It posted a net profit of ₹3032 Crores during the financial year 2011-12.
- 3.2 PFC has been consistently maintaining an overall recovery rate of 96-99% for the past ten years. PFC has achieved a recovery rate of 99.19% in respect of principal amount due during the year 2011-12.
- 3.3 In the FY 2011-12, PFC had paid a dividend of ₹792 Crores to Government of India representing 26.12% of Profit After Tax.
- 3.4 A snapshot of PFC's financial performance for the past 3 years is as under:

(₹Crores)

FINANCIAL PERFORMANCE AT A GLANCE (LAST 3 YEARS)			
	2009-10	2010-11	2011-12
Sanctions	65,465	75,197	64,752
Disbursements	25,808	34,122	41,418
Profit Before Tax	3,013	3,544	4242
Profit After Tax	2,357	2,620	3032
Dividend	516	599	792

4.0 AWARDS & ACCOLADES

- i. Received "Scope Gold Trophy for Best Managed Bank, FI or Insurance Company" for the year 2010-11 from Smt. Pratibha Devisingh Patil, former President of India.
- ii. Received 'MoU Excellence Award' in the category of "Financial Services Sector" for the year 2009-10 from Hon'ble Prime Minister of India, Dr. Manmohan Singh.
- iii. Received "Dun & Bradstreet PSU Award 2012" in "Non-Banking Financial Company" category.

- iv. Received "4th KPMG Infrastructure Today Award 2011" for contribution to the Power Sector over 25 years.

5.0 OPERATIONAL HIGHLIGHTS

As on 30th September, 2012, PFC had sanctioned an amount of ₹41,732 Crores (excluding R-APDRP) as compared to ₹28,398 Crores sanctioned during similar period of the last year (2011-12). An amount of ₹17,555 Crores was disbursed during the same period to State, Central and Private Sector entities, compared to ₹14,234 Crores disbursed during similar period in 2011-12. With this, cumulative sanctions of ₹3,95,411 Crores and disbursements of ₹2,26,520 Crores have been made by the Company as on 30.9.2012. PFC's growth potential is also reflected in the outstanding loan sanctions available for disbursement, which is ₹1,68,891 Crores as on 30.09.2012.

6.0 RESOURCE MOBILISATION

6.1 DOMESTIC

PFC mobilized funds amounting to ₹36,319 Crore from the domestic market during FY 2011-12 as against ₹26,057 Crore during FY 2010-11. Out of the above, ₹33,141 Crore was raised through issue of unsecured/secured taxable/ Tax Free bonds in the nature of debentures, ₹2,200 Crore by way of long/medium term loans from Banks/FIs, and ₹978 Crore by way of issue of Commercial Paper and Short Term Loans.

6.2 EXTERNAL

During the FY 2011-12, PFC could not raise Foreign Currency Loan owing to global economic slowdown and in the absence of availability of funds at competitive rates.

7.0 CONSORTIUM LENDING GROUP

CLG is primarily responsible for administering loans for the private (Power) projects where PFC is the lead FI. The unit is also corresponding with developers of IPPs, corporate bodies, prospective lenders for identifying loan syndication proposals and coordinate with members of Power Lenders Club for providing single window facility to power project developers. The Consortium Lending Group (CLG) is thus, dedicated to the needs of those private sector borrowers who have reposed faith in the services of the Corporation.

During the Financial Year 2011-12 and first two quarters of Financial Year 2012-13, the unit has managed to achieve disbursements of ₹4800 crore and ₹1300 crore respectively, despite the recent challenges faced by the sector with major setback to private players. The major projects which received disbursements were RKM Powergen Pvt. Ltd., Udupi Power Corp. Ltd., Vadinar Power Company Ltd., Lanco Amarkantak Power Ltd., KSK Mahanadi Power Company Ltd., KVK Nilanchal Power Pvt. Ltd., Ind-Barath Energy (Utkal) Ltd., IndiaBulls Power Ltd. and others. Further, in the current financial year to align with the government's commitment to increase the share

of renewable energy in the 12th 5 year plan, the unit has also emphasized more on renewable energy projects. It has successfully completed the execution of documents for 11 renewable energy projects out of which 3 projects i.e. Vasavi Solar Power Pvt. Ltd., Electromech Maritech Pvt. Ltd. and Newton Solar Pvt. Ltd. have successfully commenced commercial operations.

With an aim to give impetus to Consortium Lending Operations, CLG is working towards harnessing the huge business potential offered by the Power Sector. The goal is to have a focused thrust of the development of the infrastructure sector towards the growth and development of the power sector.

8.0 POWER EXCHANGE

PFC has invested ₹2.80 Crores (approx.) in the equity share capital of Power Exchange India Ltd. (PXIL), which is 6.08% of the paid up capital of ₹46.05 Crores as on 30.11.2012.

Apart from the above PFC, NTPC, NHPC and TCS have promoted 'National Power Exchange Limited' (NPX) a company incorporated under the Companies Act, 1956, with an authorized capital of ₹50 Crores. PFC has invested ₹2.19 (approx.) crores in the equity share capital of NPX, which is 16.66% of the paid up share capital of ₹13.13 Crores (approx.). CERC has accorded in principle approval to NPX for setting up of power exchange. The Company is yet to start its operations.

9.0 'PFCGEL' ESTABLISHED FOR PROMOTING GREEN ENERGY

'PFC Green Energy Limited' (PFCGEL) has been incorporated on March 30, 2011 as a wholly owned subsidiary of Power Finance Corporation Limited (PFC), for financing and financial services to Renewable Energy sector and Energy Efficiency projects. The Certificate for Commencement of Business was obtained on July 30, 2011 from the Registrar of Companies.

As the Company's main object is to provide financial support to RE projects, it applied to the Reserve Bank of India (RBI) for registration as a Non-Banking Financial company in January 2012. On October 1, 2012 RBI granted it the status of Non-Banking Financial Institution. With the receipt of the Certificate of Registration (CoR) from RBI on October 1, 2012, the Company is now geared to commence its business of lending to the renewable energy sector in the FY 2012-13.

PFC has incorporated the Company to provide focused approach on Renewable Energy sector. The idea of providing impetus to the Renewable energy sector by PFC was initially conceived in August, 2008 with the creation of strategic business unit i.e. RE&CDM (Renewable Energy and Clean Development Mechanism). The unit was created to offer special thrust and focus to such projects. With the growth of renewable energy portfolio of PFC, the idea of incorporating a separate company was conceived and implemented. Subsequent to receipt of Certificate of Registration by PFC GEL, the RE&CDM unit

of PFC is dissolved w.e.f. November 22, 2012 and the work previously handled by RE&CDM unit will be looked after by PFC GEL.

As the Company is dedicated only for renewable energy projects, the apprehension of diversion of possible green funds coming to the Company is also eliminated. Recently, the Company has been approached by foreign agencies such as AFD, DFID etc. for providing it funds for renewable energy. With the flow of funds dedicated for green energy, the Company may be in a position to provide soft loans.

Since the formation of RE&CDM in August 2008, PFC has supported a capacity of 914 MW extending financial assistance of ₹3649 Crores to various clients. The promoters of renewable energy generation projects in all sectors i.e. Central, State, Private sector etc. are welcome for taking financial assistance for their upcoming projects.

10.0 ESTABLISHED 'PFCAS' FOR DEBT SYNDICATION SERVICES

The company was incorporated on July 18, 2011 to provide debt syndication services in the areas of power, energy, infrastructure and other industries. The Certificate for Commencement of Business was obtained on September 02, 2011. Since then, the company has started its operations.

During the FY 2011-12, company has been instrumental to achieve Profit after tax of INR 4.97 lakhs. With the addition of resources, company has reported Profit After Tax of INR 78.11 lakhs as on September 30, 2012, thereby registering impressive growth in its net profit and reflecting its potential. The company is evolving as an active player in the business of syndication thereby enhancing PFC's portfolio of services and be associated to maximum number of projects coming up in Power & energy sector, either by way of funding or by syndicating the required investment.

11.0 EQUITY INVESTMENT GROUP (EIG)

Equity related new initiatives of EIG are as below:

11.1 Private Equity Fund

PFC aims to launch a PE Fund focussed on the Indian power sector along with a reputed Indian partner. This would aid India to meet in capacity addition targets as significant contribution would be required from the private sector. The fund would help in channelizing flow of domestic as well as foreign institutional funds in equity of power projects and facilitate faster financial closure of projects leading to expeditious capacity addition in the sector.

PFC is in the process of selecting a partner for launching the PE Fund. PFC is currently holding discussions with Tata Capital Ltd., w.r.t terms and conditions of the Joint Venture Agreement.

11.2 Equity Funding

PFC is looking at opportunities to provide equity funding to attractive power projects so as to leverage its immense

financial strength, large debt providing capability and domain expertise in power sector to invest in equity through various instruments. PFC has formulated a policy for investment in equity of power projects and would be looking at investment opportunities ranging between 0.5% and 2% of its own Net worth. Equity funding would help PFC to diversify its gamut of products and use its expertise to help the power sector more effectively.

11.3 Corporate Loan

PFC has been providing "Corporate Loan" to enable experienced utilities/promoters in the power sector to leverage the successful operation of the commissioned project(s) in order to expedite capacity addition in power sector. The assistance shall be extended either for the purpose of equity infusion in new power project or acquisition of an existing power project. PFC has sanctioned an amount of ₹850 Crs. under this product.

12.0 TRANSITIONAL FINANCING FOR STATE DISCOMS

PFC has provided financial support under Transitional Financing scheme to State Sector DISCOMs so as to meet the temporary liquidity crunch being faced by these DISCOMs due to various reasons like lack of cost-reflective tariff, non-availability of fuel surcharge in tariff, inadequate government support to meet the cash/revenue gap, insufficient capacity addition and purchase of expensive power etc. The utilities are required to prepare Financial Restructuring Plan (FRP) giving roadmap for reduction in the accumulated losses and turnaround of the utilities. The transitional loans are being provided after stipulating the conditions which are aimed towards reforming these utilities. PFC has sanctioned ₹16330 Crs. to DISCOMs of 5 states namely Haryana, Uttar Pradesh, Tamil Nadu, Rajasthan and Punjab.

13.0 BUYERS LINE OF CREDIT

PFC has been providing non-revolving rupee line of credit to actual users in power sector for purchase of machinery, equipment and other capital goods on deferred payment basis. PFC has sanctioned ₹300Cr. under this scheme so far in Financial Year 2012-13.

14.0 FACILITATION GROUP

PFC has successfully grown business operations in the area of financing Fuel Sources Development & Distribution projects during the financial year.

During the year, PFC has entered into the global operations with sanction of ₹2200 crore to Videocon Industries Limited for the development of its overseas gas & oil assets. Further, PFC has received requests & is processing loan proposals for development of domestic coal mine, overseas coal mine and rail network. Among these is the request from GVK Group for financial assistance to its Singapore based subsidiary for development of its Australian Coal mines. As Gas & Coal are amongst the fuel options for Power Generation Projects, the projects may help in bridging the gap between demand & supply for the fuels within India.

15.0 ACQUISITION ADVISORY SERVICES

The company has set up an 'Acquisition Advisory Services Unit' to focus on acquisition advisory services for power sector projects, including the identification of target projects and potential acquisitions and consolidation opportunities, and also provide techno-commercial appraisal of target projects. Communication/ interaction is being held with various stakeholders to explore/ identify opportunities in these areas.

16.0 RISK MANAGEMENT

16.1 Asset Liability Management

Asset Liability Management Committee (ALCO) monitors risks related to liquidity and interest rate and also monitors implementation of decision taken. The liquidity risk is being monitored with help of liquidity gap analysis. The Asset Liability Management framework includes periodic analysis of long term liquidity profile of assets, receipts and debt service obligations. Such analysis is made every month and the same is being used for critical decisions regarding volume and maturity profile of the borrowings, creation of new assets and mix of assets and liabilities in terms of time period (short, medium and long term). The committee managed the liquidity risk through cash liquidity gap analysis, through mix of strategies, including liquidity analysis for next 12 months. The interest rate risk is monitored with the help of interest rate sensitive gap analysis and assessing earnings at risk for a given future change in interest rates on rate sensitive assets and liabilities. The interest rate risk is managed through a mix of strategies for reduction in rate sensitive gap, including the process of creation of floating or fixed rate assets and liabilities.

16.2 Foreign Currency Risk Management

PFC has put in place Currency Risk Management (CRM) policy to manage risk associated with the foreign currency borrowings. The Company enters into hedging transaction to cover exchange rate and interest rate risk through various instruments like currency forward, option, principal swap and interest rate swap. As on 30th Nov, 2012, the total foreign currency liabilities are USD 790.36 million, JPY 41643.20 million and Euro 23.77 million. On overall basis, the exchange rate risk is covered to the extent of 19% through hedging instruments and lending in foreign currency. As on 30th Nov, 2012, the interest rate risk in foreign currency liabilities is USD 610.23 million and JPY 41643.20 million.

17.0 INSTITUTIONAL DEVELOPMENT OF BORROWERS

17.1 Categorization of Power Utilities

PFC classifies State Power utilities, into categories as A+, A, B and C based on the reform status and operational & financial performance parameters of the utilities. This categorization is carried out biannually. The categorization enables PFC to determine credit exposure and differential loan pricing mechanism. As on 30th November 2012, the

number of utilities in various categories is as under:

Category	No. of State Power Utilities
A+	32
A	33
B	23
C	12

PFC is also stipulating appropriate conditions relating to implementation of reforms and improvement of performance while sanctioning financial assistance to the borrowers.

17.2 Annual Performance Report of State Power Utilities

PFC brings out a report on the Performance of State Power Utilities (SPUs) annually. The IXth report for the years 2008-09 to 2010-11 covering 93 State power utilities was published in August, 2012. The Report analyses the financial and operational performance e.g. profitability, gap between average cost of supply and average realization (₹/kwh), net worth, capital employed, receivables, payables, capacity (MW), generation, (Mkwh), AT&C losses (%), consumption pattern etc. of the sector at utility, state, regional and national level. The 10th edition of the Report covering the years 2009-10 to 2011-12 is under preparation for submission to Ministry of Power as per the targets set in the MoU.

Quarterly Performance Research Report of State Power Utilities

PFC issues one page research report on the performance of each of the State Power Utilities (SPUs) on a quarterly basis. The report contains key operational and financial performance parameters, reform status, status of implementation of Electricity Act, 2003, areas of concern, conditions for improvement of performance etc. The first quarterly research report was brought out for April – June 2006 quarter covering 20 Power Utilities in 11 States and since then the report is regularly issued.

The report is sent to the stakeholders in the power sector. It is acknowledged as a good effort and useful in assessing the health of the State Power Utilities at macro level, flagging the key issues for review of performance of SPUs.

During the year upto 30th Nov 2012, PFC has issued performance reports for the quarters January-March 2012 and April-June 2012 covering 42 and 41 utilities respectively. The report for the quarter July-September 2012 is under preparation.

17.3 Support for Information Technology and Reforms in State Power Utilities

The dynamic changes in the power sector are necessitating the power utilities to be more responsive to market requirements by way of enhancing efficiency and effectiveness. Information Technology and Communication system in the area of MIS, accounting, metering, billing and collection, inventory management, human resources, advance areas e.g. Enterprise Resource

Management (ERP), would enhance efficiency of operations of the power sector. PFC intends to continue its support to power utilities to adopt new technological innovations and up-gradations available in the market.

During the year upto 30th Nov 2012, PFC sanctioned a loan of ₹1.12 Cr to Power Transmission Corporation of Uttarakhand Limited (PTCUL) towards computerization project and disbursed an amount of ₹3.78 Cr towards loan for computerization project in Maharashtra State Electricity Transmission Co. Ltd (MSETCL).

PFC also disbursed a grant of ₹1 Cr to Bihar State Electricity Board (BSEB) for reform & restructuring study.

17.4 Study on Component wise AT&C Losses

MoP had requested PFC to appoint the consultants for “Study on Component wise AT&C Losses” for six States. PFC awarded the study in the States of Maharashtra, Madhya Pradesh and Karnataka to M/s MECON Limited in November 2012.

The study for the states of Uttar Pradesh, Tamil Nadu and Rajasthan is under progress for which PFC had awarded the work M/s Medhaj Techno Concept Pvt. Ltd in February 2012.

The study is in progress for all the six states.

18.0 RESTRUCTURED ACCELERATED POWER DEVELOPMENT AND REFORM PROGRAMME (R-APDRP)

Power Distribution Sector has always been identified as a significant link in chain of power generation & supply as financial viability of entire power sector depends on financial viability of this sector as it is solely responsible for collecting energy charges from consumers. However, high commercial & technical losses in this sector have always placed enormous financial burden on state and central governments.

Aiming at financial turnaround in the sector, MOP, GOI launched Accelerated Power Development Programme (APDP) in 2000-2001 wherein additional central plan assistance was made available to states undertaking distribution reforms in a time bound manner by signing MOU with MOP. The funds were for 63 distribution circles identified as Centers of Excellence by adopting various interventions.

In March 2002, APDP was rechristened as APDRP with urban focus & introduction of reforms element. Incentive scheme was introduced to incentivize utilities achieving cash loss reduction. The AT&C losses during this programme reduced from 38.86% in 2001-02 to 29.24% in 2007-08. However, the absolute level of losses were still at a higher level and needed further efforts for achieving lower loss levels. Also reliable & verifiable baseline data for revenue & energy were required for verifying exact AT&C losses in an area and further detection of commercial and technical loss pockets.

In order to achieve the above objective, the need for adoption of integrated IT system by utilities was recognized and hence, MOP, GOI launched restructured

APDRP (R-APDRP) in July 2008 as a central sector scheme for XI Plan. The scheme comprised of two parts-Part-A & Part-B.

Part-A of the scheme being dedicated to establishment of IT enabled system for achieving reliable & verifiable baseline data system in all towns with population greater than 30,000 as per 2001 census (10,000 for Special Category States) Installation of SCADA/DMS for towns with population greater than 4 lakhs & annual input energy greater than 350MU is also envisaged under Part-A. 100% loan is provided under R-APDRP for Part-A projects & shall be converted to grant on completion and verification of same by Third Party independent Evaluating agencies (TPIEA) being appointed by MOP/PFC. MOP,GOI has earmarked ₹10,000 Crores for R-APDRP Part-A.

Part-B deals with regular Sub Transmission & Distribution system strengthening & up-gradation projects. The focus for Part-B shall be loss reduction on sustainable basis. 25% loan is provided under Part-B projects and upto 50% of scheme cost is convertible to grant depending on extent of maintaining AT&C loss level at 15% level for five years. For special category states, 90% loan is provided by GOI for Part-B projects and entire GOI loan shall be converted to grant in five tranches depending on extent of maintaining AT&C loss level at 15% level for five years. Achieving AT&C loss level of greater than 15% shall reduce loan conversion to grant accordingly for that financial year. Upto 10% scheme cost for Part-B can be converted to grant each financial year for normal category states and upto 18% of scheme cost can be converted to grant each financial year for special category states. MOP, GOI has earmarked sanctioning of schemes of upto ₹40,000 Crores under R-APDRP Part-B. Of this, upto ₹20,000 Crores would be converted to grant depending on extent to which utilities reduce AT&C losses in project areas.

R-APDRP also has provision for Capacity Building of Utility personnel and development of franchises through Part-C of the scheme. Few pilot projects adopting innovations are also envisaged under Part-C.

Power Finance Corporation has been designated by MOP as the nodal agency for operationalizing the scheme. The nodal agency has appointed process consultant & has empanelled IT Consultants, IT implementing agencies, SCADA/DMS Consultants, SCADA implementing agencies and Third Party Independent Evaluating Agencies-Energy Accounting. Under Part-A (IT) of the scheme, all of 1402 eligible schemes have already been sanctioned ₹5196 Crores for funding under the scheme. An amount of ₹1811 Crores has already been disbursed to utilities under Part-A (IT). Also sixty three schemes under R-APDRP Part-A (SCADA) have been sanctioned a sum of ₹1443 Crores for funding and disbursed ₹412 Crores. Under Part-B of the scheme, 1132 schemes worth ₹25,685 Crores have been sanctioned and a sum of ₹4082 Crores has been disbursed to utilities under the head. PFC has appointed TPIEA-EA for all states and has also appointed TPIEA-ITs for all zones.

Over 20,000 utility personnel have been trained under R-APDRP Capacity Building Programme till date. Pilot projects pertaining to smart grid are also being considered under R-APDRP Part-C.

19.0 FINANCING TO GENERATION PROJECTS

19.1 Hydro Projects

During the year 2012-13, as on 30th Nov 2012 Hydro Generation Project loans amounting to ₹2509 Cr were sanctioned and an amount of ₹615 Cr were disbursed. The cumulative amount sanctioned for Hydro Generation Projects is ₹35093 Cr out of which ₹23659 Cr has been disbursed till 30th November, 2011.

19.2 Thermal Projects

PFC is providing financial support to the Thermal Generation Projects for their timely completion. During the year 2012-13 as on 30th Nov 2012 the Company has sanctioned loans amounting to ₹22455 Cr and disbursed a total amount of ₹15166 Cr. The cumulative financial support provided by the Company for Thermal Generation Scheme is ₹221045 Cr out of which ₹114585 Cr has been disbursed till 30th Nov 2012.

The major Thermal Generation projects sanctioned to State & Central sector are Ennore SEZ 2X800 MW Coal Based Super Critical TPP, Coal Fired 1X700 MW Thermal Power Plant At Bellary, 1X800 MW UNIT III Of SDSTPS at Krishnapatnam, AP, Ramgarh Combined Cycle Gas Based Project Stage-IV (160MW).

20.0 RENOVATION MODERNISATION & LIFE EXTENSION

20.1 Thermal Projects

During the year 2012-13 as on 30th Nov 2012, no fresh loans were sanctioned R&M and Life Extension of thermal power plants and an amount of ₹273 Cr has been disbursed. Cumulatively, an amount of ₹7751 Cr has been sanctioned and ₹6170 Cr stands disbursed, till 30th Nov 2012.

20.2 Hydro Projects

During the year 2012-13 as on 30th Nov 2012, no fresh loans were sanctioned for R&M and an amount of ₹4Cr has been disbursed for R&M Hydel Projects. Cumulatively, an amount of ₹1549 Cr has been sanctioned and ₹1077 Cr stands disbursed, till 30th Nov 2012.

21.0 MEMORANDUM OF UNDERSTANDING WITH GOVT. OF INDIA

PFC has signed an MoU with the Govt. of India for FY 2012-13 on 26th March, 2012. The MoU sets an "Excellent" level target of Sanctions at ₹45,150 Crores excluding R-APDRP. Similarly, Disbursement target has been set at ₹40,000 Crores for the FY 2012-13 (excluding R-APDRP).

22.0 HUMAN RESOURCE MANAGEMENT AND TRAINING

22.1 Human Resource Management

The Company has put in place effective human resource acquisition and maintenance function, which is benchmarked along best corporate practices designed

to meet the organizational needs. This, apart from other strategic interventions, leads to an effective management of Human Resources thereby ensuring a high level of productivity.

The Industrial Relations within the organization has been very cordial and harmonious with the employees committing themselves entirely to the objectives of the organization. There was no man days lost during the year under review. The attrition rate for the period from 1st April 2012 to 30th November 2012 comes out to 0.73%.

22.2 Welfare Measures

The Corporation follows good management practices. The employees of the company have access to the Top Management officials thereby contributing effectively in the management and growth of the Corporation.

Commitment of the workforce is ensured through an effective package of welfare measures which include comprehensive insurance, medical facilities and other amenities which lead to a healthy workforce.

22.3 Human Resource Development & Training

During the year 2012-13 the focus on conducting in-house programs was augmented in order to ensure specific skill development in line with the corporate goals. Various customized programs like Overview of Power Sector, Team Building, ISO Internal Auditor Certification Training, Mentoring Skills, FIRE Safety training, Work life Balance & Stress Management, Workshop on Strategic Management System, Public Interest Disclosure & Protection of Informers Resolution (PIDPL), Business Ethics & Corporate Governance, 360 degree Feedback based development Workshop etc were organized along with other need based programs.

As on 30th November, 2012, 16 in-house training programs were organized by PFC for its employees. A total of 1215 man-days were achieved through in-house programs and sponsoring PFC employees to training programs organized by other training institutes.

22.4 Capacity Building Process under R-APDRP

Nodal agency has appointed a Capacity Building Consultant to finalise training needs of distribution utility personnel across the country and identifying the Resource Institutes (RIs) and Partner Training Institutes (PTIs). Resource Institutes (RIs) have been selected for course content development and PTIs have been empanelled to deliver training to both level A & B and level C&D state power utility distribution personnel. Over 2000 utility personnel were trained in the FY 2011-12 under capacity building process under R-APDRP. So far over 20000 utility personnel of distribution power utilities have been trained under R-APDRP capacity building.

22.5 DRUM Training

PFC is also working as the focal point as well as the Principal Implementation Partner under Distribution Reforms, Upgrades and Management initiative of Ministry of Power and Government of United States

(USAID), which focuses on the development of the critical Distribution Sector. The major objective of the DRUM Training Programme are to (i) enhance the knowledge and experience of distribution engineers, managers and technicians through the facilitation of technical and managerial training delivered by professional Indian training institutions; and (ii) support the development and institutional capacity enhancement of selected Indian institutions for sustainable delivery of distribution business management, reform and regular training.

Under the initiative, 81 training programs were organised during the FY 2011-12 through which 1833 number of personnel was trained from various utilities and over 1482 utility personnel have been trained so far in 58 training programs in the current financial year. Apart from short-term training (5 days and less), the DRUM programme also supports longer duration courses through collaboration with leading institutions such as the Management Development Institute, Gurgaon for an MBA in Power Distribution Management, and The Energy Research Institute, New Delhi, for MBA in Infrastructure.

To further enhance the reach of its training activities the DRUM program has initiated the distance learning mode in collaboration agreement with the Indira Gandhi National Open University, in which PFC is the major sponsor, course of six months duration has been initiated for personnel at remote centres who would otherwise not have access to training for up gradation of their skills.

23.0 CORPORATE SOCIAL RESPONSIBILITY (CSR)

- PFC has revisited the CSR Policy and formulated a new CSR Policy in FY 2012-13
- The aim of the Corporate Social Responsibility Policy (CSR Policy) is to ensure that the Corporation becomes a socially responsible corporate entity contributing towards improving the quality of life of the society at large.
- The thrust areas under CSR Policy, as far as possible, shall be related to PFC's business area i.e. Power and Infrastructure Sector and should integrate social and business goals of PFC.
- For the FY 2012-13 (till 30th Nov. 2012), PFC has earmarked a budget of ₹15.29 Cr (0.5% PAT of previous FY i.e. 2011-12). PFC has sanctioned projects worth ₹18.12 crore under CSR activities.
- List of Projects are:
 - Project for construction of Toilet-cum-bathroom facilities at Leh-Ladakh region (J&K) amounting to ₹1.90 crore.
 - Solar Lighting System at ASI sites/ Heritage Buildings amounting to ₹4.68 crore.
 - Solar lantern distribution to shepherds in Kargil amounting to ₹22.50 lakhs.
 - Street Lighting/ High Mast Light of Kargil Town and District Headquarters (J&K) amounting to ₹3.80 crore.

- Skill Development Programme for SC/ST/OBC/ Women & EWS of society (1400 persons) amounting to ₹3.79 crore.
- Project of Adopting entire colony constructed for flood victims of Rajoli Village of Waddepally Mandal in Andhra Pradesh for providing street lighting using Solar Power LED lights amounting to ₹3.50 crore.
- Financial assistance for project to distribute the appliances for the benefit of the Persons with Disabilities (PwD) through Artificial Limbs Manufacturing Corporation of India (ALIMCO) in NCR and Maharashtra amounting to ₹22.30 lakhs.

24.0 OFFICE AUTOMATION

Recognizing that Information Technology is a powerful tool to achieve office automation thereby improving operational efficiency, PFC has taken many initiatives to foster IT-enabled conducive work environment. Some of the important steps taken in this direction are:

- All major Business Processes such as Project Appraisal, Financial & Loan Accounting Management, Pay-roll and HR have been computerized with on-line Transactional Applications with centralized data base. To further consolidate, a robust, secure and fully integrated Oracle Apps ERP solution was implemented covering enterprise wise business process.
- Web based self-help Employee Portal has been implemented with on-line claim processing system to facilitate paper-less filling of various claims and viewing of status.
- Networked environment of fastest Gigabit Local Area Network with fiber back bone and Layer-3 switching technologies.
- 24x7 operational state-of-the-art Data Center housing Database/ Applications/ Network/ MS Exchange Email / Anti-virus Servers, hosted on Rack-mount Dual Processor Servers with full power & data redundancy/ protection systems.
- Comprehensive Network Security system to fully secure corporate information/ data has been implemented with two stage firewalling for Server-zone and with Intrusion Detection & Prevention system, Anti-virus, Content Filtering systems etc.
- To equip PFC work force with full-network access to all corporate resources and applications from anywhere for high operational efficiency, mobile computing facilities alongwith secure VPN access over the internet have been provided.
- End-users computing facilities with the latest desk top computers and Microsoft office tools.

To help accomplish PFC's business objectives & long term strategic goals, and having put in place robust transactional system like ERP, PFC is now in the process of implementing a Strategic Performance Management

(SPM) system which would enable the top management to have access to real time operational performance of the corporation.

25.0 PFC CONSULTING LIMITED (PFCCL), a wholly owned subsidiary of PFC

25.1 Introduction

PFC Consulting Limited (PFCCL) was incorporated on March 25, 2008 as a wholly owned subsidiary of Power Finance Corporation Limited to provide consultancy services to the Power Sector. PFCCL commenced its business on April 25, 2008.

25.2 Mission

To provide objective oriented end to end consulting solutions consistent with long term interests of Power & allied Sectors in India.

25.3 Vision

To be the leading consulting organisation in the Country for Power and associated Infrastructure Sectors.

25.4 Services Offered

The services offered by PFCCL are broadly classified as under:

- Procurement of Power by Distribution Licensees through Tariff Based Competitive Bidding
- Govt. of India initiatives like Ultra Mega Power Projects (UMPPs), Independent Transmission Projects (ITPs)
- Assignments from State Power Utilities, Licensees/IPPs, State Govt., PSUs & SERC's
- Renewable and Non-Conventional Energy Schemes
- Coal Block JVs and selection of developers for Coal blocks and linked Power Projects
- Project Advisory including Selection of EPC Contractor
- Reform, Restructuring, and Regulatory aspects
- Capacity Building and Human Resource Development

25.5 Operations

PFCCL's operations are spread over:

- Govt. of India initiatives like Ultra Mega Power Projects (UMPPs) and Independent Transmission Projects (ITPs)
- Bid Process Management for Selection of Developer for Generation and Transmission Projects
- Selection of JV Partner for various Power Sector projects
- Preparation of Guidelines and Bidding Documents for Renewable, Non-Conventional and other Sectors
- Reform, Restructuring of State Power Utilities and Regulatory aspects

26.0 FOOTPRINTS

As on November 30, 2012, services have been rendered to 39 clients spread across 21 States/UTs namely Andhra Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Puducherry, Punjab, Rajasthan, Tripura, Uttar Pradesh and West Bengal.

Clients	No.
States Utilities	18
Licensees/ IPPs	7
Public Sector Undertakings	6
State Governments	4
Regulatory Commissions	3
Central Govt. Departments/Ministries	1
Total	39

27.0 ASSIGNMENTS

76 assignments worth around ₹210 Crores (apart from UMPPs and ITPs) out of which 60 assignments have already been completed and 16 assignments are under various stages of implementation.

28.0 ULTRA MEGA POWER PROJECTS

Government of India through Ministry of Power launched the initiative of Ultra Mega Power Projects (UMPPs) i.e. 4,000 MW super thermal power projects (both pit head and imported coal based) in November 2005 with the objective to develop large capacity power projects in India. Power Finance Corporation Ltd (PFC) has been appointed as the Nodal Agency to facilitate the development of these projects.

So far 16 UMPPs have been identified to be located in the States of Madhya Pradesh, Gujarat, Andhra Pradesh, Jharkhand, Karnataka, Maharashtra, Odisha, Chhattisgarh, Tamil Nadu and Bihar.

Eight (8) projects in Madhya Pradesh, Chhattisgarh, Odisha, Jharkhand and Bihar are domestic coal based while the other Eight (8) are based on imported coal. So far, Thirteen (13) Special Purpose Vehicles (SPVs) have been incorporated for these UMPPs to undertake all preliminary site investigation activities necessary for conducting the bidding process for these projects. These SPVs shall be transferred to successful bidder(s) selected through Tariff Based International Competitive Bidding Process for implementation and operation.

28.1 Already Awarded UMPPs

UMPPs namely Sasan in Madhya Pradesh, Mundra in Gujarat, Krishnapatnam in Andhra Pradesh and Tilaiya in Jharkhand have already been awarded to the successful bidders and are at different stages of development. A brief detail of these projects are as follows:

Sl. No.	Name of UMPP	Type	Date of Transfer	Levelised Tariff (in ₹ Per KWh)	Successful Developer
1.	Mundra, Gujarat	Coastal	23.04.2007	2.264	Tata Power Ltd.

2.	Sasan, Madhya Pradesh	Pithead	07.08.2007	1.196	Reliance Power Ltd.
3.	Krishnapatnam, Andhra Pradesh	Coastal	29.01.2008	2.333	Reliance Power Ltd.
4.	Tilaiya, Jharkhand	Pithead	07.08.2009	1.77	Reliance Power Ltd.

28.2 The UMPPs under progress are Orissa Integrated Power Limited (OIPL), Chhattisgarh Surguja Power Limited (CSPL), Coastal Tamil Nadu Power Limited (CTNPL), Deoghar Mega Power Limited (DMPL) and Tatiya Andhra Mega Power Limited (TAMPL). The UMPPs in pipeline are Coastal Karnataka Power Limited (CKPL), Coastal Maharashtra Mega Power Limited (CMMPL), Sakthigopal Integrated Power Company Limited (SIPCL) and Ghogarpalli Integrated Power Company Limited (GIPCL).

29.0 INDEPENDENT TRANSMISSION PROJECTS (ITPs)

Ministry of Power has initiated Tariff based Competitive Bidding Process for development of Transmission System through private sector participation.

Five (5) SPVs namely East North Interconnection Company Limited (ENICL), Jabalpur Transmission Company Limited (JTCL), Bhopal Dhule Transmission Company Limited (BDTCL), Nagapattinam-Madhugiri Transmission Company Limited (NMTCL), DGEN Transmission Company Limited (Formerly DGEN & Uttarakhand Transmission Company Limited) (DTCL) have been incorporated. These SPVs undertake preliminary survey work, identification of route, preparation of survey report, initiation of process of land acquisition, initiation of process of seeking forest clearance, if required and to conduct the bid process etc. for selection of Transmission Service Provider (TSP) for the ITPs through tariff based international competitive bidding.

Four out of the above mentioned five ITPs, as identified by MoP, Gol, have already been transferred to successful bidders under Tariff Based Competitive Bidding for transmission. For DTCL, the bidding process is under progress.

MoP vide Gazette Notification dated 8th October, 2012 appointed PFC Consulting Limited (PFCCL) as Bid Process Coordinator (BPC) for the development of four Independent Transmission Projects namely (i) Transmission System for Patran 400 kv S/S (ii) Part ATS of RAPP U-7&8 in Rajasthan (iii) Transmission System for Eastern Region System Strengthening Scheme – VII and (iv) Transmission System for Eastern Region System Strengthening Scheme – VI. The incorporation of the four SPVs for the development of aforesaid transmission projects is in process.



RURAL ELECTRIFICATION CORPORATION LIMITED (REC)

1.0 Rural Electrification Corporation Limited (REC) was incorporated as a Company under the Companies Act, 1956 in the year 1969 with the main objective of financing rural electrification schemes in the country. Subsequently, the mandate of REC was expanded to include financing of all power projects including Generation, Transmission and Distribution without any restriction. REC is a Public Financial Institution under Section 4A of the Companies Act, 1956. REC is also registered as a Non-Banking Financial Company (NBFC) under Section 45 IA of the RBI Act, 1934. REC is a “Navratna” Company. REC has also been categorized by RBI as an Infrastructure Finance Company (IFC).

2.0 REC has grown over the years to be a leading financial institution in power sector. Besides attending to its core objectives of financing schemes for extending and improving the rural electricity infrastructure, REC is funding large/mega generation projects, and transmission and distribution projects, which are critical to the projected addition of installed capacity during the Eleventh Plan.

3.0 REC is the Nodal Agency for (i) implementation of “Rajiv Gandhi Grameen Vidyutikaran Yojana” (RGGVY), a Government of India Scheme for Rural Electricity

Infrastructure and Household Electrification, and (ii) operationalization of the **National Electricity Fund (NEF)**, an Interest Subsidy Scheme introduced by Government of India to promote the capital investment in the distribution sector in entire country.

4.0 HIGHLIGHTS OF PERFORMANCE (DURING 2011-12)

4.1 The highlights of performance of REC for the year 2011-12 are given below:-

Particulars	2011-12 (₹ in Crore)
Loan sanctioned (Excluding subsidy under RGGVY)	51296.77
Loan Disbursed (Including subsidy under RGGVY)	30593.30
Recovery of Dues (including interest)	18440.09
Resource Mobilization	29709.36
Profit before Tax	3792.86
Profit after Tax	2817.03
Net worth	14744.92
Dividend	740.59
Business per employee	72.32



Village electrification infrastructure

4.2 Memorandum of Understanding with Ministry of Power

The performance of REC in terms of Memorandum of Understanding (MoU) signed with Ministry of Power, Government of India for the financial year 2010-11 has been rated as "Excellent". This is the 18th year in succession that REC has received "Excellent" rating since the year 1993-94 when the first MoU was signed with the Government. For the financial year 2011-12 also, based on the performance achieved, the Company is poised to receive "Excellent" rating.

4.3 Share Capital

The Issued and Paid up Share Capital is ₹987.46 crore consisting of 98,74,59,000 equity shares of ₹10 each as on 30.11.2012, against the Authorized Capital of ₹1200 crore. The Government of India holds 66.80% of paid up equity share capital.

4.4 Mobilization of Funds

The amount mobilized from the market during the year 2011-12 was ₹29709.36 crore. The domestic debt instruments of REC continued to enjoy "AAA" rating – the highest rating assigned by CRISIL, CARE, FITCH & ICRA-Credit Rating Agencies. REC also enjoys international credit rating equivalent to sovereign rating of India from International Credit Rating Agencies Moody's and FITCH which is "Baa3" and "BBB-" respectively. "Baa3" rated obligations denote moderate credit risk and "BBB-" rated obligations denote that expectations of default risk are currently low.

5.0 PROGRESS MADE DURING 2012-13 (UPTO 30.11.2012) & ANTICIPATED TARGETS TO BE ACHIEVED DURING THE REMAINING PERIOD OF THE YEAR I.E. UPTO 31.3.2013.

5.1 Sanctions

(₹ in crore)

Sl. No.	Particulars	Target as per MoU for the year 2012-13	Targets achieved till 30.11.2012	Anticipated achievement during the remaining period of the year i.e. upto 31.3.2013
1.	Transmission & Distribution {including projects under International Cooperation and Development (IC & D)}	54600	21275	28000
2	Generation		18563	8344
3	Renewable Energy		470	-
4	Loan under RGGVY scheme		-	-
5	Short Term Loan		2690	1132
	Total	54600	42998	37476

5.2 Disbursements (Excluding RGGVY Subsidy)

(₹ in Crore)

Sl. No.	Particulars	Target as per MoU for the year 2012-13	Targets achieved till 30.11.2012	Anticipated achievement during the remaining period of the year i.e. upto 31.3.2013
1.	Transmission & Distribution {including projects under International Cooperation and Development (IC & D)}	27300	12343	14000
2	Generation		6928	5751
3	Renewable Energy		58	-
4	Loan under RGGVY scheme		51	-
5	Loan under DDG scheme		1	-
6	Short Term Loan		2610	1132
	Total	27300	21991	20883

5.3 Mobilization of Funds

The total Borrowing Programme of the Corporation for the year 2012-13 is projected at ₹30000 crore as per MoU target. In the year 2012-13 (Up to 30th November, 2012), REC has raised ₹20524.09 crore. The anticipated mobilization of funds for the remaining part of the year is ₹9475.91 crores.

5.4 Performance Highlights from 01.04.2012 to 30.09.2012

(Based on unaudited Financial Results subject to Limited Review)

Sl. No.	Particulars	Achievement till 30.09.2012	Achievement Annualized for the year	Targets as per MoU for the year 2012-13	% Achievement on Annualized basis
1	Total Income (₹ in crore)	6406	12813	11535	111 %
2	Gross Margin (₹ in crore)	6253	12505	11275	111 %
3	Return on Net Worth (%)	11.04	22.09	16.85	131 %
4	PBDT / Total Employee (₹ crore per Employee)	3.70	7.39	5.14	144 %
5.	Interest Coverage Ratio (Times)	1.65	1.65	1.50	110 %

6.0 WHOLLY OWNED SUBSIDIARIES OF REC

As on 30th November, 2012, the Company had two wholly owned subsidiary companies, namely:-

- REC Transmission Projects Company Limited (RECTPCL); and

(2) REC Power Distribution Company Limited (RECPDCL).

6.1 REC Transmission Projects Company Limited (RECTPCL)

REC Transmission Projects Company Limited (RECTPCL) is a wholly owned subsidiary of Rural Electrification Corporation Limited and was incorporated on 8 January, 2007 as public limited company. RECTPCL is engaged inter-alia in the business to promote, organize or carry on the business of consultancy services and/ or project implementation in any field relating to transmission and distribution of electricity in India or abroad.

The Ministry of Power has nominated RECTPCL as Bid Process Coordinator for selection of bidder through tariff based competitive bidding process, as per guidelines issued by the Ministry of Power in this regard, for various transmission projects and accordingly, RECTPCL has incorporated various wholly owned subsidiary companies from time to time.

During the financial year 2011-12, the Ministry of Power has allocated following transmission projects to RECTPCL for selection of bidder:

- (i) System Strengthening in Southern Region for import of power from Eastern Region [initially named as Package-C: Evacuation System for Vizag-Vemagiri Projects - (Hinduja 1040MW)]
 - 765 kV Srikakulam Pooling Station – Vemagiri Pooling Station Double Circuit line; and
 - 400 kV Khammam Pooling Station- Nagarjuna Sagar S/Stn. Double Circuit Line;
- (ii) Transmission lines associated with IPPs of Vemagiri Area: Package-A (Vemagiri- Khammam-Hyderabad 765 kV Double Circuit Line-1).
- (iii) Transmission System associated with IPPs of Vemagiri Area: Package-B; and
- (iv) Transmission System associated with IPPs of Vemagiri Area: Package-C:

For Transmission System strengthening in Southern Region for import of power from Eastern Region (erstwhile Package-C: Evacuation System for Vizag-Vemagiri Projects - (Hinduja 1040 MW), a wholly owned subsidiary company namely M/s Vizag Transmission Limited was incorporated on 30.11.2011. The RfQ process for short-listing of bidders has been initiated on October 26, 2012 and the process of selection of developer is expected to conclude during Financial Year 2013-14.

Further, for Transmission System associated with IPPs of Vemagiri Area: Package-A (Vemagiri- Khammam-Hyderabad 765 kV Double Circuit Line-1) a wholly owned subsidiary company namely M/s Vemagiri Transmission System Limited (VTSL) was incorporated on 21.4.2011 and on completion of tariff based competitive bidding process, M/s VTSL was transferred to successful bidder i.e. M/s Power Grid Corporation of India Limited on April 18, 2012.

The process of selection of developer for transmission projects mentioned at Sl. No. (iii) & (iv) above will be initiated based on directions of the Empowered Committee on transmission once the associated generation projects have made substantial progress.

Further, the Ministry of Power has nominated RECTPCL as Bid Process Coordinator for selection of developer for four transmission projects during the Financial Year 2012-13, namely:

- (i) Transmission System required for evacuation of power from Kudgi TPS (3x800 MW in Phase-I) of NTPC Limited;
- (ii) Transmission System for Connectivity for NCC Power Projects Ltd. (1320MW);
- (iii) Baira Siul HEP – Sarna 220 kV line
- (iv) ATS of Unchahar TPS

For Transmission System required for evacuation of power from Kudgi TPS (3x800 MW in Phase-I) of NTPC Limited, a wholly owned subsidiary company namely M/s Kudgi Transmission Limited was incorporated on 27.11.2012 and the process of selection of developer is expected to be concluded during Financial Year 2013-14.

As on 30.11.2012, the incorporation of 3 wholly owned subsidiary companies of RECTPCL for transmission projects mentioned at Sl. No.(ii), (iii) and (iv) is in process.

6.2 REC Power Distribution Company Limited (RECPDCL)

REC Power Distribution Company Limited (RECPDCL) was incorporated on July 12, 2007 as a Wholly Owned Subsidiary Company of REC Ltd. and received Certificate of Commencement of Business on July 31st, 2007. The main objectives of the Company is to promote, develop, construct, own, operate, distribute and maintain 66 KV and below voltage class Electrification/Distribution Electric supply lines/distribution system, Decentralized Distributed Generation (DDG) & associated distribution system, and consultancy/execution of works in the above areas for other agencies/Government bodies in India and abroad.

6.2.1 Progress made during the current year 2012-13 (Up to 30th November, 2012)

RECPDCL during the period completed Third Party Inspection (TPI) of about 16467 villages and 452 feeders including 2nd stage inspection under Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and Feeder Renovation Programme (FRP) works respectively.

TPI of RGGVY works first time awarded by NTPC Electric Supply Company Limited (NESCL) for JSEB and the assignment of preparation of cost data book for Delhi Electricity Regulatory Commission (DERC) awarded through competitive bidding has been completed.

The Company has carried out material inspection for Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL) at manufacturers end by ensuring quality standards of IS

codes and other guidelines as applicable. Company has also carried out MRI based billing and data analysis works of Paschimanchal Vidyut Vitran Nigam Limited (PVVNL) for EUDC Noida, EDC Hapur, RUDD-II Ghaziabad and EDC Ghaziabad.

To enhance business activities, RECPDCL has started participation in competitive bidding tender and had been awarded tender for Project Management Consultancy under RGGVY Phase-II of PuVVNL discom worth ₹14.75 Crore and TPI of work and workmanship executed by turnkey contractor under Infrastructure development plan in 120 Division of MSEDCL worth ₹3.91 Crore.

RECPDCL has been awarded the work of preparation of Suppl. DPR under RGGVY of AVVNL, JVVNL & JdVVNL discoms.

The company continued to do profitable business in the financial year 2012-13 and earned a total income of ₹14.83 crore and net profit before tax of ₹7.93 crore for the half year ending.

6.2.2 Anticipated targets to be achieved during the remaining period of the year i.e upto 31st March 2013

RECPDCL during the year expects to complete Third Party Inspection (TPI) of 33350 villages under Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and 721 Feeder Renovation Programme (FRP) including 2nd stage inspection. RECPDCL also expects to complete TPI of work and workmanship executed by turnkey contractor under Infrastructure development plan in all 120 Division of MSEDCL. The company expects total revenue of ₹25 crores and net profit before tax to be ₹10.20 crore for the financial year 2012-13.

7.0 Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY)– Scheme for Rural Electricity Infrastructure and Household Electrification

Under the above RGGVY programme, initial approval was for implementation of Phase I of the scheme for capital subsidy of ₹5000 crore during the 10th Plan period. The scheme was subjected to evaluation towards the end of 10th Plan to take a view on modification required for implementation during 11th Plan.

Accordingly, approval of continuation of the scheme in XI plan was issued by Ministry of Power vide OM No.44/37/07-D(RE) dated 6th February 2008 for capital subsidy of ₹28000 crore during 11th Plan period.

Salient features

- Ninety per cent capital subsidy is provided towards overall cost of the projects under the scheme.
- The states to finalize their Rural Electrification Plans in consultation with Ministry of Power and notify the same within six months.
- For projects to be eligible for capital subsidy under the scheme, prior commitment of the States be obtained before sanction of projects under the scheme for :
 - i) Guarantee by State Government for a minimum

daily supply of 6-8 hours of electricity in the RGGVY network.

- ii) Deployment of franchisees for the management of rural distribution.
- The management of rural distribution would be through franchisees who could be Non-Governmental Organizations (NGOs), Users Association, Panchayat Institutions, Cooperatives or individual entrepreneurs. The franchisee should be preferably input based to reduce AT & C losses so as to make the system revenue sustainable.
 - The projects under the scheme are subject to three-tier Quality Monitoring Mechanism. At first tier, implementing agency will engage third party inspection agency to inspect approx. 50% villages on random sample and pre-despatch inspections of major materials. Whereas at Second tier, Rural Electrification Corporation will inspect 10% villages on random sample basis. At third tier, Independent Evaluators (individual/ Agency) will be engaged by the Ministry of Power to cover evaluation of 1% villages.
 - Decentralized distribution-cum-generation from conventional or renewable or non-conventional sources such as biomass, bio fuel, bio gas, mini hydro, geo thermal and solar etc. for villages where grid connectivity is either not feasible or not cost effective.

7.1 The details of targets achieved during the period from 01.04.2012 to 31.12.2012 are as mentioned below:-

Sl. No.	Particulars	Targets achieved till 30.11.2012	Anticipated targets to be achieved
	RGGVY		
1	Electrification works in Un-electrified villages (Nos.)		
	(a) North East States	659	1400
	(b) Other than NE States	961	2100
	(c) Total	1620	3500
2	Release of free electricity Connections to BPL Households (in lakhs)		
	(a) North East States	1.01	2
	(b) Other than NE States	8.13	12
	(c) Total	9.15	14

7.1.1. Sanction of projects

(a) Projects sanctioned in X Plan

235 projects covering 180699 villages (68763 un-electrified and 111936 electrified villages) and 83 lakh BPL Households with the total sanctioned project cost of ₹9808.33 crore were sanctioned for implementation by the Ministry of Power.

(b) Projects sanctioned in XI Plan

341 projects covering 294249 villages (49792 un-electrified and 244457 electrified villages) and 164

lakhs BPL households with the total sanctioned project cost of ₹16739.06 crore have been sanctioned for implementation by the Ministry of Power.

(c) Projects sanctioned in XI Plan phase-II

72 projects covering 55414 villages (1909 un-electrified and 53505 electrified villages) and 45.6 lakhs BPL Households with the total sanctioned project cost of ₹7964.32 crore have been sanctioned for implementation by the Ministry of Power.

7.2. Progress of works during the year 2012-13 (Upto 31.12.2012)

It has been reported that works have been completed for 31518 villages (including 1839 un-electrified and 37679 electrified villages) during 2012-13 up to 31.12.2012. Connections to 10.22 Lakh rural households have been released during 2012-13 up to 31.12.2012.

7.3. Franchisee development

18 states in the country have already taken action in development of franchises for distribution of power in rural areas. So far, 36662 franchisees are operational/contracted covering 208846 villages both in RGGVY and other areas (177534 Nos. RGGVY villages and 31360 Nos. Non-RGGVY villages) in the states of West Bengal, Uttaranchal, Uttar Pradesh, Karnataka, Rajasthan, Nagaland, Bihar, Assam, Andhra Pradesh, Chhattisgarh, Gujarat, Haryana, Orissa, Meghalaya, Maharashtra, Madhya Pradesh, Himachal Pradesh and Tripura.

7.4. Anticipated targets to be achieved during the remaining period of the year i.e. up to 31st March 2013

Works in about 3500 un-electrified villages and household electrification of 14 Lakh BPL households are expected to be completed during 2012-13.

7.5. Cumulative performance

- (a) The total coverage under the RGGVY from the date of launching the programme is as mentioned below:-

(As on 31.12.2012)

Plan	Number of Projects	Number of un-electrified villages covered (Revised)	Number of electrified villages	Number of BPL House-hold	Sanctioned Cost (₹ in Crore) (Revised)
Xth Plan	235	64745	104850	7728227	13309.80
XIth Plan	341	46141	231981	15211284	20964.69
XI Plan Phase-II	72	1909	53505	4559141	8103.81
Total	648	112795	396336	27498652	42378.29

- (b) Cumulatively, works in 392567 villages (106335 un-electrified and 286232 electrified villages) have been completed under RGGVY up to 31.12.2012. Cumulatively, connections to 204.47 Lakh BPL households have been released under the scheme up to 31.12.2012.

7.6 Renewable Energy Projects

Under Renewable Energy, REC has sanctioned 9 projects aggregating installed capacity of 91.60 MW out of which

4 are Solar projects (50 MW), 1 is Wind Energy Project (6.8 MW) and 4 Small Hydro Project (34.8 MW). The total loan amount sanctioned to these projects stands at ₹470 crore. The amount disbursed during the current year 2012-13 (upto 30th November, 2012) is ₹105.512 crore.

8.0 NORTH EASTERN STATES

- 8.1 Under Generation Projects, in financial year 2012-13 (upto 30.11.2012), REC sanctioned - (i) ₹487 crore for 1 no. Private Sector project i.e. 2x55 MW Hydro Power Project at Chuzachen in Sikkim in the tributaries of Teesta rivers Rangpo and Rangoli in East Sikkim being developed by M/s. Gati Infrastructure Limited, and (ii) ₹1056.45 crore for 2 nos. private projects i.e. additional loan of ₹995 crore for 1200 MW Teesta Phase-III HEP in Sikkim & ₹61.45 crore for setting up of 96 MW Jorethang Loop project in Sikkim being developed by M/s. Dans Energy Pvt. Limited.

- 8.2 Under Generation Projects, in financial year 2012-13 (upto 30.11.2012), REC disbursed ₹139.06 crores for Generation Projects in Sikkim i.e. ₹78.25 crore to M/s. Teesta Urja Private Limited for 1200 MW Teesta Phase-III HEP, ₹26.70 crore to M/s. Lanco Energy Private Limited and ₹34.11 to M/s. Dans Energy Private Limited.

- 8.3 Under RGGVY projects, in financial year 2012-13 (upto 30.11.2012), REC disbursed ₹9.84 crores to North Eastern States (i.e. ₹5.28 crore to Assam, ₹2.79 crore to Meghalaya, ₹1.36 crore to Nagaland and ₹0.41 crore to Tripura).

9.0 INTERNATIONAL COOPERATION AND DEVELOPMENT (IC & D)

9.1 Japan International Cooperation Agency (JICA), Tokyo

The period of JICA-I loan (JPY 20629 million) was closed on 8th August 2012. All the works envisaged under 'Rural Electricity Distribution Backbone project' in the states of Andhra Pradesh, Madhya Pradesh, and Maharashtra have been completed.

The Transmission System Project funded under ODA funding of JPY 20902 million (JICA-II Loan) in the state of Haryana, is under implementation. A cumulative amount of JPY 10,016 million (equivalent to ₹537.53 crore) has been drawn from JICA under JICA-II Loan upto 30.11.2012.

9.2 KfW, Frankfurt

Two ODA loans of EURO 70 million (equivalent to ₹465.88 cr) each sanctioned by KfW under 'REC Energy Efficiency Programme- I and II have been fully utilized by REC, and envisaged HVDS works completed.

REC has also concluded its third Loan Agreement with KfW for availing ODA loan assistance of EURO 100 million for the Project 'Clean Development for Rural Energy Development' for financing renewable energy projects across the country. Projects are under various stages of implementation, and draw down is expected to commence during this year 2012-13.

10.0 TRAINING ACTIVITIES AT CENTRAL INSTITUTE FOR RURAL ELECTRIFICATION (CIRE), HYDERABAD

CIRE was established at Hyderabad in 1979 under the aegis of REC to cater to the training and development needs of engineers and managers of Power and Energy Sector and other organisations concerned with Power and Energy. The programmes are conducted on various aspects of Power Sector. CIRE is designated as a nodal agency for implementation of National Franchisee and C&D Employees Training Programmes under the Human Resources Development component of RGGVY programme.

10.1 Progress made during the current year upto 30th November 2012

During the current year 2012-13 (upto 30th November 2012), CIRE has conducted 46 programmes on various themes and trained 872 personnel as indicated below:

Sl. No.	Name of the Programme	No. of Programs	No. of Participants
1	Regular - National Programmes	18	252
2	International Programmes	5	78
3	Programmes in collaboration with IPE	1	11
4	DRUM Programmes sponsored by MOP/USAID	12	355
5	R-APDRP programmes sponsored by MOP/PFC	3	56
6	National Training Programme for C&D Employees conducted by CIRE	2	50
7	In-house Programmes	5	70
	Total	46	872

10.2 Anticipated targets to be achieved during the remaining period of the year i.e. from 1.12.2012 to 31.3.2013

During the remaining period of 2012-13 (01.12.2012 to 31.3.2013) CIRE is likely to conduct the following programmes:

Sl. No.	Type of programmes	No. of Programmes
1	Regular - National Programmes	6
2	International Programmes, sponsored by MEA, GOI (8 / 4 weeks duration)	4
3	Programmes in collaboration with IPE	2
4	DRUM Programmes, sponsored by MOP/USAID/PFC	3
5	R-APDRP Programmes , sponsored by MOP/PFC	25

6	National Training Programmes for Franchisees and C&D Employees to be conducted under CIRE banner - sponsored by MOP	33
7	Sponsored programmes	10
8	In-house programmes for REC personnel	05
	Total	88

10.3 Sustainable Development Initiatives

With a view to minimize the environmental and ecological impact of the business operations, REC has decided to take up Sustainable Development measures from the current financial year 2012-13, for which it has adopted a policy to commit certain amount of funds every year linked to its net profit. During the current year REC has taken up implementation of five projects in its training institute campus at Hyderabad, namely the Central Institute for Rural Electrification (CIRE). These projects include, afforestation, greening of landscape, setting up solar power demo plant, energy audit, usage of solar lanterns, rain water harvesting measures and conducting training programs on Sustainable Development for its stakeholders, power utilities etc. The projects are being implemented by specialist outside agencies. The impact of the measures shall be analysed concurrently, as well as on completion of the projects.

11.0 INFORMATION TECHNOLOGY

11.1 Progress made during the current year up to 30th November, 2012

All major business functions of the Corporation including Financials, Project, Disbursements, Management of Loan Accounts, Treasury functions,, Payroll, CPF, Cash management, Banking, Purchases across all Offices are done through an integrated ERP system resulting in continuous & sustainable improvement of internal efficiency and greater customer satisfaction. The ERP Data Centre is ISO 27001 : 2005 certified. During the period, the Scope of the system has been improved to include:

- Introduction of new project categories like Renewal Energy, DDG, TFL, R-APDRP etc.
- Interfacing of payment with RTGS system
- Improving customer service through automated generation of mail alerts from the system.
- Improvement of IT setups by migrating the system to cluster based production environment for improved performance and availability
- Established a full-fledged real time Disaster Recovery Centre for ERP at Hyderabad for replication of data within pre-defined time frame
- Introducing improved internal control in the ERP system by carrying out internal assessment of the ERP system by a committee and incorporation of the suggestions in the system

REC Data Centre is certified ISO/IEC 27001:2005 security standard, by British Standards Institution (or BSI).

REC has implemented Document Management System (DMS) covering important divisions in Corporate Office. This involves digitization of documents including scanning, cleaning, QC, Indexing, uploading and retrieving. The system has been extended to other divisions in Corporate office and Zonal & Project offices.

REC has initiated implementation of Workflow Management System (WMS) for electronic movement of note sheet approval along with attached document. The WMS system has been implemented at 2 divisions of Corporate Office.

11.2 Anticipated targets to achieved during the remaining period of the year i.e. upto 31st March, 2013

- Disaster Recovery Center (DRC) is proposed to be certified ISO/IEC 27001:2005 security standard, by British Standards Institution (BSI).
- To extend the Workflow Management System to 2 field offices of REC.
- To initiate implementation of HR-ERP solution to automate HR function including Employee Self Service module and integration with existing ERP System. To float and complete the tender process by the end of the financial year.
- Redesigning and revamping of existing static Corporate Website to an interactive and dynamic website.

12.0 SUSTAINABLE PROJECTS UNDER CORPORATE SOCIAL RESPONSIBILITY INITIATIVES BY REC

In pursuance of REC CSR Policy, REC signed the Memorandum of Understanding for FY 2012-13 with the Ministry of Power, Govt. of India, with commitments for undertaking sustainable projects under Corporate Social Responsibility initiatives in project mode with predefined milestones, timelines for implementation and budget. While identifying CSR initiatives, REC has adopted an integrated approach to address the community, societal and environmental concerns.

12.1 Progress made during current financial year 2012-13 (up to 30.11.2012)

REC has allocated a budget of 0.5% of its Profit after Tax (PAT) of previous year for FY 2012-13, amounting to ₹14.0852 crore. Sustainable CSR projects were identified and sanctioned with financial assistance aggregating ₹1331.03 lakhs up to 30.11.2012 and an amount ₹372.82 lakh has been disbursed up to 30.11.2012.

12.1.1 REC conferred with the 'IPE - CSR Corporate Governance Award'

REC was conferred the 'IPE - CSR Corporate Governance Award' by The Institute of Public Enterprises, Hyderabad, at a function held in Mumbai on 29th November 2012,

in recognition of its best practices in CSR and the contribution made by an organization which has made a difference to the people and the community and played a role of responsible citizen. The IPE - CSR awards are endorsed by World CSR Congress, CMO Asia & Asian Confederation of Business. The awards are research based and decided by an independent jury.

12.1.2 Major ongoing CSR projects of REC

- Skill up-gradation and job oriented training leading to creation of livelihood opportunities and employment to rural/ semi urban youths from economically weaker sections at 15 centers located in 6 states viz. Odisha, Jharkhand, Chhatisgarh, Bihar, West Bengal and Uttar Pradesh. through Dr. Reddy Foundation a CSR arm of Dr. Reddy Laboratories Hyderabad and at Construction Industry Development Council's an autonomous body established by Planning Commission, Government of India, New Delhi designated training centres located at Faridabad in Haryana, Ghaziabad.
- Distribution of Solar Lanterns to the underprivileged population in 63 villages of Madhya Pradesh, Assam and Maharashtra where grid connectivity is not possible through The Energy and Resources Institute (TERI) .
- Distribution of Aids and appliances to approximately 2500 persons with disabilities living in rural areas belonging to lower strata of the society across various States through Artificial Limbs Manufacturing Corporation of India, Kanpur .
- Reviving Crafts Heritage and Providing Sustainable Livelihood to the Artisans' in the State of Gujarat to be implemented by Gujarat State Women's SEWA CO-OP Federation Ltd., Ahmedabad supported by National Culture Fund for a period of 3 years.
- 'Smile on Wheels' – a Mobile Medical Unit to Improve Primary Health Care Services for the Underprivileged in Villages of Rae Bareilly, UP, for 3 year period.
- Financing purchase and installation of kitchen equipments for centralized kitchens of Akshaya Patra Foundation engaged in preparation and distribution of Mid Day meals to under-privileged children in government schools in Jodhpur, Bhubaneswar and Vrindavan.
- Financing purchase and distribution of Health Care Package i.e. Multi Facility Kit to 40 Old Age Homes at 8 cities Mumbai, Kolkata, Chennai, Hyderabad, Bangalore, Lucknow, Chandigarh and Bhopal.
- Bringing Safe Drinking Water to identified communities in Nalgonda district of Andhra Pradesh.

12.2 Anticipated targets to be achieved during remaining period of the year up to 31st March, 2013

REC is expected to achieve the full target for disbursement of funds allocated for CSR as per the MoU for the FY 2012-13, i.e. ₹14.0852 crore.





Agartala Gas Turbine Power Plant of NEEPCO

CHAPTER-23

NEEPCO

The North Eastern Electric Power Corporation (NEEPCO) Ltd, was incorporated on 2nd April 1976 as a wholly owned Government of India Enterprise under the ministry of Power to plan, promote, investigate, survey, design, construct, generate, operate and maintain both hydro and thermal power stations. It has the unique distinction of implementing and operating both hydro and thermal power plants right from concept to commissioning. NEEPCO is a Schedule – 'A' Corporation with an Authorized Share Capital of ₹5000 Crores. NEEPCO's total installed capacity is 1130 MW, out of which 755 MW is in Hydro and 375 MW in Thermal sectors.

GENERATION PERFORMANCE:

Sl. No.	Power Plant	MOU Target for 2012-13 (Very Good MOU target)	Achievement (in MU). April'11 to Nov'12.	Balance target up to 31st March 2013 (In MU).	APAF (%) (Cumulative up to Nov'12)
Hydro					
1	Kopili (200 MW)	950	498	452	58.07
2	Khandong (50 MW)	146	148	Target achieved	74.95
3	Kopili Stage-II (25 MW)	75	85	Target achieved	82.50
4	DHEP (75 MW)	227	194	33	68.51
5	RHEP (405 MW)	1300	1097	203	98.12
Thermal					
1	AGBP (291 MW)	1747	1095	652	64.71
2	AGTP (84 MW)	625	423	202	85.47

FINANCIAL PERFORMANCE:

- The revenue collection in the current financial year up to Nov' 2012 is ₹718.66 Crores (provisional).
- The Profit before Tax up to Nov'2012 is ₹201.90 Crores for the FY 2012-13 (Provisional).

PROJECTS UNDER CONSTRUCTION:

Sl. No.	Name of the Project	State	Installed Capacity (MW)
1.	Kameng H.E. Project	Arunachal Pradesh	600
2.	Tuirial H.E. Project	Mizoram	60
3.	Pare H.E. Project	Arunachal Pradesh	110
4.	Tripura Gas Based Power Project	Tripura	101
5.	Agartala Gas Turbine Plant-Combined Cycle Extension Project	Tripura	51
TOTAL			922

BRIEF STATUS OF PROJECTS UNDER CONSTRUCTION:

i) Kameng Hydro Electric Project (600 MW), Arunachal Pradesh

The Kameng H.E. Project located in the West Kameng District of Arunachal Pradesh is planned as a Run-of-the River Scheme. The CCEA clearance of Kameng HEP was accorded on 02.12.04 at an estimated cost of ₹2496.90 Crores (including IDC) at March 2004 PL. The project was originally approved for completion in 5 years from the date of CCEA clearance with commissioning schedule in Dec. 2009. Considering the major

changes of design parameters as suggested by the High Power Committee of CWC / CEA and keeping in view the technical problems faced in boring of HRT due to extremely poor geology and also because of loss of considerable working hours due to natural hindrances and contractual issues, commissioning of the Project has been reviewed and re-scheduled to March 2017. Meanwhile, RCE of the Project amounting to ₹5139.00 Cr (including IDC) at December 2011 Price Level has been submitted to CEA on 16.05.2012 & is presently under scrutiny at CWC.

As far as the progress in the major work fronts is concerned, out of 14.47 KM tunnel length, 11.57 KM (79.92%) has been completed as on 30th Nov'12. Boring of Surge Shaft including orifice has been completed and concrete lining of the Surge Shaft has also been completed. Progress in excavation works of Bichom & Tenga Dams are 598115 Cum out of 682126 Cum (87.68%) and 122000 Cum out of 135000 Cum (90.37%) respectively up to November 2012. Diversion tunnel works have been completed. 98.06% of underground boring of HPT including boring of Vertical Shaft, 64.12% of open excavation of surface Penstock has been completed. Fabrication and erection of Steel Liner are also in progress. In respect of Power House excavation, 1080844 Cum (98.96%) has been excavated out of the estimated quantity of 1092184 Cum up to November 2012. Concreting works of the Power House is in progress (43.05% completed).

ii) Pare Hydro Electric Project (110 MW), Arunachal Pradesh:

The Cabinet Committee on Economic Affairs (CCEA) accorded investment approval to Pare HEP vide letter dated 4th December 2008. The Corporation has signed a Loan Agreement with KfW, Germany for loan (ECB) of 80 Million Euros with soft rate of interest under Indo-German Financial Cooperation on 11.12.2008. The approved estimated cost of the project is ₹ 573.99 Crores (including IDC and FC) at June 2007 Price level. The project is scheduled for commissioning by September 2014.

Work for Package-I (Civil Works) which is being executed by M/S HCC is on in full swing. The boring of Diversion Tunnel has been completed. Overt Lining of the Diversion Tunnel including the cut and cover portion has been completed and invert lining is in progress. In case of the Power House, 119406 cum (95.52%) out of 125000 cum of open excavation and concreting of 34.06% have been completed upto November 2012. Boring of Surge Shaft and HPT has been completed, and presently Surge Shaft lining is in progress. 44.31% excavation of Dam has been achieved up to November 2012. Boring of HRT has been completed for 1973 M out of total length of 2828 M.

As far as Package II (Hydro Mechanical Works) works are concerned, fabrications of ferrules are in progress. Up to November 2012, fabrication of 14 numbers of ferrules of 4.5 M diameter and 62 numbers of 6.4 M diameters have been completed. Also, 1st stage embedded parts are being progressively installed in Diversion Tunnel inlet structure and in Draft Tube Gate of Power House. For Package III (Electro Mechanical Works) Ground mat works in Units I & II have been completed, and target in respect of erection of Draft Tube liners of both the units have been achieved. In case of Package IV (Transformer & Switchyard) earth cutting and leveling of the Switchyard area has been completed, while 100% of equipment foundation works have been completed up to November 2012.

iii) Tuirial Hydro Electric Project (60 MW), Mizoram:

After completion of around 30% of the works, the activities of Tuirial HEP (60 MW) remained suspended w.e.f. 09/06/2004 due to an agitation launched by the Tuirial Crop Compensation Claimants Association demanding compensation for crops grown in the riverine forest land. Following sustained efforts, the project has been revived after a gap of almost 6(six) years. PIB recommended revival of Tuirial H.E. Project (60MW) in Mizoram at RCE of ₹ 913.63 Crores including IDC) at March, 2010 Price Level. The CCEA clearance on RCE of the project was accorded on 14th January 2011. The project is scheduled for completion in February 2015.

As far as civil works (Lot I, II & III) is concerned, till November 2012 progress in major works such as boring of Diversion Tunnel-I is 98.70%, while Diversion Tunnel-II boring has been completed. In case of excavation of the Main Dam, 71600 cu m excavation have been completed out of an estimated quantity 430100 cu m, while in the Spillway, 89.78% excavation has been completed. Further, in Power House & Switchyard, 86.81% of

excavation works have been completed up to November 2012. The Saddle Dam has already been completed.

Lot-IV (Hydro-Mechanical Works): Detailed Work Order for the Lot-IV Hydro-Mechanical Equipment was issued on 22nd September 2011 to M/s SEW-PES Tuirial Consortium, Hyderabad. Design drawing of Radial Gates has been finalized by the contractor and submitted to the D&E Wing for approval. For Lot-V (Electro-Mechanical Works), order was placed with BHEL and amendment to the contract agreement was issued to BHEL on 1st August 2011 at a price of ₹ 135.00 Crores.

iv) Tripura Gas Turbine Project (101 MW), Tripura:

The Tripura Gas Based Power Project, Monarchak is being executed at a capacity of 101 MW based on availability of gas. The project cost was revised to ₹ 623.44 Crores (including IDC) at November 2009 price level. The Public Investment Board (PIB) recommended the RCE for approval of CCEA. The CCEA clearance on RCE was accorded on 23.02.2011. Lol for the EPC contract was placed on the 23rd of July 2010. The project is scheduled for completion within 36 months i.e. July 2013.

All piling works of the project have been completed. While foundation works of STG, HRSG and GTG areas have been completed, 99% works in STG area have been completed. 70% of GTG hall superstructure erection and 32% in Gas Booster Compressor House erection works have been completed by the end of November 2012. Around 65% of the civil works in the Switch Yard and 28% erection of towers, equipment structure and beams have been completed. 12% erection works of HRSG and around 53% transportation works of ODC equipment such as GT, GTG, ST, STG, Generator Transformers, HRSG modules have been achieved up to November 2012.

v) Agartala Gas Turbine Plant-Combined Cycle Extension Project (51 MW)

The EFC has recommended investment approval for the project on 2nd July 2012 at an approved cost of ₹ 296.87 Crore (Incl. IDC) at Jun'2011 PL. All geotechnical activities have been completed.

Design and Engineering works of the project has commenced, and also some site activities like Leveling and Grading are in progress. The project is scheduled for completion in December 2014.

FUTURE PROJECTS:

Sl. No.	Name of the Project	State	Installed Capacity (MW)
1.	Mawhu Stage-II H.E Project	Meghalaya	85
2.	Lungreng HEP	Mizoram	815
3.	Chhimtuipei HEP	Mizoram	635
4.	Mat HEP	Mizoram	76
5.	Killing H.E. Project	Assam/ Meghalaya	240
6.	Garo Hills Thermal Power Project	Meghalaya	500
7.	Grid Interactive Solar Power Plant	Tripura	5
TOTAL			2356

JOINT VENTURE CORPORATIONS

CHAPTER-24

SJVN LIMITED

1.0 ABOUT SJVN

SJVN was incorporated on May 24, 1988 as a joint venture of the Government of India (GoI) and the Government of Himachal Pradesh (GoHP) to plan, investigate, organize, execute, operate and maintain Hydro Electric Power Projects in Satluj basin in the state of Himachal Pradesh and at any other place with equity contribution of GoI & GoHP as 75:25, respectively. SJVN is Schedule-A, Miniratna Category-I PSU under the administrative control of Ministry of Power.

After disinvestment by GoI during the year 2010, the present equity contribution between the GoI, GoHP and Public is 64.46%, 25.51% and 10.03%, respectively. Initial authorized share capital of SJVN was ₹ 4500 Crores and present authorized share capital of SJVN is ₹ 7000 Crores.

The Nathpa Jhakri Hydro Power Station (NJHPS) - 1500 MW was the first project undertaken by SJVN for execution having six units of 250 MW each. All units are under commercial operation since May 18, 2004. Since commissioning, NJHPS has generated total of 57,303 MUs (Cumulative Commercial Generation) up to November 30, 2012. SJVN has paid a total dividend of ₹ 2149.56 Crores cumulatively to its stakeholders. The yearwise

details of dividend paid is as under:-

(In ₹ Crores)

DIVIDEND PAID YEARWISE					
Sr. No.	Year	GoI	GoHP	Public	Total
1	2004-05	107.37	35.79	0	143.16
2	2005-06	119.57	39.86	0	159.43
3	2006-07	176.25	58.75	0	235.00
4	2007-08	183.00	61.00	0	244.00
5	2008-09	240.00	80.00	0	320.00
6	2009-10	220.00	83.30	24.90	328.20
7	2010-11	213.33	84.40	33.20	330.93
8	2011-12	250.66	99.17	39.01	388.84
Cumulative Total		1510.18	542.27	97.11	2149.56

2.0 PROGRESS MADE DURING 2012-13

The details of the progress made during the year 2012-13, in respect of Energy Generation and Capacity Addition



1500 MW Power House of Nathpa Jhakri Power Station of SJVNL

by SJVN is as under:

Description	Actual Achievement up to November 30, 2012 for the FY 2012-13	Total Target for the FY 2012-13
Gross Energy Generation in MUs	5937.36	7000.00
Capacity Addition	NIL	NIL

3.0 AWARDS AND ACHIEVEMENTS

SJVN has been awarded with Gold Shield by the Ministry of Power, Govt. of India in the category of "Performance of Hydro Power Station" for the year 2010-11. The award was presented on 22nd March, 2012 at New Delhi by Hon'ble Minister of Power, Shri Sushil Kumar Shinde. SJVN has won the Commendation Certificate of "SCOPE Award for Excellence and Outstanding Contribution to the Public Sector Management – Institutional Category-II (Miniratna-I & II PSEs)" for the year 2010-11. SCOPE has communicated the confirmation of award vide their letter dated November 7, 2012.

SCOPE Excellence Awards were conceptualized and instituted to recognize the contribution of Public Enterprises as well as to encourage outstanding persons for their hard work and leadership qualities. The award will be presented by Hon'ble Prime Minister of India to SJVN at the forthcoming "Scope Awards" function shortly. Beside this, Sh. Nand Lal Sharma, Director (Personnel), SJVN has been conferred with Human Resource Leadership Award by Institute of Public Enterprises in September, 2012 and HR Director of the Year 2012 by India Human Capital Award in December, 2012.

4.0 Financial Parameters of SJVN

The financial performance of SJVN for the last four financial years is as under:-

(₹ In Crores)

S. No.	Description	2011-12	2010-11	2009-10	2008-09
A	INCOME DETAILS				
I	Sales	1927.50	1829.74	1769.74	1759.59
II	Other income	209.29	149.42	138.99	269.65
III	Claim from Insurance Co.	-	-	-	-
IV	Total income	2136.79	1979.16	1908.73	2029.24
V	Profit before Depreciation, Interest & Finance Charges, and Taxation.	1888.27	1739.57	1730.63	1857.89
VI	Profit before tax	1345.89	1156.19	1017.47	1285.90
VII	Profit after tax	1068.68	912.13	972.74	1015.32
VIII	Dividend	388.84	330.93	328.20	320.00
IX	Tax on Dividend	63.08	53.69	54.82	54.38
X	Reserves and Surplus	3685.65	3068.89	2528.25	1938.53
B	SOURCES OF FUND				
I	Share Capital	4136.63	4136.63	4108.81	4108.81
II	Reserve & Surplus	3685.65	3068.89	2528.25	1938.53

III	Net Worth	7822.28	7205.52	6653.76	6047.34
IV	Borrowings	1764.02	1753.92	1681.88	2142.44
	TOTAL	9586.30	8959.44	8335.64	8189.78
C	APPLICATION OF FUNDS				
I	Gross Fixed Assets	8851.47	8794.85	8654.90	8624.55
II	Less Depreciation (-)	2621.65	2174.26	1720.52	1305.11
III	Net Block	6229.82	6620.59	6934.38	7319.44
IV	Total Fixed Assets (including capital work in progress, investments etc.)	8402.28	8026.20	7929.09	8045.28
V	Net Current Assets	1911.60	1712.89	1236.23	993.85
VI	Misc. Expenditure	-	-	0	0
	Total	10313.88	9739.09	9165.32	9039.13

Note: For the half year ended on September, 2012, SJVN has earned profit of ₹ 702.30 Crores.

5.0 CORPORATE PLAN

SJVN has drawn a comprehensive 10 year plan to achieve a target of approximately 6166 MW capacity addition by 2019-20 to emerge as a major contributor in Hydel Power generation. SJVN has taken up the execution and subsequent operation and maintenance of the following projects in the states of Himachal Pradesh, Uttarakhand and Arunachal Pradesh in India and various other projects in Nepal and Bhutan.

6.0 PROJECTS PORTFOLIO

6.1 Project under Operation:

- 1500 MW (6x250 MW) Nathpa Jhakri Hydro Power Station (NJHPS) run-of-the-river hydroelectric power station located on the Sutlej river.

6.2 Project under Construction:

Hydro Power Project (HEP)

- Rampur HEP (412 MW) located on river Satluj in Shimla district of Himachal Pradesh is scheduled to be commissioned by Sept., 2013.

Wind Power Project

- SJVN has recently awarded 47.6 MW Wind Power Project Work on EPC basis in Kirvere Distt. Ahmednagar, Maharashtra. Project will be commissioned during May/June, 2013 while grid stabilization will be completed by August, 2013.

6.3 Project under Development / Implementation:

6.3.1 Hydro Electric Power Project

- Luhri HEP (775 MW) located on river Satluj in Shimla district of Himachal Pradesh.
- Dhulasidh HEP-66 MW, on river Beas, located in Hamirpur district of Himachal Pradesh.
- Devsari Dam HEP-252 MW, on river Pindar, located in district Chamoli of Uttarakhand state.
- Naitwar Mori HEP-60 MW, on river Tons (a tributary of river Yamuna), located in district Uttarkashi of Uttarakhand state.
- Jakhol Sankri HEP-51 MW, on river Supin, located in district Uttarkashi of Uttarakhand state.

- Arun-III HEP-900 MW, on river Koshi, located in Sankhuwasabha district of Nepal.
- Govt. of India has allocated two projects namely 600 MW Kholongchu HEP and 570 MW Wangchu HEP in Bhutan to SJVN. Implementation agreement for execution of the above project will be signed shortly.
- Duimukh HEP (80 MW) in State of Arunachal Pradesh has been allocated to SJVN recently. Memorandum of Agreement for execution of project will be signed shortly with Govt. of Arunachal Pradesh.

6.3.2 Solar Power Project

- SJVN is foraying into Solar Power with plans to establish 5MW and 2MW Capacity power projects to be located in Charanka, Patan Distt., Gujarat and Jhakri, Shimla Distt., HP, respectively.

6.3.3 Thermal Power Project

- SJVN is presently in the process of venturing into Thermal Power Sector. SJVN has taken up the proposal for allocation of 1320 MW Thermal Power Project in Chausa Distt. Buxsar in Bihar with State Govt.

6.3.4 Power Transmission

- SJVN entered into a Memorandum of Agreement with IL&FS Limited, the Power Grid Corporation of India Limited (PGCIL) and PTC Financial Services Ltd. for establishment of a Joint Venture called Cross Border Power Transmission Company to construct and maintain the Indian part of 400kv transmission line connecting Nepal and India. The 400kv Transmission Line will pass through Sitamari and Muzzaffarpur districts in Indian Territory and will be connected to Nepal Grid at Dhalkebar Sub-station.

7.0 DETAILS OF PROJECTS UNDER CONSTRUCTION:

7.1 Rampur Hydro Electric Project (RHEP) - 412 MW (located on river Satluj in Shimla district of Himachal Pradesh)

SJVN has already taken up the execution of the proposed 412 MW Rampur HE Project (RHEP). The proposed RHEP is a downstream development of the existing 1500 MW NJHPS and shall use the de-silted waters of the NJHPS under operation.

The Salient Features of 412 MW RHEP, in brief, are as under:

Head Race Tunnel	- 15.177 km long, 10.50m dia circular concrete lined
Power House	- Surface type 138 m x 23.50 m x 48m (L x W x H)
Capacity	- 6 x 68.67 MW each = 412 MW
Energy Generation	- 1770 Million Units during a 90% dependable year

The Cabinet Committee on Economic Affairs (CCEA) Govt. of India accorded clearance to Rampur HEP on January 25, 2007, subsequent to which the major civil works were awarded on February 1, 2007 and Electromechanical works were awarded on September 16, 2008.

As on November 30, 2012, heading excavation for

entire length of 15,177 m of HRT has been completed, benching excavation for 13,475 m (89%) and concrete lining for 9,606 m (63%) has been completed. In Surge Shaft, concrete lining for entire length of 165.2 m has been completed. In pressure shaft for underground liner portion, total length of 648 m has been completed and for Surface liner, erection of 251 m out of 568 m completed. The civil and electromechanical works in the Power House are under progress in all the six units. The project is scheduled to be commissioned by September, 2013.

7.2 Kirvere Wind Power Project (47.6 MW) located in Kirvere Distt. Ahmednagar in Maharashtra

SJVN on October 19, 2012 has awarded the works for 47.6 MW Wind Power Project located at Kirvere Distt. Ahmednagar in Maharashtra on EPC basis.

Project will have 56 turbine units of 850 kW each and spread in an area of 51.3 hectare. The project will have an Annual Energy Generation of 85.65 MU. The project will have a 132 kV Transmission Line from Akole 132 kV Grid Sub Station to 2x50 MVA, 33/132 kV Wind Farm Pooling Station connecting 33kV Line for Inter connecting the Grid. Project will be commissioned during May/June, 2013 while grid stabilization will be completed by August, 2013.

8.0 INDUSTRIAL RELATIONS

Regular interactions are held with the representatives of the various Associations/Unions. The thrust area for discussions is related to policies as well as issues concerning with enhancing production, efficiency and improving organizational climate. The above actions of the Management paved the way for better employee-employer relations and the industrial relations during the year remained cordial. Recreational cultural and sports activities are being organized during different occasions for improving inter-personal relations and also to bring out the talent of employees and their family members.

9.0 ENVIRONMENT

The Company's mission statement which, interalia states that developing and supplying to the nation, State and Local communities, an efficient, economic, environmentally sustainable hydro power.

SJVN stresses the need to develop adequate long term capacity to manage environmental issues in all projects. Towards this end, SJVN has formulated a comprehensive Environment Management Plan to ameliorate any potential environmental impacts due to our projects for sustenance of resources over a long term.

The Environment Management Plan (EMP) for Nathpa Jhakri Hydro Electric Project has been formulated for ₹35.85 Crores. The implementation of activities under this plan namely, Compensatory Afforestation, Muck Disposal Plans, Fisheries Sustenance Plan, Green Belt Development, Post Commissioning Environmental Monitoring etc. have been completed while the CAT plan works are being implemented by State Forest Deptt.

The Environment Management Plan (EMP) for Rampur Hydro Electric Project has been approved for ₹45.52 Crores and environment management activities such as CAT plan, Compensatory Afforestation, Fisheries Management, Muck Management and Environmental Monitoring etc are being implemented.

In addition to the above, SJVN has also established an Environmental Laboratory at its Rampur Hydro Electric Project to carry out sample collection and analysis of water, wastewater, ambient air quality and noise monitoring for Rampur HE Project. This laboratory is also being utilised for other SJVN Projects under operation and construction phases. The laboratory shall be the corner stone of SJVN's pollution abatement and control efforts as it shall provide qualitative and quantitative data for decision making. SJVN is in the process of getting the laboratory recognized from Central Pollution Control Board (CPCB) under Ministry of Environment & Forests (MoEF) and the National Accreditation board for Testing & calibration Laboratories (NABL) in near future.

10.0 RESETTLEMENT & REHABILITATION AND CORPORATE SOCIAL RESPONSIBILITY

10.1 Resettlement & Rehabilitation

SJVN being responsible corporate citizen is executing its hydro power projects in a manner not only to optimize the project benefit in the interest of the nation but has also been implementing the resettlement and rehabilitation plans in the project affected areas with a view to enhance socio-economic standards of project affected families. The R&R plans of SJVN are in consonance with National R&R Policy, 2007. SJVN has implemented R&R plans in Nathpa Jhakri Hydro Power Station and Rampur Hydro Power Project incurring an expenditure of ₹12.85 Cr. and ₹ 26.62 Cr. respectively. In NJHPS, all 480 project affected families have been duly compensated under Land Acquisition Act. Besides, 112 landless PAFs have been provided land for land, 61 PAFs have been provided employment, 55 PAFs have been provided alternative package in lieu of employment ranging from ₹ two to three Lac, 25 houseless PAFs have been provided built-up houses, 44 PAFs have been provided cash assistance in lieu of constructed house, 75 displaced shopkeepers have been provided shop plots, 53 students have been provided merit scholarships etc. Further, with a view to meet continual societal needs of local communities, an Annual Recurring Community Development Plan of ₹1.5 cr. has been implemented in the project affected areas covering 12 project affected panchayats which include 22 villages.

In Rampur HEP, all 142 PAFs have been duly compensated under the Land Acquisition Act. Besides, 37 PAFs have been provided R&R benefits like resettlement grant ranging from ₹45,000/- to ₹65,000/-, constructed houses to 15 houseless PAFs, cash assistance of ₹9.98 Lac in lieu of constructed house to each 3 houseless PAFs, construction grant of ₹1.8 Lac for enlargement of houses to each 10 families whose houses were acquired and

left with second house, financial support of ₹ 18,000/- to 51 vulnerable families, employment to one PAF, merit scholarships to 56 students. As per guidelines on "Local Area Development Committee" issued by GOHP, SJVN is to provide fund of ₹ 30.75 cr which is 1.5% of project cost to GOHP for carrying out various infrastructural development works in project affected areas of Rampur HEP. SJVN has so far deposited ₹ 24.08 Cr. with GoHP.

10.2 Corporate Social Responsibility

SJVN has formulated and adopted its Corporate Social Responsibility-Community Development Policy in November, 2011. The Policy is in consonance with the CSR guidelines issued by the Ministry of Heavy Industries, Department of Public Enterprises, and Government of India. SJVN is committed to the concerns of its stakeholders and has been striving to maintain good standards of corporate social responsibility (CSR) in its business activities. The main thrust of SJVN CSR Policy is in the sphere of education, health, infrastructural work, community development works and assistance during natural disasters. The works under CSR Policy are being governed through a Trust comprising of Board of Trustees registered as "SJVN Foundation". SJVN spent ₹ 784 lac. towards various CSR works in the year 2011-2012 which is 0.86% of previous year's Profit After Tax. The major activities carried out under CSR plans during the year 2011-12 are extending financial support of ₹ 600 Lac. to Atal Bihari Vajpayee Engineering College, Pragatinagar, providing educational and infrastructural aid to 67 schools in project affected areas at the cost of ₹ 33.01 Lac, organising 13 health check-up camps for children in schools, extending free consultancy and medicines to local people through 175 visits of mobile health vans, financial support to National CSR Hub TISS Mumbai, financial support to Bharat Olympic Shimla for promotion of sport and sponsorship of 25 local students for vocational training in ITIs of HP. During the current financial year, a mobile health van has been put in place in Luhri HEP for providing free medical services to the local people and such services are already in operation in NJHPS and RHEP. In this year 2012-13 SJVN plans to spend about ₹ 16.00 Cr. on various CSR schemes and activities. The major CSR schemes and activities include "SJVN Silver Jubilee Merit Scholarship Scheme" under which 140 meritorious students of 12th standard from schools affiliated to HP and UK Education Boards, CBSE and ICSE will be provided scholarship for pursuing next higher education, adoption of villages under Model Village Scheme in project area, women and child care program, farm support for higher yield, installation of garbage disposal system in villages, creation of community assets etc. This year which marks the Silver Jubilee of SJVN's existence, the Foundation has launched "Scheme to Reward the Meritorious Students Studying in Schools Situated in Project Affected Areas of SJVN". Under the scheme, 150 topper students of classes 5th, 8th, 10th and 12th in schools situated in NJHPS and RHEP area will be rewarded.

THDC INDIA LTD.

THDC India Limited is a Joint Venture of Govt. of India and Govt. of Uttar Pradesh. The Equity is shared in the ratio of 3:1 between GoI and GoUP for the Power Component. The Company was incorporated in July' 88 with the initial mandate to develop, operate & maintain the 2400 MW Tehri Hydro Power Complex (comprising of 1000 MW Tehri Dam & HPP, 1000 MW Tehri Pumped Storage Plant & 400 MW Koteswar HEP) and other hydro projects.

The Company has successfully commissioned the Tehri Dam & HPP (1000 MW) Stage-I during the Xth Plan and Koteswar HEP (400 MW) during XIth plan.

THDCIL has been conferred with prestigious award "International Milestone Project" of International Commission of Large Dam (ICOLD) for Tehri Dam Project in Oct.'09, considering the uniqueness of its design and construction features.

Koteswar Hydro Electric Project (400MW) has won the prestigious "PMI India 2012 Best Project of the Year Award". The award has been conferred in recognition of excellence and the outstanding performance by THDCIL in implementation of Koteswar Hydro Electric Project by applying best project management principles and techniques.

THDCIL has been conferred SCOPE Meritorious Award for Corporate Social Responsibility and Responsiveness in April 2012. THDCIL has also been conferred the Power Line Award

in the category of 'Best Performing Generation Company (in Hydro Sector)' in May 2012.

THDCIL has obtained ISO 9001:2008 Certificate of Quality Management System for Corporate Office, Rishikesh, Tehri HPP, Tehri PSP and Vishnugad Pipalkoti HEP. THDCIL has also obtained ISO 14001-2004 Certification (Environment Management System) for Tehri HPP, Tehri PSP and Vishnugad Pipalkoti HEP.

THDCIL is a Miniratna Category –I Schedule 'A' company by the Govt. of India. The authorized Share Capital of the company is ₹ 4000 Cr.

The wide range of technical, environmental and social proficiency and experience of THDCIL places it in leading position to take up challenging Hydro Power Projects. THDCIL is entrusted with new projects for execution/preparation/ updation of DPR for hydro power projects, Pump Storage Schemes in India and abroad. THDCIL has now grown to a multi project organization having 15 projects totaling to an installed capacity of 10,290 MW under operation/ various stages of development in Uttarakhand, U.P, Maharashtra and Bhutan.

With the allotment of Khurja Super Thermal Power Plant (1320 MW) in Kurja, (U.P), THDCIL has taken a step forward in diversification into Thermal Power. As a further step ahead towards renewable energy resources, THDCIL is venturing into Solar and Wind Energy areas.



A view of Koteswar Dam & Spillway

FINANCIAL PERFORMANCE

THDC is consistently profit making company since the commissioning of the first phase of 2400 MW Tehri Hydro Power Complex i.e. Tehri Dam & HPP in the year 2006-07. The total income of the company during FY 2011-12 was ₹1689.27 Cr. THDCIL has earned a net profit of ₹703.83 Cr during the year 2011-12 as compared to ₹600.48 Cr during FY 2010-11.

The company has paid a dividend of ₹ 212 Cr for the year 2011-12.

OPERATIONAL PERFORMANCE

THDCIL is at present generating power from Tehri HPP & Koteswar HEP with installed capacity of 1400 MW and power generated is supplied to 09 beneficiaries States/UT of Northern Region.

During the year 2011-12, Tehri Power Station generated 3983.65 MU of energy against a target of 2797 MU and Koteswar HEP generated 607.60 MU of energy against a target of 537 MU. The reservoir operation ensured the committed water for drinking to Delhi & UP and for irrigation in the command area.

During the current FY 2012-13, THDCIL has generated 2873.77 MU of energy till 30.11.2012. It is expected to meet the annual generation target of 4145 MU.

COMMERCIAL PERFORMANCE

The Power Purchase Agreement for Koteswar HEP (400 MW) has been signed with all the 9 beneficiaries. The Power Purchase Agreement for Vishnugad Pipalkoti HEP (444 MW) has also been signed with Delhi Discom 'BRPL' during the year 2011-12. The same may be signed with the only remaining beneficiary namely, BYPL (Delhi Discom) shortly.

Further, THDC also entered into the field of Thermal Power through implementation of Khurja Super Thermal Power Plant (1320 MW). The total power of the plant has been tied up for sale by signing the Power Purchase Agreements before 5th January 2011 with five beneficiaries namely Uttar Pradesh, Uttarakhand, Rajasthan, Himachal Pradesh and BRPL, Delhi.

The Tariff Petitions for fixation of tariff for Tehri HPP (1000MW) for the period 2006-09 and 2009-14 have been filed separately before the Hon'ble Central Electricity Regulatory Commission (CERC) in the year 2010-11 & 2011-12 respectively. The Tariff Petition for Koteswar HEP (400MW) has also been filed before the Hon'ble CERC during 2011-12. The tariff for Tehri HPP for the period 2006-09 is expected to be approved by Hon'ble CERC shortly.

Units-3 & 4, each of 100 MW, of Koteswar HEP were synchronized with the Northern grid in Jan'2012 and Mar'2012 respectively and are in Commercial Operation since 13.02.2012 & 01.04.2012 respectively. Prior to this, Units 1 & 2 were put on Commercial Operation on 01.04.2011 & 26.10.2011 respectively. The provisional tariff of Koteswar HEP was got agreed with the beneficiaries in the 18th Technical Co-ordination Committee (TCC) & 20th Northern Regional Power Committee (NRPC) meetings held on 28th Feb.' 2011

& 1st March 2011 respectively for 80% of the Annual Fixed Cost of Koteswar Hydro Electric Project. Accordingly, bills are being raised on the beneficiaries.

For the financial year 2011-12, almost entire revenue has been realised from the beneficiaries against the energy billing of ₹1676.51 Cr. towards sale of energy based on provisional tariff. During the year, the company has also earned net revenue of ₹ 32.37 Cr. on account of Unscheduled Interchange (UI) Charges under the prevailing UI mechanism and ₹ 0.71 Cr. on account of interest due to late payment of UI charges.

During the financial year 2012-13 (upto 30.11.2012) based on the Provisional Tariffs, ₹443.37 Cr. revenue has been realised from the beneficiaries against the billing of ₹ 1090.34 Cr. towards energy bills raised between 01.04.2012 and 30.11.2012. In addition, the company has also earned net revenue of ₹13.06 Cr. for the period 01.04.2012 to 18.11.2012 on account of Unscheduled Interchange (UI) charges under the prevailing UI mechanism.

PROJECTS AT A GLANCE:

THDCIL has successfully commissioned Tehri HPP (4x 250 MW) and Koteswar HEP (4x100 MW) during Xth and XIth Plans respectively. THDCIL plans to add 1024 MW during the XIIth plan.

The projects in hand with a total proposed installed capacity of about 8790 MW are in various stages of development as briefed below:

PROGRESS OF ONGOING PROJECTS

Tehri Pump Storage Plant (PSP) 1000 MW

The Tehri PSP is part of the 2400 MW Tehri Hydro Power Complex. Revised Cost Estimate (RCE) of the Project amounting to ₹2978.86 Cr including IDC of ₹405.04 Cr at April'10 PL has been approved by CCEA in Nov'11. Tehri PSP is to be funded with a Debt Equity ratio of 70:30. Term Loan for Rupee portion of ₹1500.00 Cr has been sanctioned by SBI and for Off Shore Component, fund is being tied up with foreign bank.

Letter of Award for execution of the Project on EPC/Turnkey has been issued to consortium of M/S Alstom Hydro France and Hindustan Construction Company on 23rd June-11. Work on the Project commenced w.e.f. 27th July, 2011.

Excavation of five approach audits has been completed. Excavation of balance five access audits is in progress.

All geological investigations have been completed in the Power House. Crown slashing of Power house cavern is under progress. Design & Drawings of Power House Cavern are under finalization. Heading excavation of TRT-3 & TRT-4 is in progress. Model testing of Pump Turbines have been successfully completed in July, 2012. Project is expected to be commissioned in FY 2016-17.

Vishnugad Pipakoti HEP (444MW)

Govt. of India accorded investment approval for the execution of VPHEP in Aug.'08 at a cost of ₹ 2491.58 Cr. including IDC & DC of ₹366.83 Cr at March'08 PL.

The Revised Cost Estimate (RCE) amounting to ₹ 3745.08 Cr (including IDC & FC of ₹ 309.53 Cr) at Oct'11 PL has been submitted to MOP on 28th Mar'12.

For the funding of the debt portion (70%) of the project, loan agreement for US\$ 648 million has been signed with World Bank on 10th Aug'11. The loan has become effective from 7th Nov'11 with tenure of 29 years.

Stage-II Forest clearance of 80.507 Ha land is pending with MoEF. The recommendation of National Board for Wildlife is required to consider the case.

Pending transfer of forest land, award of Civil & HM package is kept in abeyance.

All infrastructural works (roads, bridges, residential & non-residential buildings) required to take up the major works of the Project have been completed.

The project is planned to be commissioned in 54 months after award of Civil & HM package.

Dhukwan Small HEP (24MW)

THDCIL has been entrusted 24 MW Dhukwan Small Hydro Project on the river Betwa in District Jhansi, Uttar Pradesh. Implementation agreement was signed between GOUP and THDCIL on 2nd Sep'09.

Investment approval of the project has been accorded by THDCIL Board at an estimated cost of ₹ 195.42 Cr. including IDC of ₹ 12.89 Cr. in Mar, 2011 at April, 2010 PL. Equity portion i.e. 30% of the Project cost shall be funded by the Corporation from its internal resources.

39 Hactares forest land is required for Project works. Stage-I Forest clearance for the same has been accorded by MoEF on 27.11.12 with fulfillment of certain conditions. Action for compliance has been initiated.

NIT for PQ of bidders for civil package has been published on 24th Nov-12. The Project shall be completed within 30 months after award of contract for the major works.

IN THE STATE OF UTTARAKHAND

DPR of Jelam Tamak HEP (128 MW) was completed and submitted to CEA in Dec'2010. The EIA / EMP study has also been completed. In view of the enhancement of the installed capacity from 60 MW (PFR stage) to 128 MW (DPR stage) and change in the height of the structures, Environment Appraisal Committee (EAC) has approved the revised ToR of the EIA study on 26th March '11 with condition to keep a free flow of 1 Km between TWL discharge and point of U/S project and the reservoir tip at FRL of immediate D/S project.

Request of THDCIL for dilution of condition of 1 Km free riverine stretch between Jhelum Tamak & Tamak Lata HEP was considered by EAC of MOEF in their meeting held on 27th Apr-12. The EAC has agreed for 200 m free riverine stretch between Jhelum Tamak & Tamak Lata HEP. The DPR with revised installed capacity of 108 MW stands completed and has been submitted to CEA on 4th Dec, 2012.

The draft EIA / EMP study of the project has been completed & submitted to State Pollution Control Board (SPCB), Dehradun

on 3rd July' 12. Public Hearing has been held on 6th Sept' 12 and SPCB (State Pollution Control Board) has forwarded their recommendations to MoEF, New Delhi.

DPR preparation of Malari Jelam HEP (114 MW) at alternate location of Kosa village was kept in abeyance due to pending decision of MoEF on 1 Km free flow stretch issue between two projects.

In view of the recommendations of the MoEF & revised ToR dated 31st July' 12, to keep 1 Km free flow stretch between TRT outlet of Malari Jelam HEP and FRL of Jelum Tamak HEP, viability of the project is being appraised. The DPR preparation shall be taken up accordingly.

Bokang Bailing (330 MW), Karmoli (140 MW) and Jadhganga (50 MW) HEPs come under protected wild life areas. An interlocutory application has been filed before Hon'ble Supreme Court for de-reservation of the forest land.

In Bokang Bailing, for granting permission for drilling & drifting for S&I works, a fresh proposal was submitted with DFO, Pithoragarh in Nov-11. Chief Wild Life Warden, GoUK has recommended the proposal to Principal Secretary (Forest & Env.), GoUK and is under process for onward sending it to MOEF for granting permission.

On the insistence of Chief Wildlife Warden, one season EIA/EMP studies for Karmoli and Jadhganga projects was completed and report of the study was forwarded to Chief Wild life Warden, GoUK for recommendation of the case. In turn, Director, Gangotri National Park has communicated the views not favoring the grant of permission for survey & investigation works. However, matter has again been taken up with forest authorities afresh for according permission for taking up survey & investigations.

IN THE STATE OF MAHARASHTRA

To develop the hydropower in Maharashtra, in April'2008, Govt. of Maharashtra allotted, two Pumped Storage Schemes, namely; Malshej Ghat PSS (600 MW) and Humbarli PSS (400 MW) for updation of DPRs and if found viable ,subsequent implementation by the JV of THDCIL and NPCIL. DPR of Malshej Ghat PSS with enhanced installed capacity of 700 MW has been completed and submitted to the Govt of Maharashtra.

In a high level meeting held on 29th April, 2011, representatives of Govt of Maharashtra agreed for implementation of the Malshej Ghat PSS through JV of THDCIL and NPCIL, subject to the approval of State Cabinet. The formal approval is awaited.

The Humbarli PSS is located on the fringe area of Koyna Wildlife Sanctuary (KWS).The proposal to carry out Survey & investigation work of the Project has been forwarded by Govt. of Maharashtra to MOEF, New Delhi in August, 2011 for consideration of NBWL. Permission of MoEF is awaited.

FOREIGN PROJECTS - IN BHUTAN

Under India-Bhutan Co-operation, Govt of India allotted Sankosh HEP (2560 MW) for updation of DPR and Bunakha HEP (180 MW) for implementation through Joint Venture mechanism.

THDCIL had initially completed DPR of Sankosh HEP (4060 MW) in April, 2009 based on the original scheme of rockfill dam. CWC suggested that the possibility of Concrete Dam be explored for better handling of sediment and also keeping in view longevity of Dam. Accordingly, DPR of Sankosh HEP (4060 MW) was prepared and submitted to CEA and CWC in May, 2011. In view of high tariff of ₹ 7.29 (levelised) at Sankosh HEP, Govt of India and Royal Govt of Bhutan decided that viability of Sankosh be improved further by optimizing the height of the dam. Optimization studies with alternate options of dam height were carried out by THDCIL and the revised scheme was finalized and presented to Empowered Joint Group (EJG) in Feb, 2012. The go ahead for preparation of DPR of Optimized Sankosh HEP was given by EJG. Accordingly, DPR of optimized Sankosh Project (2560 MW) has been completed and submitted to CEA and CWC in Aug'12 for their examination. Detailed presentation on DPR was made to CEA on 16th Sep'12. Observations of CEA and CWC are awaited.

After obtaining clearance on viability of Bunakha HEP (180 MW) in Mar, 2010, DPR of Bunakha HEP as a storage project has been completed and submitted to CEA and CWC in Aug, 2011. Examination of DPR of Bunakha HEP is under progress in CEA/CWC. The sharing modalities of the cost of Bunakha HEP with downstream Generating Stations in proportion to

enhanced energy benefits attributable to storage created at Bunakha have been finalized by CEA. Discussions for JV agreement for Bunakha HEP with Royal Govt of Bhutan have been held and the final view is under consideration of Empowered Joint Group.

KHURJA STPP-1320 MW:

Towards diversification into other energy areas, a MoU has been entered on 31st Dec'10 with Energy Department; GoUP for setting up of a coal based 1320 MW Khurja Super Thermal Power Station at Khurja in the state of Uttar Pradesh. PPAs for entire energy have been signed with five beneficiary states before 5th Jan, 2011.

PFR of the Project and ToR for EIA study were prepared and submitted to MoEF in Aug, 2011. The ToR for EIA study has been approved by MOEF. Accordingly, work for DPR preparation was taken up. Most of the requisite site specific studies for preparation of Detailed Project Report (DPR) have been completed. The DPR is expected to be completed by March'13. Proposal for incurring advance expenditure up to ₹400 Cr on land acquisition for the Project has been submitted to Govt. of India pending environment clearance & coal linkage.



Shri Jyotiraditya M. Scindia, Hon'ble Union Minister of State for Power (Independent Charge) after laying the Foundation Stone for the 1320MW Phase-II of Raghunathpur Thermal Power Station of DVC on 16.12.2012

DAMODAR VALLEY CORPORATION (DVC)

INTRODUCTION

Damodar Valley Corporation (DVC), the major multipurpose river valley project of independent India, came into being on the 7th July, 1948 by an Act of the Central Legislature.

As in the past, Damodar Valley Corporation (DVC) has discharged its responsibilities as mandated by the DVC Act relating to electricity generation and distribution, flood control and irrigation, soil conservation and social sector activities within the Damodar Valley during the year 2011-12. In addition, DVC has undertaken the job of rural electrification in Jharkhand and West Bengal under the Rajiv Gandhi Grameen Vidyutikaran Yojana of Govt. of India.

PERFORMANCE HIGHLIGHTS 2012-13 (UPTO NOV.'12)

POWER GENERATION – PHYSICAL

- Total generation achieved by DVC thermal generating units in FY 2012-13 (Upto November, 2012) is 16161 MU.
- Total generation achieved by DVC Hydel generating units in FY 2012-13 (Upto November, 2012) is 187 MU.
- MTPS U#(1 – 8) achieved highest peak load of 2383 MW on 04.10.2012 at 19.11 Hrs.
- Capacity Addition (1000 MW)
 - DSTPS U#1 (500 MW) – COD declared on 15.05.2012.
 - MTPS U#8 (500 MW) – COD declared on 16.08.2012

ESTIMATED FINANCIAL STATEMENT

Amount (₹ Cr.)

Particulars	2012-13 (Provisional) (April' 12 to Nov.' 12)
Sale of Power (MU)	16287
Revenue (₹ Crore)	6810
A. Sale of Power	6751
B. Misc. Income	59
Revenue expenses (₹ Crore)	6697
Profit from current years operation [2-3]	113
Loss on Irrigation & Flood Control	(2)
Surplus/(Deficit) [4-5]	111
Income Tax	
Net Surplus/(Deficit) [6-7]	111

- Finance adjustments, if any required, in response to the Calcutta High Court Order dated 07.12.2012 and the Hon'ble Supreme Court Order dated 14.12.2012 will be considered in the Accounts of the Corporation on receipt of final order from the Hon'ble Supreme Court.

- Income Tax has not been considered due to adjustment of 'Carry Forward Losses'.

GENERATION AND POWER SUPPLY POSITION

Generation (MU) & PLF (%)

Particulars	2011-12	2012-13 (till Nov., 12)	Target (Dec, 2012 - March, 2013)
OLD UNITS (2710)			
1. Generation MU			
(i) Thermal	16269	9615	6050
(ii) Hydel	304	187	12
2. Thermal PLF (%)	68.35	60.59	77
NEW UNITS			
1. Generation MU			
Thermal	2795	6546	4840
2. PLF	51.87	68.62	83
3.*Generation (at PS BUS)	17349	14760	9837
4. **Purchase of Power (at DVC Bus) (MU)	1575	1760	880
5. Total Stock (at DVC Bus) (MU)	18924	16520	10717
6.Saleable Units (at DVC Bus/ Periphery) (MU)	18289	15920	10299

*Excludes infirm power.

** Includes ISGS, MPL, IEX/PXIL, UI etc. but excludes Scheduled Wheeling of Power by TISCO etc.



CAPACITY ADDITION PROGRAMME AND ACHIEVEMENTS

Sl. No.	Project	Capacity (MW)	Progress made up to Dec-2012	Anticipated Target up to 31.03.2013
1.	Chandrapura TPS Extn. Unit-7&8 (2x 250 MW)	500	Unit-7: COD achieved on 2.11.11 Unit-8: COD achieved on 15.07.11	---
2.	Mejia TPS U-7&8 (2x 500 MW) EPC Contractor Main Plant Pkg.: BHEL CHP: Elecon Water: L&T Rly. Infra: RITES	1000	Unit-7: 1) COD achieved on 2.08.11. Unit-8: 1) COD achieved on 16.08.12.	---
3.	Koderma TPS Unit-1&2 (2x 500 MW) EPC Contractor Main Plant Pkg.: BHEL CHP: L&T Water: KBL Rly. Infra: RITES	100	Unit-1 1) Oil Synchronisation done on 27.06.11. 2) Coal Synchronisation done on 16.07.11. 3) Full load achieved on 20.07.11 Unit-2 1) Boiler light up achieved on 26.04.12. 2) TG Box up done on 20.07.12. 3) TG Oil flushing completed on 10.09.12.	Unit-1 1) COD by Feb' 2013. Unit-2 1) TG on Barring Gear by Jan-2013. 2) Unit Synchronization by 31.01.2013.
4.	Durgapur Steel TPS Unit-1&2 (2x 500 MW) EPC Contractor Main Plant Pkg.: BHEL CHP: ThyssenKrup Water: VA Tech Rly. Infra: RITES	1000	Unit-1 1) COD achieved on 15.05.12. Unit-2 1) TG Oil flushing completed on 12.01.12. 2) TG on Barring gear put on 12.02.12. 3) Oil synchronized on 12.03.12 4) Coal synchronized & Full load achieved on 23.03.12.	Unit-2 1) COD by Feb' 2013.
5.	Raghunathpur TPS Unit-1&2 (2x 600 MW) EPC Contractor Main Plant Pkg.: REL CHP: TRF Water: MBL Rly. Infra: RITES	1200	Unit-1 1) Turbine Box up on 10.05.12. 2) Boiler light up on 18.10.12. Unit-2 1) Boiler Hydro test done on 25.05.12.	Unit-1 1) Steam Blowing Completion by 15.03.2013 2) TG on Barring Gear 28.02.2013.
6.	Bokaro 'A' TPS Unit-1 (1x 500 MW) EPC Contractor Main Plant Pkg.: BHEL	500	Boiler Drum lifting done on 01.08.2012	1) Turbine Erection started on December, 2012. 2) Boiler Hydro test by March, 2013.

Private Sector Participation in Power Sector: Joint Venture Projects of DVC:

Sl. No.	Name of the Project	Location	Capacity (MW)	Package Awarded	Progress made upto 31.12.2012	Anticipated Target upto 31.03.2013
Implementation through Joint Venture Company						
1.	Maithon RB TPS Unit-1&2 (2x 525 MW) [Under implementation through Maithon Power Ltd., a JVC of TPC & DVC]	Dist: Dhanbad State: Jharkhand	1050	BTG: BHEL, GCW: Simplex, PES & CT: L&T, CHS: Tecpro, AHS: MBPL, Railway: TPL, WTP: BGR, Pumps: WPIL	Unit-1 1) COD achieved on 1.09.2011. Unit-2 1) Full load/Commissioning achieved in Feb' 2012.	---

TRANSMISSION PROJECTS

PROGRESS UPTO 20.12.2012-ONGOING PROJECTS

Sl. No.	Schemes	Progress upto 18.11.12	Remarks	Anticipated Target upto 31.03.2013
1.	220 KV Mejia-Ramgarh Line upto Gola.	77%	Work under progress.	PDC-3/2013 Depends upon obtaining of working clearance for forest.
2.	132KV Dhanbad-Govindpur Line.	60%	Work in progress.	PDC-03/2013
3.	Retrofitting of Numerical Relays in various Sub stations. Gr-I:132 KV Line protection Gr-II:132 KV Diff protection Gr-III:220 KV Line protection Gr-IV:25 KV Rly. protection	Supply-Erection 100%-96% 100%-65% 100%-91% 100%-100%	Work in progress.	Completion by i) Completed ii) June 2013 iii) Completed iv) Completed
4.	220 KV Dhanbad Sub-station including LILO of 220 KV CTPS-Kalyaneswari at Dhanbad S/S.	Phase -I: 100% Phase -II: 95%	Commissioned Ph-I: 30.06.2011 Ph-II: Commissioned.	Completed
5.	220 KV Dhanbad-Giridih Line.	75%	Work in progress.	March 2013.
6.	220 KV Koderma-Giridih Line	61%	Work in progress.	PDC- 6/2013.Depends upon obtaining Forest Clearance. Proposal is pending with Govt. of Jharkhand.
7.	400 KV D/C DSTPD-RTPS Line	88%	Work in progress.	PDC-03/2013
8.	400 KV S/C LILO at RTPS of Maithon-Ranchi(PGCIL) Line.	100%	Commissioned on 23.06.12	
9.	400 KV RTPS-Ranchi Line.	76%	Work in progress.	PDC-3/2013. Depends upon obtaining of working clearance for Forest which is yet to be obtained.
10.	System Energy Management & Accounting.	Supply-100% Erection-98%	Work in progress.	PDC-02/2013
11.	220 KV Gola Sub-station	Nil	Nil	Fresh Tendering under process.
12.	220 KV Giridih Sub-station	95%	Commissioned on 29.09.12	1 No. 80 MVA and 1 No.160 MVA Tr. Commissioned.
13.	2nd circuit LILO of 220 KV Mejia-Kalyaneswari Line at Burnpur.	16%	work in progress.	PDC-07/2013
14.	3 Nos. 220KV Bays at 220 KV Burnpur Sub-station.	80%-1st and 2nd bay.	Work in progress.	i) 3rd bay-commissioned on 08.08.2012. ii) 1st and 2nd bay-01/2013
15.	132 KV North Karanpura Tandwa (NTPC) Line to be charged at 33 KV	20%	No progress due to non availability of forest clearance as balance work in forest area.	Forest Clearance proposal is still lying with ED cum PCCF, the Govt. of Jharkhand.

SAHARPUR JAMARPANI COAL BLOCK

The mine was allocated by Ministry of Coal by 25.07.2007. Mineable reserve of 600 mt. The rated capacity is 7 MTPA. The block was de-allocated by MOC vide letter dated 14.06.11. Subsequently, on continuous persuasion by MOP & DVC, in-principle reallocation granted. **Final withdrawal of de-allocation was communicated on 28th February, 2013 by Ministry of Coal to Damodar Valley Corporation.**

RECOVERY OF JSEB DUES

Outstanding dues of electricity bill of Jharkhand State Electricity Board (JSEB) to Damodar Valley Corporation (DVC) have been accumulating every month due to less/part payment. This monthly power supply bill is above Rs. 120 Crore. An outstanding due as on 30.11.2012 is Rupees 5559 Crore due to default in payment. JSEB dues of Rupees 2353.26 crore are reconciled as on 31st March, 2012 and are

recoverable from JSEB by DVC from devolution of Central Plan fund under clause 17 of Tripartite Agreement (TPA).

The above claim of DVC for recovery of JSEB dues was sent to the Ministry of Finance by Ministry of Power in October, 2011, subsequently as per advice of Ministry of Finance, opinion of Ministry of Law and Justice was obtained on the same and the proposal was re-submitted to the Ministry of Finance in October, 2012. A meeting was held on 21.12.2012 between Secretary (Power), Additional Secretary (Expenditure) and Chief Secretary, Government of Jharkhand. In the meeting, it was agreed by Government of Jharkhand to open Letter of Credit (LC) of 105% of bill value with immediate enhancement of monthly payment of required amount and to submit a road map within 10 days for settlement of outstanding dues of Rupees 2356.26 crore in a month. Subsequently in the meeting held at Ranchi on 8th February, 2013 it was further decided that payment of Rs.200 Crore would be made by Jharkhand

Govt. immediately (paid in February, 2013) with provision of payment of at least Rs.1000 Crore in the beginning of the next financial year and the balance at the earliest.

RURAL ELECTRIFICATION PROGRAMME

Govt. of India has launched a scheme named “Rajiv Gandhi Grameen Vidyutikaran Yojana” to provide access of electricity to all rural households and service connection to BPL households duly authorizing the Rural Electrification Corporation Limited (RECL) as the nodal agency for complete supervision of the programme from concept to completion.

DVC has been assigned with formulation and implementation of RE project in East Midnapore District in West Bengal and Dhanbad, Koderma, Bokaro, Gumla, Simdega, Hazaribagh, Chatra and Giridih Districts in Jharkhand as deposit work basis on behalf of respective State Governments, by Ministry of Power, Govt. of India.

WEST BENGAL - East Midnapore Project :

- Project completed.
- Project Closure – ‘Completion Proposal’ of the project submitted to RECL.

JHARKHAND - Dhanbad, Koderma, Bokaro, Gumla, Simdega, Hazaribagh, Chatra and Giridih Projects :

a) Physical achievements :

Sl. No.	Description	Sanctioned Scope	Scope as per survey	Achievement in 2012-13 (up to 30.11.12)	Cumulative achievement	Target for remaining period up to Mar'13
1	Electrification of Un-electrified (UE)/ De-electrified (DE) Villages	5705	5232	167	4983	249
2	Electrification of Partially electrified (PE) Villages	2672	2230	61	2142	88
3	Providing BPL Service connection	650710	490729	9450	419411	15773
4	Construction of New 33/11 KV Power Sub-station (PSS)	42	42	1	31	11

Note:-

- Balance remaining 55545 BPL of Chatra District may be done beyond Mar'13 upon charging of PSS and villages which will be done after completion of additional 33KV lines involving forest clearance.
- Charging of 10 PSS (Chatra-8, Simdega-2) can be done only after completion of additional 33KV lines involving forest clearance.
- To resolve the source connectivity issues in Chatra & Simdega districts and overloading problem in Giridih district, as decided by MOP in Dec'11, DVC has undertaken construction of 19 Nos. additional 33KV lines of 390 KM. There is involvement of 20 Nos. forest proposals which has been submitted by DVC to Forest Department and is at different levels of forest department for clearance.

b) Financial status: Expenditure incurred during 2012-13 (upto 30.11.12) - ₹5523.06 Lakhs.

ENERGY CONSERVATION

DVC has been making continuous efforts to induct efficient and

modern practices in Energy Management System to increase the availability of power with lower Oil, Coal, Water and Aux. Power consumption vis-à-vis continuous improvement of Net Unit Heat Rate. The Energy Conservation measures taken by DVC are furnished hereunder:

- Improved O&M practices for better and efficient plant operation.
- Gradual replacement of energy meters and provisioning of energy meters wherever required by new higher accuracy static meters for more accurate accounting of Aux. Consumption and equipment performance monitoring.
- Gradual introduction of efficient equipments, e.g. Energy Efficient Cartridge & replacement of recirculation valves of BFP, Energy Efficient motors, Microprocessor based ESP etc.
- Combustion optimization, improvement of condenser vacuum, reduction of unburnt carbon, reduction of air leakage from ducts, expansion joints, restoration of HP heaters – all to optimize system efficiency and aux. power consumption.
- Performance Evaluation Test for taking corrective

measures to improve energy efficiency. Carrying out Energy Audit/Performance test of Thermal Units/ Equipments/Systems/Sub-systems & taking corrective measures.

- An Energy Efficiency/R&M/LE initiative taken up through CEA for comprehensive R&M of underperforming BTPS 'B' Units.

Under National Mission of Enhanced Energy Efficiency (NMEEC), PAT (Perform Achieve & Trade) mechanism has been designed to facilitate the designated consumers (DC) to achieve their Efficiency Target as well as provide incentives to overachieve the targets. DVC Durgapur, MTPS (U#1-4), BTPS 'B' & CTPS (U#1-3) are included under PAT mechanism.

RENOVATION AND MODERNISATION

R&M ACTIVITY STATUS OF DVC

GAS TURBINE

The deliberation for retirement of Gas Turbine is under process. A meeting was held on 21.11.2012 with CEA, OEM and DVC to discuss the above matter.

BOKARO 210 MWX3 & DTPS 210MWx1

Divided into 5 packages, status of which is furnished below:

1. C&I - Sent to Vendors for Budgetary Offer
2. BOILER - Sent to Vendors for Budgetary Offer
3. TURBINE - Sent to Vendors for Budgetary Offer
4. ELECTRICAL - Generator protection relay specification i/p
5. ESP - New Specification being prepared, Layout Drawing being arranged Ash data for Bokaro 500 MW shall be used.
6. CHP R&M OF Bokaro & DTPS to be included after approval of proposal
7. Offer of ABB & INVENSYS received, but not for complete scope.
8. Asked Doosan for Budgetary Offer to reduce unburnt in the forthcoming OH.

For Diagnosis of DTPS 210 MW Unit, Team of 15 persons of JCOAI visited from 10.12.2012 to 14.12.2012.

NON-POWER ACTIVITIES OF DVC

WATER RESOURCES MANAGEMENT

Out of the originally planned eight storage reservoirs in the Damodar Basin, construction of multi-purpose Dams at Tilaiya (1953), Konar (1955), Maithon (1957) and Panchet (1959) by DVC was completed in the First Stage. But the designed storage levels could not be achieved due to constraints in acquiring the required land from the State Governments in respect of Maithon and Panchet reservoirs. In the first phase, total flood reserve capacity planned was 1.51 million acre feet. But due to non-acquisition of land flood reserve capacity achieved was only 1.047 million acre feet, which has been further reduced to about 0.95 million acre feet due to progressive siltation. Maithon and Panchet, being terminal reservoirs, play a vital role in water management in the valley. However, even with the partial implementation of the scheme, DVC, over the years, has been able to achieve moderation of the floods in the lower valley to a great extent. By judicious operation of reservoirs, all the downstream committed requirements are being met in full thus achieving efficient water resources management.

Progress made in water resources management during the year 2012-13 up to 30th November, 2012 is as under:

FLOOD CONTROL

During the year under consideration, South-West monsoon was onset in the entire Damodar Valley Area on 21.06.2012 and the same was withdrawn from the Valley on 15.10.2012. The average monsoon rainfall over the Barakar and Damodar catchments was 914.8 mm and 1112.4 mm respectively against the normal monsoon rainfall of 1115 mm and 1139 mm respectively, the rainfall shortage being 18 % for Barakar and 2.3 % for Damodar Catchment.

There was only one instance of moderate flood release to the tune of 40,000 cusec from Panchet and that was for 45 Hours w.e.f. 2400 Hours on 14.08.2012 to 2100 Hours on 16.08.2012 caused by moderate rainfall in the Damodar Catchment and subsequently high release from Tenughat Dam. During this

flood operation of Panchet, peak Inflow rate of Panchet was 64,000 cusec and maximum combined release from Maithon and Panchet Reservoirs was 45,000 cusec only. No major flood release was required from Maithon Reservoir during the monsoon period of 2012-13.

IRRIGATION

Operation and maintenance of the Barrage and Irrigation System of the Damodar Valley Corporation was transferred to the Government of West Bengal in the year 1964. DVC provides water from its reservoirs, as per advice of the Member Secretary, Damodar Valley Reservoirs Regulation Committee, Central Water Commission, based on the indents placed by the Government of West Bengal, for Kharif and Rabi cultivation in the Lower Valley. Though there is no allocation for Boro Cultivation in the Regulation Manual for Damodar Valley Reservoirs, surplus water, if available, in the reservoirs as on 1st November is allowed for Boro cultivation after taking into account all the committed requirements.

Monsoon rainfall in the Valley was not quite normal. Water supply for irrigation of Kharif crops during 2012-13 was about 8.58 lac acre ft. and the probable area irrigated was to the tune of 8.20 lac acre. The post-monsoon Damodar Valley Reservoirs Regulation Committee Meeting for the year 2012-13 has not been held till date. However, a meeting to review the water availability position in DVC Reservoirs for Boro irrigation during non-monsoon season 2012-13 was held on 07.11.2012, where the availability of surplus water for Boro & emergency power was assessed. These quantities were revised further on 23.11.2012 due to improvement in the storage position of Maithon and Panchet Reservoirs due to delayed rainfall in the valley i.e. after 07.11.2012. Quantity of water that will be available for Boro crops (non-committed) for 2012-13 in the State of West Bengal is 1.8 lac acre feet, over and above the 70,000 acre feet committed for Rabi cultivation.

DRAWAL OF INDUSTRIAL & DOMESTIC WATER

Many industries have come up in the Damodar Valley in the last few decades due to the availability of power and water in the region. Presently, DVC supplies water to 184 agencies. Permitted drawal quantity of the agencies located in the State of West Bengal is 454.78 MGD and of those located in the State of Jharkhand is 461.28 MGD. Demand of water is increasing day by day due to rapid industrialization in the Valley. About 24 new industries in West Bengal are in the fray for allocation of water.

WATER INVESTIGATION AND DEVELOPMENTAL INITIATIVES

As a part of the developmental activities in water resources management, a few projects have been taken up by DVC, the details of which are as follows:

Sl. No.	Name of the project	Status
1.	Survey & Investigation works and preparation of Detailed Project Report for Balpahari Dam over the River Barakar.	Final report received on 19.04.2012. A meeting was held with Govt. of Jharkhand in the month of Oct. 2012. Comments of Govt. of Jharkhand are still awaited.

2.	De-siltation of Panchet Dam Reservoir.	Comments of CWC in the matter is under review.
3.	Preparation of guide curve for operation of Tenughat Reservoir to bring it under integrated operation of DVC Reservoirs.	Finalization of the Tender is under process.
4.	Installation of Automatic Rain Gauge (ARG) in DV area for modernization and expansion of rain gauge network in the valley area.	Work is in progress and it is expected that the work would be completed by March, 2013.
5.	Construction of new embankment from 495 ft. to 500 ft. (Elevations above M.S.L.) around Maithon Reservoir for increasing the flood storage capacity.	CWC, B&B.O, Shillong has visited the site on 20.04.2012 and submitted the report. NHPC visited the site in the month of September, 2012.
6.	Rehabilitation program of Konar Dam.	Recently Konar Dam has been taken up under Dam Rehabilitation and Improvement Program (DRIP) Scheme of CWC, Govt. of India.

ECO-CONSERVATION & AFFORESTATION

SOIL CONSERVATION

During the year 2012, DVC has taken up several initiatives in the field of Soil and Water Conservation, such as, renovation of water harvesting structures earlier created by DVC, development of pisciculture in water bodies/check dams constructed by DVC, experimental project on Mint and Lemon grass cultivation in foreshore farm etc.

Apart from the above, DVC has been providing training on soil conservation, advisory services through soil laboratory, hydrological and silt monitoring of selected watersheds and afforestation in the Valley area (new plantation as well as maintenance of work of green field already created).

SOCIAL INTEGRATION PROGRAMME

The Social Integration Programme was launched in the year 1981 by DVC to fulfill its mandated action under the Section 12 of the DVC Act for "Promotion of Public Health and the agricultural, industrial, economic & general well being in the Damodar Valley".

DVC's commitment towards the community led to the extension of the programme from a mere 25 villages in 1981 and to more than 629 villages of Jharkhand and West Bengal.

An amount equivalent to 2.5% of the preceding year's net profit of the Corporation is allocated for implementing the various activities under SIP and is in the nature of a non-lapsable fund. An amount of ₹ 431.72 Lakh has been spent upto November, 2012 out of total allocation of ₹1803.80 lakh for 2012-13. The balance amount of the allocation is likely to be utilized by March, 2013.

DVC through its SIP activities has been continuing with series of Socio-economic Programmes like interventions in agriculture, animal husbandry etc. Through these activities, DVC is striving for creation of infrastructure according to the needs of the local populace.

Furthermore, DVC Unit Hospitals in the State of Jharkhand and West Bengal also provide free OPD consultation, Indoor

Treatment Bed and Operation procedure to the BPL patients. 263 villages are covered through Medical Mobile Unit serving over 2.75 lakh population.

EDUCATION

The Corporation runs its own 18 schools for the children/wards of its employees and the people of the villages around its major power stations in which the children of the non-DVC employees living in the colonies / townships of these power houses also study. The number of students reading in these DVC schools is approximately 12,647 in the current academic session, i.e., 2012-13.

Besides, there are 3 (three) Kendriya Vidyalayas located in the townships / colonies of DVC which are fully funded by the Corporation in which almost 3259 students are enrolled during the current session. Moreover, there are 4 (four) private schools located in the different colonies/townships of DVC, namely DAV Public School, MTPS, St. John's School, MTPS, De Nobili School, CTPS and De Nobili School, Maithon Dam to which the Corporation provides substantial infrastructural and partial financial support. These four schools together have approximately 3783 students at present. There are yet 8 (eight) other such schools in the townships / colonies of DVC, which get infrastructural assistance in the form of subsidized water & electricity charges, license fees etc. for the buildings and lands allotted to them by the Corporation. Presently, there are almost 4603 students in these schools.

In the said 33 schools, there are altogether 24292 students being the children and wards of the DVC employees and the people residing in the nearby localities/villages in the current academic session. The percentage of the children/wards of the non-DVC employees studying in these schools is almost 81%.

Thus, towards the fulfillment of the Corporation's objective of the socio-economic development of the inhabitants of the villages situated in the close proximity of its major projects, these schools play a key role by way of imparting education because socio-economic development is not at all possible without basic education.

WELFARE OF DVC EMPLOYEES

In every project of DVC there is a Labour & Welfare Officer and also a Welfare Centre wherefrom Books, Journals, Daily Newspapers, Sports Materials etc. are provided. Complaint Committees constituted to combat the evils of sexual harassment of women at workplace are functioning in the projects of DVC as well as at Head Quarters. The general well being of the employees is looked after by the respective Labour & Welfare Officer posted at the project under Personnel Department. Canteens are also maintained by DVC in every project including Headquarters where the DVC employees and their family members can stay at nominal charges during their holiday trips to the sea beach.

Employees are encouraged to participate in Annual Sports as well as in All Valley Tournaments. Even selected teams of DVC participate in various tournaments conducted by All India Power Control Sports Board as well as India PSU Sports Control Board.

BHAKRA BEAS MANAGEMENT BOARD (BBMB)

Bhakra Management Board (BMB) was constituted under Section 79 of the Punjab Re-Organisation Act, 1966 for the administration, maintenance and operation of Bhakra Nangal Project with effect from 1st October, 1967. The Beas Project Works, on completion, were transferred by the Government of India from Beas Construction Board (BCB) to BMB as per Section 80 of the Act and Bhakra Management Board was renamed as Bhakra Beas Management Board (BBMB) with effect from 15.5.1976.

FUNCTIONS

Bhakra Beas Management Board is responsible for the administration, operation and maintenance of Bhakra Nangal Project, Beas Satluj Link Project and Pong Dam including Power Houses and a network of transmission lines and grid sub-stations. The functions of Bhakra Beas Management Board are:

- Administration, Operation & Maintenance of Bhakra-Beas Projects.

- The regulation of the supply of water from Bhakra-Beas Projects to the States of Punjab, Haryana and Rajasthan.
- The regulation of the supply of power generated at Bhakra-Beas Projects.
- Any other function as the Central Government may assign after consultation with the Governments of States of Haryana, Punjab & Rajasthan.
- The Govt. of India in the year 1999 has entrusted additional functions of providing & performing engineering and related technical consultancy services in field of Hydro Electric Projects & Irrigation Projects.

The works being managed by BBMB are broadly grouped as three large multipurpose projects viz. Bhakra Nangal Project, Beas Project Unit-I (BSL Project) and Beas Project Unit-II (Pong Dam).

The Bhakra Nangal project comprises the Bhakra Dam, Bhakra Left Bank & Bhakra Right Bank Power Houses, Nangal Dam,



Pt. Jawaharlal Nehru, Smt. Indira Gandhi, Ch. Lehri Singh, Er. S.D. Khungar at Bhakra Dam Site

Nangal Hydel Channel, Ganguwal & Kotla Power Houses and associated transmission system. Bhakra Dam, the majestic monument across the river Satluj, is a high straight gravity concrete Dam rising 225.55 metres above the deepest foundation and spanning the gorge over 518.16 metre length at the top. The Gobind Sagar Lake created by the Dam has 168.35 square kilometer area and a gross storage capacity of 9621 million cubic metres. The two power houses, one on the Left Bank and the other on the Right Bank, have a combined installed capacity of 1325 MW. The Ganguwal and Kotla Power Houses fed from Nangal Hydel Channel have an installed capacity of 153.73 MW. The Beas Project Unit– I (BSL Project) diverts Beas Water into the Satluj Basin, falling from a height of 320 metres and generating power at Dehar Power House having an installed capacity of 990 MW. This project comprises a diversion dam at Pandoh, 13.1 Km long Pandoh Baggi Tunnel, 11.8 Km long Sundernagar Hydel Channel, Balancing Reservoir at Sundernagar, 12.35 Km long Sundernagar Satluj Tunnel, 125 metre High Surge Shaft and 990 MW Dehar Power House. The Beas Dam at Pong is earth-fill (earth core, gravel shell) dam 132.6 metre high with a gross storage capacity of 8570 million cubic metres. The 396 MW Pong Power House is located in the stilling basin downstream of penstock tunnels.

The total installed generating capacity of the BBMB Power Houses is 2864.73 MW as detailed below :-

Power House	Installed Capacity	Mega Watt
Bhakra (Right Bank)	5x157	785
Bhakra (Left Bank)	5x108	540
Ganguwal	1x27.99+2x24.20	76.39
Kotla	1x28.94+2x24.20	77.34
Dehar	6x165	990
Pong	6x66	396

GENERATION AND TRANSMISSION SYSTEM

The generation during 2011-12 was 12491 Million Units against the target of 10023 Million Units. The generation of BBMB Power Houses has been more than the target for the year by 24.62%. During the current year 2012-13, generation from BBMB Power Houses has been 8057.59 Million Units up to 30.11.2012 against the target of 7583 Million Units. The target for the year 2012-13 is 10023 million units. The likely generation till March, 2013 is 10370 MU.

Power house wise plant availability during the year 2011-12 has been Bhakra Left Bank-99.68% Bhakra Right Bank 98.60% Ganguwal 85.30%, Kotla 98.48%, Dehar 88.11% and Pong 99.94%.

Power house wise plant availability of BBMB Power houses for the year 2012-13 up to 30.11.2012 has been Bhakra Left Bank-99.56%, Bhakra Right Bank 99.99%, Ganguwal 97.70%, Kotla 97.65%, Dehar 84.81% and Pong 99.80%.

Power generation at BBMB Power Houses is being evacuated through BBMB Power evacuation system running into 3705 circuit Km length of 400, 220, 132 and 66 kv and 24 Sub-stations. The Bhakra Beas Management Board power evacuation system operates in an integrated manner in the Northern Grid with its transmission network spread over the States of Himachal Pradesh, Punjab, Haryana and Delhi. The system is interconnected with transmission system of PGCIL and the states of Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir, Uttar Pradesh, Rajasthan, Chandigarh and Delhi. The availability of transmission system during the year 2011-12 has been 99.13%, whereas the availability of transmission system during 2012-13 upto 30.11.2012 has been 99.25%.

IRRIGATION

At the time of partition of India, about 80% of the irrigated area of Punjab went to West Pakistan leaving India with very meagre irrigation resources. The mighty Bhakra- Nangal and Beas Projects changed the scenario and turned Northern India into Granary of the Nation. The Bhakra Nangal and Beas Projects have not only brought Green Revolution in the States of Punjab, Haryana and Rajasthan, but also White Revolution by way of record production of milk. The States of Punjab, Haryana and Rajasthan are being supplied upto 28 million acre feet of water every year which irrigates 125 lac acres of land.

RENOVATION, MODERNISATION AND UPRATING (R,M&U)

R,M&U of old power houses not only gives new lease of life to the machines but is also a significant step towards meeting the aspirations of the nation by adding low cost peaking power to the system.

BBMB has undertaken an ambitious R,M&U of its existing hydro generating units. Through R,M&U, BBMB has already added 311 MW of incremental capacity. Presently R,M&U of 5 No. machines at Bhakra Left Bank Power House is under progress. All the five machines will be uprated from 108 MW to 126 MW each, thus providing total additional capacity of 90 MW to the system. The contract stands awarded to the consortium led by M/S Sumitomos Corporation, Japan. The total cost of RM&U works is ₹489.77 crore approx. (inclusive of cost of equipment to be procured by BBMB i.e. Generator Transformers, Numerical protection schemes and exclusive of IDC, Bank/Finance/Legal charges etc.).

Scheduled date for commencement of RM&U work on the first Unit (Unit No.2) was 1st January, 2010. But due to discrepancy in the metallurgy of the Runner offered for inspection by M/s Hitachi, RM&U work was commenced by the Consortium on 26th April, 2010 with scheduled completion period of 210 days i.e. upto 21st November, 2010.

Due to design and quality issues in Lower and Upper Brackets, mismatching of Bus Duct sections, in-adept handling of site issues and non-deputing of Project Manager by M/s Andritz Hydro Austria and subsequent failure of the first Unit in four attempts of Spinning on 10.07.2011, 01.08.2011, 05.10.2011 and 07.10.2011, detection of metallic particles deposited in Generator on 31.01.2012 and damage Stator assembly & many other components required cleaning/rectification/replacement; completion of RM&U of the first Unit has got delayed. As per the revised schedule, the unit shall be commissioned by January, 2013. 2nd Unit (Unit No.5) is also under RM&U works w.e.f 11th April, 2011, scheduled to be completed by 6th November, 2011 is now likely to be commissioned in April, 2013. The entire work is anticipated to be completed in 2014-15. The Consortium is being persuaded for taking appropriate measures expeditiously for timely completion of works.

UPKEEP OF DAMS AND HYDEL CHANNELS

The upkeep of BBMB dams and hydel channels has been of high standards, which are even considered benchmarks for other hydro projects in the region. Monitoring of the health and behaviour of dams with the help of instruments installed in and around the body of dams has shown normal behaviour. Underwater inspections of dams also did not indicate any abnormality.

Nangal Hydel Channel is running continuously since its year of commissioning i.e. 1954. Inspection, repair and maintenance of Nangal Hydel Channel are being carried out online without any closure. Sand grouting of lining is done regularly and underwater repairs are done with the help of divers. This has not only helped in maintaining an uninterrupted supply of water to the Partner States but has also helped in continuous operation of Ganguwal and Kotla powerhouses for more than 57 years.

ENVIRONMENT MANAGEMENT PLAN

Plantation Programme

BBMB had chalked out a programme to improve ecology by planting trees and shrubs on vacant land at all the Project Stations every year. During the year 2011-12, 8500 plants & shrubs have been planted. During the year 2012-13, 6770 plants were planted upto 30.11.2012. More plants will be planted in the remaining months of the current year.

ENVIRONMENTAL MANAGEMENT PLAN (EMP) FOR BEAS SATLUJ LINK PROJECT

The Environmental Management Plan (EMP) proposed for BSL Project by the National Environmental Engineering Research Institute (NEERI), Nagpur had following two components:

- i) **Short-Term Measures:** These were the mitigation measures for the benefit of the general public like organized promotion of fish production in Suketi Khad & its tributaries, one-time farm management in silt affected agriculture-land, tarring of road along one side of Sundernagar Hydel Channel, improvement of cross-

over bridges on Suketi Khad, plantation at Baggi Control Works (BCW) and along Sundernagar Hydel Channel, provision of cattle-troughs along Suketi Khad, etc. Out of these measures, some were required to be completed exclusively by BBMB and others were to be completed by the H.P.Govt. Deptts. after getting their proposals vetted/financed by BBMB.

The Short-Term measures, which were directly under the control of BBMB, were completed even before onset of monsoon 2003. The measures completed were - improvement & modification of 22 no. cross-over bridges of modified design, metalling & tarring of road along one side of Sundernagar Hydel Channel and tree plantation along Sundernagar Hydel Channel and BCW.

The project of development of fisheries in Suketi Khad and its tributaries costing ₹72 lacs was approved by BBMB and an amount of ₹36 lacs as 1st Installment was released to Fisheries Deptt of HP in October, 2003. The Fisheries Deptt. has executed the 1st phase of the project. The second instalment of ₹36 lacs has been released in Dec.2007.

For one-time farm management, the Agriculture Deptt. of HP, after detailed surveys/studies, informed the State Level 'Steering Committee for BSL Project', under the chairmanship of Principal Secretary (ST&E), Govt. of HP, that this recommendation of NEERI is not techno-economically feasible and practicable. The Committee, thus, decided that the compensation of damages to the affected crops only as per the practice already in vogue, may be continued.

The Animal Husbandry Deptt. of HP has withdrawn the proposal of making provisions of cattle troughs for animals along Suketi Khad corridor, as the dredging activity has been restricted only to monsoon season and silt free clear water is available for drinking purpose of animals in Suketi Khad during lean season.

- ii) **Long-term measures:** The long-term measures suggested by NEERI were to reduce the silt load at Pandoh Dam and for disposal of silt from Balancing Reservoir, Sundernagar.

The Central Pollution Control Board, in consultation with Ministry of Environment & Forest, constituted an Expert Committee in pursuance of the directions of Hon'ble HP High Court, Shimla in 2004, for preparing an action plan for management of silt and advise on other relevant issues with respect to BSL Project. The Expert Committee, after detailed studies for about a year, submitted its final report in the Hon'ble HP High Court, Shimla on 10.05.2005, in which an 'Action Plan' has been proposed for monsoon seasons for BSL Project for next 3 to 5 years. The Hon'ble HP High Court has asked BBMB to implement the Action Plan for 5 years for which monitoring would be done by the Expert Committee'.

During the year 2006-07, BBMB has enhanced the dredging capacity by commissioning the 3rd dredger. The dredging is being done during the monsoon period as per recommendations of the Expert Committee, Bhakra Beas Management Board has implemented the Action Plan proposed as above during the monsoon season of 2010.

MINIMUM FLOW IN RIVER BEAS

In respect of minimum flow from Pandoh dam, BBMB has been following Environmental Management Plan (EMP) prepared by NEERI. In the EMP, NEERI had recommended to maintain a minimum daily inflow in river Beas at Mandi Town to not less than 5% of minimum daily flow upstream of Pandoh Dam. It was also recommended that after accounting for all the Khads/rivers/rivulets confluencing with river Beas in the reach between Pandoh dam and Mandi and flowing under normal present condition, the shortfall, if any, may be made up by release of water from Pandoh dam. However, so far, occasion has not arisen when water had to be released from Pandoh Dam downstream at the cost of power generation at DPH as the contributions from rivers/rivulets downstream the dam were adequate to meet the stipulated requirement of 5% of minimum daily inflows at Mandi Town.

The Himachal Pradesh Govt. vide Notification No. PC-F(2)-1/2005 dated 16.07.2005 and revised Notification No. PC-F(2)-1/2005 dated 09.09.2005 has ordered to release the minimum flow downstream of Diversion Dams throughout the year at a threshold value of not less than 15% of the minimum inflow observed in the lean season into main river body whose water is being harnessed by such projects. Accordingly BBMB has started releasing the minimum stipulated flow as desired vide above said notifications from Pandoh Dam from September, 2005.

CONSULTANCY SERVICES

In an endeavour to synergize the existing potential of BBMB and to boost the interest of its partner states, BBMB Consultancy Wing was introduced.

The following works were carried out by Consultancy Wing of BBMB during the year 2012-13 upto 30th Nov. 2012.

- CDM Project for sale of Certified Emission Reductions (CERs) generated by Renovation, Modernization and Upgrading programme of BBMB for its Hydro Power Stations with World Bank has been undertaken by BBMB.
 - An Emission Reductions Purchase Agreement (ERPA) for the sale of 26,500 CERs upto Dec. 2013 has been signed by BBMB with World Bank and registration of the same for the sale of CERs is awaited from UNFCCC.
 - Second ERPA starting from 31st Dec. 2013 onwards for the sale of 5,65,000 CERs has also been signed with World Bank.

- BBMB was entrusted with the work for organizing school and state level painting competition on Energy Conservation and on behalf of Bureau of Energy Efficiency (BEE) by Ministry of Power, for the students of 4th, 5th & 6th standard of states of Punjab, Haryana & UT, Chandigarh. State Level Painting Competition was organized by BBMB Chandigarh on 9th Nov., 2012 at Inderdanush Auditorium, Panchkula as per guidelines of Bureau of Energy Efficiency (BEE) under Ministry of Power, Govt. of India. Participation detail of schools of States/UT are as under:-

State/UT	No. of Schools	No. of participants	%age increase in participating schools from previous year
Punjab	13447	439337	412.56%
Haryana	9394	472410	277.22%
Chandigarh	140	31794	112.78%

BBMB has been awarded with National Award for maximum increase in participation in respect of State of Punjab, by Hon'ble President of India.

- Operation & Maintenance of 66KV Sub-station, PGIMER, Chandigarh is being carried out by BBMB.
- Technical Audit of BBMB Power Houses has been carried out through External Auditors of M/s Lahmeyer international India(P) Ltd., Gurgaon and progress is being monitored.
- Renewal Audit of Quality and Environment Management Systems carried out through M/s BIS & recommended for renewal of license for another three years.
- BBMB has initiated the process for obtaining Integrated Management System comprising ISO 9001:2008 (QMS), ISO 14001-2004 (EMS) & ISO 18001:2007 (OHSAS for Health & Safety) Certification for Operation & Maintenance of its Power Stations, Transmission Line & Dams, Canal/Water Conducting System.
- Provided Consultancy Services
 - (i) Providing Consultancy Services for 66/.11 KV Sub Station at Indian Institute of Science Education & Research (IISER) Sector-81, Mohali (Punjab).
 - (ii) For testing of Power transformer at 66/11KV sub-station Ambala Cantt. for MES.
 - (iii) For setting and testing of relays at 66 KV and 11KV Sub-station, Ambala Cantt.

HYDROLOGY PROJECT-II

BBMB is participating in Hydrology Project Phase-II under Ministry of Water Resources (Govt. of India) in World Bank funded Project for development of Real Time Decision Support System (RTDSS) for operational management of its reservoirs. BBMB has signed a consultancy contract with DHI,

Denmark for this purpose. During 2011-12, the Consultant has submitted the following two reports which has been accepted by BBMB:

- 5th deliverable - Interim Report 1: Model Development
- 6th deliverable- Interim Report 2: Database Development

Contract for DSS equipment has been signed with M/s Essel Shyam Technologies Ltd., Noida on 17.2.2012 through International Competitive Bidding method after due approval from Ministry of Water Resources and World Bank. Most of the material under this contract has been received in BBMB Stores, Nangal and its installation work has been started. Earth Receiving Station has been established.

For the procurement of Hardware (Computer equipment), contract has been signed with M/s Essel Shyam Technologies Ltd. Noida on 3.8.2012 through National Competitive Bidding method after due approval from Ministry of Water Resources and World Bank. Most of the material under this contract has also been received in BBMB stores, Nangal and its installation at various control centers has been started.

ORGANISING A COMPETENT WORKFORCE:

BBMB manpower is highly motivated and is generally satisfied with wage benefits and lifestyle BBMB has given thrust to the training of its personnel for continually improving their competence and efficiency to support safe, reliable and cost effective operation. BBMB has framed and adopted a Training Policy in line with the National Training Policy of Ministry of Power during its Board meeting held on 24.07.2003.

A number of training programmes are organized through interactive workshops, seminars at all the Project Stations as well as in the Board Secretariat, both for workers, Ministerial staff and officers. Technical Management Motivational Legal Health and Financial topics have been taken up for training through In-house experts, retired BBMB personnel and experts from other organizations, including manufacturers of equipment etc. In addition to this, Institutional Training Programmes are being conducted through reputed institutes/ organizations by sending officers/ officials for training as per their job assignment.

In the year 2012-13 (01.04.2012 to 30.11.2012), In-house lectures were arranged for 597 executives and 1594 non-executives covering 2206 mandays of training. In addition to the In-house programmes 506 executives and 461 non-executives were provided institutional training covering 3581 mandays of training.

BBMB has created its own infrastructure for imparting training to its employees. A lecture hall of seating capacity of 40 persons at SLDC Complex, Chandigarh is utilized to arrange In-house lectures/ workshops/ seminars established in the year 2003. A dedicated Training Centre “Bhakra Beas Training

Centre” commenced operational at Nangal since March 2005. This training centre has a lecture hall of seating capacity of 45 persons with all the latest learning-aids (multimedia), two different model-rooms for Irrigation and Power Wings and a discussion room to impart training to power sector engineers and technicians of BBMB & other power utilities. It has a attached hostel facilities for 30 personnel on twin sharing basis. Training programme on “Distribution, Reforms, Upgrades & Management” (DRUM) has been started at this centre since August’2005 and every month a training on “DRUM” is being imparted in which engineers from the Partner States/ Utilities are also participating. The cost of this training is being borne by the US-AID under the aegis of Ministry of Power facilitated by Power Finance Corporation.

In the year 2012-13 (01.04.2012 to 30.11.2012) 153 no. of participants were trained under the programme with 665 mandays of training. Since the inception of DRUM programme, from August’ 2005 till date 1447 participants with 6083 mandays of training have been imparted to engineers from Partner States Power Utilities.

Besides this, BBMB has also been imparting Induction training to executives from Power Finance Corporation (PFC), New Delhi. Training visits of students of Chandigarh College of Engg. & Technology, Sector 26, Chandigarh to Bhakra Dam & Ganguwal Canal Power House has also been conducted during the current year.

In addition to this under sharing of power sector infrastructure training facilities, BBMB has been providing ‘Hands-on’ support for O&M, On-job site training to PGDC-Hydro students of HPTC(NPTI) at its Power Houses at Nangal. Faculty from BBMB has also been deputed for giving lectures on specialized technical topics to trainees of PGDC Hydro come at HPTC Nangal.

BBMB Hydro Power House personnel including officers are deputed for Simulator Training at Hydro Institute of HPTC, Nangal for upgradation of technical skills to manage the operation and maintenance of Power Houses.

AWARDS

- HRD Deptt. on behalf of BBMB has won the 13th Annual Environment Gold Award & 3rd Annual CSR Silver Award of Greentech Foundation, New Delhi during the current year in the award function held on October’2012 at Hyderabad.
- Council of Power Utilities, New Delhi has awarded BBMB the 5th India Power Award in “Best Maintenance Practices for maintenance of very large dam – Bhakra Dam” at New Delhi on November’2012.
- Adjudged 2nd for Excellence in display in 32nd India International Trade Fair at Delhi.





Shri Pranab Mukherjee, Hon'ble President of India lighting the lamp to inaugurate the National Energy Conservation Day function in New Delhi on 14.12.2012 at Vigyan Bhawan

BUREAU OF ENERGY EFFICIENCY (BEE)

The Government of India has enacted the Energy Conservation Act 2001, and for implementing various provisions in the EC Act, Bureau of Energy Efficiency (BEE) was operationalised with effect from 1st March, 2002. The EC Act provides a legal framework for energy efficiency initiatives in the country. The Act has mandatory and promotional initiatives which broadly relates to Designated Consumers, Standards and Labeling programme for equipment and appliances and Energy Conservation Building Codes (ECBC) for new commercial buildings. The Bureau is spearheading the task of improving the energy efficiency in various sectors of the economy through regulatory and promotional mechanism. Bureau of Energy Efficiency co-ordinates with designated consumers, designated agencies and other organizations recognizes, identifies and utilizes the existing resources and infrastructure, in performing the functions assigned to it under the EC Act.

MISSION OF BEE

The Mission of Bureau of Energy Efficiency (BEE) is to develop policy and strategies with a thrust on self-regulation and market principles, within the overall framework of the Energy Conservation Act (EC Act), 2001 with the primary objective of reducing energy intensity of the Indian economy. This will be achieved with active participation of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors.

OBJECTIVES AND STRATEGIES

The primary objective of BEE is to reduce energy intensity in the Indian economy. In order to translate the objectives into result-oriented action, the broad strategies of BEE include:

- To coordinate policies and programmes on efficient use of energy and its conservation with the involvement of stakeholders.
- To plan, manage and implement energy conservation programmes as envisaged in the EC Act.
- To assume leadership and provide policy framework and direction to national energy efficiency and conservation efforts and programmes.
- To demonstrate energy efficiency delivery mechanisms, as envisaged in the EC Act, through Private-Public Partnership (PPP).
- To establish systems and procedures to measure, monitor and verify energy efficiency results in individual sectors as well as at the national level.
- To leverage multi-lateral, bi-lateral and private sector support in implementation of programmes and projects on efficient use of energy and its conservation.

FUNCTIONS OF BEE

BEE co-ordinates with designated consumers, designated agencies and other organizations; recognizes, identifies and utilizes the existing resources and infrastructure, in performing the functions assigned to it under the EC Act. The EC Act provides for regulatory and promotional functions.

Regulatory functions

The major regulatory functions of BEE include:

- Develop minimum energy consumption standards and labeling for equipment and appliances.
- Develop specific energy conservation building codes (ECBC).
- Activities focusing on designated consumers:
 - Develop energy consumption norms.
 - Certify energy managers and energy auditors.
 - Accreditation of energy auditors.
 - Define the manner and periodicity of mandatory energy audits.
 - Develop reporting formats on energy consumption and action taken on the recommendations of the energy auditors.

Promotional functions

The major promotional functions of BEE include:

- Create awareness and disseminate information on energy efficiency and conservation.
- Arrange and organize training of personnel and specialists in the techniques for efficient use of energy and its conservation.
- Strengthen consultancy services.
- Promote research and development.
- Develop testing and certification procedures and promote testing facilities.
- Formulate and facilitate implementation of pilot projects and demonstration projects.
- Promote use of energy efficient processes, equipment, devices and systems.

- Take steps to encourage preferential treatment for use of energy efficient equipment or appliances.
- Promote innovative financing of energy efficiency projects.
- Give financial assistance to institutions for promoting efficient use of energy and its conservation.
- Prepare educational curriculum on efficient use of energy and its conservation.
- Implement international co-operation programmes relating to efficient use of energy and its conservation.

PROJECTS AND PROGRAMMES

Bureau of Energy Efficiency has already launched the following voluntary and mandatory schemes for promoting Energy Efficiency in India during XIIth Plan, the details of which have been given in Chapter 9 relating to Energy Conservation:

1. Bachat Lamp Yojana (BLY) Scheme
2. Standards and Labelling Scheme
3. Energy Conservation Building Codes (ECBCs)
4. Assistance on ECBC to different projects
5. Energy Efficiency in Existing Buildings
6. Accreditation of ESCOs
7. Agricultural (Ag DSM) and Municipal (Mu DSM) Demand Side Management Scheme
8. Strengthening Institutional Capacity of SDAs Scheme
9. Contribution to State Energy Conservation Fund (SECF) Scheme
10. National Energy Conservation Awards, 2012
11. Painting Competition on Energy Conservation, 2012
12. National Certification Examination for Energy Managers & Energy Auditors
13. National Mission for Enhanced Energy Efficiency (NMEEE)
14. International Co-operation programmes
15. Human Resource Development (HRD) Scheme
16. Energy Efficiency Research Centre for Energy Consuming Sectors.



CENTRAL POWER RESEARCH INSTITUTE, BANGALORE

The Central Power Research Institute (CPRI) was established in Bangalore and Bhopal by the Government of India in 1960. It became an Autonomous Society in the year 1978 under the aegis of the Ministry of Power, Government of India. The objectives of the Institute is to serve as a national Laboratory for furthering applied research in electric power engineering besides functioning as an independent National Testing & Certification Authority for electrical equipment and aid product development. The Institute has set up State of Art Research & Test facilities in the areas of Short Circuit & High Power, High Voltage & Ultra High Voltage, Insulation, Power Systems, Materials, Transmission line towers & accessories.

The Institute has its Head Office & major laboratories at Bangalore. The Institute has its Units at Bhopal, Hyderabad, Koradi, Noida, Kolkata & Guwahati.

The other Activities of the Institute are :

- Power System studies covering Load Flow, Short Circuit and Relay Co-ordination
- Condition Monitoring and Diagnostics Services
- Energy Audit
- Communication Protocol Testing
- Third Party Inspection Services
- Seismic Qualification of Power Equipment
- Customized Training Programmes

IMPORTANT EVENTS



Shri. N. Murugesan, Director General receiving Indira Gandhi Rajbhasha Awards from the Hon'ble President during the function organized on 14th September, 2012 at Vigyan Bhawan, New Delhi

Important Testing/Consultancy activities

Generation

- Remaining Life Assessment study conducted for M/s. Grasim Industries Ltd., Nagda, M/s. IFFCO, Phulpur, M/s. NTPC Ltd., Vindhyachal, M/s. NTPC Ltd., Korba, M/s. Grasim Industries Ltd., Nagda, M/s. CSPGCL, Korba East, M/s. NTPC, Rihand Thermal Power Station, M/s. C S P G C L, Korba East, M/s. NTPC Ltd., Unchahar TPS, M/s. Century Cement, Baikunth, Dist. Raipur, M/s. Badarpur Thermal Power Plant, M/s. Chandrapura Thermal Power Station, DVC, Bokaro, Jharkhand etc.
- In-situ material mix-up checking for boiler tube material for unit-7 for M/s. NTPC Ltd., Singrauli.
- Non-destructive testing (NDT) of the plant machine foundations and buildings for M/s. NTPC Ltd., Kawas.
- Chemical analysis & material hardness of unit-7 Coal Mill BBD- 4722 for M/s. Parli Thermal Power Station, Parli.
- Consultancy programmes pertaining to correlation of raw coal and YGP index and correlation of raw coal and HGI for M/s. BHEL, Hyderabad has been commenced.

Transmission System related studies (major ones)

- Design checking/analysis of 400 kV D/C, 'DD' type towers to M/s. M J Engineering Works, New Delhi.
- Design checking/analysis of 220 kV Cable Termination 'D' type tower of 220 kV multi-circuit 'Z' type tower to M/s. A.P. Transco, Hyderabad.
- Design Checking/approval of 400 kV multi-circuit tower 'MCD' type tower for M/s. Adani Power Ltd., Ahmedabad.
- Design checking/approval of 400kV D/C 400/220kV M/C Monopoles to M/s. Lily Realty Pvt. Ltd., Bangalore.

Diagnostic Studies

- Condition monitoring /diagnostic tests for M/s. KSEB, Kerala, M/s. IOCL, SRPL, Chennai, M/s. BRG Energy Ltd., Hyderabad, M/s. NHPC, Rangit power station, M/s. Reliance, Mumbai, M/s. ROSA Power Supply Company Ltd. (Reliance Power Ltd.), Shahjahanpur, U P., M/s. Punjab State Power Corporation Ltd., Ludhiana, M/s. Areva, Noida, M/s. IOCL, Bongaigaon Pumping Station, Assam, M/s. NHPC, Uri Power Station, M/s. NHPC, Rangit Power Station.

Power System Studies

- Thermography Survey of 220kV switchyard, transformers, generator for Baira Siul Power Station, M/s. NHPC Ltd., Surangani (H.P.).
- Transformer charging and lightning over voltage studies for Goregaon and Saki sub-stations for M/s. Reliance, Mumbai.
- Planning studies for M/s. Uttar Pradesh Power Transmission Company Ltd. (UPPTCL), Lucknow.
- Power systems studies and energy audit for M/s. Reliance Industries Ltd., Hazira.
- Protection audit and study of DTL transmission system for M/s. Delhi Transmission Ltd. (DTL), New Delhi.

Overseas assignments:

- 800A LV service cabinet was tested for M/s. Arabian Fiberglass Products Co., Riyadh.
- FRP cross arms tested for M/s. Intralink Techno Sdn Bhd, Malaysia.
- Capacitor unit tested for M/s. ABB AB, Sweden.
- Refrigerator tested for M/s. BSH EV Aletleri San Ve Tic A.S, Turkey.
- Low voltage cabinet for pole mounted transformers tested for M/s. Al Khalefah Factory for Metal Industries, Riyadh
- Reclosers tested for Schneider Electric, Australia.
- FRP cross arms tested for M/s. HNC Technologies Sdn Bhd, Malaysia.
- Empty metal cabinets tested for Gulf Metal Craft LLC, Dubai.
- Cylindrical type capacitor bank tested for M/s. Electrical Components Sdn Bhd, Malaysia.
- Current transformers (600/5A, 800/5A, 1000/5A) tested for M/s. Mohammed Al-Ojaimi Factory, Riyadh
- 2500A Panel tested for M/s. Al-Khajah Establishment Factories, Kingdom of Bahrain.
- Link boxes tested for M/s. Al Abdul Rahman Contracting Establishment, Al-Khobar, SA.
- IP 55 test on transformer cable boxes for M/s. Voltamp Transformers Oman LLC, Sultanate of Oman.
- 12kV Switchgear tested for M/s. Schneider, Malaysia.
- SC test on LV section of unit substation for M/s. Alfano Electrical Systems, Riyadh.
- Single pole, din rail MCB's - 32A, 40A & 63A tested for M/s. Alfano Electrical Systems, Riyadh.
- Reclosers tested for M/s. Schneider Electric, Australia.

- IP testing of RTU panel for M/s. K. P. Loo Engineering Sdn Bhd, Malaysia
- Temperature rise test on 2500A Panel for M/s. Al-Khajah Establishment Factories, Kingdom of Bahrain.
- SC tests on low voltage cabinet for pole mounted transformers for M/s. Al Khalefah Factory for Metal Industries, Riyadh.
- Low voltage cabinet for pole mounted transformer (800A) tested for M/s. Electro Industries, Jeddah.
- Seismic testing of 2000A Cu sandwich bus trunking for M/s. Powerbar Gulf LLC, Ras Al Khaimah, UAE.
- 33kV Bypass switches tested for M/s. Hubbell Power System Inc, USA.
- 400A & 1000A Disconnecting switch units and 1600A feeder pillar tested for M/s. Indkom Engineering Sdn Bhd, Malaysia

New facilities created under Capital Projects during the year

- Creep Test & Mechanical Test Facility
- Measurement of load loss and no load loss of power transformers up to 50 MVA, 220 kV class (under commissioning)



Test facility for no-load and loss measurement at HPL, CPRI, Bangalore

Other important facilities which are under implementation are :

- Augmentation of 800kV Ac & 800kV DC Transmission System, at UHVRL-CPRI, Hyderabad
- "Setting up of Pre-qualification test facilities for 400kV XLPE Cables
- Centre for excellence for lifecycle management and condition assessment of high voltage substation and power plant electrical equipment
- Augmentation of high voltage, diagnostic, relay, vibration, LED test facilities and infrastructure protection

Visit of Important Representatives from Overseas/ Delegations/Customers

- Shri Junji Okumoto, Chief Specialist, Plant Engineering Group, Electrical Engg. Dept. Thermal & Hydro Power Systems & Services Div., M/s. Toshiba Corporation Power Systems Company, Japan & Shri Shuji Hirono, Deputy Manager, Sales Group, India Project Promotion Department, Thermal & Hydro Power Systems & Services Division, Japan visited our Laboratory with regard to supply of new Short Circuit Generator on 22 Nov 2011.
- M/s Schneider Electric, Riyadh, Kingdom of Saudi Arabia visited Station-2, STDS-CPRI, Bhopal for short time withstand current test. M/s Wintech Power Co. Shanghai, China visited Station-1, STDS-CPRI, Bhopal. M/s TA YA ELECTRIC WIRE & CABLE, TAIWAN visited Power Cables laboratory and had business discussion with the officers of the laboratory
- Officials from M/s. Hitachi Ltd., Japan – Shri Koji Nakagomi, Engineer, Smt Wakana Sata, Project Coordinator, & Shri Takahashi and Shri Binu Vasudev, Managers visited CPRI, Bangalore on 21 & 22 Oct, November 21st, 29 February, and 1 March 2012 with regard to the supply of a new short circuit system for our laboratory. Officials have been appraised of our requirements about the second short circuit generator and its auxiliaries.
- Shri K.P. Lamba, Director, Scottwilson, Shri Darjee Zeffru, Engineer, EEPCO, Ethiopia, Shri Seifu Feyissa, Project Manager, EEPCO, Ethiopia visited CPRI and witnessed short circuit testing of transformer 50 KVA and 100 KVA, for M/s. Marsons Electrical Industries, Agra on 5 March 2012.
- Mr. Jean Marie Schenkebcher from M/s Hager, France visited Station-2 of STDS-CPRI, Bhopal, on 4th April 2012 to see the test facilities on L.T Switchgear.
- A high level delegation led by Dr.Jun Kyung Kim, Vice President and many Senior Officials from Korea Institute of Science and Technology, Seoul, visited CPRI, Bangalore, for discussions on R&D Collaboration
- Visit of M/s. Power Quality Enhancement Sdn Bhd, Malaysia delegation Head, Instrumentation & Monitoring Unit of Tala Hydropower Plant of Bhutan, visited CPRI, Bangalore and had discussions about the test facilities of Dielectric Materials Division, on 16th May 2012.
- Experts from M/s. Mitsubishi, Japan visited High Power Laboratory, CPRI, Bangalore Director Special Projects, M/s. Industrial Research Limited, New Zealand, visited CPRI, Bangalore to explore possible collaboration on the subject of Material Science Applications and Energy.
- M/s Schneider Electric, Riyadh, Kingdom of Saudi Arabia visited Station-2, STDS-CPRI, Bhopal for short time



*Innaugural Function of International Conference on Emerging Trends and Challenges in Transformer Technology
From left to right: Shri Manoranjan Kumar, Economic Adviser, Ministry of Power,
Shri N. Murugesan, Director General, CPRI, Shri A S Bakshi, Chairperson, CEA and Shri Raghavaiah, Aditional Director*

withstand current test. M/s Wintech Power Co. Shanghai, China visited Station-1, STDS-CPRI, Bhopal. M/s TA YA ELECTRIC WIRE & CABLE, TAIWAN visited Power Cables laboratory and had business discussion with the officers of the laboratory.

IMPORTANT WORKSHOP/TRAINING PROGRAMME/ SEMINARS CONDUCTED

- The Institute organized R&D Expo 2012 from 24th – 26th July 2012 during IEEE 10th International Conference on Properties and Application of Dielectric Materials (ICPADM) at CPRI, Bangalore from 24th – 28th July 2012.
- Shri J.Santhosh, Joint Director, CPRI, Bangalore imparted Switchgear Testing Training to M/s.TNBR Utility Engineers in Kuala Lumpur, on 3rd & 4th July 2012
- CPRI, Bangalore and STDS-CPRI, Bhopal jointly organized 2-Day International Conference on “Emerging trends and challenges in Transformer Technology”, at SCOPE Complex, New Delhi, on 13th & 14th September 2012.
- Utility Automation Research Centre, CPRI, Bangalore, organised Two days Workshop on Trends in Substation Automation and IEC 61850 on 4th & 5th October 2012 at CCAR, Bangalore.
- One day National Workshop on “Instrument Transformers Testing as per National & International Standards”, Organized by CPRI, Bhopal on 11th August, 2012.



NATIONAL POWER TRAINING INSTITUTE

National Power Training Institute (NPTI), an ISO 9001 & ISO 14001 organization under Ministry of Power, Govt. of India is a National Apex body for Training and Human Resources Development in Power Sector with its Corporate Office at Faridabad. NPTI had been providing its dedicated service for more than four decades and trained over 1,99,502 Power Professionals in regular Programs over the last 4 decades. NPTI is the world's leading integrated power training institute. NPTI is the only institute of its kind in the world with such a wide geographical spread and covering a wide gamut of academic and training programs in Power Sector. NPTI's committed faculty is providing excellent training in the Power Sector, which is the most important sector among various infrastructure sectors. Training provided by NPTI on Generation Simulators has improved Plant Load Factor of Generating Units, has increased the availability of Transmission & Distribution System and has decreased Aggregate Technical & Commercial Losses. This in turn is providing more power to the country. Thus the training being provided by NPTI is having a cascading effect in the growth of GDP and economy of the country. NPTI operates on an all India basis with manpower strength of 352 including 97 officers through its nine Institutes in different zones of the country as per details below:

A. Northern Region

1. NPTI Corporate Office, Faridabad
2. NPTI (Northern Region), Badarpur, New Delhi
3. NPTI (Hydro Power Training Centre), Nangal

B. Southern Region

4. NPTI (Power System Training Institute), Bengaluru
5. NPTI (Hot Line Training Centre), Bengaluru
6. NPTI (Southern Region), Neyveli

C. Eastern & North Eastern Region

7. NPTI (Eastern Region), Durgapur
8. NPTI (North Eastern Region), Guwahati

D. Western Region

9. NPTI (Western Region), Nagpur

MANPOWER TRAINING AND ACADEMIC PROGRAMS

NPTI conducts the following industry interfaced academic programs with the objective to create a pool of committed and competent professionals equipped with appropriate technical skills to steer the Indian Power Sector:

- Two-Year MBA in Power Management approved by AICTE
- Four-Year B.E./B.Tech. Degree in Power Engineering approved by AICTE
- One Year Post Graduate Diploma Course in Thermal Power Plant Engineering
- One Year Post Diploma Course in Thermal Power Plant Engineering

- Nine Months Post Graduate Diploma Course in Hydro Power Plant Engg
- Six Months O&M of Transmission and Distribution System for Engineers

In addition to the above, several long-term, medium term and short-term training programs in the areas of Thermal, Hydro, Transmission & Distribution and Management, Regulatory affairs etc. are being conducted in the various Institutes of NPTI. Customized training programs for various Power Utilities are also organized round the year.

POWER TRAINING SIMULATORS

NPTI has 500 MW Thermal Power Training Simulator at Faridabad Institute and 210 MW Thermal Power Training Simulator at Nagpur Institute for imparting specialized skills to operation personnel across the country. A 430 MW (2x143 MW Gas Turbine and 1 x 144 MW Steam Turbines) full Scope Combined Cycle Gas Turbine Replica Simulator has been commissioned at NPTI Corporate Office, Faridabad. A High fidelity Load Dispatch Operator Simulator for the National Grid is commissioned at PSTI, Bangalore. A 250 MW Hydro Simulator has also been commissioned at HPTC, Nangal.

HOT LINE TRAINING CENTRE

A facility has been created at NPTI's Hot Line Training Centre, Bengaluru for Live Line Maintenance of Transmission Lines upto 400 kV (first of its kind in Asia) which enables trained personnel to attend to maintenance requirements without power interruptions. Facilities for water washing of sub-station equipments are also available.



PLACEMENT

Our MBA, B.Tech., PGDC students are finding 100% placement in reputed companies like CRISIL, CARE, BSES, KPMG, REL, Moser Baer, Lanco, GMR, Feedback Ventures, Suzlon, Tata Power, Torrent Power, PricewaterhouseCoopers, Deloitte etc.

ACHIEVEMENTS DURING 2012-13

NPTI provided training to 7,293 trainees for a total trainee-week of 81,076 till 30.11.2012.

TRAINING PROGRAMS FOR FOREIGN NATIONALS

Professionals from various countries like Sudan, Bhutan, Sri Lanka, Nepal, Nigeria, African Nationals etc. have undergone training at NPTI's various training Institutes. Some of the major foreign programs are listed below :

- 3 batches of 4 weeks training on 'Best Practices of Steam Power Plant' for 10 engineers in each batch from Sudan were conducted during the period 17.09.12 to 09.11.12.
- 2 weeks Training program on 'Combined Cycle Gas Turbine' for 10 engineers of Sri Lanka from 08.10.12 to 19.10.12
- One week training on 'Non Destructive Testing' for 3 engineers from Bhutan from 27.08.12 to 31.08.2012



INDUCTION TRAINING & CUSTOMISED TRAINING PROGRAMS

NPTI organised Induction Training programs for the Executive Trainees/Graduate Engineer Trainees from the Organisations: POWERGRID, NHPC, BHEL, DHBVNL, UPRVUNL, RVUNL, Lanco Power, GSECL, L&T, Tata Power, NBPL, Avanta Power, Jindal Power, IEPL etc. and customized Training programs for the personnel from the Organisations – NEEPCO, WBSETCL, ASEB, NESEB, IEPL, CSPGCL, HPCL, HPGCL, CSPTCL, Moser Baer, Sarvanthi Group, Alstom Power, Siemens, PCBL, HPVNL, IPGCL, GPEC, BPSCL, NALCO etc.

Solapur Power Industrial Training Institute (Maharashtra):

An Institute has been set up at Solapur which offers NCVT recognized ITI courses as also customised courses for working personnel of Power Sector. The Institute is being managed by NPTI and 3 ITI courses in Electrician, Fitter and Welder trades have been started.

OTHER IMPORTANT ACTIVITIES

System Operator Certification Examination

NPTI's Power System Training Institute (PSTI) is conducting first of its kind Training & Certification of Power System Operators for executives of NLDC, RLDCs and SLDCs. This course equips the System Operators with necessary inputs to take up the System Operators' Certification Examination.

The first on-line examination for System Operator Certification was conducted at 12 Centres across the country on 6.11.2011.

Consultancy Services

In order to serve the industry requirements and make best usage of infrastructure and expertise, NPTI has ventured into providing consultancy services in Preparation of DPRs under R-APDRP (11th Plan). NPTI has also been appointed as REC Quality Monitor (RQM) for Tier-II Inspection of RGGVY Works under 11th Plan for Six (6) States. NPTI has also been awarded the Third Party Inspecting Agency (TPIA) works by a few DISCOMs for the RGGVY works under the 10th Plan & 11th Plan.

NPTI is providing consultancy services to WAPCOS for preparation of DPR for establishment of Power Training Institute in Bhutan. NPTI is also providing consultancy services to NHPC for preparation of DPR for establishment of Hydro Power Training Institute in Jammu & Kashmir.

NPTI also provides consultancy in the field of Human Resources Development including Training Need Analysis, Upgradation of training facilities, Customized Course Designs, Capacity Assessment/Evaluation for Promotion etc.

800 MW Supercritical Simulator

NPTI is in the process of procuring a 800 MW Supercritical Simulator which will be commissioned at NPTI, Faridabad.

Awards and Recognitions

- NPTI has been conferred 4th India Power Awards 2011 instituted by Council of Power Utilities for "Excellent work in imparting training to Power Engineers".
- NPTI has been conferred the 3rd Asia's Best Employer Brand Awards 2012 for "Excellence in Training" for the year 2011-12 by the World HRD Congress, under the category Employer Branding Awards at Singapore.

Vision Ahead

NPTI is furthering the quality of industry-interfaced education and training being provided by its various Institutes by focusing on improvement in the following areas:

- Renovation & Modernization of existing nine (9) Institutes by way of Improvement of infrastructure of the Institute office buildings, labs, hostels etc.
- Augmentation of the existing infrastructure of all institutes by way of creation of more training infrastructure like class-rooms, conference halls, auditoriums, hostels, residential quarters etc.
- Establishment of more Power Training Institutes in the country.
- Starting of new MBA Program in Power Management through correspondence.
- Starting of new part-time MBA program in Power Management.
- Starting of new Executive MBA program in Power Management for experienced professionals.



CHAPTER-31

PUBLIC GRIEVANCES CELL

CEA

The Authority has very well qualified and dedicated personnel to look after various services. The clients can expect prompt response including the details of any formalities required to be fulfilled by them. A Grievance Redressal system headed by a Chief Engineer, designated as Director (Grievance) (In charge of every specific service), is functional in CEA. Staff grievance officers have also been appointed in all the subordinate/ regional offices. Further, in case of non-fulfillment of commitment, they can approach Director (Grievance) and/or Secretary, CEA. The address of Secretary, CEA and Director (Grievance) are given as under:

Shri M.S.PURI , Secretary Central Electricity Authority, 2nd Floor, Sewa Bhawan, R.K. Puram, New Delhi – 110066. Tel. No. 26108476,26105619	Shri BHIM RAI , Chief Engineer and Director (Grievances) Central Electricity Authority, 6th Floor, Sewa Bhawan, R.K. Puram, New Delhi-66. Telefax: 26109396 E-mail – brai1955@yahoo.co.in
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Director (Grievance) will acknowledge the grievance application within two weeks. He will try to settle the issue within three months, otherwise a suitable reply will be sent to the complainant, if the complaint is rejected.

STATUS OF RTI APPLICATIONS FOR THE PERIOD 01.04.2012 TO 31.12.2012

Request / Appeal	Transferred cases received	Total Applications received	RTI applications transferred	Total request/ Appeal accepted
Request	66	100	4	162
Appeal	0	13	0	13

NHPC

Statement regarding Public Grievance (Period: 2012-13. As on 30.11.2012)

S. No.	Details of Aggrieved Person with Address	Details of Grievance in brief	Date of Grievance received	Status of Grievance	Remarks
1.	Aditi Yadav, 8/54 A-13, Ashok Vihar Colony, Islamganj, Lucknow-227105	Transfer of service bond with the new employer	05.04.2012	Replied to Ministry vide letter no. PEE/ Grie./2012/1074 dated 25.07.2012	Matter stand disposed off.
2.	Villagers of Moukhari, Distt-Chamba, Himachal Pradesh	Few area of the village go under water	11.05.2012	Replied to Ministry vide letter no. PEE/ Grie./2012/1256 dated 29.08.2012	Matter stand disposed off.
3.	Rajesh Sharma, 1210, Sector-28, Fraidabad-121008	Related to delay in promotion	27.06.2012	Replied to Ministry vide letter no. PEE/ Grie./2012/1256 dated 29.08.2012	Matter stand disposed off.
4.	Stephen Jose, NHPC Ltd, Sewa-II Power Station, Post bag No. -2 PO-Khairi, Chamba-176325	Extending financial benefits on promotion from retrospective date	23.10.2012	Under examination	

NTPC

Grievance Redressal Mechanism in NTPC

NTPC has a public grievance redressal mechanism in place for dealing with grievances of public at large through which NTPC is committed to redress Public Grievance in efficient and time bound manner. NTPC has a Citizen Charter. The Company Secretariat is the nodal point for redressal of Public Grievances and the Company Secretary has been designated as Director (Grievances) for the Corporation. Grievance officers have also been appointed in all Projects/ Regional Offices. Grievances received from the public are processed as per the guidelines issued by Department of Administrative Reforms and Public Grievances and a monthly status report regarding status of grievances is furnished to the Department. Grievances from employees are being dealt as per staff grievance procedure framed in this regard.

PFC

PFC has a Grievance Redressal System for dealing with grievances of the employees and the public at large. The systems are duly notified and the Nodal Officers ensure quick redressal of grievances within the permissible time frame. PFC has also notified Citizen's Charter to ensure transparency in its work activities. The Charter is available on the website of PFC to facilitate easy access.

DVC

In every project as well as in Headquarters, well defined Grievance Redressal mechanism is set up to see individual grievance. The collective grievances are also considered and discussed with Unions/aggrieved personnel at appropriate level. In fact, all such grievances are amicably redressed/ disposed off within the ambit of the extant rules. DVC is privileged to have very harmonious relations with the employees as well as the Unions.

NPTI

During the period 21 nos. of grievances were received out of which 15 nos. of cases were settled and 06 nos. of cases are under examination. Grievance Redressal Mechanism has been uploaded on NPTI website.

SJVNL

In the matter of redressal of grievances, though SJVNL welcomes an aggrieved employee to meet his departmental head or the concerned personnel department executive and discuss his grievances, nevertheless in view of the growing size of the organization and the accompanying complexities, the need of formal grievance redressal machinery cannot be under-estimated. Keeping in view this aspect, as also the guidelines received from the Government of India, SJVNL has laid down a formal time bound grievance procedure for redressal of the grievances of the employees. SJVN has laid down three stage grievance redressal system.

SJVNL has also made grievance redressal system transparent and accessible to all and in this endeavor, grievance can be lodged on our website www.sjvn.nic.in. Moreover, to make the grievance redressal system more efficient and effective nodal officer has been designated for grievance redressal in project as well as corporate office.

NEEPCO

The NEEPCO Employees Grievance procedure for redressal of individual grievances of employees was formulated and brought into effect from 01-12-2000.

As per the policy, an employee may represent or put forward his/her grievance in writing or in verbatim but recorded if an

employee is not in position to do so in regard to the Rules/ Procedure already framed by the Corporation on the following subjects.

1. Compensation (Wage, payment, Increment, recovery of dues)
2. Working condition (Safety, hazards)
3. Leave, Leave Travel condition.
4. Amenities (allotment of quarter, Medical facility, Entitlements)
5. Nature of job (Job allocation)
6. Promotion (Super cession, acting promotion, pay fixation, Seniority)
7. Service matters (Transfer, continuity of service, superannuation, DOB, Age)

Matter relating to collective bargaining such as wages, allowances, bonus, hours of work and other benefits etc. and also grievance arising out of discharge and dismissal are outside the purview of the grievance procedure.

The grievance redressal mechanism have been categorized at three stages/levels viz. Stage-I, Stage-II and Stage-III for expeditious settlement of grievances. If the aggrieved employee is not satisfied with the decision of the Apex Grievance Redressal Committee, he/she shall have the right to appeal to the CMD. The CMD is authorized to communicate his final decision within 30 (thirty) days.

During the period April to November 2012, only one grievance has been received by the Corporation, which is under examination by the competent authority.



RIGHT TO INFORMATION ACT, 2005

NTPC

NTPC Limited has implemented RTI Act, 2005 in true spirit since its inception. In order to implement the same effectively, NTPC has created an independent RTI Cell at Corporate Centre, headed by the Central Public Information Officer (CPIO). Assistant Public Information Officers (APIOs) have also been appointed at all projects/ stations/ offices of NTPC. There is an Appellate Authority who independently disposes off the appeals.

In compliance with Section 4 of the RTI Act, RTI manual is updated and uploaded on NTPC website annually. RTI portal for benefit of NTPC employees has also been created on intranet which is updated as and when required.

As per section 26 of the RTI Act related to training and awareness of the RTI Act, Workshops on RTI Act are conducted at regional headquarters and at projects to share and deliberate on latest notifications, amendments and other issues for smooth implementation.

During the year 2012-13 (up to 30th Nov. '12), 772 applications were received under the RTI Act. Out of which 720 have been replied till 30th November 2012.

NHPC

In compliance with the provisions of the Right to Information Act, 2005, NHPC Limited provided various documents / records on its website during the year.

To enable nationwide access to information, Assistant Public Information Officers were appointed at each of the Power Stations / Projects / Regional offices / units.

All the applications received under the Right to Information Act were attended to and the information furnished to the applicants as per the provisions of the Act. Shri S.K. Dubey, Chief Engineer (Civil), is designated as the Central Public Information Officer.

POWERGRID

Right to Information Act, 2005 (RTI Act, 2005) is a move to replace a culture of secrecy and control in Public Authorities with one of openness, transparency and participation. The Act proposes to strengthen the democratic setup of our country by providing citizen's access to Information in Public Authorities covering the executive, judiciary and legislature arms.

POWERGRID, a Government of India Enterprise, has taken concrete actions to provide information to the citizens of the country in accordance with the RTI Act 2005. Public Information Officers and Appellate Authorities have been designated at Corporate Centre and Regional Head Quarters/ RLDCs under the provisions of the RTI Act, 2005. Relevant information is also available on its official website.

PFC

Right to Information Act or RTI is a central legislation, which enables the citizens to procure information from a public authority. It also helps to ensure that the information furnished is complete, correct, to the point and timely. RTI Act is a progressive legislation based on citizen's right to know, fundamental right enshrined in the Constitution of India.

Power Finance Corporation Limited implements the Act in its true letter and spirit. In compliance with the provisions of the Right to Information Act, 2005, the Public Information Officer and the Appellate Authority has been designated by the Corporation. The relevant information / disclosures are also made available on the official website (www.pfcindia.com) of the Company. In the current financial year upto 30th Nov., 2012, the Company had received 76 applications under the Act, which have been duly replied/ dealt with under the provisions of the RTI Act, 2005.

REC

An independent RTI Cell has been set up in REC for implementation of RTI Act, 2005 and coordinating the work relating to receipt of applications and furnishing information thereto. RTI Handbook (both in English and Hindi) has been placed on REC website and is updated periodically. The status of RTI applications for the year 2012-13 (up to 30.11.2012) is given below:

Sl. No.	Particulars	2012-13 (up to 30.11.2012) (Nos.)
1.	Applications received	125
2.	Applications disposed off	118
3.	Appeals received by Appellate Authority, REC	7
4.	Appeals disposed off by Appellate Authority, REC	6
5.	Appeals received from CIC	-

NPTI

During the period, 29 applications of RTI were received. All the cases have been replied except one case which is under process.

SJVN

SJVN limited has complied with the various statutory guidelines of the Right To Information Act-2005. The various details as required under the Act are available on our web site www.sjvn.nic.in. In addition to these various other documents such as The Annual Reports, Delegation of Powers & Code of Conduct etc. are also available on the website.

To make the RTI application disposal system more efficient in addition to designated Public Information Officer at Corporate Office senior officers at project sites are also designated as Public Information Officers. It is pertinent to mention that our system of disposing of the applications under RTI is working

efficiently and effectively and applications are responded/ disposed of within prescribed time limits under the Act.

As a step towards transparency in our working we have started Project Information Centers (PICs) at our various projects, from where the information about the projects can be assessed by the stakeholders (PAFs) at free of cost.

NEEPCO

As far as RTI is concerned, from April 2012 to November 2012, 27 numbers of RTI applications have been received, of which 24 numbers have been replied to. As on 30th November 2012, three numbers of applications are pending, replies to which shall be furnished within the stipulated time.

THDC

THDC India Limited has been extending all support to the applicants in providing information to Indian citizens seeking information under RTI Act 2005. The applications received are disposed off as per provisions contained in the Right to information Act 2005. The particulars of Appellate Authority, CPIO, PIOs and APIOs of the Corporation, format for seeking application, and also format for filing appeal to the First Appellate Authority is uploaded in the website of THDCIL- www.thdcil.nic.in. During the year 2012-13 (for the period from 01.04.2012 to 30.11.2012) 128 Nos. of applications seeking information of various natures concerning this Corporation has been received from the citizens of India. The First Appeals received by the first Appellate Authority are being disposed off by issuing Orders within the time period specified in the RTI Act-2005. So far during the year almost all the cases decided by 2nd Appellate Authority (Central Information Commission) are by and large in favour of THDC India Limited.

DVC

In compliance of provisions of the RTI Act, 2005, DVC has taken necessary steps to implement the Act. In order to strengthen the system of RTI implementation in DVC, a RTI Cell has already been set up in DVC HQs, Kolkata. The RTI Cell acts as a nodal point for all RTI implementation issues within DVC HQs as well as the field formations of DVC. The Cell is created in the Secretariat Department, DVC HQs, Kolkata and is headed by a Deputy Secretary & CPIO under the guidance of Additional Secretary, DVC. There are one Transparency Officer and nine Public Information Officers (PIOs) in DVC

for its HQs and the major projects. The Dy. Secretary & CPIO, DVC, Kolkata takes care of compliance of the provisions of the RTI Act, 2005 and overall monitoring. During the period under review, all RTI applications received were dealt with due importance by the respective PIOs in co-ordination with the concerned departments. All out efforts were made to reply all RTI applications received within the specified time. Apart from above, regular monitoring is done from the HQs on functioning of the PIOs posted at different projects of DVC. In case the applicant does not receive a decision/reply within the specified time or is aggrieved by a decision of the PIO, he/she may within thirty (30) days from the receipt of such a decision prefer an appeal to the Appellate Authority, DVC under the RTI Act, 2005. Shri A Bakshi, Director (HRD), DVC, Kolkata-700054 is the Appellate Authority, DVC.

For more details regarding the application format, address and contact details of the Appellate Authority, Transparency Officer and CPIO/PIOs, anyone can access to DVC's website at www.dvc.gov.in.

BBMB

Right to Information Act, 2005 is in place and fully operational w.e.f 12th October, 2005. The Act provides for setting out the practical regime of right to information in order to promote openness, transparency and accountability in public offices. BBMB has adopted and implemented the Act in letter and spirit. The necessary infrastructure has been provided for operationalization of the Act. BBMB has designated nine Asstt. Public Information Officers (APIOs) and eight Public Information Officers (PIOs) at different locations. In line with requirements of the Act, eight Appellate Authorities have also been designated. The official Website of BBMB (www.bbmb.gov.in) depicts official designations, addresses and phone nos. of these officers. Comprehensive details regarding the procedure in respect of applying for information have been given on the website. The information regarding 17 no. manuals which have been prepared as per provisions of Section 4(2) of the RTI Act, is also available on the website. The information is regularly updated from time to time as per provisions of the RTI Act. The quantum of applications received under the Act, appeals made & other related details are given in **Annexure-I**.

Annexure-I

Details relevant to RTI Act for the year 2012-13 (As on 30.11.2012)

Sl. No.	No. of requests received	No. of decisions	Decision where applications for information rejected														Number of cases where disciplinary action was taken against any officer in respect of administration of this Act.	Amount of Charges collected (₹)				
			No. of times various provisions were invoked																			
				Sec. 8 (1)										Other Section								
				A	B	C	D	E	F	G	H	I	J	9	11	24	others					
1.	212	212	NIL	NIL										NIL				NIL	9,029/-			

OTHER IMPORTANT ACTIVITIES

CHAPTER-33.1

IMPLEMENTATION OF OFFICIAL LANGUAGE

Ministry of Power

Ministry of Power, its attached and subordinate offices and public sector enterprises, Autonomous Bodies, Boards, Societies and Institutions under administrative control of the Ministry of Power continued their efforts in ensuring effective implementation of the Official Language Policy of the Government and promoted the progressive development of Hindi in day to day activities of the Ministry.

The Ministry ensured full compliance of Section 3(3) of Official Language Act and rule 5 of Official Language rules, 1976 in the Ministry and offices under the administrative control of the Ministry.

Ministry and offices under the administrative control of the Ministry, are making several efforts to encourage progressive use of the Official Language. A Scheme is in vogue for awarding a Vidyut Rajbhasha Shield for promoting the progressive use of Hindi through healthy competition under which the offices situated in region "A", "B", "C" doing well in Hindi, are awarded a shield.

The Kendriya Pustak Lekhan Puraskar Yojna encourages officials to write original books in Hindi relating to the power sector. To encourage more technical books in Hindi on the above subject the prizes instituted under the scheme include a first prize of ₹60,000/-, second prize of ₹40,000/-, third prize of ₹25,000/- and a consolation prize of ₹10,000/-. Along with the cash award, an appreciation letter is also given under the scheme. This scheme is in operation since 01 January, 2003.

To make more and more use of Hindi in administrative work, an appeal was issued by the Hon'ble Minister on the occasion of Hindi Diwas. In compliance with the Official Language Policy, Hindi Pakhwara was celebrated from 01st September, 2012 to 15th September, 2012. During this period essay competition, noting, drafting and standard technical glossary competition, picture description competition, poetry competition, debate competition and Hindi typing competition were organized for the officers and employees of the Ministry. Officers and staff of the Ministry participated in these competitions with great enthusiasm. The winners were given certificates and cash prizes.

During the year new initiatives were introduced for the promotion of Hindi using scientific tools to train officials in Hindi, especially those from the non-Hindi speaking areas/ category. With the assistance of IIT Kharagpur, a 'Hindi Lab' has been established at Damodar Valley Corporation. In this Hindi Lab, with the use of Audio and Video tools, a group of five non Hindi speaking officials are imparted Hindi language skills. They are taught to read, write and speak in Hindi which empower the officials to deliver lectures in Hindi. The Hindi training helps officials in overcoming their barrier in communicating in Hindi. Thus the true spirit of promoting Hindi, is being practiced in this Ministry. This initiative is an unique experiment being adopted for the first time in the Government of India.

A comprehensive inspection programme has been prepared to review the progressive use of Hindi in the attached and



Meeting of Hindi Salahkar Samiti, September, 2012 held in Jammu & Kashmir

subordinate offices, Boards, organization and public sector undertakings under the administrative control of the Ministry and these inspections are being carried out from time to time.

Officers of the Ministry also participated in the inspection programmes being done by the Committee of Parliament on Official Language. During the year 20 Offices have been notified under the rule 10(4) of the Official Language Rules, 1976.

As per the targets fixed by the Department of Official Language, meetings of Official Language Implementation Committee of the Ministry were organized regularly on 05th June, 2012, 20th September, 2012 and 30th November, 2012. Immediate action was taken on the important decisions taken in these meetings i.e. organizing Hindi workshops, Regional Rajbhasha Sammelan/ Seminars, recruitment against the vacant posts of Hindi, bilingual advertisements in newspapers and conducting of refresher course in Corporation/ undertakings.

CEA

In CEA this year Hindi correspondence percentage remained around 85%. This year Hindi correspondence percentage in region "A" is 80.47%, in region "B" 68.15% and in region "C" 49.48% respectively.

In CEA the OLIC meetings are held regularly and in regular intervals under the Chairmanship of Chairperson, CEA. Prompt action is taken on the decisions taken in these meetings.

Once in a year a meeting of all Chief Engineers of CEA is held under the Chairmanship of Chairperson, CEA in which progress of Hindi in their respective field is discussed and action is taken accordingly.

All efforts are being made to enhance the usage of Hindi in official work in CEA. All incentive schemes sponsored by the Deptt. of Official Language are in operation in CEA. In addition a Roving Shield is awarded to the Division/Section/Unit who does maximum work in Hindi throughout the year. During the year, Rajbhasha Shields have been awarded to those 8 Divisions/Sections where maximum correspondence is made in Hindi with Regions "A" & "B". Apart from above, CEA is running a Cash Award Scheme namely Kendriya Vidyut Pustak Lekhan Puraskar Yojna on All India basis to promote original book writing in Hindi from the calendar year 2003. Under this scheme prize money is - First Prize - ₹60,000/-, Second Prize- ₹40,000/-, Third Prize - ₹25,000/- and one consolation prize of ₹10,000/- only. Altogether ₹1,35,000/- has been earmarked for this scheme.

Internal OL inspections of various sections is done by the Hindi officers from time to time so that the shortcomings, if any can be reviewed. An inspection of the office by the Parliamentary Committee on OL was done on 12.11.2012 in which the members of the Committee appreciated the efforts of CEA in propagation of Hindi and gave valuable suggestions for achieving the targets laid down by the Deptt. of Official Language.

Hindi Books are regularly purchased for library of CEA as per the targets laid down by the Official Language department. E-Books are also purchased as per the directions of Deptt. of Official Language.

During the year, Four Hindi workshops were also organized in which about 200 employees participated. A Unicode based one day computer training programme was also organized in which 20 CEA officials participated.

Now in CEA all Officers and employees are trained in Hindi Language and newly recruited officers/ employees are being trained in Hindi Language Courses/Shorthand/Typing classes organized by CHD, Deptt. of OL from time to time.

In CEA Hindi Fortnight was organized from 14.09.2012 to 29.09.2012 and prize distribution ceremony was held on 15.10.2012. During the Fortnight four competitions were held namely General Essay, Noting Drafting, G.K. Test and Hindi dictation competition only for MTS officials in which most of the officers and employee had participated. The winners of these competitions were given the cash award. Chairperson, CEA distributed the Prizes and appreciation letter to the winners and the function concluded with cultural programme.

NTPC

Several steps were taken for the propagation and implementation of Official Language Hindi in the Corporation. The progress of the usage of Hindi in our Eastern Region HQ-II, Bhubaneswar, Hydro Region HQ., Noida, Koldam Hydro Power Project, Badarpur Thermal Power Station, Southern Region HQ., Secunderabad, Simhadri Super Thermal Power Project and Korba Super Thermal Power Station offices were inspected and proper suggestions were given to the Heads of the Offices in this regard. Meetings of Official Language Implementation Committee were held on June 20, 2012 and September 18, 2012 in which the implementation of Hindi in the Organization was reviewed thoroughly. Hindi Diwas and Hindi competitions were organized during Hindi fortnight from 1st to 14th September, 2012 in the corporate office as well as in all projects of NTPC. The winners of Hindi competitions were awarded in the Hindi Diwas function on September 14, 2012. Corporate Hindi Magazine "Vidyut Swar" was awarded All India Second Prize by Hon'ble President of India Shri Pranab Mukherji. Hindi workshops were conducted for the employees of Engineering, Nodal Officers, CENPEEP, Finance, Consultancy, Operation, Commercial, Human Resources Departments, NETRA and PMI as well as in the projects in which renowned Hindi scholars inspired the participants to use Hindi in day-to-day official work. The Second Sub-Committee of the Committee of Parliament on Official Language had inspected our Hydro Region HQ., Noida on June 6, 2012, Koldam Hydro Power Project on July 16, 2012, Southern Region HQ., Secunderabad on October 1, 2012 and Simhadri Super Thermal Power Project on November 3, 2012 to review the progress of Rajbhasha Implementation and appreciated our efforts.

NHPC

The provisions of the official language Act and Rules were complied with during the year. The Company has made sincere efforts to increase the progressive use of official language in accordance with the policy of Government of India.

Hindi Fortnight was observed in the Company from 01 to 14 September, 2012. Various Hindi competitions and book exhibition was organized during the Hindi Fortnight at Corporate Office. Prizes were distributed to the winner participants & 41 employees were rewarded for doing Hindi Noting/Drafting during the year. Rajbhasha magazine "Rajbhasha Jyoti" was also released on this occasion.

Regular quarterly meetings of OLIC were organized and Hon'ble CMD himself chaired the meetings at Corporate Office. Hindi Kavya Path & Nibhand Pratiyogita were also organized for employee's children at NHPC Residential Complex. Various incentive schemes have been introduced to encourage the use of Hindi in the Company at various levels. Prizes were given to employees under incentive schemes.

At corporate office 16 computer workshops were organized during the period till now and 151 employees were imparted training in these workshops. Training Classes were conducted to impart training of Hindi Language, Hindi typing & Hindi Stenography.

A regional Rajbhasha Sammelan was organized under the aegis of Ministry of Power on 23rd May, 2012. This Sammelan was inaugurated by Dr. Ratnaker Pandey, former Member of Parliament and prominent Hindi Author and Director (Pers.) Sh. R.S. Mina. The officers of PGCIL, NTPC, BBMB, NPTI, besides our Corporations officers also participated in this Sammelan.

A Hindi Kavya Goshthi was organized on 21st Nov-2012, in the Corporate Office. 14 employees recited their original poems on this occasion. A large number of employees attended this programme.

The second Sub Committee of Parliament on Official Language reviewed the progress of Rajbhasha related work of Teesta Low Dam-IV Project at Darjeeling (West Bengal) on 31.05.2012 and Parbati-II project in Kullu (Himachal Pradesh) on 13.07.2012. During Inspection Parliamentary Committee appreciated the work done by our corporation for progressive use of official Language. In addition Rajbhasha Inspections were conducted during the year of all Departments of Corporate Office and Power Stations/Project/Regional Offices. Senior Officers i.e. Director/Executive Directors also conducted Rajbhasha Inspection at Power Station/Project/Offices.

Two meetings of Town Official Language Implementation Committee were organized in NHPC Corporate Office on 08.06.2012 and 29.10.2012, wherein status of Implementation of Official Language in offices of Central Government located in Faridabad was reviewed. Two Hindi Computer workshops were also organized on 18th May, 2012 and 22nd August, 2012 for TOLIC member offices. Five Hindi Competitions were also

conducted on 15-19 October, 2012. "Nagar Saurbh" Magazine was Published & released on this occasion.

NHPC has been awarded second prize by Ministry of Home Affairs, Govt. of India for the year 2010-11 under Indira Gandhi Rajbhasha Award Scheme for outstanding work in implementation of Official Language. The Award was received by CMD, NHPC from President of India Sh. Pranab Mukharji at Vigyan Bhawan, New Delhi on 14.09.2012.

NHPC also received Rajbhasha Shield First Prize and Citation for outstanding work in Implementation of Official Language amongst Power Sector under NTPC Rajbhasha Shield Yojana on Behalf of Ministry of Power.

In NHPC during the remaining period of current Financial year 2012-13 various programmes i.e. quarterly meeting of Official Language Implementation Committee, Publication of 'Rajbhasha Jyoti', Hindi Pustak Pathan Saptah, All India Rajbhasha Sammelan and All India Kavi Sammelan will be organized upto March, 2013.

POWERGRID

POWERGRID, as a company, is sensitive towards its heritage, social and cultural concerns. In pursuance of Govt. of India's Rajbhasha policy to promote Indian languages and Rajbhasha "Hindi", POWERGRID has made all efforts to integrate use of Hindi in its office works at all levels. POWERGRID has proved its commitment to ensure the implementation of Rajbhasha policy and to achieve the goal as laid out in the Rajbhasha Annual Plan.

POWERGRID has made all efforts to ensure use of Hindi in all aspects of management at all levels to achieve the goal as laid out in the Rajbhasha Annual Plan of the Government of India. To increase the use of Official language various activities like Annuvad Abhayaas Karyakram are organized for every Department; to enhance the working knowledge through organizing Computer trainings and Hindi classes; to change the mindset of the employees. Lectures on heritage, social and cultural concerns are also being delivered by eminent scholars on regular basis.

Various activities are undertaken to publicize Hindi. Every year, Akhil Bhartiya Rajbhasha Sammelan, Kavi Sammelans (Poetry sessions), Dramas, publication of Hindi Magazines (GRID DARPAN), various competitions and meetings etc. are also organized. POWERGRID has established one of the best Hindi libraries in public sector wherein popular / literary magazines and news papers have been made available.

To inspire, the employees working in Hindi are nominated for external Hindi Training Programmes. Attractive incentive schemes for employees working in Hindi have been implemented. Also various award and reward schemes have been introduced to encourage employees to actively participate in promotion of Hindi, by giving articles/write ups for in-house magazines, reading library books etc.

The effort made by POWERGRID has been applauded in many forums during the year 2012-13. POWERGRID has received under mentioned rewards and awards whose details are given below:

1. Various awards given by Town Official Language Implementation Committee (TOLIC) :-
 - Corporate Office Gurgaon: Corporate Office Rajbhasha Patrika GRID DARPAN received First prize and award for active participation for organizing Computer Sangoshthee for members of TOLIC.
 - Kolkatta Office: Second Prize Rajbhasha Shield.
 - Siliguri : First Prize Rajbhasha Shield
 - Jammu Office: First Prize Rajbhasha Shield and Certificates
 - Jammu Office: Rajbhasha Shree Samman and Rajbhasha Shilpi Samman to Sr. Hindi Officer and Se. Officer.
 - Shillong Office: First Prize Rajbhasha Shield
 - Secunderabad Office: First Prize Rajbhasha Shield
2. Awards received from Rajbhasha Vibahg, Ministry of Home, Govt. of India:-
 - RHQ Secunderabad Office: Second Prize Rajbhasha Shield & Certificate.
 - RHQ Jammu Office: First Prize Rajbhasha Shield & Certificate
3. Inspections and discussions done by Hon'ble Committee of Parliament on Official Language:-
 - Thanks was given to Corporate Office, Gugaon for active participation and co-operation during Oral Evidence and discussion programme with the Drafting and Evidence Sub-Committee by Hon'ble committee of Parliament on Official Language.
 - The second sub-committee of Hon'ble committee of Parliament on Official Language inspected the Gangtok Office on June 04, 2012 and given appreciation letter after inspection.
 - 'Grid Darpan' has bagged 'Rajbhasha Grih Patrika Samman' by Rashtriya Hindi Academy, Rupambare.
 - ED (LD&C) has been honoured with 'Hindi Karyanvayan Rattan Samman' for sterling performance in Official Language by Parivartan Jan Kalyan Samiti, Delhi.

PFC

Power Finance Corporation Limited (PFC) believes in creating possibilities of better tomorrow. Following the same principle and to ensure the effective implementation of Official Language Policy in the Corporation, so far, meetings of the Committee were organised for each quarter to review and find out solutions for better implementation of Official Language Policy either under the chairmanship of CMD, PFC or Deputy Chairman of the Committee i.e. Director (Commercial) with all the directors, executive directors and Heads of Units being the members of the Committee.

3 no. Hindi workshops and computer training programmes for 73 no. Senior Executives of the Corporation at the level of Executive Directors, General Managers and Deputy General Managers were organised with a view to improve their efficiency in doing their day to day official work in Hindi. Internal inspections of 05 no. of units was conducted with a view to discuss and find out the areas to work in Hindi by respective units and guided them accordingly.

To create a Hindi oriented environment in the Corporation, Hindi Day and Hindi Month were celebrated on 14th September and from 14th September to 13th October, 2012 respectively. During the Hindi Month, various competitions, like Quiz, Antyakshari, Chitrabhivyakti, Vartani shodhan, Sansmaran, Katha Vistaran partiyoga were organized. In addition to these, a Kavya Goshthi of PFC employees was organised wherein employees of PFC recited poems written by themselves. One competition for casual employees was also organised.

In the internal MoU Targets of the Corporation, targets related to Rajbhasha Hindi have also been fixed for the year 2012-13. Copies of Annual Programme for the year 2012-13 published by Department of Official Languages, Ministry of Home Affairs were circulated amongst all the employees and the same was discussed in the Official Language Implementation Committee Meeting held on 28.06.2012.

April-June, 2012 issue of Corporation's Quarterly magazine 'Urja Deepti' was dedicated to Gurudev Rabindra Nath Tagore. Special feature of the issue was that unique collection of various stamps released by India as well as other countries from time to time and his paintings were also published in the magazine.

Annual Report of the Corporation was published in bilingual form. CMD's message was circulated in Hindi also in Annual General Meeting of PFC. Centralised diary and despatch system of the Corporation was got computerised. On the first inside cover of file covers, small standard notings were got printed so as to help the employees in doing their day to day work in Hindi.

Officials of Department of Official Language, Ministry of Home Affairs conducted inspection of Head Office on 23.08.2012. They commended the efforts made by PFC in implementing Official Language Policy in the Corporation and made certain suggestions which have either been complied with or being implemented. PFC carried out all the co-ordination work successfully for Parliamentary Committee Inspection of Ministry of Power in July, 2012 and also for the meeting of Hindi Advisory Committee of Ministry of Power held on 24.10.2012 in Srinagar.

On the occasion of Foundation day on July 16, a cultural programme was organised in Hindi. During the 'Vigilance Awareness Week', three competitions were organised in Hindi also.

All these efforts were motivational tools in creating possibilities of better and progressive use of Hindi in the Corporation.

REC

Progress achieved during the current year 2012-12 (Upto 30th November, 2012).

- In compliance with the directives of Department of Official Language, Ministry of Home Affairs, strenuous efforts have been made to achieve Annual Programme 2012-13.
- To encourage employees, all the incentive schemes introduced by the Government of India have been implemented in the Corporation.
- A Regional Rajbhasha Sammelan/Workshop for Southern Region Project Offices was organized by the Corporation on 6th July, 2012 at Amar Sewa Sangham Ayikudi. Twelve Officers/Employees participated in this workshop.
- A Hindi Workshop was also organized on 24 & 25 August, 2012 at Chayal Solan (HP) for Senior Officers/Executives of the Corporation, wherein 25 Senior Officers participated. Joint Director (Rajbhasha) from Ministry of Power was also present.
- Quarterly Hindi Magazine 'REC Darpan' also launched for June, 2012.
- Hindi Pakhwara organized from 14.09.2012 to 28.09.2012 in Corporate Office, in which nine competitions were organized for Senior Officers, Middle Level Officers & Employees including class fourth also.
- A Prize Distribution Function was also organized on 06.11.2012. Winners of competitions were awarded Certificates of Merits & cash prizes. Famous Hindi Poet Shri Surender Sharma, Shri Hari Om Pawaar and Ms. Sita Sagar charmed with their satirical poetry in Hindi and motivated to work in Rajbhasha. Dr. P.C.Tandan, Sr. Reader, Delhi University, in his address emphasised on the usage of Rajbhasha. The function was chaired by CMD, REC. Cash Prizes and Certificates were given to encourage employees for doing their original work in hindi during the year 2011-12
- REC honoured with 'Rajbhasha Kirti Sammaan' by Bharatiya Rajbhasha Vikas Sansthan in 2012.
- Hindi Essay Competition was organized on 19.11.2012 in aegis of NRAKAS and 32 Organisations participated in this programme.
- Hindi books in required ratio were purchased during the year.
- All publications, Press Releases, Annual Report, MOUs issued bilingually.
- To give impetus to the correspondence in Hindi, Standard Forms made available on INTRANET.

The details of targets achieved during the period from 01.04.2012 to 30.11.2012 and likely to be achieved upto

31.03.2013 are as mentioned below:

Sl. No.	Particulars	Achievement upto 30.11.2012	Targets likely to be achieved upto 31.03.2013
1.	Inspection of Internal Divisions	7	12
2.	Inspection of Project Offices	5	12
3.	Meetings of Official Language	2	4
4.	Hindi Workshop	4	8
5.	Hindi Website	100%	100%

NEEPCO

The Corporation is making all out efforts to implement effectively the Official Language Policy of the Government of India at its Corporate Office as well as Projects and other offices. Efforts were made to issue papers referred to in Section 3 (3) of the Official Language Act in bilingual. A centre of Hindi Training is functioning at Corporate office, Shillong conducting regular classes of Prabodh, Praveen and Pragya courses. During the year, 93 employees were nominated for Hindi Language Training under regular course and 15 employees posted at project sites were nominated for Correspondence course. The contact programme was organized under Hindi Teaching Scheme at project office to provide guidance to the employees attending Hindi Training. Cash Awards were given to the employees for passing Hindi examinations as per eligibility. To facilitate the employees for doing their official work in Hindi, 04 (four) Hindi workshops were organized and 71 officers & employees were trained in the workshops. Training materials were provided to the employees during the Workshop. In the House Journal - 'NEEPCO NEWS' valuable information relating to use of Hindi were provided for the guidance of the employees. NEEPCO website is also available in Hindi.

Rajbhasha (Hindi) Pakhwara was observed and "Hindi Divas" was celebrated at the Corporate office as well as in the projects and other offices of the Corporation during the year to create awareness and to encourage the employees for doing their official works in Hindi. Various competitions were conducted in Hindi and attractive prizes were awarded to the participants. Hindi patrika "NEEPCO JYOTI" was published from Corporate HQ, Panyor Pravah was published by project office on the occasion. An exhibition was also organized at Corporate office where the achievements made in the use of Official Language Hindi in the Corporation were displayed.

Rajbhasha (Hindi) Pustakalaya has been functioning at Corporate office, Shillong which was further enriched with valuable books. Dictionaries, Glossaries and other reference books are also available for the use of the employees. Hindi News Papers and periodicals are available in the Pustakalaya. In sub-ordinate offices also reference books in Hindi were made available for the use of the employees. Since installation

of Hindi Software in Corporate office as well as other offices, a remarkable progress has been made in the use of Hindi in official works.

SJVN

In order to ensure the implementation of the Official Language Policy of the Govt. of India, all possible efforts have been made by the company to achieve the targets as specified by the Department of Official Language. Company has received awards in recognition for these efforts.

Under section 3.3(i) of Official Language Act cent percent documents were issued bilingually. All the letters received in Hindi were replied to in Hindi.

Company's website is already in bilingual form and time to time it is updated.

To encourage executives and non-executives to do their entire work in Hindi a number of incentive schemes are under implementation namely 1) Payment of amount equivalent to one increment every month for doing whole office work in Hindi, 2) Honorarium for writing technical papers in Hindi, 3) Cash prize on passing Hindi typing examination and 4) Cash prize for Best write-up published in in-house Hindi journal "Himshakti". Under these schemes 385 executives and non-executives have received prizes amounting to ₹3,90,170/- approximately.

Under the new "Rajbhash Samman" Scheme ₹25,000/- will be paid to each employee doing best work in Hindi in different Projects including Corporate Office and "Rajbhasha Uttkrishtha Samman" of ₹30,000/- to the employee doing best work in Hindi at Corporate Level. This year seven employees were awarded cash prizes under the scheme.

To impart training to the executives and non-executives to do their day-to-day work in Hindi by organising Hindi workshops/seminars is a continuous process in the company. 06 Hindi workshops/seminars have been organised and 150 no. of executives and non-executive have been trained. Organising of Hindi quiz competitions on national/important occasions is a regular feature and besides this a number of competitions were also organised during "Hindi fortnight" in which 492 no. of executives and non-executives were awarded cash prizes amounting to ₹3,02,000/-.

To popularise Hindi in a big way, a 'Akhil Bhartiya Kavi Sammelan' was also organised on 10 November, 2012.

Ministry of Power, Govt. of India has awarded "NTPC Rajbhasha Shield (IIIrd Prize)" to SJVN. Hon'ble Minister of State for Power presented this award to the Chairman & Managing Director of SJVN, Sh. R.P.Singh in the Meeting of Hindi Advisory Committee of the Ministry of Power on 24.09.2012 at Srinagar (J&K). Besides this, Town Official Language Implementation Committee, Shimla awarded the Company with IIIrd Prize for its outstanding efforts towards implementation of Official Language. Vice Chancellor of H.P. University gave this award to GM (P&A) on 10.04.2012 in a ceremony at Shimla.

To give impetus to the multi-facet talent of employees an in-house bi-annual Hindi magazine "Himshakti" is being published and circulated. Out of total expenditure on purchase of books, 64.03% of amount has been spent on purchase of Hindi books.

THDC

The Corporation has made continuous efforts to enhance the progressive use of Hindi in day to day official working according to the guidelines of the Official Language Policy of the Govt. of India.

During the year, 07 (Seven) Hindi workshops have been conducted at Corporate office, Rishikesh and subordinate units/Offices for the motivation of the employees. Hindi Fortnight was conducted from 14th to 28th Sep, 2012 at all the offices of the Corporation. During the Fortnight various competitions like Hindi Essay, Noting & Drafting, Translation, Poetry, Handwriting, Typing, Debate and Hindi Quiz etc. were organized. Employees participated with great zeal and enthusiasm. Besides the competitions conducted during Hindi Fortnight, a Hindi Essay Competition was organized on 13.07.2012 in Corporate office, Rishikesh under the aegis of TOLIC and sponsored by THDCIL, in which apart from THDCIL a number of Officers and employees from the member offices of TOLIC participated in this competition. To re-energize the employees towards Hindi, a Kavi Sammelan was organized on 20 Apr, 2012 in Tehri Unit. In addition, during the year IIIrd Edition – Jan to June, 2012 of the Hindi house Journal "Pahel" was published with the interesting and knowledgeable material.

Quarterly meetings of Official Language Implementation Committee have been held on 29.06.2012 & 25.09.2012 at Corporate office and Quarterly meetings of Official Language Implementation Committee are also being organized regularly in subordinate offices/units. 03 Meetings, each in every quarter of Hindi Nodal Officers appointed in different departments have been held also for the review of Hindi implementation. To inspect the progress of Hindi implementation, all the offices of the corporation have been inspected by the officers of the Hindi section from time to time. Hindi books have been purchased for approximately ₹1,36,882/- during the year at Corporate office as well as subordinate offices in libraries.

To provide bilingual working facility in computers/laptops Hindi software / fonts have been installed. Material is displayed in the website bilingually.

Corporation has been conferred Third prize in Indira Gandhi Rajbhasha award for the year 2010-2011 for excellent contribution in the field of Official Language Implementation. This award has been received by Shri R.S.T.Sai, CMD from Shri Pranab Mukherjee, President of India on 14th Sept, 2012, on the occasion of Hindi Day Celebration at Vigyan Bhavan, New Delhi.

Corporation's CMD has been also honoured with "Rajbhasha Shri Samman" at Akhil Bhartiya Rajbhasha Sangosthi, Shimla conducted from 10.10.2012 to 12.10.2012 by Bhartiya Rajbhasha Vikas Sansthan, Deharadun.

The Corporation's CMD & Senior Executives have attended the meeting of Hindi Advisory Committee of MOP held on 24.09.2012 at Srinagar, Jammu & Kashmir.

DVC

During 2012-2013, DVC has implemented different Official Language programmes keeping in view the directives received from the Department of Official Language, Ministry of Home Affairs and Ministry of Power, Government of India for the progressive use of Hindi in the official work of the Corporation.

Hindi classes for imparting Hindi knowledge among the employees of DVC are being run at the Headquarters as well as in the Field formations. 30 employees qualified in the Probodh, Praveen and Pragya examinations at Headquarters during the period under review. Some of the employees have also acquired knowledge in Hindi through correspondence course.

An arrangement for Hindi Typing/Stenography classes has been made in DVC Headquarters. During the period, 10 (ten) employees appeared for the Hindi Typing Examination and 03 employees appeared for Hindi Stenography examinations. All the employees received incentives after qualifying these examinations. As a result of the regular training and with the recruitment of some staff in the Hindi Section, there has been a remarkable increase in implementation of Section 3(3) of Official Language Act and Rule 5 of the Official Language Rules in DVC.

Separate workshops were organized for Officers and Staff to develop their working knowledge required for implementation of Official Language Policy. In these workshops, participants went through the routine exercises for day to day official work in official language.

Apart from this, a Regional Official Language Seminar was organized on 26th April, 2012 under the guidance of MOP, GOI in which 80 employees of different organizations under Ministry of Power took part.

Hindi Diwas/Pakhwara was celebrated also during the year under review. Several competitions related to official language were organised to inspire employees for executing their official works in Hindi. A large number of non-Hindi speaking employees participated in these competitions and successful participants were given prizes. A Departmental Rajbhasha Shield was awarded to Human Resource Department at DVC Headquarters on the basis of using official language in Corporation's activities. During the Hindi Pakhwara, a speech from the Desk of the Chairman was distributed to inspire the employees of the Corporation to dispose of their maximum work in Hindi. An audio drama written by Rabindranath Tagore was organized during the occasion.

During the period under review, DVC received "First Prize" for its performance in execution of Official Language Policies amongst the different Public Sector Undertakings located in Kolkata from the CALTOLIC (Undertaking), Ministry of Home Affairs, Govt. of India. During the year, an "NTPC Rajbhasha

Shield" (2nd Prize) was also awarded to DVC. On behalf of DVC, Shri Rabindra Nath Sen, Chairman, DVC and Shri Pallav Roy, Additional Secretary, DVC received the award from Shri K.C. Venugopal, Hon'ble Power Minister for State, MOP, GOI in a prestigious occasion held at Srinagar.

As regards the anticipated programme, this is to state that two Hindi Workshops will be conducted by March, 2013.

BBMB

Special efforts have been made by BBMB for implementation of Official Language Policy of the Union. All the documents under section 3(3) of the Official Language Act are issued bilingually and letters received in Hindi or signed in Hindi are invariably replied in Hindi. Also, efforts are made to reply English letters, in Hindi. At present about 89% correspondence of Board Secretariat with region 'A' offices, 94% with region 'B' offices and 100% correspondence with region 'C' is being done in Hindi. BBMB website also contains all information bilingually.

Official Language Implementation Committees have been constituted in the Board Secretariat and its subordinate offices and their quarterly meetings are regularly held, in which reports in respect of progressive use of Hindi are reviewed. In Board Secretariat, about 89% notings are being done in Hindi. Hindi workshops organized in every quarter and subordinate offices are regularly inspected by the Board Secretariat against the target fixed by the Government of India.

Bilingual working facilities are provided on all the computers. Training in Hindi shorthand/typing has been imparted to all steno typists/clerks.

Hindi Library has been set up in the Board Secretariat. During this year total books amounting to ₹44,635/- have been purchased out of which ₹ 43,840/- has been spent on Hindi books only.

Hindi fortnight is organized in all the offices in the month of September, 2012 during which various Hindi competitions are organised in order to create awareness amongst the employees to work in Hindi. Moreover, employees doing considerable work in Hindi during the year are encouraged with cash awards also.

All magazines/journals of BBMB are published bilingually. Quarterly in-house magazine of BBMB i.e. 'Bhakra Beas Samachar' is published in Hindi/Hindi-English. July-September issue of the magazine is published as "Rajbhasha Visheshank". Besides this, a special annual issue of "Jeevan Dhara" Magazine is also published during the year. Some compilations to facilitate the use of Hindi, viz. Administrative Notings, 'Taqniki Shabdavali' and 'Rajbhasha Shayak Pustak' have been published and distributed to all the offices. Board Secretariate has been awarded on a number of occasions for excellent performance in Implementation of Official Language policy of the Government by Ministry of Power as well as by the Town Official Language Implementation Committee, Chandigarh.

BEE

For the purpose of creating awareness towards progressive use of Hindi in official work, every year in the month of September, Hindi Pakhwara is observed in the Bureau of Energy Efficiency. During the year, various Hindi competitions and Hindi workshops etc. were organized to encourage and incentivize the officers/employees for doing their more and more official work in Hindi as per the rules under the Official Language Act.

BEE organized Hindi workshops quarterly on 6th & 7th June, 2012 and 26th & 27th September, 2012 (during the Hindi Pakhwara 14-28 September, 2012) and 27th & 28th December 2012. Participation in these workshops had helped enormously in increasing the use of Hindi in the official work. After participating in these workshops, employees had started typing notes through Unicode in Hindi in the files. No. of letters sent to 'A' & 'B' regions in Hindi are increasing in each quarter.

Besides this, Hindi Pakhwara was organized during 14-28 September, 2012. During the Pakhwara, five competitions namely, Essay competition in Hindi, Noting & Drafting competition in Hindi, Dictation in Hindi, Competition in General knowledge regarding use of official language Hindi and Hindi poem recitation, five prizes viz. first prize, second prize, third prize and two consolation prizes were given to the winners of the competitions. Besides this, two special prizes were also given to non-Hindi employees who had otherwise not received any prize but had even shown keen interest in participating in all these competitions. One Hindi book, to create interest about reading Hindi books and a certificate of participation along with the prizes were given on the closing ceremony of Hindi Pakhwara.

On 26th & 27th September, 2012, two day Hindi workshop was held with participation of 25 participants each day. Deep knowledge and experiences of the Expert Guest Speaker who not only shared his views and knowledge but also helped to solve the problems being faced by the participants in doing their day to day official work in Hindi as per the requirement of the Official Language Act. Besides this, Quarterly meetings to review the progressive use of Hindi were held regularly under the Chairmanship of Director General, BEE.

NPTI

Meetings of Official Language Implementation Committee of NPTI and other Training Institutes are convened regularly.

In compliance with the official Language Policy, "Hindi Pakhwara" was celebrated with great enthusiasm from 12th–16th Sept-2012 and Hindi Diwas was celebrated. In order to step up the use of Hindi in official work, competitions in Hindi Essay writing, Hindi debate, Hindi poetry, Hindi noting and drafting were organised. Officers/employees took part and winners were conferred with certificates/cash prizes.

In compliance with the constitutional and statutory requirements, all the documents required to be issued bilingually are being adhered to. Similarly communications received in Hindi are replied in Hindi.

NPTI is awarding cash prizes to its employees for writing Noting/Drafting in Hindi under the Original Writing in Hindi Incentive Scheme.

The 2nd Sub-Committee Inspection of Rajbhasha Parliamentary Committee was held at NPTI(WR), Nagpur on 10.11.2012.



VIGILANCE ACTIVITIES/DISCIPLINARY CASES

Ministry of Power

PSUs of the Ministry continued the focus on preventive vigilance during the year. Review of the vigilance work being undertaken by the PSUs/other offices functioning under the Ministry was done by holding a meeting on 01.05.2012 chaired by Secretary, Ministry of Power with CMDs/Heads and CVOs including a review of the progress made by the PSUs in e-procurement. The Annual Zonal/ Sectoral Review meeting of CVOs of Power Sector held by Central Vigilance Commission on 27.06.2012 at Satarkata Bhawan, New Delhi was attended.

Regular monitoring and watch is being kept on the complaints received from CVC. CVO, Ministry of Power submitted reports and comments on the cases referred by CVC including those under the CVC Act. CVO, Ministry of Power also held discussions in CVC for disposal of important cases. Various cases of vigilance irregularities were dealt with/disposed of by the Vigilance Wing. Apart from dealing with some complaints of previous years, 121 new complaints were received and handled during the year, in consultation with the concerned authorities. Timely disposal of vigilance clearance has been ensured in the service matters pertaining to the Ministry and PSUs. During the year, vacancies arose in the post of CVOs in NTPC, NHPC and NEEPCO, the post of CVO, NTPC has been filled up.

Vigilance Awareness Week, 2012 was celebrated in this Ministry and PSUs/other organizations from 29th October 2012 to 3rd November 2012. On this occasion a pledge to maintain integrity and transparency in all spheres of work was administered to the officers and staff of the Ministry. A Debate competition was also organized on the topic: **“WHETHER TRANSPARENCY IN WORK CULTURE IS ENOUGH TO FINISH CORRUPTION?”** on 31st October 2012. Prizes were awarded to the five best participants.

In the scenario of constant security threats, strengthening the security of vital installations was continuously emphasized and regular interaction was undertaken with MHA and PSUs to enhance the security and comply with the security instructions received from various agencies.

Advisories received from IB and MHA regarding security of installations are promptly taken up/ followed up with concerned authorities for implementation. In the scenario of constant perception of security threats, strengthening the security of vital installations of power sector was continuously emphasized upon and regular correspondence was under taken with MHA and PSUs to enhance the security and comply with the security instructions received from various agencies. A national level Standing Group for coordination and review of security arrangements for power sector installation has been constituted under the Chairmanship of Secretary/Addl. Secy., Ministry of Power. States & UTs were advised to set up security

coordination committees at local/installation and State levels for continuous monitoring of all security-related matters and fast dissemination of intelligence. 7 PSUs/organizations of the Ministry have set up local/installation level committee.

Apart from that, 3 committees one each in Hydropower Sector, Thermal Power Sector and Power Transmission Sector established with a view to benchmark the minimum physical, technological and IT security standards for power sector. Final report & Guidelines for Physical Security, Technological & IT for on Hydro Power Sector, Thermal and Power Transmission Sector have given their report which have been sent to IB.

CEA

The Vigilance Division, CEA is headed by Chief Vigilance Officer (CVO) and is nodal point in Vigilance set up of Authority and its Subordinate Offices. The Division deals with various facet of Vigilance mechanism and functions for carrying out investigations into complaints, suggesting corrective measures for improving the control system, compliance of laid down procedures and also for carrying out preventive vigilance exercises.

As part of preventive vigilance, the Vigilance Division felicitates in ensuring job rotation in sensitive posts. The vigilance Division has also taken steps to ensure that website of CEA plays an important role in increasing the transparency in its functions. Vigilance Awareness Week 2012 was observed in Central Electricity Authority and its Subordinate Offices from 29th October to 3rd November, 2012. The Vigilance Awareness Week was celebrated to highlight the theme “Transparency in Public Procurement”.

Complaints other than anonymous/pseudonymous were taken up for investigation promptly and after completion of investigations, reports submitted to the prescribed authority. As on 01-01-2012 one case of disciplinary action was pending under CEA’s disciplinary jurisdiction. One case was added during the period. Out of them one case has been finalized. Thus at present (as on 31-12-2012) one case is pending finalization. Prescribed periodical Returns were sent to the ministry of Power in time.

NTPC

Vigilance Department of NTPC Limited consists of four Units, namely, Corporate Vigilance Cell, Departmental Proceeding Cell (DPC), MIS Cell, Technical Cell (TC) reporting to Chief Vigilance Officer. The Units deal with various facets of Vigilance Mechanism and function independently and exclusively to ensure transparency, objectivity and quality in vigilance functioning.

As suggested by the CVC the Integrity Pact has been implemented in NTPC. The MOU between Transparency International (India) and NTPC has been signed. Integrity Pact

has been taken up for implementation for Corporate packages in two stages :-

- a. For packages having estimated value (excluding taxes and duties) of ₹10 Crores and above but less than ₹100 Crores with effect from 1st June, '09 and
- b. For packages having estimated value (excluding taxes and duties) of ₹100 Crores and above with effect from 3rd Aug.'09.

Central Vigilance Commission has approved the proposal of NTPC for appointment of Sh.A.N.Tewari, IAS(Retd), Ex-CIC and Sh.V.S.Jain, Ex-Member, PESB as Independent External Monitors. The orders are under issue.

The complaints are disposed well within the time-frame prescribed by the CVC. Total 61 nos. complaints were handled during the relevant period. Out of these 61, 18 complaints were carried to a logical conclusion and the remaining 43 are under various stages of investigation. Necessary disciplinary action wherever appropriate was also initiated against the involved employees. So far as CBI cases are concerned, 02 CBI cases are under prosecution as on 30th November 2012.

Three major cases of fraud/misappropriation of company's funds were detected and reported under the Fraud Policy of the Company during the relevant period. 1st by Sh. J. Srinivasan, Sr.Mgr.(Fin.) involving ₹70 lakhs, who misusing the authorizations given to him in the ERP-SAP, had fraudulently transferred funds to the accounts of other employees and shared the amount as quid-pro-quo with other employees and a sum of ₹41 lacs stands recovered. 2nd instance of fraud/misappropriation by Sh. Puneet Gupta, Sr. Fin. Officer fraudulently transfer ₹29,50,408/- on the basis of fictitious records from other vendors accounts giving credit to M/s Jay Pee Corporation whose proprietor, is none other than his own father Sh. J.P. Gupta, the beneficiary and the 3rd by Sh. A.K.Singh, Sr. Mgr.(Fin.) fraudulently misappropriating Company funds to the tune of ₹17.20 approx. Lac by forging signatures of concerned officials. The misappropriated amount has been recovered fully from Sh. Puneet Gupta and Sh. A.K. Singh and Police/disciplinary actions against the all the said three employees is in progress.

In an another case of fraud NTPC, Mouda had reported prima-facie a shortage of 120 MT of structural steel of 32 mm TMT. First Information Report was lodged with the Police and criminal case was registered against five persons. Matter is pending trial in the court. In the mean time ₹45 lacs has been retained from the running bills of the contractor. Disciplinary action has also been initiated against the involved employees. 158 Surprise Checks were conducted. Recovery of ₹91,80,957/- was effected against various discrepancies detected during investigation. 4 System Improvement Circulars were issued. Vigilance Deptt. of NTPC had laid emphasis in the awareness process. In line with this during the relevant period 21 Preventive Vigilance Workshops were conducted at various projects/places in which 574 employees participated. Internal Audit Reports pertaining to NTPC Projects/Stations, sites and Regional Headquarters received from NTPC Finance Dept. during the year were examined from vigilance angle.

Online submission of Property Returns relating to movable/ immovable properties by the employees has been started through SAP. Details of private foreign visits by employees are also being entered online in SAP for easy retrieval of data. The issuance of vigilance clearance has been linked with submission of APRs as per Govt. directives.

The Vigilance Awareness Week was observed in the organization from 29th Oct. '12 to 3rd Nov. '12 as per the directives of the Central Vigilance Commission. The pledge was administered by CMD and respective project/regional heads. In compliance with the directive of the CVC, the theme of the Vigilance Awareness Week was "Transparency in Public Procurement". Review meetings by CVO with concerned officials of NTPC were held in order to build a broad road map for achieving 100% e-procurement in NTPC by March 2013 as per directives of the Govt. Competitive debates/ lectures on the topic of 'Anti-Corruption' were organized for the employees and the family members of the employees at various Projects/Stations. Vendor Meets were organized in different projects and their grievances were settled to the extent possible. Billboards and banners were put up at public places in order to generate publicity against corruption. 02 Booklets containing 'Case Studies' of various investigations conducted by NTPC Vigilance Executives were published during the Vigilance Awareness Week.

NHPC

NHPC Vigilance Division at Corporate Office has been granted ISO 9001-2008 certification for implementation of Quality Management System by BIS(Bureau of Indian Standard). All procedures have been documented and systems of monitoring of Vigilance complaints and disciplinary cases have been implemented to avoid delays.

Regular and surprise inspections are being conducted by the Vigilance Department at regular intervals. Actionable points are identified by the Project Vigilance Officer and intimated to Head of the Project from time to time. Also, intensive examination of the works are carried out by Chief Technical Examiner of the CVC from time to time. Integrity pact has been implemented successfully for all the procurement works of the value of ₹ 15 crores and more, and for procurement of goods and service of value of ₹ 25 lacs and more as per guideline of CVC. E-procurement solution is being implemented for cases of supply/works/contracts over value of ₹10 lacs.

Emphasis has been laid on preventive vigilance by issuing circulars and guidelines based on inspection/intensive examinations. Various vigilance awareness programs and vigilance awareness week are being conducted to promote transparency and ethics in working system.

POWERGRID

The Vigilance Department of POWERGRID focuses more on Preventive and Pro-active Vigilance, apart from Detective, Predictive and Punitive Vigilance. It is actively involved in suggesting various system improvements, and also in improving vigilance administration by leveraging technology through Online Complaint Handling System, VINS, Online

Property Returns, e-bidding, e-payments, e-auction, e-procurement, e-billing, etc in the Organisation as a whole. The aim behind all this is to usher in more and more transparency in the working of the Organisation and also to inculcate a sense of Ethics, Integrity and sound Corporate Governance.

As part of this process, the Vigilance Department conducts various workshops on Preventive Vigilance, Ethics and the RTI Act, both at the Corporate Centre as well as in the regions. Till date, 23 workshops have been conducted in 2012, out of which 4 workshops are related to the RTI Act. 636 non-vigilance employees have so far been imparted training during this year.

As part of Preventive Vigilance, inspections, in the form of surprise and process online were conducted, apart from CTE type inspections. During the year, 165 inspections were conducted, out of which 58 were surprise inspections. The CTE's Organisation also conducted 2 inspections in the Organisation. Based on the inspections conducted by the Vigilance Department, adequate cost compensation were effected on points not conforming to technical specifications or conditions of contract etc. On the basis of surprise inspections conducted, some cases were also registered for investigation and necessary disciplinary proceedings were initiated in some cases. A number of complaints were also received both internally as well as from outside agencies. On the basis of investigations conducted into them, disciplinary action, wherever appropriate, was also initiated against some employees. The Vigilance Department continues its drive to spread awareness amongst employees by sending bulk SMS and e-mail regarding the provisions of the Conduct, Discipline and Appeal Rules. Continuous improvement in systems and procedures has always remained one of the hallmarks of the Vigilance Department. The Department has, like in previous years, continued its focus on spheres of functioning, like, communication of assessment to the concerned bidders, incorporation of provision relating to conflict of interest, restriction relating to purchase of mementoes to visiting dignitaries, installation of surveillance cameras to increase security, storage of materials at construction sites etc. Vendors' meet were also organized during the year in various regions to bolster more interaction with the stakeholders.

During Vigilance Awareness Week, POWERGRID organized a number of programmes both at Corporate Centre and regions like essay, debate, quiz, slogan and painting competitions both for employees as well as their family members. Panel discussions and lectures by eminent personalities and academicians were also organized. Both the Vigilance Commissioners, Shri R. Srikumar and Shri J.M. Garg, Vigilance Commissioners addressed the employees at Corporate Centre and at the regions (through Video Conferencing) during this period. During this period, the in-house journal of the Vigilance Department, 'Candour' was also inaugurated and distributed widely amongst the employees.

PFC

During the financial year 2012-13 (upto 30th November 2012) the Vigilance Unit functioned as an effective tool of positive management with the thrust being on "Preventive Vigilance". This aspect was emphasized by Conducting periodic and Surprise Inspections of various units and by issuing effective guidelines to streamline systems with the aim of eliminating loopholes and ensuring transparency in day to day operations, minimizing scope for misuse. Vigilance Unit undertook the review of operational manuals of various activities of the Corporation. Entity Appraisal Manual has been notified after review, Project Appraisal Manual and Fund Management & Banking Manual has been reviewed and is in process of finalization. The filing of Property Returns has been made on-line. Property Returns are also displayed on the website of the PFC. Further during this period detailed investigation was carried out in several cases of registered complaints.

The performance of Vigilance Unit was reviewed by the Central Vigilance Commission, Ministry of Power, Board of Directors and CMD of PFC in addition to regular reviews undertaken by the CVO, PFC as per the prescribed norms.

In accordance with the directives of Central Vigilance Commission (CVC), Vigilance Awareness Week was observed from 29th October to 3rd November, 2012 in the Head Office and Regional offices of the Corporation. During the Vigilance Awareness week a one day workshop on "Business Ethics and Corporate Governance with special emphasis on procurement" was organized for the employees of this Corporation. In the programme, interactive sessions were organised with prominent faculty members on varied subjects like "Ethics, Corporate Governance and Transparent Procurement".

Slogan writing, Essay writing & Pictorial Theme representation Competitions were organized on themes relating to "Fair Procurement", "Transparency in Procurement" and "Process of Tendering and Procurement" respectively with the aim of involving employees and encouraging them to come forward with innovative ideas about dealing with Transparent Procurement.

REC

Progress made during current year 2012-12 (Up to 30.11.2012)

The Vigilance Division continued its emphasis on "Preventive Vigilance" so as to enhance transparency and accountability in the systems and procedures. An IT based Bill Tracking System was introduced, to ensure that the bills of third parties are processed on First in First Out (FIFO) basis, and enable third parties to track their bills through REC Website. Status of loan applications received in the Corporation is also uploaded on the Website. E-procurement has also been implemented in REC for procurement above ₹10 lakhs. Leveraging of IT Technology through ERP has resulted in availability of on-line secure information and substantial reduction of average disbursement period.

With a view to enhance the knowledge of employees about vigilance related issues, a Vigilance Bulletin is being issued on a quarterly basis. As desired by MOP, the details of Immovable Property Returns (IPR) of all Executives have been uploaded on REC's Website and vigilance clearance has been linked with timely submission of IPRs. In addition to this, submission of Annual Property Returns has been computerized and employees now enter details of movable/immovable property online.

Agreed Lists and list of Officers of Doubtful Integrity were finalized. In compliance to the instructions of CVC, sensitive posts in the Corporation are being identified and HR Division will be requested to rotate officers working on these posts. Prescribed periodical statistical returns were sent to CVC, CBI, MOP on time.

As per directives of CVC, REC observed Vigilance Awareness Week from 29.10.2012 to 03.11.2012. Various activities were organized in the Corporate Office as well as at the Zonal Offices/ Project Offices and Central Institute for Rural Electrification, Hyderabad to enlist the participation of the people at large. At the Corporate Office, Quiz (Multiple Choice Questions) and Essay Writing Competitions were organized for executives as well as non-executives, and dignitaries were invited to sensitise REC employees with various facets of vigilance.

The performance of Vigilance Division was reviewed regularly by the CVC, BOD-REC and CMD, REC in addition to constant reviews undertaken by the CVO, REC in accordance with the prescribed norms.

Anticipated targets to be achieved during the remaining period of the year i.e. upto 31.3.2013.

- Efforts will be made to get the pending disciplinary cases completed.
- Third party payments will be monitored so as to assess the effectiveness of Bill Tracking System.
- Review of tendering procedures on random basis with respect to purchases etc. will be carried out.
- HR matters relating to recruitments, training and appointment of consultants will be reviewed.
- Inspections will be carried out in respect of the remaining field offices.
- Efforts will be made to complete the process of identification of sensitive posts and to ensure rotation of officers working on sensitive posts.
- Greater transparency will be ensured in policy matters and management functions.

Disciplinary Cases

Employees are committed to discipline and order with negligible instances of non-compliance. REC has put in place a sound policy to deal with such intendants.

NEEPCO

During the period from 01/04/2012 to 30/11/012, NEEPCO Vigilance Department dealt with various facet of Vigilance

Mechanism under the directives and guidelines issued from the Central Vigilance Commission (CVC) from time to time. For exclusive and independent functioning of Vigilance department, NEEPCO ensured transparency, objectivity and quality in vigilance functioning. Complaints received from various sources other than anonymous/pseudonymous were taken up for prompt investigation and the same have been disposed off in accordance with the time frame prescribed by the CVC. As on 1st April 2012, 7 (seven) complaints were pending. During the period under report, 1 (one) new complaint has been added which has also been investigated and out of these, 2(two) complaints have already been disposed off. As on 30/11/2012, there were 6 (six) complaints pending for finalization. Emphasis was given to the aspect of preventive vigilance to streamline the rules and procedures and making all efforts to arrest the loopholes detected during investigation of various cases.

As on 01/04/2012, 1(one) disciplinary case was pending which was subsequently disposed off. No further disciplinary case has been added during period under report.

The observations and further observations raised from Chief Technical Examiner's organization of CVC in their intensive examination report carried out against a work of a particular project of this Corporation are being taken up with various authorities and on receiving the reply the same are being furnished to the CTE/CVC with CVO's comments after scrutiny at Vigilance Deptt.

In order to improve system and procedure in respect of various short comings observed during the processing of tender of works and procurement etc, a number of suggestions have been forwarded to Management. During this period 35 (thirty five) nos. of inspections have been conducted at different plants/projects by site vigilance officials as well as by vigilance officials of the HQ including CVO. Regarding improving vigilance administration by leveraging technology, steps have been taken towards implementation of e-procurement, e-payment, registering online vigilance complaints etc. Towards adopting a new initiative, as a part of leveraging technology, the Vigilance Deptt. has uploaded the Annual Immovable Property Returns (AIPRs) of all Executives in the NEEPCO's Web site.

All the important CVC circulars and OMs issued during this period have also been circulated to all concern with a view to improve overall system in the Corporation.

310 nos. of Annual Property Returns (APRs) of the employees have been scrutinized during the period from 01/4/2012 to 30/11/2012. Vigilance clearances against officials required for various purposes like DPC, promotion regularization, foreign visit, out-side employment, retirement, resignation, foreign training, deputation to other organization, release of terminal benefit etc. were given as and when sought for.

A Vigilance review meetings was also held at Corporate HQ, Shillong on 17.8.2012 with in-charges of all Projects/Plants Vigilance Deptt.

The "Vigilance Awareness Week" was observed in the Corporation w.e.f. 29/10/2012 to 03/11/2012. Besides taking

“Pledge” an Essay Writing Competition on the topic “Vigilance is responsibility of everyone in the Organization” and a Slogan Writing Competition on the theme “Transparency in Public Procurement” was organized amongst the employees of the Corporate HQ.

SJVN

Various routine vigilance administrative matters / regular vigilance activities, are being continued in SJVN like maintaining up-to date vigilance status of the officials of SJVN; granting vigilance clearance to SJVN Officials for various requirements; to identify areas of corruption and identification and manning/ postings on Sensitive Posts; investigation / action on Complaints; preparation of the Agreed list and List of Persons of doubtful Integrity; to study and advise improvement in the existing procedures and practices, to root out grey areas; to ensure preparation of manuals / standards operating procedures; to ensure discharge of all regulatory functions; to ensure E – Governance in as many functional spheres as possible / implementation of Good Corporate Governance measures; Surveillance / Detection / Collection of intelligence/ source information / vigilance information / conducting Surprise Checks / Inspections by Vigilance units; to create awareness amongst SJVN employees about corruption free working and vigilance functions by conducting training / workshop on vigilance and observance of Vigilance Awareness Week w.e.f. October 29th - November 03rd 2012 and to keep the CVC apprised of all developments and seek their advise wherever necessary. During the year, no disciplinary cases / proceedings were initiated or pending against any of the SJVN Officials.

Extent of IT usage and the E - Governance:

To adopt and implement transparent systems and strive hard to improve the organizational working in all spheres, by leveraging technology, increasing transparency in the decision making process through effective use of information technology in the discharge of various organizational functions, Compliance of CVC instructions regarding E-Procurement like publication of tenders and Uploading of Tender / details of awarded tenders on officials websites, are being ensured.

E - Procurement:

The E – Procurement has been implemented in SJVN. At SJVN Corp. Office Shimla, 1500 MW NJHPS and 412 MW Rampur HEP, 100 % tenders are now being procured through E - Procurement system, except for small petty purchases / spot purchases etc.. Implementation of E-procurement shall also help in discouraging formation of cartels by the prospective bidders. During 2nd phase, the process for implementation of online acceptance of Earnest Money Deposit (EMD) for SJVN tenders is also underway.

E - Banking:

All payments above the threshold value of ₹1.00 Lac are now being made through RTGS system / Electronic mode, wherever E-Banking / Core banking facilities are available.

Integrity Pact:

Integrity Pact programme has been implemented in SJVN Ltd. since January 05, 2011 and has been made applicable for all transactions involving (i) Procurements above ₹ 10 Crores & (ii) Contracts above ₹ 25 Crores.

Thereafter, meetings were held by the SJVN Management with the Independent External Monitors on 22nd & 23rd May, 2012 and 23rd & 24th November, 2012 to review effective implementation of IP in SJVN. Recently Contract for 47.6 MW capacity Wind Power Project to be installed in the village Khirvire / Kombhalane, Distt. Ahmednagar in the state of Maharashtra has been awarded by SJVN on 19th Oct 2012 to M/s Gamesa Wind Turbines Pvt. Ltd., Chennai (Tamil Nadu) for total accepted contract price of ₹ 351.80 Crores, wherein the Integrity Pact (IP) has been incorporated for implementation.

THDC

During the year the thrust of the Vigilance Department was on improving vigilance administration by leveraging technology and increasing transparency through effective use of Website. Preventive vigilance was given the utmost priority by implementing the process of e-tendering. Procurement of supply items is being done 100% on e-procurement basis at Rishikesh, Tehri and Koteshwar. On line registration system of vendors for participation in e-tendering has been introduced by THDCIL. Now with new system, online payment facility has been developed and vendors can get themselves registered online. The contracts awarded are published in website in each month. E-payment practice has been introduced and is being followed. Contractors are being asked for option for e-payments.

Vigilance organization of THDCIL through forums, talks, meetings etc. has been trying to bring out positive contribution of Vigilance works for enhancing efficiencies. It has been the endeavour to educate employees to work efficiently as per the systems to minimize scope of corruption.

The activities of Vigilance Department were reviewed regularly by the Chief Vigilance Officer and by the CMD from time to time. Quarterly Structured Meeting between CMD and CVO are being conducted on regular basis. The time schedule as laid down by the CVC for conducting department enquires and investigations was by and large adhered to 18 Nos. Surprise Check, 03 Nos. CTE type inspection of work was also carried out by the Vigilance Department. Agreed list was reviewed and up dated in consultation with the Supt. of Police, Central Bureau of Investigation, Dehradun. Similarly list of officers of doubtful integrity was also finalized.

Status of Registered complaints w.e.f. 01.04.2012 to 30.11.2012

During the period the Vigilance Department registered 08 complaints /cases for investigation. Out of these 6 have been completed and 2 (two) are under investigation.

Letter issued on Systemic Improvement

During the period the Vigilance Department issued 6 numbers of letters of Systemic Improvement relating to various cases. Some of these letters were also published in Booklet "Chetna" third edition published by the Vigilance Department.

Vigilance Awareness Week -2012

Vigilance Awareness Week was observed from 29th October, 2012 to 3rd November 2012. On the occasion the Vigilance department published a booklet "Chetna" third edition which contained Case Studies of the matter investigated by the Vigilance Department, letters of Systemic Improvements issued by Vigilance Department. Main, function was held on 03.11.2012 at Corporate Office at Rishikesh. MOU on Integrity Pact was signed between THDCIL & Transparency International India (TII).

Disciplinary Cases

During the period one Major Penalty of reduction to a lower stage in the time scale of pay have been imposed. One Minor penalty of withholding of 01(One) increment of pay without cumulative effect for one year was imposed. 5 nos. of Caution Memo, 2 nos. of Recorded warning & 2 nos. of Counselling have been issued.

DVC

A. CURRENT YEAR UPTO 30TH NOVEMBER, 2012

Like previous year, Vigilance Department of DVC laid special emphasis to bring about objectivity, transparency and accountability keeping participative vigilance in particular. Various activities taken up during the aforementioned period are enumerated below:-

1. Disposal of Complaints

Complaints received from different sources during the period were disposed after proper scrutiny and needful action within the prescribed time frame. Some of them were taken up for detailed investigation and some were referred back to HODs for taking suitable administrative actions. Up to 30-11-2012, about 88 complaints were received and processed as per merit.

2. Inspections

Different types of inspections as part of the preventive vigilance were carried out. The Vigilance Department conducted 132 periodic inspections and 66 surprise inspections in different field formations. Four intensive examinations on CTE's pattern were also carried out. The actionable points observed during the inspections were brought to the notice of the concerned HOD and other officials for suitable corrective and administrative measures. In the course of inspection it was felt that there is a need for effecting suitable changes in the procedure/manual regarding transparent system of tendering particularly qualifying requirements.

On the basis of a special inspection, Vigilance Department recommended for framing a fool proof system for all types of recruitment through offline or online.

3. System Improvement

With the initiative and recommendation of Vigilance Deptt., Kolkata, the following actions pertaining to system improvement have been taken by the DVC management:

- Vigilance clearance not to be issued without submission of the Annual Property Return in time.
- Circulation of CVC guidelines for compliance to quality requirement.
- Circulation of CVC guidelines on consideration of Indian Agents and applicability of CVC guidelines in post tender negotiation with regard to projects by World Bank & other funding agencies.
- Circulation of MPO instructions regarding non-relaxation of qualifying requirements after issue of NIT.
- Hoisting of GOI resolution on Public Interest Disclosure & Protection of Informer (PIDPI) guidelines.
- Circulation of Government agenda on Good governance & anti-corruption.
- Uploading & display of Immovable Property Return in Public domain.
- Issuance of Office Memorandum regarding adoption of Integrity Pact.
- Issuance of Office Memorandum regarding submission of Annual Property Return by all employees immediately after appointment and report of any transaction in movable property of value exceeding two months basic pay within one month.
- Issuance of Office Memorandum regarding banning of business dealings with defaulter Vendors/Contractors.
- Issuance of Office Order By Central Accounts Dept., Kolkata regarding authorization of limits for operation of Bank Accounts of the Corporation at HQ and Field Accounts Offices.

Lack of proper knowledge was found to be a factor responsible for minor procedural irregularities in several cases. As such, continuous training programmes are being conducted throughout the valley covering entire group of employees under Management Development Programme.

4. Actions on recommendation

- ◆ On recommendation of Vigilance Dept. an amount of ₹11,57,231/- (Rupees Eleven lacs fifty seven thousand two hundred thirty one) only recovered in the month of March 2012 from the final payment bill of M/s Teekay Security Agency, MTPS.
- ◆ M/s Blue Bird Roadlines was debarred from participation in DVC Tender/ Enquiry for a period of 02 (Two) years in the month of April, 2012.
- ◆ On pursuance of Vigilance Dept. an amount of ₹33,40,425/- (Rupees thirty three lakh forty thousand four hundred twenty five) only has been recovered from

different Contractors/ agencies engaged at BTPS against extra payment made from Accounts Section of DVC, BTPS.

5. Other Activities

Vigilance clearance in respect of 1484 persons was given for different purposes. Around 220 APRs of employees were scrutinized during the period. As per CVC guidelines, Annual Work Plan for the year 2012-13 has been prepared. Annual action plan for training courses to be conducted in vigilance awareness has also been implemented. The prescribed periodic returns to CVC, CTE and MOP on anti corruption have been submitted to concerned authorities in time. In accordance with DVC guidelines, Vigilance awareness week has been observed between 29.10.12 to 03.11.12 in all field formations as well as HQtrs. A structured meeting with Chairman, DVC has also been taken place on vigilance activities in which was attended regularly by the CVO and other vigilance officials.

B. ANTICIPATED TARGETS FOR THE REMAINING PERIOD UP TO 31ST MARCH, 2013

- ◆ Needful action to be taken on all the genuine complaints received in a time bound manner.
- ◆ As planned, a minimum 48 periodical and 24 surprise inspection to be conducted.
- ◆ Timely submission of Quarterly Report to CTE, Monthly and Annual report DVC and Quarterly report to MOP on anti corruption measures.
- ◆ To increase intensive examination of a major works/ purchase on CTE pattern
- ◆ Scrutiny of a least 80 Annual property Returns.
- ◆ To take up pending disciplinary cases for early disposal.
- ◆ Besides above, pending issues related to system improvement would be taken up with the management.

BBMB

The Vigilance Organisation in Bhakra Beas Management Board comprises a part time Chief Vigilance Officer (CVO) of the rank of Superintending Engineer who is helped by six part time Vigilance Officers (VOs) of the rank of Superintending Engineers at various Project Stations of Bhakra Beas Management Board, viz Bhakra Dam, Nangal (Two VOs), Beas Dam, Talwara (One VO), Beas Satluj Link Project, Sundernagar (One VO), Chandigarh (Two VOs). Any complaint(s) received is got investigated through the VO and appropriate action is taken.

The Vigilance Organisation in BBMB is doing earnest efforts to inculcate in all the employees of BBMB, the following as a measure of preventive vigilance:-

- i) To check and control the very tendency on one's part to delay the matters.
- ii) To record speaking orders in clear terms on the files giving merits of the orders.

- iii) To avoid decisions being influenced by those who might have an axe to grind.
- iv) To be always receptive to any suggestion by a colleague, superior or a subordinate which may result in savings to the exchequer.
- v) To be firm in conviction that integrity is to be safeguarded and any price paid in this regard is insignificant.
- vi) To keep a watchful eye on all breeding places of corruption.
- vii) To expose without fear those involved in acts of self gratification.
- viii) To take pride in humble living and acts of honesty.
- ix) To follow the rules, procedures, instructions, manuals, etc. meticulously.
- x) To avoid drawing illogical and dubious inferences so as to derive undue benefits, whenever an ambiguity in rules is encountered.
- xi) Expedite the inquiries, their follow up action to get decision from parent States/State Electricity Boards.
- xii) Implementation of disciplinary actions without any delay wherever BBMB itself can take the same

Besides above, **Vigilance Awareness Week – 2012** was celebrated w.e.f 29.10.12 to 03.11.2012 in BBMB offices at Chandigarh as well as at Project Stations. An interactive session on vigilance awareness was also conducted on 01.11.2012 at Chandigarh.

Recently, BBMB has implemented Integrity pact and 2 No. Independent External Monitors are also being appointed.

NPTI

NPTI Vigilance is headed by a CVO which is a rank of functional Principal Director and gives special emphasis on preventive vigilance. Employee and officers are advised to be more careful wherever negligence is observed.

Vigilance Awareness Week was celebrated from 29th October-2012 to 3rd November-2012 at NPTI Corporate Office and its various Institutes. During this period a Seminar was conducted on "Transparency in Public Procurement" for creating awareness of vigilance among the officers and employees.

Vigilance Cases : During the period, NPTI vigilance has investigated 5 cases and taken action in 2 cases with the consultation of MoP and CVC. In these 2 cases, an Inquiry Officer has been appointed by CVC for major and minor penalties. In the 3rd case, Preliminary Inquiry has been completed and the matter has been sent to CVC for first advice. In the remaining cases, disciplinary actions have been taken.

BEE

During the year 2012-13, there were no major complaints received and no disciplinary case initiated.

CPRI

The vigilance activities of the institute are overseen by a part-time Chief Vigilance Officer (CVO). The CVO reports to the Director General and is assisted by the Administration Section of the institute. Dr. H.N. Nagamani, Joint Director, was appointed the CVO on the approval by the Chief Vigilance Commission.

The vigilance vision of CPRI is:

- To take preventive action over punitive action

- To enforce meaningful, workable and objective systems and procedures
- To develop trust and transparency in all transactions
- To prevent financial or other losses due to any malpractices
- To promote the pride of the institute as well as the self esteem of the employees
- To promote time bound actions in all spheres of activities



CSR activities by participating Women

ACTIVITIES RELATING TO WOMEN EMPLOYEES

Ministry of Power

There are 49 women employees in the Ministry of Power. The representation of women employees at various levels in the Ministry of Power is indicated below :

Group	Total Employees (as on 30.11.2012)	No. of Woman Employees	Percentage of overall staff strength
A	58	11	18.9
B	123	28	22.7
C	63	09	14.2
C (MTS)	54	01	1.8
D	01	00	00
Total	299	49	16.3

Employment of women in various grades in the Ministry of Power depends on the nominations received from the recruiting agencies such as the Union Public Service Commission, Staff Selection Commission etc.

A complaints Committee exists in the Ministry of Power to look into the complaints of sexual harassment by the women employees of the Ministry. A Women's Cell also exists in the Ministry to oversee various welfare activities of women employees.

CEA

Representation of women in CEA is given below:-

Group	Total Employees as on 30.11.2012 (nos.)	Number of Women employees (nos.)	Percentage of over- all staff strength (%)
A	296	27	9.12
B	226	90	39.8
C	133	34	25.5
MTS-C	168	14	8.33
Total	823	165	20.04

NTPC

Details of Women Employees in NTPC (as on 30th Nov. '12)

Group	Total Employees as on 30.11.2012 (nos.)	Number of Women employees (nos.)	Percentage of over- all staff strength (%)
A	14,302	894	6.25
B	5,465	342	6.26
C	5,239	290	5.54
D	706	27	3.82
D (S)	0	0	0
Total	25,712	1,583	6.06

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A complaints Committee exists in the Ministry of Power to look into the complaints of sexual harassment by the women employees of the Ministry. A Women's Cell also exists in the Ministry to oversee various welfare activities of women employees.

NHPC

NHPC provides conducive working environment to all its female employees and strives to ensure gender equality at all levels. NHPC provides the best working conditions prevalent in the industry to female employees in respect of work, leisure health and hygiene. Further, our organization ensures that there is no hostile environment towards women at work place and no women employee has any grounds to believe that she is in a disadvantageous position regarding her employment.

The various benefits and facilities provided to Women employees in NHPC Ltd are briefed as below:

I. Maternity Leave

Maternity Leave is granted to female employees for a period up to 180 days to take care of the new born.

II. Child Care Leave (CCL) for Women Employees

Child care Leave has been introduced to facilitate women employees to take care of their newborn/ infant children. Women employees are eligible to avail Child Care Leave (CCL) in continuation of Maternity Leave or otherwise up to a period of 2 years.

III. Special Child Care Leave on adoption of a child.

Special child care leave is granted to facilitate female employees with less than two surviving children up to a period of 135 days from the date of valid legal adoption, to take care of their legally adopted child up to one year of age.

IV. Conduct, Discipline & Appeal Rules:

NHPC Conduct, Discipline and Appeal Rules, includes rules prohibiting sexual harassment and provide for appropriate penalties against offender.

V. Complaints Committee for handling harassment related grievances of women employees:

In accordance with the Hon'ble Supreme Court's guidelines, NHPC has a Complaints Committee for handling complaints/ grievances of female employees concerning harassment at workplace at Corporate Office and at all its Projects/Power Stations/Regional Offices and Units at all times, which undergoes modification in its composition, whenever necessary, are made promptly and same is adequately publicized at all its units.

VI. Crèche Facility:

Crèche facility has been provided to employees at Corporate Office. The Crèche is having the facilities of storage, heating, cooking food for infants, nannies to take care of infants etc.

VII. Declaration of Parents/ Parents-in -Laws as dependents.

NHPC also provides the option to its female employees to declare her parents / Parents -in -Laws as dependents for availing Medical as well as LTC benefits.

VIII. Special Dispensation in Attendance:

Late coming beyond 9:30 a.m. to 10:00 a.m. is allowed four times in a month to all employees subject to compensation on the same day for corresponding period after 17:30 hrs. However, female employees require compensating the late coming in morning by sitting late in the evening up to 18:00 hours only.

Representation of women is indicated in the format given below:

Group	Total Employee as on 31/10/12	Number of Women employees	Percentage of overall staff (Women employees) strength
A	3134	244	7.8%
B	1433	137	9.6%
C	4194	254	6.1%
D (Excluding Sweepers)	1775	302	17%
Sweepers	121	43	35.5%
Total	10657	980	9.2%

POWERGRID

As on November 30, 2012 there are 592 Women Employees working at different levels in the corporation. Details are given below:

Group	Total no. of Employees as on 30/11/2012	No. of Women Employees	% of Staff strength
A	4038	268	6.64%
B	2448	191	7.80%
C	2800	108	3.86%
D	201	25	12.44%
Total	9487	592	6.24%

POWERGRID believes in holistic development of all employees with specific focus on the women employees for their empowerment. Programs aimed specifically at the women employees like focused training programs to help manage work pressure and family requirements are organized regularly. Forums like Mahila Shrishti Samaj of POWERGRID provide a platform for women to voice their opinions, discuss social issues and work towards the betterment of personal and social lives. A women protection cell is in place

which ensures all grievances are adequately handled and a proactive environment of awareness is created. The company complies with all the rules and regulations as laid down by the Government of India.

PFC

Representation of women is indicated in the format given below:-

Group	Total Employees as on 30/11/2012	Number of Women Employees	Percentage of overall staff strength
	410	83	20.24
Total	410	83	20.24

PFC Ltd. as a part of its social responsibility makes all-out efforts to ensure compliance of the Directives and guidelines issued by the Government of India from time to time pertaining to the welfare of female employees. A sexual harassment committee has been constituted to look into the complaints of female employee (if any).

REC

The Corporation encourages employment of women and takes care of their safety and needs. Of the total work force in the Corporation, the representation of women is 15.70%. Details of the number of women employed in the Corporation are as under:

Group	Total Employees as on 30.11.2012	Number of Women Employees	Percentage of overall staff strength
A	369	55	14.90
B	153	33	21.56
C	47	5	10.63
D	93	11	11.82
TOTAL	662	104	15.73

SJVNL

Activities relating to Women Employees

Group	Total Employees as on 30.11.2012	Number of Women Employees	Percentage of overall staff strength
Total	1322	120	9.08

Employment of Women

Since the inception in 1989, 123 females have been recruited at various executive/non-executing levels in the Corporation. At present, the strength of the women employee is 120 which comprise of 49 Executives and 71 Non-Executives. Their present strength accounts for about 9.08 % of the total work force on the rolls of the Corporation. It is ensured that women employees get adequate representation in various activities/ programs in the Corporation, a Women Cell has been set up in the year 1997 in the Corporation with the objectives of

promoting awareness among women employees about their rights and their all-round development. This cell is being headed by a female employee of the rank of an executive in the middle level management. This cell is functioning effectively since then.

In line with Supreme Court Judgment in the matter of Vishaka and other Vs. State of Rajasthan, necessary clause has been incorporated in the conduct, discipline & appeal rules and certified Standing Orders of the Corporation besides formulating Complaint Committees – one each at Corporate Office and Project Site to look into the matters relating to Sexual Harassment of Women Employees at work place.

NEEPCO

Representation of woman is indicated in the format given below:

Group	Total Employees as on 30.11.2012	Number of Women Employees	Percentage of overall staff strength
A	745	49	11.48%
B	1062	152	
C	966	119	
D	17	01	
Total	2790	321	

THDC

Representation of women is indicated in the format given below :-

Group	Total Employees as on 30.11.2012	Number of Women Employees	Percentage of overall staff strength
Total	2137	123	5.76%

THDC India Limited believes that Women Employees are equal partners in the growth of the organization. This year the Corporation recruited 38 Nos. Executive/Engineer Trainees in different Disciplines through All India Open Advertisement which includes 05 Women executives. Various activities have been organized in the Financial Year 2011-2012 which includes workshops for women and specially designed training programs for them. The organization imparts training programme implicitly for women employees round the year. A Women Cell works for the welfare of the women employees. It constitutes women employees of different grades and meets periodically. The cell works for the welfare and redressal of grievances of women employees (if any). Complaints Committee for Women under Code of Conduct for work place was reconstituted. The members meet periodically and address issues under the purview of the committee. There are a number of different committees which operate for the welfare and well being of the employees of the corporation and has women representation. This year the Women Carom Team represented THDC India Limited in ICPSU Tournament.

Apart from this a number of sports and cultural activities are organized round the year implicitly for the women employees and spouse of employees.

Giving prime consideration on the health of women during maternity, women employees are granted 180 days of Maternity leave. A 15 days Paternity leave is also granted to the male employees in this regard.

DVC

Representation of women employees is indicated below:

Category	Total employees as on 30.11.2012	Number of women employees	Percentage of women employee
Group 'A'	2464	109	4.42
Group 'B'	5080	333	6.56
Group 'C' & 'D'	3155	270	8.56
Total	10699	712	6.65

BBMB

Representation of women in BBMB is indicated below:-

Category	Total employees as on 30.11.2012	Number of women employees	Percentage of women employee
A	205	21	10.24
B	296	28	9.45
C	5553	565	10.17
D	4156	400	9.62
Total	10210	1014	9.93

BBMB discharges its functions as laid down in Section 79(1) of the Punjab Re organization Act, 1966 for which staff for the operation & maintenance of BBMB works is provided by partner State Govts./SEBs on transfer basis. However, in the event of inability of partner States/SEBs to provide requisite staff, BBMB resorts to direct recruitment & promotion in respect of Group C & D employees only as Officers of Class A & B category are being provided by partner States/SEBs. BBMB Class III and Class IV Employees (Recruitment & Conditions of Service) Regulations, 1994 were approved by the Central Govt. & published in Part-III Section 4 of the Gazette of India dated 8.10.1994. As per Regulation 11 of these Regulations, the members belonging to SC, ST, BC, Ex-servicemen, Physically handicapped persons and the dependents of deceased employees in the service, shall have the reservation in the service & all other concessions as prescribed by the Punjab Govt. from time to time. Accordingly, due representation is being given to various categories of employees in view of provisions of Rule 6 of BBMB Rules, 1974 and Regulation 11 of BBMB Class III & Class IV Employees (Recruitment and Conditions of Service) Regulations, 1994.

BEE

Representation of women is indicated in the format given below:-

Group	Total Employees as on 30.11.2012	Number of Women Employees	Percentage of Women employees
A	10	02	20%
B	02	-	-
C	08	03	37.5%
D	--	-	-
Total	20	05	25%

NMEEE

Group	Total Employees as on 30.11.2012	Number of Women Employees	Percentage of Women Employees
A	07	02	28.6%
B	01	-	-
C	01	01	100%
D	-	-	-
Total	09	03	33%

CPRI

Representation of Women Employee is as indicated:

Total Employees as on 30.11.12	Number of Women Employees	Percentage of overall staff strength
586	76	12.79%

NPTI

Group	Total Employees as on 30.11.2012	Number of Women Employees	Percentage of overall staff strength
Total	352	50	14.20%

At present the total strength of women employees is 50 including Executives and Non-executives. This number of women employee accounts for about 14.20% of the total work strength of NPTI. It is assured that the women employees get sufficient representations in various programs and activities of NPTI such as foreign visits, training outside NPTI etc. A separate common room exclusively for women employees has been allocated at NPTI, Faridabad.



PHYSICALLY CHALLENGED EMPLOYEES

Ministry of Power

Ministry of Power appreciates the requirement of providing reservation to the Physically Challenged in appointments and the various Government directives in this regard are duly followed by it. The implementation of the reservation policy for Physically Challenged persons in the Ministry of Power and various organisations under its administrative control is monitored by the Director (Administration) & Liaison Officer (Physically Challenged) of the Ministry.

The representation of Physically Challenged employees in the Ministry as on 30.11.2012 is as under :

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent-age of physically challenged employees
		VH	HH	OH	Total	
A	58	0	0	0	0	0.0
B	123	0	1	1	2	1.6
C	63	0	0	1	1	1.5
C (MTS)	54	1	0	0	1	1.8
D	01	0	0	0	0	0.0
Total	299	1	1	2	4	1.33

CEA

Representation of physically Challenged Employees in CEA is given below:-

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent-age of physically challenged employees (%)
		VH	HH	OH	Total	
A	296	0	1	2	3	1.01
B	226	0	0	4	4	1.76
C	133	0	0	0	0	0
MTS-C	168	0	0	0	0	0
TOTAL	823	0	1	6	7	0.85

NTPC

Details of Physically Challenged Employees in NTPC (as on 30th Nov. '12)

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent-age of physically challenged employees (%)
		VH	HH	OH	Total	
A	14,302	05	06	82	93	0.65
B	5,465	02	02	36	40	0.73
C	5,239	64	65	112	241	4.60
D	706	23	29	25	77	10.90
D (S)	0	0	0	0	0	0
Total	25,712	94	102	255	451	1.75

NHPC

Representation of Physically Challenged Employees As on 30.11.2012

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent-age of physically challenged employees (%)
		VH	HH	OH	Total	
A	3129	5	0	27	32	1.0
B	1430	1	1	23	25	1.7
C	4175	2	2	17	21	0.5
D (Excl. Swprs)	1769	2	0	6	9	0.5
(Sweep-ers)	121	0	0	0	0	0.0
Total	10624	10	3	73	86	0.8

The reservation and relaxation is provided to Physically Challenged Employees in direct recruitments and promotions as per guidelines issued by DoPT/Ministry of Social Justice & Empowerment from time to time in addition to following welfare schemes:-

Grant of Financial Assistance for vocational Training, who get physically handicapped while in service.

Reimbursement of monthly Conveyance Allowance for Blind and Orthopedically Handicapped employees.

Reimbursement of charges for purchase of hearing aid is allowed to the employees and their dependents and reimbursement of Cost of Artificial Limbs and extending interest free loans for the same.

Restriction of age is not applicable in respect of physically/ mentally retarded children for considering him/her as a dependent.

POWERGRID

As on November 30, 2012 there are 144 Physically Handicapped Employees working at different levels in the corporation. Details are given below:

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percentage of physically challenged employees (%)
		VH	HH	OH	Total	
A	4038	2	8	41	51	1.26%
B	2448	-	-	19	19	0.78%
C	2800	5	5	60	70	2.50%
D	201	2	-	2	4	1.99%
Total	9487	9	13	122	144	1.52%

Company is fully committed to the highest level of excellence and transparency in providing the benefits to candidates belonging to person with disabilities by providing reservation/relaxation/concession as per Govt. of India directives and guidelines. In case of Recruitment, 3% of vacancies are reserved for Person with disabilities (PWD) in all groups of posts and the upper age limit is relaxable by 10 years for General candidates, 13 years for OBC (NCL) candidates and 15 years for SC/ST candidates. Reservation in promotion also exists for PWD as per Govt. Directives. All other relaxation and concessions admissible to PWD are available like exemption of application fee, traveling allowance for attending tests, interviews etc.

PFC

Representation of Physically Challenged Employees is indicated in the format given below:-

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percentage of physically challenged employees (%)
		VH	HH	OH	Total	
Total	410	1	2	7	10	2.43

PFC Ltd. as a part of its social responsibility makes all-out efforts to ensure compliance of the Directives and Guidelines issued by the Government of India from time to time pertaining to the welfare of employees with disabilities. The steps taken include due reservations and relaxation as applicable under the various directives for direct recruitment as well as for promotions. PFC has provided provisions with boards engraved with Braille script at all floor for easy access to persons who are visually challenged. A separate toilet is maintained for disabled persons. Liaison officer is appointed to look into the matter of reservations.

REC

The Corporation, while keeping in mind the operational requirements also ensures fair representation of physically handicapped employees as required for under the statute. The position of the physically challenged employees vis-a-vis the total strength is as under :

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percentage of physically challenged employees (%)
		VH	HH	OH	Total	
A	369	-	-	7	7	1.89
B	153	-	-	1	1	0.65
C	47	1	-	-	1	2.08
D	93	1	-	-	1	1.12
TOTAL	662	2	-	8	10	1.51

NEEPCO

Representation of Physically Challenged Employees is indicated in the format given below:

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percentage of physically challenged employees (%)
		VH	HH	OH	Total	
A	745	-	-	3	3	1.14%
B	1062	5	5	6	16	
C	966	8	3	2	13	
D	17	-	-	-	-	
Total	2790	13	8	11	32	

SJVNL

Physically Challenged Employees

Group	Total Employ-ees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent- age of physically challenged employees (%)
		VH	HH	OH	Total	
Total	1322	02	01	10	13	0.98

Employment of Physically Challenged Persons

From the very beginning it has been the Endeavour of SJVN to give due representation to the physically challenged persons in the employment of the Corporation. However due to geographical conditions and peculiar construction work of the hydroelectric projects, most of the posts in the technical area do not suit the disabled persons. As such, their employment has mainly been in no-technical posts. At present, their strength is 13 (Thirteen), which is above 0.98 % of the total manpower of the Corporation.

THDC

Representation of Physically Challenged Employees is indicated in the format given below :-

Group	Total Employ-ees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent- age of physically challenged employees (%)
		VH	HH	OH	Total	
Total	2137	2	6	21	29	1.36%

The Corporation considers Physically Handicapped Employees as one of the building blocks of the Organization and has always worked for the effective implementation of presidential directives released from time to time for their welfare and representation in the organization. Special recruitment drive to fill up 01 backlog vacancy in Group B for PWD was relaunched and efforts were made to fill up the vacancy. This year the Corporation forwarded the nomination of 01 PWD employee in "Best Employee with Disability" category under National Award for the Empowerment of Persons with Disabilities, 2012. For the implementation of United Nations Convention on the rights of Persons with Disabilities (UNCRPD) the Corporation provides accessibility to different building for persons with disabilities under Section 46 of the Persons with Disabilities (Equal Opportunities, Protections of Rights and Full Participation) Act, 1995. Apart from the above physically handicapped employees are provided equal opportunity participate in the sports and cultural activities and other competitions organized round the year.

DVC

Group	Total Employ-ees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percentage of physically challenged employees (%)
		VH	HH	OH	Total	
Group 'A'	2464	00	00	23	23	0.93
Group 'B'	5080	04	04	22	30	0.59
Group 'C' & 'D'	3155	07	03	15	25	0.79
Total	10699	11	07	60	78	0.73

BBMB

Representation of Physically Challenged Employees in BBMB is shown below:

Group	Total Employ-ees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent- age of physically challenged employees (%)
		VH	HH	OH	Total	
A	205	-	-	1	1	0.48
B	296	-	-	1	1	0.33
C	5553	5	2	32	39	0.70
D	4156	4	4	31	39	0.93
Total	10210	9	6	65	80	0.78

BBMB discharges its functions as laid down in Section 79(1) of the Punjab Re organization Act, 1966 for which staff for the operation & maintenance of BBMB works is provided by partner State Govts./SEBs on transfer basis. However, in the event of inability of partner States/SEBs to provide requisite staff, BBMB resorts to direct recruitment & promotion in respect of Group C & D employees only as Officers of Class A & B category are being provided by partner States/SEBs. BBMB Class III and Class IV Employees (Recruitment & Conditions of Service) Regulations, 1994 were approved by the Central Govt. & published in Part-III Section 4 of the Gazette of India dated 8.10.1994. As per Regulation 11 of these Regulations, the members belonging to SC, ST, BC, Ex-servicemen, Physically handicapped persons and the dependents of deceased employees in the service, shall have the reservation in the service & all other concessions as prescribed by the Punjab Govt. from time to time. Accordingly, in view of provisions of Rule 6 of BBMB Rules, 1974 and Regulation 11 of BBMB Class III & Class IV Employees (Recruitment and Conditions of Service) Regulations, 1994, BBMB is following the reservation policy of Punjab Govt. issued from time to time in respect of implementation of provision of reservation in jobs for physically handicapped persons. According to the instructions of the Punjab Govt., 3% vacancies to be filled up by direct recruitment are reserved for physically handicapped

persons, 1% each in the category of blind, deaf & dumb and orthopaedically handicapped. Instructions have been issued to all the Chief Engineers that the policy instructions of Punjab Govt. regarding reservation for persons with disability issued from time to time may be followed strictly at the time of making direct recruitment and also to ensure that reservation of persons with disabilities does not lapse.

CPRI

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent- age of physically challenged employees (%)
		VH	HH	OH	Total	
Total	586	02	02	09	13	2.21%

NPTI

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent- age of physically challenged employees (%)
		VH	HH	OH	Total	
Total	352	01	01	06	08	2.27%

NPTI gives due representation in recruitment process as per the directives of Govt. of India. Besides the reservation in recruitment process, NPTI extended various facilities by providing, ramp, toilet, lift facilities to the physically challenged persons. Presently there are 8 physically challenged employees out of 352 employees which is around 2.27%.

BEE

Representation of physically Challenged Employees is indicated in the format given below:-

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent- age of physically challenged employees (%)
		VH	HH	OH	Total	
A	10	-	-	-	-	-
B	02	-	-	-	-	-
C	08	-	-	01	-	12.5%
D	-	-	-	-	-	-
Total	20	-	-	01	-	5.0%

NMEEE

Group	Total Employees as on 30.11.2012 (nos.)	Physically Challenged Employees (nos.)				Percent- age of physically challenged employees (%)
		VH	HH	OH	Total	
A	07	-	-	-	-	-
B	01	-	-	-	-	-
C	01	-	-	-	-	-
D	-	-	-	-	-	-
Total	09	-	-	-	-	-

33.5 RECREATION ACTIVITIES



Shri Randhir Singh Toor has continued to excel in various Inter Ministerial wrestling and Delhi State Athletic sport events in spite of his age factor. He is a dynamic, energetic and noble Captain of Kabaddi and Volleyball team of the Ministry of Power(MOP). He has achieved distinction in Wrestling and Athletic events by winning medals during the year 2012-13.

In his endeavor to bear flag of MOP high, he was re-elected General Secretary of Ministry of Power's Recreation Club.

List of events in which he participated and achieved distinction is as under:

Sl. No.	Tournament name	Place	Date	Event name	Position
1	Airtel Half Marathon-Delhi	New Delhi	30th September, 2012	21 Km	Third
2	Inter Ministry Wrestling Championship 2012-13	New Delhi	4th - 5th October, 2012	55Kg Free Style Wrestling	Third
3	32nd Delhi State Veteran Athletic Championship -2012	New Delhi	16th December, 2012	200m	First
4	32nd Delhi State Veteran Athletic Championship -2012	New Delhi	16th December, 2012	100m	Second
5	32nd Delhi State Veteran Athletic Championship -2012	New Delhi	16th December, 2012	Long Jump	First

WELFARE OF SC/ST/OBC/MINORITIES

Ministry of Power

The schemes, as recommended by the Government for the welfare of the minorities from time to time, are implemented.

A SC/ST Cell has been functioning in the Ministry since the early nineties under the direct control of the Deputy Secretary (Administration-2), who is also the Liaison Officer for Scheduled Castes and Scheduled Tribes. SC/ST Cell also assists the Liaison Officer for OBCs. The Cell monitors the implementation of reservation policies of the Government of India in respect of Scheduled Castes, Scheduled Tribes, Other Backward Classes, Physically Handicapped and Ex-Servicemen in the Ministry as well as Autonomous Bodies/CPSUs under the administrative control of the Ministry of Power.

The total strength of employees and representation of Scheduled Castes, Scheduled Tribes and Other Backward Classes in the Ministry of Power as on 30.11.2012 is indicated as below:

Group	Total Employees as on 30.11.2012 (nos.)	Representation					
		SCs (nos.)	SCs (%)	STs (nos.)	STs (%)	OBCs (nos.)	OBC (%)
A	58	04	6.8	08	13.7	00	00
B	123	19	15.4	03	2.4	16	13.0
C	63	21	33.3	02	3.1	06	5.3
C (MTS)	54	30	55.5	02	3.7	00	00
D	01	01	100	00	00	00	00
TOTAL	299	75	25.0	15	5.0	22	7.3

CEA

Representation of SC / ST / OBC / Employees in CEA is given below:-

Group	Total Employees as on 30.11.2012 (nos.)	Representation					
		SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
A	296	61	20.6	17	5.7	5	1.6
B	226	34	15.04	9	3.9	9	3.9
C	133	22	16.5	6	4.5	4	3.0
MTS-C	168	66	39.2	5	2.9	5	2.9
Total	823	183	22.2	37	4.4	23	2.7

NTPC

Details of SC/ ST/ OBC Employees in NTPC (as on 30th Nov. '12)

Group	Total Employees as on 30.11.2012 (nos.)	Representation					
		SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
A	14,302	1,736	12.14	593	4.15	2,296	16.05
B	5,465	945	17.29	402	7.36	462	8.45
C	5,239	887	16.93	356	6.80	602	11.49
D	706	175	24.79	117	16.57	119	16.86
D(S)	0	0	0.00	0	0.00	0	0.00
Total	25,712	3,743	14.55	1468	5.70	3,479	13.53

NHPC

Representation of SC/ST/OBCs As on 30.11.2012

Group	Total Employees as on 30.11.2012 (nos.)	Representation					
		SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
Group A	3129	431	13.8	191	6.1	455	14.5
Group B	1430	202	14.1	86	6.0	240	16.8
Group C	4175	421	10.1	161	3.9	182	4.4
Group D (Excl. Swprs)	1769	239	13.5	132	7.5	91	5.1
Sweepers	121	98	81.0	1	0.8	0	0.0
TOTAL	10624	1391	13.1	571	5.4	968	9.1

Welfare of SC/ST and Other Backward Classes

NHPC is taking care for socio-economic developments of SC/ST/OBC and weaker category sections of the societies at various Projects/Power Station situated in remote areas of the Organization. NHPC provides budget allocation for Schools and Colleges at various SC/ST/OBC populated locations of the NHPC Projects/Power Stations. The Medical facilities are also being provided to all the weaker sections and SC/ST/OBC people where it is necessary. During natural calamities/epidemic NHPC is helping in different ways and organizing medical camps also.

The reservation and relaxation is provided to SCs/STs and OBCs in direct recruitment as per guidelines issued by DoPT from time to time. The relaxed standard and reservation is applicable for SC/ST employees while considering promotion. The Organization holds periodical meetings with SC/ST Employees. A SC/ST Cell is set up for the Welfare of SCs/STs and OBCs under the direct control of separate Liaison Officers for SC/ST and OBC respectively.

POWERGRID

STATEMENT SHOWING THE NUMBER OF EMPLOYEES AND THE NUMBER OF SC, ST & OBC IN POWERGRID AS ON NOVEMBER 30, 2012 ARE GIVEN BELOW:

Group	Total Employees as on 30.11.2012 (nos.)	Representation					
		SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
A	4038	533	13.2%	200	4.95%	735	18.2%
B	2448	299	12.2%	95	3.88%	286	11.68%
C	2800	417	14.9%	327	11.7%	699	24.96%
D	201	36	17.9%	23	11.44%	36	17.91%
TOTAL	9487	1285	13.5%	645	6.8%	1756	18.5%

The Company is fully committed to the highest standard of excellence and transparency in providing the benefits to the employees belonging to SC's/ST's/OBC's/PH's. It provides reservation/relaxation/concessions for SC/ST/OBC/PH candidates as per Govt. of India's guidelines. In case of recruitment, the upper age limit is relaxable by 5 years for SC/ST, 3 years for OBC, 10 years for PH-General, 15 years for PH-SC/ST and 13 years for PH-OBC candidates. All SC/ST/PH candidates are exempted of the application fee for job. SC/ST/PH candidates are also provided travelling allowance even for appearing for written test. Reservation Cell of POWERGRID is dedicated to ensuring equality of status and opportunity to reserved employees by eliminating inequalities in facilities & opportunities provided to them.

PFC

Representation of SC/ST/OBC is indicated below:

Total Employees as on 30.11.2012 (nos.)	Representation					
	SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
410	68	16.58	22	5.39	56	13.65

PFC Ltd. as a part of its social responsibility makes all-out efforts to ensure compliance of the Directives and Guidelines issued by the Government of India from time to time pertaining to the welfare of SC/ST/OBC employees. The steps taken include due reservations and relaxation as applicable under the various directives for direct recruitment as well as for promotions. Separate Liaison officer is appointed to look into the matter of reservations.

REC

The Corporation has ensured adequate representation of persons belonging to the SC/ST/OBC category on its rolls in accordance with the directives of Government of India. In case of any backlogs/shortfalls, efforts are made by the Corporation to fill these up through Special Recruitment Drives. Representation of the various categories as on

30.11.2012 is as under:

Group	Total Employees as on 30.11.2012 (nos.)	Representation					
		SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
A	369	35	9.48	10	2.71	41	11.11
B	153	20	13.07	3	1.96	1	0.65
C	48	9	19.14	-	-	2	4.25
D	93	28	30.10	2	2.15	3	3.22
Total	662	93	14.04	15	2.26	47	7.09

NEEPCO

Representation of SC/ST/OBC is indicated as given below:

Group	Total Employees as on 30.11.2012 (nos.)	Representation					
		SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
A	745	76	10.20	107	14.36	102	13.69
B	1062	41	3.86	249	23.44	156	14.68
C	966	67	6.93	361	37.37	146	15.11
D	17	7	41.17	3	17.64	3	17.64
Total	2790	191	6.84	720	25.75	407	14.58

SJVNL

Total Employees as on 30.11.2012 (nos.)	Representation					
	SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
1322	285	21.56	78	5.9	141	10.67

Human Resources

The total manpower on the rolls of SJVN is 1322 as on November 30, 2012 as against 1192 as on November 30, 2011. The strength of HPSEB/HP Govt. on deputation on the above date is 484. The strength of SC, ST and OBC employees as on the above date was 285, 78 and 141 respectively

Human Resources Development

SJVNL believe that employees are its most valuable assets and has evolved growth oriented human resource development strategy.

Empowerment of manpower skills through training, receives utmost importance all the time. The Company has well established strategy for imparting training to the employees and involved other professional people to motivate the employees for good working. The training imparted is two-dimensional i.e. by giving in-house training and through external professional institutions as well. We also facilitate the professional candidates of various institutions for undergoing vocational training in this organization.

THDC

Representation of SC/ST/OBC is indicated below :-

Total Employees as on 30.11.2012 (nos.)	Representation					
	SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
2137	294	13.76	29	1.36	158	7.39

Guidelines issued by Govt. of India from time to time on implementation of reservation policy, welfare, training, grievance redressal etc. are strictly followed. Special Recruitment Drive was relaunched and efforts were made to fill up backlog vacancies. Periodic meetings of Liaison Officers and SC/ST/OBC/Minorities Welfare Association were held to identify their problems and implementation of various welfare activities for them. This year the Corporation has recruited 38 Nos. Executive/Engineer Trainees through All India Open Advertisement which includes 16 recruits from SC/ST/OBC category and 05 from minority. A grievance cell for SC/ST/OBC and minorities exists to redress their grievances. Training programmes to equip employees with upto date information on reservation policy and other service conditions were organised.

DVC

Group	Total Employees as on 30.11.2012	Representation					
		SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
A	2464	331	13.43	124	5.03	379	15.38
B	5080	905	17.81	248	4.88	456	8.98
C & D	3155	589	18.67	253	8.02	195	6.18
Total	10699	1825	17.06	625	5.84	1030	9.63

BBMB

Representation of SC/ST/OBC is indicated below:-

Group	Total Employees as on 30.11.2012 (nos.)	Representation					
		SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
A	205	24	11.70	-	-	3	1.46
B	296	27	9.12	-	-	6	2.36
C	5553	1215	21.88	4	0.07	473	8.51
D	4156	1399	33.66	4	0.09	358	8.61
Total	10210	2665	26.10	8	0.07	840	8.22

BBMB discharges its functions as laid down in Section 79(1) of the Punjab Re-organisation Act, 1966 for which staff for the operation & maintenance of BBMB work is provided by partner State Governments/ State Electricity Boards on transfer basis. However, in the event of inability of partner States/State Electricity Boards, BBMB resorts to direct recruitment and promotion in respect of Group C & D employees, as officers

of Group A & B category are being provided by partner States/ SEBs. BBMB Class III & Class IV Employees (Recruitment and Conditions of Service) Regulations, 1994 were approved by the Central Government and published in Part-III, Section 4 of the Gazette of India dated 8.10.1994. As per Regulation 11 of these Regulations, the members belonging to SC, ST, BC, Ex-servicemen, Physically handicapped persons and the dependents of deceased employees in service shall have the reservation in service and all other concessions as prescribed by the Punjab Govt. from time to time. Accordingly, in view of provisions of Rule 6 of BBMB Rules, 1974 and Regulations 11 of BBMB Class III & Class IV Employees (Recruitment & Conditions of Service) Regulation, 1994, BBMB is following the reservation policy of Punjab Govt. issued from time to time in respect of implementation of provision of reservation in jobs for SC/STs. The prescribed percentage of reservation applicable in BBMB in favour of SCs as per Punjab Govt. instructions is as under:-

- i) Posts filled by direct recruitment = 25%
- ii) Posts filled by promotion = 20%

There is no reservation for ST category in Punjab Govt. Therefore, no post is being reserved for ST category in BBMB.

For providing general welfare measures for SC employees, instructions have been issued to all field offices requesting them to provide the following facilities, if so demanded by the members of SCs on the occasion of Birthday of Dr.B.R.Ambedkar, Maharishi Balmiki Ji and Sri Guru Ravi Dass Ji:-

- i) Bus facilities for Shobha Yatra at token charges of ₹1 per km.
- ii) Auditorium for function on above occasions, free of charge.

In addition to above, BBMB has given representations to the members of the Scheduled Castes by nominating one SC member of the rank of Addl. SE/Senior Executive Engineer in all the Selection Committees.

BEE

Representation of SC/ST/OBC is indicated below:

Group	Total Employees as on 30.11.2012 (nos.)	Representation					
		SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
A	10	01	10	-	-	-	-
B	02	-	-	-	-	-	-
C	08	-	-	-	-	-	-
D	-	-	-	-	-	-	-
Total	20	01	5	-	-	-	-

NMEE

Group	Total Employees as on 30.11.2012 (nos.)	Representation					
		SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
A	07	01	14	-	-	-	-
B	01	-	-	-	-	-	-
C	01	-	-	-	-	-	-
D	N.A.	-	-	-	-	-	-
Total	09	01	11	-	-	-	-

CPRI

Total Employees as on 30.11.2012 (nos.)	Representation					
	SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
586	145	24.74	68	11.60	45	7.67

The 121st Birth Anniversary of Dr.B.R.Ambedkar was celebrated on 6th September 2012. The Chief guest of this function was Dr.Banjagere Jayaprakash, MSW.,PhD who is a Kannada writer and Sahithi, Samskruthi Chinthakaru. He delivered a talk on Prasthutha Samajika Paristhithi-Ambedkaravara Chinthanegalu. Shri.N.Murugesan, Director General, CPRI presided over the function. On this august occasion CPRI awarded Dr.B. R.Ambedkar Merit Awards to the children of CPRI employees who topped in the 10th and 12th standard examinations under different schemes during the year 2011-12.

NPTI

Total Employees as on 30.11.2012 (nos.)	Representation					
	SCs (nos.)	SC (%)	STs (nos.)	ST (%)	OBCs (nos.)	OBC (%)
352	88	25	17	4.82	30	8.52

The total manpower on the rolls of NPTI is 352 as on 30.11.2012. The strength of SC/ST/OBC employees as on the above date is 135.



The screenshot displays the official website of the Ministry of Power, Government of India. The header includes the ministry's logo and name. A left sidebar contains navigation links for 'About Us', 'Generation', 'Transmission', 'Distribution', and 'Rural Electrification'. The main content area features a large banner image of a farmer using a pump in a field. Below the banner, there's a 'WHAT'S NEW' section with recent updates, a search bar, and a 'QUICK LINKS' section. The footer contains various program logos (R-APDRP, RGGVY, DDG, GRID DISTURBANCE REPORT), contact information, and a visitor count of 3,433,402.

E - GOVERNANCE / IT - INITIATIVES

MINISTRY OF POWER

IT cell of the Ministry coordinates with Computer Cell of National Informatics Centre (NIC), Ministry of Power for implementation and execution of various ICT (Information & Communication Technology) Projects/activities in the Ministry. These projects/activities broadly include :

- Design, Development & Implementation of e-Governance Projects and related training.
- Design, Development & Hosting of Web Sites.
- Maintenance and Implementation of Web Portals and Web Based Applications.
- Maintenance of Local Area Network (LAN) and Internet Services.
- Video Conferencing.

The Following Projects/ Activities were taken up during the year 2012 :

- (1) Design, Development & Implementation of e-Governance Projects and related training.** The following projects were implemented :

(i) Foreign Deputation Information System

A web based system has been implemented in the ministry for International Collaboration (IC) Division. The system is being extensively used by the Division. This system maintains the database of sanctions issued for foreign deputation by various divisions. The organization-wise, official name-wise and visit duration-wise queries can be generated on line using this system. The system also generates a cover note assigning automated reference number to each sanction ensuring that the same has been entered in the database. The system was demonstrated to all the senior officers in the ministry and necessary operational training was provided to concerned division.

(ii) File Tracking System

File Tracking System implemented earlier was used by all the sections/divisions of the ministry and has been found very useful by officials in the Ministry to make query based tracking of movement of receipts/ files. The database of the system is being updated regularly as and when changes in organization structure take place.

(iii) Comprehensive DDO (CompDDO) Package

CompDDO package implemented for processing salary of ministry officials was upgraded to version 4.0 with additional features. The pay slip format was redesigned. The cash section of the ministry was given necessary support to process the salary of employees and generate pay bills using this system.

(iv) Central Public Procurement Portal (CPPP) for tender publishing

The web based centralized application on Central Public Procurement Portal (CPPP) for tender publishing was implemented in the ministry as per the guidelines of Deptt. Of Expenditure. Necessary operational training was provided to concerned officials and the information is being updated regularly as per the guidelines.

(v) INTRA Power System

The intranet application INTRAPower was maintained and updated regularly. This is web based G2E (Government to Employee) application accessible by individual official using his/her login credentials and provides access to circulars/notices, telephone/e-mail directory, printing of pay slips, useful links, printing of downloadable forms (leave, LTC, medical, GPF, higher education, HBA, loans, tour, general stores requisition, gate pass etc.).

(2) Design, Development & Hosting of Web Sites

(i) Web Site of the Ministry

The bilingual web site for Ministry of Power available at <http://powermin.nic.in> was regularly updated. New module for Controller of Accounts was designed and incorporated to facilitate uploading of eight standard monthly statements from Office of Controller of Accounts. The Cyber Security Guidelines received from Cyber Security Division of NIC are being incorporated regularly. The contents on News items, Organisation structure, New Government policies and programmes, notifications, tenders, appointments, budget details, summary of monthly accounts of Principal Accounts Office and other regular documents related to distribution , generation, transmission & rural electrification are being updated regularly.

(ii) Support for Hosting of Web Sites of Associated Organisations

Necessary coordination and support was extended to associated organizations like CEA, NTPC, NHPC, NEEPCO, BEE, PFC, REC, PMINTPC, THDC, NRPC, CERC, JERC-UTS& Goa for hosting and maintaining their web sites in NIC Data Center. The redesigned web sites of NHPC recruitments was hosted and recruitment was conducted on line. All the organizations were provided VPN account required for secure updation in new set up as advised by NIC VPN Support Group.

(3) Maintenance and implementation of Web Portals and Web Based Applications

The updation of following web portals and web based applications was continued on regular basis :

- Redesigned ACC Vacancy Monitoring System
- Bharat Nirman Portal (with respect to RGGVY)
- Rural Electrification Details on Flagship Portal of Planning Commission
- Centralised Public Grievance Redressal System and Pensioners' Portal
- Right to Information Act (RTI) Proactive disclosures and Annual Return system

(4) Maintenance of Local Area Network (LAN) and Internet Services

Network Operation Centre (NOC) of Shram Shakti Bhawan is operational at NIC cell, Ministry of Power which provides Internet facility to about 1300 clients in all three ministries of the Bhawan. Out of these, about 400 clients of this Ministry are being maintained over LAN with internet facility. The MTNL Fibre link was upgraded to 1 GBPS. A separate 2 MBPS Fibre Link was extended from PGCIL for connecting NHPC project sites over video link.

Network support is also being extended to National Power Monitoring Center (NPMC) for capturing of real time operational data of generation and transmission system as well as off line data on generation and outages.

(5) Video Conferencing

The Video Conferencing facility (both Integrated Services Digital Network (ISDN) and Internet Protocol (IP) based) available in the Ministry was upgraded with IPV6 compliant equipment. The international video conferences were conducted with Joint working Groups at Germany.

A new video conferencing link has been established to connect IP based cameras on NHPC project sites to review on going projects.

(6) Preparedness on Internet Protocol Version 6 (IPV6) Transition

As per guidelines received from Deptt. Of Telecommunications, the Necessary follow up is being done at Ministry and advisory was also given to associated organizations to ensure preparedness for IPV6 transition. The client systems in the ministry were ensured to be IPV6 compliant.

(7) NIC E-mail facility

NIC E-mail facility is being extended to ministry officials and also officials from associated organizations as desired by them, At present CEA, NHPC, THDC, CERC, REC, NEEPCO are availing NIC E-mail facility.

(8) Other Activities

- (i) IT cell is also coordinating with Admin in smooth operation of Hardware and Software installed with Ministry officials.

- (ii) Necessary follow up and coordination is done with associated organizations under Ministry of Power to ensure compliance of important instructions/ advisory related to IT issues received from various departments of Govt. of India.

SJVN

The Information Technology & Communications (IT & C) Department works towards the development, creation and providing of the latest IT and Communications infrastructure and related services for the use of the various Department at different locations of the organization.

MAJOR THRUST AREAS:

- Keeping abreast of the latest technological developments in the area of IT & C, its possible scalability for optimal use within the organization.
- Spearheading awareness and utility of IT and ITES and its proliferation across the organization.
- Finalization of optimal technology as well as commensurate technical specifications for the procurement of IT and Communications related hardware, software & networking solutions.
- Post-award contract administration in respect of procurement of IT and Communications related hardware, software & networking solutions, with the requisite co-ordination with the concerned hardware/software/ networking vendors. etc.
- Co-ordination with the different users/user groups within the organization for resolution of IT and Communications related specific technical and/or operational issues.
- Websites development, maintenance & updation.
- Maintenance of organizational IT and Communications inventory.

EXTENT OF IT&C PENETRATION:

Hardware and software

SJVN has more than 1000 Pentium based Computer Systems including servers, desktops and notebooks on Windows environment to cater to the needs of users across the organization. Software like Oracle, Visual Basic, Power Builder, Payroll System, Materials Management System, AutoCAD, Phase-2 software, ST ADD-Pro, Cosmos-M, Primavera Project Planner (P6.2) etc. are used for resource optimization activities. Microsoft proxy servers is used for providing Internet and official mail facilities has been provided to all the executives of the organization.

User driven Application Packages for E-Governance/ IT initiatives: The following application packages have been developed for effective E-governance I IT initiatives in the organization.

- **Financial Accounting System:** The system helps in ensuring smooth flow of transactions with the desired level of security application from vouchers to various

books of account, namely, sub-ledgers, ledgers, cash book, bank book, bank re-conciliation of various banks at all locations, accounting of fixed assets with depreciation, monthly reconciliation, generation of monthly books of account, IEDC/Profit & Loss Account, Balance Sheet etc. The system also generates daily funds Statement for the information of the Management.

- **Payroll System:** The main features of the System include automatic salary calculation of the employees, processing and generation of pay bill, bank statement including bank voucher, salary ledgers, journal ledgers, automatic calculation of arrears for prior period, lease payment vouchers, calculation of interest of various loans and advances, calculation of income tax, valuation of perquisites, generation and processing of Form-16, Form-12BA and Form-24. interface with EPF for recurring remittances on a regular basis, Provident Fund/Pension Statements, etc.
- **Materials Management System:** This sophisticated System helps in lowering costs through Project wide visibility of inventory, improve planning accuracy, reserve and allocate critical items and spares for future use, reduce inventory costs through optimum inventory holding, standardization of work procedures, effective purchase, through vendor evaluation, generation of MIS Reports, etc.
- **E-tendering System:** E-tendering/E-procurement one of the important e-governance initiatives of Govt. of India (Gol) has been implemented in the organization since 2008 through M/s ITI Limited. SJVN was one of the first PSU to implement e-tendering system. The system is in place and approximately all tendering activity is done through e-tendering system.
- **Website:** SJVN Website available at <http://www.sivn.nic.in>, <http://www.sivnindia.com> and <http://www.sivn.gov.in>, provides an interface for extensive reach to the public and also serves as an effective communications media for organizational publicity, information dissemination and worldwide access to SJVN.
- **Intranet:** SJVN has an extremely user friendly and powerful Intranet named as Organizational Information Dissemination System (OIDS). OIDS is an internal website of SJVN and provides a means of communication within the organization. It provides important relevant and typical data/information such as CMD's important Organizational Communications, Press Clippings, Press Releases, Company Documents like Quality Manual, Circulars. Office Orders. Project Progress, Monthly Progress Reports, Departmental Presentations, Employee Search Facility, Directory Services, etc, related to the organization under a single domain. The Corporate Office Shimla, Delhi Office and Project sites at Jhakri and Rampur have been connected through MPLS Network.
- Many more System like Online filing of property returns by SJVN employees, Online Bill Tracking System / online

Status of bill payments to contractors / suppliers , Online claim system, online system of vigilance activities in SJVN, Online File Tracking system are in the pipeline for spreading the IT penetration in the organization and will be implemented in the near future. Whereas, online recruitment system has been implemented in SJVN.

NEEPCO

INFORMATION TECHNOLOGY

Keeping in view the constant and radical changes that take place in the IT Industry and NEEPCO's vision to the power scenario, an IT road map has also been prepared. This road map encompasses all the IT requirements of NEEPCO for present and also the requirement in the next five years. The roadmap provides guidance on the most suitable hardware, network, software solution, security, backup and disaster recovery for NEEPCO.

The important milestones achieved in the IT sector of the corporation are briefly listed:

1. A Web based Project Monitoring Centre has been implemented in NEEPCO. In the first phase Primavera Project Monitoring Software has been implemented for all Construction Projects. Side by side a dashboard has been designed to extract vital data from the Primavera Software to be viewed by the top management.
2. A state of the art Video Conferencing facility has been implemented at thirteen locations including all Construction projects, Corporate Office Shillong, Design Office at Guwahati and one O&M Power House. Industrial Cameras are mounted at all vital locations like Dam site, Power House, Switch Yard etc. of the all Construction Project Sites. Facility has been implemented to transmit live video of the actual construction sites to the head quarter for review by the top management.
3. Material & Financial Management System successfully implemented at Kopili, AGBPP, AGTP, RHEP, DHEP, KPC, Pare, TGBP, Guwahati and Shillong. Besides, few sites like Tuirial HEP, QC office at Tezpur and Kolkatta are also included under the same umbrella. These locations are allowed to access MATFIN remotely from the Corporate Office Shillong.
4. Apart from Local Area Network (LAN), all locations have been connected through VSAT to form a Wide Area Network (WAN) for voice and data. There are 18 nos. of Extended-C band VSATs installed. It is under active consideration to upgrade the existing bandwidth to higher capacity for centralizing the Material & Financial Management System.
5. Thirteen numbers of VSATs are installed at various places to cater to the need of Video Conferencing. An eight (8) mbps bandwidth pipe has been booked from M/s Essel Shyam Ltd., the service provider of the VSAT.
6. A UTM Firewall has been installed at all sites to prevent external intrusion into the corporate network as well

as limiting internal users visit to unrelated sites. A centralized antivirus has been successfully installed and regularly updated to tackle any kind of virus attacks.

7. An official website <http://www.neepco.gov.in> gives static and dynamic information about the corporation. An internet corporate mailing facility has been made available for all executives at <https://mail.nic.in>. An intranet portal is also in place to display all relevant data pertaining to the employees of NEEPCO.
8. A Storage Area Network (SAN) device has been installed in Shillong having capacity of 4 TB. The device can be utilised to store huge data generated by Primavera Project Management System and other such software where local hard disk space is not enough to cater to the need of fast growing data.

REC

Information Technology

Progress made during the current year up to 30th November, 2012

All major business functions of the Corporation including Financials, Project, Disbursements, Management of Loan Accounts, Treasury functions,, Payroll, CPF, Cash management, Banking, Purchases across all Offices are done through an integrated ERP system resulting in continuous & sustainable improvement of internal efficiency and greater customer satisfaction. The ERP Data Centre is ISO 27001 : 2005 certified. During the period, the Scope of the system has been improved to include:

- Introduction of new project categories like Renewal Energy, DDG, TFL, R-APDRP etc.
- Interfacing of payment with RTGS system
- Improving customer service through automated generation of mail alerts from the system.
- Improvement of IT setups by migrating the system to cluster based production environment for improved

performance and availability

- Established a full-fledged real time Disaster Recovery Centre for ERP at Hyderabad for replication of data within pre-defined time frame
- Introducing improved internal control in the ERP system by carrying out internal assessment of the ERP system by a committee and incorporation of the suggestions in the system

REC Data Centre is certified ISO/IEC 27001:2005 security standard, by British Standards Institution (or BSI).

REC has implemented Document Management System (DMS) covering important divisions in Corporate Office. This involves digitization of documents including scanning, cleaning, QC, Indexing, uploading and retrieving. The system has been extended to other divisions in Corporate office and Zonal & Project offices.

REC has initiated implementation of Workflow Management System (WMS) for electronic movement of note sheet approval along with attached document. The WMS system has been implemented at 2 divisions of Corporate Office.

Anticipated targets to be achieved during the remaining period of the year i.e. upto 31st March, 2013.

- Disaster Recovery Center (DRC) is proposed to be certified ISO/IEC 27001:2005 security standard, by British Standards Institution (BSI).
- To extend the Workflow Management System to 2 field offices of REC.
- To initiate implementation of HR-ERP solution to automate HR function including Employee Self Service module and integration with existing ERP System. To float and complete the tender process by the end of the financial year.
- Redesigning and revamping of existing static Corporate Website to an interactive and dynamic website.



CHAPTER-35

REGION-WISE INSTALLED CAPACITY

STATEMENT - I

INSTALLED CAPACITY (IN MW) OF POWER UTILITIES IN THE STATES/UTs LOCATED IN NORTHERN REGION
INCLUDING ALLOCATED SHARES IN JOINT & CENTRAL SECTOR UTILITIES

As on 31.01.2013

State	Ownership Sector	Modewise breakup							Grand Total
		Thermal			Total Thermal	Nuclear	Hydro (Renewable)	RES ** (MNRE)	
		Coal	Gas	Diesel					
Delhi	State	135.00	1550.40	0.00	1685.40	0.00	0.00	0.00	1685.40
	Private	0.00	108.00	0.00	108.00	0.00	0.00	18.53	126.53
	Central	4355.41	207.61	0.00	4563.02	122.08	666.12	0.00	5351.22
	Sub-Total	4490.41	1866.01	0.00	6356.42	122.08	666.12	18.53	7163.15
Haryana	State	3160.00	25.00	3.92	3188.92	0.00	884.51	70.10	4143.53
	Private	1620.00	0.00	0.00	1620.00	0.00	0.00	53.10	1673.10
	Central	1174.00	535.29	0.00	1709.29	109.16	478.67	0.00	2297.12
	Sub-Total	5954.00	560.29	3.92	6518.21	109.16	1363.18	123.20	8113.75
Himachal Pradesh	State	0.00	0.00	0.13	0.13	0.00	393.60	531.91	925.64
	Private	0.00	0.00	0.00	0.00	0.00	1748.00	0.00	1748.00
	Central	135.16	61.88	0.00	197.04	34.08	809.34	0.00	1040.46
	Sub-Total	135.16	61.88	0.13	197.17	34.08	2950.94	531.91	3714.10
Jammu & Kashmir	State	0.00	175.00	8.94	183.94	0.00	780.00	130.53	1094.47
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	296.51	129.14	0.00	425.65	77.00	796.43	0.00	1299.08
	Sub-Total	296.51	304.14	8.94	609.59	77.00	1576.43	130.53	2393.55
Punjab	State	2630.00	25.00	0.00	2655.00	0.00	2230.23	244.50	5129.73
	Private	360.00	0.00	0.00	360.00	0.00	0.00	137.08	497.08
	Central	619.54	263.92	0.00	883.46	208.04	784.66	0.00	1876.16
	Sub-Total	3609.54	288.92	0.00	3898.46	208.04	3014.89	381.58	7502.97
Rajasthan	State	3615.00	443.80	0.00	4058.80	0.00	987.96	30.25	5077.01
	Private	840.00	0.00	0.00	840.00	0.00	0.00	2496.39	3336.39
	Central	957.10	221.23	0.00	1178.33	573.00	539.84	0.00	2291.17
	Sub-Total	5412.10	665.03	0.00	6077.13	573.00	1527.80	2526.64	10704.57
Uttar Pradesh	State	4673.00	0.00	0.00	4673.00	0.00	524.10	25.10	5222.20
	Private	3090.00	0.00	0.00	3090.00	0.00	0.00	699.88	3789.88
	Central	2749.90	549.97	0.00	3299.87	335.72	1297.32	0.00	4932.91
	Sub-Total	10512.90	549.97	0.00	11062.87	335.72	1821.42	724.98	13944.99
Uttranchal 160	State	0.00	0.00	0.00	0.00	0.00	1252.15	170.82	1422.97
	Private	0.00	0.00	0.00	0.00	0.00	400.00	15.05	415.05
	Central	280.88	69.35	0.00	350.23	22.28	346.03	0.00	718.54
	Sub-Total	280.88	69.35	0.00	350.23	22.28	1998.18	185.87	2556.56
Chandigarh	State	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	29.81	15.32	0.00	45.13	8.84	51.74	0.00	105.71
	Sub-Total	29.81	15.32	0.00	45.13	8.84	51.74	0.00	105.71
	Central - Unallocated	902.19	290.35	0.00	1192.54	129.80	497.05	0.00	1819.39
Total Northern Region	State	14213.00	2219.20	12.99	16445.19	0.00	7052.55	1203.21	24700.95
	Private	5910.00	108.00	0.00	6018.00	0.00	2148.00	3420.03	11586.03
	Central	11500.50	2344.06	0.00	13844.56	1620.00	6267.20	0.00	21731.76
Grand Total		31623.50	4671.26	12.99	36307.75	1620.00	15467.75	4623.24	58018.74

STATEMENT - II

**INSTALLED CAPACITY (IN MW) OF POWER UTILITIES IN THE STATES/UTs LOCATED IN WESTERN REGION
INCLUDING ALLOCATED SHARES IN JOINT & CENTRAL SECTOR UTILITIES**

As on 31.01.2013

State	Ownership Sector	Modewise breakup							
		Thermal			Total Thermal	Nuclear	Hydro (Renewable)	RES ** (MNRE)	Grand Total
		Coal	Gas	Diesel					
Goa	State	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05
	Private	0.00	48.00	0.00	48.00	0.00	0.00	30.00	78.00
	Central	314.97	0.00	0.00	314.97	25.80	0.00	0.00	340.77
	Sub-Total	314.97	48.00	0.00	362.97	25.80	0.00	30.05	418.82
Daman & Diu	State	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	32.82	4.20	0.00	37.02	7.38	0.00	0.00	44.40
	Sub-Total	32.82	4.20	0.00	37.02	7.38	0.00	0.00	44.40
Gujarat	State *	3970.00	1243.72	17.28	5231.00	0.00	772.00	32.90	6035.90
	Private	8200.00	2577.50	0.20	10777.70	0.00	0.00	3682.00	14459.70
	Central	2408.35	424.27	0.00	2832.62	559.32	0.00	0.00	3391.94
	Sub-Total	14578.35	4245.49	17.48	18841.32	559.32	772.00	3714.90	23887.54
Madhya Pradesh	State	2745.00	0.00	0.00	2745.00	0.00	1703.66	86.76	4535.42
	Private	250.00	0.00	0.00	250.00	0.00	0.00	403.05	653.05
	Central	2049.97	257.18	0.00	2307.15	273.24	1520.00	0.00	4100.39
	Sub-Total	5044.97	257.18	0.00	5302.15	273.24	3223.66	489.81	9288.86
Chhatisgarh	State	1780.00	0.00	0.00	1780.00	0.00	120.00	27.25	1927.25
	Private	1968.00	0.00	0.00	1968.00	0.00	0.00	253.90	2221.90
	Central	1427.94	0.00	0.00	1427.94	47.52	0.00	0.00	1475.46
	Sub-Total	5175.94	0.00	0.00	5175.94	47.52	120.00	281.15	5624.61
Mahara-shtra	State	8400.00	672.00	0.00	9072.00	0.00	2884.84	297.46	12254.30
	Private	5486.00	180.00	0.00	5666.00	0.00	447.00	3636.67	9749.67
	Central	2992.79	2623.93	0.00	5616.72	690.14	0.00	0.00	6306.86
	Sub-Total	16878.79	3475.93	0.00	20354.72	690.14	3331.84	3934.13	28310.83
Dadra & Nagar Haveli	State	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	38.82	27.10	0.00	65.92	8.46	0.00	0.00	74.38
	Sub-Total	38.82	27.10	0.00	65.92	8.46	0.00	0.00	74.38
	Central-Unallocated	1472.35	196.91	0.00	1669.26	228.14	0.00	0.00	1897.40
Total western Region	State	16895.00	1915.72	17.28	18828.00	0.00	5480.50	444.42	24752.92
	Private	15904.00	2805.50	0.20	18709.70	0.00	447.00	8005.62	27162.32
	Central	10738.00	3533.59	0.00	14271.59	1840.00	1520.00	0.00	17631.59
Grand Total		43537.00	8254.81	17.48	51809.29	1840.00	7447.50	8450.04	69546.83

STATEMENT - III

**INSTALLED CAPACITY (IN MW) OF POWER UTILITIES IN THE STATES/UTs LOCATED IN SOUTHERN REGION
INCLUDING ALLOCATED SHARES IN JOINT & CENTRAL SECTOR UTILITIES**

As on 31.01.2013

State	Ownership Sector	Modewise breakup							
		Thermal			Total Thermal	Nuclear	Hydro (Renewable)	RES ** (MNRE)	Grand Total
		Coal	Gas	Diesel					
Andhra Pradesh	State	5092.50	0.00	0.00	5092.50	0.00	3734.53	221.83	9048.86
	Private	450.00	3370.40	36.80	3857.20	0.00	0.00	813.91	4671.11
	Central	2821.38	0.00	0.00	2821.38	275.78	0.00	0.00	3097.16
	Sub-Total	8363.88	3370.40	36.80	11771.08	275.78	3734.53	1035.74	16817.13
Karnataka	State	2720.00	0.00	127.92	2847.92	0.00	3599.80	831.84	7279.56
	Private	2060.00	0.00	106.50	2166.50	0.00	0.00	2554.13	4720.63
	Central	1341.23	0.00	0.00	1341.23	254.86	0.00	0.00	1596.09
	Sub-Total	6121.23	0.00	234.42	6355.65	254.86	3599.80	3385.97	13596.28
Kerala	State	0.00	0.00	234.60	234.60	0.00	1881.50	171.41	2287.51
	Private	0.00	174.00	21.84	195.84	0.00	0.00	0.03	195.87
	Central	897.92	359.58	0.00	1257.50	95.60	0.00	0.00	1353.10
	Sub-Total	897.92	533.58	256.44	1687.94	95.60	1881.50	171.44	3836.48
Tamil Nadu	State	3570.00	523.20	0.00	4093.20	0.00	2137.20	118.55	6348.95
	Private	250.00	503.10	411.66	1164.76	0.00	0.00	7385.05	8549.81
	Central	2959.37	0.00	0.00	2959.37	524.00	0.00	0.00	3483.37
	Sub-Total	6779.37	1026.30	411.66	8217.33	524.00	2137.20	7503.60	18382.13
NLC	State	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	100.17	0.00	0.00	100.17	0.00	0.00	0.00	100.17
	Sub-Total	100.17	0.00	0.00	100.17	0.00	0.00	0.00	100.17
Pondicherry	State	0.00	32.50	0.00	32.50	0.00	0.00	0.00	32.50
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
	Central	227.85	0.00	0.00	227.85	19.28	0.00	0.00	247.13
	Sub-Total	227.85	32.50	0.00	260.35	19.28	0.00	0.03	279.66
	Central-Unallocated	1292.08	0.00	0.00	1292.08	150.48	0.00	0.00	1442.56
Total Southern Region	State	11382.50	555.70	362.52	12300.72	0.00	11353.03	1343.63	24997.38
	Private	2760.00	4047.50	576.80	7384.30	0.00	0.00	10753.15	18137.45
	Central	9640.00	359.58	0.00	9999.58	1320.00	0.00	0.00	11319.58
Grand Total		23782.50	4962.78	939.32	29684.60	1320.00	11353.03	12096.78	54454.41

STATEMENT - IV

**INSTALLED CAPACITY (IN MW) OF POWER UTILITIES IN THE STATES/UTs LOCATED IN EASTERN REGION
INCLUDING ALLOCATED SHARES IN JOINT & CENTRAL SECTOR UTILITIES**

As on 31.01.2013

State	Ownership Sector	Modewise breakup							
		Thermal			Total Thermal	Nuclear	Hydro (Renewable)	RES ** (MNRE)	Grand Total
		Coal	Gas	Diesel					
Bihar	State	430.00	0.00	0.00	430.00	0.00	0.00	66.30	496.30
	Private	0.00	0.00	0.00	0.00	0.00	0.00	29.50	29.50
	Central	1194.70	0.00	0.00	1194.70	0.00	129.43	0.00	1324.13
	Sub-Total	1624.70	0.00	0.00	1624.70	0.00	129.43	95.80	1849.93
Jharkhand	State	1190.00	0.00	0.00	1190.00	0.00	130.00	4.05	1324.05
	Private	630.00	0.00	0.00	630.00	0.00	0.00	16.00	646.00
	Central	228.88	0.00	0.00	228.88	0.00	70.93	0.00	299.81
	Sub-Total	2048.88	0.00	0.00	2048.88	0.00	200.93	20.05	2269.86
West Bengal	State	4970.00	100.00	12.06	5082.06	0.00	977.00	143.40	6202.46
	Private	1341.38	0.00	0.14	1341.52	0.00	0.00	28.05	1369.57
	Central	805.96	0.00	0.00	805.96	0.00	205.30	0.00	1011.26
	Sub-Total	7117.34	100.00	12.20	7229.54	0.00	1182.30	171.45	8583.29
DVC	State	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Private	1050.00	0.00	0.00	1050.00	0.00	0.00	0.00	1050.00
	Central	5005.60	90.00	0.00	5095.60	0.00	193.26	0.00	5288.86
	Sub-Total	6055.60	90.00	0.00	6145.60	0.00	193.26	0.00	6338.86
Odisha	State	420.00	0.00	0.00	420.00	0.00	2061.92	64.30	2546.22
	Private	2400.00	0.00	0.00	2400.00	0.00	0.00	33.00	2433.00
	Central	1512.10	0.00	0.00	1512.10	0.00	105.01	0.00	1617.11
	Sub-Total	4332.10	0.00	0.00	4332.10	0.00	2166.93	97.30	6596.33
Sikkim	State	0.00	0.00	5.00	5.00	0.00	0.00	52.11	57.11
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	74.10	0.00	0.00	74.10	0.00	75.27	0.00	149.37
	Sub-Total	74.10	0.00	5.00	79.10	0.00	75.27	52.11	206.48
	Central - Unallocated	1355.16	0.00	0.00	1355.16	0.00	0.00	0.00	1355.16
Total Eastern Region	State	7010.00	100.00	17.06	7127.06	0.00	3168.92	330.16	10626.14
	Private	5421.38	0.00	0.14	5421.52	0.00	0.00	106.55	5528.07
	Central	10176.50	90.00	0.00	10266.50	0.00	779.20	0.00	11045.70
Grand Total		22607.88	190.00	17.20	22815.08	0.00	3948.12	436.71	27199.91

STATEMENT - V

**INSTALLED CAPACITY (IN MW) OF POWER UTILITIES IN THE STATES/UTs LOCATED IN NORTH-EASTERN REGION
INCLUDING ALLOCATED SHARES IN JOINT & CENTRAL SECTOR UTILITIES**

As on 31.01.2013

State	Ownership Sector	Modewise breakup							
		Thermal			Total Thermal	Nuclear	Hydro (Renewable)	RES ** (MNRE)	Grand Total
		Coal	Gas	Diesel					
Assam	State	60.00	276.20	20.69	356.89	0.00	100.00	31.11	488.00
	Private	0.00	24.50	0.00	24.50	0.00	0.00	0.00	24.50
	Central	0.00	177.82	0.00	177.82	0.00	329.72	0.00	507.54
	Sub-Total	60.00	478.52	20.69	559.21	0.00	429.72	31.11	1020.04
Arunachal Pradesh	State	0.00	0.00	15.88	15.88	0.00	0.00	94.51	110.39
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
	Central	0.00	21.05	0.00	21.05	0.00	97.57	0.00	118.62
	Sub-Total	0.00	21.05	15.88	36.93	0.00	97.57	94.54	229.04
Meghalaya	State	0.00	0.00	2.05	2.05	0.00	240.00	31.03	273.08
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	0.00	25.96	0.00	25.96	0.00	74.58	0.00	100.54
	Sub-Total	0.00	25.96	2.05	28.01	0.00	314.58	31.03	373.62
Tripura	State	0.00	148.50	4.85	153.35	0.00	0.00	16.01	169.36
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	0.00	33.34	0.00	33.34	0.00	62.37	0.00	95.71
	Sub-Total	0.00	181.84	4.85	186.69	0.00	62.37	16.01	265.07
Manipur	State	0.00	0.00	45.41	45.41	0.00	0.00	5.45	50.86
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	0.00	25.96	0.00	25.96	0.00	80.98	0.00	106.94
	Sub-Total	0.00	25.96	45.41	71.37	0.00	80.98	5.45	157.80
Nagaland	State	0.00	0.00	2.00	2.00	0.00	0.00	28.67	30.67
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	0.00	19.19	0.00	19.19	0.00	53.32	0.00	72.51
	Sub-Total	0.00	19.19	2.00	21.19	0.00	53.32	28.67	103.18
Mizoram	State	0.00	0.00	51.86	51.86	0.00	0.00	36.47	88.33
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	0.00	16.28	0.00	16.28	0.00	34.31	0.00	50.59
	Sub-Total	0.00	16.28	51.86	68.14	0.00	34.31	36.47	138.92
	Central - Unallocated	0.00	55.40	0.00	55.40	0.00	127.15	0.00	182.55
Total North-Eastern Region	State	60.00	424.70	142.74	627.44	0.00	340.00	243.25	1210.69
	Private	0.00	24.50	0.00	24.50	0.00	0.00	0.03	24.53
	Central	0.00	375.00	0.00	375.00	0.00	860.00	0.00	1235.00
Grand Total		60.00	824.20	142.74	1026.94	0.00	1200.00	243.28	2470.22

STATEMENT - VI

INSTALLED CAPACITY (IN MW) OF POWER UTILITIES IN THE ISLANDS

As on 31.01.2013

State	Ownership Sector	Modewise breakup							
		Thermal			Total Thermal	Nuclear	Hydro (Renewable)	RES ** (MNRE)	Grand Total
		Coal	Gas	Diesel					
Andaman & Nicobar	State	0.00	0.00	40.05	40.05	0.00	0.00	5.25	45.30
	Private	0.00	0.00	20.00	20.00	0.00	0.00	0.10	20.10
	Central	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub-Total	0.00	0.00	60.05	60.05	0.00	0.00	5.35	65.40
Lakshadweep	State	0.00	0.00	9.97	9.97	0.00	0.00	0.00	9.97
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.75
	Central	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub-Total	0.00	0.00	9.97	9.97	0.00	0.00	0.75	10.72
Total Islands	State	0.00	0.00	50.02	50.02	0.00	0.00	5.25	55.27
	Private	0.00	0.00	20.00	20.00	0.00	0.00	0.85	20.85
	Central	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grand Total		0.00	0.00	70.02	70.02	0.00	0.00	6.10	76.12



A view of NTPC Jhanor

STATEMENT - VII

**ALL INDIA INSTALLED CAPACITY (IN MW) OF POWER STATIONS LOCATED IN THE
REGIONS OF MAIN LAND AND ISLANDS
(UTILITIES)**

As on 31.01.2013

Region	Ownership Sector	Modewise breakup							
		Thermal			Total Thermal	Nuclear	Hydro (Renewable)	RES ** (MNRE)	Grand Total
		Coal	Gas	Diesel					
Northern Region	State	14213.00	2219.20	12.99	16445.19	0.00	7052.55	1203.21	24700.95
	Private	5910.00	108.00	0.00	6018.00	0.00	2148.00	3420.03	11586.03
	Central	11500.50	2344.06	0.00	13844.56	1620.00	6267.20	0.00	21731.76
	Sub Total	31623.50	4671.26	12.99	36307.75	1620.00	15467.75	4623.24	58018.74
Western Region	State	16895.00	1915.72	17.28	18828.00	0.00	5480.50	444.42	24752.92
	Private	15904.00	2805.50	0.20	18709.70	0.00	447.00	8005.62	27162.32
	Central	10738.00	3533.59	0.00	14271.59	1840.00	1520.00	0.00	17631.59
	Sub Total	43537.00	8254.81	17.48	51809.29	1840.00	7447.50	8450.04	69546.83
Southern Region	State	11382.50	555.70	362.52	12300.72	0.00	11353.03	1343.63	24997.38
	Private	2760.00	4047.50	576.80	7384.30	0.00	0.00	10753.15	18137.45
	Central	9640.00	359.58	0.00	9999.58	1320.00	0.00	0.00	11319.58
	Sub Total	23782.50	4962.78	939.32	29684.60	1320.00	11353.03	12096.78	54454.41
Eastern Region	State	7010.00	100.00	17.06	7127.06	0.00	3168.92	330.16	10626.14
	Private	5421.38	0.00	0.14	5421.52	0.00	0.00	106.55	5528.07
	Central	10176.50	90.00	0.00	10266.50	0.00	779.20	0.00	11045.70
	Sub Total	22607.88	190.00	17.20	22815.08	0.00	3948.12	436.71	27199.91
North Eastern Region	State	60.00	424.70	142.74	627.44	0.00	340.00	243.25	1210.69
	Private	0.00	24.50	0.00	24.50	0.00	0.00	0.03	24.53
	Central	0.00	375.00	0.00	375.00	0.00	860.00	0.00	1235.00
	Sub Total	60.00	824.20	142.74	1026.94	0.00	1200.00	243.28	2470.22
Islands	State	0.00	0.00	50.02	50.02	0.00	0.00	5.25	55.27
	Private	0.00	0.00	20.00	20.00	0.00	0.00	0.85	20.85
	Central	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub Total	0.00	0.00	70.02	70.02	0.00	0.00	6.10	76.12
ALL INDIA	State	49560.50	5215.32	602.61	55378.43	0.00	27395.00	3569.92	86343.35
	Private	29995.38	6985.50	597.14	37578.02	0.00	2595.00	22286.22	62459.24
	Central	42055.00	6702.23	0.00	48757.23	4780.00	9426.40	0.00	62963.63
Total		121610.88	18903.05	1199.75	141713.68	4780.00	39416.40	25856.14	211766.22

Renewable Energy Sources (RES) include SHP, BP, U&I, Solar and Wind Energy

Abbreviation:- SHP=Small Hydro Project, BP=Biomass Power, U&I=Urban & Industrial Waste Power, RES=Renewable Energy Sources

Note :

- i. The Hydro generating stations with installed capacity less than or equal to 25 MW are included in RES.
- ii. The installed capacity figures in respect of RES is as on 31.10.2012 and is based on MNRE email Dt.20.11.2012 where cumulative Grid interactive power installed capacity has been indicated as 25409.33 MW . Reconciliation of installed capacity of Hydro capacity resulted in transfer of 135 MW from conventional to SHP-RES and retrieval of installed capacity of 67.20 from SHP-RES to conventional Hydro has resulted in net addition of 67.8 MW to SHP under RES. Also 30 MW of capacity in the nature of Waste Heat Recovery Power Plant at Goa Energy Private Limited under U&I category of RES has been added. The installed capacity due to wind and small hydro amounting to 508.67 MW appearing in captive capacity has been deducted to arrive at installed capacity of utilities in respect of RES($26267.01-508.67+67.8+30=25856.14$).
- iii. 10% of the Installed capacity of Pragati CCGT which is indicated to be Merchant Power by IRP Div has been included in I/C of Delhi State Sector.
- iv. The Vijeshwaram CCPP of 272 MW Installed capacity has been included as an IPP in the state of Andhra Pradesh.
- v. Unit No 3 of Satpura T P S of MPPGCL of 62.5 MW capacity has been retired w.e f 01.10.2012 during the month of January, 2013.
- vi. The Obra T P S Unit No '6' of derated capacity of 94 MW of UPRVUNL and Units No 1 & 2 of Nasik T P S of derated capacity of 125 MW of MAHAGENCO were retired during June 2012.
- vii. With the commissioning of 3rd Unit in the month of Oct,2012,the shares of First Three Units (of 800MW each) of MUNDRA UMPP Station (5*800MW) (Gujarat) have been divided amongst the States of U.P,Punjab,Haryana,Rajasthan,Gujarat & Maharashtra in quantum as 180,270,225,225, 1110 & 390MW respectively (as per intimation received from IRP Div,vide letter No CEA/PLG/IRP/1/12/2194 Dt. 08.10.2012) & not in the state of Gujarat alone as a whole as was beeing done earlier.
- viii. Figures at second place of decimal may not tally due to rounding off.



OFFICE OF THE CONTROLLER OF ACCOUNTS

The Secretary (Power) is the Chief Accounting Authority of the Ministry. The office of Controller of Accounts functions under overall supervision of Joint Secretary & Financial Adviser. The office is headed by the Controller of Accounts with one Deputy Controller of Accounts and seven Pay & Accounts Officers responsible for making all the payments, expenditure control & banking arrangement, Internal Audit and accounting of all the receipts/payments. Out of these, one Pay and Accounts office is stationed in Bengaluru. The Principal Accounts Office is responsible for consolidation of monthly Accounts of all the Pay & Accounts Offices and submission of monthly accounts of the Ministry to Controller General of Accounts (CGA), Department of Expenditure, Ministry of Finance, preparation of Appropriation Accounts, Statement of Central Transactions (SCT) and Finance Accounts on annual basis for submission to the CGA. It is also responsible for the compilation of various data and generation of reports for submission to Ministry of Power, Ministry of Finance, CGA, O/O CAG etc.

The Office of Controller of Accounts also bring out an annual accounting booklet called 'Accounts at a Glance' which contains details of total transactions (Receipts, Expenditure, Investments and Loans) of the Ministry and its various organizations. It gives a brief overview of Accounting trends. The office is also responsible for preparing the Receipt Budget of the Ministry.

INTERNAL AUDIT WING

The Internal Audit Wing facilitates ensuring of adoption of sound procedures, regularities and financial propriety of transactions of accounts. This Wing advises DDOs and Grantee Institutions for correct implementation of rules and maintenance of proper records. The Internal Audit Wing also conduct audit of Rajiv Gandhi Gramin Vidutikaran Yojna (RGGVY) & Restructured Accelerated Power Distribution Reform Programme (R-APDRP) Schemes.

Performance of the Internal Audit Wing, during the year 2012-13 (up-to 30/11/2012) is as under:-

No. of Units due/ inspected (up-to 30/11/2012)	No. of Paras raised (up-to 30/11/2012)	No. of Paras settled	No. of Paras outstanding up-to 30/11/2012
37 / 24	96	56	423

AUDIT OBSERVATIONS

The Organization-wise Break-up of outstanding Audit Observations & Inspection Reports issued up-to 30/11/2012

is as under:-

Sl. No.	Name of Organization/ Office	No. of Inspection Reports issued from 1.4.2012 to 30.11.2012	No. of Paras outstanding as on 30.11.2012 (including old Paras)
01.	Ministry of Power	--	58
02.	Central Electrical Authority	04	183
03	Appellate Tribunal for Electricity	01	27
04	BBMB, Nangal	--	10
05	JERC, Gurgaon	--	12
06	NPTT, Faridabad	01	17
07	CPRI Bangalore	01	08
08	Forum of Regulators (FoR)	--	08
09	Special Audit (AG&SP)	01	02
10	RGGVY Scheme	08	09
11	R-APDRP Scheme	07	10
12.	BEE	--	28
13.	Pr. AO Admn. & Accounts	--	24
14.	PAO (Secretariat & BMCC)	--	11
15.	PAO, CEA, New Delhi	--	11
16.	PAO, CEA, Bengaluru	01	05
	Total	24	423

Statutory Audit Paras of MOP, PSUs etc:-

The position of pending Audit Paras as on 31.12.2012 is as under:

Paras	Pending		Total
	MOP	Audit	
(i) Commercial	14	1	15
(ii) Civil	-	-	-
(iii) Draft	-	-	-
Total	14	1	15

COMPUTERISATION

The Office is generating Computerized Accounts through two packages namely COMPACT (PAO-2000) for accounts

of Pay & Accounts Offices and CONTROLLER'S ACCOUNT (CONTACT-OLD) for monthly accounts of Pr. Accounts Office. The Package named COMPACT (PAO, 2000) consisting of Pre-check, Compilation, GPF and Pension etc. modules for Pay and Accounts Offices, CPFIM package for New Pension Scheme and CONTACT (OLD) for Principal Accounts Office have been working properly. Alongside with COMPACT all PAOs are uploading the daily abstract of accounts on the 'E-LEKHA' website on day-to-day basis. 'E-LEKHA' is an e-governance initiative by the Controller General of Accounts. The expenditure and receipt of the Ministry can be viewed from link e-lekha on the website cga.nic.in with a valid user ID and password. The monthly accounting data is also now uploaded on the Ministry of Power website i.e. powermin.nic.in→Controller of Accounts.

E-PAYMENT:

The Controller General of Accounts, Ministry of Finance has developed a facility in COMPACT for electronic payment (e-payment through digitally signed electronic advices. This has replaced the existing system of payment through cheques while leveraging the COMPACT application running in all Pay & Accounts Offices of all Ministries/Departments of Central government.

The e-payment system is a fully secured web based system of electronic payment services which introduces transparency in government payment system. Payment from the Government under this system is made by credit of money directly into the bank account of the payee through a digitally signed

e-advice generated from COMPACT through the 'Government e-payment Gateway (GePG) on a secured Communication channel. In Ministry of Power, ₹1968.43 Crores have been paid through e-payment up to November, 2012.

Report on e-payment is being regularly submitted to the O/o CGA. 95 % payments have been done in November, 2012 by this office through GePG.

DEFINED CONTRIBUTION PENSION SCHEME:

There were 120 subscribers under New Pension Scheme in M/o Power as on 30/11/2012.

CENTRAL PLAN SCHEME MONITORING SYSTEM:

The Plan Scheme Monitoring system is a Central Sector Plan Scheme of the Planning Commission and is being implemented by the office of controller General of Accounts. The Scheme aims at establishing a Suitable on-line Management Information System and Decision Support System for the Plan Scheme of the Government of India. The System is envisaged to track fund disbursement from government of India up to the last beneficiary under Plan Scheme and ultimately report on fund utilization at different level of implementation on real basis. This shall not only make monitoring of the Plan Scheme more effective but also augment efficiency of financial management in the public sector. In Ministry of Power though details of sanctions and releases under all plan scheme are being entered into CPSMS, presently RGGVY (Rajiv Gandhi Grameen Vidyutikaran Yojna) is taken up for detailed implementation under CPSMS. Now all the agencies in RGGVY are registered in the CPSMS.



3260MW Vindhyachal Power Plant of NTPC

AUDIT OBSERVATIONS OF C&AG

SUMMARY OF REPORTS OF THE C&AG OF INDIA, UNION GOVERNMENT–COMMERICAL 2011-12 and 2012-13 SERIES

Ministry of Power

Report No 8 of 2012-13

Bokaro Power Supply Company Limited

12.1 Loss due to non fulfilment of obligations prescribed in Letter of Assurance for supply of coal

The Company could not adhere to the time bound milestones laid down in the Letter of Assurance for supply of coal leading to forfeiture of bank guarantee of ₹ 15.52 crore by Central Coalfields Limited.

DAMODAR VALLEY CORPORATION LIMITED

12.2 Transmission and Distribution of Power

Audit noticed that gaps pointed out earlier existed even now in contract management, Right of Way to contractors, change in scope of work, change in route profiles and placement of orders to technically and financially unsound contractors etc.

Though the Corporation was formed and mandated by DVC Act for unified development of the Damodar Valley, the Corporation entered into Power Purchase Agreements (PPAs) with electricity agencies of other States for providing power despite pending demand in the valley.

The performance of the Corporation on expansion of its capacity to overcome the demand-generation gap remained dismal as it could not achieve the targets set for 10th Plan and 11th Plan due to persistent weaknesses in the planning and execution of projects leading to inordinate delays in construction/installation of various segments of the transmission and distribution network viz. transmission lines, sub stations and transformers etc. The Project Monitoring System of the Corporation was also not effective in containing the time and cost overruns of the projects.

The operation & maintenance system of transmission and distribution network of the Corporation needs to be strengthened. The Corporation did not adhere to the periodicity of checking of the various equipments such as transformers, relays and other associated equipments as per the guidelines of CEA. The Corporation was also not able to discourage the consumers from overdrawing the power by imposing adequate punitive measures. As a result the incidents of tripping/transformer breakdown, violation of grid discipline etc and consequential load restriction/load shedding were on rise and the Corporation could not provide uninterrupted and quality power to the consumers.

Further, despite the fact that transmission and distribution losses were above the norms, the Corporation had not

implemented SEMA notified by CEA in March 2006 in all the Sub Stations for taking corrective actions.

12.3 Fuel Management in Thermal Power Stations

Audit observed that despite the fact that the cost of fuel constituted 70 per cent, the Management failed to take appropriate cost control measures to economise the cost of generation of electricity. In fact, proper systems, and effective internal controls procedures were not in place and, therefore, the fuel management system of the Corporation needs streamlining in all the processes viz. procurement of fuel, transportation of fuel and consumption of fuel. In the absence of an effective sampling system, penal provisions in the agreements with the joint samplers, adequate monitoring of the quality of coal received and follow up action with the coal companies, the Corporation continued to receive inferior grade of coal from the Coal companies which besides having lower calorific value, contained oversized stones and extraneous materials. The Corporation also continued to incur a substantial wasteful expenditure on account of demurrages due to delays in unloading of coal from railway wagons and transit losses of coal due to coal pilferage enroute. Further, due to various operational inefficiencies, a large quantity of fuel was wasted as it remained un-burnt in ash due to imperfect combustion. The consumption of coal was also not measured scientifically for tariff purpose.

In sum, though the Corporation continues to encounter problems relating to procurement, transportation and consumption of fuel, it is yet to conduct energy audit of its power plants to address the issues of conservation of energy, detection of its wastage and excess consumption of fuel etc.

NTPC LIMITED

12.4 Loss due to absence of route planning

Due to non-enforcement of contractual terms regarding supplies of imported coal at the optimum landed cost the Company had to incur an avoidable expenditure of ₹698.81 crore during 2008-11 on supplies of coal through routes other than optimum routes.

POWER GRID CORPORATION OF INDIA LIMITED

12.5 Follow up of Audit Para titled “Changes in terms and conditions after opening of bids”

Audit appreciates the action initiated by the Ministry of Power, Government of India in restoring the process of competitive bidding which was vitiated by them/ Company due to post bid changes in the tendering process for award of work in two transmission projects.

RATNAGIRI GAS AND POWER PRIVATE LIMITED

12.6 Extension of extra contractual benefit to a private contractor

Ratnagiri Gas and Power Private Limited extended extra contractual benefit of ₹12.28 crore to a private joint venture by paying them extra for a repair work which was already their responsibility under the work awarded to them.

Report No. 6 of 2012-13

ULTRA MEGA POWER PROJECTS

This Report of the Comptroller and Auditor General of India contains the results of the Performance Audit of the records of Ministry of Power (MOP) and Power Finance Corporation Limited (PFC) carried out to assess effectiveness and transparency in award of Ultra Mega Power Projects (UMPPs) to the Developers. The Audit Report has been finalized after incorporating the views of the MOP.

The concept of UMPPs was conceived by MOP in 2005 in the backdrop of growing demand for power. To address the deficit, a need was felt for development of large capacities in power sector in India and to bring in potential investors for developing such projects at a stage having major clearances, fuel tie-up and sale of power agreements in place. Each UMPP was projected to have a capacity of around 4,000 MW with cost ranging between ₹16,000 - 20,000 crore per project. Ministry of Power prescribed the Special Purpose Vehicle (SPV) route and designated PFC, a financial institution under the administrative control of MOP, as the Nodal Agency to carry out preliminary activities and undertake the bidding process for identifying the Project Developer. An Empowered Group of Ministers (EGOM) was constituted in June 2007 for facilitating expeditious decisions on all major issues concerning UMPPs.

Out of 16 UMPPs identified so far (March 2012), 12 SPVs have been floated, of which four UMPPs viz Sasan in Madhya Pradesh, Mundra in Gujarat, Krishnapatnam in Andhra Pradesh, and Talaiya in Jharkhand have been awarded to the identified Developers at lowest levelised tariff⁴, which ranged between ₹1.196 and ₹2.333 per unit of electricity. The remaining UMPPs are yet to be awarded. One unit of 800 MW of the Mundra UMPP was commissioned in February 2012.

HIGHLIGHTS OF THE AUDIT REPORT

Bid Process Management

- The lowest technically qualified bidder (M/s ICRA) was not considered for consultancy assignments for Sasan and Mundra UMPPs and the contract was awarded at a higher price to M/s Ernst & Young (M/s E & Y), on the ground that they had advised on bid process management of a power project in Bangladesh. M/s. E&Y was also awarded the consultancy assignment for Talaiya UMPP (without inviting bids) and Krishnapatnam UMPP, overlooking the principle of equity in public procurement laid down in the General Financial Rules of the GOI.
- The equity holding requirement of Parent/Affiliate (for claiming the benefit of technical and financial capability in bid) was scaled down from 51 per cent in the initial

bid document (March 2006), to 26 per cent in May 2006. This change made on the basis of feedback from bidders and advice of the consultant M/s. E&Y violated the basic principle of 'ownership' and 'control' as per Accounting Standard Interpretation (ASI) 24 issued by the Institute of the Chartered Accountants of India.

- The normative availability⁵ for UMPPs was reduced from 85 per cent to 80 per cent on the suggestion of PFC. For the levy of penalty, the base was reduced from 80 per cent to 75 per cent before receiving financial bids. Reduction in normative availability and penalty base was not in the interest of operational efficiency of UMPPs.
- Equity lock-in requirement for the selected bidder in the SPV was reduced from 12 years from Commercial Operation Date (COD) to 5 years for Krishnapatnam and Talaiya UMPPs after award of Sasan and Mundra UMPPs. In addition, in all the 4 UMPPs the Developers were permitted to cede managerial control (i.e. equity holding can be reduced from 51 per cent to 26 percent) after two years of commercial operation, even though the quoted tariff was valid for 25 years. Allowing the Developers to cede management control after 5 years of the COD may not be advisable since adequate backing of the sponsoring entity would be lacking for the SPVs during the major part of the operational period.
- Minimum net worth of ₹1000 crore (which is 5 per cent of ₹20,000 crore being the project cost) prescribed in the bid documents of all four UMPPs was on lower side when compared to minimum net worth requirement of 15 per cent fixed by Ministry of Finance for PPP projects costing ₹1000 crore or more. Audit is of the opinion that fixing low net worth criteria involves unwarranted risk for the UMPPs.

⁴ Levelised tariff is the weighted average tariff

⁵ Availability means the quantum of time that a power plant is able to produce electricity over a certain period divided by the amount of time in the period.

Gaps in Bid Evaluation

- In the three UMPPs awarded to Reliance Power Limited (RPL), experience of developing projects based on additions to the fixed assets (₹3123.88 crore for Sasan & Mundra, ₹2137.49 crore for Krishnapatnam and ₹2254.61 crore for Talaiya UMPPs) during the last 10 years was claimed though only capital cost of projects commissioned during the last 10 years was eligible to be counted for project experience.
- Central Electricity Authority finalized its report on land requirements for thermal plants in December 2007. 1538 and 1096 acres land were agreed for Mundra and Krishnapatnam UMPPs respectively in excess of these norms. The excess value inherent in the extra land allocated should be suitably monitored in the interest of the State and the power consumers.

Financial benefit to Project Developer

Originally (Sep 2006) two coal blocks viz. Moher, Moher-Amlohri extension and later (Oct 2006) a third block viz.,

Chhatrasal were allocated to Sasan UMPP to meet its coal requirement of 16 Million Tonne per annum. In November 2007, Chief Minister of Madhya Pradesh requested the Prime Minister, to allow RPL to use the surplus coal from the captive blocks of Sasan UMPP in the power plant being set up by RPL at Chitrangi tehsil in the vicinity of these mines. The matter was referred to EGOM and the issue was deliberated in the two EGOM meetings held on 28 May 2008 and 14 August 2008. EGOM recommended that RPL be allowed to use the surplus coal from coal blocks allotted to Sasan UMPP for its other projects where power was sold through tariff based bidding. Accordingly, the permission was accorded. This decision is likely to result in financial benefit of ₹29,033 crore over 20 years with a net present value (NPV) of ₹11,852 crore to the project developer.

A detailed analysis of the chronology of events which took place in granting permission for use of surplus coal at Chitrangi Project from the coal blocks allocated for Sasan Project, also revealed as under:

- i) The basis on which MOP on 9 October 2006 came to the conclusion that the two initially allocated blocks for the Sasan UMPP would be inadequate, is not clear.
- (ii) The basis on which MOC was prevailed upon in October 2006 itself to allot an additional block (Chhatrasal) of coal to Sasan UMPP by de-allocating it from the Public Sector NTPC is not clear.
- (iii) In March 2008, RPL maintained that there was no possibility to enhance production beyond 12 million tonne from Moher and Moher-Amlohri extension. Surprisingly, the Chief Minister of Madhya Pradesh had written to the Prime Minister in November 2007 itself seeking diversion of the surplus coal to Chitrangi. However, in August 2008, RPL intimated their intention to use latest technology leading to increased recovery and higher annual production leading to the coal from these three blocks becoming surplus to the requirement of Sasan UMPP. Thus, whilst in March 2008 RPL was taking the stand that there was no surplus coal from the two blocks, the Chief Minister, Madhya Pradesh had already concluded in November 2007 that surplus would accrue from the three blocks allotted to RPL.
- (iv) The information provided by RPL, to the EGOM in its meeting on 14 August 2008, led to their deciding that surplus coal would be available and this could be diverted to other projects.
- (v) Till March 2009, however, MOC was of the view that coal from two blocks (Moher and Moher-Amlohri) was sufficient for the Sasan UMPP and that there is no justification for allocating a third block (Chhatrasal) to the Developer.

The permission to use surplus coal in other projects of the Developer vitiated the sanctity of the bidding process since it amounts to post bid concessions having significant financial implication as further explained below:

- The EGOM in its meeting held on 28 May 2008 had sought information about structure in respect of ownership,

mode of sale of power and tariff of Chitrangi Project. However, without getting this information from Madhya Pradesh Government, EGOM recommended (14 August 2008) granting of permission for usage of incremental coal.

- EGOM in its meeting held on 14 August 2008 had recommended that power generated by utilizing incremental coal from captive coal blocks of Sasan UMPP would be sold through tariff based competitive bidding. But RPL was granted permission by MOC (February 2010) to use the surplus coal in Chitrangi Project the tariff of which was already accepted in May 2008 at ₹2.45 per unit i.e, prior to the EGOM decision on usage of surplus coal for Chitrangi Project. For this purpose RPL had bid along with other bidders citing independent fuel arrangement (from Mahanadi Coalfields Limited/112.22 million tonne of coal reserves in the Rampia and dip-side of Rampia non-coking coal blocks in the state of Odisha).
- The relevant clauses of the coal allocation letter (clause (i), (vi) and xii) did not explicitly state that Central Government would indeed grant permission to the Developer to use the surplus coal in their other projects. It was left to the bidders to interpret the implication of the clauses of allocation letter. However, a normal understanding of these clauses indicates that they are restrictive and are designed to ensure non-diversion of coal.
- NTPC, one of the bidders for the Sasan UMPP, also held the aforementioned view as they did not factor into their bid the possibility of using the surplus coal from the captive mines of Sasan UMPP.
- M/s. Tata Power Company Limited, which was also a bidder for the Sasan UMPP has also contested the post-bid permission of surplus coal diversion facility to RPL as that was not their understanding either, from a reading of the pre-bid conditions. A special leave petition filed (May 2009) by Tata Power Limited against permission to RPL to use surplus coal from captive coal mines of Sasan UMPP is pending in the Hon'ble Supreme Court of India. It had earlier been rejected by the High Court on the ground of suppression of material fact, absence of locus standii of Tata Power to maintain the writ petition and on account of the time taken for approaching the Court for relief.
- The Inter Ministerial Group (IMG), while deliberating on the safeguards issue against misuse of coal mine noted in September 2007 that the allocation of coal mine had an explicit condition that its coal should be used solely for the purpose of the Sasan UMPP or else the lease was liable to be cancelled. This IMG was constituted in August 2007 by the MOP on the recommendation of EGOM to review the Standard Bidding Documents for UMPPs.
- Since fuel cost is an important aspect of commercial consideration in arriving at the tariff, any relaxation of condition subsequent to bidding would vitiate the bidding process. As explicit mention of usage of surplus coal in other projects was not unambiguously transparent in the coal block allocation letters, the bidders who lost out

did not have equal opportunity to bid under the relaxed condition.

To sum up, the conclusion that can be drawn is:

- (i) The advice of MOP in October 2006 that Sasan UMPP would require an additional coal block was based on insufficient data as mining plan of Moher and Moher-Amlohri extension was not available.
- (ii) The permission for diversion of surplus coal was not explicitly stated in the bid document.
- (iii) The EGOM evidently was not provided accurate information about adequacy or otherwise of coal availability in the two blocks initially allocated to Sasan UMPP leading to their decision permitting usage of surplus coal in another project of the Developer.
- (iv) Permission to utilize surplus coal for projects with tariff based competitive bidding has been violated since tariff for Chitrangi Project, for which such permission was granted, was already fixed before the permission was granted.

Recommendations

- To ensure fair play, a level playground and transparency of the bidding process for future developers to derive comfort in Government action, the allocation of the third coal block (Chhatrasal) be appropriately reviewed.
- Taking a larger perspective and as the Government is left with the fait accompli of continuing with the bidders there is a need to closely monitor the physical progress of the projects so as to avoid any slippage in capacity addition programme.

- The bid evaluation process may be streamlined to ensure strict compliance of the qualifying criteria and adequate due diligence done in the selection of appropriate bidder.

REPORT NO. 10 OF 2012-13

Capacity Expansion in Hydro Power Sector by CPSEs

Hydro Power Sector CPSEs embarked upon an ambitious target of capacity addition of 11,813 MW during the period 2007-12. However, the CPSEs did not prepare their capacity addition plans with due diligence as two CPSEs (THDC and NEEPCO) did not envisage any new project for capacity addition and two CPSEs (SJVN and NHPC) included projects without consultation with the State Governments with the result that the plans did not materialize. As a result the plans had to be scaled down from 11,813 MW to 6,794 MW. Even the scaled down targets which were almost 42 per cent less than the original targets could not be achieved. CPSEs had achieved only 1,550 MW (13 per cent and 23 per cent of the original and revised targets respectively) by March 2012. Besides, these CPSEs are likely to add only 3,774 MW capacity in 12 projects in XII Five Year Plan (2012-2017) as against 14,535 MW in 33 projects envisaged in the Hydro Power Policy 2008.

Audit observed that the entire process for project planning and implementation was beset with inordinate delays. Delay in execution of 16 projects by four CPSEs resulted in revision of their initial approved cost of ₹30,005 crore to ₹44,712 crore. In seven completed/ongoing projects, the cost overrun was in the range of 53 to 148 per cent.



Silver Medal being presented to Ministry of Power Pavilion at IITF 2012

RESULTS-FRAMEWORK DOCUMENT & ACHIEVEMENTS OF MINISTRY OF POWER FOR 2011-12

(For the period April 1, 2011 to March 31, 2012)

SECTION-1

Vision, Mission, Objectives and Functions

VISION

Reliable, adequate and quality power for all at reasonable prices.

MISSION

Ministry of Power seeks to achieve its vision by providing necessary support and enabling policy framework for integrated development of power infrastructure in the country to meet the requirements of the growing economy and to meet the requirements and aspirations of the people for quality power particularly of poor households in rural areas.

OBJECTIVES:

(I) Improving the Power availability through

- i. Fresh Capacity addition
- ii. Improved Generation
- iii. Capacity requirement saved through Energy Conservation measures

(II) Expanding the Transmission Network in the country through :

- i. Transmission lines addition
- ii. Transformation capacity addition

(III) Universal power access through implementation of RGGVY scheme aiming at :

- i. Village electrification
- ii. BPL Households electrification

(IV) Reducing AT&C losses through implementation of R-APDRP scheme, by :

- i. Setting up a verifiable system of measuring AT&C losses in project areas.
- ii. Distribution infrastructure strengthening which aim at reducing AT&C losses.
- iii. Setting up of SCADA Centres in Project Areas.
- (v) Enhancing the availability of trained and skilled manpower for the power sector through Imparting training at NPTI.

(VI) International Co-operation with Bhutan, Nepal and Myanmar.

(VII) Efficient functioning of RFD System.

(VIII) Improving Internal Efficiency / Responsiveness / Service Delivery of Ministry/ Department.

FUNCTIONS :

The main work items dealt by the Ministry of Power include following :

- General Policy in the electric power sector and issues relating to energy policy and coordination thereof.
- All matters relating to hydro-electric power (except small/ mini/ micro hydel projects of and below 25 MW capacity) and thermal power and transmission & distribution system network;
- Research, development and technical assistance relating to hydroelectric and thermal power, transmission system network and distribution systems in the States/Union Territories;
- Administration of the Electricity Act, 2003, (36 of 2003), the Energy Conservation Act, 2001 (52 of 2001), the Damodar Valley Corporation Act, 1948 (14 of 1948) and Bhakra Beas Management Board as provided in the Punjab Reorganisation Act, 1966 (31 of 1966);
- All matters relating to Central Electricity Authority, Central Electricity Board and Central Electricity Regulatory Commission;
- Rural Electrification;
- Power schemes and issues relating to power supply/ development schemes / programmes / decentralized and distributed generation in the States and Union Territories;
- All matters concerning energy conservation and energy efficiency pertaining to Power Sector.
- Matters relating to functioning of Undertakings / Organizations under its administrative control like NTPC, NHPC, Powergrid, REC, NEEPCO, PFC, THDC, SJVNL, NPTI, CPRI, BBMB, DVC and BEE.

SECTION-2

Inter se Priorities among Key Objectives, Success Indicators and Targets (Period: April1,2011 to March 31,2012)

Sl. No.	Objectives	Weight-age (Out of 100)	Actions		Success Indicators	Unit	Weight-age (Out of 100)	Target Rating (achievement in %)				
								Excellent 100%	Very good 90%	Good 80%	Fair 70%	Poor (60%)
(I).	Improving Power availability	35	Fresh Capacity addition		15600*	(MW)	8	15600	14040	12480	10920	9360
			Generation performance		855	(BU)	8	855	770	684	599	513
			Fresh Capacity addition saved through Energy Conservation Schemes including National Mission on Enhanced Energy Efficiency (Energy Savings)		2600	(MW)	8	2600	2340	2080	1820	1560
			Issue of RFP for Bulk order for supercritical power plants (800 X 9 = 7200 MW)		9	No.	3	9	8	7	6	5
			Issuance of RFQ for UMPPs		1	No.	1	1	-	-	-	-
			Revision of Tariff Policy 2006 & New Hydro Policy 2008		Revision	Date	1	Jan 31 2012	Feb 15 2012	Feb 28 2012	Mar 15 2012	Mar31 2012
			QPR of PSUs and monitoring performance of Autonomous Bodies biannually		24	No.	2	24	22	19	17	14
			Issue of RFS for remaining capacity(300 MW) under Solar Mission		Issue of RFS	Date	1	Dec 31 2011	Jan 31 2012	Feb 28 2012	Mar 15 2012	Mar 31 2012
			Workshop on R&M of power plants, technological upgradation and improving project execution capabilities with GenCos/States/ Developers etc.		3	No. of work-shops	2	3	2	1	-	-
			R&M of Power Plants of total estimated capacity of 750 MW.		2	No. of plants	1	2	1	-	-	-
(II).	Expanding the Transmission Network	9	Transmission lines addition / ready for commissioning	Central	8159	(ckm)	1	8159	7343	6527	5711	4895
				State	8620	(ckm)	2	8620	7758	6896	6034	5172
				Private	3013	(ckm)	1	3013	2712	2410	2109	1808
			Transformation capacity addition/ ready for commissioning	Central	6885	(MVA)	2	6885	6197	5508	4820	4131
				State	20495	(MVA)	2	20495	18446	16396	14347	12297
			New Technologies in Transmission Sector.		Construction of 1200 kV D/C line at Bina National Test Station	Date	1	Mar 15 2012	Mar 20 2012	Mar 25 2012	Mar 29 2012	Mar 31 2012
(III).	Improving power access through implementation of RGGVY scheme	17	Village electrification		14500	No.	8	14500	13050	11600	10150	8700
			BPL Households electrification		52	(No. in Lakhs)	8	52	47	42	36	31
			Notification of Rural Electrification Plan by remaining States**		3	No. of States	1	3	2	1	-	-

(IV)	Reducing AT&C losses through implementation of RAPDRP scheme	16	Sanction of projects (Part B- infrastructure strengthening)	150***	No.	8	150	135	120	105	90
			Sanction of projects (SCADA)	15***	No.	7	15	13	12	11	9
			No. of Power Ministers' Conference organized	2	No.	1	2	1	-	-	-
(V)	Enhancing the availability of trained and skilled manpower for the power sector	5	Persons imparted training by NPTI	16225	No.	2	16225	14603	12980	11358	9735
			Trainee weeks at NPTI	132000	No.	3	132000	118800	105600	92400	79200
(VI)	International cooperation with Bhutan, Nepal and Myanmar	3	Bhutan: Preparation/ Updation of DPR	5	No.	1	5	4	3	2	1
			Nepal: Submission of FC clearance application for Arun-III Project	On time submission	Date	1	Dec 31 2011	Jan 31 2012	Feb 29 2012	Mar 15 2012	Mar 31 2012
			Myanmar : Updation of DPR for Tamanthi	Updation of DPR	Date	1	Jan 31 2012	Feb 15 2012	Feb 29 2012	Mar 15 2012	Mar 31 2012
(VII)	Efficient functioning of the RFD System	3	Timely submission of Draft for Approval	On-time submission	Date	2	Mar. 7 2011	Mar. 8 2011	Mar. 9 2011	Mar. 10 2011	Mar. 11 2011
			Timely submission of Results	On-time submission	Date	1	May 1 2012	May 3 2012	May 4 2012	May 5 2012	May 6 2012
(VIII)	Improving internal Efficiency/ responsiveness/ service delivery of Ministry/ department	10	Identify potential areas of corruption related to departmental activities and develop an action plan to mitigate them	Finalize an action plan to mitigate potential areas of corruption	Date	2	Feb. 10 2012	Feb. 15 2012	Feb. 20 2012	Feb. 24 2012	Feb. 29 2012
			Ensure compliance with Section 4(1) (b) of the RTI Act, 2005	No. of items on which information is uploaded by Feb 10, 2012	No.	2	16	15	14	13	12
			Develop an action plan to implement ISO 9001 certification	Finalize an action plan to implement ISO 9001 certification	Date	2	Feb. 10 2012	Feb. 15 2012	Feb. 20 2012	Feb. 24 2012	Feb. 29 2012
			Implementation of Sevottam	Re-submission of revised draft of Citizens' / Clients Charter	Date	2	Dec. 15, 2011	Dec. 20, 2011	Dec. 25, 2011	Dec. 28, 2011	Dec. 31, 2011
				Independent Audit of implementation of public grievance redressal system	%	2	100	95	90	85	80

(IX)	Ensuring compliance to the Financial Accountability Framework	2	Timely submission of ATNs on Audit Paras of C&AG	Percentage of ATNs submitted within due date (4 months) from date of presentation of Report to Parliament by CAG during the year.	%	0.5	100	90	80	70	60
			Timely submission of ATRs to the PAC Sectt. on PAC Reports.	Percentage of ATRs submitted within due date (6 months) from date of presentation of Report to Parliament by PAC during the year.	%	0.5	100	90	80	70	60
			Early disposal of pending ATNs on Audit Paras of C&AG Reports presented to Parliament before 31.3.2011	Percentage of outstanding ATNs disposed off during the year.	%	0.5	100	90	80	70	60
			Early disposal of pending ATRs on PAC Reports presented to Parliament before 31.3.2011.	Percentage of outstanding ATRs disposed off during the year.	%	0.5	100	90	80	70	60

* Excluding Nuclear.

** Projects have already been sanctioned to States. There is little leverage available with the Ministry to induce remaining 13 States to notify RE Plans.

*** Subject to availability of balance towns as per R-APDRP Guidelines.

SECTION-3

Trend Values of the Success Indicators

Sl. No.	Objectives	Actions		Success Indicators	Unit	Actual				Projected	
						FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2012-13	FY 2013-14
(I).	Improving Power availability	Fresh Capacity addition		15600^	(MW)	9263	3454	9585	12160.5 ^{\$s}	-	-
		Generation performance		855	(BU)	704.5	723.8	771.5	811.104 ^{\$s} (Provisional)	-	-
		Fresh Capacity addition saved through Energy Conservation Schemes including National Mission on Enhanced Energy Efficiency(Energy Savings)		2600	(MW)	623	1504	2868	2600 (100% Achievement is estimated)	3200	3500
		Issue of RFP for Bulk order for supercritical power plants (800 X 9 = 7200 MW)		9	No.	-	-	-	-	-	-
		Issuance of RFQ for UMPPs		1	No.	1	-	-	Two/One	One	One
		Revision of Tariff Policy 2006 & New Hydro Policy 2008		Revision	Date	-	-	-	-	-	-
		QPR of PSUs and monitoring performance of Autonomous Bodies biannually.		24	No.	-	-	-	-	-	-
		Issue of RFS for remaining capacity (300 MW) under Solar Mission		Issue of RFS	Date	-	-	-	-	-	-
		Workshop on R&M of power plants, technological upgradation and improving project execution capabilities with GenCos/States/ Developers etc.		3	No. of workshops	-	-	-	-	-	-
		R&M of Power Plants of total estimated capacity of 750 MW		2	No. of Plants	-	-	-	-	-	-
(II).	Expanding the Transmission Network	Transmission lines addition/ ready for commissioning	Central	8159	(ckm)	7,417	5,556	5,515	3,655 [@]	-	-
			State	8620	(ckm)	5,146	4,576	4,917	7,568 [@]	-	-
			Private	3013	(ckm)	0	0	1,358	1,328 [@]	-	-
		Transformation capacity addition/ ready for commissioning	Central	6885	(MVA)	13,075	6,580	10,290	3705 [@]	-	-
			State	20495	(MVA)	11,348	12,100	12,585	17,296 [@]	-	-
			Private	0	(MVA)	0	0	1400	0	-	-
		New Technologies in Transmission Sector.		Construction of 1200 kV D/C line at Bina National Test Station	Date	-	-	-	-	-	-
(III).	Improving power access through implementation of RGGVY scheme	Village electrification		14500	No.	9,301	12,056	18,374	18307 ^{\$s} (Provisional)	&	-
		BPL Households electrification		52	(no. in lakhs)	16.2	30.9	47.18	58.8 ^{\$s} (Provisional)	&	-
		Notification of Rural Electrification Plan by remaining States		3	No.	-	-	-	-	-	-
(IV).	Reducing AT&C losses through implementation of R-APDRP scheme	Sanction of projects (Part B- infrastructure strengthening)		150*	No.	*	-	239	536 ^{\$}	-	-
		Sanction of projects (SCADA)		15*	No.	*	0	3	15 ^{\$}	-	-
		No. of Power Ministers' Conference organized		2	No.	-	-	-	-	-	-

(V).	Enhancing the availability of trained and skilled manpower for the power sector	Persons imparted training by NPTI	16225	No.	12555	14225	14869	12572 ^{\$}	17848	19633
		Trainee weeks at NPTI	132000	No.	98439	113305	115132	111621 ^{\$}	145200	159720
(VI)	International Co-operation with Bhutan, Nepal and Myanmar	Bhutan: : Preparation/ Updation of DPR	5	No.	-	-	-	-	-	-
		Nepal: Submission of FC clearance application for Arun-III Project	On time submission	Date	-	-	-	-	-	-
		Myanmar : Updation of DPR for Tamarthi	Updation of DPR	Date	-	-	-	-	-	-

^ Excluding Nuclear.

\$ Achievement as on 31.01.2011, @Achievement as on 28.02.2011, \$\$ Achievement as on 31.03.2011.

& RGGVY is upto 31.03.2012. Target for 2012-13 and onwards will depend on continuation of scheme beyond 11th Plan.

* Subject to availability of balance towns as per R-APDRP Guidelines.

SECTION-4

Description and Definition of Success Indicators and Proposed Measurement Methodology

- AT&C – Aggregate Technical and Commercial
- BPL – Below Poverty Line
- Energy Conservation measures are related to energy saved which can be quantified in terms of equivalent capacity addition avoided through the saving measures
- Generation capacity added in MW (Mega Watt)
- Generation is in kilo watt hours (kWh), called units (1 Billion Unit= 1x10⁹ units)
- R-APDRP – Restructured Accelerated Power Development & Reforms Programme.
- RGGVY – Rajiv Gandhi Grameen Vidyutikaran Yojana
- Village electrified-A village is declared as electrified if basic infrastructure is provided in the inhabited locality as well as the dalit basti /hamlet where it exists, electricity is provided to the public places, number of households electrified is atleast ten per cent of the total number of households in the village and Gram Panchayat certifies completion of village electrification.
- SCADA – Supervisory Control and Data Acquisition
- Transmission lines measured in line length, in ckm (Circuit kilometers)
- Transformation capacity in term of rating of transformers added in MVA (Mega Volt Amperes)
- Project area for Part 'A' and Part 'B' of R-APDRP : Towns with population above 30,000 (10,000 for special category States).
- Project area for SCADA under R-APDRP : Towns with population above 4,00,000 and annual electricity input above 350 Million Unit.
- NPTI-National Power Training Institute
- One Trainee week – one person trained for a week
- UMPP – Ultra Mega Power Project

- RFS – Request for selection
- RFP – Request for Proposal
- RFQ – Request for Qualification
- R&M – Renovation and Modernisation
- QPR – Quarterly Performance Review

SECTION-5

Specific Performance Requirements from other Departments

1. Ministry of Coal: -Supply of 335 million tons of Coal during the year from Coal subsidiaries (CIL and SCCL) and ensuring early clearance of coal block. Long term arrangement for requirement of coal based on capacity addition programme in power generation would be finalized.
2. Ministry of P&NG: -Supply of additional gas of about 60 MMSCMD during the year under APM and from KG Basin (D-6).
3. Ministry of Environment & Forests: Clearance of pending, new and proposed generation projects and transmission lines, resolution of go and no-go area issues, and expeditious clearance of hydel projects without waiting for the reports of comprehensive basin study.
4. State Governments: Support for Land acquisition and settlement of R&R issues, Right of Way for transmission lines, State Pollution Board clearance and maintaining law and order in the projects under construction / to be constructed.
5. Ministry of Labour: To ensure availability of skilled manpower for power sector.
6. Department of Heavy Industry: M/s BHEL to ensure completion of the power projects targeted for review period through timely supply of main plant equipment and balance of plant.
7. Power Utilities in the Central and State Sector and their Canalizing Agencies like MMTC/STC: To ensure import of 35 Million Tons of coal during 2011-12.

8. Power Utilities having Captive Coal Mines: Ensuring supply of 23 Million Tons coal during the year 2011-12.
9. State Governments (for RGGVY) : Ensuring (a) timely allotment of land for new sub-stations, especially in the States of Bihar and Jharkhand, (b) time bound forest clearance in the States especially in Jharkhand, (c) timely clearance of revised cost estimates by the States, (d) timely energization and taking of completed villages, especially in Assam, Bihar, Jharkhand and Orissa, (e) creation of suitable sub-transmission system in Jharkhand for energization of RGGVY villages, (f) Deployment of franchisees by State Discoms which is mandatory condition for closure of project and (g) submission of RE plans by States immediately.
10. State Governments (for APDRP): Ensuring timely preparation and submission of Part 'B' projects as per guidelines issued by Ministry of Power.

SECTION-6

Outcome / Impact of activities of Department / Ministry

Sl. No.	Outcome/ Impact of Department/ Ministry	Jointly with	Success Indicator(s)	2009-10	2010-11 (Provisional)	2011-12	2012-13	2013-14
1.	Improving access to power especially in rural areas	MNRE, States	i. Number of unelectrified villages electrified	18,374	18,307*			
			ii. BPL households electrified	47.18 lakhs	58.8* lakhs			
2.	Improving availability of power	MNRE, Dept. of Atomic Energy, Ministry of Coal, Ministry of Environment & Forest, Department of Heavy Industries	i. Fresh Capacity added	9585 MW	12160.5* MW			
			ii. Power Generation	771.5 BU	811.104* BU			
			iii. Fresh Capacity Addition saved through energy conservation measures	2868 MW	2600 MW (expected)			
3.	Improving quality of power	Discoms, States, Regulators & Developers	i. Minimizing grid disturbance	7	2			
			ii. Transmission lines addition/ ready for commissioning	11790	12551**			
			iii. Transformation capacity addition/ ready for commissioning	24315	21001**			

* achievement as on 31.3.2011

** achievement as on 28.2.2011

The Ministry of Power shall submit Annual Performance Report against the performance obligations mentioned in the Part II of this Agreement at end of the review period.

MINISTRY OF POWER
RFD FOR 2011-12 – YEARLY ACHIEVEMENT
Target Vs. Achievement

S. No.	Objectives	Actions		Success Indicators	Unit	Achievement Year 2011-12
(I).	Improving Power availability	Fresh Capacity addition		15600*	(MW)	20502
		Generation performance		855	(BU)	876.44
		Fresh Capacity addition saved through Energy Conservation Schemes including National Mission on Enhanced Energy Efficiency (Energy Savings)		2600	(MW)	2998 [@] (Verified)
		Issue of RFP for Bulk order for supercritical power plants (800 X 9 = 7200 MW)		9	No.	9
		Issuance of RFQ for UMPPs		1	No.	Nil
		Revision of Tariff Policy 2006 & New Hydro Policy 2008		Revision	Date	08/07/2011
		QPR of PSUs and monitoring performance of Autonomous Bodies biannually		24	No.	31
		Issue of RFS for remaining capacity (300 MW) under Solar Mission		Issue of RFS	Date	24/08/2011
		Workshop on R&M of power plants, technological upgradation and improving project execution capabilities with GenCos/States/ Developers etc.		3	No. of workshops	3
		R&M of Power Plants of total estimated capacity of 750 MW.		2	No. of Plants	2
(ii).	Expanding the Transmission Network	Transmission lines addition /ready for commissioning	Central	8159	(ckm)	9774
			State	8620	(ckm)	7421
			Private	3013	(ckm)	3239
		Transformation capacity addition/ ready for commissioning	Central	6885	(MVA)	30675
			State	20495	(MVA)	23485
		New Technologies in Transmission Sector.		Construction of 1200 kV D/C line at Bina National Test Station	Date	01.03.2012
(III).	Improving power access through implementation of RGGVY scheme	Village electrification		14500	No.	7934
		BPL Households electrification		52	(no. in lakhs)	34.44
		Notification of Rural Electrification Plan by remaining States		3	No. of States	4
(IV)	Reducing AT&C losses through implementation of R-APDRP scheme	Sanction of projects (Part B -infrastructure strengthening)		150	No.	263
		Sanction of projects (SCADA)		15	No.	35
		No. of Power Ministers' Conference organized		2	No.	2
(V)	Enhancing the availability of trained and skilled manpower for the power sector	Persons imparted training by NPTI		16225	No.	17012
		Trainee weeks at NPTI		132000	No.	135168
(VI)	International Co-operation with Bhutan, Nepal and Myanmar	Bhutan: Preparation/ Updation of DPR		5	No.	5
		Nepal: Submission of FC clearance application for Arun-III Project		On time submission	Date	Sept – 2011
		Myanmar : Updation of DPR for Tamanthi		Updation of DPR	Date	07.10.2011

(VII)	Efficient functioning of the RFD System	Timely submission of Draft for Approval	On- time submission	Date	Submitted on time
		Timely submission of Results	On- time submission	Date	On time
(VIII)	Improving internal Efficiency/ responsiveness/ service delivery of Ministry / Department	Identify potential areas of corruption related to departmental activities and develop an action plan to mitigate them	Finalize an action plan to mitigate potential areas of corruption	Date	23.12.2011
		Ensure compliance with Section 4(1) (b) of the RTI Act, 2005	No. of items on which information is uploaded by Feb 10, 2012	No.	18
		Develop an action plan to implement ISO 9001 certification	Finalize an action plan to implement ISO 9001 certification	Date	Submitted on time (16.4.2012)
		Implementation of Sevottam	Resubmission of revised draft of Citizens' / Clients Charter	Date	Submitted on time (16.01.2012)
			Independent Audit of implementation of public grievance redressal system	%	100% achievement
(IX)	Ensuring compliance to the Financial Accountability Framework	Timely submission of ATNs on Audit Paras of C&AG	Percentage of ATNs submitted within due date (4 months) from date of presentation of Report to Parliament by CAG during the year.	%	80%
		Timely submission of ATRs to the PAC Sectt. on PAC Reports.	Percentage of ATRs submitted within due date (6 months) from date of presentation of Report to Parliament by PAC during the year.	%	No ATR with MoP
		Early disposal of pending ATNs on Audit Paras of C&AG Reports presented to Parliament before 31.3.2011	Percentage of outstanding ATNs disposed off during the year.	%	62.50
		Early disposal of pending ATRs on PAC Reports presented to Parliament before 31.3.2011.	Percentage of outstanding ATRs disposed off during the year.	%	No ATR with MoP

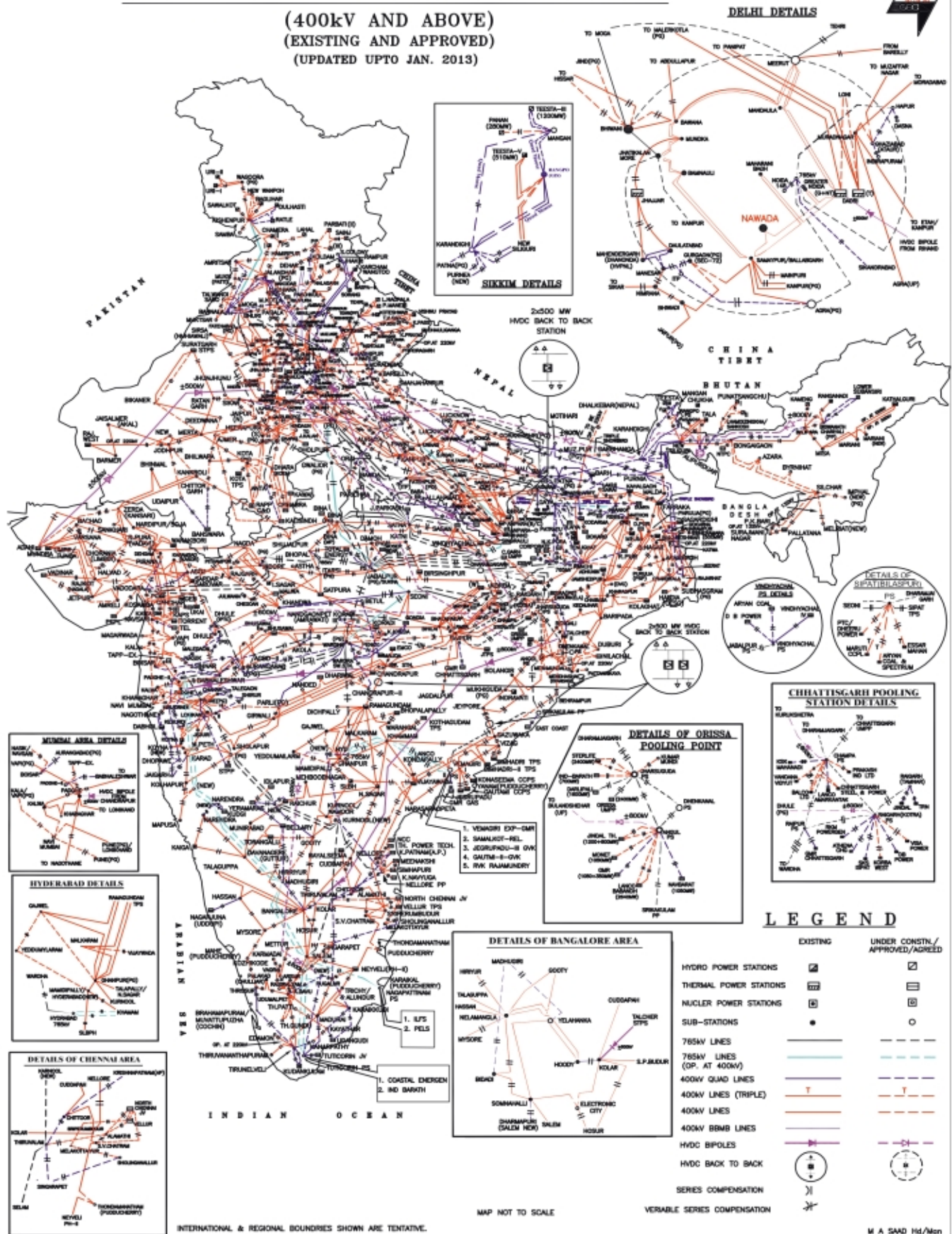
* Excluding nuclear, @: up to 31.12.2011





MAJOR TRANSMISSION NETWORK OF INDIA

(400kV AND ABOVE)
(EXISTING AND APPROVED)
(UPDATED UPTO JAN. 2013)





Ministry of Power

Government of India

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