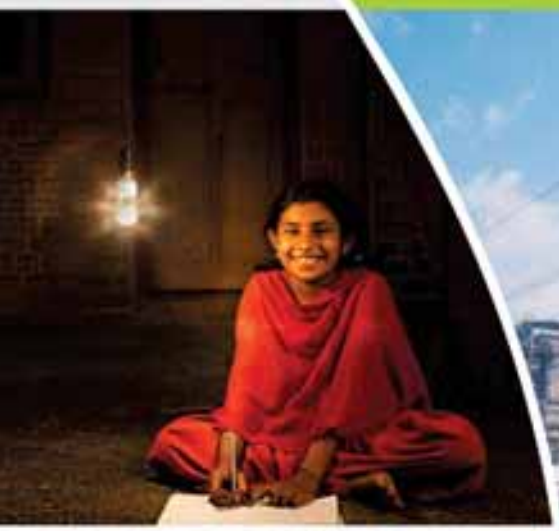


ANNUAL REPORT

2013-14

Ministry of Power

Government of India

www.powermin.nic.in

MAP OF INDIA

SHOWING

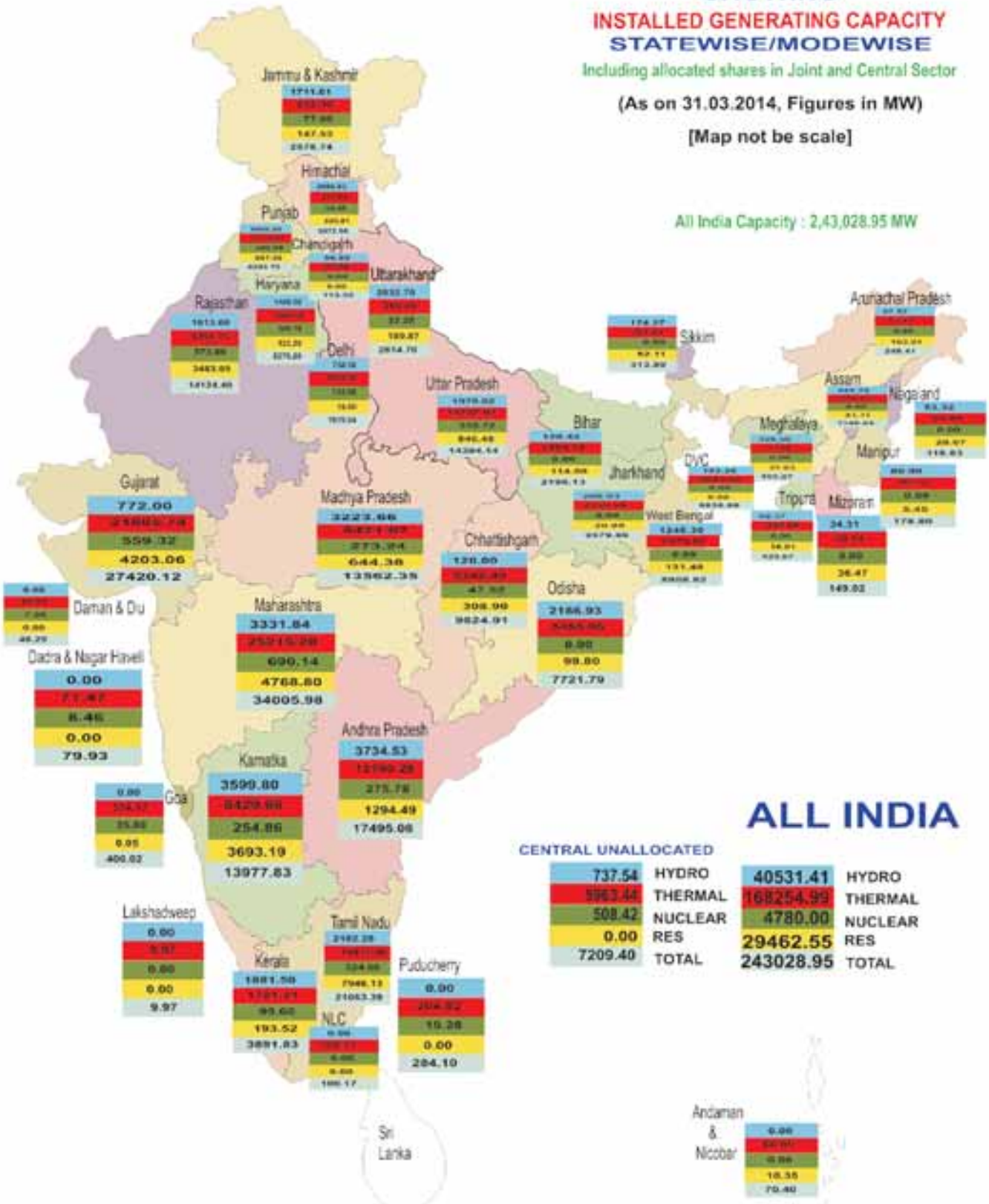
INSTALLED GENERATING CAPACITY STATEWISE/MODEWISE

Including allocated shares in Joint and Central Sector

(As on 31.03.2014, Figures in MW)

[Map not be scale]

All India Capacity : 2,43,028.95 MW



ALL INDIA

CENTRAL UNALLOCATED

737.54	HYDRO
5963.44	THERMAL
508.42	NUCLEAR
0.00	RES
7209.40	TOTAL

40531.41	HYDRO
168254.99	THERMAL
4780.00	NUCLEAR
29462.55	RES
243028.95	TOTAL

ANNUAL REPORT

2013-14

सत्यमेव जयते

Ministry of Power

Government of India

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

www.powermin.nic.in

'SAMAPARK, SAMANVAY EVAM SAMVAD' on 2nd June 2014 of Ministry of Power, Ministry of Coal and Ministry of New & Renewable Energy

CONTENTS

Inauguration of 'SAMPARK, SAMANVAY EVAM SAMVAD' by Shri Piyush Goyal, Hon'ble MOS(I/C) Power on 2nd June 2014. Conference was attended by officials of Ministry of Power, Ministry of Coal and Ministry of New & Renewable energy.

CHAPTER - 1

PERFORMANCE HIGHLIGHTS

NATIONAL ELECTRICITY POLICY

In compliance of section 3 of the Electricity Act, 2003. the Government of India has notified the National Electricity Policy on 12.2.2005.

The Policy aims at achieving the following objectives :

a) Access to Electricity - Available for all households in the next five years

b) Availability of Power - Demand to be fully met by 2012. Energy and peaking shortages to be overcome and adequate spinning reserve to be available.

c) Supply of reliable and quality power of specified standards in an efficient manner and at reasonable rates.

d) Per capita availability of electricity to be increased to over 1000 units by 2012.

e) Minimum lifeline consumption of 1 unit/houlsehold/day as a merit good by year 2012.

f) Financial Turnaround and Commercial Viability of Electricity Sector.

g) Protection of consumers' interests.

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 objectives of the Tariff Policy are to :

a) Ensure availability of electricity to consumers at reasonable and competitive rates;

b) Ensure financial viability of the sector and attract investment.

c) Promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;

d) Promote competition, efficiency in operations and improvement in quality of supply.

Tariff Policy has been amended vide resolution dated 31.3.2008, 20.1.2011 and 8.7.2011.

IMPROVED POWER SUPPLY POSITION:

Power Supply position in the country has improved substantially during the current year. The energy shortages in the country have reduced to 4.3% during the period April, 2013 to January, 2014 as compared to 8.8% during the same period in previous year. Similarly, the peak shortage have reduced to 4.2% from 9.0%.

NOTIFICATION OF REGULATIONS:

During the year 2013-14 CEA notified Central Electricity Authority (Technical Standards for connectivity of the Distributed Generation Resources) Regulations, 2013. These regulations specify technical rules for connecting small generation resources like Roof Top Solar, Biomass, small hydro etc. to the main grid at voltage level below 33 kV. CEA also notified "The Central Electricity Authority (Technical Standards for connectivity to the Grid) Amendment Regulations, 2013" to include technical rules in the existing Central Electricity Authority (Technical Standards for connectivity to the Grid) Regulations, 2007, for connectivity of Renewable Energy Sources like wind & solar, to the grid at a voltage level at 33 kV & above. These Regulations which were notified in October, 2013, would facilitate development of Renewable Sources for power generation in the country.

FORMATION OF NATIONAL POWER COMMITTEE (NPC):

Keeping in view the ever growing complexity of Power System, proposed synchronous mode of operation of the entire grid of the country and to evolve a common approach to issues related to reliability and security of the grid, at National level, National Power Committee (NPC) was established in March, 2013.The NPC is headed by Chairperson, CEA with Chairmen, Regional Power Committees (RPCs); Chairmen of Technical Co-ordination Sub Committees of RPCs and Member Secretaries of RPCs as its Member.

ULTRA MEGA POWER PROJECTS

Four UMPPs namely Mundra in Gujarat, Sasan in Madhya Pradesh, Krishnapatnam in Andhra Pradesh and Tilaiya in Jharkhand had already been transferred to the identified developers and the projects are at different stages of development. Mundra UMPP is fully commissioned and is generating electricity. First two units of Sasan UMPP (2x660 MW) have been commissioned in 2013. Third unit of Sasan UMPP has been commissioned on 25.03.2014. The remaining units of Sasan and other awarded UMPPs are expected in 12th Plan (except last unit of Tilaiya UMPP, which is likely to come in 13th Plan).

- Request for Qualification (RfQ) for two UMPPs namely Bedabahal in Odisha and Cheyyur in Tamil Nadu have been issued on 25.09.2013 and 26.09.2013 respectively. Applications from 9 firms have been received for Odisha UMPP. Applications from 8 firms have been received for Cheyyur UMPP. RfP for both Projects have been issued on 27.12.2013.
- A site at Husainabad, Deoghar District has been identified for setting up of 2nd UMPP in Jharkhand.
- A site at Bijoypatna 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 site at Kakwara in Banka Distt. has been identified for setting up of UMPP in Bihar.
- A site at Niddodi village in Karnataka has been identified for UMPP by CEA and Govt. of Karnataka.
- The sites in Tamil Nadu and Gujarat for their second UMPPs are being examined by CEA/PFC.

STATUS OF RAJIV GANDHI GRAMEEN VIDYUTIKARAN 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. The Government has approved continuation of RGGVY in 12th Plan to electrify balance census villages and all habitations above 100 populations and all eligible BPL households in the country.

Under this scheme, it is targeted to electrify over one lakh un-electrified villages and to provide free electricity connections to 2.76 Crore rural BPL households. As on 31st January, 2014, 1,08,099 villages have been electrified and free electricity connections have been provided to 2.15 crores BPL households.

STATE POWER MINISTERS' CONFERENCE

The 6th & 7th semi-annual Conference of State Power Ministers' were held on 5th Feb. and 10th Sep., 2013 respectively in New Delhi. The conferences were attended by State Power Ministers, Secretaries and other senior officers. 14 Resolutions were passed in the Power Ministers' Conference held on 10.09.13. Important decisions taken in the Conference are as follows:

i. State Governments would complete the balance works by March, 2014 and that all RGGVY villages are energized within 3 months of electrification.

ii. Detailed Project Reports (DPRs) would be prepared based on actual survey.

iii. State Governments would include complete implementation of all Part-A (IT) schemes by 2015 and Part-B as well as SCADA Schemes by March 2017. State Governments would endeavour to supply quality power for a minimum of 6-8 hours in the RGGVY benefitted area.

iv. State Governments may enact a suitable legislation within six months of the date of Notification of the Model State Electricity Distribution Responsibility Bill.

v. State Governments resolved to plan, build and strengthen the intra-state transmission and sub-transmission systems and furnish additional requirements for required strengthening of sub-transmission and distribution network by 30.09.2013.

vi. State Governments resolved that adequate long term procurement of power will be put in place along with a reliability framework for assured supply of electricity to consumers.

vii. State Governments resolved to agree to the proposed amendments in Tariff Policy for continuance of cost plus tariff regime for hydro projects up to end of XIII Plan.

viii. State Governments resolved to take all possible measurers for meeting the Renewable Purchase Obligation.

ix. State Governments resolved to take immediate steps for filling up of vacancies in their respective SERCs in a time bound manner.

CAPACITY ADDITION

The all India installed power generation capacity as on 31.12.2013 is 2,33,930 MW comprising of 1,59,794 MW Thermal, 39,893 MW Hydro, 4,780 MW Nuclear and 29,463 MW R.E.S.

CAPACITY ADDITION PROGRAMME AND ACHIEVEMENTS DURING 2013-14

Capacity addition target for the year 2013-14 is 18,432.3 MW. As against it, a capacity of 8,728 MW has been added till 31.12.2013.

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

The Government of India formulated a scheme to provide supply of electricity to the rural households of the villages within radius of 5 Km. of Power Stations set up by Central Public Sector Undertakings (CPSUs) in 2010. However the scheme has been withdrawn by Govt. of India vide MOP's letter No.44/7/2010-RE dated 25th March, 2013. The respective distribution licensee has to take the appropriate action in this regard.

GENERATION PERFORMANCE

The electricity generation target for the year 2013-14 was fixed as 975 Billion Unit (BU). The actual generation during April-November, 2013 was 663/928 BU as compared to generation target of 930 BU for the period and actual generation of 607.2 BU during April-November 2012, representing an achievement of 99.19% and a growth of about 5.21%.

Coal continued to remain the mainstay of electricity generation in the country. During the year 2013-14 (upto November, 2013), the coal based generation contributed more than two third of the total electricity generation of 663.928 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 2013-14 (up to November, 2013) is given below :

Coal Receipt	**Million Tonne**
• Coal India Limited	224.7
• Singareni Collieries Company Ltd.	20.7
• Captive Mines	14.6
• E-auction	4.3
• Import (Blending)	24.5
• Import (Import coal based)	28.1

SIGNING OF FSAs

The Cabinet Committee fo Economic Affairs (CCEA) in its meeting held on 21st June, 2013 had issued directive to Ministry of Coal/Coal India Limited to sign FSAs for a total capacity of 78000 MW, including tapering linkage which are likely to be commissioned by March, 2015. With the concerted efforts made by MOP, Power Utilities have signed fuel supply agreement for 157 Units totaling around 72,000 MW up to 3.1.2014

CCEA had approved in June 2013 that FSAs are to be signed for domestic coal component for the levy of disincentive at the quantity of 65%, 65%, 67% and 75% of Annual Contracted Quantity (ACQ) for the remaining four years of the 12th Plan.

PASS THROUGH MECHANISM

Pass through mechanism for the concluded PPAs has been approved by CCEA (14000 MW-case I and Case II post 2009 plants) on 21.06.13.

MoP has issued advisory on 31.07.2013 to CERC/SERCs to consider the request of individual power producers in this regard as per due process on a case to case basis in public interest. The Appropriate Commission have been requested to take immediate steps for the implementation of the above decision of the Government.

INCORPORATION OF PPA CONDITION FOR COAL BLOCK ALLOCATES

As suggested by MoP, Ministry of Coal has issued letters to IPPs and State Governments for Incorporation of PPA condition at the time of executing Mining Lease in coal block allocation letters of IPPs in Power Sector so that the benefits of low cost coal can be passed on to the consumers.

As suggested by MoP, Ministry of Coal has issued letters to coal block allocatee IPPs for participation in the Tariff based bids floated by DISCOMS.

IMPORT OF COAL

To meet its balance FSA obligations, CIL may import coal and supply the same to the willing TPPs on cost plus basis.

TPPs may also import coal themselves if they so opt. Higher cost of imported coal is to be considered for pass through as per modalities suggested by CERC.

In order to maximize coal based generation, Power Utilities were advised to import 82 Million Tonne (MT) coal for the year 2013-14. Coal based power plants of the country have achieved around 8% growth in electricity generation since last year.

INDEPENDENT COAL REGULATORY BILL

MoP has stressed the need for setting up an independent coal regulator with the authority to fix prices of coal and powers to resolve disputes.

Independent Coal Regulatory Bill has been approved by the Cabinet on 27.06.2013. Ministry of Coal introduced the Bill in the Parliament in December, 2013

ALLOCATION OF NEW COAL BLOCKS TO NTPC

Inter-Ministerial Committee in MoC finalized allocation of 4 coal blocks in August, 2013 (Banai, Bhalumuda, Chandrabila, KudanaliLaburi) for NTPC power projects of 8460 MW.

COAL LINKAGE FOR 13TH PLAN POWER POJECTS

Request for Coal linkage of 33 GW for 13th plan power projects has been taken up with Ministry of Coal through Group constituted in Planning Commission.

THIRD PARTY SAMPLING AND QUALITY CONTROL MECHANISM

With the concerted efforts of MOP, Ministry of Coal/Coal India Limited had agreed for Third Party Sampling at loading points to address the issue of coal quality since October, 2013. CIL appointed agency for third party sampling and is operational w.e.f. 1.10.2013.

As on 27.05.2014

ORGANISATION STRUCTURE

SHRI PIYUSH GOYAL
MINISTER OF STATE (I/C) FOR POWER, COAL AND NRE

PRADEEP KUMAR SINHA
SECRETARY (POWER)

CEA

- Chairperson (Smt. Neerja Mathur)
- Member (Thermal) (Krishna Narain Garg) (A/C)
- Member (Hydro) (Krishna Narain Garg)
- Member (Plg) (Major Singh)
- Member (Power Systems) (Major Singh) (Additional Charge)
- Member (Grid Operation & Distribution) (P.K. Pawha) (A/C)
- Member (Economic & Commercial) (Dr. Jaipal Singh)

DEVENDRA CHAUDHRY, ADDITIONAL SECY

Satish Kumar
JS (A)

- Administration
- Public Grievances Parliament and Official Language
- RTI
- Information-Technology*
- Energy Conservation, Energy efficiency*
- International Cooperation*

Mukesh Jain
Jt. Secretary

- Hydro matters including CPSU. namely NHPC, SJVNL, NEEPCO, THDC;
- Environment Management for Hydro Projects.
- BBMB
- V&S***

Raj Pal
Economic Adviser

- Policy & Planning
- Power Projects Monitoring Panel
- Coordination
- Trg & Research including CPRI & NPTI
- All Tax related Matters

Pradeep Kumar
JS & FA

- Internal Finance & Budgetary Control

R.N. CHOUBEY, ADDITIONAL SECRETARY

B.N. Sharma
Jt. Secretary

- APDRP
- PFC
- RE
- RGGVY
- REC
- Demand Side Management
- National Electricity Fund

G. Sai Prasad
Jt. Secretary

- Ultra Mega Power Projects
- Thermal
- NTPC
- DVC
- IPP
- Fuel Supply

Ms. Jyoti Arora
Jt. Secretary

- R&R (Including SBR)
- Nodal Officer for Open Access in Trans & Distribution including Franchising
- Transmission**
- PGCIL**
- Operating & Monitoring**

* Joint Secretary (SK) will route the IT, EC, EE & IC files through Additional Secretary (RNC)
** Joint Secretary (JA) will route the O&M, PGCIL, Trans Files through Additional Secretary (DC)
*** JS (Hydro/CVO) will route all files except vigilance cases through AS (DC); vigilance cases will be submitted directly to Secretary.

CHAPTER - 2

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 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 hydro-electric 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. National Thermal Power Corporation Limited;
  d. National Hydroelectric Power Corporation 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. Tehri Hydro Development Corporation;
  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.

ORGANISATIONAL SET-UP

Shri Piyush Goyal is the Minister of State (I/C) for Power, Coal and NRE with effect from 27.05.2014.

Shri P. Uma Shankar assumed charge as Secretary in the Ministry of Power with effect from the 30th April, 2010. He demitted office on 30.06.2013.

Shri Pradeep Kumar Sinha assumed charge as Secretary in the Ministry of Power with effect from the 1st July, 2013. The Ministry has two Additional Secretaries, six Joint Secretaries, including the Financial Adviser, and one Economic Adviser.

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

Shri R.N. Choubey, Additional Secretary, oversees the work relating to Reforms & Restructuring (including the State Electricity Boards Restructuring), 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; Demand Side Management and National Electricity Fund; Ultra Mega Power Project; Thermal; National Thermal Power Corporation; Damodar Valley Corporation; Independent Power Producers and Fuel Supply; Information Technology; International Cooperation and climate Change; Energy Conservation & Efficiency; Bureau of Energy Efficiency; 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 including Official Language & Parliament; Energy Conservation & Efficiency; Bureau of Energy Efficiency and International Cooperation; and RTI Cell; Information Technology & Public Grievances.

ii) Ultra Mega Power Projects; Thermal; NTPC Ltd.; Damodar Valley Corporation; Independent Power Producers (IPP) and Fuel Supply;

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 Projects ; Vigilance & Security (Vigilance cases will be submitted directly to Secretary (P).

v) Internal Finance; Budgetary Control.

vi) Reforms & Restructuring (including the State Electricity Boards Restructuring); Nodal Officer for open Access in Transmission and Distribution including Franchising; Operation & Monitoring; Transmission; Power Grid Corporation of India Limited.

vii) Training & Research including CPRI and NPTI, All Tax Related Matters; Policy & Planning, Power Projects Monitoring Panel, Coordination.

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.

"MOP Pavilion IITF - Implementing Team 2013"

CHAPTER - 3
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 31.12.2013 is 2,33,929.94 MW comprising of 1,59,793.99 MW Thermal, 39,893.40 MW Hydro, 4,780.00 MW Nuclear and 29,462.55 MW R.E.S.

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:

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 was revised to 62,374 MW comprising of 50757 MW Thermal, 8237 MW Hydro, 3380 MW Nuclear.

5. **Capacity addition during XIth Plan.**

As against the midterm appraisal target of 62,374 MW set for the XIth 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. Sector-wise and Fuel-wise summary of the capacity addition during the XIth Plan is given in the following table:-

6. **Capacity addition (last five years)**

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

Year	Central	State	Private	Total
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
2012-13	5397.3	3968	11257.5	20622.8

7. 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.

8 Capacity addition target for the year 2012-13 was 17956.3MW. As against it, a capacity of 20622.8 MW has been added. Sector-wise and Fuel-wise summary of the capacity addition for the year 2012-13 is given in the following table:-

	Thermal		Hydro		Nuclear		Total	
	Target	Ach.	Target	Ach.	Target	Ach.	Target	Ach.
Central	4023.3	5023.3	645	374	2000	0	6668.3	5397.3
State	3951	3911	87	57	0	0	4038	3968
Private	7180	11187.5	70	70	0	0	7250	11257.5
Total	**15154.3**	**20121.8**	**802**	**501**	**2000**	**0**	**17956.3**	**20622.8**

9. Capacity addition target for the year 2013-14 is 18432.3MW. As against it, a capacity of 8683 MW has been added till 31.12.2013. Sector-wise and Fuel-wise summary of the capacity addition for the year 2013-14 is given in the following table:-

	Thermal		Hydro		Nuclear		Total	
	Target	Ach.	Target	Ach.	Target	Ach.	Target	Ach.
Central	3123.3	1160	914	258	2000	0	6037.3	1418
State	4451	1971	85	45	0	0	4536	2016
Private	7660	5150	199	99	0	0	7859	5294
Total	**15234.3**	**8281**	**1198**	**402.0**	**2000**	**0**	**18432.3**	**8683**

Sector	Thermal			Hydro.			Nuclear			Total		
	Target	MTA Targ.	Ach.	Tar.	MTA Targ.	Ach.	Targ.	MTA Targ.	Ach.	Targ.	MTA Targ.	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 during XII[th] Plan

As against the capacity addition target of 88,537 MW set for the 12th Five Year Plan, a capacity of 29,350 MW has been achieved in the first two years of 12th Five Year Plan till 31.12.2013. Sector-wise and Fuel-wise summary is given in the following table :-

Sector	Thermal			Hydro.			Nuclear			Total		
	Target XII Plan	Target (2012-14)	Ach till. 31.12.2013	Target XII Plan	Target (2012-14)	Ach. till 31.12.2013	Target XII Plan	Target (2012-14)	Ach. till 31.12.2013	Target XII Plan	Target (2012-14)	Ach. till 31.12.2013
Central	14878	7146.6	6183.3	6004	1559	632	5300	4000	0	26182	12705.6	6815.3
State	13922	8402	5882	1608	172	102	0	0	0	15530	8574	5984
Private	43540	14840	16337.5	3285	269	169	0	0	0	46825	15109	16506.5
All India	**72340**	**30388.6**	**28402.8**	**10897**	**2000**	**903**	**5300**	**4000**	**0**	**88537**	**36388.6**	**29305.8**

11. The Ministry of Power has adopted a robust monitoring system for the capacity addition programme 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).

12. Monitoring by the Central Electricity Authority

The Central Electricity Authority (CEA) has a nodal officer associated with each ongoing 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 projects on monthly basis highlighting the critical areas where corrective action is required. The Chairperson, CEA reviews progress of the ongoing projects with the nodal officers. The CEA also holds quarterly review meetings with the developers and other stakeholders.

13. 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 and developers are hold from time to time. 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.

14. 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 four 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. The progress of implementation of the projects is accordingly reviewed by the Ministry on the basis of the report received from the Monitoring Panel.

15. Advisory Group

An Advisory Group under the chairmanship of Minister of State for Power(IC) has been constituted to discuss and deliberate periodically issues pertaining to the Power sector and suggest reforms in different areas relating to the sector. Nine meetings of Advisory Group have been held.

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

PROJECT NAME	REGION	SECTOR	STATE	FUEL TYPE	COMMISSIONING DATE	CAPACITY (MW)
THERMAL PROJECTS						
SIMHAPURI TPP PH-1 U2	SR	P.S.	AP	COAL	02.07.2012	150
THAMMINAPATNAM TPP I U 1	SR	P.S.	AP	COAL	09.09.2012	150
SIPAT St-I STPP UNIT 3	WR	C.S.	CHAT	COAL	02.06.2012	660
KASAIPALLI TPS UNIT 2	WR	P.S.	CHAT	COAL	21.06.2012	135
RATIJA TPP UNIT 1	WR	P.S.	CHAT	COAL	04.02.2013	50
KORBA WEST	WR	S.S	CHAT	COAL	22.03.2013	500
ADHUNIK POWER TPP	WR	P.S.	JHAR	COAL	29.03.2013	270
PRAGATI III GT-3	NR	S.S.	DEL	GAS	27.06.2012	250
SALAYA TPS U 2	WR	p.s.	GUJ	COAL	13.06.2012	600
UMPP-MUNDRA UNIT2	WR	P.S.	GUJ	COAL	17.07.2012	800
UMPP-MUNDRA U 3	WR	P.S.	GUJ	COAL	16.10.2012	800
UNOSUGEN CCPP MODULE 1	WR	P.S.	GUJ	GAS	20.01.2013	382.5
UMPP-MUNDRA U 4	WR	P.S.	GUJ	COAL	16.01.2013	800
UKAI TPP EXT U-6	WR	S.S.	GUJ	COAL	05.03.2013	500
UMPP-MUNDRA U 5	WR	P.S.	GUJ	COAL	18.03.2013	800
PIPAVA CCPP	WR	S.S	GUJ	GAS	22.03.2013	351
MAHATMA GANDHI TPP U2	NR	P.S.	HAR	COAL	11.04.2012	660
INDIRA GANDHI (JHAJJAR) STPP U3	NR	C.S.	HAR	COAL	07.11.2012	500
MAHADEV PRASAD STPP U1 (ADHUNIK POWER NATURAL RESOURCES LTD.)	ER	P.S.	JHAR	COAL	19.11.2012	270
KODERMA TPP UNIT 2	ER	C.S.	JHAR	COAL	15.02.2013	500
MOUDA TPP U-1	WR	C.S.	MAHA	COAL	19.04.2012	500
GEPL TPP PH-1, UNIT2	WR	P.S.	MAHA	COAL	28.04.2012	60
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
TIRORA TPP PH I UT-1	WR	P.S.	MAHA	COAL	11.09.2012	660
EMCO WARORA TPP U1	WR	P.S.	MAHA	COAL	07.02.2013	300
BELA TPP-1U-1	WR	P.S.	MAHA	COAL	20.03.2013	270
TIRORA TPP PH I UT-1	WR	P.S.	MAHA	COAL	25.03.2013	660
AMARAVATI	WR	P.S.	MAHA	COAL	25.03.2013	270
MOUDA TPP	WR	C.S.	MAHA	COAL	29.03.2013	500
VINDHYACHAL STPP St-IV	WR	C.S.	MP	COAL	14.06.2012	500
BINA TPP U-1	WR	P.S.	MP	COAL	12.08.2012	250
MAHAN TPP UNIT 1	WR	P.S.	MP	COAL	24.02.2013	600
SATPURA TPS EXTN U-10	WR	S.S	MP	COAL	22.03.2013	250

PROJECT NAME	REGION	SECTOR	STATE	FUEL TYPE	COMMISSIONING DATE	CAPACITY (MW)
VINDHYACHAL STPS-IV U-12	WR	C.S.	MP	COAL	25.03.2013	500
BINA TPP	WR	P.S.	MP	COAL	31.03.2013	250
STERLITE (JHARSUGUDA) TPP U-4	ER	P.S.	ODISHA	COAL	25.04.2012	600
KAMALANGA TPP U-1	ER	P.S.	ORI	COAL	29.03.2013	350
JALIPA KAPURDI U5	NR	P.S.	RAJ	LIG	5.02.2013	135
JALIPA KAPURDI U8	NR	P.S.	RAJ	LIG	28.02.2013	135
JALIPA KAPURDI U6	NR	P.S.	RAJ	LIG	03.03.2013	135
JALIPA KAPURDI U7	NR	P.S.	RAJ	LIG	16.03.2013	135
RAMGARH GT	NR	S.S.	RAJ	GAS	20.03.2013	110
METTUR TPP EXT U 1	SR	S.S.	TN	COAL	11.10.2012	600
VALLUR TPP PH I UNIT 2	SR	C.S.	TN	COAL	28.02.2013	500
NORTH CHENNAI EXT U 2	SR	S.S.	TN	COAL	09.03.2013	600
IND BARATH TUTICORIN U-1	SR	P.S.	TN	COAL	11.03.2013	150
TRIPURA CCGT	NER	C.S.	TRI	GAS	03.01.2013	363.3
RIHAND STPP St-III UNIT 5	NR	C.S.	UP	COAL	25.05.2012	500
PARICHHA TPP UNITt-5	NR	S.S.	UP	COAL	24.05.2012	250
HARDUGANJ TPP EXT. UNIT-9	NR	S.S.	UP	COAL	25.05.2012	250
PARICHHA EXTN U-6	NR	S.S	UP	COAL	11.03.2013	250
TOTAL (THERMAL)						20121.8
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	28.062012	77
CHUTAK HEP UINT 2	NR	C.S.	J&K	HYDRO	08.11.2012	11
CHUTAK HEP UINT 3	NR	C.S.	J&K	HYDRO	11.11.2012	11
CHUTAK HEP UINT 1	NR	C.S.	J&K	HYDRO	22.11.2012	11
BHAWANI KATTLAI BARRAGE-III U-1	SR	S.S	TN	HYDRO	08.12.2012	15
TEESTA LOW DAM-III UNIT 2	ER	C.S.	WB	HYDRO	20.01.2013	33
CHUTAK HEP UINT 4	NR	C.S.	J&K	HYDRO	28.01.2013	11
TEESTA LOW DAM-III UNIT 1	ER	C.S.	WB	HYDRO	30.01.2013	33
TEESTA LOW DAM-III UNIT 3	ER	C.S.	WB	HYDRO	24.02.2013	33
MYNTDU U3	NER	S.S	MEGH	HYDRO	06.03.2013	42
TOTAL (HYDRO)						**501**
TOTAL (2012-13)						**20622.8**

LIST OF PROJECTS COMMISSIONED DURING 2013-2014 (12TH PLAN) AS ON 31.12.2013

PROJECT NAME	REGION	SECTOR	STATE	FUEL TYPE	COMMISSIONING DATE	CAPACITY (MW)
THERMAL PROJECTS						
Rihand TPP-III U-6	NR	C	UP	Coal	07.10.2013	500
Barh-II U-4	ER	C	Bihar	Coal	30.11.2013	660
Satpura TPP EXT U-11	WR	S	MP	Coal	25.12.2013	250
Shree Singaji TPP U-1	WR	S	MP	Coal	18.11.2013	600
Chhabra TPP Ext U-3	NR	S	Rajasthan	Coal	14.09.2013	250
North Chennai TPP Ext U-1	SR	S	TN	Coal	13.09.2013	600
Pragati -III (BAWANA) CCGT GT-4	NR	S	Delhi	Gas	07.05.2013	250
Rokhia GT-9	NER	S	Tripura	Gas	31.08.2013	21
Thamminapatnam TPP U-2	SR	P	AP	Coal	17.04.2013	150
Akaltara Nariyara TPP U-1	WR	P	Chhattisgarh	Coal	13.08.2013	600
Sasan UMPP U-3	WR	P	MP	Coal	30.05.2013	660
Sasan UMPP U-2	WR	P	MP	Coal	18.12.2013	660
Dhariwal Infrastructure (P) Ltd TPP U-1	WR	P	Maharashtra	Coal	03.11.2013	300
EMCO Warora TPP U-2	WR	P	Maharashtra	Coal	27.08.2013	300
Tiroda TPP Ph-II U-1	WR	P	Maharashtra	Coal	10.06.2013	660
Kamalanga TPP U2	ER	P	Odisha	Coal	28.09.2013	350
Kawai, U-I	NR	P	Rajasthan	Coal	28.02.2013	660
Kawai, U-2	NR	P	Rajasthan	Coal	28.05.2013	660
Tuticorin Indbarath U-2	SR	P	Tamil Nadu	Coal	30.12.2013	150
Niwari TPP Unit-I	WR	P	MP	Coal	10.12.2013	45
					TOTAL	**8326**
HYDRO PROJECTS						
Teesta LD -III U-4	ER	C	WB	HYDRO	01.04.2013	33
Nimoo Bazgo U-3	NR	C	J&K	HYDRO	30.10.2013	15
Nimoo Bazgo U-2	NR	C	J&K	HYDRO	31.10.2013	15
Nimoo Bazgo U-1	NR	C	J&K	HYDRO	02.11.2013	15
Uri-II, U-1	NR	C	J&K	HYDRO	25.09.2013	60
Uri-II, U-3	NR	C	J&K	HYDRO	27.09.2013	60
Uri-II, U-2	NR	C	J&K	HYDRO	16.11.2013	60
Bhawani Kattali Barrage-II, U-1	SR	S	TN	HYDRO	27.08.2013	15
Bhawani Kattali Barrage-II, U-2	SR	S	TN	HYDRO	06.09.2013	15
Bhawani Kattali Barrage-III, U-2	SR	S	TN	HYDRO	25.09.2013	15
Chuzachen HEP U-2	ER	P	SIKKIM	HYDRO	20.04.2013	49.5
Chuzachen HEP U-1	ER	P	SIKKIM	HYDRO	21.04.2013	49.5
					TOTAL	**402**
TOTAL (2013-14) AS ON 31.12.2013						**8728**

Down Stream view of Koteshwar Dam

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 639.2 BU during (April-November, 2013). 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
2012-13	912.0
2012-13*	**607.227**
2013-14*	**639.163**
*April to November	

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, 2013) was 64.04 . 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
2012-13	79.2	65.6	64.1	69.9
2012-13 *	**77.96**	**64.64**	**63.06**	**68.90**
2013-14*	**73.33**	**57.41**	**62.17**	**64.04**
* April to November				

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, 2013), peak shortage reduced to 4.2 % from 9.0 % during April to November, 2012. The energy shortage during the current financial year (upto November, 2013) has also decreased to 4.5 % from 8.6 % during April to November, 2012.

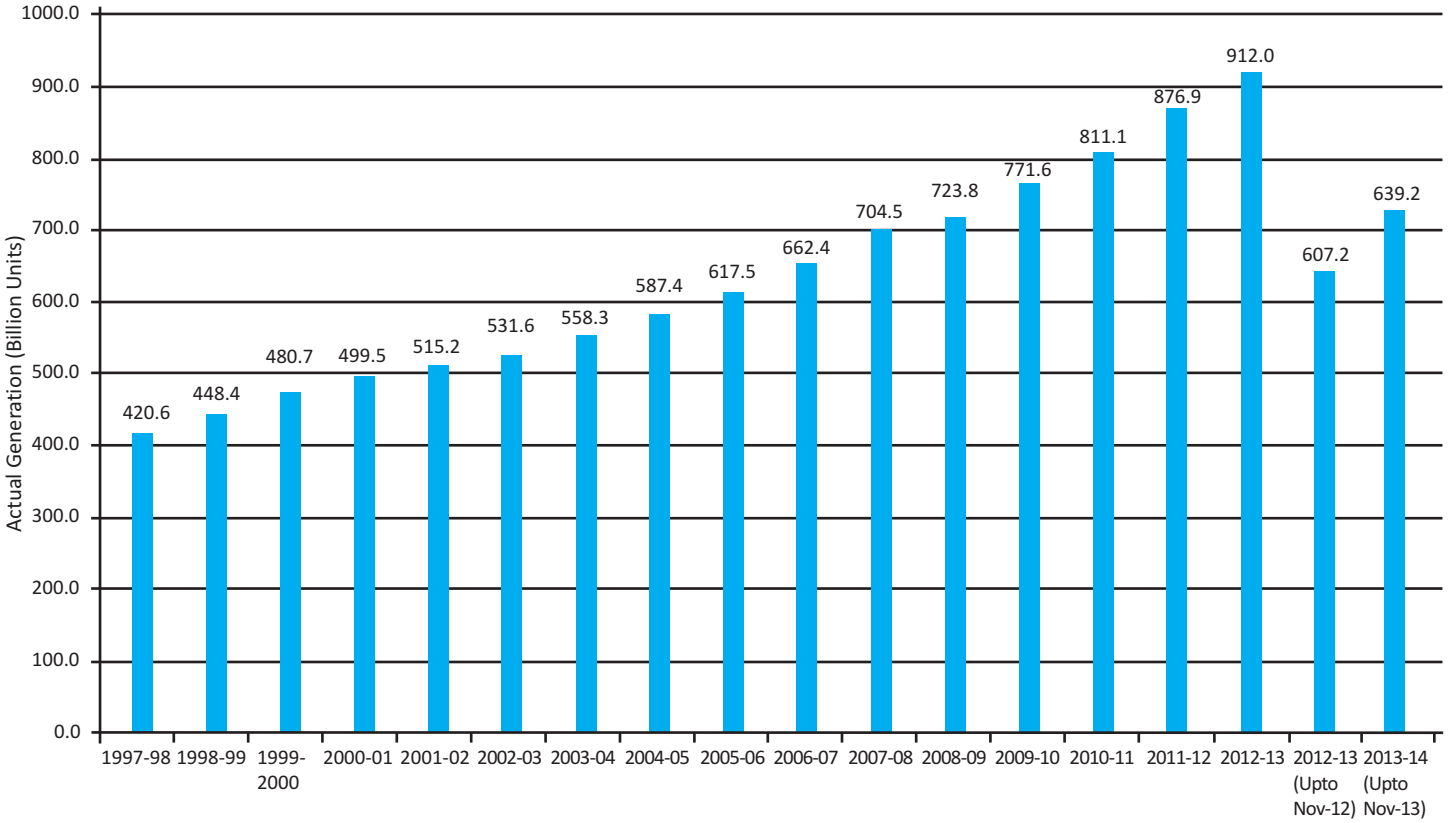
The power supply position since beginning of 9th Plan was as under :

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
2012-13	998114	911209	86905	8.7
2012-13*	**663928**	**606613**	**57315**	**8.6**
2013-14*	**671229**	**640834**	**30395**	**4.5**
*upto November				MU=Million Unit

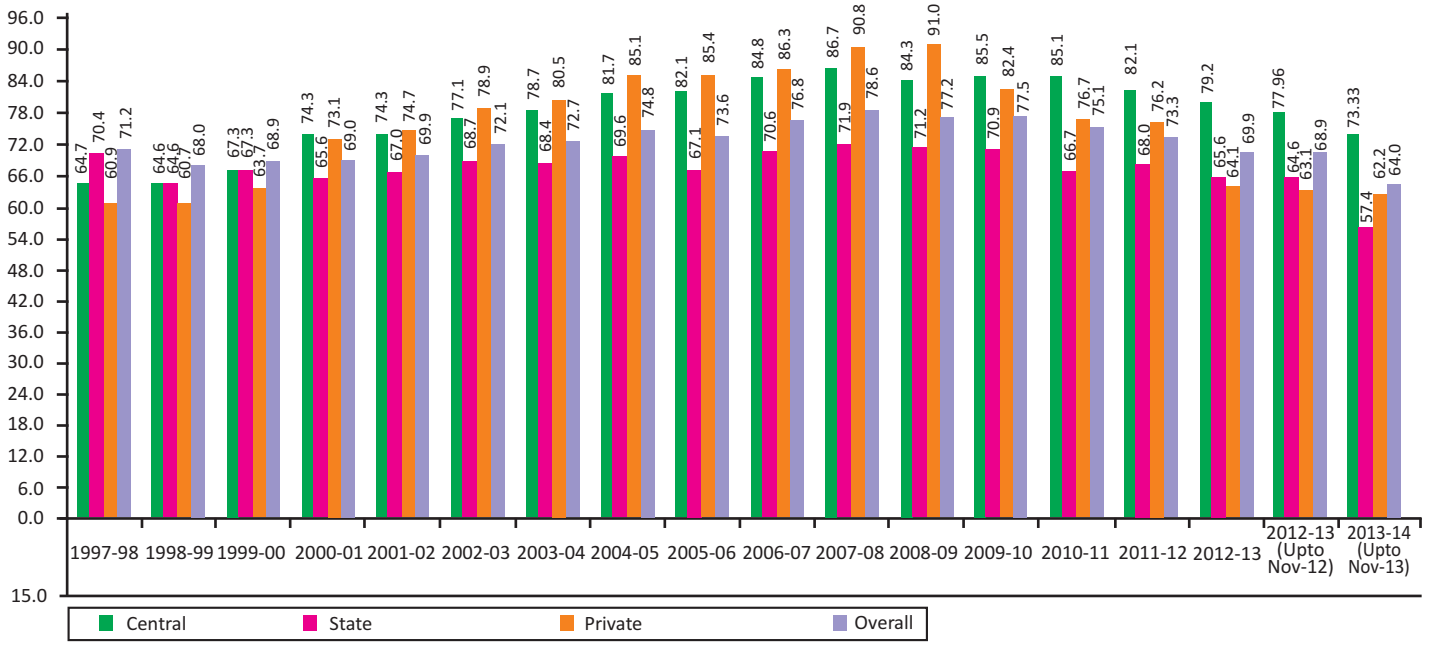
Peak Demand:

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	13.0
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
2012-13	135453	123294	12159	9.0
2012-13*	**135453**	**123294**	**12159**	**9.0**
2013-14*	**135561**	**129815**	**5746**	**4.2**
*upto November				

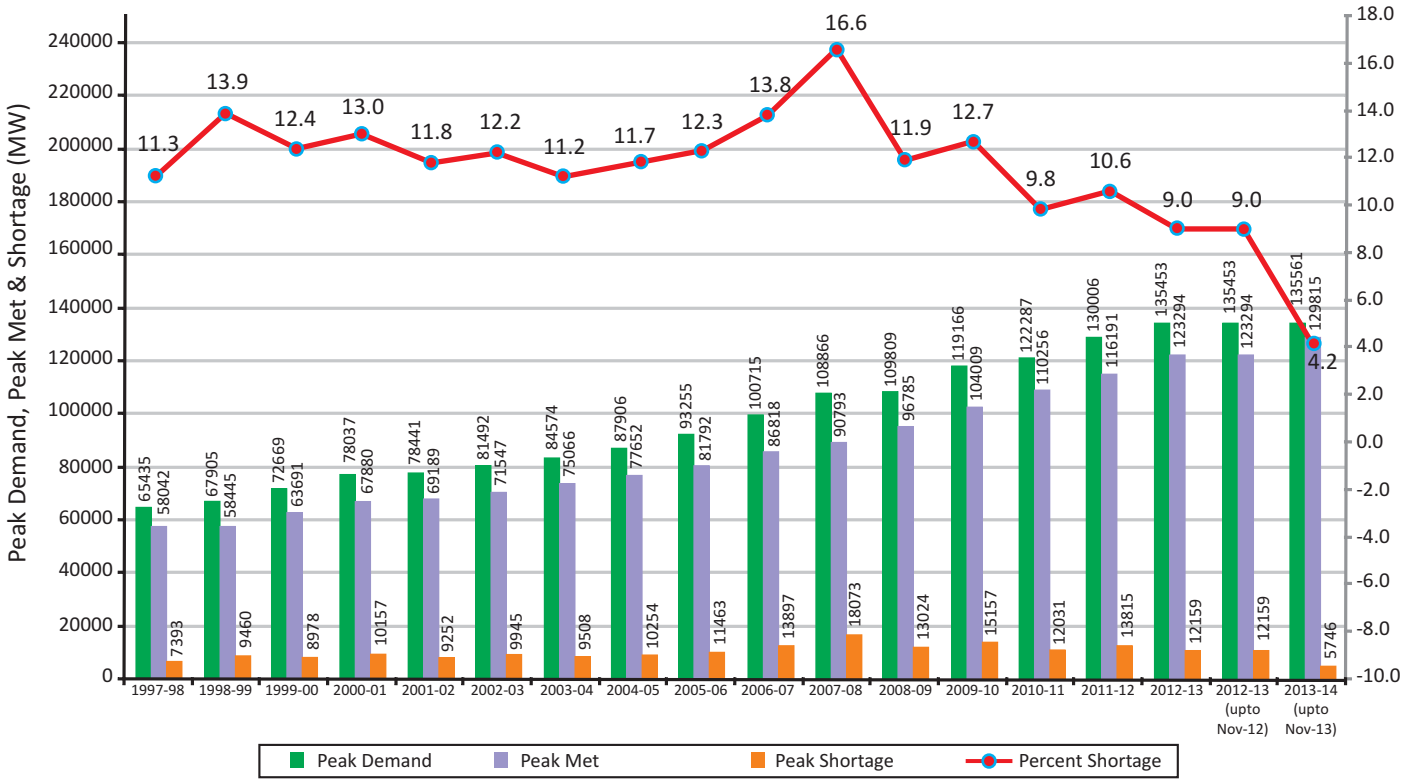
Generation (BU)



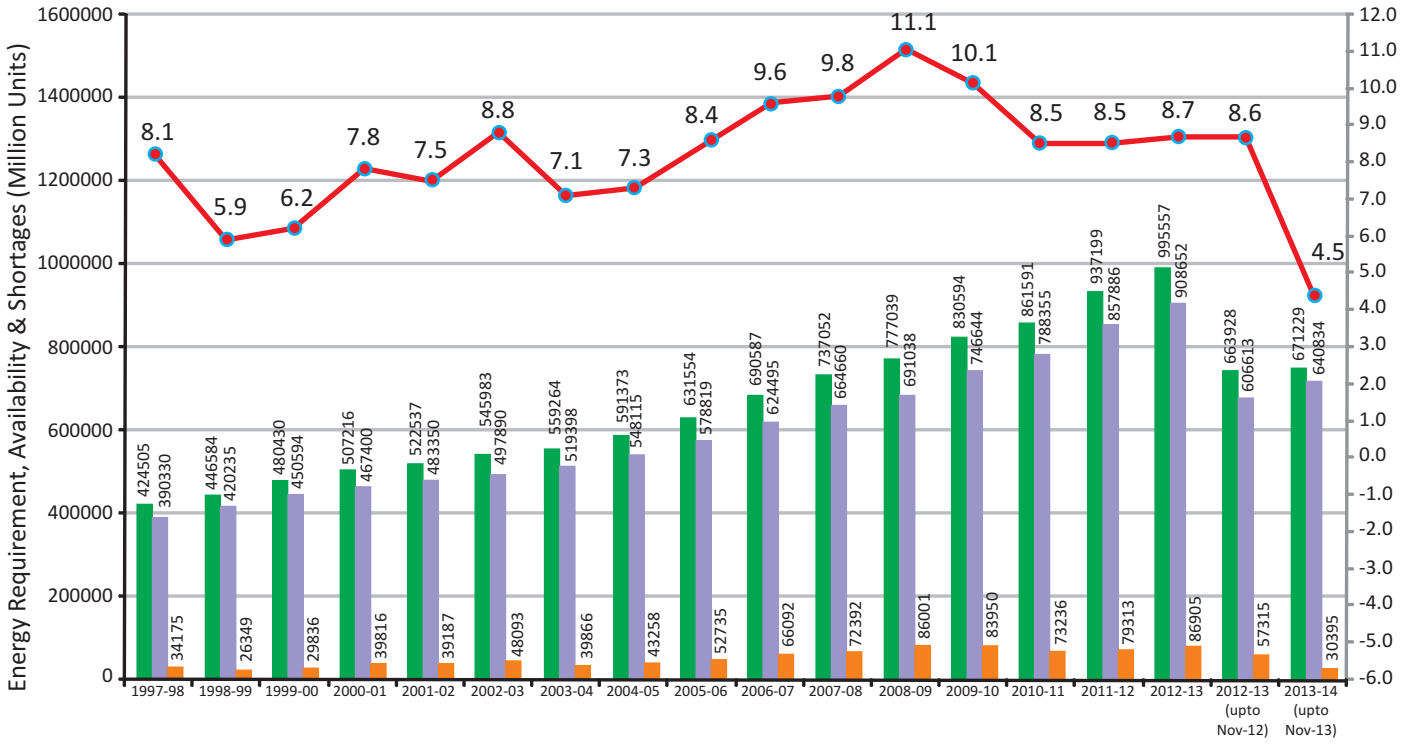
Plant Load Factor



Power Supply Position - Peak



Power Supply Position - Energy



LIST OF CENTRAL SECTOR POWER STATIONS AS ON 30.11.2013

Sr. No.	Region/ State	Owner	Name of Project	P M	Total Capacity
1	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
2	Uttar Pardesh	NTPC	Auriaya CCPP	GT-Gas	109.30
	Uttar Pardesh	NTPC	Auriaya CCPP	GT-Gas	109.30
	Uttar Pardesh	NTPC	Auriaya CCPP	GT-Gas	111.19
	Uttar Pardesh	NTPC	Auriaya CCPP	GT-Gas	111.19
	Uttar Pardesh	NTPC	Auriaya CCPP	GT-Gas	111.19
	Uttar Pardesh	NTPC	Auriaya CCPP	GT-Gas	111.19
3	Rajasthan	NLC	Barsingsar Thermal Power Station	Steam	125.00
	Rajasthan	NLC	Barsingsar Thermal Power Station	Steam	125.00
4	Haryana	NTPC	Indira Gandhi STPP	Steam	500.00
	Haryana	NTPC	Indira Gandhi STPP	Steam	500.00
	Haryana	NTPC	Indira Gandhi STPP	Steam	500.00
5	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
6	Uttar Pardesh	NTPC	Dadri CCPP	GT-Gas	130.19
	Uttar Pardesh	NTPC	Dadri CCPP	GT-Gas	130.19
	Uttar Pardesh	NTPC	Dadri CCPP	GT-Gas	130.19
	Uttar Pardesh	NTPC	Dadri CCPP	GT-Gas	130.19
	Uttar Pardesh	NTPC	Dadri CCPP	GT-Gas	154.51
	Uttar Pardesh	NTPC	Dadri CCPP	GT-Gas	154.51
7	Haryana	NTPC	Faridabad CCGT	GT-Gas	137.76
	Haryana	NTPC	Faridabad CCGT	GT-Gas	137.76
	Haryana	NTPC	Faridabad CCGT	GT-Gas	156.07
8	Uttar Pardesh	NTPC	National Capital Region Power Station	Steam	490.00
	Uttar Pardesh	NTPC	National Capital Region Power Station	Steam	490.00
	Uttar Pardesh	NTPC	National Capital Region Power Station	Steam	210.00
	Uttar Pardesh	NTPC	National Capital Region Power Station	Steam	210.00
	Uttar Pardesh	NTPC	National Capital Region Power Station	Steam	210.00
	Uttar Pardesh	NTPC	National Capital Region Power Station	Steam	210.00
9	Uttar Pardesh	NTPC	RihandThermal Power Station	Steam	500.00
	Uttar Pardesh	NTPC	RihandThermal Power Station	Steam	500.00
	Uttar Pardesh	NTPC	RihandThermal Power Station	Steam	500.00
	Uttar Pardesh	NTPC	RihandThermal Power Station	Steam	500.00
	Uttar Pardesh	NTPC	RihandThermal Power Station	Steam	500.00
	Uttar Pardesh	NTPC	RihandThermal Power Station	Steam	500.00

10	Uttar Pardesh	NTPC	Singrauli Thermal Power Station	Steam	200.00
	Uttar Pardesh	NTPC	Singrauli Thermal Power Station	Steam	200.00
	Uttar Pardesh	NTPC	Singrauli Thermal Power Station	Steam	200.00
	Uttar Pardesh	NTPC	Singrauli Thermal Power Station	Steam	200.00
	Uttar Pardesh	NTPC	Singrauli Thermal Power Station	Steam	200.00
	Uttar Pardesh	NTPC	Singrauli Thermal Power Station	Steam	500.00
	Uttar Pardesh	NTPC	Singrauli Thermal Power Station	Steam	500.00
11	Uttar Pardesh	NTPC	Tanda Thermal Power Station	Steam	110.00
	Uttar Pardesh	NTPC	Tanda Thermal Power Station	Steam	110.00
	Uttar Pardesh	NTPC	Tanda Thermal Power Station	Steam	110.00
	Uttar Pardesh	NTPC	Tanda Thermal Power Station	Steam	110.00
12	Uttar Pardesh	NTPC	Unchahar Thermal Power Station	Steam	210.00
	Uttar Pardesh	NTPC	Unchahar Thermal Power Station	Steam	210.00
	Uttar Pardesh	NTPC	Unchahar Thermal Power Station	Steam	210.00
	Uttar Pardesh	NTPC	Unchahar Thermal Power Station	Steam	210.00
	Uttar Pardesh	NTPC	Unchahar Thermal Power Station	Steam	210.00
13	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
14	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
15	Himachal Pradesh	NHPC	ChameraHydro Power Station -II	Hydro	100.00
	Himachal Pradesh	NHPC	ChameraHydro Power Station -II	Hydro	100.00
	Himachal Pradesh	NHPC	ChameraHydro Power Station -II	Hydro	100.00
16	Himachal Pradesh	NHPC	ChameraHydro Power Station -III	Hydro	77.00
	Himachal Pradesh	NHPC	ChameraHydro Power Station -III	Hydro	77.00
	Himachal Pradesh	NHPC	ChameraHydro Power Station -III	Hydro	77.00
17	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
18	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
19	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
20	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
21	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
22	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
23	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
24	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
25	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
	Jammu & Kashmir	NHPC	Uri-II Hydro Power Station	Hydro	60.00
	Jammu & Kashmir	NHPC	Uri-II Hydro Power Station	Hydro	60.00
	Jammu & Kashmir	NHPC	Uri-II Hydro Power Station	Hydro	60.00
26	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
	Jammu & Kashmir	NHPC	Nimoo Bazoo	Hydro	15.00
	Jammu & Kashmir	NHPC	Nimoo Bazoo	Hydro	15.00
	Jammu & Kashmir	NHPC	Nimoo Bazoo	Hydro	15.00
27	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
28	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
29	Uttar Pradesh	NPCIL	Narora A P S	Nuclear	220
	Uttar Pradesh	NPCIL	Narora A P S	Nuclear	220
	Total NR				21221.26
30	Gujrat	NTPC	Gandhar CCPP	GT-Gas	144.30
	Gujrat	NTPC	Gandhar CCPP	GT-Gas	144.30

	Gujrat	NTPC	Gandhar CCPP	GT-Gas	144.30
	Gujrat	NTPC	Gandhar CCPP	GT-Gas	224.49
31	Gujrat	NTPC	Kawas Gas Power Station	GT-Gas	106.00
	Gujrat	NTPC	Kawas Gas Power Station	GT-Gas	106.00
	Gujrat	NTPC	Kawas Gas Power Station	GT-Gas	106.00
	Gujrat	NTPC	Kawas Gas Power Station	GT-Gas	106.00
	Gujrat	NTPC	Kawas Gas Power Station	GT-Gas	116.10
	Gujrat	NTPC	Kawas Gas Power Station	GT-Gas	116.10
32	Chhattiagarh	NTPC	Korba Thermal Power Station	Steam	200.00
	Chhattiagarh	NTPC	Korba Thermal Power Station	Steam	200.00
	Chhattiagarh	NTPC	Korba Thermal Power Station	Steam	200.00
	Chhattiagarh	NTPC	Korba Thermal Power Station	Steam	500.00
	Chhattiagarh	NTPC	Korba Thermal Power Station	Steam	500.00
	Chhattiagarh	NTPC	Korba Thermal Power Station	Steam	500.00
	Chhattiagarh	NTPC	Korba Thermal Power Station	Steam	500.00
33	Chhattiagarh	NTPC & Sail	Bhilai Thermal Power Station	Steam	250.00
	Chhattiagarh	NTPC & Sail	Bhilai Thermal Power Station	Steam	250.00
34	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
35	Maharashtra	NTPC	Mauda Thermal Power Station	Steam	500.00
	Maharashtra	NTPC	Mauda Thermal Power Station	Steam	500.00
36	Chhattiagarh	NTPC	Sipat Supper Thermal Power Station	Steam	500.00
	Chhattiagarh	NTPC	Sipat Supper Thermal Power Station	Steam	500.00
	Chhattiagarh	NTPC	Sipat Supper Thermal Power Station	Steam	660.00
	Chhattiagarh	NTPC	Sipat Supper Thermal Power Station	Steam	660.00
	Chhattiagarh	NTPC	Sipat Supper Thermal Power Station	Steam	660.00
37	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
38	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
39	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
40	Gujarat	NPCIL	Kakarapara A P S	Nuclear	220
	Gujarat	NPCIL	Kakarapara A P S	Nuclear	220
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
	Total WR				18233.59
42	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 Stage-II	Steam	250.00
43	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
44	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
45	Tamil Nadu	NTPC & T N E B (J/V)	Vallur Thermal Power Station	Steam	500.00
	Tamil Nadu	NTPC & T N E B (J/V)	Vallur Thermal Power Station	Steam	500.00
46	Andhra Pradesh	NTPC	SimadriThermal Power Station	Steam	500.00
	Andhra Pradesh	NTPC	SimadriThermal 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
47	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
48	Tamil Nadu	NPCIL	Madras A P S	Nuclear	220
	Tamil Nadu	NPCIL	Madras A P S	Nuclear	220
	Total SR				10019.58
49	Bihar	NTPC & Bihar	Muzaffarpur Thermal Power Station	Steam	110.00
	Bihar	NTPC & Bihar	Muzaffarpur Thermal Power Station	Steam	110.00
	Bihar	NTPC	BARH STPP ST II	Steam	660.00
50	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
51	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
52	West Bengal	D.V.C	Durgapur Thermal Power Station	Steam	130.00
	West Bengal	D.V.C	Durgapur Thermal Power Station	Steam	210.00
53	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
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	West Bengal	D.V.C	Koderma Thermal Power Station	Steam	500.00
	West Bengal	D.V.C	Koderma Thermal Power Station	Steam	500.00
56	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
57	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
58	Bihar	NTPC	Kahalgaon Thermal Power Station	Steam	210.00
	Bihar	NTPC	Kahalgaon Thermal Power Station	Steam	210.00
	Bihar	NTPC	Kahalgaon Thermal Power Station	Steam	210.00
	Bihar	NTPC	Kahalgaon Thermal Power Station	Steam	210.00
	Bihar	NTPC	Kahalgaon Thermal Power Station	Steam	500.00
	Bihar	NTPC	Kahalgaon Thermal Power Station	Steam	500.00
	Bihar	NTPC	Kahalgaon Thermal Power Station	Steam	500.00
59	Odisha	NTPC	Talchar Thermal Power Station(STPS)	Steam	500.00
	Odisha	NTPC	Talchar Thermal Power Station(STPS)	Steam	500.00
	Odisha	NTPC	Talchar Thermal Power Station(STPS)	Steam	500.00
	Odisha	NTPC	Talchar Thermal Power Station(STPS)	Steam	500.00
	Odisha	NTPC	Talchar Thermal Power Station(STPS)	Steam	500.00
	Odisha	NTPC	Talchar Thermal Power Station- II, Unit - 3	Steam	500.00
60	Odisha	NTPC	Talcher Thermal Power Station Old	Steam	62.50
	Odisha	NTPC	Talcher Thermal Power Station Old	Steam	62.50
	Odisha	NTPC	Talcher Thermal Power Station Old	Steam	62.50
	Odisha	NTPC	Talcher Thermal Power Station Old	Steam	62.50
	Odisha	NTPC	Talcher Thermal Power Station Old	Steam	110.00
	Odisha	NTPC	Talcher Thermal Power Station Old	Steam	110.00
61	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
62	Bihar	D.V.C	Panchet Hill Hydro Power Station	Hydro	40.00
	Bihar	D.V.C	Panchet Hill Hydro Power Station	Hydro	40.00
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
65	West Bengal	NHPC	Teesta Low Dam Hydro Power Station	Hydro	33.00
	West Bengal	NHPC	Teesta Low Dam Hydro Power Station	Hydro	33.00
	West Bengal	NHPC	Teesta Low Dam Hydro Power Station	Hydro	33.00
	West Bengal	NHPC	Teesta Low Dam Hydro Power Station	Hydro	33.00
	Total ER				15925.20
66	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
67	TRIPURA	ONGC J/V	Tripura CCGT	GT-Gas	363.30
68	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

Under construction of Powergrid's Sub-station

	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
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	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
71	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
72	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
73	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
	Total NER				1598.30
	Total ALL INDIA:				66997.93

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

CHAPTER - 5

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 stage of development. A brief detail of these projects is as below:

Sl.	Name of UMPP	Type	Date of Transfer	Levellised 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	Krishnapat-nam, And-hra Pradesh	Coastal	29.01.2008	2.333	Reliance Power Ltd.
4	Tilaiya, Jharkhand	Pithead	07.08.2009	1.77	Reliance Power Ltd.

Mundra UMPP is fully commissioned and is generating electricity. First two units of Sasan UMPP (2x660 MW) have been commissioned in 2013. Third unit of Sasan UMPP has been commissioned on 25.03.2014.

UMPPs at bidding stage:

Odisha : The site for this UMPP is in village Bedabahal in Sundergarh District. RFQ for this UMPP has been issued on 25.09.2013. RfP has been issued on 27.12.2013.

Cheyyur : The site for Cheyyur in Kanchipuram District in Tamil Nadu has been identified along with captive port at Panaiyur village. RfQ for this UMPP has been issued on 26.09.2013. Applications from 8 firms have been received for Cheyyur UMPP. RfP has been issued on 27.12.2013.

Chhattishgarh : The site for this UMPP is in district Sarguja. RfQ for this UMPP was issued on 15.03.2013. MoEF had informed that the captive coal blocks are in inviolate areas. In view of the above, Ministry decided that RfQ for the project to be issued afresh on the revised SBDs only on clearance of coal blocks allocated to Chhattisgarh UMPP or allocation of new coal blacks. Accordingly, the RfQ for 4000 MW Chhattisgarh UMPP issued on 15.03.2010 has been withdrawn.

UMPPs in pipeline:

- A site at Husainabad, Deoghar Distt has been identified for setting up of 2nd UMPP in Jharkhand.
- A site at Bijoypatna 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 site at Kakwara in Banka Distt. has been identified for setting up of UMPP in Bihar.
- A site at Niddodi village in Karnataka has been identified for UMPP by CEA and Govt. of Karnataka.
- The sites in Tamil Nadu & Gujarat for their second UMPPs are being examined by CEA/PFC.

CHAPTER - 6

TRANSMISSION

POWRGRID

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 2013-14 and the achievements up to November 30, 2013 are summarized below:

Parameter	MOU Target (Excellent)	Achievement upto November 30, 2013	% of Achievement
Commissioned Ckt. Kms. ready for Commissioning (GW-Ckms)	7500	3829	51
Transformation Capacity Addition Ready for Commissioning (MVA)	20000	17310	87

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 2013-14 (upto Nov. 30, 2013) are shown in the following table:

Sl. No.	Name of transmission lines /Sub-Stations	Voltage Class
I	**Transmission lines**	
1.	Sasan-Satna S/c line-II - 508 GW-Ckm	765kV
2.	Agra-Jhatikara S/c line - 529 GW-Ckm	765kV
3.	Sasaram-Fatehpur S/c line-II - 746 GW-Ckm	765kV
4.	Meerut-Agra S/c line - 563 GW-Ckm	765kV
5.	Fetehpur - Agra S/C line - 701 GW-Ckm	765kV
6.	765KV D/C Raigarh PS(Near Kotra) - Raigarh PS(Near Tamner) line - 206 GW-Ckm	765kV
7.	Indore - Indore D/C line (Q) - Ckt-II - 40 GW-Ckm	400kV
8.	LILO of 400kV Parbati-II - Parbati Pooling Point at Parbati-III HEP (Q) - Ckt-I & Ckt-II - 4 GW-Ckm	400kV
9.	Thermal Powertech Corp. (I) ltd - Nellore Pooling Station D/C line (Q) - 52 GW-Ckm	400kV
10.	Ckt-I of LILO of 2x S/C 400KV Parbati-II - Koldam/ Nalagarh Line at Parbati Pooling Point (Q) - 2 GW-Ckm	400kV
11.	Raigarh pooling station-Raigarh D/C line - 7 GW-Ckm	400kV
12.	LILO of Rourkela-Raigarh 400 kV D/C at Jharsuguda PS - Ckt-II - 22 GW-Ckm	400kV
13.	Jamshedpur-Baripada D/C line (Balance portion)- 31 GW-Ckm	400kV
14.	Re-conductring of Siliguri-Purnea D/C line - Ckt-II - 87 GW-Ckm	400kV
15.	Parbati Pooling Point - Amritsar 400kV D/C line - 251 GW-Ckm	400kV
16.	Baharampur(India)-Bheramara (Bangladesh) 400kV D/C line - 72 GW-Ckm	400kV
17.	LILO of Farakka - Jeerat 400KV S/C line at Baharampur (India)- 3 GW-Ckm	400kV
18.	LILO of both ckt of 400KV Kishenpur - Wagoora at Wanpoo Sub station - 5 GW-Ckm	400kV
II	**New Sub-Stations**	
1.	Indore - 3000 MVA	765/400kV
2.	Raigarh (near Tamnar) - 3000 MVA	765/400kV
3.	Raigarh (Kotra) - 4500 MVA	765/400kV
4.	Wanpoo - 315 MVA	400/220kV
5.	Parbati Pooling Station (GIS)	400kV
6.	Baharampur Switching Station	400kV
III	**Extension of Sub-Stations**	
1.	Augmentation at Sasaram - 1500 MVA	765/400kV
2.	Augmentation of 400/220 kV Meerut S/Stn. to 765/400KV - 3000 MVA	765/400kV
3.	Aug at Moga- 500 MVA	400/220kV
4.	ICT at Amritsar - 500 MVA	400/220kV
5.	Augmentation at Mapusa -315 MVA	400/220kV
6.	ICT at Nalagarh Sub station - 315 MVA	400/220kV
7.	ICT at Abdullapur Sub station - 315 MVA	400/220kV
8.	Imphal - 50 MVA	132/33kV

Balance addition of 3671 GW-ckt kms. of transmission lines is expected to be completed by Mar.'14.

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, 2013, National Grid with inter-regional power transfer capacity of about **31,850 MW** has been established.

List of existing Inter-Regional links is as below:

Existing Inter-Regional Power Transfer Capacity (MW) (as on 30 November, 2013)

Name of link	Existing (Nov.'13)
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
Sasaram - Fatehpur 765kV 2nd S/c line	2100
Gaya - Balia 765kV S/c [DVC,NK, Maithon Tr. System]	2100
Sasaram bypassing (additional capacity)	500
Sub-total	**14230**
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
Gwaliar-Agra 765 kV S/c	2100
Gwaliar-Agra 765 kV S/c 2nd ckt [NR-WR inter-regional strengthening scheme]	2100
Zerda-Kankroli 400kV D/c [NR-WR inter-regional strengthening scheme]	1000
Sub-total	**6220**
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	**31,850**
* 200 MW HVDC Monopole is currently not in operation	

INTER-CONNECTION WITH NEIGHBORING COUNTRIES

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 for effective utilization of regional resources.

Presently, various interconnections upto 132kV voltage level exist between **India & Nepal** and interconnections upto 400kV voltage level exist between **India & Bhutan.** Recently, the Company has successfully commissioned interconnection between India and Bangladesh in September, 2013 through Bahrampur (India) – Bheramara (Bangladesh) 400 kV D/c line and 500 MW HVDC back-to-back link at Bheramara.

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. For enhancement of power exchange between India and Nepal, another 400 kV D/c line from Dhalkebar (in Nepal) to Muzaffarpur (in India) is under implementation through separate Joint Venture Companies for Indian and Nepalese portion in which POWERGRID is a partner. In addition, feasibility study for interconnection between **India and Sri Lanka** through HVDC bipole link which includes submarine cable for sea portion has been carried out. 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 High Capacity Power Transmission Corridors (HCPTCs) is progressing as per schedule with completion in a phased manner matching with generation projects. In fact, some of the elements under HCPTCs of Chhattisgarh and Odisha have already been commissioned and balance elements of HCPTC's are expected to be completed progressively by FY 2015-16.

PRIVATE SECTOR PARTICIPATION IN TRANSMISSION

Promotion of competition in the electricity industry in India is one of the key objectives of the Electricity Act, 2003. As per the provisions under Section 63 of the Electricity Act, 2003 and the Tariff Policy dated 6th January 2006, Ministry of Power, 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.

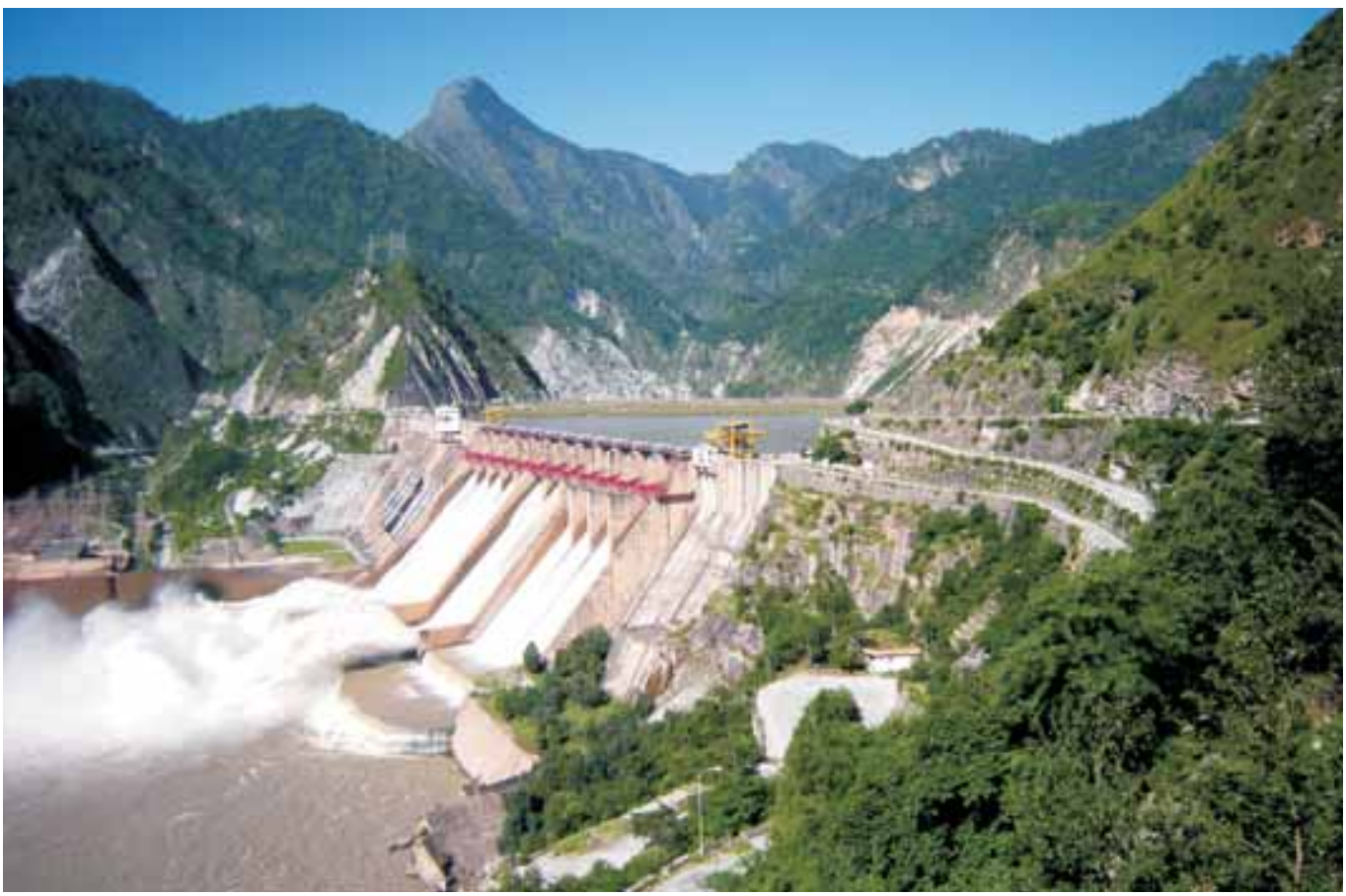
As envisaged in the Guidelines, Ministry of Power had constituted an Empowered Committee with representatives from Ministry of Power, CEA, CTU (i.e., POWERGRID), Planning Commission and two experts in power sector for development of Inter-State Transmission lines (ISTS) through tariff based competitive bidding route. As per the tariff policy issued by MOP, since January , 2011, all the ISTS transmission projects are to be implemented through tariff based competitive bidding except some projects as identified by MoP which are to be implemented by CTU. The Ministry of Power has also issued Standard Bidding Documents (SBDs), viz. Request for Qualification (RfQ), Request for Proposal (RfP), Transmission Service Agreement (TSA) and Share Purchase Agreement (SPA). As provided in the Guidelines, Ministry of Power has appointed PFC Consulting Limited (PFCCL) and REC Transmission Projects Company Limited (RECTPCL) as the Bid Process Coordinators (BPC) for carrying out the bidding process.

As of now, Request for Proposal (Price bids) have been obtained by the BPCs for sixteen transmission projects for implementation through tariff based competitive bidding and awards have been placed for the following Fourteen projects under Tariff based competitive bidding:

Sl.	Transmission System	Awarded to :
1.	Talcher - II Augmentation system	Reliance Power Transmission Ltd.
2.	North Karanpura Transmission System	Reliance Power Transmission Ltd.
3.	East - North Interconnection - System	Sterlite Technologies Ltd.
4.	Raichur - Sholapur Transmission System	Consortium of Patel Engg with Simplex Infrastructure & BS Transcom
5.	Dharamjaygarh - Jabalpur - Bina Transmission System	Sterlite Technologies Ltd.
6.	Jabalpur - Bhopal - Indore and Aurangabad - Dhule - Vadodara Transmission System	Sterlite Technologies Ltd.
7.	Vemagiri Transmission System	POWERGRID
8.	Nagapattinam Transmission System	POWERGRID
9.	Vizag Transmission System	POWERGRID
10.	Kudgi Transmission System	L&T IDPL
11.	Transmission System for Patran 400 kV S/S	TECHNO
12.	Transmission System for Part ATS of RAPP U-7&8 in Rajasthan	STERLITE GRID
13.	Transmission System for Eastern Region System Strengthening Scheme - VII	STERLITE GRID
14.	Transmission System for Eastern Region System Strengthening Scheme - VI	ESSEL INFRA

Two projects wherein the RFP (Price bids) have been obtained and the awards under process are as under:

Sl.	Transmission System	Awarded to :
15.	Transmission System for Connectivity for NCC Power Project Ltd.	--
16.	Transmission System for Baira Siul HEP-Sarna 220 kV line	--



690 MW Salal Power Station (Jammu & Kashmir)

CHAPTER - 7

STATUS OF POWER SECTOR REFORMS

7.1 Model Bidding Documents (MBDs) for Thermal Power Station set up on Design, Build, Finance, Operate and Transfer (DBFOT) and guidelines for procurement of power for long-term

To address the issues related to fuel availability and price and to encourage large participation from investors /developers for better public private partnership in the consumer interest and in pursuance of the decision of the EGoM on Ultra Mega Power Projects (UMPPs) having specified site and location, the SBDs for Case-2 have been further reviewed and the Model Bidding Documents (MBDs) comprising the Model RFQ, Model RFP and the Model PPA for construction and operation of power generation projects/ UMPPs on Design, Build, Finance, Operate and Transfer (DBFOT) basis have been issued on 20th Sept, 2013. Guidelines for procurement of power from thermal power station set up on DBFOT basis have also been issued on 21st September, 2013.

7.2 Model Bidding Documents (MBDs) for Thermal Power Station set up on Design, Build, Finance, Own and Operate (DBFOO) and guidelines for procurement of power for long-term

In line with the decisions taken for revision of Standard Bidding Documents for Case-2/UMPPs projects, similar exercise was undertaken for Case-1 SBDs also by Ministry of Power. Model Bidding Documents (MBDs) comprising the Model Request for Qualification, Model Request for Proposal and the Model Power Supply Agreement for construction and operation of Thermal power Stations set up on Design, Build, Finance, Own and Operate (DBFOO) basis have also been finalized and circulated on 8th November, 2013. Guidelines for procurement of power from thermal power station set up on DBFOO basis have also been notified in the Gazette on 9.11.2013

This is aimed to bring in larger private sector investments in power at competitive tariffs.

7.3 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).

Reorganization of SEBs was an important strategy in this pursuit of reforms for encouraging competition and improving efficiency in operation. Restructuring these boards is aimed at promoting greater efficiency by streamlining operations of distribution, transmission, generation and trading, while also promoting transparency and accountability.

Section 131 read with Section 172 of the Electricity Act 2003 provides for re-organization of State Electricity Boards. State Electricity Boards in all 21 States have been reorganized.

7.4 FDI in Power 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 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.

The Government on 22.08.2013 notified revised position for FDI Cap for Power Exchanges registered under CERC Regulations, 2010 as follows:

Present Position

FDI Cap	Entry Route
49% (26% FDI+23%FII)	Government (for FDI)

Revised Position

FDI Cap	Entry Route
No Change	Automatic.

7.5 Amendment in Electricity Act, 2003

Based on the experience gained over the last ten years and to accommodate the recent developments in the areas of grid stability and security development of market and progress in technology, Ministry has finalized draft amendments to the Electricity Act, 2003 based on the recommendations of a committee under the Chairman, CEA. These amendments are expected to bring about further improvement in grid security, improvement in the efficiency of distribution sector through separation of carriage and content, rationalization of tariff, dynamic and responsible regulatory framework with the overall objective of sustainable growth of the sector aimed at consumer benefits. The proposed draft amendment have been circulated on 17th October, 2013 for seeking comments. The same were also uploaded on the website of Ministry of Power. The comments received from stakeholders which are under examination.

7.6 Amendments in Tariff Policy

The Tariff Policy was notified by the Central Government under section 3 of the Electricity Act, 2003 on 6th January,

2006 and was amended on 31st March, 2008 allowing Hydro Power Developers other than state controlled/owned companies the facility of tariff determination through appropriate commission up to 5th January, 2011 and exemption from tariff based competitive bidding. This amendment was necessitated due to changes in the Hydro Power Policy, 2008. The tariff policy was further amended on 8th July, 2011 extending the above provision up to 31st December, 2015. Proposal was received for amendment in Tariff Policy to provide further exemption to Hydro Power Projects till the end of 13th Plan. In addition, based on the Working Group Report on 12th Five Year Plan, certain other amendments have also been proposed in the policy.

Shri B.N. Sharma, JS (D), MoP, Shri P.K. Sinha, Secretary (Power), MoP, Shri Raj Pal, EA, MoP

CHAPTER - 8

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 **rggvy.gov.in.**

The Government has approved continuation of RGGVY in 12th Plan to electrify balance census villages and all habitations above 100 populations and all eligible BPL households in the country.

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. So far under DDG, 586 DDG projects for an amount of ₹ 263.75 crore have been sanctioned. Out of 586 projects, 71 projects have already been commissioned. The Provision for subsidy requirement for DDG has been revised to ₹ 1000 crores from 540 crores in the 12th plan.

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. Under RGGVY, 648 projects were sanctioned during 10th and 11th Plan, covering electrification of 1,12,027 un/de-electrified villages (UEV), intensive electrification of 3,81,942 partially electrified villages (PEV) and release of free electricity connections to 2.76 crore BPL households in the country.

In addition to 648 projects, 172 projects have been sanctioned so far under RGGVY during 12th Five Year Plan, covering electrification of 10,574 UE villages and 1,61,367 PE villages.

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

In 2013-14, upto 31.01.2014, 1016 un-electrified villages have been electrified, 15,501 partially electrified villages have been intensively electrified and free electricity connections to 7,87,513 BPL households have been released.

Since April, 2005, till 31st January, 2014, the cumulative achievement is electrification of 1,08,099 un-electrified villages, intensive electrification of 3,05,638 partially electrified villages and release of free electricity connections to 2,15,09,337 BPL households. Till 31.1.2014, 1,03,522 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 19 states namely Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Nagaland, Odisha, Punjab, Rajasthan, Tripura, Uttar Pradesh, Uttrakhand and West Bengal covering 2,23,448 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
	11th Plan Total	**65971**	
23	2012-13	2587	RGGVY
24	2013-14	1016 (Up to 31.01.2013)	RGGVY

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

Secretary (P), MoP visited DT at Ahmed Nagar and inspected Meter, MODEM etc.

CHAPTER - 9

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 trough 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. Third Party Independent Evaluators have been finalized through 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 (Rs 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 RAPDRP'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.
- **Continuation of R-APDRP in XII/XIII Plan:** CCEA has approved the continuation of R-APDRP in XII/XIII Plan on 21.06.2013.

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 30.11.2013 of the R-APDRP scheme is given below:

- Part-A (IT) projects worth ₹ 5233.65 Cr covering almost all the eligible towns (1398Nos) in 29 states / UTs have been sanctioned. **Details are placed at annexure-I.**
- Part-A (SCADA) projects worth ₹ 1574.71 Cr covering all the eligible towns (70 Nos.) in 18 States have been sanctioned. **Details are placed at annexure-I.**
- So far 1229 Part-B projects worth ₹ 30381.46 Cr in 25 States have been sanctioned. **Details are placed at annexure-II.**
- So far 431 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 2013-14) is ₹ 575 Crore (Rs.500 Crore as loan and ₹ 75 Crore as grant).

Up Stream View of Koteshwar Dam & Lake

Annexure –I

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

Sr. No	State	No of Projects Sanctioned	Sanctioned Project Cost (₹ 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	275.63
12	Maharashtra	128	315.43
13	Puducherry	04	27.53
14	Punjab	47	272.85
15	Rajasthan	87	315.93
16	Tamil Nadu	110	417.00
17	Uttar Pradesh	168	650.68
18	West Bengal	61	163.77
	Sub-Total	**1188**	**4451.26**
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	Uttrakhand	31	125.82
	Sub-Total	**210**	**782.39**
	TOTAL	**1398**	**5233.65**

Annexure –I

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

Sr. No.	State	No of Projects Sanctioned	Sanctioned Project Cost (₹ in crore)
1	Andhra Pradesh	6	126.56
2	Assam	1	21.82
3	Bihar	1	22.02
4	Chattisgarh	2	41.06
5	Gujarat	6	138.51
6	Jammu &Kashmir	2	52.89
7	Jharkhand	3	70.23
8	Haryana	1	24.29
9	Kerala	3	83.15
10	Madhya Pradesh	5	102.94
11	Maharashtra	8	161.62
12	Punjab	3	52.36
13	Puducherry	1	13.89
14	Rajasthan	5	150.90
15	Tamilnadu	7	182.17
16	Uttar Pradesh	12	280.81
17	Uttrakhand	1	16.55
18	West Bengal	3	32.94
	Total	**70**	**1574.71**

Annexure –II

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

Sr. No.	State	Projects Sanctioned	Sanctioned Cost (₹ Crore)
1	Andhra Pradesh	79	1365.72
2	Assam	67	644.05
3	Bihar	64	1155.21
4	Chhattisgarh	19	710.24
5	Gujarat	58	954.02
6	Jharkhand	30	1181.45
7	Haryana	33	1321.12
8	Karnataka	81	786.59
9	Himachal Pradesh	14	338.97
10	J &K	30	1665.27
11	Kerala	43	1078.30
12	Madhya Pradesh	81	2034.60
13	Maharashtra	122	3408.24
14	Manipur	13	398.87
15	Meghalaya	9	159.73
16	Mizoram	9	240.41
17	Puducherry	1	84.78
18	Punjab	46	1632.70
19	Rajasthan	81	1536.07
20	Sikkim	2	68.46
21	Tamil Nadu	74	2281.69
22	Tripura	16	165.09
23	Uttar Pradesh	167	5777.01
24	Uttrakhand	31	584.09
25	West Bengal	59	808.78
	Total	**1229**	**30381.46**

Annexure –III

STATUS OF GO-LIVE OF TOWNS UNDER R-APDRP

SL.NO.	STATE	NO. OF TOWNS	NO. OF TOWNS DECLARED 'GO LIVE'
1	Andhra Pradesh	113	54
2	Assam	67	01
3	Chhattisgarh	20	08
4	Gujarat	84	71
5	Himachal	14	11
6	Karnataka	98	46
7	Maharashtra	128	67
8	Madhya Pradesh	83	64
9	Rajasthan	87	03
10	Sikkim	02	02
11	Tripura	16	01
12	Uttar Pradesh	168	34
13	Uttrakhand	31	08
14	West Bengal	61	61
	TOTAL		**431**

Financial Restructuring Plan (FRP) of State owned Distribution Companies

- The scheme for Financial Restructuring of State Owned Discoms was formulated and approved by the Government keeping in view of the declining operational performance and financial health of State Discoms and to enable the turnaround of the State Discoms and ensure their long term viability, which have accumulated huge losses and unsustainable debt. The scheme contains measures to be taken by the State Discoms and State Government for achieving financial turnaround by restructuring their debt with support through a Transitional Finance Mechanism by Central Government.
- The State Government will take over 50% of the outstanding short term liabilities (STL) of the DISCOMS as on March, 31, 2012. This will be first converted into bonds to be issued by Discoms to participating lenders, duly backed by State Government guarantee. The State Government will then take over these liabilities from Discoms in the next 2-5 years by way of issuing special securities in accordance with their FRBM space. The State Government will provide support in payment of interest and repayment of principal till the date of takeover by issuing special securities.
- The Balance 50% Short Term Liabilities will be rescheduled by the lenders at the best possible terms with moratorium on principal repayment.
- The scheme contains two tier monitoring mechanism by committees at Centre and State level to monitor the progress of the turnaround plan.
- Central Government would provide incentive by way of grant equal to the value of the additional energy saved by way of accelerated AT&C loss reduction beyond the loss trajectory specified under RAPDRP and capital reimbursement support of 25% of principal repayment by the State Government on the liability taken over by the State Government under the scheme.
- The scheme contains immediate/continuing and other measures required to be taken in a time bound manner by the Discoms and State Governments to ensure long term financial & commercial viability of State owned Discoms. These measures include Financial Restructuring, Tariff Setting & Revenue Realization, Subsidy, Metering, Audit & Accounts and Monitoring.
- The Scheme of FRP is under implementation in the States of Haryana, Rajasthan, Uttar Pradesh and Tamil Nadu. Bonds worth ₹ 46707 crores have already been issued in Tamil Nadu, Rajasthan, Uttar Pradesh and Haryana. FRP of Himachal Pradesh is being finalized. The States of Tamil Nadu, Rajasthan and Haryana have seen noticeable improvement in their power supply. Haryana and Rajasthan now have surplus power and so they do not have to buy electricity from spot market.

Government of India has approved special dispensation for the States fo Jharkhand, Bihar and Andhra Pradesh to enable their participation in FRP.

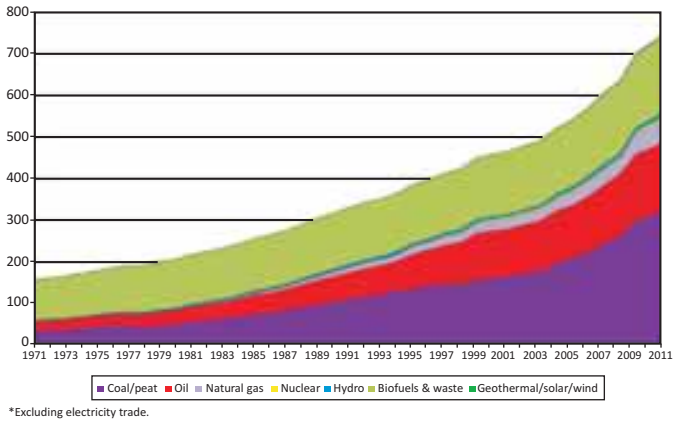
National Electricity Fund

1. Government of India has approved setting up of National Electricity Fund (Interest Subsidy Scheme) to provide interest subsidy on loans disbursed to the State Power Utilities, Distribution Companies (DISCOMS) - both in public and private sector for the loans taken from Private & Public Financial Institutions, to improve the infrastructure in distribution sector.
2. Rural Electrification Corporation (REC), would be the Nodal Agency to operationalise the scheme.
3. Under NEF scheme, interest subsidy would be provided on loans taken by private and public power utilities in distribution sector for non Rajiv Gandhi Gramin Vidyutikaran Yojana (RGGVY) and non Restructured Accelerated Power Development and Reforms Programme (R-APDRP) projects.
4. The preconditions for eligibility are linked to reform measures taken by the States and the amount of interest subsidy is linked to the progress achieved in reforms linked parameters. The preconditions of eligibility are operationalisation of State Electricity Regulatory Commission (SERC), formulation of business plan for turn around of utilities, re-organisation of State Electricity Boards (SEB), release of subsidy by State Government to DISCOMs, submission of audited annual accounts and timely filing of tariff petition.
5. There will be two categories of States for working out the interest subsidy - Special category and focused states, and States other than special category and focused states. Each power utility eligible for subsidy on interest would be assigned marks based on reforms measures i.e. reduction in AT&C losses; reduction in revenue gap (Average Cost of Supply (ACS) - Average Revenue Realized on subsidy received basis); return on equity and multi year tariff (MYT). Based on the consolidated score achieved on these parameters, the utilities would be categorized and will be eligible for subsidy in interest rates from 3% to 5% in States other than Special category and focused states and 5% to 7% in Special Category and focused states.
6. National Electricity Fund would provide interest subsidy aggregating ₹ 8466 crore spread over 14 years for loan disbursement amounting to ₹ 25,000 crore for distribution schemes sanctioned during the 2 years viz., 2012-13 and 2013-14.
7. NEF Steering Committee in the Financial Year 2012-13 has approved proposal worth ₹ 10953.80 crores of 8 States (11 Discoms) and ₹ 6017.82 cr. for the FY 2013-14 of 10 states (17 Discoms) for coverage under National Electricity Fund.

CHAPTER - 10
ENERGY CONSERVATION

The gap between electricity supply and demand in terms of both capacity (i.e. MW) and energy (i.e. MWh) has been steadily growing in India. 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. Recognizing the formidable challenges of meeting the energy needs and providing adequate and varied energy of desired quality to users in a sustainable manner and at reasonable costs, improving efficiency has become important components of energy policy. In addition, the environmental and health burdens arising out of the use of hydrocarbons may also force mankind towards energy efficiency and clean energy systems. Energy Efficiency and Conservation has also assumed enhanced importance with a view to conserve depleting energy resources.

TOTAL PRIMARY ENERGY SUPPLY* - INDIA



*Excluding electricity trade.

Source: IEA

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 designated consumers, prescribes energy conservation building code 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 and schemes as well as expanding and reaching out to new areas i.e. Utility Demand Side Management, Human Resource Development Programme and Super-Efficient Equipment Programme in the 12th Five Year Plan.

Bureau of Energy Efficiency (BEE), a statutory body under Ministry of Power is responsible for spearheading the improvement of energy efficiency in the economy through various regulatory and promotional instruments.

Promoting Energy Efficiency in Buildings

Energy Conservation Building Code (ECBC) was developed and introduced in the 11th Plan. This code sets minimum energy performance standards for commercial buildings having a connected load of 100 KW or above or contract demand of 120kVA or above. While BEE has developed ECBC, its enforcement lies with the state government. 22 states are at various stages of adoption of the code.

The main emphasis during the 11th Plan period was concentrated on developing capacities and putting enabling measures in place to support large scale implementation of ECBC scheme. The focus during the 12th Plan is more on its wide scale implementation in the built environment and energy efficiency improvements in existing commercial buildings with the objective that 75% of all new starts of commercial buildings are ECBC complaint by the end of the 12th Plan period. In addition, 20% of the existing commercial buildings reduce their energy consumption through retrofits. This would lead to energy saving of 5.07 BU from commercial buildings.

Standards and Labeling Scheme

Standards and labeling scheme was one of the standalone schemes initiated during 11th Five year plan. The key objectives of the S&L program is to provide the consumer an informed choice about various energy consuming equipment/appliances regarding the energy saving it would result based on the energy efficiency performance.

With the above objectives, the S&L scheme widely covers 16 equipments in which 4 equipments are mandatory and 12 covered under voluntary scheme. Thus Standards and labeling scheme was successfully achieved with the following benefits:

- It created good impact among consumers to purchase energy efficient equipment through a structured consumer awareness program.
- Market transformation occurred from non energy efficient products to energy efficient products.
- Resulted an avoided capacity generation of 7766MW.

With the continued efforts, BEE has now preparing to move the following three equipments from the voluntary stage to mandatory stage in 12th Plan period:

1. Direct Cooled Refrigerator
2. Electric Water Geysers
3. Color Television

The star labeling scheme for office equipment was successfully launched on 27th September, 2013. Thus by the end of 12th plan period, it is planned to have 20 equipments under voluntary phase and 7 equipments under mandatory phase including the above said equipments. Hence it is targeted to achieve an avoided peak capacity generation of 2308 MW at the end of 12th Five year plan.

AGRICULTURE DEMAND SIDE MANAGEMENT (AG-DSM)

The Agriculture Demand Side Management (Ag-DSM) scheme of BEE was initiated during XI plan in eleven DISCOMs of selected eight states (Maharashtra, Haryana, Punjab, Rajasthan, Gujarat, Andhra Pradesh, Madhya Pradesh and

Karnataka) which are agriculturally intensive and accounts for more than 70% of electricity consumption in this sector. The objective of the program is to create appropriate framework for market based interventions in the agriculture pumping sector and carried out pumpset efficiency upgrdation projects through Public Private Partnership (PPP) mode. Under this scheme, 11 Detailed Project Reports (DPRs) were prepared in 8 states covering about 20,000 pump sets connected on 87 feeders and indicating saving potential of 97 million units.

The first pilot Ag-DSM project is being implemented in Mangalwedha Sub-division of Solapur District in Maharashtra. The detailed project report (DPR) has been prepared and an implementer agency/ESCO has been engaged for implementation. Under this project, total 2209 pumpsets is replaced (free of cost to farmers) with energy efficient star rated pumpsets reflecting annual energy savings of 6.1 million units.

During XII five year plan, the objective is to reduce the energy intensity of agriculture pumping sector by carrying out efficiency up gradation of agricultural pumps. The approach for meeting the targets would be to build up the process of acceleration of sustainable energy efficiency through; statewide regulatory mechanism which will be coupled with the Financial assistance provided by the GoI for bridging the EEPS pump sets higher cost, capacity building of all stakeholders, few demonstration projects for efficiency improvement of rural drinking water pumping systems and adoption of strategic approach for dissemination of results.

MUNICIPAL DEMAND SIDE MANAGEMENT (MU-DSM)

The global trend towards increased urbanization requires municipal bodies to provide services such as streetlights, solid waste management, sewage treatment & disposal, etc. and consume significant amount of electricity, usually in an inefficient manner. The cost of energy sometimes constitutes more than 50% of the municipality's budget and implementing efficiency measures could reduce it by at least 25%. The Municipal Demand Side Management (MuDSM) programme can improve the overall energy efficiency of the Urban Local Bodies (ULBs) which could lead to substantial savings in the electricity consumption, thereby resulting in cost reduction/savings for the ULBs.

During XI Plan, MuDSM program was taken up in a phased manner all across the country as per the situational survey report. Bankable DPRs of 134 ULB were prepared after taking up Investment Grade Energy Audit (IGEA). The overall potential saving of 120 MW is estimated as part of avoided generation capacity through energy efficiency projects in 134 ULBs. Based on the learning's & barriers identified, the objectives of the XII plan MuDSM Program are defined, which are as follows:

a. To build the technical and managerial capacity of the energy conservation cell of ULBs.

b. Realizing the energy saving through implementation of selective DPRs in few ULBs.

c. Facilitation to other ULBs to replicate the implementation process through knowledge transfer.

d. Involving various stakeholders to create a market transformation in energy efficiency.

e. Facilitating state Urban Development Departments to create institutional arrangements through which projects can be implemented.

SMALL AND MEDIUM ENTERPRISES (SMES)

In the XII Plan BEE proposes to take up scheme titled "Energy Efficiency and Technology up-gradation in Small and Medium Enterprises", in order to overcome the barriers faced in XI plan. The scheme would focus on four major components as following:

1. Demonstration of energy efficient technologies (identified during XI plan period) through pilot implementations in 5 MSME sections/clusters.
2. Provision of Technical assistance & capacity building across the stakeholders. (LSP/Interprenures/FIS/ESCOs)
3. Aggressive awareness and outreach program across the stakeholder.
4. Energy mapping, on a Pan India basis for SMEs.

Energy savings equivalent to an avoided capacity addition of 131 MW is envisaged under the scheme for the XII plan.

STRENGTHENING INSTITUTIONAL CAPACITY OF STATE DESIGNATED AGENCIES (SDAS)

During the 12th plan, the EFC memo tilted "Strengthening of State Designated Agencies on Efficient Use of Energy and its Conservation" has been approved with an outlay of ₹ 205.31 crores comprising the following:

- Providing financial assistance to the State Designated Agencies to strengthen their institutional capacities and capabilities.
- Contribution to State Energy Conservation Fund.
- Human Resource Development for Promoting Energy Efficiency.

During the financial year 2012-13, financial support of ₹ 25.223 crores was provided to 21 SDAs for Implementation of energy efficiency measures to showcase the potential of energy efficiency through demonstration projects, LED Village Campaign, Workshop/ training programs involving energy professionals, Analysis and survey of the impact of energy conservation activities, Publicity/awareness on energy efficiency in the states and Maintenance and updation of internet platform. Also, the impact assessment study of energy efficiency activities undertaken by SDAs during 11th plan has been completed.

CONTRIBUTION TO STATE ENERGY CONSERVATION FUND (SECF)

Section 16 of the Energy Conservation Act, 2001, mandates States to constitute a fund called State Energy Conservation Fund (SECF). The Central Government contribution under SECF is to strengthen the existing SECFs and facilitate creation of new SECFs. Major part of the funds disbursed under SECF is to be

earmarked separately as Revolving Investment Fund. A State Level Steering Committee constituted under SECF is responsible for regulating and controlling the fund. Till date, 25 States have constituted SECF.

NATIONAL ENERGY CONSERVATION AWARD AND PAINTING COMPETITION

The National Energy Conservation Awards are presented to industry and other establishments and prizes to the winners of the annual Painting Competition on Energy Conservation for school children every year by the Ministry of Power with the objective of promoting energy conservation among all sectors of economy.

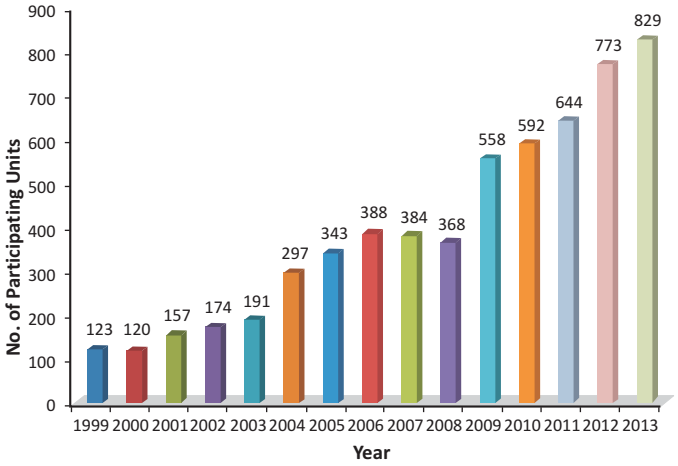
NATIONAL ENERGY CONSERVATION AWARDS

The annual energy conservation awards recognize innovation and achievements in energy conservation by the industries, buildings, zonal railways, state designated agencies; and municipalities and raise awareness that energy conservation plays a big part in India's response to reducing global warming through energy savings. The awards are also recognition of their demonstrated commitment to energy conservation and efficiency.

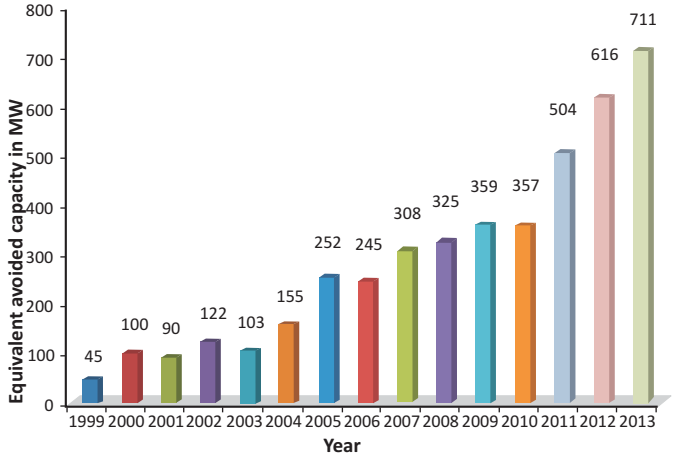
39 sub-sectors of Industry, thermal power stations, office buildings, BPO buildings, hotels, hospitals, shopping malls, zonal railways, railway workshops, municipalities, State Designated Agencies and manufacturers of BEE Star labeled appliances/equipment are included in the Awards. The responses among the industrial and commercial units have become very encouraging as is evident from the increasing participation level (from 123 in 1999 to 829 in 2013).

The President, Shri Pranab Mukherjee presented the National Energy Conservation Awards, in New Delhi on December 16, 2013. Secretary, Ministry of Power, Shri Pradeep Kumar Sinha is also present.

ENCOURAGING RESPONSE FROM INDIAN INDUSTRY AND OTHER ESTABLISMENTS IN THE NATIONAL ENERGY CONSERVATION AWARD SCHEME (1999-2013)



ELECTRICAL ENERGY SAVINGS IN TERMS OF EQUIVALENT AVOIDED CAPACITY (MW) PER YEAR BY THE PARTICIPATING UNITS THROUGH IMPLEMENTATION OF ENERGY SAVING PROJECTS (1999-2013)



One Top Rank Award, 34 First prize,34 second prize and 43 units were selected for certificate of merit. Participating units invested ₹ 4537 Crores in energy conservation measures, and achieved monetary savings of ₹ 4141 Crores. Participating units also saved electrical energy of 4354 Million kWh, which is equivalent to the energy generated form a 711 MW thermal power station.

Hon'ble President of India presented the awards to winners on 16th Dec, 2013 at Vigyan Bhawan.

Painting Competition on Energy Conservation for School Children

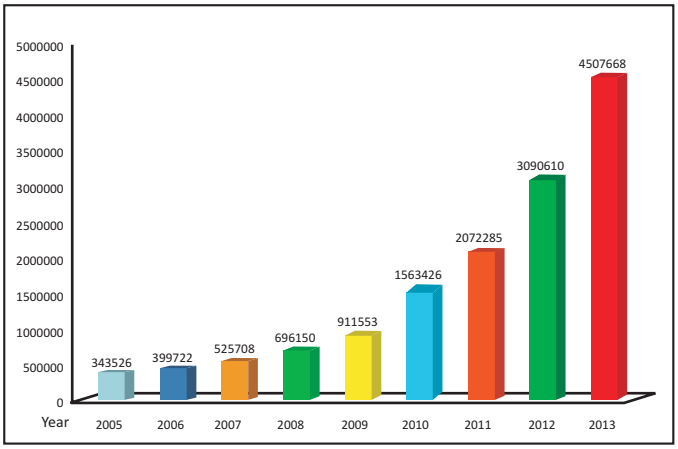
The habit of conservation is best introduced and inculcated at the school age. It has been seen that the Children are the best agents of change and in this case we need to equip them with the information and knowledge on energy conservation and create interest among them on this important subject.

In this regard, Ministry of Power has taken an initiative and has been organizing Painting competition on Energy Conservation for students since the year 2005.

The competition is held in three stages, namely, School, State and National Level since 2005. In order to strengthen the campaign, higher classes of 7th, 8th and 9th standards are also being included from this year onward in addition to existing classes of 4th, 5th and 6th Standards. Students of 4th, 5th & 6th standard students under Category 'A' and for 7th, 8th & 9th standard students under Category 'B' are eligible to participate in the competition.

The National Painting Competition on Energy Conservation 2013 was a resounding success. Across the country, about 45.00 lakhs students from 98,000 schools from all over the country have participated. This participation was about 46% higher than that in the previous year, which is being organized all over the country in association with Bureau of Energy Efficiency and 11 CPSUs under Ministry of Power.

Students Participated in the Last 9 Years



The paintings drawn by children reflected their interest in the energy conservation activities and their concern about energy crises and climate change, and have effectively conveyed inspiring ideas in their impressing paintings. The vibrant designs, the confident depiction of the topic and remarkable composition seen in these paintings reflects clear understanding of the subject themes in the minds of these young children.

NATIONAL MISSION FOR ENHANCED ENERGY EFFICIENCY (NMEEE)

The Cabinet approved the National Mission for Enhanced Energy Efficiency (NMEEE) with a financial outlay of ₹ 235.35 crores in 24th June, 2010.

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 comprised of the following four initiatives::

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

After the launch of NMEEE, PAT scheme has been initiated. PAT is a market based mechanism to enhance energy efficiency in large industries in India. Eight Industrial sectors has been identified in PAT Cycle I. Bureau has prepared Energy Conservation Rules, 2012 (PAT rules) and also notified Energy consumption reduction targets for 478 Designated Consumers (DCs) on 30th March, 2012. The expected Energy saving from PAT Cycle I is 6.686 Million Tonne of Oil Equivalent at the end of 2014-15.

Baseline energy audit of units under identified sectors has been undertaken. An online portal PAT-Net for submission of online data related to PAT was launched by Bureau of Energy Efficiency (BEE). Further, sector/ sub-sector specific normalization factors were developed to neutralize the effects on specific energy consumption (SEC) in the assessment year as well as baseline year so that undue advantages or disadvantages could not be imposed on any DCs while assessing the targets. For development of such factors, Sub-committees were formed for each sector/sub-sector with members from DCs as well.

Bureau has also prepared Sector Specific Form-1 (annual energy return form) along with Sector specific Normalization Factors to streamline the monitoring and verification (M&V) process

Bureau has put in place a process of accreditation of Energy Auditors/Assesses who will be engaged to execute the M&V process of DCs to assess their performances.

- **Market Transformation for Energy Efficiency (MTEE)**
  - **Super Efficient Equipment Program (SEEP)**

    SEEP forms a part of MTEE initiative, under NMEEE. The primary objective of MTEE is to accelerate the shift to energy efficient appliances in designated sectors through innovative measures to make the products more affordable.

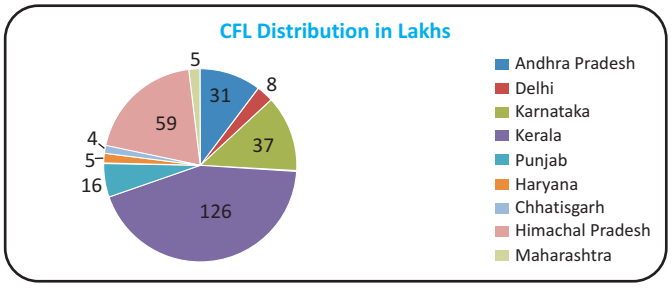
    SEEP is a program designed to bring accelerated market transformation for super efficient appliances by providing financial stimulus innovatively at critical point/s of intervention. SEEP for ceiling fans aims to leapfrog to an efficiency level which will be about 50% more efficient than market average by providing a time bound incentive to fan manufacturers to manufacture super efficient (SE) fans and sell the same at a discounted price.

    For the XII Plan, BEE has proposed SEEP for Ceiling Fans given the rationale that appliances like ceiling fans which has an average life of over 15 years are being deployed in the economy in huge volumes (of the tune of 30-35 million annually). To avoid inefficiency getting locked in economy for its life, this program aims to stimulate technological upgradation and their accelerated introduction by manufacturers through an incentive mechanism which would motivate manufactures to manufacture such super efficient fans and sell at competitive price in a highly price sensitive fans market.

- **Bachat Lamp Yojna (BLY)**

  The objective of the BLY scheme is to provide Energy Efficient Compact Fluorescent Lamps (CFLs) at the same cost i.e. ₹ 15/-, as of Incandescent Bulbs. To bridge the cost differential between the market price of the CFLs and the price at which they are distributed to households, the Clean Development Mechanism (CDM) is harnessed.

  The BLY CDM Programme of Activities (PoA) has been registered with UNFCCC on 29th April 2010. Till date, 50 small scale BLY projects from various parts of India have been included in this registered umbrella framework and 44 projects have been implemented. As a result, about 29 millions of CFLs have been distributed during XI plan period. The state wise CFL distributions are depicted below.



An Avoided Generation Capacity of 420 MW has been achieved by the CFL distribution during XI Plan. The Monitoring and Verification process of the entire BLY PoA has commenced for issuance of CERs for the completed projects. The carbon credits for these BLY projects will be issued to BEE and BEE will in turn transfer these carbon credits to the respective project implementers according to their share. Since BEE has already created the entire necessary infrastructure and the institutional structure for the BLY Programme, it is proposed to continue the scheme in the XII plan considering the existing energy savings potential in the residential sector in the coming years and also for the monitoring & verification of the BLY-PoA. It is also proposed to use this infrastructure to facilitate Rural Electrification Corporation (REC) in distribution of LED bulbs under RGGVY Scheme and monitoring and verification of the projects.

- **Framework for Energy Efficient Economic Development (FEEED)**

  Framework for Energy Efficient Economic Development (FEEED), seeks to develop fiscal instruments to promote energy efficiency including innovative fiscal instruments and policy measures like the Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) and Venture Capital Fund for Energy Efficiency (VCFEE), Public Procurement of energy efficient goods and services, etc.

- **Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE)**

  Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) is risk sharing mechanism to provide commercial banks with a partial coverage of risk involved in extending loans for energy efficiency projects. The amount paid out will be equal to the agreed-upon percentage of the outstanding principal and will not cover the interest or other fees owed to the bank. The Guarantee will not exceed ₹ 3 crores per project or 50% of loan amount, whichever is less. Initially the support was provided to only government building and municipalities, however, in the twelfth plan it has been extended to cover SMEs and industries too.

Rules for operationalization of Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) were approved in April 2012, subsequent to which Supervisory Committee for PRGFEE has been constituted.

- **Venture Capital Fund for Energy Efficiency (VCFEE)**

  The Venture Capital Fund for Energy Efficiency (VCFEE) is a fund to provide equity capital for energy efficiency projects. A single investment by the fund shall not exceed INR 2 Crores. The Fund shall provide last mile equity support to specific energy efficiency projects, limited to a maximum of 15% of total equity required, through Special Purpose Vehicle (SPV) or INR 2 Crores, whichever is less. The support under VCFEE is limited to Government buildings and municipalities.

  Rules for operationalization of Venture Capital Fund for Energy Efficiency (VCFEE) were approved in April 2012, subsequent to which Board of Trustees has been constituted for VCFEE Trust.

- **Fiscal incentives**

  BEE has been making proposal for tax exemptions (including direct as well as indirect tax) for promotion of energy efficiency for the Union Budget. However, in the Union Budget 2012-13, following benefits have been given in indirect tax regime:

  - Full exemption from basic customs duty is being extended to tri band phosphor for use in the manufacture of Compact Fluorescent Lamps (CFL).
  - LEDs required for the manufacture of LED lamps are also being exempted from Special Additional Duty.
  - Excise duty on LEDs has been reduced from 10% to 6%.

  In Union Budget 2013-14, under the direct tax regime Government has announced 'pass through' status for category-I Alternative Investment Fund (AIF) set up as Venture Capital Funds under which the income of Venture Capital Fund for Energy Efficiency (VCFEE) shall be exempted under the Income tax.

- **Public Procurement of Energy Efficient Appliances**

  BEE has initiated Public Procurement Policy for promotion of energy efficiency in procurement of energy consuming

products, which are sold in a competitive market. In this regard, on the basis of life cycle cost analysis carried out by BEE for Split Air Conditioners, Frost Free Refrigerator Ceiling fans and Water heaters, The Ministry of Finance had issued an Office Memorandum on 21st January 2013 for all Ministries/Departments and their attached and subordinate offices. As per this Office Memorandum, these agencies while procuring appliances mentioned above, will ensure that the appliances carry a threshold or higher BEE star rating as specified in the OM.

SIMHADRI Thermal Power Project Visakhapatnam

CHAPTER -11

RENOVATION AND MODERNISATION OF THERMAL POWER STATIONS

Renovation & modernization (R&M) is seen as a cost-effective option to maximize 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 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:

Revised Tentative LE/R&M works during 12th Plan on account of slippage from 11th Plan				
Sl.	Particulars	State Sector	Central Sector	Total (State Sector + Central Sector)
		No. of unit & 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 to 30th November 2013:

During 12th Plan, LE works have been completed in 6 units as details furnished below:-

State Sector (3 No. of unit)

1. Bhathinda TPS Unit – 3 (110 MW) - Synchronized on 05.08.2012.
2. Parichha TPS Unit – 2 (110 MW) - Synchronized on 05.05.2013
3. Muzaffarpur TPS Unit 1 (110 MW) - Synchronized on 05.07.2013

Central Sector (3 No. of unit)

1. Kawas GT- 1 (106MW) - Synchronized on 21.01.2013.
2. Kawas GT- 2 (106MW) - Synchronized in August 2013
3. Gandhar GT – 3 (131 MW) - Synchronized in September 2013

Sub total (LE) - 6 Unit (673 MW)

2.2 Achievement of R&M Programme during the 12th Plan up 30th November 2013:

During 12th Plan, R&M works have been completed in 6 units as details furnished below:-

State Sector (5 Nos. of units)

1. DPL TPS Unit – 6 (110 MW) - Synchronized on 07.05.2012.
2. Patratu TPS Unit – 10 (110 MW) - Synchronized on 24.05.2012.
3. Anpara 'A' TPS Unit 1 to 3 (3x210 MW) Schemes completed in March 2013.

Central Sector (1 no. unit)

1. Tanda TPS Unit – 2 (110 MW) – Synchronized on 15.09.2012

Sub total (R&M) - 6 Units (960 MW)

Total (LE and R&M) - 12 Units (1633 MW)

2.3 Expected achievement during remaining period of 2013-14 upto March 2014.

LE works on following units are likely to be completed:

1. Muzaffarpur TPS unit - 2 (110 MW)
2. Bhathinda TPS unit – 4 (110 MW)

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

1. Patratu TPS unit - 9 (110 MW)
2. Kawas GT – 4 (106 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 WBPDCL.

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 WBPDCL.

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 WBPDCL respectively. The final DPRs in respect of Unit-1 to 3 of Bokaro 'B' TPS have been prepared in November 2013 and the same has been accepted by DVC Board.

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 WBPDCL, 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 packages i.e. BTG, BOP, CHP & Electrical System packages. BTG package has been singed 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. Contract for AHP Package has been signed on 29.4.2013 with M/s MBPL. For Electrical system, the contract was signed with M/s Alstom T&D India Ltd. on 28.12.2012. The unit has been taken under shout down w.e.f. 17.11.2013 for R&M works.

ii) Koradi TPS, U-6 :

R&M project at Koradi TPS, U-6 consists of three package i.e. BTG, Electrical & BOP.

For Electrical Package Contract signed with M/s ABB Ltd on May 25, 2012. For BOP Package Contract signed with M/s Tecpro Systems Ltd. on August 10, 2012.

For BTG package LOA has been issued to BHEL on 31st May 2013 and contract has been signed on 18.12.2013.

iii) Panipat TPS, U-3 & 4:

World Bank is providing grant of ₹ 497.65 lakhs for carrying out assessment and strengthening 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 CEA	M/s KPMG have been appointed to carry out the study on 16-07-2012. The draft report on Institutional Capacity of CEA and Customer Expectancy Survey at which are under finalization.
3.	Study on Reduction of Barriers to R&M intervention in Thermal Power Plant in India	M/s Mercados Energy Market India has been appointed as a consultant w.e.f. 2.04.2012.. The final report has been submitted on 29th November 2013. Upon acceptance of the same, the report shall be circulated to all concerned stakeholders.
4.	Study on Developing Markets for implementation of R&M schemes in TPS in India	M/s Mercados Energy Market India has been appointed as a consultant w.e.f. 14.05.2012. They have submitted the final report on 13th November 2013. Upon acceptance of the same, the report shall be circulated to all concerned stakeholders.
5.	Study on Review of Experience from Pilot R&M projects interventions in TPS in India	M/s WAPCOS Ltd. has been appointed as a consultant w.e.f. 23-07-2012. M/s WAPCOS submitted draft report on Procurement Experience form R&M projects in India in September 2013 which is under examination & review by CEA.

As on 31st March 2013, total expenditure incurred ₹ 111.95 lakhs.

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 were:

i) Units-1&2(2x210 MW) of Chandrapur TPS,

ii) Unit-2 (210 MW) of Bhusawal TPS

iii) Unit-3(210 MW) of Parli TPS

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 has 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 all the draft Documents which are under study by CEA.

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

A 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. The final report for carrying out study for energy efficiency oriented R&M activities was submitted on 15th April, 2013.

The Annual Joint Meeting among JCOAL, CEA and MOP was held on 23rd August 2013. Meeting of Electricity Working Group of the Japan India Energy Dialogue was also held on 23.8.2013.

A study tour to Japan was organized in October 2013. Engineers/Officers from CEA, NTPC, APGENCO, GSECL, DVC and MOP participated in this programme.

3.6 Workshop and Training programme on Renovation & Modernisation and Operational Practices for the Indian Thermal Power Sector

A Contract has been signed between European Commission and STEAG Energy Services (India) Pvt. Ltd. for implementation of the project and the kick-off meeting was held on 19th December, 2012 in Brussels. Ministry of Power has designated CEA as the Nodal Agency for this assignment.

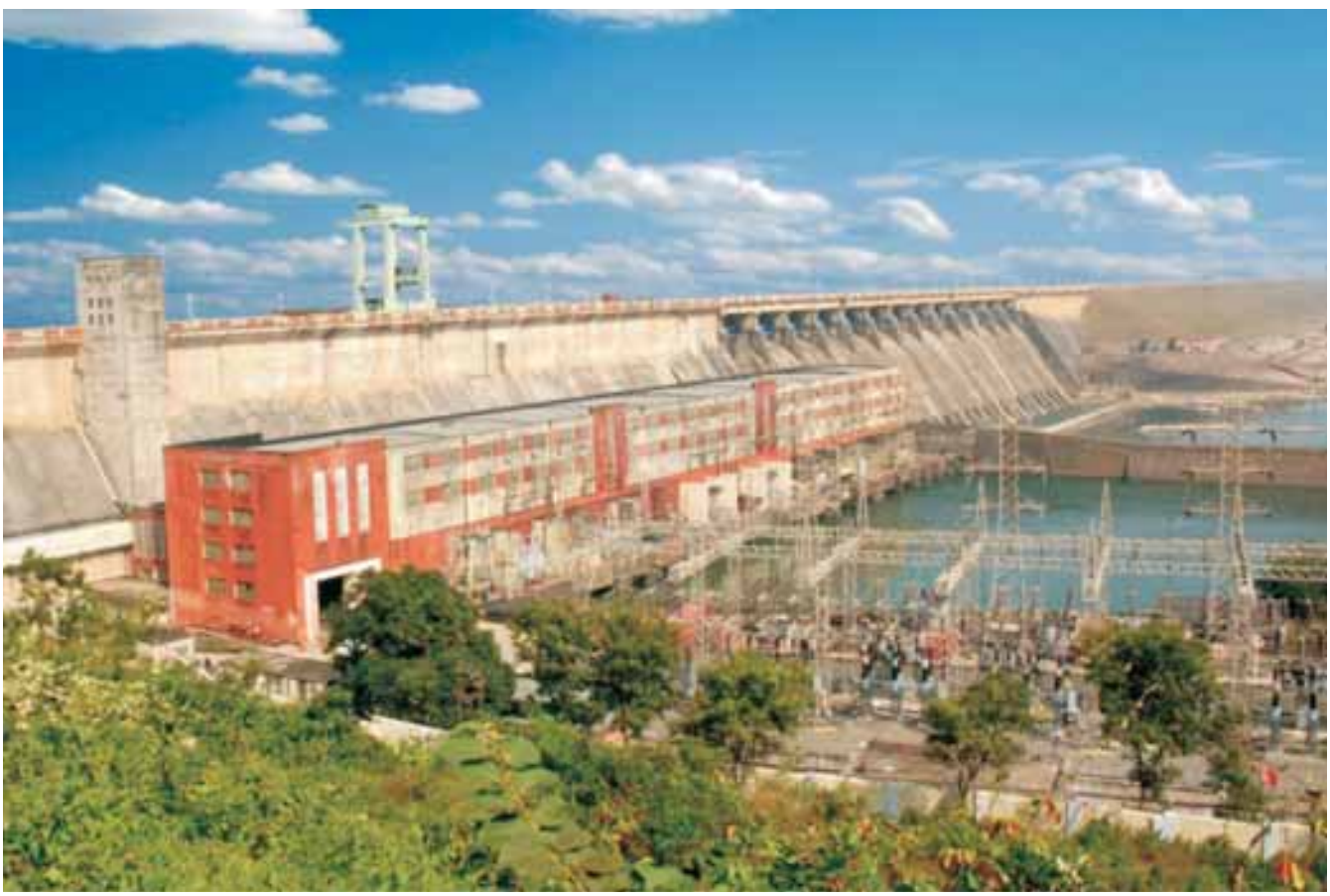
As per the Contract, STEAG Energy Services (India) Pvt. Ltd. was to organize two workshops on the following topics:

(i) A Road Map for R & M and O & M of existing Indian coal Fired Power Plants

(ii) Training program to enhance the capacity of the Indian Thermal Power Sector mangers to plan and carry out R&M in a timely and efficient manner.

The first workshop concerning a Road Map for R & M and O & M of existing Indian coal Fired Power Plants was held on 10th May 2013. The second workshop on Training programme was held on 2nd August 2013.

As a part of the programme a study tour on R & M to Europe was also organized in October 2013. Engineers from CEA, NTPC, MAHAGENCO & WBPDCL attended this programme. The final report has been submitted by STEAG Energy Services (India) Pvt. Ltd. to World Bank.



A panoramic view of Hirakud Hyro-electric Project of Odisha Hydro Power Corporation Ltd. (OHPC)

CHAPTER - 12
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.

1.1 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. (since withdrawn).

Tariff Policy.

New Hydro Policy 2008

1.2 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.

1.3 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. The Government on 22.08.2013 notified revised position for FDI Cap for Power Exchanges registered under CERC Regulations, 2010 as 49% (26% FDI+23% FII) through 'Automatic Route'.

Vindhyanchal Super Thermal Power Station - NTPC

CHAPTER -13

INTERNATIONAL COOPERATION

INTERNATIONAL COOPERATION

IC Division works for enhancing Cooperation with various countries in the Power Sector. During 2013, Minister level visits were undertaken to Germany, Sweden, USA, Canada and UK. Further, active interest has been taken in enhancement of Bilateral Cooperation with Bangladesh, Bhutan, Canada, China, Nepal, Sri Lanka, Germany, Japan, United States of America, European Union etc. Multilateral engagement under the umbrellas of SAARC, Clean Energy Ministerial and International Energy Agency was also undertaken.

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

BILATERAL COOPERATION:

Bangladesh

A Memorandum of Understanding on energy cooperation was signed between Govt. of India and Govt. of Bangladesh in January, 2010. Pursuant to that NTPC signed an MOU for cooperation in power sector with Bangladesh Power Development Board (BPDB) on 30th Aug 2010. The MOU, inter-alia, included setting up a 1320 MW coal based power project through 50:50 Joint Venture with BPDB in Bangladesh, subject to techno-commercial feasibility and necessary approvals. A Joint Venture Agreement (JVA) was signed between NTPC and BPDB on 29.01 .2012 for incorporating a Joint Venture Company (JVC) with equal equity participation (50:50) for developing power project(s) in Bangladesh. JV Company by the name of 'Bangladesh- India Friendship Power Company (Pvt) Limited' (BIFPCL) has been incorporated on 31st Oct 2012, as per the laws of Bangladesh, for developing coal based power project(s) in 'Bangladesh. NTPC is providing consultancy services to Bangladesh Power Development Board (BPDB) for feasibility studies for proposed coal based power projects at Khulna and at Chittagong. Feasibility Report for the 1320 MW coal based power project at Khulna has been finalized and accepted by NTPC and BPDB. Power Purchase Agreement (PPA) and lmplementation Agreement (lA) for the project have been signed by BIFPCL with BPDB and Govt. of Bangladesh respectively on 20.04.2013. Land filling work at site is under progress. Work on construction of temporary site office and transit camp has started. For Chittagong power project, NTPC would take up preparation of Feasibility Report as soon as location is identified by BPDB.

A PPA has been signed between BPDB & NTPC Vidyut Vyapar Nigam Limited (NWN) on 28.02.2012 for supply of 250 MW of power to Bangladesh from unallocated quota of Government of India in Central generating stations.

NTPC is providing O&M consultancy for Siddhirganj Peaking Power Plant. The Scope of work covers management of Commissioning, PG test, Operation & Maintenance, Finance & Accounts, Planning, Procurement & lnventory, Training, Health, Safety, Quality and Environment etc.

The interconnection link between India and Bangladesh has been operationalized. Power flow through the link has started since Oct.,2013.

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 1400 MW 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.

As per the MOU signed between Govt. of India and Royal Govt. of Bhutan in December, 2009, ten hydro projects with the aggregate capacity of about 11,000MW will 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 likely to come up in March'15.

Nepal

India has been assisting Nepal in the development of its hydro power potential and four HE schemes viz., Pokhra (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 with Rupaligarh (5600MW + 240MW), 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.

Arun – III project has been awarded by Govt. of Nepal to Sutlej Jal Vidyut Nigam Ltd (SJVNL) on Build –Own-Operate –Transfer basis for a period of 30 years and a MoU, in this regard has been signed between Govt. of Nepal and SJVNL. DPR for the project is under examination in CEA and aspects relating to water availability and the power potential studies have been firmed up/ finalized.

Cross Border interconnection and power trade

Power exchange between NEA and utilities on the Indian side namely BSEB, UPPCL and UPCL has since been taking place on the principle of catering to the power needs of isolated local areas of both of the sides of the border. There are presently

about 12 cross border interconnections facilities in operation for bilateral power exchange through 11kV, 33kV and 132 kV transmission lines. The above State utilities export power to Nepal and the quantum of power exchange volume is limited to about 50 MW for which tariff is decided by the Power Exchange Committee (PEC). India also supplies about 70 MU free power from Tanakpur HEP (120 MW) to Nepal under the Mahakali treaty.

Power Sale Agreement (PSA) between NEA and PTC has been signed for import of 150MW for 25years. For initial 5-7years, 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

Pursuant to the Memorandum of Agreement signed between NTPC, Govt. of Sri Lanka (GOSL) and Ceylon Electricity Board (CEB), NTPC and CEB signed a Joint Venture Agreement on 6th September 2011 in Colombo to develop a 2x250 MW coal based power project in Trincomalee Sri Lanka with equal (50:50) equity participation. JV Company by the name "Trincomalee Power Company Limited" (TPCL) has been incorporated in Colombo on 26th September 2011.

Progress made on project Agreements:

On 7th October 2013, in the presence of Hon'ble Foreign Minister, GoI and Ministers of Sri Lanka, following agreements were signed by TPCL with the respective counterparties in Sri Lanka.

- Power Purchase Agreement (PPA) with CEB
- Implementation Agreement (IA) with Govt. of Sri Lanka
- Board of Investment (BoI) Agreement with BoI of Sri Lanka
- Land Lease Agreement (LLA) with Govt. of Sri Lanka
- Coal Supply Agreement (CSA) with Lanka Coal Company Ltd (LCCL)

There is significant progress for inter grid connection between India and Sri Lanka. Feasibility study for a +/- 400 KV, 500 /1000MW under-sea HVDC Bipole line is under finalization.

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). Ministry of Power is leading in the Working Group on Power and Energy Efficiency. The Indo-US collaboration in power sector is mainly deploying and transferring Innovative Clean Energy Technologies. In the last meeting held on 25.09.2012, three priority areas were agreed upon:

i. Cleaner Fossil Energy
ii. Electrical Grid
iii. Energy Efficiency

The instruments for collaboration with U.S. are :

(a) Partnership to Advance Clean Energy -Deployment (PACE-D) Programme. The key highlight of the programme includes the following:

Cleaner Fossil Technologies

- Selected two state utilities for heat rate improvement.
- Organized two visits of U.S. experts to focal state utilities (Panipat and Chandrapur Thermal Power Stations) and 3 visits to the NTPC's Sipat Thermal Power Plant, which has been selected for the baselining exercise. .
- Prepared draft Best Practises Manual on operation and maintenance of super critical coal based thermal power plant. The abstract was released in the International Conference in November 21-22, 2013.
- Organized two training workshops on heat rate improvement at each of the two state utilities.
- Organized a workshop on Heat Rate Improvement Best Practice for all Indian utilities.
- Organized a study trip by an Indian delegation to the U.S. on best practices adopted at U.S. facilities.
- Organized a two day international conference (Nov 21-22) on Advanced Coal Technologies in Delhi in November.

Smart Grids and Energy Efficiency

- Organized three smart grid capacity building workshops.
- Presented two opinion papers on smart grid at the international conference- GRIDTECH 2013.
- Released a report on Interoperability Roadmap for Smart Grid.
- Initiated the work on supporting Ministry of Power on Smart Grid regulations and held the first technical committee meeting to guide the process.
- Developed a conceptual framework for the ECBC technical update.
- Organized two working group meetings, comprised of technical experts, to guide the ECBC update process
- Conducted an international awareness seminar on Net-Zero Energy Buildings.
- Identified two pilot for NZEB projects.
- Developed roadmap for normalization for select sectors i.e. pulp and paper and sponge iron.
- Conducted macro level WHU market assessment for high temperature waste gas

- Selected three focal states for focused support under institutional development and strengthening of policy and regulatory framework at state level.
- Launched a report on EE financing.
- Prepared a draft market assessment study for Heating Ventilation Air Conditioning.

(b) In this working Group work on bilateral cooperation in Cleaner Fossil Energy , Electrical Grid and Energy Efficiency apart from the PACE-D programme is also undertaken. In Cleaner Fossil Energy, NTPC has identified projects for collaboration with USDOE labs , NETL and NREL .

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. 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 : Demand side Energy Efficiency and Low Carbon Growth Strategies [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 are handled by Ministry of Power.

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):
  - EEC for Indian Power Sector has been launched on 02.02.2012. The EEC has been registered as a Society.
  - EEC has been housed in CEA.
  - 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.
  - 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.
  - Workshops have been conducted in Delhi & Kolkata to spread the idea of the EEC, and staff has been trained with the support from VGB.
  - 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: A 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.

- Fraunhaffer 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.

A meeting of the Sub Group-III was also held on 6th Dec.,2013 at New Delhi. Progress on various identified areas is as follows:

- IGEF support office along with Bureau of Energy Efficiency have prepared a Terms of Reference on Promotional Schemes for Demand Side Energy Efficiency – Indo-German Exchange of Experiences and have shortlisted Adelphi to carry out the study. The methodology and scope of the study was finalized during the meeting.

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 7th Meeting of IJED was held in New Delhi , on 12th September, 2013. Prior to the 7th meeting of IJED, the Working Group meetings of "Energy Efficiency" and "Power Generation and Electricity" were also held in New Delhi,

A Joint Statement on the Occasion of the 7th 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:

Both sides recognized that it is important for them to cooperate with each other in the energy efficiency and conservation sector, and welcomed that the meeting of Energy Efficiency and Conservation Working Group under the India-Japan Energy Dialogue framework was held in New Delhi on September 2, 2013. Both sides reaffirmed the need to strengthen bilateral relationship in the energy sector, focusing on energy conservation and environmental issues, and the need to expand the consultation process between the government and the private sector.

Canada

Indo-Canada Energy Dialogue are led by Planning Commission and Ministry of Power is a representative. The inaugural meeting of the Energy Dialogue was held on 28th October 2013 in Ottawa, Canada. During the meeting India proposed that opportunities be explored to engage in clean coal. Integration of renewables into the grid and smart grids are areas of interest. Both sides agreed that scope exists to share knowledge and exchange information on the legislative framework in both countries(specifically with respect to power and gas exchanges, Canada's experience with trans - border transactions with the US,etc.)

China

India China Strategic Economic Dialogue (SED) is led by Planning Commission. There are five Working Groups under the SED:

I. Working Group of Infrastructure (Railways)

II. Working Group on Energy

III. Working Group on Environmental Protection (Energy Efficiency and Water)

IV. Working Group on Policy Coordination

V. Working Group on Hi-Tech (ICT)

(i) Working Group on Energy: Headed by MNRE and CEA is a member representing Ministry of Power.

(ii) Working Group on Environmental Protection (Energy Efficiency and Water) : JS (EC) is the Co-Chair, Ministry of Water resources and Ministry of Urban Development are members.

The third India-China strategic dialogue was held on 26-28 September, 2013 in Beijing, China. During the Working Group on Energy Meeting a Memorandum of Understanding between Ministry of Power, Government of the Republic of India and the National Energy Administration, Government of the People's Republic of China on "Setting-up Chinese Power Equipment Service Centers in India" was finalized. The MoU was subsequently signed on 23rd Oct.2013 during the PM's visit to China.

Russia

18th India –Russia JWG on Energy & Energy Efficiency meeting was held in Moscow during Oct.,2013, wherein an MoU between BEE and REA was agreed. The MoU between Bureau of Energy Efficiency and the Federal State Budgetory Organization Russian Energy Agency of the Energy Ministry of the Russian Federation was subsequently signed on 21.10.2013 during 14th India – Russia Annual Summit.

Australia :

With Australia there is a joint working group on Energy and Minerals which is headed by Ministry of Mines and Ministry of Power is a representative. The 8th meeting of JWG was held on 11-12 June 2013 in New Delhi. A work programme for the period 2013-15 was signed.

MULTILAERAL COOPERATION:

South Asian Association for Regional Co-Operation (SAARC)

India hosted the 3rd meeting of the Expert Group on Electricity on 19th December,2013. Representatives from Bangladesh , Bhutan, India ,Pakistan and Sri Lanka participated in the meeting. JS (Transmission) Ministry of Power chaired the Expert Group meeting.

International Energy Agency (IEA)

Representatives of Ministry of Power and Ministry of External Affairs participated in the IEA Governing Board meeting in November , 2013 and took an intervention on "Role of Energy in Development". During the meeting a Joint Declaration by the IEA and Brazil, China, India, Indonesia, Russia and South Africa, and a Joint Statement by the Ministry of Power and IEA were agreed upon.

Clean Energy Ministerial (CEM)

India hosted the 4th Clean Energy Ministerial Meeting in New Delhi during 17-18 April 2013. Hon'ble Prime Minister of India inaugurated the event. Hon'ble MOSP(I/C) gave the awards on Global Super Efficient Appliance Deployment (SEAD) Global Efficiency. Hon'ble MOSP(I/C) also gave an intervention in the closed door discussions on Energy Efficiency. Out of a total of 13 verticals under CEM , India is a member of 5 verticals. The Bureau of Energy Efficiency is actively engaged with verticals on Appliances , and , Buildings & Industry. Besides this Ministry of Power has recently joined two other cross cutting verticals – viz, the 21st Century Power Partnership and Women in Clean Energy.

International Funding:

During 2013-14, 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), Sawra Kuddu (111 MW), Sainj (100 MW) and Shongtom Karcham (450 MW) HEPs / HPPCL/ ADB (tranches – I, II, III & IV) (USD 732.10 million) + KfW (Euro 150 million exclusively for Shongtom Karcham 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) / WBPDCL 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)

Final Dividend Payment for 2012-13 - North Eastern Electric Power Corporation Ltd.

CHAPTER -14

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:

Central Sector Projects

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 11.10.1991. 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 3353 Gwh in a 90% dependable year. The environmental and forest clearance was obtained on 29.03.2001 & 03.8.2000 respectively. The proposed revised cost of the project is ₹ 4653.95 crores (PL 12/2011).

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 4 units of 150 MW each. All the civil, HM & EM works have been awarded. Civil, HM & E&M 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 proposed revised cost of the project is ₹ 1128.38 Crs (PL 01/2013).

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. HM works have been awarded to M/S Precision Infratech Ltd, Ahmedabad and EM work has been awarded to M/S Andritz Hydro Pvt. Ltd. & M/S Areva T&D India Ltd. Civil, HM & E&M works are under progress.

The project is scheduled for commissioning in year 2015-16.

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

Turial HEP is located in the boarder of Aizwal district of Mizoram adjoining Cachar district of Assam The project envisage a 75 m high zoned-earth filled dam, two diversion tunnel of Dia 6.8 m, Head Race Tunnel - Modified Horse Shoe Type 6.25m Dia.160m Long, Penstock – 176m Long, Dia 6.2m bifurcating into 4.3m Dia each and a powerhouse with vertical Francis turbine operating under a head 53m 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 project is scheduled for commissioning in year 2016-17.

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 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, HRT, surge tunnel, presume shaft, Power House etc. are in progress.

Work stopped since 16.12.2011 due to agitation launched by Anti-Dam activities against construction of Subansiri Lower HE Project.

A tripartite meeting among Govt. of India/NHPC, Govt. of Assam and various agitating groups of Assam was held on 6th Dec'2013 at Guwahati. As decided in the meeting on 6th Dec'13, discussions between Expert Group from both the side were held on 23.12.2013

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) 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 Projects

(i) 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, and 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 2014-16.

(ii) 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 Rs. 3283.08 crores including IDC&FC of Rs. 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.

(iii) 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 2016-17.

(iv) 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.

(v) 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.

(vi) Tashiding HEP, (2×48.5= 97 MW), Sikkim:

The Tashiding Hydro Electric Project is located in West district of Sikkim with an installed capacity of 97 MW (2×48.5) 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 ₹ 465.95 crores

The project envisages a barrage about 12M 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 2*220 Kv 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 clearances were 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.

(vii) Rongnichu HEP, (2×48= 96 MW), Sikkim:

The Rongnichu Hydro Electric Project is located in East district of Sikkim with an installed capacity of 96 MW (2×48). 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 clearances were obtained from ministry of environment & forest Government of India on 4.4.2007.

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.

(viii) Rangit-II HEP, (2×33= 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 (2×33) 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 64.7*34.3.*31M with Pelton turbine along vertical shaft. The power benefit at 90% dependable energy at 95% availability will be 272.0 GWH. The environment clearance was obtained from ministry of environment & forest Government of India on 16.4.2010 and 22.10.10.

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

(ix) Dickchu 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 145 KM from Bagdogra airport. The under ground power house is proposed to be located about 1.5 KM 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.

NEW THERM AL PROJECTS

i) Margherita TPP 500 MW

M/s Assam Power Generation Corporation Ltd. (APGCL) has a proposal to set up a 2x250 MW Thermal Power Project in Distt Tinsukhia in Assam. APGCL has applied for coal linkage for Margherita TPP – 500 MW to Min. of Coal. CEA had not prioritized this project for coal linkage as 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 were yet to be tied up for the project. APGCL vide letter dated 20.4.2013 have since furnished tie up of inputs. The project will be considered for prioritization as and when fresh exercise of prioritization is done.

ii) Garo Hills – 500 MW NEE PCO

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. NEEPCO has applied for coal linkage to Min. of Coal. The project was not pre-qualified for coal linkage as 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 pre-qualified 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 pre-qualified 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 has 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 by 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 has been prepared.

(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 and gas linkage is under process.

NEEPCO

The various power projects being developed by NEEPCO in the NE Region is as under:

PROJECTS UNDER CONSTRUCTION :

Sl. No.	Name of the Project	State	Installed Capacity (MW)	Commissioning schedule
1.	Kameng H.E. Project	Arunachal Pradesh	600	March 2017
2.	Tuirial H.E. Project	Mizoram	60	December 2015
3.	Pare H.E. Project	Arunachal Pradesh	110	September 2015
4.	Tripura Gas Based Power Project	Tripura	101	November 2014
5.	Agartala Gas Turbine Plant-Combined Cycle Extension Project	Tripura	51	March 2015
6.	Grid Interactive Solar Power Plant at TGBPP Site	Tripura	5	October 2014
	T O TA L		**927**	

FUTURE PROJECTS :

Sl. No.	Name of the Project	State	Installed Capacity (MW)
1.	Siang Upper Stage-II HE Project	Arunachal Pradesh	3750
2.	Mawphu Stage-II H.E. Project	Meghalaya	85
3.	Lungreng HE Project	Mizoram	815
4.	Chhimtuipui HE Project	Mizoram	635
5.	Mat HE Project	Mizoram	76
6.	Killing H.E. Project	Assam/Meghalaya	240
7.	Tipaimukh HEP (In JV Mode)	Manipur	1500
		Hydro Total	7101
	THERMAL PROJECTS		
1.	Garo Hills Thermal Power Project	Meghalaya	500
	RENEWABLE ENERGY PROJECTS		
1.	Grid Interactive Solar Power Project	Assam	2
2.	Grid Interactive Solar Power Project	Tripura	5
3.	Wind Energy Project (In JV Mode)	Gujarat	100
	Renewable Energy Total		107
		TOTAL	**7708**

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 more than 5,000 ckt. kms. of transmission lines including 864 ckt. km. of inter-regional lines between NER & ER and 16 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. In the recent past, 2x200 MVA, 400/132kV substation at Silchar alongwith 400kV high capacity corridor viz. Pallatana-Silchar-Byrnihat has been commissioned for evacuation of power from Pallatana generation project.

The Company had earlier 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 has also been completed recently, as a deposit work of Meghalata.

At present, two thermal/ gas generating stations are being developed in NER viz. Pallatana Power Project with 726 MW capacity by ONGC Tripura Power Company Private Limited (OTPC) in Tripura and Bongaigaon Power Project with 750 MW capacity by NTPC Ltd. in Assam. To increase the thermal share of NER States, entire power of the above two projects has been allocated to NER States only. For evacuation of power from the above projects and consumption in the States of NER, development of a number of transmission schemes worth about ₹ 5,000 crore has been taken up. Most of these lines have been commissioned and the balance system would be commissioned progressively by 2014-15.

For consumption of power within the NER States and strengthening of the intra-State transmission and distribution infrastructure in NER, 'Comprehensive Scheme for Strengthening of Transmission & Distribution System in NER & Sikkim' with a total cost of about Rs. 11,500 crore has also been planned. This project envisages construction of transmission network in each State of NER so as to take care of the power transfer requirement of next 10 years. Funds for implementation of the scheme are being arranged through 85% from The World Bank loan, 10% from Govt. of India grant and 5% from individual State. POWERGRID has been identified as the Project Management Consultant and the agreement with 6 States has been signed for implementation. The work would commence upon sanction of the fund.

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 ±800kV 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.

In order to strengthen the interconnectivity of NER with other Regions for exchange of power, high capacity AC as well as HVDC lines have been/ are being implemented. This includes about 2000km long +800kV, 6000MW HVDC bipole line from Bishwanath Chariali (NER) to Agra (NR) which will be interconnected en-route at Alipurduar (ER), with 3000MW terminals each at Bishwanath Chariali & Alipurduar and 6000MW terminal at Agra. Alipurduar would be utilized for taking power from Bhutan projects. 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. This link would provide a strong interconnection among NER, ER and NR/WR and would facilitate transfer of surplus power available in NER after meeting the demand of NER States to other regions. Construction of this link is expected to be completed in 2015-16.

Inauguration of DVC Pavilion in IITF-2013 by Union Power Secretary, Shri P K Sinha IAS

CHAPTER -15

CENTRAL ELECTRICITY AUTHORITY

1. Constitution of the 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. The 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 the 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. The 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 the CEA

The functions and duties of the Authority are delineated under Section 73 of the Electricity Act, 2003. Besides, the 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 coordinate their activities with the activities of the persons responsible for such scheme in so far as they are interrelated.

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 the 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.

Conference of 'SAMAPARK, SAMANVAY EVAM SAMVAD' on 2nd June 2014.

Secretary (P), Ministry of Power visited New 33 KV Sub Station at Ahmed Nagar under R-APDRP

CHAPTER - 16
CENTRAL ELECTRICITY REGULATORY COMMISSION (CERC)

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 Chairperson 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 2013-14 (up to 30th November, 2013)

1. **CERC (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) (Second Amendment) Regulations, 2013.**

The Central Commission has been vested with the function for market development under section 66 of the Electricity Act, 2003. In pursuance thereof, Central Commission has created a market framework for renewable energy certificates through the CERC (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 (hereinafter Principal REC Regulations) vide notification dated 14th January, 2010. The concept of renewable energy certificate seeks to address the mismatch between availability of renewable energy sources and the requirement of obligated entities to meet their renewable purchase obligations. REC mechanism aims at promoting additional investment in the renewable energy projects and to provide an alternative mode to the RE generators for recovery of their costs.

The Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) (Second Amendment) Regulations, 2013 notified by the Central Commission on 11.7.2013 sought to address the some of the difficulties experienced in achieving the objectives of the Regulations. Notable among the amended provisions are extension of time period for applying for REC, extension of the shelf life of RECs, waiver of electricity duty as a disqualification for eligibility for grant of RECs, retention of REC for meeting RPO by a renewable energy generator as a consumer, etc.

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

In sync with the dynamic market conditions in the power market, the Commission notified the Central Electricity Regulatory Commission (Terms and Conditions for grant of trading licence and other related matters) (Second Amendment) Regulations, 2013 on 29.08.2013. The amendment included following changes in the principal regulations:-

a) "Intra-State trading" was qualified with the words "based on the inter-State trading licence issued by the Commission".

b) Manner of posting of information by the inter-State trading licensees on their website.

c) New format of application for issue of trading licence reflecting the requirement of net worth as per the first amendment to the Trading Licence Regulations.

d) Deletion of open position reporting.

e) Introduction of format for filing of information regarding Bilateral and Power Exchange Transactions annually by Trading Licensee.

3. Central Electricity Regulatory Commission (Open Access in Inter-State Transmission) (Second Amendment) Regulations, 2013.

In view of the difficulties experienced in operationalising the Open Access Regulations, the Central Commission has amended the Central Electricity Regulatory Commission (Open Access in Inter-State Transmission) Regulations, 2008 which inter-alia include procedure and manner of issue of No Objection Certificate/ Standing Clearance by State Load Despatch Centre for inter-State Open Access, rationalization of operating charges in the event of cancellation of short term open access, collection of short term open access charges and its disbursement, restriction on grant of STOA in certain cases of default by utilities.

4. Draft CERC (Deviation Settlement Mechanism and related matters) Regulation, 2013

Central Commission notified the Central Electricity Regulatory Commission (Unscheduled Interchange charges and related matters) Regulations, 2009. The concept of UI Charges served its useful purpose over all these years and there has been a marked improvement in the grid discipline. The Commission has narrowed down the frequency range over the years and imposed penalties on some state utilities for grid indiscipline. There was no major grid failure since the introduction of UI till 2012 when the grid failed twice in two days. The Enquiry Committee constituted by Ministry of Power to analyse the cause of grid failures recommended, inter-alia, further tightening of grid frequency and review of UI mechanism.

In the light of above, Commission reviewed the existing UI Regulations and proposed to adopt a new CERC (Deviation Settlement Mechanism and related matters) Regulation, 2013 which provides for making the measures for enforcing grid discipline more stringent along with narrowing of grid frequency range from 49.7 Hz-50.2 Hz to 49.95 Hz to 50.05 Hz. It has also been proposed to introduce strict limits on the volume of under/over drawal and under/over injection even if the grid frequency is "49.7 Hz and above". In order to ensure compliance, graded additional charges for the Deviation during a time block appropriately linked to the quantum of breach have been proposed to be imposed in addition to the charges for the Deviation in the event of breach of above volume limits for over drawal/under injections when the grid frequency is "49.70 Hz and above". The Commission circulated draft Regulations inviting comments / suggestion of the stake holders for wider consultation before finalization of the regulation.

5. Draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Second Amendment) Regulations, 2013

In view of the draft regulations on deviation settlement mechanism, corresponding changes were also required in the IEGC regulations. Accordingly, the Commission circulated draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Second Amendment) Regulations, 2013 for the comments of stakeholders.

6. Tariff Regulation for the Control Period 2014-19

The Commission initiated the process of framing the tariff regulations for 2014-19 by issuing an approach paper and solicited comments of stakeholders on the basis and assumptions to be considered while framing the new terms and conditions of tariff regulations. The Commission, through this approach paper, sought views from the stakeholders to review the existing tariff principles and norms in view of the developments during the ongoing tariff period, current and perceived challenges in the Power sector and duly recognizing the need for sustainable market development based on the experiences over the years. The Commission, through approach paper, aimed at soliciting views of stakeholders on the different aspects of tariff setting during tariff period 2014-19. The Comments and data received on the approach paper was considered to draft Terms and Conditions of tariff for the Control Period 2014-19.

7. 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 01.04.2013 applicable for the period from 01.04.2013 to 30.09.2013 and 07.10.2013 applicable for the period from 01.10.2013 to 31.03.2014.

8. Revised Congestion Management Procedure in Real-Time System Operation.

The Commission notified the Central Electricity Regulatory Commission (Measures to relieve congestion in real time operation) Regulations, 2009 (hereinafter referred to as "Congestion Charge Regulations") which came into effect from 24.12.2009. The Commission vide its order dated 11.6.2010 approved the Detailed Procedure for relieving congestion in real time operation under regulation 4 (2) of the Congestion Charge Regulations.

The Enquiry Committee constituted by Ministry of Power to analyse the cause of grid failures recommended, inter-alia, that POSOCO should take up with Central Commission the issue of inconsistency between congestion regulation and the detailed procedure framed there under so that congestion due to forced outages and Unscheduled Interchange (UI) can be handled effectively. POSOCO/NLDC also submitted that apart from the issue raised by the Committee, a few other procedural issues have been observed as a result of which system operator is feeling constrained in applying of these regulations. The Commission approved the revised congestion management procedure to address these issued.

9. Adoption of transmission tariff in respect of transmission companies selected under competitive bidding route.

During the year, the Commission has approved and adopted the transmission tariff of Nagapatinam/ Mdhugiri Transmission Co. Ltd. under Section 63 of the Electricity Act, 2003 in respect of the transmission system associated with IPPs of Nagapattinam/Cuddalore Area-Package-A (the transmission system) for evacuation of power from the generating stations being set up by IPPs in Nagapattinam/Cuddalore Area on Build, Own, Operate and Maintain (BOOM) basis through the international tariff-based competitive bidding route consisting the following elements.

10. Regulatory approval of transmission projects

M/s Power Grid Corporation of India Ltd filed Petitions for regulatory approval of OPGW based communication system for Central Sector sub-stations and generating stations in North-Eastern region and direction for payment by the NER constituents till it is funded by DONER and for execution of Unified Real time Dynamic State Measurement (URTDSM). The Commission vide its orders dated 10.9.2013 and 6.9.2013 in Petition Nos. 218/MP/2012 and 129/MP/2012 accorded its approval for execution of the OPGW based communication system in NER and URTDSM, respectively @ approximate cost of ₹ 278.89 crore for Phase-I and ₹ 377.09 crore for Phase-II.

11. Grant of Inter-State Trading licence

During the year, the Commission has granted three inter-State trading licences under Section 14 of the Electricity Act, 2003 to the following entities.

(i) Newfields Advertising Private Limited

(ii) Vedprakesh Power Private Limited

(iii) Pan India Network Infravest Private Limited

12. Grant of Inter-State Transmission licence

During the year, the Commission has granted three inter-State transmission licences under Section 14 of the Electricity Act 2003 to the following entities:

(i) POWERGRID NM TRANSMISSION LIMITED

(ii) Torrent Power Limited

(iii) Adani Power Limited

(iv) Aravali Power Company Private Limited, New Delhi

13. Transaction of Business by the Central Commission during the period

(a) During the period from 1.4.2013 to 30.11.2013, 182 petitions were filed / registered and 213 petitions were disposed of.

(b) Adani Power Limited and M/s Coastal Gujarat Power Limited had filed petition Nos. 155/MP2012 and 159/MP/2012 before CERC seeking relief for offsetting the impact of escalation in the cost of imported coal on account of the promulgation of the Regulations by the Government of Indonesia to align the export price of coal with the international benchmark price. The Commission in its orders dated 2.4.2013 and 15.4.2013 had directed the parties to set down to a consultative process to find out an acceptable solution in the form of compensatory tariff over and above the tariff decided under the PPAs to mitigate the hardship arising out of absence of full domestic coal linkage and the need to import coal at benchmark price on account of Indonesian Regulations. The Commission had also directed to constitution of the Committee comprising of the Chairman/MD of APL and CGPL, Principal Secretary (Power)/MD of the distribution companies of the procuring States, an eminent banker and an independent financial analyst. The Committee has submitted its reports to the Commission on 16.8.2013. The Commission has heard all concerned parties and the matter is under consideration for issue of final orders.

(c) RLDCs related petitions

The Commission has issued appropriate directions in the following cases relating to system security, safe and secure operation of the grid.

(i) The Commission vide common order dated 19.12.2013 in Petition Nos. 249/MP/2012, 250/MP/2012 and 251/MP/2012 directed all STUs/SLDCs of the Northern Region, Southern Region and Eastern Region to forecast their demand and make adequate arrangements to avoid dependence on Unscheduled Interchange for meeting their demand or for injecting short term surplus power, irrespective of the frequency and to comply with Regulation 5.2 (j) of the Grid Code failing which appropriate proceedings shall be initiated against them for non-compliance with the provisions of the Grid Code and directions of the Commission

(ii) The Commission vide its order dated 19.12.2013 in Petition No. 263/MP/2012 directed all SR constituents to identify the additional feeders and install UFR, df/dt relays to ensure the relief as decided by SRPC from time to time. The Commission further directed SRLDC and SRPC to coordinate and monitor the progress and compliance of Commission's directions and ensure compliance of Regulations 5.2 (n) and 5.4.2 (e) of the Grid Code and report instances of non-compliance.

(iii) The Commission vide its order dated 23.12.2013 in Petition No. 221/MP/2012 had observed that the Commission expressed its dissatisfaction with the defense mechanism in terms of UFR and df/dt and issued the following directions:

(a) Issue notices to the heads of SLDCs and MD/CMD of the STU of Punjab, Haryana, Rajasthan, Delhi, Uttar Pradesh, Uttarakhand, Himachal Pradesh, Jammu and Kashmir and head of Electricity Department, UT of Chandigarh and to explain why action should not be initiated under Section 142 of the Electricity Act, 2003 for non-compliance of the Grid Code.

(b) Member Secretary, NRPC to submit the latest status of UFRs and df/dt installations in NR within 1 month from the issue of this order.

(c) UFRs and df/dt relays also be mapped on the SCADA system of each state so that they can be monitored from SLDC/NRLDC.

(d) All STUs and SLDCs to map/network the UFR and df/dt on their SCADA system.

(e) NRLDC to submit the compliance report on the progress of installation of additional UFR and df/dt relays and quantum of load relief expected during contingency by 31.3.2014.

(f) The staff shall examine the reports of the Member-Secretary, NRPC and NRLDC and shall submit to the Commission within one month of the receipt of the reports of NRPC and NRLDC.

(iv) The Commission vide order dated 19.12.2013 in Petition No. 56/SM/2013 directed POWERGRID to complete the telemetry on all its sub-stations within six months of the issue of order. The Commission also clarified that State Load Despatch Centres shall be responsible for arranging compliance of the relevant telemetry provision viz. Regulation 4.6.2 of the Grid Code in their respective control area.

(d) Open Access to inter-State transmission:

Essar Steel India Limited (ESIL) had filed petition No. 245/MP/2012 seeking transfer of load control jurisdiction over it from SLDC Gujarat to WRLDC and for grant of the status of regional entity for the purpose of scheduling of power and UI accounting. ESIL is a bulk consumer and the Commission by transferring the control area from SLDC to WRLDC has facilitated open access to a consumer to inter-State transmission system in compliance with Section 38 (2) (d) (ii) of the Electricity Act, 2003.

14. 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 objectives:

(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 2013, the report for the year 2012-13 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 long term sources of power for various distribution companies.

15. Power Exchange Business

Power Exchange business commenced in 2008 and the two exchanges now have been in operation for over 5 years. The transactions on power exchanges have grown with Annual turnover in 2009-10 at 7.5 BU to turnover in 2012-13 at 23 BU and an average daily turnover of around 80 MU. Two electronic power exchanges are functioning and providing trading platform for Day ahead contracts, weekly contracts, intra day contracts and Renewable energy Certificates. The number and type of participants in power exchange has also grown exponentially with over

2500 open access consumer across various states, 170 Captive generators, 32 state discoms, 50 IPP, 15 ISGS and 15 private discoms. Power exchanges have transcended the boundary of wholesale power market and through IT infrastructure and enabling open access regulation are providing state embedded 1 MW open access customer access to the national market.

To bring more transparency in power exchange markets and to facilitate informed decision making by market participants a discussion paper on "Display of aggregate Demand and Supply curves for Day ahead markets on power exchange website" was published in August 2013.

Short Term open access regulations were modified to provide more choice to the market participant and allow seamless access for customers between power exchange and bilateral transactions in intra-day market. The modification was effective from September 2013.

16. Regulations notified by Central Electricity Regulatory Commission (CERC) during the year 2013-14

1. During the year 2013-14 CERC notified on 6.01.2014 Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters matter) regulation, 2013.
2. Central Electricity Regulatory Commission notified on 6.01.2014 (Indian Electricity Grid Code) (Second Amendment) Regulations, 2013
3. Central Electricity Regulatory Commission notified on 21.02.2014 (Terms and Conditions of Tariff), 2014.

Joint Electricity Regulatory Commission (For the State of Goa & Union Territories)

Introduction

In exercise of the powers conferred by Section 83 of the Electricity Act, 2003, the Central Government constituted a two member (including Chairperson) Joint Electricity Regulatory Commission for all Union Territories except Delhi to be known as 'Joint Electricity Regulatory Commission for Union Territories' with Headquarter at Delhi as notified vide Notification No. S.O. 643(E) dated 2nd May, 2005. Later with the joining of the State of Goa, the Commission came to be known as 'Joint Electricity Regulatory Commission for the State of Goa and Union Territories' as notified vide Notification No. 1271(E) dated 30th May, 2008. The Joint Electricity Regulatory Commission for the State of Goa and Union Territories started functioning with effect from August 2008. Office of the Commission is presently located in a rented building in the district town of Gurgaon, Haryana.

Functions of JERC

1. As per the Electricity Act, 2003, the Commission is vested with the responsibility of discharging the following functions:

a) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be;

b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State/Union Territories;

c) facilitate intra-state transmission and wheeling of electricity;

d) issue licenses to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State/ Union Territories;

e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person and also specify for purchase of electricity from such sources a percentage of the total consumption of electricity in the area of a distribution license;

f) adjudicate upon the disputes between the licensees and generating companies and to refer any dispute for arbitration;

g) levy fee for the purposes specified under this Act;

h) specify State Grid Code consistent with the Indian Electricity Grid Code (IEGC) specified by Central Electricity regulatory Commission;

i) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;

j) fix the trading margin in the intra-State trading of electricity, if considered necessary;

k) approval of Power Purchase Agreements, and

l) discharge such other functions as may be assigned to it under the Act.

2. The Commission shall advise the State/ Union Territory Government on all or any of the following matters, namely:-.

a) promotion of competition, efficiency and economy in activities of the electricity industry;

b) promotion of investment in electricity industry;

c) reorganization and restructuring of electricity industry in the State/ UTs

d) matters concerning generation, transmission , distribution and trading of electricity or any other matter referred to the Joint Commission by that Government.

3 The Commission shall ensure transparency while exercising its powers and discharging its functions.

4 In discharge of its functions, the Joint Commission shall be guided by the Electricity Act, 2003, the National Electricity Policy, National Electricity Plan and Tariff Policy.

The Joint Electricity Regulatory Commission is committed to fulfill its mandate for creating an efficient and economically viable electricity system in the State of Goa & Union Territories, balance the interests of all stakeholders while fulfilling its primary responsibility to ensure reliable supply of power at affordable rates and shall be guided by the principles of transparency, accountability, equitability and participation in discharge of its functions, to safeguard the interests of the licensees and generating companies in the State of Goa & Union Territories and to give a fair deal to consumers at the same time.

To achieve above, the Commission aims to:

a) Promote competition, efficiency and economy in the activities of the Electricity Industry within the State of Goa & Union Territories;

b) Regulate effectively the power purchase and procurement process of the distribution licensees for sale, distribution and supply of electricity within the State of Goa & Union Territories;

c) Encourage cogeneration and use of energy generated from Renewable Sources;

d) Consumer satisfaction with mechanism to redress its complaint urgently;

e) Introduce open-access & reduce the cross-subsidy;

f) Improve access to information for all Stakeholders.

JERC (Appointment and Functioning of Ombudsman) First amendment Regulations, 2013

The Joint Electricity Regulatory Commission notified the first amendment in JERC (Appointment and Functioning of Ombudsman) Regulations, 2009 which were notified on 31.07.2009.

The Joint Electricity Regulatory Commission (For the State of Goa & Union Territories) based on the experience gained and feedback received from time to time from various stakeholders recognized that there is a need to make the procedure for selection/appointment of Ombudsman effective and transparent, attract persons of experience, ability, integrity and understanding from areas of law, management, engineering, finance, economics, commerce, public administration and to make Ombudsman effective and independent in functioning requiring certain amendments in qualifications, procedure for selection and appointment, age, remuneration and service conditions of Ombudsman as well as for providing effective and early justice to the consumers. Accordingly the Commission prepared a document on proposed amendments and uploaded the same on the website of the Commission to invite inputs, comments and suggestions/objections from all stakeholders including Licensees. The Commission after receipt of some inputs, comments and suggestions/objections makes amendments in JERC (Appointment and Functioning of Ombudsman) Regulations, 2009.

Major Activities during the year 2013-14 (up to 30th November, 2013)

1. JERC (Procedure for filing Appeal before the Appellate Authority) Regulations, 2013.

   As stipulated under Section 127 of Electricity Act, 2003, JERC prepared the procedure for filing of appeal before the Appellate Authority against the final order passed by the assessing officer under Section 126 of the said act.

2. JERC (Electricity Supply Code) Second Amendment Regulations, 2013.

   The Commission had received several representations regarding continuation of allowing bank guarantee against Advance Consumption Deposit/Security Deposit. The Commission sought stakeholders comments thereon and based on the inputs received carried out the said amendment.

3. JERC (Conduct of Business) Second Amendment Regulations, 2013.

   The Commission was experiencing some procedural difficulties and accordingly amendment was carried out in the said Regulations.

Final Tariff for FY 2013-14

The Commission had issued the following tariff orders for FY 2013-14:

1.	Daman & Diu	22.03.2013
2.	Dadra & Nagar Haveli	25.03.2013
3.	Puducherry Power Corporation Limited	28.03.2013
4.	Andaman & Nicobar Islands	31.03.2013
5.	Goa	31.03.2013
6.	Puducherry	10.04.2013
7.	Chandigarh	15.04.2013
8.	Lakshadweep	22.05.2013

Draft Regulations circulated for public comments

1. Multi Year Tariff Regulations
2. Demand Side Management Regulations
3. The draft regulations were uploaded on the website of the Commission, copies sent to the utility under the jurisdiction of JERC, public comments were invited and thereafter public hearing were held at Chandigarh on 12.12.2013 and Puducherry on 17.12.2013. The said regulations are under process.

Major Target likely to be achieved upto 31st March 2014

Tariff orders for FY 14-15 are likely to be issued for all the seven distribution utilities under the jurisdiction of JERC namely Andaman & Nicobar Islands, Chandigarh, Daman & Diu, Dadra & Nagar Haveli, Puducherry, Lakshadweep and the State of Goa and one generation company namely Puducherry Power Corporation Limited (PPCL).

CHAPTER - 17

APPELLATE TRIBUNAL FOR ELECTRICITY (APTEL)

1. The Appellate Tribunal for Electricity (APTEL) has been setup under the provisions of the Electricity Act, 2003 (Section 110) with all India jurisdiction (Except the State of J&K) and it started functioning on 21st July, 2005. The Tribunal is presently located at 7th Floor, Core -4, SCOPE Complex, Lodhi Road, New Delhi.

2. APTEL is headed by a Chairperson who has the 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 one post of Judicial Member and two Technical Members (Electricity) and one Technical Member (P&NG) . Hon'ble Justice Shri Surindra Kumar is the Judicial Member of the Tribunal. Hon'ble Mr. Rakesh Nath and Hon'ble N.M. Borah are the Technical Members of the Tribunal. One post of Technical Member is vacant since 03.12.2013.

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 Addl. District Judge.

5, APTEL hears and disposes of appeals filed against the orders of the Central Electricity Regulatory Commission, State Electricity Regulatory 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 and Kashmir on the subject were also transferred to this Tribunal.

6. Proceedings are conducted in two courts, each court consist of one Judicial Member and a Technical Member.

7. As on 31st December 2013, of 5179 appeals/petitions /matters etc. that have been filed to date, 4527 have already been disposed off.

8. Thus within a short span of its operation, APTEL has become fully operational and has been successful in disposing of a large number of matters, thus expediting justice. The Tribunal is also operating having Circuit Benches Sitting in Chennai, Mumbai and Kolkata.

The website of the Tribunal (www.aptel.gov.in) is providing easy access to the daily cases lists and judgments/orders.

RATNAGIRI Power Plant, NTPC

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 ₹ 10000 crores, Paid up capital is ₹ 8245.5 crores. 75% 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 2013, NTPC has been ranked No.1 Independent Power Producer in the world. NTPC ranked 384th largest company in the world among 'Global 2000' list of companies compiled by Forbes for 2013.

2.0 NTPC PERFORMANCE HIGHLIGHTS FOR THE YEAR 2013-14

- The gross generation from NTPC stations, excluding joint ventures, during the year 2013-14 (up to 30th Nov.'13) has been 149,224 MUs. During the period, NTPC coal based stations achieved a PLF of 77.95% with availability of 87.76%, and NTPC gas stations achieved a PLF of 35.61% with availability of 47.07% (92.76% DC).
- Nine NTPC coal stations achieved more than 80 % PLF: Singrauli (92.16%), Talcher Thermal (92.01%), Tanda (90.43%), Korba (87.65%), Unchahar (84.79%), Vindhyachal (84.61%), Ramagundam (82.82%), Dadri (81.86%) and Rihand (81.06%).
- NTPC has been maintaining sound financial performance. NTPC recorded a total income of ₹ 33418.19 crores (unaudited) and net profit after tax of ₹ 5019.92 crores (unaudited) during the Half Year 2013-14 (Apr.-Sept. '13), as compared to total income of ₹ 34018.87 crores (unaudited) and net profit after tax of ₹ 5641.02 crores (unaudited) during the Half Year 2012-13 (Apr.-Sept. '12) respectively.
- Capacity addition of 1,270 MW was achieved which comprises Barh-II U#4 (660 MW), Rihand-III U#6 (500 MW) & Kanti Stg-I U#1 (110 MW). While Barh & Rihand are new units, Kanti Stg-I U#1 has undergone R&M for revival after take over from BSEB.
- Installed capacity reaches 42,454 MW (including 5474 MW under JVs).
- Construction work is in progress at 24 project locations with an aggregate capacity of 19,419 MW.
- 1,110 MW was declared commercial comprising Jhajjar U#3 (500 MW), Vallur U#2 (500 MW), Kanti Stg-I U#1 (110 MW).
- Awards placed for 570 MW projects – Unchahar-IV U#6 (500 MW) and Solar PV Projects at Faridabad (5 MW), Rajgarh (50 MW) and Singrauli (15 MW).
- Investment approval of 5,680 MW is likely to be accorded shortly for the projects –Darlipalli-I (1,600 MW) in Odisha, North Karanpura (1980 MW) in Jharkhand, Tanda (1320 MW) in UP, Rammam HEPP (120 MW) in WB and two Wind Energy Projects (40 MW each) in Karnataka and Maharashtra.
- Various Govt. clearances/commitments including Forest and Environment clearance for Darlipali (1600 MW), Gajmara (1600 MW), Khargone (1320 MW), Gadarwara-II are in advanced stages.
- Stage-II forest clearance to be accorded by MOEF for Talaipalli and Kerandari Coal blocks.
- Proposal for Stage-I Forest Clearance for Dulanga Coal block considered favorably by FAC in its meeting on 28.11.13, MoM awaited.
- Dedication to the Nation of Sipat Super Thermal Power Station (3x660 + 2x500 MW) and laying of the foundation stone of Lara Super Thermal Power Project Stage-I (2x800 MW) by Dr. Manmohan Singh, Hon'ble Prime Minister of India, on 19.09.2013.
- NTPC has received 92.6 MMT of domestic coal and there is an increase of 2.2 % in coal receipt over the last year.
- In addition to FSA, bilateral MoUs for 3.5 MMT coal from SCCL for Ramagundam & Simhadri have been signed to augment domestic coal supply.
- For critical stations, 1.66 MMT of domestic coal received through E-Auction during 2013-14 as compared to 0.13 MMT received in 2012-13.
- Coal supply agreements have been signed for 9620 MW for NTPC units commissioned after 31.03.09 & to be commissioned till 31.03.15 with Annual Contracted Quantity (ACQ) of 39.67 MMT.
- Also, coal supply agreements have been signed for 4390 MW for NTPC-JV units commissioned after 31.03.09 & to

be commissioned till 31.03.15 with Annual Contracted Quantity (ACQ) of 21.46 MMT.

- Disbursement of enhanced land compensation payment & annuity policy commenced from 07.05.13 in Pakri-Barwadih coal block.
- Mine Opening permission for Pakri-Barwadih coal block received from DGMS & Coal Controller on 25.06.13 and 18.11.13 respectively.
- After Stage-II forest clearance for Chatti-Bariatu coal block, Forest Department, Govt. of Jharkhand issued final order for transfer of forest land on 08.06.13.
- R&R Plan for Chatti-Baraitu & Kerandari approved on 08.07.13 and for MGR area of Talaipalli coal block approved on 15.07.13.
- Land rates for Dulanga Coal block finalized by Govt. of Odisha on 06.09.13.
- Reservoir impounding at Koldam (4x200 MW) HEPP commenced on 19.12.13.
- The major project agreements for the 2x250 MW coal based joint venture power project in Sri Lanka were signed in Sri Lanka on 07.10.13. The project shall be developed by Trincomalee Power Company Limited, a joint venture company incorporated in Sri Lanka with equal (50:50) equity contribution from NTPC and Ceylon Electricity Board of Sri Lanka.
- The Power Purchase Agreement and the Implementation Agreement for the 1320 MW coal based joint venture power project in Rampal (Khulna Division of Bangladesh) were signed in Dhaka on 20.04.13. The project shall be developed by Bangladesh-India Friendship Power Company Limited, a joint venture company incorporated in Dhaka with equal (50:50) equity contribution from NTPC and Bangladesh Power Development Board. The 1320 MW coal power project at Rampal (Khulna) has been christened as Maitri Power Project. The foundation stone of Maitri Power Project was unveiled on 05.10.13 by Hon'ble PM of Bangladesh at Bheramara, Bangladesh.

3.0 COMMERCIAL PERFORMANCE

3.1 Billing and Realisation: NTPC has been able to consistently maintain 100% realization of bills for 11 years in succession. During the current financial year 2013-14, the amount billed up to Nov.'13 is ₹45,851 crore.

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.

3.2 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 others' best practices.

In the financial year 2012-13, a total of 58 such services have been provided and in the financial year 2013-14 (Upto 30th Nov.'13), 24 such services have already been provided.

4.0 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.

NTPC has formed various Joint Venture companies and Subsidiaries for pursuing growth. Details of these companies are enclosed at **Annexure-I.**

4.1 Capacity Addition Programme :

Against a MoU target of 1875 MW (including 195 MW under JVs) for the year 2013-14, 1160 MW has already been added till 30.11.13. In addition one unit of 110 MW of Muzaffarpur TPS has been revived after takeover from BSEB. Details of NTPC's installed capacity as on 30.11.13 are enclosed at **Annexure-II.**

As on 30.11.13, construction work is in progress for 19419 MW capacity at 24 project locations including JVs & Subsidiaries. Further, NTPC has identified a number of projects for its capacity addition program for XII and XIII Plan. Bids for Main Plant (BTG) have already been received/ invited for 5100 MW capacity and Feasibility Reports (FR)/ Detailed Project Reports (DPR) have been approved for 21860 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.

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 Program Implementation.

4.2 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 NTPC-SAIL Power Company Private Limited (NSPCL), Ratnagiri Gas and Power Private Limited (RGPPL), NTPC Tamil Nadu Energy Company Limited (NTECL), Bharatiya Rail Bijlee Company Limited (BRBCL), Kanti Bijlee Utpadan Nigam Limited (KBUNL - formerly Vaishali Power Generating Company Limited), Nabinagar Power Generating Company Private Limited (NPGCL), Meja Urja Nigam Private Limited (MUNPL), Trincomalee Power Company Limited (TPCL), Bangladesh India Friendship Power Company Limited (BIFPCL) and Aravali Power Company Private Limited (APCPL). Details of JVs & Subsidiaries and their areas of operation are given in **Annexure-I (A).**

4.3 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 06.09.11 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 26.09.11, by the name "Trincomalee Power Company Limited". The major project agreements including the Power Purchase Agreement, Implementation Agreement, Board of Investment Agreement, Coal Supply Agreement and the Land Lease Agreement for the 2x250 MW Coal based joint venture power project in Sri Lanka were signed in Sri Lanka on 07.10.13 in the august presence of Sh. Salman Khurshid, Honourable Foreign Minister, Govt. of India. The project shall be developed by Trincomalee Power Company Limited, a joint venture company incorporated in Sri Lanka with equal (50:50) equity contribution from NTPC and Ceylon Electricity Board of Sri Lanka.

Further, a 1,320 MW coal based power project in Bangladesh is being pursued. The Power Purchase Agreement and the Implementation Agreement for the 1320 MW Coal based joint venture power project in Rampal (Khulna Division of Bangladesh) were signed in Dhaka on 20.04.13. The project shall be developed by Bangladesh-India Friendship Power Company Limited, a joint venture company incorporated in Dhaka with equal (50:50) equity contribution from NTPC and Bangladesh Power Development Board. The 1320 MW coal power project at Rampal (Khulna) has been christened as Maitri Power Project. The foundation stone of Maitri Power Project was unveiled on 05.10.13 by Hon'ble PM of Bangladesh at Bheramara, Bangladesh.

4.4 Lateral Integration

4.4.1. 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 1,491 MW capacity are under construction, comprising of 800 MW (4x200 MW) Koldam in Himachal Pradesh, 520 MW (4x130 MW) Tapovan Vishnugad, 171 MW (3x57 MW) Lata Tapovan both in Uttarakhand. Also 120 MW (3x40 MW) Rammam-III HEPP in West Bengal is under process of tendering & award.

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

"**G**oing **H**igher on **G**eneration, lowering **GHG** intensity"

In NTPC, Renewable energy (RE) is being perceived as an alternative source of energy for "Energy Security" and subsequently "Energy Independence". NTPC plans to broad-base generation mix by evaluating non-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 -110 MW

- Projects commissioned – 10 MW (Andaman & Nicobar (A&N) – 5 MW, Dadri – 5 MW)
- Projects under execution – 100 MW (Ramgundam – 10 MW, Unchahar – 10 MW, Talcher Kaniha – 10 MW, Faridabad – 5 MW, Rajgarh – 50 MW, Singrauli – 15MW).

Further, solar projects at various NTPC stations are being explored for feasibility.

ii. Small Hydro Projects -11 MW

- Singrauli Hydro (under execution) – 8 MW
- Rihand Hydro (in DPR stage) – 3 MW

iii. Wind Projects - 80 MW

- 40 MW each of wind projects in Karnataka and Maharastra are under tendering.
- Further feasibility studies of two wind projects in Karnataka and Kerala is in progress.

iv. Geothermal Projects

- MoU has been signed with Chhattisgarh Govt for development of geothermal power project at Tattapani in Chhattisgarh.

- MOU has been signed with Geological Survey of India (GSI) for exploration of geothermal resources at Tattapani project site and assistance in preparation of DPR for the project.

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 hydro and solar energy and sustainability of the distributed generation projects.

vi. JV Company

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.

4.4.3. 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).**

4.5 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).**

4.6 Backward Integration

4.6.1. 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, Kerandari, 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 33 MTPA by 2017-18. 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.

In addition to above, MOC, vide its letter dated 25.07.13, intimated the decision of Government of India for allocation of four more coal blocks namely Banai, Bhalumuda, Chandrabila & Kudanali-Luburi with total 1995 MT of geological reserves to NTPC to meet the requirement of Barethi (2640 MW), Kudgi-I(2400 MW), Gadarwara-I(1600 MW), Unchahar-IV(500 MW), and Bilhaur-(1320 MW) end-use power projects.

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.

4.6.2. Coal Import: To overcome the shortfall of domestic coal supply, NTPC is importing coal since 2005-06. For the year 2013-14 target for coal import is 16.6 MMT & 9.45 MMT has been ordered till end Oct.'13 against which 7.77 MMT of coal has already been received up to Nov.'13.

4.6.3. Coal Transportation: Inland Waterways - Transportation of imported coal through Inland Waterways to Farakka project – Project has became operational in Nov'13 and around 70,000 MT of imported coal has been transported through Inland Waterways to Farakka project upto 16.12.13.

4.6.4. 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 Oil and Gas exploration Blocks.

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.

4.7 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).**

4.8 Services Business

4.8.1. 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 include various state utilities / PSU`s like MSPGCL, UPRVUNL, MPPGCL, GSECL, DVC, DPL, WBPDCL, 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 11,000 MW apart from 7,690 MW in NTPC Joint Venture projects as below:

- Owner`s Engineers Services & Project Monitoring Services – 3,900 MW
- O&M Services /O&M studies (PIP & Gap Analysis) – 7,470 MW
- R&M Services – 440 MW

NTPC- Consultancy Wing is providing O&M services for 2x120 MW Siddhirganj Peaking Power Plant (SPPP) located near Dhaka in Bangladesh. "Transition & Takeover" activities towards execution of assignment at SPPP site started w.e.f 01.10.12 and completed on 30.10.12. Further activities for Operation Period of six years have started w.e.f. 01.11.12. Plant has achieved Deemed Availability of 99.003% for the year 2012-13 which is highest since inception.

NTPC has submitted an offer for providing Consultancy Services to Trincomlaee Power Company Limited (A JV Company between NTPC and CEB) for Owner's Engineer Services comprising Pre & Post award Services and Site Supervision by deployment of experts for setting up of 2x250MW Trincomalee Coal Power Project at Sri Lanka.

During the year 2013-14 (till 30.11.13) NTPC – Consultancy Wing has secured 11 work/job orders.

5.0 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, 765KV Switchyard, Ash water recirculation, Liquid waste management systems, PADO (Performance Analysis and Diagnostic Optimization), Tunnel Boring Machines, and Supercritical technology for our Sipat plant with Steam parameters of (247 Kg/cm2 / 537 oC / 565 oC). 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
- In order to improve the efficiency further, we have adopted even higher steam parameters of (247 Kg/cm2 / 565 oC /593 oC) for Barh expansion project and all 660/ 800 MW bulk tender projects. 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 565 deg. 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 for proposed 100MWe IGCC Technology Demonstration Project at NTPC Dadri in two stages.

Development of Advance Ultra Super Critical technology: Under National Mission on Clean Coal (Carbon) Technologies, NTPC, BHEL and Indira Gandhi Centre for Atomic Research (IGCAR) have entered into MoU for indigenous development of advance ultra super critical technology which will enhance efficiency to around 46% and about 16-18% reduced 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 MWe 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 stem cycle of 210 MW unit. This technology has been pioneered by NTPC for the first time in India.

6.0 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:

- Heat recovery from waste flue gas for air conditioning of ESP control room at NTPC Ramagundam has been commissioned.
- CW effluent recycling using ultra filtration technology
- CFD Analysis of Boilers and CW sumps
- VFD Retrofitting in Cooling Tower fans
- AI based System for combustion performance improvement
- AI based Online Boiler Water Chemistry Monitoring;
- Solar Thermal based HVAC;
- Solar Hybrid with Steam Cycle
- Development of Nano lubricants for ID Fans, mills
- Integrated Bio-Diesel production & gasification
- Robotic Inspections of LTSH tubes in Boiler
- RFID technique for detection of fish plate removal
- CO2 Capture / utilization Technology by PSA, Micro-Algae, Ash Mineralization; etc.
- Introduction of Time of Flight Diffraction (TOFD) Technique to detect the defects in welds on pipelines.

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

NETRA is a member of International Electrical Research Exchange (IERE), Japan and Global Carbon capture & Storage Institute (GCCSI), Australia.

7.0 SUSTAINABLE DEVELOPMENT

For NTPC, Sustainability is an opportunity for business to improve its profitability, competitiveness and market share without compromising the ability of future generations to meet their own needs. NTPC addresses all aspects related to sustainable development and continuously promotes environmental management, social responsibility and economic performance (triple bottom line approach).

NTPC is a member of "TERI – Business Council for Sustainable Development – India (TERI-BCSD)", the Indian partner of the WBCSD (World Business Council for Sustainable Development), Geneva, and also a member of United Nation's Global Compact.

NTPC has developed a Policy on Sustainable Development in accordance with which a sustainable development plan has been prepared for the year 2013-14. Major activities being undertaken under this plan include various projects for biodiversity conservation, energy management and promotion of renewable energy, waste management, water management and reduction in air emissions. Initiation of various environmental studies, at NTPC stations, have also been included in the Sustainable Development Plan. A total expenditure of ₹ 12.62 crores has been planned on these SD projects for the year 2013-14 as against ₹ 10.18 crores incurred on such projects during FY 2012-13.

SEBI has mandated the top 100 listed entities based on market capitalization at BSE and NSE, to include Business Responsibility Report as a part of the Annual Report describing the initiatives taken by the Company from Environmental, Social and Governance perspective. Accordingly, a Business Responsibility Report was prepared and attached as Annex-X to NTPC's Annual Report (2012-13). NTPC is also in the process of preparing its "Sustainability Report (2012-13)" in line with the internationally accepted "Global Reporting Initiative (GRI)" Guidelines.

NTPC has already published its "Sustainability Report (2011-12)" duly assured by an independent external assurance provider as per international standard. The report has been hosted on NTPC website.

7.1 CeNPEEP : 'Center for Power Efficiency and Environmental Protection' (CenPEEP), was set up to take initiatives to address climate change issues by efficiency improvement of coal fired stations. 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 the responsibility of improving the efficiency and reliability of NTPC power stations through development & implementation of systems, strategic initiatives and introduction of new techniques & practices. Recent initiatives include modification of internals in boiler flue gas ducts based on CFD modeling to reduce pressure drops & fan power consumption, accurate performance gap analysis using thermodynamic models, validation of Feed water flows using ultrasonic flow meters, application of multiple technologies like Infrared Thermography (IRT), Acoustics etc. for equipment diagnostics.

Various state-of-the-art technologies for improvement in efficiency and reliability have been demonstrated and disseminated to power stations in NTPC, IPPs & State utilities through hands-on training, guidelines and workshops. Under ongoing PACE-D (Partnership to Advance Clean Energy – Deployment) program with USAID, performance assessment tests were carried out at Panipat (HPGCL) & Chandrapur (MAHAGENCO) and action plans developed for Heat Rate improvement. A manual on 'Best Practices for Super critical units' is being developed jointly with US experts for distribution in Indian power sector.

CenPEEP is also responsible for development of strategies & action plans at stations to achieve Net Heat Rate improvement targets notified under PAT (Perform Achieve & Trade) scheme of Govt. of India.

7.2 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 2013-14 (up to Nov.'13), a total of 27 energy audits of various systems were conducted at different NTPC power stations. In the remaining period of 2013-14, 28 energy audits have been planned at NTPC stations.

NTPC has completed installation of On Line Energy Management System in its 19 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.

7.3 Clean Development Mechanism (CDM) :

- NTPC is pioneer in addressing climate change issues proactively. The company has taken several initiatives in CDM projects in Power Sector.
- Eight CDM projects viz. North-Karanpura STPP, Tapovan Vishnugad HEPP, Energy efficiency project at NTPC-Singrauli, Energy efficiency project at NTPC-Dadri, Small Hydro Power Project at NTPC-Singrauli, 5MW Solar PV Power Project at NTPC-Dadri, 5MW Solar PV power Project at NTPC-Faridabad & 5MW Solar PV power project at Port Blair (A&N) have got Host Country Approval (HCA) from National CDM Authority (NCDMA).
- Two of its solar PV projects viz. 5 MW Solar PV Power Project at NTPC-Dadri and 5 MW Solar PV Power Project at Port Blair (A&N) has already been registered with United Nations Frame Work Convention on Climate Change (UNFCCC) CDM Executive Board. Other two projects viz. 5 MW Solar PV Power Project at NTPC Faridabad and 8 MW Small Hydro Power Project at NTPC-singrauli are in advance stage of Validation / Registration with UNFCCC CDM Executive Board.
- 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 Frame Work Convention on Climate Change (UNFCCC)" under 'Approved Consolidated Methodology 13 (ACM0013). More Greenfield CDM projects are in pipeline.

7.4 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 67 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, NOx and CO2 in all its units on real time basis. NTPC has planted a total of over 21 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 undertaken 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.

7.5 Corporate Social Responsibility: NTPC, a socially responsible Corporate Citizen since inception, started its Community Development initiatives in the form of R&R program which aim to improve the overall economic status of persons displaced or otherwise affected by our projects. Each R&R programme is based on specific local requirements and is guided by extensive socio-economic surveys.

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 Industry, Govt. of India.

NTPC recognized to continue community and peripheral development works through Community Development (CD) Policy where the same were closed under R&R policy. NTPC revised its CD policy in August'2010, keeping in view the

changed Business environment, Global practice and guidelines issued from DPE, Ministry of Heavy Industry & Public Enterprises. In line with the CD Policy, NTPC takes up activities at Station level and Regional / National level within the identified Basket of Activity.

As most of the stations are located in remote rural areas, NTPC during 2013-14 undertook activities in the neighborhood area of stations in the areas of basic infrastructure development like primary education, community health, drinking water, sanitation, road, women empowerment, vocational training etc. In addition, Quality Circles (QCs) activities are being carried out in neighborhood villages of stations, for improvements in various areas. NTPC employees participated in various activities through Employee Voluntary Organization for Initiative in Community Empowerment (EVOICE).

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".

NTPC Management has approved allocating every year 1% of PAT on CSR & SD activities from the year 2013-14 onwards.

During 2013-14, NTPC has been declared winner of “Golden Peacock Award for Corporate Social Responsibility” for the year 2013 Instituted by Institute of Directors.

7.6 Rehabilitation & Resttlement (R&R) :

NTPC is committed to help the populace displaced during 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 resettlement and rehabilitation (R&R) of PAPs and also on community development works in and around its projects.

R&R activities are initiated at NTPC projects by undertaking need based community development activities in the area of health, education, water, capacity building, infrastructure etc by formulating 'Initial Community Development (ICD) Plan' in consultation with concerned Panchayat, district administration and opinion makers of the locality. NTPC addresses R&R issues in line with its R&R Policy with an objective that after a reasonable transition period, the conditions of affected families improve or at least they regain their previous standard of living, earning capacity and production levels. As per the Policy, a detailed 'Socio-economic Survey (SES)' is conducted by a professional agency to create a baseline data of PAPs. This follows formulation of a 'Rehabilitation and Resettlement (R&R) Plan' after adequate consultation with stakeholders in 'Village Development Advisory Committee (VDAC)', which comprises representatives of PAPs, Gram Panchayats, NTPC and District Administration. R&R Plan consists of measures for rehabilitation, resettlement and need based community development/capacity building activities.

R&R Plan is implemented in a time bound manner so as to complete its implementation by the time the project is commissioned. On completion of the R&R Plan implementation, a Social Impact Evaluation (SIE) is conducted by a professional agency to know the efficacy of R&R Plan implementation for future learnings.

Achievement up to 30.11.2013:

- **'Initial Community Development (ICD) Plan:**
  - ICD Plan for Bilhaur project covering activities in the area of Health, Education, Sanitation, Drinking water, Infrastructure facilities etc approved and for Khargone project provisions enhanced.
  - Implementation of earlier approved ICD activities continued at respective projects at Barethi, Dulanga, Darlipali, Gajmara, Khargone, Jhajjar, Nabinagar (BRBCL) and Nabinagar (NPGC) projects.
  - NTPC is implementing Community Development (CD) activities in the backward district of Bhandara neighbouring Mouda project in Maharashtra as part of R&R Plan of Mouda project
- **Rehabilitation and Resettlement (R&R) Plan:**
  - R&R Plan for Gadarwara and Lata-Tapovan projects covering R&R obligations and community development facilities in the area of Health, Education, Sanitation, Drinking water, Infrastructure facilities finalized in consultation with stakeholders and approved.
  - R&R Plan provisions for Tapovan-Vishnugad project enhanced.
  - R&R Plans for mining projects Chhatti-Bariatu, Kerendari and Pakri-Barwadih projects revised with enhanced provisions.
  - R&R activities were implemented at the new Greenfield/Brownfield Thermal projects Barh, Bongaigaon, Dadri, Kanti, Korba, Kudgi, Lara, Meja, Mouda, North-Karanpura, Solapur, Tanda, Vallure, Vindhyachal, Hydro projects at Koldam, Tapovan-Vishnugad, and Coal Mining Projects at Pakri-Barwadih, Chhatti-Bariatu, Kerendari and Talaipali wherein R&R Plans/packages were finalized in consultation and participation of the stakeholders and approved earlier as well as at Gadarwara and Lata-Tapovan projects where the R&R Plan has been approved during the year.
- **Big Ticket activities under R&R being undertaken by NTPC:**
  - 'Power Engineering Institute' at Hazaribagh in Jharkhand as part of R&R Plan of North Karanpura project.
  - 'Engineering College' at Shivpuri in Madhya Pradesh as part of R&R Plan of Gadarwara project.

- 'Women's Polytechnic' at Dhak in Uttrakhand as part of R&R Plan of Tapovan-Vishnugad Hydro project.

- **Focus on capacity building:**
  - NTPC facilitated training in construction trades in the area of Masonry/bar bending for under-matriculate PAPs and their dependents at its Nabinagar (BRBCL) (JV) project through 'Construction Industry Development Council (CIDC)', New Delhi for improving their employability for gainful employment with agencies during construction of the projects.
  - For the benefits of project affected persons and neighbouring population earlier started 'Mobile Health Clinic' under R&R provisions at Kudgi, Nabinagar (NPGC), Pakri-Barwadih, Nabinagar (BRBCL) and Gajmara projects continued during the year.

Anticipated R&R targets to be achieved during remaining period of the financial year 2013-14:

- MoU signed on 13.12.14 for 'Medical College and Hospital' at Sundargarh, Odisha as part of proposed R&R Plan of Darlipali project.
- NIT for 'Engineering College' at Shivpuri
- MOU signing with Govt of Jharkhand for setting up 'Power Engineering Institute' at Hazaribagh
- Completion of SES of Bilhaur and Gajmara projects
- Approval for Greenfield Polytechnic at Sundargarh as part of R&R Plans of Dulanga and Darlipali projects in Odisha.
- Finalization and approval of R&R Plan for Barethi, Darlipali, Dulanga, Khargone, Mouda-II, Rammam-III, Nabinagar (BRBCL) and Nabinagar (NPGC) projects

8.0 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 entered with stock exchanges 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.

9.0 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 its 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 and laurels 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.

10.0 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 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 only required to be mitigated but sometimes offer opportunities to enhance shareholder's value.

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, the Company has an Enterprise Risk Management Committee in place comprising Executive Directors of various functions and regions of NTPC which meets to review the Risk portfolio on quarterly basis. Recommendations of ERMC are reported every quarter to the Board of Directors.

11.0 BUSINESS EXCELLENCE

We have developed and adopted 'NTPC Business Excellence Model' on the lines of globally accepted Performance Excellence frameworks such as the Malcolm Baldrige Performance Excellence framework, the EFQM Excellence Model, Deming and ITC sustainability model. In this financial year 2013-14, we will be completing the assessment of select generating stations using this Performance Excellence Framework. The assessment process shall be completed by Feb'14. From the next year 2014-15 the assessment process is also proposed to be part of external MoU. The outcome of the assessment is a feedback report that reflects on the status of Business management practices (Enablers) and achievements (Results) against the Excellence Model. The feedback report comprises of an Executive Summary for the top

management, Scoring Profile on the scale of 1000 and Strengths & Opportunity for improvement (OFI) for the generating stations. This helps the organisation to diagnose what is lacking and focus on the improvement areas.

For automating Corporate Performance Management an IT enabled "Hybrid Balanced Score Card" system has been conceptualized after detailed study in one of the NTPC Station. Proposal is under process of tendering in the financial year 2013-14.The implementation is likely to be completed in 2014-15

Other contemporary TQM concepts and techniques like ISO, Quality Circles, Professional Circles, 5S etc. have been deployed across the organization and these have been refined through suitable policy interventions in the year 2013-14 to leverage full potential. Quality Circle team (1 No.) of NTPC Faridabad had participated in International QC Convention held at Taiwan in October 2013.

12.0 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.

ERP has its main data center at Noida and a 100% disaster recovery center at Hyderabad as a full back up for real time changes over in case of any emergency.

The e-procurement application is being extensively used and NTPC is targeting for maximum possible e-procurement. A Business Partnering Vendor collaboration portal "TeamUp" 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.

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. 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 is under implementation at NTPC Data centre and Disaster Recovery site in line with "Crisis Management Plan to consider 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.

13.0 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 25,366 including JVs and subsidiaries as on 30.11.13 as against 25,712 as on 30.11.12 (excluding Executive Trainees).

All efforts were made to improve the manpower utilization. The overall Man-MW ratio for the year 2012-13 was 0.67 excluding the capacity of JVs and Subsidiaries and 0.62 including the capacity of JVs & Subsidiaries. The attrition rate of the executive during the year was 1.46 %.

13.1 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 program. Considering the significant capacity addition plan, Executive Trainees as well as Diploma Trainees have been recruited as per the requirement & continuous efforts have been made to effectively utilize the manpower by rationalization.

13.2 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 2013-14 (up to November 30, 2013), PMI has conducted a total of 293 training programmes, simultaneously achieving actual 25,522 training mandays. In the remaining four months of FY 2013-14 approximately 100 more training programmes will be conducted and 12,000 additional mandays are to be achieved.

A special industry initiative for the youth of Jammu and Kashmir was launched on 20.11.12 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. This year 73 candidates are expected to join this training starting from first week of January, 2014

PMI conducted a customized International Training Programme for Rural Electrification Corporation on "Global Best Practices in Power Sector" during 01-10 July, 2013. The programme was conducted at 3 locations i.e. PMI-Noida, Torino-Italy and Paris-France.

One National level Conference on Knowledge Management-Best Corporate Practices was organized at Goa during 23-25 October, 2013. Apart from NTPC participants, 11 other organizations also took part in it.

PMI imparts hands-on training to participants from power utilities on supercritical technology through the 660 MW simulator. So far 450 Power Plant Professionals have been provided training since its inception.

The M.Tech programme with IIT Delhi and Advanced Management Programme with ASCI, Hyderabad continued during 2013-14 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 08 new ITIs near its power stations. Cumulatively, 14,976 persons have been benefited by this initiative.

14.0 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 and sale of such power bundled with the power sourced from NTPC coal power stations to Distribution Utilities under Phase-I of JNNSM. Under the Mission, Power Purchase Agreements with 78 projects for around 1000 MW capacity have been entered into and Solar Projects of Capacity 548 have been commissioned under JNNSM Phase-I so far. This includes 498 MW of Solar PV Projects and 50 MW of Solar Thermal Project. The balance capacity of Solar Thermal Projects is likely to be commissioned in next two years. This solar power bundled with power from equivalent capacity out of unallocated quota of NTPC coal power stations is presently being supplied to Discoms / Utilities of Rajasthan, Maharashtra, Punjab, Andhra Pradesh, West Bengal , Assam, Odisha, Uttar Pradesh, Tamilnadu, Karnataka and DVC.
- **Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY):** Work is currently going on in five states namely Odisha, West Bengal, Chhattisgarh, Jharkhand & Madhya Pradesh for electrification under RGGVY. Out of the present scope of 14,735 Un-electrified/ De-electrified (UE/DE) villages, 14,477 villages have been energised and 26.14 Lakh Below Poverty Line (BPL) connections have been provided out of the present scope of 26.43 Lakhs BPL connections.

  It is expected that 14,695 villages will be energized and 26.30 Lakhs BPL connections will be provided by 31.03.14.
- **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 8 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 each in Himachal Pradesh, Jharkhand & Madhya Pradesh.
- **5 Km. Electrification Scheme:** NTPC/NESCL has awarded eight projects for the electrification in 5 km areas around NTPC Power stations namely Talcher Thermal Power Station, Talcher Super Thermal Power Station, Kahalgaon Super Thermal Power Station, Feroze 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.

  Out of these 8 projects, physical work has been completed in Singrauli and Kahalgaon and balance 6 projects work is in advance stage of completion and is expected by March 2014.

  Consequent to the withdrawal of 5 km scheme vide MoP order no. 44/7/2010-re dated 25.03.13, balance 21 projects were not taken up for implementation

15.0 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 is the only PSU, First in large organizations, 1st in energy, oil and gas industry amongst the Best Companies to Work for in India. NTPC has been ranked first amongst PSUs,

1st amongst large organizations (over 10000 employees) and 1st in energy and oil and gas industry sector amongst India's Best Companies to Work For- 2013 by The Great Place to Work Institute. NTPC has continuously been part of the Best Workplaces List for the last nine years and has been consistently amongst top performers. NTPC's people practices are rated among best in the country.

- Dr. Arup Roy Choudhury, CMD, NTPC received the 'BT-Star Award 2013 given to NTPC for Excellence in Human Resource Management.
- NTPC has been awarded with the prestigious Energize Award 2012-13 as the "Energizer Company of the Year".
- NTPC was conferred with Indira Gandhi Rajbhasha Award.
- NTPC limited has been given Jury Award for 'Lasting Impact on Indian Economy' at the PSU Awards- 2013.
- NTPC has been conferred three Awards by the world HRD Congress & Star group at the 4th Asian's Best Employer Brand Awards held at Singapore on 31.07.2013.
- The company has been given Award for Talent Management, Award for Excellence in HR through Technology and Asian's best employer Brand Award (RANK 14th).
- NTPC was awarded The Education Excellence Award in its excellence and expertise in technical areas. The "EDUCATION EXCELLENCE AWARDS – 2013"is hosted by the Associated Chambers of Commerce and Industries (ASSOCHAM) & The Education Post.
- NTPC has been recognized #1 in Global D&B rating conducted by Dun & Bradstreet Information Services India Private Ltd. This rating has been given for the highest level of credit worthiness of the Company.
- NTPC has been come out as India's most admired company in a survey conducted by Hay Group in collaboration with Fortune magazine in the country. The listing has been prepared through first of its kind peer ranking methodology.
- NTPC conferred "IEI Industry Excellence Award 2012" in the category A of Manufacturing and Processing for overall business excellence and industry practices.
- NTPC Limited was awarded the Pride of India award for its leadership and contribution to the power sector.
- NTPC SAIL Power Company Pvt. Ltd. (A Joint Venture of NTPC and SAIL) has been conferred the award for Best HR Strategy in Line with Business by World HRD Congress. NSPCL was recognized for the strategic alignment of its HR Polices with the Company's Vision and working on "People First" Approach.
- NTPC Limited has been awarded as the most Efficient Maharatna-in Manufacturing for the year 2012.
- NTPC awarded as Business Leader in the Power Sector at the NDTV Business Leadership Awards.
- NTPC has been selected as one of India's Best Companies for Rewards & Recognition in 2013.
- NTPC has been honored as the top performing thermal Generator in the Power line Awards held in New Delhi.
- NTPC Ltd earned a ranking of 49 on overall global performance for the year 2013. In the Platts ranking NTPC Limited ranked 1 in Independent Power Producers and Energy Traders in Asia/Pacific Rim, 1 in Independent Power Producers and Energy Traders Globally and 10 in overall performance in Asia/Pacific Rim.
- NTPC has been awarded as the Best Power Developer in the country in the 6th India Power Awards organised by the Council of Power Utilities engaged in promoting excellence in Power and Energy Sector,
- NTPC LTD. - Singrauli Super Thermal Power Station "won the Award for Power Generation - "Thermal Power Sector" for recording highest PLF of 92.43% in 2012-13, while generating the highest of 8.09 MUs at "7th ENERTIA Awards 2013 - India's Award for Sustainable Energy & Power" held on 23.11.13 in New Delhi.
- NTPC Kayamkulam bagged 2nd prize in the Thermal Power Station Category (Gas fired) for Excellence in Energy Conservation at the National Energy Conservation Awards 2013 held in Vigyan Bhawan, New Delhi on 16th December, 2013.
- NTPC has been bestowed with Golden Peacock Award for Corporate Social Responsibility (CSR) 2012.
- Greentech CSR Award 2012' in Gold Category in Power Sector by Green tech Foundation
- International Star Award for Quality to NTPC PMI.

NTPC Group – Joint Ventures and Subsidiaries

Sl. No.	Name of the JV/Subsidiary Co. (Incorporated on)	Equity Holding as on 30.11.2013	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%	Owns 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-32.86% each IFIs-16.87% MSEB Holding Co.-17.41%	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 GoI has allocated full quantum of gas required for Power Blocks. 5 MTPA LNG terminal of RGPPL has been commissioned and being commercially utilised since April 2013.
3.	NTPC Tamil Nadu Energy Company Ltd.. (23.05.2003)	NTPC-50% TANGEDCO-50%	Setting up a coal-based power station of 1500 MW capacity, at Vallur, using Ennore port infrastructure facilities. Unit#1 & Unit#2 were commissioned on 28.03.12 & 28.02.13 and are under commercial operation since 29.11.12 & 25.08.13 Construction work for Unit # 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 2×110 MW Muzaffarpur Thermal Power Station. 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.
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 was formed on 26th September 2011 to undertake the development, construction, establishment, operation and maintenance of coal based electricity generating station of 2x250MW capacity at Trincomalee in Sri Lanka. After a prolonged discussion all major project agreements like Power Purchase Agreement, Implementation Agreement, Coal Supply Agreement, Land Lease Agreement etc. have been signed by the company with respective counter parties in Sri Lanka. The company is now proceeding further for implementation.
10.	Bangladesh India Friendship Power Company (Pvt.) Limited (31.10.2012)	NTPC-50% BPDB-50%	Company formed on 31.10.12 to undertake the development, construction, operation and maintenance of coal based electricity generating stations in Bangladesh. Feasibility of a 1320 MW imported coal based power project at Rampal (Khulna), in Bangladesh has been prepared and the Power Purchase Agreement and Implementation Agreement for the project have been signed on 20th April 2013. The project is under implementation.
(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 has been merged into NTPC w.e.f. 18.12.13.
2.	Anushakti Vidhyut Nigam Limited (27.01.2011)	NTPC-49% NPCI -51%	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. 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.

3.	Pan-Asian Renewables Private Limited (14.10.2011)	NTPC-50% ADB-25% Kyushu-25%	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. In the future, the JVC may Develop Projects outside India, provided always that the JVC shall only Develop Projects in Developing Member Countries. The First Business Plan of the Company is under preparation.
(C)	**Joint Ventures / Subsidiaries – Forward Integration**		
1.	NTPC Electric Supply Co. Ltd. (21.08.2002)	NTPC-100%	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. 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. Company is also making efforts to make foray into the distribution sector in collaborative manner with existing power distribution players. 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. Company is also executing GoI scheme for Supply of electricity in 5 Km area around NTPC Power Stations.
2.	NTPC Vidyut Vyapar Nigam Ltd. (01.11.2002)	NTPC-100%	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). 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. 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
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. In view of change in regulation and market scenario, NTPC derives no strategic advantage any more by investing in the power exchange. Accordingly, NTPC has decided to exit from NPEX.
(D)	**Joint Ventures / Subsidiaries – Strategic Alliance**		
1.	International Coal Ventures Pvt. Ltd. (20.05.2009)	NTPC-14.28% SAIL, CIL-28.58% 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)	RINL, NMDC-14.28% each 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 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 Kahalgaon 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. (09.12.1963)	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 30.11.2013)

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	-	1000	4260
6.	Rihand-I & II	UP	2000	-	1000	3000
7.	Kahalgaon-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	-	-	1000	1000
17.	Barh-II	Bihar	-	-	660	660
	Total (Coal)		**22395**	**6300**	**4320**	**33015**
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.	*RENEWABLE PROJECTS*					
1.	Andaman Solar PV	A&N	-	-	5	5
2.	Dadri Solar PV	UP	-	-	5	5
	Total (Renewable)		**-**	**-**	**10**	**10**
IV.	*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	220
6.	Jhajjar (APCPL)	Haryana	-	1000	500	1500
7.	Vallur (NTECL)	Tamil Nadu	-	500	500	1000
	Total (under JVs)		**1054**	**3310**	**1110**	**5474**
	GRAND TOTAL (I+II+III+IV)		**27404**	**9610**	**5440**	**42454**

Annexure-III

DETAILS OF ONGOING AND NEW PROJECTS OF NTPC AS ON 30.11.2013

Sl. No.	Name of the project (Fuel)/State	Capacity (MW)
A	***Ongoing projects***	
1	Bongaigaon (Coal)/ Assam	750
2	Mouda-II (Coal)/ Maharashtra	1320
3	Vindhyachal-IV & V (Coal)/ Madhya Pradesh	500
4	Barh-I & II (Coal)/ Bihar	2640
5	Koldam (Hydro)/ Himachal Pradesh	800
6	Tapovan Vishnugad (Hydro)/ Uttarakhand	520
7	Kudgi-I (Coal)/ Karnataka	2400
8	Solapur (Coal)/ Maharashtra	1320
9	Lara (Coal) / Chattisgarh	1600
10	Gadarwara (Coal) / Madhya Pradesh	1600
11	Unchahar (Coal) / Uttar Pradesh	500
12	Singrauli CW Discharge HEPP (Small Hydro)/ Uttar Pradesh	8
13	Ramagundam Solar PV / Andhra Pradesh	10
14	Faridabad Solar PV / Haryana	5
15	Unchahar Solar PV / UP	10
16	Talcher Solar PV / Odisha	10
17	Rajgarh Solar PV/ Madhya Pradesh	50
18	Singrauli Solar PV / UP	15
19	Lata Tapovan (Hydro)/ Uttarakhand (by subsidiary NHL)	171
20	Vallur Phase-II (Coal)/ Tamil Nadu - JV with TNEB	500
21	Nabinagar (Coal)/ Bihar - JV with Railways	1000
22	New Nabinagar (Coal) / Bihar - JV with BSEB	1980
23	Muzaffarpur Exp. (Coal)/ Bihar - JV with BSEB	390
24	Meja (Coal)/ Uttar Pradesh - JV with UPRVUN	1320
	Sub Total - A	**19419**
B.	**Projects for which Main Plant bids have been received/ invited**	
1	Tanda-II (Coal)/ Uttar Pradesh	1320
2	Darlipalli-I (Coal)/ Odisha	1600
3	North Karanpura (Coal) / Jharkhand	1980
4	Rammam-III (Hydro)/ West Bengal (by subsidiary NHL)	120
5	WEP Maharashtra (Renewable)	40
6	WEP Karnataka (Renewable)	40
	Sub Total - B	**5100**

C.	**Projects for which FR/ DPR approved**	
1	Khargone (Coal) / Madhya Pradesh	1320
2	Singrauli-III (Coal) / Uttar Pradesh	500
3	Talcher TPS Exp. (Coal) / Odisha	1320
4	Gajmara-I (Coal) / Odisha	1600
5	Gidderbaha (Coal)/ Punjab	2640
6	Bilhaur (Coal)/ Uttar Pradesh	1320
7	Barethi-I (Coal) / Madhya Pradesh	2640
8	Ramagundam-IV (Coal) / Andhra Pradesh	1320
9	RGCCPP-II (Gas)/ Kerala	1050
10	Badarpur CCPP (Gas)/ Delhi	1050
11	Ratnagiri Expansion (Gas)/ Maharashtra - JV with GAIL, MSEB, IFIs	2100
12	Kawas CCPP-II (Gas)/ Gujarat	1300
13	Jhanor Gandhar CCPP-II (Gas)/ Gujarat	1300
14	Kolodyne-II (Hydro) / Mizoram	460
15	Guledagudda (Wind)/ Karnataka	100
16	Ramakkalmedu Ph.-I (Wind)/ Kerala	20
17	BIFPCL JV Khulna (Coal) / Bangladesh	1320
18	TPCL JV Trincomalee (Coal) / Sri Lanka	500
	Sub Total - C	**21860**
	GRAND TOTAL A+B+C	**46379**

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 at present has power stations aggregate to 5747 MW (including JVs) of installed capacity in operating and has six projects under construction with total installed capacity of 4050 MW. Amongst this under construction projects, three Units of 60 MW each of Uri-II Project have been commissioned. Remaining one unit (60MW) is likely to be commissioned in Dec'13. One more project (Parbati-III of 520MW) is scheduled to be commissioned by the end of financial year.

Projects under Operation

NHPC has so far commissioned 18 hydroelectric projects with an aggregate installed capacity of 5747 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	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	Chutak	J&K	44
15	TLDP-III	WB	132
16	Nimoo Bazgo	J&K	45
17	Indirasagar (JV)	Madhya Pradesh	1000
18	Omkareshwar (JV)	Madhya Pradesh	520
		Total	**5747**

Besides, three Units of 60 MW each out of 4 Units of Uri-II HEP (240MW) have also been commissioned.

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 2013-14.

Power STATION	Installed CAPACITY	ACTUAL GENERATION UPTO 30.11.2013 (Including Auxilliary Consumption and Transformation loss)	LIKELY TO BE GENERATED IN BALANCE PERIOD i.e. DEC/13 to MAR'14	TOTAL EXPECTED GENERATION DURING 2013-14
BAIRA SIUL	180	502	114	616
LOKTAK	105	480	121	601
SALAL	690	2712	338	3050
TANAKPUR	94.2	354	34	388
CHAMERA -I	540	1976	278	2254
URI	480	1953	550	2503
RANGIT	60	294	54	348
CHAMERA-II	300	1218	197	1415
DHAULIGANGA	280	282	5	287
DULHASTI	390	1821	268	2089
TEESTA-V	510	2155	168	2323
SEWA-II	120	356	109	465
CHAMERA-III	231	857	103	960
Chutak	44	20	16	36
TLDP-III	132	180	33	213
NIMMO BAZGO	45	33	37	71
URI-II	180	119	331	450
PARBATI-III	520	0	46	46
TOTAL	**4901**	**15314**	**2802**	**18115**

NOTE

Anticipated generation from Dec'13 to Mar'14 has been considered keeping in view present trend of generation in Nov'13.

PLANT AVAILIBILTY FACTOR OF NHPC POWER STATIONS.

Name of POWER STATION/ PROJECT	PLANTAVAILA-BILITY FACTOR UPTO NOV'13	LIKELY PLANT AVAILABILITY FACTOR IN BAL-ANCE PERIOD i.e. DEC'13 TO MAR'14 (ANTICIPATED)	TOTAL EXPECTED PAF DURING 2012-13
BAIRA SIUL	99.5	68.7	89.3
LOKTAK	90.5	83.1	88.0
SALAL	81.9	33.1	65.7
TANAKPUR	73.4	15.8	54.3
CHAMERA -I	99.8	86.1	95.2
URI	78.4	49.3	68.8
RANGIT	99.8	80.6	93.4
CHAMERA-II	101.7	86.1	96.5
DHAULIGANGA	31.5	8.5	23.9
DULHASTI	100.0	86.1	95.4
TEESTA-V	97.2	48.5	81.1
SEWA-II	101.4	76.0	93.0
CHAMERA-III	93.5	72.0	86.4
Chutak	62.5	22.8	49.3
TLDP-III	39.1	29.5	35.9
NIMMO BAZGO	100.0	29.8	76.7
URI-II	98.1	56.2	64.2
PARBATI-III	0.0	5.0	1.7
TOTAL	**86.3**	**56.8**	**68.1**

Projects under Construction

NHPC is presently engaged in construction of 6 hydro projects with aggregate installed capacity of 4050 MW which includes 3 units of Uri-II Project commissioned till date. Construction activities in ongoing projects viz., Parbati-II, Teesta Low Dam-IV, Kishanganga etc is in full swing. However, due to ongoing protests by various pressure groups in Assam against the construction of project, there is stoppage of works in Subansiri Lower HE Project. List of NHPC projects under construction is as below:-

S.No.	Project	State	Capacity (MW)
1	Uri-II	J&K	240*
2	Parbati-II	H. P.	800
3	Subansiri Lower	Ar. P./ Assam	2000
4	Parbati-III	H. P.	520
5	Teesta Low Dam-IV	W. B.	160
6	Kishanganga	J&K	330
		Total	**4050**

*3 Units of 60 MW each out of total 4 Units of Uri-II commissioned till Nov-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 project have been accorded by the concerned agencies. PIB meeting held on 23.10.2013 has recommended the proposal for taking up the construction of project after Supreme Court clearance & CCEA. Draft material for CCEA submitted to MOP on 12.12.2013. As per orders of Hon'ble Supreme Court dated 13.08.2013, MoEF has been directed to examine, as to whether the proposed 24 projects (as per WII report) are causing significant impact on the biodiversity of Alaknanda and Bhagirathi Rivers and reports to be submitted within a period of three months. Kotlibhel Stage -1A, is appearing in the list of 24 proposed hydropower projects. MoEF has constituted a 17 member committee vide order dated 15.10.2013 with the direction to submit the final report latest by 14.01.2014 on the impact of the proposed hydropower projects in Alaknanda-Bhagirathi river basin.

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. Ministry of Defence has also accorded Defence Clearance.

With regard to Forest Clearance, Forest proposal for diversion of 5022.84 ha forest land was discussed by Forest Advisory Committee (FAC) of MoEF during its meeting held on 12.07.2013 , however, the project has been recommended for rejection of forest clearance. NHPC, MOP and State Government took up the matter with MoEF for reconsideration of forest proposal by FAC for accord of forest clearance. MoEF vide letter dated 25.11.2013 has stated that NHPC may explore the possibility to reduce the requirement of forest land for the project and submit a revised proposal to MoEF for further consideration. Various alternatives of project parameters for reducing the land requirement are being examined / studied by NHPC.

With regard to Environment Clearance, after successful public hearings for the project in March 2013, NHPC vide letter dated 27.05.2013 to Ministry of Environment & Forests (MoEF) applied for environmental clearance. Expert Appraisal Committee (EAC) of MoEF discussed the case during its meeting held on 23.09.2013. EAC has raised issues related to flora & fauna, fish species, protection of cultural identity of tribal community, reassessment of environmental flow, revision of cost of various EMPs etc. To address these issues, a study has been awarded to WAPCOS Ltd on 12.11.2013, with a period of 3 months for completion of same i.e. by Feb, 2014.

Teesta-IV (520 MW) Sikkim:

CEA in May'10 accorded concurrence to the project. Ministry of Defence has accorded Defence Clearance vide letter dt. 11.01.2011. MOEF has accorded the Stage-I forest clearance on 26.02.2013.

For environment clearance the project was discussed by EAC in its meeting held on 08.09.2012, 24.11.2012 and 02.02.2013. As per Minutes of Meeting held on 02.02.2013, EAC has recommended Teesta-IV for environmental clearance. Formal environmental clearance letter is awaited. Project is situated out side any National Park/ Sanctuary but falls within 10 km of National Park/ Sanctuary. Accordingly the proposal for clearance from Standing Committee (SC) of NBWL was discussed in its meeting held on 20.03.2013. Project was listed for discussion in the meeting of SC of NBWL held on 04.09.2013 but did not come up for discussion during the meeting. The project is likely to be discussed in the next meeting of SC of NBWL. Draft material for Cabinet Committee on Investment for Environmental & Wild life clearance has been submitted to MOP on 17.12.2013.

Tawang-I (600 MW) and Tawang-II (800 MW), Arunachal Pradesh:

CEA has accorded concurrence to Tawang-II HEP (800 MW) vide on 22.09.2011 and to Tawang I (600 MW) HEP vide on 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. Forest proposals of Tawang-I and Tawang-II for diversion of 187.20 ha and 116.62 ha forest land, respectively were discussed by Forest Advisory Committee (FAC) of MoEF in its meeting dated 02.04.2012. FAC desired that State Govt. should undertake a cumulative biodiversity study of Tawang basin. Ministry of Power (MoP), State Govt. and NHPC requested MoEF that forest proposal might be reconsidered in FAC for accord of forest clearance (stage-I) delinking the biodiversity study of the whole basin and the basin study may be taken up as a follow-up study. There after Forest proposals of both projects were again discussed by FAC on 17th and 18th September 2012. But, FAC re-emphasized for the basin study. However, in response to NHPC request, forest proposal of Tawang-II was again discussed by FAC in its meeting dated 22.01.2013. FAC has recommended for accord of forest clearance (Stage-I) to the project, with a special condition that cumulative biodiversity study of Tawang Basin study shall be completed and before grant of forest clearance (Stage-II). In compliance to FAC, basin study covering all aspects desired by FAC has been awarded by State Forest Deptt., Govt. of Arunachal Pradesh to NEHU, Shillong. The study is in progress and scheduled to be completed by July 2014.

For issuance of forest clearance (Stage-I) letter of Tawang-II Project, the proposal is pending for approval in MoEF since 18.04.2013. Draft material for Cabinet Committee on Investment for Forest clearance (Stage-I) has been submitted to MOP on 13.12.2013.

JOINT VENTURE 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 share holding 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. Environmental clearance accorded by MoEF on 16.01.2013. Defence Clearance accorded on 26.08.2013.

Updated DPR has been submitted to CEA on 23.09.2013 for vetting.

Pakal Dul and other hydroelectric projects, aggregate 2120 MW in J&K.

Pakal-Dul and other hydroelectric projects in the Chenab River Basin of J&K with an aggregate installed capacity of 2120 MW are to be developed through Joint Venture Company "Chenab Valley Power Projects (Private) Limited" amongst JKSPDC, NHPC Ltd. and PTC with share holding 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 accorded by concern authorities. MOP vide letter dated 30.11.2012 circulated PIB Memo to concerned Ministries/ Departments for furnishing the comments on proposal. After incorporating the replies to the observations of appraising agencies, PIB meeting was held on 08.05.2013. MOF vide ID dt. 09.05.2013 had issued the recommendations of the PIB. Reformulate submission/ proposal incorporating recommendation of the PIB has been submitted by NHPC to MOP vide letter dt.19.07.2013. MOP vide letter dt. 30.07.2013 has circulated the PIB note to various Ministries/ Deptts. The PIB was scheduled to be held on 29.08.13 but the same was cancelled. CEA has cleared the cost estimate amount for ₹ 8814.25 Crores (March'13 PL) vide U.O dt. 31.10.2013. NHPC vide letter dt. 11.11.2013 has submitted the supplementary note to PIB memo, to MOP. MOP vide O.M dt. 16.12.2013 circulated the supplementary note to concern ministry.

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. FAC of J&K, in a meeting held on 22.08.13, had agreed to the Forest land proposal and intimated that the Forest Clearance will be accorded. Formal communication is awaited. EIA & EMP Reports were submitted on 27.07.2013 to J&K State Pollution Control Board and Public Hearing held on 30.10.2013 at Kiru, Kishtwar for issue of Environment Clearance. MOM is awaited.

Kwar (520MW)

DPR of the Project with revised installed capacity of 560 MW was submitted to CEA on 25.07.2012 and is under appraisal. The Forest Proposal stands submitted to PCCF, Govt. of J&K for accord of Forest Clearance. EIA & EMP Reports submitted on 07.08.2013 to J&K State Pollution Control Board and Public Hearing held on 28.10.2013 at Kwar Kishtwar. MOM is awaited.

Tipaimukh (1500 MW), Manipur:
MOU amongst NHPC, SJVNL and Govt. of Manipur has been signed in April 2010 with share holding 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 for project accorded by MoEF on 24.10.2008 in favour of NEEPCO is required to be transferred in favour of the JVC after its formation. For Forest land, Project has been discussed by FAC in its meeting on 11.07.2013. FAC has not recommended the grant of Forest clearance.

Projects under FR/ DPR Preparation:
NHPC at presently is engaged in 3 projects aggregating to 1350MW for preparation of DPR. These projects may reap benefit during 13th/ 14th plan period. These projects are Bursar (1020 MW) J&K, Dhauliganga Intermediate (210 MW), Uttarakhand and Gori Ganga IIIA (120 MW), Uttarakhand.

However, four projects (Lachen: 210MW, Chungarchal: 240MW, Garba Tawaghat: 630MW & Kharmoli Lumti Tulli: 55MW) aggregating 1135MW are held up due to environmental issues and may be taken up for DPR preparation once the related issues are solved.

NHPC Other Joint Venture Initiatives:
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.

National Power Exchange (NPEX): Equity share of NHPC, NTPC, and PFC & TCS in NPEX is 16.67%, 16.67%, 16.66% & 50% respectively. The NPEX was 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. CERC has granted in principle approval to NPEX.

National High Power Test Laboratory Private Limited (NHPTLPL): A Joint Venture formed in May-09 amongst NTPC, NHPC, PGCIL & DVC having share holding of 25% each. NHPTL has authorized capital of ₹ 120 crores and paid capital of ₹14.875 crores.

Other Initiatives by NHPC
JV with DGPC, a public sector undertaking of RGOB for implementation of CHAMKHARCHHU –I PROJECT (770 MW) in Bhutan is in process. Talks are on with MOP/MEA/RGOB/Indian

45 MW Nimoo Bazgo Hydro Power Station (Jammu & Kashmir)

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. Draft Inter-governmental agreement likely to be signed in January, 2014.

NHPC holds 4.17% of paid-up capital of PTC India Limited.

COMMERCIAL PERFORMANCE OF THE CORPORATION (UP TO 30.11.2013)

Against the MoU sales target of ₹ 5214.00 crores (V. Good)) for the year 2013-14, the actual sales up to 30.11.2013 is ₹ 3303.00 crores(Provisional) excluding water usages charges, RLDC charges & UI charges etc. NHPC achieved Cumulative Billing of ₹ 4551.09 Crs. and cumulative realization of ₹ 4382.69 Crs. upto 30.11.2013 during the year 2013-14. Outstanding dues for more than 60 days are ₹ 1011.00 Crs as on 30.11.2013, in respect of PDD, J&K (₹ 846.31 Crs.), UPPCL, Uttar Pradesh, (₹ 66.82 Crs.), HPSEB, Himachal Pradesh, (₹ 26.88 Crs.), JSEB, Jharkhand, (₹ 19.40 Crs.), MeECL, Meghalaya (₹ 12.32 Crs.), BSEB, Bihar (₹ 12.16 Crs.), BRPL, Delhi (₹ 11.71 Crs.), APDCL, Assam (₹ 5.07 Crs.), JDVVNL, Rajasthan (₹ 3.80 Crs.), AVVNL, Rajasthan (₹ 2.38 Crs.), BYPL, Delhi (₹ 2.25 Crs.) and DPCL, Delhi (₹ 1.92 Crs.)

CONSULTANCY

NHPC is providing consultancy in various fields of hydro power viz. River basin studies, survey work, design & engineering , geological studies, geotechnical studies, contract management, construction management, equipment planning, underground construction, testing commissioning operation & maintenance etc. to leading organizations globally. NHPC is registered with World Bank and Kuwait Fund for Arab Economics Development as a consultant in the area of hydro power. Major consultancy assignments are from central and state government agencies in India and neighbouring countries like Bhutan & Myanmar.

The organizations to whom consultancy services are currently being given include A&N Administration, Ministry of External Affairs, Deptt. of Energy, Royal Govt. of Bhutan, PGCIL, Ethiopian Electric Power Company (EEPCo), Ethiopia, Mangdechhu Hydroelectric Power Authority (MHPA), Chenab Valley Power Projects Limited (CVPP), Loktak Downstream Hydroelectric Corporation Limited (LDHCL).

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, LAHDC, Northern Railways, NTPC, REC, SJVNL, THDC, JKPDC.

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 9310 Un-electrified/ De-electrified villages, 19882 Partially Electrified (PE) villages and service connections to 20.74 lacs BPL households.

Against this scope, During 2013-14(up to 30.11.2013), NHPC has completed 9128 Un-electrified/ De-electrified villages and 18737 Partially electrified villages and provided service connections to 18.42 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 (PMSGY). These roads will also be maintained by NHPC for five years.

Under this scheme, 758 roads of 3228.82 km. with a cost of ₹ 1728.60 crores have been cleared by Ministry of Rural Development, GOI. As on 30.11.2013, 722 roads of 3057.9 km. length have been completed.

CHAPTER - 20

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 assigned to it for evacuation of power from central sector projects, system strengthening scheme etc., is also responsible for Establishment of Regional & National Power Grids and operates (Through POSOCO, a fully owned subsidiary of POWERGRID) to facilitate transfer of power within and across the regions with Reliability, Security and Economy on 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 the Capital Market through an IPO and subsequently through Follow-On Public Offer issues in FY 2010-11 & 2013-14. Presently, public holding in the Company is 42.11% and the balance 57.89% 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. Based on the approved score the Company is expected to receive the **"MoU Excellence Award"** for FY 2010-11, FY 2011-12 & FY 2012-13.

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.

The Company had been conferred with the **"3rd Rajeev Gandhi Excellence Award 2011"** under the **'Best Power Company of the Year'** Category.

The Company has also been conferred with the 4th DSIJ PSU Awards 2012 for **"Fastest Growing Navratna in non-manufacturing category"** by Dalal Street Investment Journal.

The Company is certified for Integrated Management System as per Publicly Available Specification, **PAS 99:2006** integrating requirements of **ISO 9001:2008** (Quality Management System), **ISO 14001:2004** (Environment Management System) and **OHSAS 18001:2007** (Occupational Health & Safety Management System). All the Establishments of the Company have been audited for its Social accountability systems & certification for Social Accountability Standard, **SA 8000:2008.**

As the end of November 30, 2013, the Company owns & operates a transmission network **around 1,02,600 ckt. kms.** of transmission lines along with **173 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 about 50% of total power generated in the country through its transmission network.

During FY 2012-13, availability of **99.90%,** was achieved for the transmission system. Also no. of trippings per line was restricted to 0.58. Presently, **49** sub-stations of the Company are being operated remotely and many new sub-stations are being designed for remote operation. For centralized remote monitoring, operation & control of sub-stations "National Transmission Asset Management Centre" is under implementation and first phase is nearing completion which will further improve the efficiency and transparency in the operation of the transmission system in the country. The Company has created "Maintenance Service Hubs" where specialist manpower is pooled into a hub for undertaking the maintenance of number of substations within a close range.

The Company has recorded an impressive financial performance during FY 2012-13, achieving a turnover of ₹ **13,329 Crore** and Net Profit of ₹ **4,235 Crore** as compared to ₹ **10,785** Crore and ₹ **3,255 Crore** respectively during FY 2011-12. The gross asset base of the Company has been enhanced to ₹ 80,600 Crore from ₹ **63,387 Crore** in 2011-12, an increase of about **27.2%.**

At the end of FY 2012-13, the company has a Networth of ₹ 26,213 Crore and Capital Employed of ₹ 52,958 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 16.15% in 2012-13.

During half yearly period of FY 2013-14 (upto September 30, 2013), company achieved a turnover of about ₹ 7,738 Crore (Unaudited) and Net Profit of ₹ 2,280 Crore (Unaudited). Gross assets base of the company have grown to ₹ 87,107 Crore (Unaudited) till September 30, 2013.

The company made an investment of ₹ **20,037 Crore** during FY 2012-13 for implementation of various transmission projects. The requisite funds were mobilised from domestic market and proceeds of ongoing loans from multilateral funding agencies, The World Bank and Asian Development Bank were utilised, besides internal resources.

During FY 2013-14, out of envisaged investment of ₹ 20,000 Crore, an investment of ₹ 14,190 Crore (Unaudited) has been made till November, 2013 for implementation of various projects.

In Financial year 2012-13 PGCIL has added 6,998 Ckm against the targets of 6,367 Ckm and 33,680 MVA of transformation capacity against the target of 10,830 MVA in the transmission system. During financial year 2013-14, PGCIL has achieved 3,829 Ckm against the planned transmission length of 7,500 Ckm upto November 2013. Similarly, upto November 2013 they have achieved 17,310 MVA of transformation capacity against the target of 20,000 MVA for the year 2013-14.

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 the international arena, Company is presently working for client in **14 countries** viz. Nepal, Bhutan, Bangladesh, Afghanistan, Sri Lanka, Myanmar, UAE, Nigeria, Ethiopia, Kenya, Tajikistan, Congo, Pakistan and Kyrgyz Republic.

On the domestic front, during FY 2012-13, the Company has bagged **26** new assignments aggregating to a project cost of **₹ 715 Crore.**

GRID MANAGEMENT

The grid management function in the country is continued to be looked after by Power System Operation Corporation Limited (POSOCO), a fully owned subsidiary of POWERGRID, with its state-of-the-art Unified Load Despatch & Communication facilities. These facilities are being updated continuously to further improve quality and economy in operation of power systems besides improving data availability, visibility and transparency.

POWERGRID's strong transmission network and modernised RLDCs have facilitated about **51 billion units (BUs)** of inter-regional energy transfer across the country during FY 2013-14 till Nov 30, 2013 meeting more demand in energy deficit regions. Further, **22,300 transactions** involving about **58 BUs of energy** were approved under Short Term Open Access (STOA) during the FY 2013-14 till November 30, 2013.

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. The Company has successfully commissioned the world's highest transmission voltage of **1200 kV Ultra High Voltage AC (UHVAC)** (test line) at its National Test Station, Bina, Madhya Pradesh in December, 2012. Presently, field tests are under progress. Further, for boosting its research and technology development portfolio the Company is setting up an Advanced Research and Technology Centre at Manesar, Gurgaon comprising of various state of the art laboratories.

Further, the Company is taking pioneering steps in bringing Smart Grid technology in all facets of power supply value chain in the country and established first Smart Grid Control Center in the country at Puducherry through open collaboration with more than 70 organizations & academic institutions. Further, the Company has executed Wide Area Measurement System (WAMS) pilot project and presently about 40 nos. Phasor Measurement Units (PMUs) are in operation, facilitating dynamic real time measurements and better visualization of power system which are useful in monitoring safety & security of the grid along with enhanced situational awareness and taking control/corrective actions.

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 played 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. Under Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) cumulatively, till Nov. 30, 2013, infrastructure has been created for electrification of 69,682 villages and service connections to about 35.77 Lakh BPL households have also been released.

LEVERAGING HUMAN CAPITAL TO ACHIEVE EXCELLENCE

Company believes that its human resource consisting of about 9,325 employees (as on November 30, 2013) 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. The Company's Human Resource Development Interventions are

directed towards learning new competencies and to reinforce good work practices & change workplace behaviour as per the Organizational needs.

Through the online Training Need Assessment process, the Company has been able to link the development plans of employees as per the business requirement which helps the organization to keep updating the competencies of employees to meet current and future requirement. In order to prepare employees for growing competitive business environment, POWERGRID conducted series of certified Project Management & Risk Management programmes, Latest survey techniques & PLS CADD, Networking Skills, Certification programmes for Hands on training on Transformer & Reactor.

For enabling senior executives in their career advancement, Transformational Leadership Programme (TLP) and Transformation Management Programmes (TMP) were conducted at reputed institutions. POWERGRID also conducted Programmes on Women Empowerment and Empowerment of employees by self-growth (for reserve category employees) and special programme for differently abled employees. POWERGRID trained additional group of executives for going through the process of National Certification Examination for Energy Auditors and subsequent accreditation by Bureau of Energy Efficiency (BEE). For overall skill development in the country particularly in the area of Power Transmission Line Construction, Capacity Building Programmes are being conducted with the help of Transmission Line (TL) construction contractors under Public Private Partnership (PPP) mode.

POWERGRID has signed Memorandum of Understanding (MoU) with premier educational Institutions such as IITs, IIMs, IIFT, ISB, MDI, Gurgaon etc. to leverage each other's capability and resources in areas of pedagogy, training, research and innovation in systems, process etc.

POWERGRID has been conferred **Award for Corporate HR Excellence in Power Sector** by **7th ENERTIA Awards 2013,** for being India's best place to work for Power Professionals and Power Engineers and **"e-India PSE 2013 Award"** for its "Online Human Resource Development Management System".

As the part of Training Consultancy during the FY 2013-14, training has been imparted to employees of Maharashtra State Electrciity Transmission Co. Ltd , Powergrid Company of Bangladesh Ltd. (PGCB), Bhakra Beas Management Board (BBMB) and Damodar Valley Corporation.

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

With the ever increasing threat of Climate Change, environmental degradation due to increasing pollution and growth is a major area of concern today. Therefore, more than ever before, environment management and its conservation has now assumed paramount importance, not only for all the organizations but for all the countries over the world, be it a developed or developing. Fortunately, POWERGRID's contribution towards environmental degradation is almost negligible. Still, we strongly believe that conservation and management of the environment is an essential part of development. Understanding the catastrophic impact of environmental degradation, POWERGRID is the first company who has evolved "Environmental and Social Policy & Procedures" (ESPP) in 1998 to take care of environmental and social issues arising out of its projects.

POWERGRID as a responsible corporate entity realizes its obligations and commit itself to goal of sustainable development. Sustainable development is one such opportunity which allows us to consider businesses beyond national bulk electricity transfers. With the IMS/ESPP in place, POWERGRID is quite nicely placed to explore opportunities that separate it from other utilities-both state and privately run-on the plank of environmental management and social development.

POWERGRID, the leader in Sustainability Reporting in the Indian power sector, released its second biennial sustainability report based on internationally acclaimed/accepted GRI-G3 Guidelines. The report is externally assured by M/s TUV Rheinland with GRI application level "B+ following International Standards like Accountability, UK Standard "AA1000:2008 APS and AA1000:2011 SES. This report apart from show-casing POWERGRID's achievements gives all stakeholders a clear picture of our contributions to sustainable development through its activities.

POWERGRID has constantly strived to be a responsible corporate citizen by utilizing technological resources to optimize route alignment for the transmission corridor with a specific emphasis on avoidance of Forest, National Parks / Wildlife Sanctuaries and other ecologically sensitive and biologically diverse areas. During the construction of 765 kV S/C Indore-Dahod line, the Great Indian Bustard Sanctuary was completely avoided by increasing the line length even as the proposal for clearance was in very advance stage. Likewise POWERGRID has also avoided the Achanakmar-Amarkantak Biosphere Reserve in our 765 kV D/C Dharmajaygarh-Jabalpur line.

As part of Sustainable Development, POWERGRID has taken the initiative to conserve precious water resources through Rain

Water Harvesting system which is now an integral part of every new substation design. Every Substation being constructed now is being provided with rain water harvesting systems. Recently, a "Waste Paper Recycling" plant has been commissioned in the premises of its 400/220 kV GIS Substation at Gurgaon. The waste paper generated from POWERGRID Corporate Office is now utilized for making company's letterheads, visiting cards, envelopes, file / folders, D.O. pads etc. with the aim of phasing out procurement of paper in due course of time. Further, POWERGRID is constructing the National Transmission & Asset Management Centre (NTAMC) building in Manesar Substation, Gurgaon as per Green Rating for Integrated Habitat Assessment (GRIHA) norms and has already registered with Association for Development and Research of Sustainable Habitats (ADaRSH) for Green Rating.

POWERGRID is committed to the conservation of natural resources and has taken many initiatives in this regard. Land which has now become a scarce resource hence a plethora of issues arise during the land acquisition process for the construction of sub-stations. POWERGRID has constantly upgraded and improvised itself by investing in new technologies like Gas Insulated Switchyard (GIS) which requires less land area in comparison to the traditional Air Insulated Switchyard (AIS). Path breaking practices like Consent Award under LA, Act 1894 for substations in Durg, Hyderabad, Korba, Kotra etc. and Direct Purchase of private land have been undertaken in Padghe, Varanasi, Alipurduar etc. to ease / reduce the confrontations faced during land acquisition.

Corporate Social Responsibility

POWERGRID is of firm belief that beyond its shareholders; Business also has responsibility to a broader constituency that includes its key stakeholders - the people of the communities in which it operates. Moreover, there are evidences to suggest that companies with sound sustainability programs in all probability are better managed and able to deliver stronger financial performance. Continuing with this legacy we have taken many proactive measures in the field of Community Development, Livelihood generation through skill development, healthcare, education, plantation, sanitation etc. The Company has earmarked 1% of Profit After Tax (PAT) for the preceding year as non lapsable budget for CSR activities which shall be enhanced to meet the requirement of new legislation on CSR in due course of time.

The 'Corporate Social Responsibility & Sustainability Policy' has been formulated and being implemented with the objective to address the issue of Community Development in the neighbourhood areas around POWERGRID's operations. A Board Level Committee having three Functional Directors & four Independent Directors as its members, headed by CMD, has been constituted as pert the DPE guidelines. Standing Committee on CSR & Sustainability, comprising of senior level executives has also been constituted to study and recommend projects for the approval of Competent Authority in an open and transparent manner.

Various projects / schemes are being undertaken under Corporate Social Responsibility policy, over and above the statutory obligations, in various locations across India with the objective of need based Socio-Economic development of the weaker & deprived sections of Society. The unique feature of our endeavour is a predominant thrust on Backward Districts identified by Planning Commission for Backward Region Grant Fund (BRGF).

Besides various Infrastructural projects a dedicated Capacity Building programmes on Transmission Line Tower Erection, is being undertaken at four locations in the states of Assam, Maharashtra and Tamil Nadu with the aim on providing skill and employment to the eligible youth in the transmission industry. POWERGRID under its CSR initiative is also sponsoring 15 meritorious students from J&K coming from weaker/under privileged section for preparing them for admission to reputed Engineering Colleges of India in "Kashmir Super-30, Kashmir Centre".

To help victim of Natural calamities, POWERGRID has committed contribution of ₹ 5 Crore towards restoration of flood affected Kedarnath in Uttrakhand and also contributed ₹ 2.0 Crore to the Chief Minister Relief Fund, Odisha, for severe cyclonic storm "PHAILIN" in Odisha in October, 2013.

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 Infrastructure Provider Category – I (IP-I) Registration, National Long Distance (NLD) and Internet Service Provider (ISP) Category 'A' licenses. With its brand name POWERTEL, it offers services such as Domestic Leased Circuits (both annual and long term contracts), Internet Services, and Multi-Protocol Label Switching (MPLS). The Company owns & operates a telecom network of about 29,279 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 providing high speed, reliable and secure data communication network to various educational and research institutions across the country under the National Knowledge Network (NKN) project of Govt of India. Govt. of India is in the process of implementation of National Optic Fiber Network (NOFN) for providing connectivity to 2,50,000 Gram Panchayats in the country. POWERGRID has been nominated as one of the implementing agencies for this project and has been entrusted with the task of development and maintenance of the NOFN network in four states, namely Andhra Pradesh, Himachal Pradesh, Jharkhand and Odisha, covering about 35,791 Gram Panchayats in 1,769 blocks under 89 districts.

CHAPTER - 21

POWER FINANCE CORPORATION LTD.

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 re-classified 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 our 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 coordinator for the ITP schemes and implementation partner of DRUM. PFC also has operated GoI'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 has carved 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', 'National Power Exchange Limited' and PTC India Ltd.

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 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)
CARE	'AAA'	Highest Rating
International Rating (at par with 'Sovereign' rating)		
Moody's	Baa3	
Standard & Poor's	BBB-	
FITCH	BBB-	

2.4 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.

2.5 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.

2.6 High Networth

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 networth, 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.

2.7 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 (0.71% of Loan Assets) as on March 31, 2013.

2.8 Robust Appraisal Methodology

PFC has developed extensive knowledge and experience in the Indian power sector, and has 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.

2.9 ISO Certification

PFC's operations are 'ISO 9001:2008' certified and the initial certification was done in January 2010. 'ISO 9001:2008' Recertification has been done in January 2013 for another three years.

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 ₹ 2,472 Crore during the half-year ended 30.09.2013.

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 99.39% in respect of principal amount due during the year 2012-13.

3.3 In the FY 2012-13, PFC paid a dividend of ₹ 924 Crore which is 20.91% of Profit After Tax.

3.4 A snapshot of PFC's financial performance for the past 3 years is as under:

(₹ Crore)

FINANCIAL PERFORMANCE AT A GLANCE (LAST 3 YEARS)			
	2010-11	**2011-12**	**2012-13**
Sanctions	75,197	64,752	75,147
Disbursements	34,122	41,418	45,151
Profit Before Tax	3,544	4,242	5,967
Profit After Tax	2,620	3,032	4,420
Dividend	599	792	924

4.0 AWARDS & ACCOLADES

i. Received "India Pride Award" for the year 2012-13 in the category of "Special Recognition for contribution in Power Distribution" from Hon'ble Union Minister of Petroleum & Natural Gas" Dr. M. Veerappa Moily.

ii. Received 'Enertia Award 2012" in the category of "Best Power Financing Company" from Hon'ble Union Minister of New and Renewable Energy, Dr Farooq Abdullah.

iii. Received "India Power Award 2012" in the category of "Large Financial Institution" from Dr. M.R. Srinivasan, Member, India Atomic Energy Commission organized by Council of Power Utilities.

iv. Received "ICC PSE Excellence Award" in the category of "Best Human Resource Management" from Shri O.P. Rawat, Secretary, DPE, GoI. The Award was instituted by Indian Chamber of Commerce in association with DPE, Govt. of India.

v. Received "Dalal Street Investment Journal PSU Award 2012" from Shri Ajit Singh, Hon'ble Union Minister of Civil Aviation in the category of 'Mighty Masters – Largest Balance Sheet and Topline Non-Manufacturing Navratna".

5.0 OPERATIONAL HIGHLIGHTS

As on 30th September, 2013, PFC had sanctioned an amount of ₹ 27,425 Crore (excluding R-APDRP) as

compared to ₹ 41,732 Crore sanctioned during similar period of the last year (2012-13). An amount of ₹ 18,012 Crore was disbursed during the same period to State, Central and Private Sector entities, compared to ₹ 17,555 Crore disbursed during similar period in 2012-13. With this, cumulative sanctions of ₹ 4,31,472 Crore and disbursements of ₹ 2,72,128 Crore have been made by the Company as on 30.9.2013. PFC's growth potential is also reflected in the outstanding loan sanctions available for disbursement, which is ₹ 1,62,857 Crore as on 30.09.2013.

6.0 RESOURCE MOBILISATION

6.1 Domestic

PFC mobilized funds amounting to ₹ 24,767 Crore from the domestic market during FY 2013-14 till 30.11.2013. Out of the above, ₹ 20,534 Crore was raised through issue of unsecured/secured taxable/Tax Free bonds in the nature of debentures, ₹ 2,299 Crore by way of long/medium term loans from Banks/FIs, and ₹ 1934 Crore by way of issue of Commercial Paper and Short Term Loans.

6.2 External

During the FY 2013-14 (up to Nov, 2013), PFC could not raise foreign currency loan in the absence of availability of funds at competitive rates resulting from volatility in the foreign currency markets and higher forward rates due to Rupee depreciation. During the FY 2012-13, the Company had raised ECB of USD 500 Million through Syndicated loans.

7.0 NEW BUSINESS INITIATIVES

7.1 Establishment of Post Sanction Coordination Unit

The Post Sanction Coordination (PSC) Unit is primarily responsible for administering loans for private sector power projects where PFC is the Lead FI. It is dedicated to the needs of those private sector borrowers who have reposed faith in the services of the Corporation.

Despite the challenges being faced by the sector, the Unit has achieved disbursements of ₹ 3265 crore during the Financial Year 2012-13 and ₹ 3253 crore during the first two quarters of Financial Year 2013-14. The major projects to which disbursements were made during the period include RKM Powergen Pvt. Ltd., Indiabulls Realtech Ltd., GVK Ratle Hydro Electric Project Pvt. Ltd., Indiabulls Power Ltd., KSK Mahanadi Power Company Ltd., Ind Bharat Energy (Utkal) Ltd., Jal Power Corporation Ltd., Bhubaneshwar Power Pvt. Ltd., Lanco Amarkantak Power Ltd., Udupi Power Corporation Ltd., Parbati Koldam Transmission Company Ltd., East Coast Energy Pvt. Ltd., DANS Energy Pvt. Ltd. and others.

With an aim to give impetus to consortium lending operations, PSC is working towards harnessing the huge business potential offered by the power sector.

7.2 Power Exchange

PFC has invested ₹ 2.80 Crore (approx.) in the equity share capital of Power Exchange India Ltd. (PXIL), which is 6.08% of the paid up capital of ₹ 46.05 Crore as on 30.11.2012.

Apart from the above PFC, NTPC, NHPC and TCS have promoted 'National Power Exchange Limited' (NPEX) a company incorporated under the Companies Act, 1956, with an authorized capital of ₹ 50 Crore. PFC has invested ₹ 2.19 (approx.) Crore in the equity share capital of NPEX, which is 16.66% of the paid up share capital of ₹ 13.13 Crore (approx.). CERC has accorded in principle approval to NPEX for setting up of power exchange. The Company is yet to start its operation.

7.3 'PFC Green Energy Limited' (PFCGEL)

PFCGEL has been incorporated on March 30, 2011 as a wholly owned subsidiary of Power Finance Corporation Limited. The main objective of the Company is to provide financial support to renewable and non-conventional sources of energy, energy efficiency and conservation, equipment manufacture in the area of green energy, operation of fund for green energy, lease finance for green energy, renovation and modernization of green energy projects, finance schemes for revival/ betterment of green energy, undertaking evaluation of the performance of the schemes for which financial assistance is granted by the Company, assist pilot projects, CDM projects, consultancy services etc.

The Company received the Certificate of Commencement of Business on July 30, 2011 from the Registrar of the Companies. PFC GEL being an NBFC required Certificate of Registration (CoR) from RBI for commencing its business, which was received on October 1, 2012. With the receipt of CoR from the RBI, PFC GEL commenced its business operation in March 2013.

As on November 30, 2013, the issued and paid up Share Capital of the Company is ₹ 300 crore consisting of 10 crore Equity shares of ₹ 10 each and 20 crore Preference shares of ₹ 10/- each. The total Revenue and profit after tax (PAT) of the company is ₹ 7.38 crore and ₹ 4.57 crore respectively for the half year ended on 30.09.2013. The Company has sanctioned loan amount of ₹ 125.81 crore and has disbursed ₹ 18.96 crore as on November 30, 2013.

In order to mobilise the resources for PFC GEL, PFC is contemplating to avail a Term Loan of upto EURO 150 million from the French Development Agency, Agency for Development (AFD). AFD is a public development finance institution promoted by the Government of France under Indo-French Development Cooperation Programme. PFC will be further on-lending the term loan to PFC GEL for investment in projects related to renewable energy and energy efficiency. The terms and conditions of the proposed facility are being negotiated with AFD.

7.4 PFC Capital Advisory Services Limited (PFCCAS)

PFCCAS 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.

PFC has incorporated the Company with an aim to harness the huge business potential offered by power sector in the consortium lending operations space & converted its Consortium Lending business group into PFC Capital Advisory Services Ltd., a wholly owned subsidiary of PFC to evolve as an active syndication player.

In the first two years of operation, the company has made major strides in the achievement of the same by taking up major assignments of debt syndication for Thermal, Hydro and Wind Power projects. The total income from operations (majorly loan syndication) which was INR 16.31 lakhs in the first year of operations, increased to INR 178.33 lakhs in the second year of operations (FY 2012-13) and further to INR 459.24 lakhs in the half year ended September 30, 2013 (as per Audited accounts H1, FY 2013-14).

Keeping in mind the urgent need to channelize funds to the Power Sector, PFCCAS is focusing on sectoral requirements of financial advisory services, including syndication services & continuously eyeing on various business opportunities in the allied areas to increase its gamut of services being provided by the company. Further, 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.

8.0 EQUITY INVESTMENT GROUP (EIG)

New Equity-related initiatives of EIG are as below:

8.1 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.

8.2 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 it gamut of products and use its expertise to help the power sector more effectively.

8.3 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.

9.0 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 ₹ 18,188 Crs. to DISCOMs of 5 states namely Haryana, Uttar Pradesh, Tamil Nadu, Rajasthan and Punjab.

10.0 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.

11.0 FACILITATION GROUP

PFC is exploring opportunities for growth of business operations in the area of financing Fuel Sources Development & Distribution projects. Further, PFC has received requests & is processing loan proposals for development of domestic coal mine, overseas coal mine and rail network.

12.0 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.

13.0 RISK MANAGEMENT

13.1 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.

13.2 Foreign Currency Risk Management

As on 30.11.2013, the total foreign currency liabilities are USD 999.13 mn and Euro 21.83 mn. On overall basis, the exchange rate risk is covered to the extent of 15% through hedging instruments and lending in foreign currency. As on 30.11.2013, the interest rate risk in foreign currency liabilities is USD 819.13 mn and JPY 41643.20mn.

14.0 INSTITUIONAL DEVELOPMENT OF BORROWERS

14.1 Categorization of Power Utilities

For purposes of funding, PFC classifies State Power Utilities into A+, A, B and C categories. The categorisation(biannually) of State Power Generation and Transmission utilities is arrived based on the evaluation of utility's performance against specific parameters covering operational & financial performance including regulatory environment, generation of audited accounts, etc. With regards to State Power Distribution utilities (including SEBs/utilities with integrated operations), PFC Categorisation policy provides for adoption of MoP's Integrated Ratings. The categorisation enables PFC to determine credit exposure limits and pricing of loans to the state power utilities. As on 30thNovember 2013, 101 utilities were categorised, 26 as “A+”, 31 as “A”, 34 as “B” and 10 as .“C”.

14.2 Ministry of Power's Integrated Rating Framework For State Distribution Utilities

Ministry of Power has formulated an Integrated Rating Methodology covering the State Power Distribution Utilities, which was unveiled in the State Power Ministers' Conference in July 2012.

The main objective of the integrated rating system for the state distribution utilities is to devise a mechanism for incentivising / dis-incentivising the distribution entities in order to improve their operational and financial performance and overall financial strength. The objective of the methodology is to rate State utilities in power distribution sector on the basis of current levels of performance as well as on relative improvements in performance achieved on a year to year basis. The integrated ratings will enable adoption of a calibrated approach by Banks/FIs considering funding assistance to various state distribution utilities. The ratings may also serve as the basis for Government assistance under various initiatives in the state power sector.

The Integrated Rating framework would cover all state distribution utilities (including SEBs/utilities with integrated operations) except state power departments. The integrated ratings would be carried out on an annual basis by independent credit rating agencies.PFC has been nominated by MoP as the nodal agency for coordinating the activities relating to integrated rating of state distribution utilities including appointment of credit rating agencies.

The first Integrated Rating exercise for rating year FY 2012 covering 39 state distribution utilities was carried out by ICRA and CARE. The Integrated Ratings were declared by Hon'ble Minister of State (Independent Charge) for Power on 19th March, 2013.

The Second Integrated Rating exercise for rating year FY 2013 is in progress and would be notified by March, 2014.

14.3 Annual Performance Report of State Power Utilities

PFC brought out the 10th edition of the Report on the Performance of State Power Utilities (SPUs) for the years 2009-10 to 2011-12 covering 91 utilities in September, 2013. The Report, which is published annually, is an effort to provide a reliable database which can help to determine the results associated with the reforms in the sector. 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 (%) etc. and consumption pattern of the sector at utility, state, regional and national level. The 11th edition of the Report for the years 2010-11 to 2012-13 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 a one page research report on the performance of each of the State Power Utilities (SPUs) on a quarterly basis. PFC brought out the first quarterly research report for April-June 2006 which covered 20 power utilities in 11

states. The report contains key operational and financial performance parameters, reform status, status of implementation of Electricity Act 2003, areas of concern etc. The report is sent to the stakeholders in the power sector. The Report is an effort to flag the key issues/ areas of concern to be reviewed by the SPUs for taking mid-term corrective measures for the overall improvement of the sector.

During the year upto 30th November, 2013, PFC has issued performance reports for the quarters January-March 2013 and April-June 2013 covering 42 utilities each respectively. The Report for the quarter July-September 2013 is under preparation.

14.4 Support for Reforms in State Power Utilities

Functioning as a developmental financial institution, PFC recognises the immediate need for efficient improvement in all areas of operations of the State Power Utilities and State Power Departments. The benefits arising from PFC's lending operation will be sustainable only if it addresses to the problem of institutional improvement of State Power Utilities.

During the year upto 30th Nov 2013, PFC has sanctioned a grant of ₹ 1 Cr to Bihar State Power Holding Co Ltd (BSPHCL) towards providing post-restructuring hand holding phase of successor companies of Bihar State Electricity Board (BSEB).

14.5 Study on Component wise AT&C Losses

MoP had requested to PFC to initiate the appointment of consultant for study on component-wise AT&C Losses for the states of Tamil Nadu, Karnataka, Maharashtra, Rajasthan, Uttar Pradesh & Madhya Pradesh. PFC awarded the studies for UP, Tamil Nadu & Rajasthan to M/s Medhaj Techno Concept Pvt Limited in Feb 2012 and the same was completed. The studies for Maharashtra, Madhya Pradesh & Karnataka were awarded to M/s MECON Ltd in Oct 2012 and are under progress.

15.0 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 Rs.10,000 Crore 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 Crore under R-APDRP Part-B. Of this, upto ₹ 20,000 Crore 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 operationalzing 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 1398 eligible schemes have already been sanctioned ₹ 5234 Crore for funding under the scheme. An amount of ₹ 2340 Crore has already been disbursed to utilities under Part-A (IT). Also seventy schemes under R-APDRP Part-A (SCADA) have been sanctioned a sum of ₹ 1575 Crore for funding and disbursed ₹ 412 Crore. Under Part-B of the scheme, 1229 schemes worth ₹30,256 Crore have been sanctioned and a sum of ₹4320 Crore 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.

16.0 FINANCING TO GENERATION PROJECTS

16.1 Hydro Projects

During the year 2013-14, as on 30th Nov 2013 Hydro Generation Project loans amounting to ₹ 8121 Cr. were sanctioned and an amount of ₹ 1698 Cr. were disbursed. The cumulative amount sanctioned for Hydro Generation Projects is ₹ 43828 Cr. out of which ₹ 25669 Cr. has been disbursed, till 30th Nov 2013.

16.2 Thermal Projects

PFC is providing financial support to the Thermal Generation Projects for their timely completion. During the year 2013-14 as on 30th Nov 2013 the Company has sanctioned loans amounting to ₹ 15659 Cr. and disbursed a total amount of ₹ 14030 Cr. The cumulative financial support provided by the Company for Thermal Generation Scheme is ₹ 233552 Cr. out of which ₹ 136033 Cr. has been disbursed, till 30th Nov. 2013.

The major Thermal Generation projects sanctioned to State &Private sector are Tuticorin Coal based TPP (1x525MW) in TN, Satpura Extension Coal based TPP (1x660 MW) in MP,Krishnapatam Super Critical Coal fired TPP (2x800 MW) in AP – additional loan.

17.0 RENOVATION MODERNISATION & LIFE EXTENSION

17.1 Thermal Projects

During the year 2013-14 as on 30th Nov 2013, loans amounting to ₹ 1175 Cr. were sanctioned for R&M and Life Extension of thermal power plants and an amount of ₹ 106 Cr. has been disbursed. Cumulatively, an amount of ₹ 8603 Cr. has been sanctioned and ₹ 6361 Cr. stands disbursed, till 30th Nov 2013.

17.2 Hydro Projects

During the year 2013-14 as on 30th Nov 2013, loans amounting to ₹ 229 Cr were sanctioned for RM&U and an amount of ₹ 30 Cr. has been disbursed for RM&U of Hydel Projects. Cumulatively, an amount of ₹ 2127 Cr. has been sanctioned and ₹ 1382Cr. stands disbursed, till 30th Nov 2013.

18.0 MEMORANDUM OF UNDERSTANDING WITH GOVT. OF INDIA

PFC has signed an MoU with the Govt. of India for FY 2013-14 on 21st March, 2013. The MoU sets an "Excellent" level target of Sanctions at ₹ 59,000 Crore excluding R-APDRP. Similarly, Disbursement target has been set at ₹ 47,000 Crore for the FY 2013-14 (excluding R-APDRP).

19.0 HUMAN RESOURCE MANAGEMENT AND TRAINING

19.1 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 2013 to 30th November 2013 comes out to 0.45%.

19.2 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.

19.3 Human Resource Development & Training

During the year 2013-14, 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, Fire Safety Training, and Seven Habits of Highly Effective Pople, etc. were organized along with other need-based programs.

As on 30th November, 2013,17 In-House training programs were organized by PFC for its employees. A total of 1350 Man-Days were achieved through In-House programs and sponsoring PFC employees to training programs organized by other training institutes.

19.4 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 3000 utility personnel were trained in the FY 2012-13 under capacity building process under R-APDRP. So far over 25700 utility personnel of distribution power utilities have been trained under R-APDRP capacity building till Nov 2013.

20.0 CORPORATE SOCIAL RESPONSIBILITY (CSR) AND SUSTAINABLE DEVELOPMENT (SD)

- PFC has revisited the CSR Policy and formulated a new CSR & SD Policy in FY 2013-14 as per revised DPE guidelines which clubbed together CSR and SD Policy.
- The aim of the CSR & SD 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, 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 2013-14 (till 30th Nov. 2013), PFC has earmarked a budget of ₹ 44.38 Crore (1% PAT of previous FY i.e. 2012-13). PFC has sanctioned projects worth ₹ 48.11 crore under CSR & SD activities.
- List of Major Projects are:
  - Project for improving Operational Reliability and Service Quality of Primary Health Centres through provision of Clean & Reliable Power by installing micro solar PV power plants amounting to ₹ 7.535 crore.
  - Skill Development Programme for SC/ST/OBC/Women & EWS of society (1000 persons) amounting to ₹ 3.846 crore.
  - Skill Development Programme for SC/ST/OBC/Women & EWS of society (500 persons) amounting to ₹ 1.188 crore.
  - Additional amount for project for installation of solar home lighting systems on the looms of prestigious Chanderi Saree weavers amounting to ₹ 0.033 crore.
  - Financial Assistance of the Project for Water Distribution Pipeline in selected wards of Chanderi town, Ashok Nagar district, Madhya Pradesh State amounting to ₹ 3.660 crore.
  - Financial Assistance of the Project for Supply, installation and commissioning of Solar Lighting System at Street of villages, Districts: Giridh, Dhanbad & Bokaro of Jharkhand amount to ₹ 1.045 crore.
  - Project for Skill Development Programme for SC/ST/OBC/Women & EWS of society through L&T Construction amounting to ₹ 3.240 crore.
  - Project for Distribution of Solar Lanterns in selected blocks of Chhattisgarh amounting to Rs.1.125 crore.
  - Financial Assistance of the Project for supply, installation and commissioning of Mini/Micro Off Grid Solar PV Power Plant in three villages Phoj Kudana, Bhoj Plasra and Patiye ki Bhood under Ambala circle in Haryana state amounting to ₹ 3.840 crore.
  - Project of Skill Development Programme for SC/ST/OBC/Women & EWS of society in Control & Automation and IT related courses through IGIAT (300 persons) amounting to ₹ 0.791 crore
  - Project of Skill Development Programme for SC/ST/OBC/Women & EWS of society in IT related courses through CRISP (300 persons) amounting to ₹ 1.028 crore
  - Relief and Rehabilitation activities in the flood affected areas of Uttarakhand amounting to ₹ 3.0 crore
  - Project for Skill Development Programme in Dindori (Madhya Pradesh) for SC/ST/OBC/ Physically challenged/Women & EWS of society through MPCON Ltd. (1000 persons) amounting to ₹ 1.755 crore
  - Financial Assistance of the Project for Supply, Installation and commissioning of Solar PV system and Biomass Cook stove in selected Anganwadi centres in Chhattisgarh state amounting to ₹ 5.0 crore.
  - Project for Skill Development Programme in Bastar region (Chhattisgarh) for SC/ST/OBC/Physically Challenged women & EWS of society through MPCON Ltd. (500 persons) 0.893 crore.
  - Project for Skill Development Programme in selected states for SC/ST/OBC/ Physically challenged/Women & EWS of society through NBCFDC(2700 persons) amounting to ₹ 4.451 crore
  - Financial Assistance of the Project for Supply, installation and commissioning of Grid connected Roof Top Solar PV (RTSPV) Projects of aggregate capacity of 500 kWp in Kalinga Institute of Social Science (KISS) in the city of Bhubaneshwar of Odisha state amounting to ₹ 2.025 crore.

21.0 INFORMATION TECHNOLOGY

Recognizing the fact that the changing economic conditions present a whole new group of challenges wherein Information Technology plays a vital role in surpassing the encumbrances to achieve the Corporation's business targets, PFC has adopted many technology implementations and provided modern working environment to its elite workforce to reap the benefits of office automation to meet the challenging socio-economic conditions. Some of the major steps taken in this direction are:

Business process such as Project Appraisal, Loan Accounting Management, Human Resources and Payroll areas has been computerized through online Transactional Applications with Centralized database.

Further, a robust, secure & fully integrated Oracle Apps ERP solution has been implemented covering enterprise wide business processes.

AWeb-based self-help Employee Portal has been implemented with on-line claim processing system with online status updates to harness the benefits of paperless office.

Networked environment of fastest Gigabit Local Area Network with fiber back bone and Layer-3 switching technologies.

In order to provide continuous technological support through reliable infrastructures, established a state-of-the-art Data Center operational 24x7, housing Database/ Applications / Network / MS Exchange Email / Anti-Virus Servers hosted on Rack mounted 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.Third party security audits are initiated from time-to-time periodically to testify and further strengthening of information systems security.

To equip PFC's workforce with full-network access to all corporate resources &applications from anywhere for high operational efficiency, mobile computing facilities alongwith secure VPN access over internet have been provided.

End-user computing facilities have been augmented with the latest desktop computers along with Microsoft Office tools.

To help accomplish PFC's business objectives & long term strategic goals and having put in place a robust transactional system of ERP, an analytical layer with data mining & business intelligence tools have been planned to provide with better Decision Support System (DSS) to the senior management.

22.0 PFC CONSULTING LIMITED (PFCCL), a wholly owned subsidiary of PFC

22.1 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.

22.2 Mission

To provide objective oriented end to end consulting solutions consistent with long term interests of power and allied sectors in India.

22.3 Vision

To be the leading consulting organisation in the Country for power sector.

22.4 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) and 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 & linked Power Projects
- Project Advisory including selection of EPC contractor
- Reform, Restructuring and Regulatory aspects
- Capacity building and human resource development

22.5 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
- Preparation of DPRs and project management consultancy for distribution system improvement schemes including areas covered under R-APDRP
- Reform & Restructuring of State Power Utilities and regulatory aspects

22.6 Footprints

Till date, services have been rendered to 42 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. PFCCL is also handling the entire work on the UMPPs on behalf of PFC, the nodal agency for development of UMPPs.

Clients	No.
States Utilities	21
Licensees/ IPPs	7
Public Sector Undertakings	6
State Governments	4
Regulatory Commissions	3
Central Govt. Departments/Ministries	1
Total	42

22.7 Assignments

79 assignments worth around ₹ 211 Crore (apart from UMPPs and ITPs) out of which 60 assignments have

already been completed and 19 assignments are under various stages of implementation.

23.0 STATUS OF 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.

23.1 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 stage of development. A brief details of these projects below:

Sl.	Name of UMPP	Type	Date of Transfer	Levellised Tariff (in ₹ Per kWh)	Successful Developer
1.	Mundra, Gujarat	Coastal	22.04.2007	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.

23.2 The UMPPs under progress are Orissa Integrated Power Limited (OIPL) Chhattisgarh Surguja Power Limited (CSPL), Coastal Tamil Nadu Power Limited (CTNPL) and Deoghar Mega Power Limited (DMPL). The UMPPs in pipeline are Coastal Karnataka Power Limited (CKPL), Coastal Maharashtra Mega Power Limited (CMMPL), Sakhigopal Integrated Power Company Limited (SIPCL) and Ghogarpalli Integrated Power Company Limited (GIPCL).

{Note:- The Government of Andhra Pradesh has decided on 3rd December, 2013 not to proceed further with the 2nd UMPP in the State of Andhra Pradesh (SPV- Tatiya Andhra Mega Power Limited).}

24.0 INDEPENDENT TRANSMISSION PROJECTS (ITPs)

Ministry of Power has initiated Tariff based Competitive Bidding Process for development of Transmission System through private sector participation.

Eleven (11) 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 (DTCL), Patran Transmission Company Limited (PTCL), RAPP Transmission Company Limited (RTCL), Darbhanga-Motihari Transmission Company Limited (DMTCL), Purulia & Kharagpur Transmission Company Limited (PKTCL), Tanda Transmission Company Limited (TTCL) and Ballabhgarh-GN Transmission Company Limited (BGTCL) 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.

Seven out of the above mentioned Eleven ITPs, have already been transferred to the successful bidders selected through "Tariff based Competitive Bidding Guidelines for Transmission services" issued by Ministry of Power, Government of India. A brief detail of these projects are as follows:

Sl.	Name of ITP SPV	Date of Transfer	Levelised Tariff (in ₹ million p.a.)	Successful Developer
1.	East North Interconnection Company Limited	31.03.2010	1187.95	Sterlite Technologies Limited
2.	Jabalpur Transmission Company Limited	31.03.2011	1421.28	Sterlite Transmission Project Pvt. Ltd.
3.	Bhopal Dhule	31.03.2011	1995.30	Sterlite Transmission Project Pvt. Ltd.
4.	Nagapattinam-Madhugiri Transmission Company Limited	29.03.2012	987.02	Power Grid Corporation of India Limited
5.	Patran Transmission Company Limited	13.11.2013	274.00	Techno Electric & Engineering Company Limited
6.	Prurlia & Kharagpur Transmission Company Limited	09.12.2013	589.00	Sterlite Gird Limited
7.	Darbhanga-Motihari Transmission Company Limited	10.12.2013	1173.69	Essel Infra-projects Limited

For RTCL, Letter of Intent (LOI) has been issued to the successful bidder and the SPV will be transferred shortly. For DTCL, TTCL and BGTCL the bidding process are under progress.

CHAPTER - 22

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 and categorized by RBI as an Infrastructure Finance Company (IFC). REC is a "Navratna" Company and its Equity Shares are listed since Financial Year 2007-08 on the National Stock Exchange of India Limited (NSE) and BSE Limited (BSE).

2.0 REC has grown over the years to be a leading financial institution in the power sector. Besides attending to its core objective 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 in Five Year Plans.

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 for providing access to electricity to all rural households, 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 2012-13)

4.1 The highlights of performance of REC for the Financial Year 2012-13 are given below:-

Particulars	2012-13 (₹ in Crore)
Loan Sanctioned (excluding sanctions under RGGVY)	79,470.49
Disbursement (including subsidy under RGGVY & DDG)	40,183.06
Recovery (including interest)	26,728.86
Resource Mobilization	30,759.16
Profit before Tax	5,163.95
Profit after Tax	3,817.62
Net worth	17,454.38
Dividend	814.65
Business per employee	103.26

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 2012-13 has been rated as "Excellent". This is the 20th year in succession that REC has received "Excellent" rating since the year 1993-94 when the first MoU was signed with the Government.

4.3 Share Capital

The Issued and Paid up Share Capital of REC is ₹987.46 crore consisting of 98,74,59,000 equity shares of ₹10 each as on 30.11.2013, against the Authorized Capital of ₹1,200 crore. The Government of India holds 66.80% of paid up equity share capital of the Company.

4.4 Mobilization of Funds

The amount mobilized from the market during the year 2012-13 was ₹30,759.16 crore. The domestic debt instruments of REC continued to enjoy "AAA" rating – the highest rating assigned by CRISIL, CARE, India Ratings & Research & 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 the Financial Year 2013-14 (upto 30.11.2013) & anticipated targets to be achieved during the remaining period of the year i.e. upto 31.3.2014

5.1 Sanctions

(₹ in crore)

Sl. No.	Particulars	Targets as per MoU for the year 2013-14	Target achieved till 30.11.2013	Anticipated achievement during the remaining period of the year i.e. upto 31.03.2014
1.	Transmission & Distribution	66000	17058	13000
2.	Generation		25448.09	3941
3.	Renewable Energy		134	500
4.	Loan under RGGVY scheme		271.82	2100
5.	DDG (excluding RGGVY Subsidy)		12.89	1.40
6.	Short Term Loan		1675	2700
	Total		**44599.8**	**22242.4**

5.2 Sanctions under National Electricity Fund:

REC is the Nodal Agency for National Electricity Fund (NEF) – an interest subsidy scheme set up by Ministry of Power,

Government of India to provide interest subsidy on loans disbursed to the State Power Utilities, Distribution Companies (DISCOMs) – both in public and private sector, to improve the infrastructure in distribution sector.

NEF envisages interest subsidy aggregating ₹8,466 crore spread over 14 years for loan disbursements against distribution schemes amounting to ₹25,000 crore sanctioned during the (Two) Financial years viz., 2012-13 and 2013-14. During Financial Year 2013-14, upto 30.11.2013, REC has sanctioned NEF proposals amounting to ₹6,017.82 crore to DISCOMs of 10 States for taking benefits under NEF scheme.

During the balance period of Financial Year 2013-14, i.e. from 1.12.2013 to 31.3.2014, the anticipated sanctions under NEF scheme would be around ₹ 8,000 crore.

5.3 Disbursements (Excluding RGGVY Subsidy)

(₹ in crore)

Sl. No.	Particulars	Targets as per MoU for the year 2013-14	Target achieved till 30.11.2013	Anticipated achievement during the remaining period of the year i.e. upto 31.03.2014
1.	Transmission & Distribution {including projects under international Cooperation and Development (IC & DI)}	31500	12013.94	7300
2.	Generation		7779.93	2260
3.	Renewable Energy		112.57	250
4.	Loan under RGGVY scheme		174.78	175
5.	Loan under DDG Scheme		1.68	3.87
6.	Short Term Loan		1432.00	2957
	Total		**21514.90**	**12945.87**

5.4 Mobilization of Funds

The total market Borrowing Programme of the Corporation for the Financial Year 2013-14 is projected at ₹34,000 crore as per MoU target. In the Financial Year 2013-14 (Up to 30th November, 2013), REC has raised ₹25,200.95 crore. The anticipated mobilization of funds for the remaining part of the year is ₹8,799.05 crore.

5.5 Performance Highlights from 01.04.2013 to 30.09.2013

(Based on unaudited Financial Results subject to Limited Review)

Sl.	Particulars	Achievement till 30.09.2013	Achievement Annualized for the year	Targets as per MoU for the year 2013-14	% Achievement on Annualized basis
1.	Total Income (₹ in crore)	8226	16451	13500	122%
2.	Gross Margin (₹ in crore)	7877	15755	12700	124%
3.	Return on Net Worth (%)	11.96	23.91	15.70	152%
4.	PBDT/Total Employee (₹ in crore per Employee)	5.07	10.14	5.60	181%
5.	Interest Coverage Ratio (Time)	1.69	1.69	1.45	116%

6. WHOLLY OWNED SUBSIDIARIES OF REC

As on 30th November, 2013, the Company had two wholly owned subsidiary companies namely:-

(1) REC Transmission Projects Company Limited; and

(2) REC Power Distribution Company Limited

6.1 REC Transmission Projects Company Limited

REC Transmission Projects Company Limited (RECTPCL) is a wholly owned subsidiary of Rural Electrification Corporation Limited which was incorporated on 8th 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 developer for identified transmission projects through tariff based competitive bidding process, as per Guidelines issued by the Ministry of Power in this regard and accordingly, RECTPCL has incorporated various project specific Special Purpose Vehicles from time to time.

During the Financial Year 2012-13, 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;

(ii) Transmission System required for evacuation of power from Kudgi TPS (3x800 MW in Phase-I) of NTPC Limited;

(iii) Transmission System for Connectivity for NCC Power Projects Limited (1320 MW);

(iv) Associated Transmission System of Unchahar TPS; and

(v) BairaSiul HEP – Sarna 220 KV line.

For System Strengthening in Southern Region for import of power from Eastern Region and Transmission System required for evacuation of power from Kudgi TPS (3x800 MW in Phase-I) of NTPC Limited, project specific SPVs namely Vizag Transmission Limited (VTL) and Kudgi Transmission Limited (KTL)were incorporated on 30th November, 2011 and 27th November, 2012 respectively. Upon successful conclusion of tariff based competitive bidding process, VTL and KTL were transferred to respective successful bidders viz M/s Power Grid Corporation of India Limited and M/s L&T Infrastructure Development Projects Limited on 30th August, 2013.

For Transmission System for Connectivity for NCC Power Projects Limited (1320 MW), the tariff discovered through tariff based competitive bidding process was higher as compared to regulated tariff mechanism of CERC. Keeping this in view, CEA has recommended to MoP to de-notify the project from tariff based competitive bidding and get the project executed by Central Transmission Utility (POWERGRID) on compressed time schedule basis through regulated tariff mechanism.

For Associated Transmission System of Unchahar TPS and BairaSiul HEP – Sarna 220 KV line, the bidding process is ongoing and the same is expected to conclude in FY 2013-14. A project specific SPV namely, Unchahar Transmission Limited and BairaSiul Sarna Transmission Limited have been incorporated for above projects on 17th December, 2012 & 24th January, 2013 respectively. Pursuant to conclusion of the bidding process, the project specific SPVs will be transferred to the respective successful bidders.

In addition to above, the Ministry of Power has nominated RECTPCL as Bid Process Coordinator for selection of developer for following three transmission projects during the FY 2013-14;

(i) Northern Region System Strengthening Scheme, NRSS-XXIX

(ii) Northern Region System Strengthening Scheme, NRSS-XXXI (Part-A)

(iii) Northern Region System Strengthening Scheme, NRSS-XXXI (Part-B)

For Northern Region System Strengthening Scheme, NRSS-XXIX, NRSS-XXXI (Part-A) & NRSS-XXXI (Part-B), wholly owned subsidiaries namely NRSS XXIX Transmission Limited, NRSS XXXI (A) Transmission Limited & NRSS XXXI (B) Transmission Limited were incorporated on 29th July, 2013 and the process of selection of developers for all the three transmission projects is expected to conclude during FY 2013-14.

Two projects allocated by MoP to RECTPCL during 2011-12 namely (i) Transmission System associated with IPPs of Vemagiri Area: Package-B & (ii) Transmission System associated with IPPs of Vemagiri Area: Package-C are currently under hold and the process of selection of bidder shall commence after review of requirement of transmission system by the Empowered Committee and CEA/CTU.

The Company has recently bagged a consultancy assignment for advising the Uttar Pradesh Transmission Corporation Limited for development of intra-State Transmission System required for evacuation of power from Lalitpur TPP through tariff based competitive bidding process.

The Company continued to do profitable business in the Financial Year 2013-14 and earned a Total Income of ₹ 27.80 Crore and Net Profit after Tax of ₹ 19.50 Crore as on 30th September, 2013.

6.2 REC Power Distribution Company Limited

REC Power Distribution Company Limited (RECPDCL) was incorporated on July 12, 2007 as a Wholly Owned Subsidiary Company of Rural Electrification Company Limited. 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 2013-14 (Up to 30th November, 2013)

RECPDCL achieved ISO 9001:2008 certification on 23.10.2013 for Field Inspection of Electrical distribution network i.e 33/11kv substation, DT, HT, LT lines and service connections. RECPDCL during the period completed Third Party Inspection (TPI) of about 11926 villages including 2nd stage inspection under Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) X and XI plan.

Assignment for preparation of Detailed project Report (DPR) under RGGVY XII plan of AVVNL, JVVNL & JdVVNL Discoms has been completed for 28 districts and balance 6 districts are under progress. Company has also completed the DPR preparation works of 21 districts of Purvanchal Vidyut Vitran Nigam Ltd (PuVVNL). Further Company has also carried out MRI based billing and data analysis works of Paschimanchal Vidyut Vitran Nigam Limited (PVVNL) for EUDC Noida, EDC Hapur, EUDD-II Ghaziabad and EDC Ghaziabad, DPR preparation & PMC works under NEF scheme for UHBVN & DHBVN and AMR consultancy project for DHBVN, Project Management Consultancy (PMC) under RGGVY Phase-II of PuVVNL discom.

The company has been awarded through competitive bidding the work of inspection of villages & substations and material under RQM by Rural Electrification Company Limited worth ₹ 15.27 crore for which we had completed the inspection of 6966 villages and 72 substations under REC Quality Monitoring works for 196 Projects of RGGVY XI plan. Also, through competitive bidding company has been awarded the DPR preparation of RE works of 11 districts by Jharkhand State Electricity Board(JSEB) worth ₹9.05 Crore, Third Party Inspection of quality of works and workmanship executed by turnkey contractor under R-APDRP Part B scheme for Maharashtra State Electricity Distribution Co. Ltd.(MSEDCL) worth ₹146.257 Lacs, TPI of villages including Material Inspection under Backward Region Grant Fund (BRGF) scheme for West Bengal State Electricity Distribution Company Limited (WBSEDCL) worth ₹8.81 Crore, TPI for Jharkhand State Electricity Board (JSEB) for RE work of 1291 villages under departmental scheme of Jharkhand state of worth ₹3.25 Crore.

Further, company has been awarded works of DPR preparation under RGGVY XII plan guidelines from Chhattisgarh State Power Distribution Company Limited (CSPDCL), Assam Power Distribution Company Ltd (APDCL), Karnataka discoms (BESCOM, HESCOM, CESC, GESCOM, MESCOM), Electricity department, Govt. of Manipur.

The company continued to do Profitable business in the Financial Year 2013-14 and earned a Total Income of ₹21.2 crore and Net Profit before Tax of ₹15.25 crore for the half year ended on 30th September, 2013.

6.2.2 Anticipated targets to be achieved during the remaining period of the year i.e upto 31st March 2014

RECPDCL during the year expects to complete Third Party Inspection (TPI) of about 12685 villages under Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) including 2nd stage inspection, inspection of about 13000 villages and 350 substations under REC Quality Monitoring works. Third party of quality of works and workmanship executed by turnkey contractor under R-APDRP Part-B scheme for MSEDCL. RECPDCL also expects to complete preparation of DPR works under RGGVY XII plan of Rajasthan discom (AVVNL, JVVNL and JdVVNL), JSEB, BESCOM, HESCOM, CESC, GESCOM, MESCOM, Govt. of Manipur, APDCL, CSPDCL.

The company expects total revenue of ₹72.5 crore and Net Profit before Tax to be ₹54.5 crore for the Financial Year 2013-14.

7. Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) – Scheme for Rural Electricity Infrastructure and Household Electrification

Under the RGGVY programme, initial approval was for implementation of Phase I of the scheme for capital subsidy of ₹5,000 crore during the X Plan period.

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 ₹ 28,000 crore during XI Plan period.

Continuation of the scheme in XII and XIII plan was also issued by Ministry of Power vide OM No.44/10/2011-RE dated 2nd September 2013 for capital subsidy of ₹35,447 crore, of which ₹23,397 crore will be met through Gross Budgetary Support for XII Plan and remaining ₹12,050 crore would spillover to XIII Plan.

7.1 The details of targets achieved during the period from 01.04.2013 to 30.11.2013 are as mentioned below:-

Sl.	Particulars	Targets achieved till 30.11.2013	Anticipated tragets to be achieved till 31.03.2014
	RGGVY		
1.	Electrification works in Un-electrified villages (Nos.)		
	(a) North East States	283	400
	(b) Other than NE States	416	1100
	Total	**699**	**1500**
2.	Release of free electricity Connections to BPL Households (in lakhs)		
	(a) North East States	0.48	2
	(b) Other than NE States	6.19	10
	Total	**6.67**	**12**

7.1.1. Sanction of projects

(a) Projects sanctioned in X Plan

235 projects covering 165423 villages (63925 un-electrified and 101498 electrified villages) and 80.46 lakh BPL Households (revised) with the total sanctioned project cost of ₹13,330.61 crore were sanctioned for implementation by the Ministry of Power.

(b) Projects sanctioned in XI Plan

341 projects covering 274755 villages (46385 un-electrified and 228370 electrified villages) and 150 lakhs BPL households (revised) with the total sanctioned project cost of ₹21,267.10 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 ₹9,175.28 crore have been sanctioned for implementation by the Ministry of Power.

(d) Projects sanctioned in XII Plan

So far, 39 projects covering 30212 villages (93 un-electrified and 30119 electrified villages) and 8.6 lakhs BPL Households with the total sanctioned project cost of ₹2,718.24 crore have been sanctioned for implementation by the Ministry of Power.

7.2. Progress of works during the year 2013-14 (Upto 30.11.2013)

Works have been completed for 14414 villages (including 699 un-electrified and 13715 electrified villages) and connections to ₹6.67 Lakh rural households have been released during Financial Year 2013-14 up to 30.11.2013.

7.3. Anticipated targets to be achieved during the remaining period of the year i.e. up to 31st March 2014

Works in about 900 un-electrified villages and household electrification of 5 Lakh BPL households are expected to be completed during 2013-14.

7.4. Cumulative performance

(a) The total coverage under the RGGVY from the date of launching the programme is as mentioned below:-

Plan	Number of Projects	Number of un-electri-filed villages covered (Revised)	Number of elec-trified villages (Revised)	Number of BPL House-hold (Revised)	Sanctioned Cost (₹in crore) (Revised)
xth Plan	235	63925	101498	8046892	13330.61
XIth Plan	341	46385	228370	15005887	21267.10
XI Plan Phase-II	72	1909	53505	4559141	9175.28
Total	648	112219	383373	27611920	43772.97

(b) Cumulatively up to 30.11.2013, works in 411634 villages (107782 un-electrified and 303852 electrified villages) have been completed under RGGVY and connections to 213.88 Lakh BPL households have been released under the scheme.

7.5 Renewable Energy Projects

Under Renewable Energy, REC has sanctioned 3 projects aggregating installed capacity of 46 MW out of which 1 is Solar photovoltaic project (25 MW) and 2 Small Hydro Projects(21 MW). The total loan amount sanctioned to these projects stands at ₹134 crore. The amount disbursed during the current year 2013-14 (upto 31st November, 2013) is ₹130.50 crore.

7.6 Sustainable Development Initiatives

During the current Financial Year 2013-14, upto November 30, 2013, REC has sanctioned assistance under Sustainable Development for 6 projects aggregating ₹600 Lakh. The projects have been sanctioned to expert implementing agencies. In one project for Jute processing cluster in Bihar, provision of 2 x 100 kW biomass-gasifier based electricity generation has been made for supplying uninterrupted and assured power supply for the looming machines to be set up by worker cooperatives. Earlier in the year, when the unprecedented natural calamity struck Uttarakhand, REC provided assistance for distribution of 4000 Solar-Lanterns to affected households and installation of 100 Mobile-charging Solar Stations in order to mitigate the hardships of the local people. In another project, Solar PV Smart Mini Grids are being implemented in 5 Off-grid locations in Dhenkanal, Odisha, with the objective of developing viable business models for off-grid electricity supply to un-electrified villages which lie inside a reserve forest. During the year, REC has initiated a Carbon Footprint study of its Corporate Offices with the objective of estimating its Green House Gas emission i.e. the level of its carbon footprint and its minimisation. A project for installation of Solar PV rooftop plants in Government owned schools in Odisha state is also being implemented.

8. North Eastern States

Under Generation Projects, in Financial Year 2013-14 (upto 30.11.2013), REC disbursed ₹125 crore for Generation Projects in Sikkim to M/s. Gati Infrastructure Limited for the implementation of 2X55 MW Chuzachen HEP.

9. 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 restated to JPY 13000 million (JICA-II Loan) in the state of Haryana, is under implementation. A cumulative amount of JPY 10,240 million (equivalent to ₹554.20 crore) has been drawn from JICA under JICA-II Loan upto 30.11.2013.

9.2 KfW, Frankfurt

Two ODA loans of Euro 70 million (equivalent to ₹465.88 crore) 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. Cumulative amount of Euro 34.93 million (equivalent to ₹255.74 crore) has been drawn under KfW – III loans upto 30.11.2013.

10. Training Activities at Central Institute for Rural Electrification (CIRE), Hyderabad

CIRE was established at Hyderabad in 1979 under the aegis of REC to cater 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.

Progress achieved during the current year 2013-14 (Upto 30th November, 2013)

10.1 Regular National Programmes

CIRE has organised 15 Regular Training Programmes with 175 participants for the personnel of various Power Utilities /Distribution Companies, on the topics such as, Specifications, Standards and Construction Practices in Distribution System; Power Sector Accounting with reference to Indian Standards and IFRS; Pilferage of Electricity - Issues, Challenges and Remedial Measures; Protection System in Sub-stations; Earthing Practices in Electrical Installations and Safety Measures; Open Access, Power Trading and Tariffs - ABT Scenario; Power and Distribution Transformers - Efficient Operation & Maintenance; High Voltage Distribution System; SCADA for Power Utilities; Solar Power Generation; EHT Transmission Lines - Design, Erection and O&M; Gas Insulated and Indoor Sub-stations including Power & Control Cables; O & M and Protection aspects in 33/11 KV Sub-stations; Design, O& M of Hydro Power Plants; and Power Distribution Management.

10.2 International Programmes sponsored by MEA (GoI)

CIRE is empanelled by Ministry of External Affairs, Govt. of India to organise training programmes in the area of power sector under ITEC/SCAAP. During the current year, upto November 2013, CIRE has organised 5 International programmes with 86 participants, on the topics, viz., (i) Planning and Management of Power Transmission & Distribution Systems (8 weeks); (ii) Financial Management

and Accounting System for Power Companies (8 weeks); (iii) Best Practices in Power Distribution Sector (4 weeks); (iv) Planning, Appraisal and Financial Management of Power Projects (8 weeks) and (v) Management of Power Utilities using IT/Automated Solutions (5 weeks).

The participants from various countries, i.e Morocco, Srilanka, Bhutan, South Sudan, Malawi, Tanzania, Nigeria, Mauritius, Burundi, Uganda, Bhutan, Zimbabwe, Ethiopia, Myanmar, Gambia, Afghanisthan, Kyrgyzstan, Oman, Liberia, Syria, Bangladesh, Namibia, Algeria, Iran, Laos, Libya, Sierra Leone, etc., have attended the programme.

10.3 Programmes organised in collaboration

CIRE is organising training programmes in collaboration with premier Management Institute i.e. Institute of Public Enterprise and conducted two programmes on "Best Practices in HR Management of Power Utilities" and "Materials Management, e-procurement & Contract Management" upto November 2013.

10.4 R-APDRP Programmes

R-APDRP programme is sponsored by MoP, through PFC. CIRE conducted 6 R-APDRP programmes on "O&M of Sub-stations for Linemen"; "Best Practices in Distribution Operation & Management System" and "Efficient Improvement Measures in Distribution System" for 179 non-executives (for C&D Category employees). Further, CIRE conducted 18 R-APDRP programmes for 260 executives (for A&B Category employees) of various power utilities on the topics, namely" Communication & Customer Relations"; Best Practices in Distribution Operation & Management System; "Efficiency Improvement Measures in Distribution System" and "Regulatory".

10.5 National Training Programmes (NTP) sponsored by MoP

CIRE is designated as a nodal agency for implementation of National C & D Employees and Franchisee Training Programmes under the Human Resources Development component of RGGVY programme. The programmes are continued during XII plan with a target of training 1,25,000 C&D employees and 25,000 existing franchisees. During the year 2013-14, upto November, 9066 C&D Employees have been trained by various power utilities/training institutions. In addition, a 2-day Workshop for Nodal Officers of NTP was conducted by CIRE regarding finalisation of new variants and readiness to organise programmes.

10.6 In-house programmes

CIRE has also organised 4 in-house programmes on topics 'Right to Information Act', 'Finance for Non-finance Employees', 'Technical aspects for Non-technical Executives' and 'Hindi Workshop' for the employees of REC. 59 Employees of the Company have taken part in these programmes.

10.7 Sponsored Programmes

Two sponsored programmes, namely, "RGGVY programme" for Gorkhaland Territorial Administration and "Best Practices for Loss Reduction" for Tripura SEB were conducted with 35 participants.

10.8 Other activities

CIRE conducted an Inter-PSU Hindi Computer Typing competition on behalf of Town Official Language Implementation Committee (TOLIC) on 26.7.2013 in two categories. 22 employees from 10 organisations have participated in the competition.

10.9 In all, during 2013-14, upto November 2013, in addition to coordinating and monitoring the National Training Programmes for C&D Employees and Franchisees, CIRE has conducted 54 programmes on various themes and trained 892 personnel as indicated below:

Sl. No.	Name of the Programme	No. of Programs	No. of Participants
1.	Regular-National Programmes	15	175
2.	International Programmes	05	86
3.	Programmes in collaboration with IPE	02	30
4.	R-APDRP Programmes sponsored by MoP/PFC	24	439
5.	Sponsored programmes	02	35
6.	In-house programmes	04	59
7.	Others	02	68
	Total	54	892

10.10 Anticipated targets to be achieved during the remaining period of the year i.e. from 1.12.2013 to 31.3.2014.

During the remaining period of 2013-14 (i.e. from 1.12.2013 to 31.3.2014), CIRE is likely to conduct the following programmes:

Sl. No.	Type of Programmes	No. of Programs
1.	Regular-National Programmes	10
2.	International Programmes, sponsored by MEA, GOI (8/4 weeks duration)	04
3.	Programmes in collaboration with IPE	03
4.	R-APDRP Programmes, Sponsored by MOP/PFC	11
5.	National Training Programmes for Franchisees and C&D Employees to be conducted under CIRE banner-sponsored by MOP	10
6.	Sponsored Programmes	08
7.	In-house programmes for REC personnel	06
	Total	**52**

11. INFORMATION TECHNOLOGY

11.1 Progress made during the current Financial Year upto 30th November, 2013

- All major business functions of the Corporation including Finance, Project, Disbursements, 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.
- REC has implemented Document Management System (DMS) within the Corporation. This involves digitization of documents including scanning, cleaning, Quality Checking, Indexing, uploading and retrieving. The system has been extended to all divisions of corporate office and field offices.
- REC has implemented Workflow Management System (WMS) for electronic movement of note sheet approval alongwith attached document. Initially, the WMS was implemented at 2 divisions of Corporate Office, 1 Zonal office and 1 Project office. The system is being extended to all field units of the Corporation.
- Towards achieving efficient e-governance and transparency, REC has implemented on-line 'E-procurement' system for procurement of goods and services above ₹10 lakhs, web-based online submission of 'Annual Property Return' etc. across the organization.
- Towards achieving transparency, a Bill Payment Tracking system for tracking timely payment of bills to vendors has been implemented in selected divisions handling payments.
- Disaster Recovery Center (DRC) at CIRE Hyderabad has been certified **ISO/IEC 27001:2005** security standard, by British Standards Institution (BSI). The primary Data Centre (PDC) is already ISO/IEC 27001:2005 certified.

11.2 Anticipated Targets to be achieved during the remaining period of the year i.e. upto 31st March, 2014

- Redesigning and revamping of existing static Corporate Website to an interactive and dynamic website.
- Implementation of an HR-ERP solution to automate HR functions including Employee Self-Service portal and integration with existing ERP business system.
- Interim audit for **ISO/IEC 27001:2005** of the Primary Data Centre and Disaster Recovery Center (DRC) at CIRE Hyderabad by CERT-In certified auditor.
- Development of "Online Customer Interface of ERP for loan accounts", a secured user friendly online portal which can be accessed by the borrowers through REC website/independent URL to view information pertaining to them like daily release of loans, loan balances, due payments, date and amount due for repayment of loans/interest, Loans accounts Security management etc.

12. SUSTAINABLE PROJECTS UNDER CORPORATE SOCIAL RESPONSIBILITY INITIATIVES BY REC

In pursuance of REC CSR policy, REC signed the Memorandum of Understanding for Financial Year 2013-14 with 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 2013-14 (upto 30.11.2013)

REC has approved budgetary allocation of ₹38.18 crore for CSR and Sustainability activities for the year 2013-14, as 1.00% of previous financial year's Profit after Tax.

Out of the total budget, 70% i.e ₹26.75 crore, has been allocated for CSR, and the balance for Sustainability Activities.

12.1.1 REC conferred with the 'Help-Age India Gold Age Award'

REC was awarded with the Help-Age India Gold Age Award on the occasion of International Day for Older Persons held on 1st October 2013 for health care initiatives undertaken under CSR.

12.1.2 Major ongoing CSR projects of Financial Year 2013-14

- Job oriented skill development/up-gradation programme related to power sector for approximately 2500 youths belonging to SC/ST/EWS in 13 select backward districts as per DPE Guidelines in 8 States i.e Odisha, Madhya Pradesh, Uttar Pradesh, Chattisgarh, Punjab, Tamil Nadu, Haryana and Rajasthan.
- Support for free residential coaching for 20 underprivileged talented students for entrance examinations for admission into IIT/NIT and other leading engineering institutes under the Abhyanand Super 30 initiative.
- Construction of Girls Hostel in THDC Institute of Hydro Power Engineering & Technology inTehri District, Uttarakhand.
- Development Works at Govt. Seth Anandi Lal Poddar Deaf and Dumb Sr. Secondary School, Jaipur.
- Funding of school fees, uniforms, bags & Braille Slate & Taylor frames for blind students of various schools in New Delhi.
- Infrastructure support in schools in Nayagarh District, Odisha.
- Construction of Building of Govt. College in Jahazpur and Raipur Blocks of Bhilwara District in Rajasthan.
- Purchase and distribution of Computers, Printers, UPS, Bench desk, Sewing machines, Ceiling fans etc. to Schools, Colleges, Institutes and self-help groups in select backward districts in Jharkhand.

- School library program in 25 Government Primary Schools in Guntur and Nalgonda Districts of Andhra Pradesh.
- LED based Solar street lighting for 20 villages of 5 districts of Arunachal Pradesh.
- Construction of toilet units in 235 homes not having any such sanitation facilities in Madhavpur village of backward district Barabanki in Uttar Pradesh.
- Construction of 4 nos. class rooms of School Building for poor children in the backward Mahoba District, Uttar Pradesh.
- Construction of Rehabilitation Centre for mentally retarded & physically challenged children in New Delhi.
- Funding for procurement of Physiotherapy equipment & ambulance for physically disabled in Hyderabad, Andhra Pradesh.
- Funding support for corrective surgery and distributing calipers with crutches for Polio affected and born disabled children.
- Procurement of Mobile vehicle for transportation of mentally challenged students of rehabilitation centre in Guwahati, Assam.
- Deployment of one Mobile Medical Unit to improve Primary Health Care Services for the underprivileged in Sonbhadra District in Uttar Pradesh.
- Procurement of Surgical Microscope and Plantech Operation Table for treatment of rural elders suffering from treatable eye ailments.
- Development of Eco Park at Gantamvarpalli village in Bagepallitaluk, and asphalting road up to Eco Park in Chickballapur District, Karnataka.
- Construction of Culvert between Dharmaini & Chamarsan Villages in District Santkabirnager, Uttar Pradesh.
- Contribution for Relief and Rehabilitation activities in the flood affected areas of Uttarakhand.
- Contribution towards Odisha Chief Minister's Relief Fund for relief and rehabilitation activities in cyclone affected areas of Odisha.
- Assistance for Heart surgeries of little children belonging to weaker sections of the society in Kolkata, West Bengal.

12.2 Anticipated targets to be achieved during remaining period of the year upto 31st March 2014

REC is expected to disburse funds allocated for Financial Year 2013-14 by the year end. Unspent amount, if any, would be carried forward for CSR related expenditure to the next financial year.

101 MW Tripura Gas Turbine Project

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. At present, NEEPCO's total installed capacity is 1130 MW, out of which 755 MW is in Hydro and 375 MW in Thermal Sectors. A Schedule "A" category CPSE, NEEPCO has been conferred with "Mini-Ratna: Category-I" status by the Government of India and has an Authorized Share Capital of Rs.5000 Crores.

NEEPCO today operates five hydro and two thermal power stations spread over the North Eastern Region of India with a total installed capacity of 1130 MW. It caters to more than 50 % of the NE Region's energy requirements. During the year 2012-13, NEEPCO generated 4690 MU against the MOU target (Very Good) of 5070 MU.

GENERATION PERFORMANCE:

Sl. No.	Power Plant	MOU Target for 2012-13 (Very Good MOU target)	Achievement (in MU). April'13 to Nov/ 13	Balance target up to 31st March 2014 (In MU).	APAF (%) (Cumulative up to Nov' 13
			Hydro		
1	Kopili (200 MW)	680	607	73	62.37
2	Khandong (50 MW)	151	164	Target achieved	75.37
3	Kopili Stage-II (25 MW)	84	74	10	69.37
4	DHEP (75 MW)	227	223	4	74.80
5	RHEP (405 MW)	1250	842	408	98.82
			Thermal		
1	AGBP (291 MW)	1725	1155	570	68.64
2	AGTP (84 MW)	602	434	168	87.94
	Total	4719	3499	1220	

FINANCIAL PERFORMANCE:

- The revenue collection in the current financial year up to Nov' 2013 is ₹ 915.97 Crores (provisional).
- The Profit before Tax up to Nov'2013 is ₹ 229.52 Crores for the FY 2013-14 (Provisional).

BRIEF STATUS OF PROJECTS UNDER CONSTRUCTION:

i) Kameng Hydro Electric Project (600 MW), Arunachal Pradesh

The Kameng HEP was accorded CCEA approval on 02.12.04 at a cost of ₹ 2496.90 Crs at March 2004 PL with commissioning schedule in December'09. However, owing to various factors viz. changes in design of Bichom Dam & Tenga Dam of the project as per recommendation of the High Level Committee constituted by MOP, GOI involving substantial upward variation both in excavation and concreting leading to time and cost overruns, poor geological conditions encountered in tunneling & Power House sites, conversion of the originally underground HPT to partly over-ground with incorporation of a Valve House involving associated design changes, devastating flash floods in October'08 & September'12 and unresolved contractual issues have compelled a reschedule of the commissioning of the Project to March 2017. Meanwhile, RCE of the Project amounting to ₹ 4653.95 Crs (including IDC) at December 2011 PL is under finalization by CEA/CWC.

As far as the progress in the major work fronts is concerned, out of 14.47 KM tunnel length 87.78% boring and overt lining of 6.87% has been completed as on 30th Nov'13. Boring of Surge Shaft including orifice has been completed and 88.02% of lining of the Surge Shaft including Parapet wall has been achieved. Progress in excavation works of Bichom & Tenga Dams are 97.72% and 93.05% respectively and concreting are 11.82% and 37.55% respectively up to November 2013. River Diversion works have been completed. 100% boring of HPT including boring of Vertical Shaft and 88.73% of open excavation of surface Penstock has been completed. Fabrication (79.73%) and erection (33.89%) of Steel Liner are also in progress. In respect of Power House, excavation of 99.37% and 59.15% concreting works is completed. Erection of Draft Tubes of Unit I & II completed, and Unit III & IV are in progress. 58.28 % of excavation in Switch ard area and concreting of 6 Nos. of columns in Tower Foundation, 213 Nos. of raft concreting of equipment foundation completed up to November 2013.

ii) Pare Hydro Electric Project (110 MW), Arunachal Pradesh:

The CCEA of the Project was accorded vide MOP, GOI's letter dated 4th December, 2008 at an approved cost of ₹ 573.99 Crs at June' 07 PL. The project is progressing amidst inconveniences caused to the project activities due to the ongoing construction of the Trans Arunachal Highway through the project area,

natural calamities like incessant rainfall and its after effects, frequent law & order problem, lack of sufficient labourers available to the Package Contractors etc. The project is scheduled for commissioning by September 2015. Meanwhile, NEEPCO has proposed RCE of ₹ 1128.38 Crore (including IDC) at Jan' 2013 PL for the project.

In respect of works for Package–I (Civil works) River Diversion Works are completed. In case of the Power House, 95.52% excavation and concreting of 55.6% have been achieved up November 2013. Boring of Surge Shaft has been completed and 64.75% lining has been achieved. 73.86% excavation of Dam has been completed. In HRT boring works 94.06% has been achieved and overt lining of 23.83% has been completed up to November 2013. In HPT, boring of horizontal and inclined Penstock completed and erection of Steel Liner in bottom horizontal portion is in progress.

As far as Package II (Hydro Mechanical Works) works are concerned up to November 2013, fabrication of 105 numbers of ferrules, 53 Nos. of Thrash Rack for HRT Intake, Draft Tube Gates and Y-Piece completed. For Package III (Electro Mechanical works) Draft Tube liners and Pier Nose of both the units have been completed. Mechanical erection of EOT Crane in Service Bay area has also been completed. In case of Package IV (Transformer & Switchyard) erection of Steel Structures of equipment has been completed upto November 2013.

iii) Tuirial Hydro Electric Project (60 MW), Mizoram:

The activities of Tuirial HEP (60 MW) remained suspended w.e.f. 09/06/2004 after completion of around 30% of the works due to crop compensation issue raised 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. The CCEA clearance on the RCE of the project was obtained on 14th January 2011 at Rs 913.63 Crs at March 2010 PL. The project is scheduled for commissioning by December 2015. Works in the project have started and are progressing amidst inconveniences mainly owing to deplorable condition of approach road to Project Site under Govt. of Mizoram and Assam. Works in the Power House area is also affected due to major slope failure in the Power House Pit that took place starting from Dec'12 to May'13 and works in the powerhouse area continues to be held up pending restoration of the same.

As far as civil works (Lot I, II & III) is concerned, River Diversion works are completed. In case of excavation of the Main Dam, 16.65%, while in the Spillway, 94.66% excavation has been achieved up to November 2013. Concreting of 8.47% in Spillway has been achieved. In DT outlet Stilling Basin, 2nd Stage excavation of 76.69% and concreting of 13541 Cum. completed. Further, in Power House & Switchyard, 95.71% of excavation works have been completed up to November 2013. The Saddle Dam has already been completed. 68.38% excavation of Up-Stream Coffer Dam has been achieved up to November 2013. The Power Water Way has also been completed. In Lot – IV (Hydro-Mechanical works), fabrication of Spillway Stop Log Gates are in progress. For Lot – V (Electro-Mechanical works), 75% materials has reached site up to November 2013.

iv) Tripura Gas Turbine Project (101 MW), Tripura:

CCEA clearance of the project was accorded on 14/07/2009. However, due to non-fulfillment of bid criteria by the lone bidder, and subsequent escalation in price from ₹ 421.01Crs at December 2008 PL to ₹ 623.44 Crores at November 2009 PL, the CCEA on the RCE was accorded on 23/02/11. The project is scheduled for commissioning in November 2014 in all respects. Meanwhile, proposed RCE (at Dec'12 PL) of ₹ 951.48 (including IDC) has been submitted to MOP. Presently all the activities of the project are under progress. However, the project may be delayed on account of very slow progress by M/s ONGC so far as gas supply to the project is concerned.

Piling and foundation works of all major structures in the project have been completed. Besides, erection of major structures such as the GTG, STG, GBC hall, SA/IA Compressor and DG House have been completed up to November 2013. 100% works in Transformer foundation and Switch Yard Civil works are also completed. 99% erection works in the Switchyard has been completed and is ready for commissioning. In erection and pre-commissioning activities, 94% works of GTG Auxiliaries, 97% works of Centrifugal Gas Compressors, 95% in HRSG works, 92% in Emergency DG, 80% in ST Generator erection works and 88% works in GTG areas have been completed up to November 2013. Also, 98% works in Raw Water Reservoir and Pump House, 90% in DM Plant Civil works, 98% of Pipe Rack structures, 75% Cooling Tower Civil works, 80% works in Desilting Basin and 45% laying of Raw Water Pipe Line are completed. On the electrical front, 55% erection and commissioning works of HT Transformers, 40% in HT &LT Bus ducts, 57% in SEE/DVAR/SCADA and 40% works in DCS and Field Equipments have been completed. Also, 42% works of the Fire Detection & Protection works have been achieved up to November 2013.

v) Agartala Gas Turbine Plant-Combined Cycle Extension Project (51 MW)

The Project was cleared for investment by the EFC on 2nd July 2012 at a cost Rs. 296.87 Crs. (Including IDC at June 2011 PL). Work order for the Main Plant and Equipment (Package-I) was issued to M/s Thermax Limited, Pune on 12.09.2012, while

Work Order for Transformer and Switchyard (Package-II) was issued to M/s Bharat Bijlee Limited, Mumbai on 08.10.2012. The project is scheduled for commissioning by March 2015.

Piling activities in the projected have been completed. On the erection front, 24% in HRSG-I, 29% in HRSG-II, 8% in HRSG-III and 25% in HRSG-IV have been achieved up to November 2013. Structural and erection works in the ACC-I & II have commenced and 65% Pile Caps and Foundation works in the STG Building area have been completed. 40% and 55% civil works for Columns and Deck Slabs for STG I & II respectively and 15% in Pile Caps and Foundations for Chimneys have been achieved till November 2013. Besides, civil works for Transformer and Switchyard has also started in the project.

vi) Grid Interactive Solar Power Project (5 MWp), Monarchak, Tripura:

NEEPCO planned setting up of a 5 MW Solar PV Plant at Monarchak, Tripura. DPR was prepared through a consultant, M/s STEAG Energy Services (India) Pvt. Ltd., Noida, which was finalized on 15/9/2012. As per the DPR, the Solar Power Project using Polycrystalline technology is found to be feasible with an estimated cost of ₹ 49.52 crores. Land area measuring 30 acres has been identified within the premises of the boundaries of the ongoing 101 MW TGBPP. LOI for the EPC contract for the project was issued to M/s BHEL on 09/10/13, with a completion schedule of 12 months from the date of LOI. Letter of comfort from TSECL for purchase of entire quantum of power received. Presently, Design and Engineering works of the project are in progress.

A view of the powerhouse from the left bank of Satluj River of the
412 MW Rampur Hydro-electric project by SJVN in Himachal Pradesh

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 (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. During FY 2013-14, NJHPS has generated total 6314.63 MUs (Gross Generation) up to November 30, 2013. SJVN has paid a total dividend of ₹ 2546.68 Crores cumulatively to GOI and GOHP. The yearvise details of divided paid is as under:-

(In ₹ Crores)

	DIVIDEND PAID YEAR WISE				
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
9	2012-13	255.99	101.28	39.84	397.12
Cumulative Total		**1766.17**	**643.55**	**136.95**	**2546.68**

2.0 Progress Made During 2013-14:

The details of the Progress made during the year 2013-14, in respect of Energy Generation and Capacity Addition by SJVN is as under:

Sh. R.P. Singh, CMD and Sh. N.L. Sharma, Director (Personnel)
receiving achievement award for Social Development & Impact from Dr. Pranav Sen, Chairman ,NSO

Description	Actual Achievement up to November 2013-14	Total Target for the FY 2013-14
Gross Energy Generation in MUs	6314.63	6930.00
Capacity Addition	NIL	NIL

3.0 AWARDS AND ACHIEVEMENT

SJVN Limited has been awarded the prestigious PSE Excellence Award – 2013 in the category of CSR and Sustainability. The Award instituted by the Department of Public Enterprises, Govt. of India and Indian Chamber of Commerce, was received by Shri R.P. Singh, Chairman & Managing Director, SJVN Limited at New Delhi on 16th December, 2013.

SJVN Limited has bagged achievement award for Social Development & Impact while its Rampur Hydro Electric Project bagged achievement award for Construction Health, Safety and Environment. The achievement award for Social Development & Impact was presented by Dr. Pranav Sen, Chairman National Statistical Organization (NSO) to Sh. R.P. Singh, Chairman & Managing Director and Sh. N.L. Sharma Director (Personnel) SJVN Limited.

SJVN Limited has been awarded "Caring Companies Award" by World CSR Congress at Mumbai. These awards aim at cultivating good corporate citizenship and encouraging strategic partnerships among businesses and non-profit organizations to create a more cohesive society. The awards also endeavour to promote partnership between business and social welfare sectors. The award has been conferred upon SJVN in recognition of outstanding socio-economic welfare activities being done by the company.

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	2012-13	2011-12	2010-11	2009-10
A	**INCOME DETAILS**				
I	Sales	1682.10	1927.50	1829.74	1769.74
II	Other income	234.52	209.29	149.42	138.99
III	Claim from Insurance Co.	-	-	-	-
IV	Total income	1916.62	2136.79	1979.16	1908.73
V	Profit before Depreciation, Interest & Finance Charges, and Taxation.	1685.31	1888.27	1739.57	1730.63
VI	Profit before tax	1184.58	1345.89	1156.19	1017.47
VII	Profit after tax	1052.34	1068.68	912.13	972.74
VIII	Dividend	397.12	388.84	330.93	328.20
IX	Tax on Dividend	67.49	63.08	53.69	54.82
X	Reserves and Surplus	4273.38	3685.65	3068.89	2528.25

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 June, 2014.

Wind Power Project

- SJVN has recently awarded 47.6 MW Wind Power Project Work on EPC basis in Kirvere Distt. Ahmednager, Maharastra. Project will be commissioned during February, 2014.

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.
- Dhaulasidh 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 has been allocated 1320 MW Thermal Power Project at Chausa Distt. Buxar in Bihar.

6.3.4 Power Transmission

- SJVN entered into 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 PROJECT 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	-	770 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, 2013, heading, benching and concrete lining for entire length of 15,177 m of HRT has been completed. In Surge Shaft, concrete lining for entire length of 165.2 m has been completed. For underground Steel liner, erection completed for total length of 648 m and for Surface liner erection of 568 m completed. The civil and electromechanical works in the Power House are under progress in all the six units and the project is scheduled to be commissioned by June, 2014.

7.2 Khirvire Wind Power Project (47.6 MW) located in Khirvire Distt. Ahmednagar in State of Maharashtra

SJVN on October 19, 2012 has awarded the works for 47.6 MW Wind Power Project located at Khirvere Distt. Ahmednagar in State of 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 2 x 50 MVA, 33/132 kV Wind Farm Pooling Station connecting 33kV Line for Inter connecting the Grid. Project will be commissioned during Feb, 2014.

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 and socially responsible hydro power 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 pollution abatement and control efforts as it shall provide qualitative and quantitative data for decision making. The laboratory is envisaged to get 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

SJVN being a responsible corporate citizen is committed to enhancement of the quality of life of local communities and area development in the vicinity of its projects. Though involuntary displacement is inevitable in hydroelectric projects causing trauma to the displaced communities, SJVN chooses the least displacing alternative sites for its projects thus minimising adverse impacts. SJVN carries out Social Impact Assessment (SIA) study in the proposed projects quite prior to its project execution so that adverse impacts are identified and mitigation measures are evolved. In addition, a detailed Baseline Socio-Economic Survey (SES) is conducted in the nearby villages of proposed projects enabling formulation of holistic Resettlement & Rehabilitation and CSR Plan for the affected communities of the projects to improve their Socio-economic conditions.

So far SJVN has implemented BOD approved R&R Plans in its two Hydro Power Projects which are in operation and construction stages. First in Nathpa Jhakri Hydro power Station (1500MW) and second in Rampur Hydro Power Project (412 MW), both situated in Himachal Pradesh. SJVN has formulated and adopted exhaustive R&R plans for NJHPS and RHEP with budget Outlay of ₹ 7.24 Cr. and ₹ 53.84 Crs. respectively. The basic objectives of the R&R Plans are to increase the socio-economic standard of the PAFs. The total expenditure incurred till date on various R&R measures in NJHPS is ₹ 13.60 Crs (beyond the budget outlay of ₹ 7.24 Crs. Based on societal needs) and in RHEP is ₹ 53.84 Crs. The other projects are under survey and investigation stages, hence R&R plans have not been implemented in such projects. These R&R Plans include, besides statutory land and house compensation, various R&R benefits like providing alternative agricultural land, employment, housing facilities, financial assistance for self employment as well as various infrastructural and community development programs. The total expenditure incurred till date on various R&R measures in NJHPS is ₹ 13.60 Crs (expenditure incurred beyond the budget outlay which was as per societal needs) and in RHEP is ₹ 53.84 Crs. SJVN follows the guidelines of National R&R Policy. The provisions made under the SJVN's R&R Policy are superior to those of National Policy and meet the standard international R&R norms of the World Bank. The main thrust of the Corporate R&R Policy is on sustainable economic development, participatory management involving project affected people in community development works, better housing facility, strengthening of social institutions, capacity building of local youth for employment opportunities, women empowerment, child development, financial assistance to vulnerable group families, upward revision of monetary grants under the policy, grievance redressal mechanism, independent R&R monitoring, sharing of benefits generated by the projects with host population like free power supply to project affected families and evaluation of R&R implementation plans by an external independent agency.

SJVN, being a responsible corporate citizen is continuously concerned about the well being of the host community residing around its projects. It perceives the welfare measures for the host community more as a responsibility rather than an obligation. Therefore, it keeps constant interactions with the local community to assess their needs and on the basis of societal needs, SJVN formulates strategies and schemes for the upliftment of the society. Based on such philosophy SJVN has approved and adopted its own "Corporate Social Responsibility- Community Development Policy" in the year 2011 which is based on the CSR guidelines issued by DPE, GOI in April 2010. The major concerns of SJVN under Corporate Social Responsibility (CSR) are:

A. Education
B. Health care
C. Community facilities
D. Infrastructural facilities
E. Assistance during natural disasters etc.

As per SJVN CSR Policy the Annual CSR Budget Plan is to be kept from 0.5% to 2% of Net Profit After tax of preceding year. As on date SJVN has spent approx ₹ 124 Crs on CSR works. The CSR Plan in SJVN is controlled by a registered Trust namely " SJVN Foundation" with Director(Personnel) Chairman and six other trustees who are heads of various departments and projects of SJVN. As per HP Govt. notification for "Local Area Development Committee", SJVN is required to provide 1.5 % project cost of RHEP i.e ₹ 30.75 Crs. to local govt. for area development works around the project. So far an amount of ₹ 26 Cr have been spent on LADC works in RHEP .

Keeping in view the new "Guidelines on Corporate Social Responsibility and Sustainability for Central Public Sector Enterprises" issued by DPE , SJVN has kept provision of sustainable development program on health and hygiene and has also adopted one backward district Chamoli in Uttrakhand for implementation of CSR programs under CSR Plan 2013-14 for overall development of the district. In future also it will follow the new CSR guidelines issued time to time.

Further with the implementation of Companies Act 2103, PSEs are required to spend 2% of average of Profit Before Tax of last three immediate FYs. Accordingly, SJVN has revised its CSR budget for FY 2013-14 to ₹ 24.57 Cr. The

major CSR works during the year are, launching of 6 mobile health vans, organising 30 specialised health camps, skill development programs for 400 people, creation of 15 community assets, financial support of ₹ 1.0 Cr for relief measures to the flood affected people in Uttrakhand, construction of 5 children parks in Shimla, Laying of Sewerage System in village Jhakri etc.

The R&R and CSR-SD activities are being implemented through well designed institutional arrangements like establishment of a separate R&R/ CSR cells at projects , monitoring and grievance redressal mechanisms and impact evaluation system.

The World Bank which evaluated and assessed the social development activities in SJVN projects has commented in their Aide Memoir as under.

"The success of the social development activities undertaken in this project is quite rare for India, and can be considered as one of the best examples of social work in bank-assisted projects in India. It should both exemplified and emulated in other projects"

A view of KTPS Stage -VI (500 MW) Project of APGENCO, funded by PFC.

Machine Hall of Koteshwar HEP (400 MW)

CHAPTER - 25

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 Koteshwar HEP) and other hydro projects in Bhagirathi valley.

The Company has successfully commissioned the Tehri Dam & HPP (1000 MW) Stage-I during the Xth Plan and Koteshwar 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.

THDCIL commissioned another project of 400MW Koteshwar HEP with a100M high concrete Dam just 20KM downstream of Tehri Project.

The Project was a non-starter project after award in 2002 due to delayed R&R issues. Hardly 10-15% work was excuted in the entire contract period. Contractor was not ready to take up execution of works without revision of rates of contracts.

THDC Management took proactive decision to work in Risk & Cost of the contractor in April 2007 and decided to provide gap funding upfront (about 10%) to bring the project at the earliest. Work was got executed like departmental work with full control of THDC.

Two units were commissioned by March 2011 i.e. in four year time after starting work almost from scratch in April 2007. Rest two units were commissioned by March 2012. Thus making it a fastest implemented hydro project in its category.

Secretary (Power) MOP issued appreciation letter in April 2011 to engineers of Koteshwar Project for their extraordinary feat.

Koteshwar 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 Koteshwar Hydro Electric Project by applying best project management principles and techniques. Koteshwar HEP has also won the most prestigious 5th CIDC Vishwakarma award – 2013.

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

A view of underground Tehri Power House

the category of 'Best Performing Generation Company (in Hydro Sector)' in May 2012.

THDCIL has obtained ISO 9001:2008 Certificate of Quality Management System and ISO 14001-2004 Certification (Environment Management System) for Corporate Office, Rishikesh, Tehri HPP, Tehri PSP and Vishnugad Pipalkoti HEP. THDCIL has also obtained ISO 18001-2007 Certification of Occupational Health and Safety Management System (OHSAS) for Corporate Office, Rishikesh.

THDCIL has been awarded Miniratna Category –I status in Oct'09 and upgraded to Schedule 'A' company in July'10 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 8795 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.

FINANCIAL PERFORMANCE

THDCIL is consistently profit making company since the commissioning of the first phase of 2400 MW Tehri Hydro Power Complex i.e. Tehri Dam & HPP (1000MW) in 2006-07. The total income of the company during FY 2012-13 was ₹ 2026.53 Cr. THDCIL has earned a net profit of ₹ 531.38 Cr during the year 2012-13 as compared to ₹ 703.83 Cr during FY 2011-12. The company has a Net Worth of ₹ 6771.49 Cr in FY 2012-13 as against a Net Worth of ₹ 6207.14 in FY 2011-12.

OPERATIONAL PERFORMANCE

THDCIL is at present generating power from Tehri HPP & Koteshwar HEP with installed capacity of 1400 MW and power generated is supplied to 09 beneficiaries States/UT of Northern Region.

During the year 2012-13, Tehri Power Station generated 3101.98 MU of energy against a target of 3000 MU and Koteshwar HEP generated 1164 MU of energy against a target of 1145 MU. The reservoir operation ensured the committed water for drinking to Delhi & UP and for irrigation in the command area.

During the current FY 2013-14, THDCIL has generated 4309.79 MU of energy till 30.11.2013.

COMMERCIAL PERFORMANCE

The Power Purchase Agreements(PPA) for Tehri HPP (1000 MW), Koteshwar HEP (400MW),Tehri PSP (1000MW) and Khurja Super Thermal Power Plant (1320 MW) were signed with the beneficiaries in the Northern Region.

The Power Purchase Agreements for Vishnughad Pipalkoti HEP (444MW) were also signed with all the beneficiaries except a Delhi Discom viz. BSES Yamuna Power Limited (BYPL). This PPA may be signed with BYPL shortly.

Tariff for Tehri HPP (1000MW) for the period 2006-09 has been approved by Hon'ble CERC vide their Order dated 16.04.2013. Accordingly, the bills were raised/regularized for the period 2006-09. The tariff petition for Tehri HPP(1000MW) for the period 2009-14 was filed before the Hon'ble CERC on 04.11.2011. Based on the Tariff Order dated 16.4.2013 for Tehri HPP for the period 2006-09, revised Tariff Forms for the period 2009-14 have also been submitted before Hon'ble Commission on 23.07.2013. Presently, for Tehri HPP provisional billing is being done based on the AFC for the Year 2008-09 (as per the CERC Tariff Regulations, 2009) pending finalisation of tariff for the period 2009-14.

The tariff petition for Koteshwar HEP (400MW) for the period 2011-14 had also been filed before the Hon'ble CERC on 30.03.2012.Hearings on tariff petition of Koteshwar HEP were held on 16.07.2013 and 27.08.2013 before the Hon'ble Commission. The Tariff Order of Koteshwar HEP (400MW) may be issued by Hon'ble CERC shortly. Presently,for Koteshwar HEP,provisional billing is being done on the tariff as agreed between THDCIL and the beneficiaries in the 18th Technical Coordination Committee (TCC) and 20th Northern Regional Power Committee (NRPC) meetings held on 28th Feb.' 2011 and 1st March 2011 respectively.

For the financial year 2012-13, approx. 98% revenue has been realized from the beneficiaries against the energy billing of ₹ 1636.85 Cr. towards sale of energy based on provisional tariff. During the Year, the company has also earned net revenue of ₹ 16.84 Cr. on account of Unscheduled Interchange (UI) charges under the prevailing UI mechanism and ₹ 1.73 Cr. on account of interest due to late payment of UI charges. During the financial year 2013-14 (upto 30.11.2013), based on the provisional tariff, ₹ 971.34 Cr. revenue has been realized from the beneficiaries against the billing of ₹ 1554.79 Cr. towards energy bills raised between 01.04.2013 to 30.11.2013. In addition, the company has also earned net revenue of ₹ 8.63 Cr. for the period 01.04.2013 to 30.11.2013 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 Koteshwar 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 8795 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-11.

Underground excavation in all nine approach adits have been completed except excavation of adit AA-8R to service bay of M/C Hall which is in progress.

Excavation of pilot shaft-4 of u/s surge shaft from HRT-4, Crown slashing of PAC & BVC with steel ribs, Benching of Machine hall upto Crane Beam level, Excavation of Lower horizontal Penstock P-5 & P-7, Excavation of drainage gallery around D/S Surge Shaft, Excavation of Ventilation tunnel and Heading excavation of TRT-3 & TRT-4 is in progress. Manufacturing of Stay ring, Butterfly Valve plug casting, Stator bar , Stator frame, Stator lamination, Runner band & crown, Turbine Shaft forging, Spiral casing, wicket Gate for Unit-5 & 6 are in progress at different facilities of consortium/sub-vendors.

Supplies of Draft Tube Elbow liner of Unit -5 6 & 7 have been received at site. Project is expected to be commissioned in FY 2016-17. Expenditure incurred on Tehri PSP Project till Nov'13 is ₹ 544.38Crs. including IDC & FC of ₹ 40.06 Cr.

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.

The Stage-I clearance of 80.507 Ha forest land was accorded by MoEF on 3rd June- 11. Stage – II Forest clearance was accorded by MoEF, GoI on 28th May-13. G.O. for transfer of 80.507 Ha of forest land has been issued on 6th Dec'13 by GoUK. LOA has been issued to M/s HCC on 19.12.2013.

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.

Stage-1 forest clearance of 39 Ha land required for project works has been accorded by MoEF on 27th Nov-12.

Final (2nd Stage) Forest diversion has been cleared by Central Nodal Forest officer, Lucknow GO for transfer of land is awaited from GoUP.

Regarding Civil works package, Techno-Commercial bid's evaluation is under progress.

IN THE STATE OF UTTARAKHAND

Examination of the updated DPR of Jhelam Tamak HEP (108 MW)is under progress in CEA.

As per Supreme Court order dated 13th Aug-2013, MoEF and State of Uttarakhand were directed not to grant any Environmental clearance or Forest clearance for any hydro electric project in the State of Uttarakhand until further orders. Further activities can be taken up after getting the clearance of the Supreme Court.

IN THE STATE OF MAHARASTRA

DPR of Malshej Ghat PSS with enhanced installed capacity of 700 MW has been submitted to the Govt of Maharastra.

The EIA studies for Malshej Ghat have been completed and the draft EIA / EMP report is ready. The validity of TOR has expired on 23.10.2012 and fresh approval of ToR shall have to be obtained after Implementation Agreement with GoMH.

THDCIL has taken up desk studies required for updation of DPR of Humbarly PSS. Approval of ToR for EIA / EMP studies was obtained on 31.08.2009. The viability of ToR has expired on 30.08.2013

FOREIGEN 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.

DPR of optimized Sankosh Project (2585 MW) has been submitted to CEA and CWC in Aug'12. All the comments received from CWC have been discussed and the same are being incorporated in the final DPR. Field survey works for the acquisition of detailed social data of the submergence area has been completed and final report on this study has been received and submitted to MoEA, RGoB.

After obtaining clearance on viability of Bunakha HEP (180 MW) in Mar, 2010, Final DPR incoporating all the suggestions of CEA/CWC/GSI has been submitted to RGoB on 21st Nov-13.

Bunakha HE Project is to be executed in JV mode. All the stake holders have signed the finalized cost sharing mechanism agreed for Bunakha. 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:

DPR of the Project has been prepared and submitted by NTPC.

The Terms of Reference for conducting EIA/ EMP study were issued by MoEF, Govt. of India on 27-10-2011. EIA/EMP Report has been prepared and submitted to UP State Pollution Control Board, Lucknow on 30.03.2013 for conducting Public hearing. Formal letter of announcement regarding holding public hearing is to be issued by SPCB head office, Lucknow.

Application for long term coal linkage alongwith applicable fee was submitted with Ministry of Coal, New Delhi in May-11. For pre-qualification & fixing of inter-se priority of Khurja STTP for Coal linkage, water allocation letter is required from water Resource Deptt., GoUP.

Out of total land requirement of 1,360 acres, about 1,200 acres of the land in four villages of Khurja Tehsil in Bulandshahar district of UP has already been acquired by UP Govt. for non-agricultural use through UPSIDC and mutated in their name.

To expedite the transfer of 1200 acres of land, earlier acquired by UPSIDC, an MoU regarding finalising the modelities for transfer of land to THDCIL, has been signed on 14.12.2013 for implementation of Khurja STPP.

NHAI has conveyed their in-principle consent to MoRTH for re-routing of the NH-91. The cost for re-routing the highway including cost of land etc. shall be borne by THDCIL.

Maithon Power Ltd. A joint venture Company of DVC

CHAPTER - 26
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. 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 2013-14 (till Nov'13)

- Total generation achieved by DVC thermal generating units in FY 2013-14 (till Nov'13) is 18661 MU.
- Total generation achieved by DVC hydel generating units in FY 2013-14 (till Nov.'13) is 181 MU.
- Capacity addition: KTPS U#1 (500 MW): COD declared on 18.07.13.

ANTICIPATED FINANCIAL STATEMENT

(₹ Crore)

Particulars	(April 13-Nov. 13) Provisional	(Dec. 13-March 14) (Anticipated)	Total (Anticipated)
Sale of Power (MU)	18077	9110	27187
Revenue (₹ Crs.)	7926	3943	11869
A. Sale of Power	7837	3874	11711
B. Misc. Income	89	69	158
Operating Profit (₹ Crs.)	791	3943	4734
Interest	1124	936	2060
Profit from Current Year's	(333)	3007	2674
Operation (3-4)			
Past Year's Adjustment		(173)	(173)
(Debit)/Credit			
Profit/(Loss) on Irrigation & Flood Control	111	11	122
Surplus/(Deficit) [5+6+7]	(222)	2845	2623
Income Tax	-		-
Net Surplus/(Deficit) [8-9]	(222)	2845	2623

Note: The above anticipated Profit /(Loss) for the financial year 2013-14 is subject to

(i) Revision of tariff up on grant of any additional allowance on account of ARR and ACS gap by State Regulators based on the petition to be filed by DVC, not considered above.

ANTICIPATED CAPITAL EXPENDITURE FOR 2013-14 ₹2980 CRORES. (RE 2013-14 - ₹ 3516 Crores)

GENERATION AND POWER SUPPLY POSITION

Performance of Old Units (2710 MW) & Hydel Units (147.2 MW):

Old units (2710 MW)	FY 2012-13	FY 2013-14 (till Nov., 13)	Expected Gen (Dec.13 Mar.14)	Remark
Thermal Gen. (MU) of Old Units (2710 MW)	14462	9350	4038	Low generation during Dec. 13 to Mar. 14 is due to low system demand
Thermal PLF (%)	60.92	58.92	51.30	
Hydel Gen (MU)	203	181	47	

Performance of New Units:

New Units	FY 2012-13	FY 2013-14 (till Nov'13	Expected Gen. (Dec'13 Mar/14)	Remark
Thermal Gen. (MU) of New Units	10995	9311	6441	Low generation Projection during Dec'13 to Mar'14 is due to low system demand
Thermal PLF %	70.16	57.22	63.37	

	Generation and Power Supply Position		
Particulars	2012-13 (Actual)	2013-14 (Actual) (prov. upto Nov' 13)	Target (Prov.) (Dec'13-Mar'14)
GENERATION (at Gen. BUS)	(MU)	(MU)	(MU)
(i) Thermal	25457	18661	10479
(ii) Hydel	203	181	47
Total	25660	18842	10526
#GENERATION (at PS BUS)	23307	17112	9560
*PURCHASE OF POWER (at DVC BUS) (MU)	2578	1718	1416
TOTAL STOCK (at DVC BUS) (MU)	25885	18830	10976
SELEABLE UNITS (at DVC BUS/Periphery)	25250	18270	10515

excludes infirm power.

* Includes ISGS, MPL, IEX/PXIL, UI etc. but excludes Scheduled Wheeling of Power by TISCO etc.

Power Plant DVC

CAPACITY ADDITION PROGRAMME AND ACHIEVEMENTS

Sl. No	Project	Capacity (MW)	Progress made upto Nov'2013	Anticipated Target upto 31.03.14
1.	Koderma TPS Unit-1&2 (2x500 MW)	1000	**Unit-1:** COD achieved on 18.07.13	
	EPC Contractor : Main plant Pkg. : BHEL CHP Pkg.: L&T PWS Pkg.: KBL Rly. Infra: RITES		**Unit-2:** 1. TG put on Barring Gear on 23.01.13. 2. Steam Blowing completion on 09.02.13. 3. Oil & Coal Synchronization done on 11.02.13 4. Full Load achieved on 15.02.13	Unit-2: COD by Jan'14.
2	Durgapur Steel TPS Unit-1&2(2x500 MW)	1000	**Unit-1:** COD achieved on 15.05.12.	
	EPC contractor: Main plant Pkg.: BHEL CHP Pkg.: ThyssenKrup PWS Pkg.: VA Tech Rly. Infra: RITES		**Unit-2:** COD achieved on 05.03.13.	
3	Raghunathpur TPS Unit-1&2 (2x600 MW)	1200	**Unit-1:** 1. TG Oil flushing done on 19.07.13. 2. TG put on Barring Gear on 27.09.13 3. Non-drainable Hydro test of Boiler done on 06.11.13	**Unit-1:** 1. Steam Blowing Completion by Feb'14. 2. Safety V/v setting by Feb'14. 3. Oil Synchronization by Feb'14 4. Coal Firing & full load by Feb'14.
	EPC Contractor : Main plant Pkg. : R. Infra CHP Pkg. : TRF PWS Pkg. : MBL Rly. Infra : RITES			**Unit - 2 :** Readiness of TG Box-up by Feb' 14.
4	Bokaro 'A' TPS Unit-I (1x500 MW)	500	Boiler Hydro test done on 10.12.13	TG Box-up by March'14
	EPC contractor : Main plant Pkg. : BHEL CHP Pkg. : a) Main Pkg.- Tecpro b) Stacker Reclaimer Pkg. TRF PWS Pkg.: a) DM Plant-VATECh b) PT Plant-Mcnalley Bharat Engg. Co. Rly. Infra : RITES			

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 31.12.2013	Anticipated Target upto31.03.2014
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) COD achieved on 24.07.2012.	--

TRANSMISSION PROJECTS

PROGRESS UPTO 30.11.2013-ONGOING PROJECTS

Sl. No.	Schemes	Progress up to 30.11.2013	Remarks	Anticipated Target up to 31.03.2014
1.	220 KV Mejia-Ramgarh Line upto Gola	85%	Work under progress	PDC-03/2014
2.	132KV Dhanbad-Govindpur Line	100%	Commissioned on 10.07.13	
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%-100% 100%-85% 100%-100% 100%-100%	Work in progress	Completion by i) Completed ii) 03/2014 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: 99% Ph-II: in progress	Commissioned Ph-I: 30.06.2011	2 nos 132KV line bay at Patherdih end by 03/2014
5.	220 KV Dhanbad-Giridih Line	100%	Commissioned on 29.03.13	
6.	220 KV Koderma-Giridih Line	81%	Work in progress	PDC- 06/2014. Depends upon obtaining final Forest Clearance. Proposal is pending with MOEF, New Delhi.
7.	400 KV D/C DSTPS-RTPS Line	100%	Commissioned on 16.07.13	
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	90%	Work in progress	PDC-03/2014.
10.	System Energy Management & Accounting	Supply-100% Erection-100%	Commissioned on 06/2013	
11.	220 KV Giridih Sub-station	100%	Commissioned on 29.09.12. Finally 1 No. 160 MVA Tr. commissioned on 25.09.13	
12.	2nd circuit LILO of 220 KV Mejia-Kalyaneswari Line at Burnpur and	21%	work in progress by resolving severe ROW	PDC-03/2014.
13.	4 Nos. 220KV Bays at 220 KV Burnpur Sub-station	99%	Work in progress	i) 3rd and 4th bay commissioned on 30.04.2011 and 03.08.2012 respectively. ii) Line bay # 2 commissioned on 29.10.2013 Balance line bay # 1 by 03/2014
14.	132 KV North Karanpura Tandwa (NTPC) Line to be charged at 33 KV	24%	No progress due to non availability of forest clearance as balance work is in forest area	Ist Stage Forest compliance is under process.

SAHARPUR JAMARPANI COAL BLOCK

Govt. of Jharkhand issued Prospecting License to DVC for undertaking exploration activity in the coal block. The Prospecting License Deed was signed and registered on 12.07.2013. Exploration activity is being undertaken by M/s Singareni Collieries Company Limited (a JV of Govt. of India & Govt. of Andhra Pradesh).

RECOVERY OF JSEB OUTSTANDING DUES

Outstanding dues of JSEB to DVC have been accumulation due to less/ irregular payment. An outstanding due till Oct'13 is Rupees 6740 Crs. JSEB dues of 2589 Crs. are reconciled upto July'13 excluding delay payment surcharge. However, with intervention of Principal Secretary, Govt. of Jharkhand, reconciliation of Delay Payment Surcharge and upto date reconciliation is under process. Meanwhile unbundling/

restructuring of JSEB is under process by Jharkhand Government to bring the Board to a zero loss balance sheet. Meanwhile, an adoc payment of ₹ 500 crs by Government of Jharkhand towards outstanding dues is in the pipeline and same is expected by January'14.

Rural Electrification Programme

Govt. of India has launched a scheme named "Rajiv Gandhi Grameen Vidyutijkaran 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 program 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 on behalf of respective State Governments, by Ministry of Power, Govt. of India.

WEST BENGAL - East Midnapore Project:

a) Project completed.

b) Project Closure – 'Completion Proposal' of the project submitted to RECL.

JHARKHAND - Dhanbad, Koderma, Bokaro, Gumla, Simdega, Hazaribagh, Chatra and Giridih Projects:

RGGVY Projects - Physical achievements:

Sl. No.	Description	Scope as per survey (Provisional)	Achievement in 2013-14 (up to 30.11.13)	Cumulative achievement	Target for remaining period up to March'14.
1.	Electrification of un-electrified /de-electrified villages	5,234	25	5,018	216
2.	Electrification of partially electrified villages	2,232	11	2,157	75
3.	Providing BPL Service connection	4,88,050	0	4,16,732	71,318
4.	Construction of New 33/11KV PSS	42	2	34	8

Note:

i) Due to non-availability of Grid connectivity in part of Simdega and Chatra districts, MoP, GOI has approved DVC to construct additional 33KV lines (242 kM). The target is subject to completion of said lines involving forest clearance of which is awaited.

DDG Projects:

i) Sanction accorded for 30 nos. villages under DDG projects on 26.08.13. Award for execution to be made within 2013-14 for execution of the projects.

ii) DPR for balance 48 nos. villages under DDG projects submitted to JSEB for onward transmission to RECL for project sanction.

RGGVY Projects - XII Plan:

DPR for all the nine districts namely Dhanbad, Koderma, Bokaro, Gumla, Simdega, Giridih, Hazaribag, Ramgarh and Chatra districts have been submitted for project sanction.

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 coal, oil, water and Auxiliary Power Consumption vis-à-vis improvement in Unit Heat Rate.

The following measures have been taken for efficient Energy Management System of the Power Plants:

- Daily Co-ordination meeting and monthly ORT meeting at plant level for monitoring of various efficiency & conservation parameters, Heat Rate deviation analysis and remedial action plan.
- Carrying out Energy Audit & Performance test of Thermal Units, Equipments, Systems & Sub-systems.
- Optimization of lighting load, gradual replacement of incandescent lamps, mercury vapour lamps, tube lights by energy efficient CFL/HPSV/T5 etc. lamps for illumination inside and outside Power Houses.
- Gradual introduction of energy efficient equipments, e.g. VFD motors in ID Fans, Energy Efficient Cartridge of BFP, Microprocessor based ESP etc.
- Timely replacement of BFP recirculation valves.
- E-watch – Energy monitoring software installed in MTPS (1-4).
- Combustion optimization, improvement of condenser vacuum, reduction of unburnt carbon, reduction of air leakage from ducts, expansion joints through improved O&M practices to optimize system efficiency and Aux. Power Consumption.
- Under National Mission of Enhanced Energy Efficiency (NMEEC), Perform Achieve and Trade (PAT) 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 & MODERNIZATION OF THERMAL POWER STATIONS

GAS TURBINE:

CEA have been informed to visit Maithon & clear the proposal for selling the plant, letter given to CEA response awaited.

Bokaro 'B''TPS 3x210 MW: DPR has been submitted to CEA for ₹ 2345 crores approval of DPR required before further

proceeding contract& tendering activity of R&M expected to be awarded by July 2014 delivery of items for the works to began within six months end 2015. Works will commence by mid 2015.

DTPS 1X210 MW: Japan coal has submitted their report which has been reviewed by DVC. Japan coal is to incorporate the recommendation of DVC. Thereafter DPR shall be prepared & R&M work shall be taken up.

NON–POWER ACTIVITIES OF DVC

WATER RESOURCE MANAGEMENT

Out of the originally planned seven storage reservoirs in the Damodar Basin, construction of multi–purpose Dams at Tilaiya (1953), Konar (1955), Maithon (1957) and Panchet (1959) 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 (GoJ & GoWB) 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 further reduced to 0.95 million acre feet due to progressive siltation as per the latest capacity survey reports of the year 2010. Maithon and Panchet being terminal reservoirs, play a vital role in water resources 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.

Up- to-date Progress made in water resources management during the year 2013–14 upto 30th November, 2013 is as under:

FLOOD CONTROL

During the year under consideration with onset of south–west monsoon on 15.06.2013 in the entire Damodar Valley Area it was active since then and the same withdrew from entire Valley on 19.10.2013. There was no remarkable rainfall in the valley till 3rd week of August.The average monsoon rainfall up to September 2013 over the Barakar and Damodar catchments were 703 mm & 720 mm respectively against the normal monsoon rainfall of 992 mm and 1035 mm respectively. The rainfall deficit was 29.13 % and 30.13 % respectively up to month of september. However, during the 2nd week of Oct. heavy to very heavy rainfall in most of the places of DV Area occurred due to the deep depression by the impact of the severe cyclonic storm “PHAILIN”, that catorized as category 3 Cyclone on the Stiff Simpson scale and made landfall near Orissa at Gopalpur on the north eastern coast of India. As a consequence, both the catchments viz. Barakar and Damodar received excess rainfall of 201.65% and 273.93% respectively in the month of October alone. At the end of monsoon, the average monsoon rainfall over the Barakar and Damodar catchments were 952 mm & 980 mm respectively against the average normal monsoon rainfall of 1074 mm and 1107 mm respectively; however the overall rainfall deficit were 11.36 % and 10.66 % respectively.

Due to the impact of cyclone “Phaline” and subsequent high releases from Tenughat Dam, there were five instances of flood release from Panchet reservoir and one from Maithon reservoir. The maximum Reservoir Level attained in Maithon was at RL. 494.78 ft. and that of Panchet was 428.84 ft. on 15.10.2013. During this flood operation, maximum combined flood release was 1,15,000 cusec (80,000 cusec from Panchet and 35,000 cusecs from Maithon) for a duration of 6 hours w.e.f. 16 hours on 14.10.2013 to 22 hours on same date. No major flood release was required from Konar and Tilaiya Reservoirs during this monsoon period.

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 Maithon & Panchet Reservoirs, as per advice of the Member Secretary, Damodar Valley Reservoir 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 allocated for Boro cultivation, after taking into account all the committed requirements.

The monsoon rainfall in the valley during this year was nearly normal. Water supply for irrigation of Kharif crops during 2013-14 was about 9.13 lakh acre ft which irrigated approximately 8,21,800 acres of land within the DV Command Area through LBMC & RBMC canal in four districts of West Bengal viz Burdwan, Bankura, Hooghly & Howrah. About 70,000 Ac.ft of water which is committed for Rabi irrigation irrigated approximately 50,000 acres of land within the DV Command Area in two districts of West Bengal viz Burdwan & Hooglhy. The post-monsoon Damodar Valley Reservoir Regulation Committee Meeting for the year 2013-14 has not been held till date. However a meeting to review position of water availability for Boro Irrigation during non-monsoon season of 2013-14 was held on 29/11/2013 with Member Sectary, DVRRC, wherein it has been decided to allocate 443.80 Th.acft. of water for Boro irrigation from the available surplus water. It is also decided in the meeting that additional 10 Th. acft. of water from DVC's quota for power generation shall be spared for Boro crop in Howrah and Hooghly Districts of West Bengal which were affected to some extent by the October, 2013 flood. So the total allocation for Boro irrigation is 453.80 Th.Ac.ft. with a target of 1,51,000 acres of land proposed to be irrigated during the season 2013-14 within the DV command area in four districts of West Bengal viz Burdwan, Bankura , Hooghly & Howrah.

DRAWAL OF INDUSTRIAL & DOMESTIC WATER

Many industries have come up in the Damodar Valley Area in the last few decades due to the availability of power and water in the region. Presently, DVC supplies water to 184 agencies (125 in Jharkhand and 59 in West Bengal) for industrial and

domestic purposes. The total permitted quantity to different agencies located in the State of West Bengal is 454.78 MGD and that of in the State of Jharkhand is 461.28 MGD. Demand of water is increasing due to rapid industrialization in the Valley Area. The DVRRC allocated 16.3 MGD of water to meet Municipal demand of Bankura Water Supply Project and 1.96 MGD to Neuturia & Raghunathpur Water Supply Project of the PHE Department, GoWB. Water allocation for KTPP phase II for an amount of 6.8 MGD was also allocated by DVRRC to DVC.

WATER INVESTIGATION AND DEVELOPMENTAL INITIATIVES

As a part of the developmental activities in water resource management, a few projects have been taken up by DVC, the details of which are as follows:

S. No	Name of the Project	Status
1.	Construction of Balpahari Dam over the Barakar River in DV Area.	Final DPR was received in the month of April 2012. A presentation was arranged in the month of Oct. 2012 at Ranchi wherein officials of CWC, GoJ and DVC participated. It was decided that EIA and EMP study are to be undertaken before further action. GoJ agreed that fund for taking up the above studies will be made available by the GoJ to the Executing authority i.e. DVC. Fund from GoJ is yet to be received and as such further progress could not be made.
2.	Preparation of Guide Curves for unified control of Reservoirs in Damodar Barakar Basin including Tenughat Dam.	The work order has been Placed and the work is in progress and likely to be completed within the month of October, 2014.
3.	Installation of 39 nos. ARG in and around DV Area for modernization and expansion of rain gauge network.	Installation and commissioning of 39 nos. of ARG in valley area has been completed on 15.06.2013.
4.	Formation of Dam Safety Review Panel (DSRP).	As per guidelines of CWC, DSRP has been constituted by DVC for all the 04 (Four) Dams of DVC. Inspection of Konar Dam was completed in the month of November 2013. The inspection of Maithon and Panchet Dams are scheduled in the 3rd week of February 2014.
5.	Rehabilitation program of Konar Dam.	Konar Dam has been proposed to be taken up under the Dam Rehabilitation and Improvement Program (DRIP) scheme of CWC, Govt. of India wit assistance of World Bank funding. The proposal is pending in the Department of Economic Affairs under Ministry of Finance, Govt. of India.

ECO-CONSERVATION & AFFORESTATION

SOIL CONSERVATION

During the year 2013, DVC has taken up several initiatives in the field of soil & water conservation, such as renovation of water harvesting structures earlier created by DVC, experimentation of ground water recharge in upper valley & lower valley, maintenance of 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 & silt monitoring of selected watersheds and Afforestation in the valley area.

During the F. Y. 2013-14, DVC has taken up an initiative of linking of schemes of rain water harvesting with ground water recharge wells. A total no of 15 schemes spread over in six districts of Jharkhand and W.B. has been completed. Over & above under the new programme launched to restore & renovate the old rain water harvesting structures constructed by DVC in the valley, 300 nos. of schemes have been selected. Hundred nos. of schemes are under various stage of construction.

An ambitious programme of distribution of 15 lakhs seedlings was carried out. The department supplied these saplings to all the projects of DVC for distribution in and around the project area.

Sl. No.	Works	Achievement up to 30th November, 2013	Anticipated Achievement up to 31st March, 2014
01	Renovation of Old Water Bodies / Check Dams / Water Harvesting Structures /Ponds created by DVC.	100 nos of structures are under various stages of construction.	300 nos structures
02	Experimentation on Ground Water Recharge in UV & LV	All the schemes successfully executed. Target - 15 nos	Target Achieved
03	Experimental Project on Mint and Lemo-ngrass cultivation at Fore Shore Farms of Soil Conservation Department, DVC.	Maintenance	Maintenance
04	Soil Conservation Training Programmes	1) One no of Summer Training Programme completed for B.Tech /M.Tech students. Total Strength - 39 students 2) Three nos of farmers training completed on the subject separately on - i) Sustainable Production of crop ii) beneficial use of inorganic and organic fertilizer for seasonal crop. iii) Use of soil testing of farmer's field for sustainable crop production.	i) Participatory Watershed Management Fisheries ii) Watershed Planning & Project Formulation iii) WHS iv) NRM Govt. of India confirms the Budgetary allocation for Centrally Sponsored Training Programme.
05	Advisory Services through Soil Laboratory	i) Soil Sample Collected -700 nos ii) Analysis of 650 nos samples are completed.	Total Annual Target is likely to be achieved i.e., 1800 nos.

06	Hydrological & Silt Monitoring of selected watersheds.	a) Data collection in respect of Rainfall, Run-off and Silt discharge completed for 2013. b) Total no. of Silt Monitoring Stations = 16	The collected data are being analyzed and its findings will be sent to the Ministry of Agriculture, Govt. of India, New Delhi and other Research Institution if they so desire.
07	Eco Development works in the power projects as per Guidelines of Ministry of Environment & Forest, GOI.	Continuation of maintenance work of 7 lakhs square meter of greenery area at lower valley & upper valley are in progress.	As stated
08	Afforestation in the Valley Area	All the 15 lakhs seedlings raised and handed over to the concerned project.	Target Achieved

SOCIAL INTEGRATION PROGRAMME

The Damodar Valley Corporation is committed towards socio-economic development of the inhabitants, particularly in the area within 10 km around main projects through its" Social Integration Programme"(SIP). The programme covers broadly two types of schemes- "Continuing scheme" involving recurring expenditure for promotion of primary education, enhancement in quality of public health by addressing problem on safe drinking water, hygiene & sanitation etc, capacity building through vocational training, SHG formation, linkage with financial institutions etc. and " Infrastructure development works" involving planned development of rural roads, school building, health centre, community / training centre, micro-lift irrigation etc.

Presently SIP has been reached out to 629 villages in Bankura, Purulia and Burdwan Districts of West Bengal and Dhanbad, Bokaro, Koderma and Hazaribag district of Jharkhand. For the financial year 2013-14 Corporation has earmarked ₹ 2504 lakhs for SIP activities out of which ₹ 970.6 lakhs for continuing scheme and ₹ 1533.5 lakhs for infrastructure development programme. Out of the total fund allocated SIP has spent ₹ 1083.80 lakhs up to October 2013. Many other schemes are under process and residual fund is likely to be spent by March 2014.

Apart from the above, DVC is actively engaged in running two ITI, one at Chandrapura and another at Koderma. These institutes are being utilized to impart different vocational training to youth of Project Affected Villages. Scientific Pisciculture in DVC reservoirs and in small water bodies in villages have been taken up by DVC in collaboration with NFDB in large scale. This activity is impacting the livelihood of huge number of people in and around DVC project and major reservoirs.

HRD Report:

1. Grievance Redressal:

A structured Employee Grievance Redressal Procedure has been introduced in DVC from the financial year 2012-2013. The form for filling grievances has been made available online for easier paperless access with a tracking feature of grievances. The procedure consists of a four tier time bound system of resolution of grievances. The four stages include controlling/reporting officer, departmental head, nodal grievance redressal committee (NGRC) at the plant level and corporate grievance redressal committee (CGRC) at the corporate level. The system has provision for feedback and monitoring for system improvement.

2. Welfare of DVC employees:

a) Career counselling workshops: Workshops have been conducted in several projects of DVC for the children studying from classes 9 to 12. The workshops are aimed at handholding the students to choose the right career for a bright future. Coaching classes are also being held in some projects of DVC.

b) Job Search tab has been created in the DVC portal for children of DVC employees so that job seekers can search for government jobs in one place.

c) Rewards & Recognition: A Rewards & Recognition scheme has been launched on Independence Day 2012 and employees have been rewarded in each project. The children of DVC employees have also been awarded for academic excellence. The scheme would be implemented every year.

E-governance / Information Technology initiatives during the year 2013-14

IT initiatives in DVC during the year 2013-14 are enumerated below:

1. An Integrated Application covering Operation, Maintenance, Fuel, Finance, Accounts, Materials function is getting implemented across the Organization. The system has already been implemented and is in effective use at DTPS, BTPS, CTPS, MTPS and HQ. This has enabled the data flow through the system across the value chain of the mentioned functions. Implementation to other locations is being done.
2. IT Tool is being used for publishing the data on Declared Capacity and Schedule Generation towards UI optimization.
3. Various on- line Applications such as Recruitment application, New Consumer registration, Annual Property Return.
4. System has been developed for enablement of Unit Operator towards optimized operation of units within ABT framework.
5. Flood forecasting system has been developed for Damodar Valley area based on Rain Gauge Data and self learning process.
6. Biometric based Attendance system has been implemented at DVC HQ in June, 2012 which has improved employee attendance and punctuality considerably.

Implementation of such system at field formations is under process.

7. An open web-based platform has been provided for direct communication with the CEO of the organization.
8. System based feedback mechanism has been enabled for an informed decision on new organization policies.
9. Several new initiatives for system based improvement for various processes viz. HRMS, DMS, Hospital Management, Project Management etc. have been undertaken.
10. GIS based monitoring of vehicle movement for Coal transport etc. has been planned.
11. Availability of expert medical advice through Tele-medicine facilities for patients at remote locations is under process.
12. All tenders over ₹ 2 lacs are done through e-tender system.

Bhakra Nangal Dam - Himachal Pradesh

CHAPTER - 27
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 of the Bhakra Dam, Bhakra Left Bank & Bhakra Right Bank Power Houses, Nangal Dam, 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 1361 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 of 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 2900.73 MW as detailed below :-

Power House	Installed Capacity	Mega Watt
Bhakra (Right Bank)	5x157	785
Bhakra (Left Bank)	2x126+3x108	576
Ganguwal	1x27.99+2x24.20	76.39
Kotla	1x28.94+2x24.20	77.34
Dehar	6x165	990
Pong	6x66	396

BBMB is IS/ISO 9001:2008 and IS/ISO 14001:2004 (Quality and Environment Management System respectively) compliant organization. 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 Power Stations, Transmission Lines & Dams, Canal/Water Conducting System.

GENERATION AND TRANSMISSION SYSTEM

The generation during 2012-13 was 11000 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 9.74%. During the current year 2013-14, generation from BBMB Power Houses has been 9083.33 Million Units up to 30.11.2013 against the target of 7270 Million Units i.e. 25% higher than the target. The target for the year 2013-14 is 9665 Million Units. The likely generation till March, 2014 is 11478 MUs.

Power house wise plant availability during the year 2012-13 has been Bhakra Left Bank 96.03% (excluding R,M&U), Bhakra Right Bank 100%, Ganguwal 98.46%, Kotla 98.43%, Dehar 89.81% and Pong 99.66%. All time high plant availability of 95.6% was achieved for the year 2012-13.

Power house wise plant availability of BBMB Power houses for the year 2013-14 up to 30.11.2013 has been Bhakra Left Bank 95.92% (excluding R,M&U), Bhakra Right Bank 100%, Ganguwal 87.96%, Kotla 81.79%, Dehar 91.80% and Pong 99.60%. Overall plant availability upto 30.11.2013 is 95.53%

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 Transmission Lines 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 2012-13 has been 99.26%. The availability of transmission system during 2013-14 upto 30.11.2013 has been 98.43%.

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 135 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 Sumitomo 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 R,M&U of the first Unit has got delayed. The First Unit (Unit No.2) has been commissioned on 18th July, 2013 after successful R,M&U. Similarly, the Second Unit (Unit No.5) which was under R,M&U works w.e.f. 11th April, 2011, has also been commissioned on 2nd October, 2013, after adopting similar remedial measures as in first Unit. The third Unit (Unit No.4) is presently under shutdown for R,M&U works w.e.f. 23rd November, 2013 and is likely to be commissioned by July, 2014 as per the schedule submitted by the Consortium. The R,M&U works of remaining two Units shall be completed in 2015-16. The Consortium is being persuaded for taking appropriate measures for expeditious completion of works.

HYDROLOGY PROJECT PHASE-II

Ministry of Water Resources (MoWR), Government of India (GoI) has initiated Hydrology Project Phase-II (HP-II) with the help of the World Bank. Agreement for the HP-II between International Bank of Reconstruction and Development (IBRD) and Government of India was signed on 19.01.2006. The project has become effective from 5th April 2006. The duration of the project was six years initially and with extension is to close by 31.05.2014.

The objectives of the project are to extend and promote the sustained and effective use of Hydrological Information System (HIS) by all potential users concerned with water resources planning and management, both in public and private sectors, thereby contributing to improved productivity and cost effectiveness of water related investments.

Under the project, BBMB has been chosen for developing Real Time Decision Support System (RT-DSS) strengthened with sophisticated Data Acquisition System, for operational management of reservoirs of BBMB with revised base cost of ₹ 377.8 million

The objective for the development of RT-DSS is to support operational decisions well in advance for long term planning and also at short term intervals. RT-DSS will provide top management with a well-structured, user friendly, practical and complete water resources management information system that will assist the decision-makers in taking the right decisions on the basis of good comparison of different strategies under

various scenarios. Real time DSS will be quite useful for issuing advance flood warning for deployment of area evacuation measures by Administrative Authorities to eliminate/minimize the loss of lives and properties.

The work of installation of 85 no. remote stations constituting Rain Gauge, Automatic Full Climatic Stations, Snow Pillows and Automatic Water Level Recording Stations is at an advance stage of completion. Earth receiving station at Chandigarh has been established. The RTDSS model developed by M/s DHI has been installed and its tuning and refinement is going on.

The project, being of scientific and innovative nature, is being implemented through human resource development strategy and capacity building programmes for complete development of the skill and competencies of the personnel at all levels. Successful development of real time DSS for operational management of reservoirs of BBMB will certainly provide comprehensive, responsive and sustainable solutions in water sector and would be an important stepping stone for BBMB and the Nation as well. The Real Time Decision Support System for River Sutlej / River Beas shall be a 'first mover' in the country; it may be replicated in all the major River Basins.

GOLDEN JUBILEE OF BHAKRA DAM

Golden Jubilee of Dedication of Bhakra Dam to the Nation was celebrated at Bhakra – Nangal on 22nd October, 2013. The function was chaired by Sh.Harish Rawat, Hon'ble Union Minister of Water Resources, GOI in the presence of number of luminaries from Govt. of India, Punjab, Haryana, Rajasthan & Himachal Pradesh including Sh.Bhupinder Singh Hooda, Hon'ble Chief Minister of Haryana. Second Commemorative Stamp on the Bhakra Dam was also released on the occasion. Bhakra Dam created history by becoming the First Structure of Independent India having two Commemorative Stamps to its credit.

AWARDS

- Gold Shield in 'Innovation Retention strategies' during the 3rd Annual Green Tech HR Award 2013 at Goa in April, 2013.
- Chairman, BBMB was awarded "CEO of the Year (Hydro) 2013" Award by Hon'ble Chief Minister of Andhra Pradesh Sh.N.Kiran Kumar Reddy during 6th India Power Awards function held by Council of Power Utilities.
- MARKENOMY Awards 2013 by Falcon Media House for "Best Water Supply, Irrigation Infra & Water Management – Multipurpose Project Operating in India". .
- Best Hydro Power Producer Award by Independent Power Producers Association of India (IPPAI) for excellent performance during the year 2012-2013.
- Coffee Table Book on Bhakra Dam released on occasion of "Golden Jubilee of Dedication of Bhakra Dam to the Nation", has won the first prize in Public Relations Society of India (PRSI) National Awards – 2013.

44 MW Chutak HE Project (Jammu & Kashmir)

Award winners of National Energy Conservation Day - 2013

CHAPTER - 28
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 10 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 (DSM) Scheme
8. Strengthening Institutional Capacity of SDAs Scheme
9. Contribution to State Energy Conservation Fund (SECF) Scheme
10. National Energy Conservation Awards, 2013
11. Painting Competition on Energy Conservation, 2013
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.

LED illumination Laboratory inaugurated by
Shri Pradeep Kumar Sinha, Secretary, Ministry of Power, on 30th August 2013 at CPRI, Bangalore.

CHAPTER - 29

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 it's 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
- Protection Audit

IMPORTANT EVENTS

15th Standing Committee on R&D

The 15th Standing Committee on R&D was convened on 29th July 2013 in CEA, New Delhi, to take stock of the technical and financial progress of ongoing Research Projects under the National Perspective Plan, to review the actions taken on the decisions of the 14th SCRD and to seek approval of SCRD for proposals received from Task Force Conveners regarding various issues of ongoing research projects. The meeting was chaired by Shri A.S. Bakshi, Chairperson CEA and attended by Members and invitees of the Standing Committee on R&D.

Inauguration of LED Illumination Laboratory

- LED illumination Laboratory, CPRI, Bangalore, was inaugurated by Shri Pradeep Kumar Sinha, Secretary, Ministry of Power, on 30th August 2013. The illumination Lab is well equipped for testing of different types of luminaries specially on evaluation and qualification of LED luminaries as per LM 79 characteristics and solar PV based lighting systems testing as per MNRE guidelines.

Important Workshop/Training Programme/Seminars conducted :

- International conference on Power Cables "CABLETECH-2013" : Diagnostics Cables & Capacitors Division, CPRI, Bangalore organized an International conference on Power Cables "CABLETECH-2013", at CPRI, Bangalore, India on 7th & 8th February, 2013.
- 13th International Conference on "Electrostatic Precipitation, ICESP-2013 was conducted jointly by International Society for Electrostatic Precipitation (ISESP) and MTD-CPRI, Bangalore at Sheraton Hotel, Brigade Gateway, Bangalore during 16th to 21st September, 2013. The ESP School had 70 delegates and the conference had 175 delegates with nearly about 80 delegates from abroad. The ESP School had 8 lectures on topics of recent advances in electrostatic precipitation and about 54 contributory papers during the conference.
- A workshop on "Energy Meter Testing & Evaluation" was organized by STDS-CPRI, Bhopal on 24th August, 2013. More than 100 delegates mainly from meter industries, utility, Power Grid of India and Academic institutions attended the Workshop. Mr. Sanjeev Pauranik, Director-MPMKVVCL was the Chief Guest of the function.
- A conference on "LV Automatic Power Factor Correction (APFC) panels" was organized during 22nd and 23rd August, 2013 at CPRI, Bangalore. The main objective of the conference was to discuss and deliberate the Indian standard formulated for LV APFC panels and also to disseminate the outcome of the project in terms of research and test facilities for LV APFC panels. An overwhelming response was received as more than 140 delegates attended the conference.
- 2nd International Conference on "Emerging Trends in LT/HT Switchgear & Controlgear Technology": CPRI Bhopal organized the 2nd International Conference on "Emerging Trends in LT/HT Switchgear & Controlgear Technology" on 13th and 14th December 2013 at Hotel Courtyard Marriott, Bhopal. The Chief Guest of the function was Shri V.S. Verma, Member, CERC, Special Guest Shri Alok Gupta, Member MPERC, Guest of Honour Shri S.K. Negi MD, GETCO, Shri S.R. Prasad, ED, BHEL, Bhopal & Shri Ashok Khanna, MD, C & S Electric. Presidential address was delivered by Shri N. Murugesan, Director General CPRI and Shri B.V. Raghavaiah, Additional Director, CPRI welcomed the august gathering. More than 300 dignitaries and delegates from

Switchgear & Controlgear Manufacturers, Utilities, State DISCOM, academic institutions and PSUs such as BHEL, PGCIL, NTPC, NHDC, NHPTL from all over the country participated in the conference. The delegates from Italy, Germany, Japan, Malaysia, Bangladesh and Middle East also participated in the International Conference. Over 48 technical papers were presented by various organizations like L & T, TAMCO Malaysia, BHEL, Crompton Greaves, ABB, Siemens, UL India, GE, GETCO, Schneider Electric and CPRI. Director General CPRI felicitated the eminent switchgear experts from all over the country.

Awards and Accolades :

- 6th Enertia Awards 2012 was received by Director General, CPRI from Honorable Dr. Farooq Abdullah, Hon'ble Union Minister of Renewable Energy and Shri A.G.Iyer, President & Promoter Director-REPA for being "A World class National Institution of Excellence in India", at a function held at Metropoliton Hotel in New Delhi, on 22nd November, 2012.
- 6th India Power Award 2013 : Shri Murugesan, Director General of Central Power Research Institute has been selected for CEO of the Year (Research), 6th India Power Award 2013 for his valued contribution to the energy sector.

IMPORTANT TESTING/CONSULTANCY ACTIVITIES :

Generation

- RLA of Steam Turbine Components during Capital Overhauling of HP, IP, LP Turbine, TG Bearings of Unit-4. M/s. NTPC Ltd., Dadri.
- RLA by corrosion mapping of boiler water wall tubes of M/s. NSPCL – CPP – II Rourkela and Unchar Thermal Power Plant, UP.
- RLA Study of Pressure Parts of Boiler Unit No. 6 at M/s. M.P.P.G.C.L.,Satpura TPS, Sarni and M/s. TANGEDCO, Tuticorin TPS, Tuticorin, M/s. NTPC Ltd., Rihand Super Thermal Power Project, Rihandnagar, UP and Tanda Thermal Power Station.
- Metallurgical analysis of boiler tube samples received from M/s. Rosa Power (RIL), Shahjahanpur, UP, M/s. Damodar Valley Corporation, Durgapur, M/s. O.P.G.C.L., Ib TPS, Banharpali, M/s. M.P.P.G.C.L., Bhusawal, and M/s. M.S.P.G.C.L., Khaperkheda.
- Failure Analysis of Failed Boiler Tube Sample from M/s. Adani Power Ltd., Tiroda , M/s. M.S.P.G.C.L., Paras TPS, Paras, M/s. C.S.P.G.C.L., H.T.P.S., Korba (West) and M/s. Vedanta Aluminium Ltd., Jharsuguda (Orissa).

Transmission System related studies (major ones).

- Design Validation/Analysis of transmission tower for M/s. KPTCL, Bengaluru, M/s. APTRANSCO, Hyderabad. M/s. Kalpataru Power Transmission Ltd., Gandhinagar, M/s. Jhamuna Tower Tech (Madras) Pvt. Ltd., Chennai, M/s. L & T, Chennai, M/s. Jhamuna Tower Tech (Madras) Pvt.Ltd., Chennai, M/s. Vijay Electricals Ltd., Hyderabad, M/s. Kadevi Industries Ltd., Hyderabad, M/s. Unitech Power Transmission Ltd., Gurgaon, M/s. Kerala Electricity Board, Kattakada.

Diagnostic Studies

- Diagnostic tests on HV equipment was carried out for M/s. Rourkela Steel Plant, Rourkela.
- Condition Monitoring/Diagnostics Tests of M/s. Jawaharlal Nehru Port Trust, Sheva, Navi Mumbai, Maharashtra.
- Condition Assessment of Concrete & Steel Structures M/s. NALCO Ltd., Angul, M/s. NTPC Ltd., Vindhyachal and M/s. M.P.P.G.C.L, Amarkantak TPS, Chachai.

Power System Studies

- Thermovision Testing of 220 KV Switchyard and (8x65MW) Power House Equipments, M/s. NHDC Limited, Omkareshwar Power Station, Siddhwarkut (M.P.) and M/s. Reckitt Benckiser (India) Ltd., Jammu
- Planning Studies for UPPTCL, Lucknow
- Power System Study of Essar Steal Complex, Hazira and M/s.Hutti Gold Mines, Hutti, Raichur.
- Protection study & third party audit of Protection System of Rajasthan at M/s. RRVPNL, Jaipur.

Overseas assignments:

- The Institute carried out Third Party witnessing of tests on 60/90MVA, 132/33kV YNd1 Power Transformer at the

works of CG, Indonesia for M/s.PT CG Power Systems Indonesia from 14th – 26th January 2013. The value of the assignment is USD 22,200.00.

- MICOM ALSTOM Bay Control & Protection Unit -- C264, tested for conformance to File Transfer Block as per IEC 61850 (Partial Testing) as per the UCA Test Procedure Version 2.3; TPCL version 1.5. The request for testing came from Alstom, Malaysia and Proforma Invoice was also sent to Alstom, Malaysia.
- IP 55 Tests were conducted on the foreign Samples of M/s. Arabian Gulf Industrial Engineering Co. P.O.Box 20298, Safat 1306, Kuwait on 17th January, 2013.
- Transformers of rating 5MVA, 10 MVA & 25 kVA of M/s TS Transformers, Dhaka, Bangladesh were tested for short circuit, impulse & temperature rise test.
- 1000V, 6000A LT Panel was tested for 65 KA for 1 sec of M/s.Pubudu Engg. Pvt. Ltd., Srilanka.
- Routine tests on 36 kV SF6 Circuit Breaker for M/s. New India Electricals, Bangalore. The buyers of this equipment are from Ghana.
- ACB Panel of rating of 2500A, tested for temperature rise tests & milli volt drop tests in DCCD-CPRI, Bangalore, for the first time to the customer from Bahrain.
- Mechanical Strength test on 132 kV Double Tension/ Suspension & Single Tension/ Suspension Composite Polymer Insulator Strings with Hardware fittings for M/s. Instalaciones Inabensa, S.A., SPAIN (Insulators Manufactured by : M/s. EB Rebosio S.r.l., ITALY).
- IP 66 tests were conducted on the Samples of Cable Boxes for M/s. Emirates Transformer and Switchgear Ltd., Dubai.
- IP X6 Tests on the Samples of HV and LV Cable Boxes for M/s. Emirates Transformers and Switchgears Ltd., Dubai, UAE.
- IP 44 Tests on the Samples of Powerlink of M/s. Pubudu Engineering Pvt. Ltd., Srilanka.
- IP 55 Tests on the Samples of Form-2 Panel for M/s. Al Hassan Switchgear Manufacturing Co., Sultanate of Oman.
- Short circuit & impulse tests on 3333/4166 kVA transformer and short circuit test on 100 kVA, 33/0.433 kV transformer for M/s TS Transformers Ltd., Dhaka, Bangladesh.
- Short circuit test on 1000V, 4000A busbar trunking for M/s Powerbar, UAE.
- Tensile and compression tests on composite cross arm members for M/s. Hans Engineering Sdn. Bhd., Malaysia.
- 132 kV link box tested for 40 kA for 1 Sec. for M/s.Power Transmission Factory, Saudi Arabia.
- Bushing evaluated in Station-2, STDS, Bhopal for M/s Schneider Electric, Riyadh, KSA.
- IP 66 Tests on the samples of S.S. 316 L Cabinet tested for M/s. MBTC-FZE, UAE.
- IP 67 Tests on the samples of 132KV Link Box for Earthing HV Cable Circuits for M/s. Power Transmission Equipment Factory, Kingdom of Saudi Arabia

New facilities created under Capital Projects during the year

Test facility created for "Determination of Sound Levels" on Transformers upto 1.4 MVA, 11 kV rating.

Test facility upgraded at CPRI:

Test facility upgraded for Temperature rise test on Transformers upto 1400 kVA, 11 kV rating. Below photograph shows temperature rise test carried out on 1400 kVA, 11 kV/2x350V transformer of M/s. Kirloskar Electric Company Ltd., Mysore, during 12th & 13th March 2013

Temperature rise Test on Transformers

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 Overseas /Delegations/Customers :

- Mr. Fabio Menicanti, Director and Mr. Franco Lo Monaco from Testing & Certification Division, CESI, Italy accompanied by Mr.Bhimsen Mudhol, General Manager-Sales, M/s. Unimark, Bangalore visited CPRI, Bangalore on 10th January 2013 for discussions regarding collaboration

with CPRI in possible areas and visited CPRI state-of-art laboratories.

- A team of officials from M/s. Nippon Steels, Japan, led by Indian Counter Parts have visited MTD, CPRI, Bangalore, to discuss about CRGO aspects and also to see the test facilities on CRGO for 2 days on 23rd & 24th January, 2013.
- Canadian Delegation from University of Toranto (UofT), Canada visited CPRI on 08th January, 2013. The delegation consisted of:
  a) Dr. Judith Wilson, Vice President, University Relations, UofT
  b) Prof. Peter Lewis, Associate Vice President (Research & Innovation), Global Research Partnership, UofT.
  c) Mr. Ajay Subramaniam, Trade Advisor – Ontario International Marketing Centre.

  The objective of the visit was to engage R&D Partnerships in Renewable Energy and Smart Grid renewable integration, grid reliability and asset management with CPRI.
- Mr. J. Jayesh from M/s. Alstom Chennai, Mr. Nilay Vashi from M/s. Alstom, Baroda and Mr. Danielle & Mr. Giovan battista from M/s. Alstom, Italy with regard to procurement of new 2500 MVA Short Circuit Generator at CPRI, Bangalore 7th May, 2013.
- Officials from CESI, Italy For discussion regarding utilization of High Power Laboratory, CPRI, Bangalore, for Synthetic Testing of 245 kV Circuit Breakers at CPRI, Bangalore on 11th May, 2013.
- Mr. Masaharu Toki, Technical Manager and three more Officials from M/s. Mitsubishi Electric Corporation Energy Systems Center, Japan visited HPL
- Mr. Tank Aik Kwong, Mr. Sze Ming and Mr. Liu Mun On of M/s VNS Manufacturing, Singapore, visited STDS-CPRI, Bhopal, on 12th July, 2013 to discuss on ASTA Evaluation of switchgear panels.
- Mr. Lambauer Roberto of Jean Mueller, Singapore, visited STDS-CPRI, Bhopal, on 18th July 2013 to see the evaluation facilities.
- Mr. Pierrick Balaire, ASTA Global Leader from M/s. Intertek, UK, Mr. Raghunath. G-ASTA Business Manager-India and Mr. Abhishek Chhabra-Manager Strategically Business from Intertek Testing & Certification Ltd, India visited CPRI, Bangalore, on 24th July 2013 for discussions regarding Evaluation & Certification under ASTA Certification Scheme.
- A delegation from CESI, Italy led by Mr. Francecso Fraisopi-Director Business Development, Mr. Fabio Menicanti-Director Business Development, Mr. Domenico-Director (Testing Division) and their Indian Representatives Mr. Y.R. Anand and Mr. T.S. Muralidhar from Unimark, Bangalore visited CPRI, Bangalore, on 28th July, 2013 for discussions regarding joint co-operation in the area of Evaluation & Certification and Utilisation of the high power evaluation facility in Bangalore for evaluation of EHV Circuit Breakers. The draft Memoranda of Understanding between the two organisations was also discussed.

Visit of CESI, Italy delegation

- Officials from SPECO, China, visited High Power Laboratory, CPRI, Bangalore, with regard to research collaboration in Transformer field, on 30th July 2013.
- IEEMA Sectional Committee Meeting on Conductors: The meeting of the IEEMA Sectional Committee on Conductors was held in CPRI, Bangalore, on 3rd August, 2013.

The meeting was attended by Senior Members of CPRI and IEEMA members belonging to the conductor industry. CPRI made a detailed presentation on Conductor evaluation facilities.

Ms. Wakana Sato, Mr. Gustavo Montoya, General Manager, Generator System Business & Engineering, Dept. of M/s. Hitachi Ltd., Japan, Power Systems Company Power & Industrial Systems Division visited High Power Laboratory, CPRI, Bangalore, with regard to supply of new Generator, augmentation plans of High Power Laboratory, on 19th September 2013.

- Following Officials from CESI, Italy visited High Power Laboratory, CPRI, Bangalore, in connection with Consultancy services for Augmentation of High Power Laboratory, CPRI, Bangalore, on 25th September 2013: Mr. Roberto Vario, Consulting, Head of Generation and Industrial Plants and Mr. Danilo Mezzani, CIS & Asia Area Manager.

Liaison officers for SC/ST & PWD and OBC :

Shri M. Janardhana, Joint Director and Shri D. Revanna, Joint Director serving as liaison officers for SC/ST & PWD and OBC categories in CPRI during the year 2013-14. The 122nd Birth

Anniversary of Bharat Ratna Dr. B.R. Ambedkar was formally celebrated on 14-4-2013 in the Institute. Further Director General Shri N. Murugesan along with Liaison officers addressed the grievances of SC/ST & PWD and OBC employees as well as reviewed the welfare measurement taken up by CPRI.

The main function of 122nd Birth Anniversary of Dr. B.R. Ambedkar was celebrated in the institute on Wednesday the 9th October 2013. The Chief Guest of this function was Prof. S.G. Siddaramaiah, renowned Kannada writer and former President for Kannada books Development Authority, Govt of Karnataka and Shri N. Murugesan, Director General, CPRI presided over the function. On this august occasion the management of CPRI distributed 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 2012-13.

CHAPTER - 30

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. NPTI has trained over 2,17,613 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. A number of training programs for foreign as-well-as national customers have been conducted. These programs have benefited the executives from different organizations. Training provided by NPTI on Generation Simulators has improved Plant Load Factor of Generating Units, has increased the availability of Transmission & Distribution Systems 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 337 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 Graduate Diploma Course in Sub-Transmission & Distribution Systems
- 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 Systems for Engineers
- Six Months Post Diploma Course in Hydro Power Plant Engineering

In addition to the above, several long-term, medium-term and short-term training programs in the areas of Thermal, Hydro, Transmission & Distribution, Management and 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. NPTI has been catering to the Training needs of Power Sector organizations and Process Industries such as Steel, Cement, Aluminum, Fertilizers, Refineries viz., ACC, AECO, APGENCO, BBMB, BHEL, BSES, CEA, CESC, DPL, DVC, ECIL, FACT, GAIL, HINDALCO, IFFCO, IOCL, IREDA, KRIBHCO, NALCO, NEEPCO, NFL, NHPC, NLC, NPC, NTPC, POWERGRID, SAIL, THDC, HPGCL, KPCL, MPEB, OHPC, OPGCL, RRVUNL, UPRVUN etc.

NPTI has a 500 MW Thermal Power Plant Training Simulator at Faridabad Institute and 210 MW Thermal Power Plant Training Simulator at Nagpur Institute for imparting specialized skills to operation personnel across the country. A 430 MW (2x143 MW Gas Turbines and 1x144 MW Steam Turbine) Full Scope Combined Cycle Gas Turbine Replica Simulator has been commissioned at NPTI Corporate Office, Faridabad. A High-fidelity Load Dispatch Operator Training Simulator for the National Grid has been commissioned at PSTI, Bengaluru. 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 up to 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 students of MBA in Power Management, B.Tech. in Power Engineering, Post Graduate Diploma Course and Post Diploma Courses are finding placement in reputed companies like PWC, KPMG, CARE, Deloitte, Infraline, Tata Power, Torrent Power, Enercon, Capital Fortunes, Suzlon, Noida Power, PTC, UJVNL,

GMR, CRISIL, TERI, Lahmeyer, Enzen Global, NDPL, Erudite, KSK Energy Ventures, Datagen, LNJ Bhilwara, Moser Baer, Eco Securities, Feedback Ventures, ABPS Advisory, Adani, Care, IL&FS, Vedanta, Lanco, BSES etc.

ACHIEVEMENTS DURING 2013-14

NPTI provided training to 12,089 trainees for a total trainee-weeks of 81,223 till 30.11.2013

INDUCTION TRAINING

NPTI has imparted induction training to fresh Graduate Engineers/Executives from various Power Sector Organizations: Power Grid Corporation of India Ltd, Avantha Power & Infrastructure Ltd., Tata Power Company Ltd., National Hydroelectric Power Corpn. Ltd., Rajasthan Rajya Vidyut Utpadan Nigam Ltd., LANCO Power, Dakshin Haryana Bijli Vitran Nigam Ltd., Lanco Kondapalli Power Ltd. & PPN Power Generating Company Ltd., GMR Energy Ltd., Lanco Infratech Ltd., Lanco Vidarbha Thermal Power Ltd., & Udupi Power Corporation Ltd., UP Rajya Vidyut Utpadan Nigam Ltd., Bokaro Power Supply Corporation Ltd., Sterlite Grid Ltd., CLP (I) Pvt. Ltd., Ideal Energy Power Ltd., L&T Power Ltd., Chhattisgarh State Power Generation Corporation Ltd., Torrent Power Ltd. etc.

OTHER IMPORTANT ACTIVITIES

System Operator Certification Examination

NPTI's Power System Training Institute (PSTI) has been conducting Training & Certification of Power System Operators for executives of NLDC, RLDCs and SLDCs. This course equips System Operators with necessary inputs to take up the System Operators Certification Examination.

On-Line System Operator Certification exams were conducted at various centres across India and so far 506 System Operators were certified.

NPTI conducted Specialist Level Learning & Development courses for System Operators in 'Regulatory Framework in Power Sector' and 'Power System Reliability' and also certifying the System Operators through On-line Certification exams.

The first On-line exam for Specialist level Certification on 'Regulatory Framework in Power Sector' was conducted for Basic level System Operators at various centres across India and 93 System Operators were certified against 181 who appeared for the exam.

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 has provided consultancy services to WAPCOS for preparation of DPR for establishment of Power Training Institute in Bhutan. NPTI has also provided consultancy services to NHPC for preparation of DPR for establishment of Hydro Power Training Institute in Jammu & Kashmir.

800 MW Supercritical Simulator

NPTI is in the process of procuring a 800 MW Supercritical Simulator which will be commissioned at NPTI, Faridabad. This is going to be the first Super Critical Thermal Simulator in the country owned by a Govt. Utility.

Awards and Recognitions

NPTI has been conferred the 4th Asia's Best Employer Brand Awards 2013 for "Excellence in Training". 4th Asia's Best Employer Brand Awards 2013 were hosted by Employer Branding Institute, World HRD Congress and Stars of the Industry Group and endorsed by Asian Confederation of Businesses and presented in a glittering ceremony at Singapore on 31st July, 2013.

Vision Ahead

NPTI is furthering the quality of industry-interfaced education and training being provided by our 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 a new Power Training Institute at Alappuzha, Kerala
- Establishment of more Power Training Institutes in the country
- Starting of two new MBA Programs at Bengaluru and Nagpur
- 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.
- Starting of on-line MBA/PGDM course in Power Management through distance learning, by making available all study material in video recording mode as well as text format through internet, to be available on demand, at any time and from anywhere.

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 are as under:

Shri T.K.Barai, Secretary
Central Electricity Authority,
2nd Floor, Sewa Bhawan
R.K. Puram,
New Delhi - 110066.
Tel. No. 26108476,26105619

Shri T.K.Barai,
Chief Engineer (FS&A) & Director (Grievances)
Central Electricity Authority,
6th Floor, Sewa Bhawan,
R.K. Puram, New Delhi-110066
Telefax: 26105746,
E-mail - tapan2012@yahoo.co.in

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.

Request/ Appeal	Transferred cases received	Total Applica-tions received	RTI Applica-tions transferred	Total Request/ Appeal accepted
Request	117	107	6	218
Appeal	0	10	0	10

STATUS OF RTI APPLICATIONS FOR THE PERIOD 01.04.2013 TO 31.12.2013

NTPC

NTPC has a public grievance redresssal 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 DVC, a well-defined Public Grievance Redressal Mechanism has been set up under the Grievance Redressal Cell to redress the grievance. The public grievances in DVC are generally received either directly from the grievance petitioners or grievances forwarded by the MOP, Dept. of Administrative Reforms & Public Grievance, Ministry of Personnel, Public Grievances & Pensions etc. After receipt of the grievance petitions the type of grievance is identified and analyzed.

At this stage, Public Grievance Officer, DVC go through the representations and come to a prima facie view regarding the gravity of the matter involved and decide to send it to the concerned section. The same is sent to the concerned Dept for its reply / redressal in time-bound manner. The reply so received in regard to the grievance petition is considered and placed before the appropriate authority for final disposal. All out efforts are taken to redress the public grievance at the earliest.

REC

With a view to setting Fair Lending Practices in a transparent manner, REC has framed its Fair Practice Codes (FPC) which are in consonance with draft FPC suggested by RBI, from time to time. Under these codes, Grievance Redressal Mechanism has been defined and any aggrieved customer may contact the Grievance Redressal Officer (GRO) of the Company for redressal of grievances in an amicable manner, in shortest possible time and at lowest appropriate level.

If the complaint/dispute is not redressed within a period of one month, the customer may appeal to the Officer-in-Charge, DNBS, Regional Office of RBI.

THDC

THDCIL has a well established system of Public Grievance Redressal. Director Public Grievance and Public Grievance Redressal Officer of the rank of General Manager for each Project/Unit of THDCIL have been designated and their contact details of (address, contact no., email ID, etc.) are available on THDCIL website. The Quarterly status of Public Grievances received and disposed off after duly addressing the issues are regularly updated and available on the THDCIL's web site.

As on 30.11.2013, there are no pending cases of Public Grievances in respect of THDCIL, as all the 31 Grievances received by THDCIL stand disposed off.

SJVNL

The organization has already designated Public Grievance Officer at its Corporate Centre and two grievances were received by the officer.

These grievances pertained to service matters of the retired/ in-service employees. However, these grievances have already been attended to and replies were sent and no further queries were received from the concerned individuals.

NEEPCO

During the year 2013-14 till 30-11-2013, only one grievance from a lady Officer serving as Senior Manager in NEEPCO has been received during August 2013 through President's Secretariat in terms of Centralized Public Grievance Mechanism, requesting for retaining her in the Guwahati Office of NEEPCO by giving equal treatment like other female colleague/seniors from other caste and communities. Having considered her request/application by the Competent Authority, the Officer who was under order of transfer from Guwahati to Shillong has been retained at Guwahati. Accordingly, the grievance of the Officer has been duly addressed and disposed off.

POWERGRID

In POWERGRID, the grievances of the citizens on any issue pertaining to POWERGRID are promptly considered for redressal within the broad parameters of guidelines enumerated by Govt. of India. POWERGRID has designated nodal officers at corporate & Regional offices for systematic & prompt redressal of the grievances of the citizens within stipulated time frames. The issues of public grievances generally pertain to land/ crop compensation for line/ tower construction done by POWERGRID. The grievances are referred to POWERGRID via Ministry of Power, Presidents Secretariat, DARPG, etc. from "PG portal" developed by Deptt. of Administrative Reforms & Public Grievances @pgportal.gov.in. This is a Govt. of India Portal aimed at providing the citizens with a platform for redressal of their grievances.

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.

BEE

There is no separate Grievance Redressal Cell in Bureau of Energy Efficiency. Grievances, if any, are being dealt by the Administration Section of Bee. During the period 2013-14 there were no grievance cases.

NHPC

STATUS REGARDING PUBLIC GRIEVANCES (Period 2013-14 as on 30.12.2013)

S. No.	Registration No. & date	Details of Aggrieved Person with Address	Details of Grievance in brief	Status of Grievance	Remarks
1.	DOPPW/P/2009/ 14879 dated 21.3.12	A.S.Bisht, R/o Vill-Pettu, PO-Bhararu, Tehsil-Joginder Nagar, Distt-Mandi-176120.	Non-settlement of pension case.	The ex-employee has not deposited the outstanding amount and the other requisite documents for processing his pension case even after repeated requests by the concerned project i.e. Chamera-I Power Station. Therefore, his pension case could not be processed.	Matter disposed off.
2.	MPOWR/E/2013 /00259 Dated 01.08.13	Bala Dutt Chhimwal, R/o Vill-Parolia, P.O.-Manan, Distt-Almorah, U.P.	Non-settlement of pension case.	Sh. Bala Dutt Chhimwal has not deposited the belated EPS amount for processing his pension case even after repeated requests from Dhauliganga Power Station. As Sh. Chhimwal has not deposited the outstanding belated EPS deposit, his pension case could not be processed.	Matter disposed off.
.3.	PRSEC/E/2013 / 12362 Dated 23.08.13	Himanshu Nagpal, R/o Flat No. 145, Akash Kunj, Sector-9, Rohini, Delhi-110085.	Requested to concerned section of MHRD/MOP to clarify regarding the validity / recognition of B.Tech degree granted by IGNOU for consideration of his promotion.	Earlier the case received by Sh. Nagpal on the matter of his qualification was examined and he was replied vide letter dated 31.1.13 & 13.2.13 that in absence of approval of Tripartite Committee of UGC-AICTE-DEC, we are unable to consider his above B.Tech degree as valid at present. On the matter, NHPC also approached MHRD through MOP for clarification about the validity of B.Tech (Civil) of IGNOU acquired through distance education mode, which is still awaited.	Matter does not pertain to NHPC
4.	PRSEC/E/2013 / 13008 Dated 23.08.13	Ved Vrat, R/o H.No. 199/18, Amrit Bazar, Kapurthala-144601.	Reimbursement of pending medical bills	Reimbursement of medical expenditure made and matter settled.	Matter disposed off.
5.	MPOWER/E/2013 /0344 dated 28.09.2013	A.K.Sachdeva, SF-440, Tower Apartments, Pitampura, Delhi	Anomaly of pay-scale in PSUs & matter related to Pension	Reply sent to Sh. A.K.Sachdeva vide our letter no. PEE/Grie./2013/1542 dated 21.11.2013.	Disposed off
6.	MPOWER/E/2013 /0347 dated 02.10.2013	A.K.Sachdeva, SF-440, Tower Apartments, Pitampura, Delhi-110034	Anomaly of pay-scale in PSUs & matter related to Pension	Reply sent to Sh. A.K.Sachdeva vide our letter no. PEE/Grie./2013/1542 dated 21.11.2013.	Disposed off
7.	MPOWR/E/2012/ 00215 dated 02.07.12	Sh.Raushan Kumar R/o Distt.Madhubani, Bihar	Grievance is related Reply sent to electr-if ication works of his area under RGGVY	Concerned person with copy to MOP vide NHPC Letter dated 11.02.2014	Disposed off
8.	Received from MOP vide F.No. 11/5/2013-NHPC (Desk) dated 30.10.2013	Displaced families of Chamera-III HEP	For providing permanent employment in NHPC to one member of each family	Reply sent to Under Secretary (NHPC), GOI, MOP vide letter no. NH/HR/IR/044/2013/1382 dated 11.12.2013.	Disposed off

9.	Received from MOP vide F.No. 11/5/2013 -NHPC(Desk) dated 31.10.2013	Anant Ram, R/o Sainj, Distt. Kullu, Himachal Pradesh	--	Matter is under examination and outcome of the same shall be intimated in due course.	Under process
10.	MPOWR/E/2013 /00336 dated 20.11.2013	Permanand Pathak, R/o Choraut, Sitamarhi, Bihar	Use of his land by NHPC for construction of Public Road without his knowledge.	Reply sent to Sh. Permanand Pathak vide letter no. PEE/Grie./2013/1533 dated 20.11.2013.	Disposed off
11.	DARPG/P/2013 /03575 dated 01.07.2013	G.V.Raste, R/o Saptalingee Nagar, at SAT(D) Valee Tal-Devrukh Distt-Ratnagiri, Maharashtra	Taking up of BAV Project (55MW) on the river BAV in Ratnagiri District, Maharashtra on built, operate and transfer basis.	Reply sent to Sh. G.V.Raste vide letter no. PEE/Grie./2013/1500 dated 07.11.2013	Disposed off

CHAPTER - 32

RIGHT TO INFORMATION ACT, 2005

PAO

Six cases of RTI were received and all were replied during the period from 1.11.2012 to 31.10.2013. In the same period Shri P.K. Sapra (Sr. Accounts Officer) and Shri M.V. Anantha Ram (Sr. Accounts Officer) have been designated as Public Information Officers in r/o Delhi and Bangalore Office respectively and Shri Sanjai Singh (Controller of Accounts) designated as Appellate Authority.

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 2013-14 (up to 30th Nov. '13), 768 applications were received under the RTI Act. Out of which 709 have been replied till 30th November 2013.

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.

PFC

Right to Information Act or RTI is a law enacted by the Parliament to enable 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. The RTI Act has ensured greater transparency and accountability in the office of every Public Authority.

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., 2013, the Company had received 56 applications under the Act, which have been duly replied/ dealt with under the provisions of the RTI Act, 2005.

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.

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 2013-14 (up to 30.11.2013) is given below:

1.	Applications received (up to 30.11.2013)	166
2.	Applications disposed off	162
3.	Appeals received by Appellate Authority, REC	14
4.	Appeals disposed off by Appellate Authority, REC	14
5.	Appeals received from CIC	04

SJVNL

SJVN limited has already 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 web site.

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.

THDC

THDC India limited has taken concrete actions to provide information to the citizens of the country in accordance with The Right to Information Act,2005 (Act). THDCIL's official website contains information as required to be published under Section 4(1)(b) of the Act. Particulars of Appellate Authority, Central Public Information Officer (CPIO), PIO's and APIO of the Corporation, and all related formats for seeking information, submission of appeal to the first Appellate Authority are available on the THDCIL website-ww.thdc.nic.in.

All the applications received from the information seekers are dealt with as per provisions contained in the RTI Act, 2005 and prompt action is taken on them. During the year 2013-14 (for the period from 01.04.2013 to 30.11.2013) total 101 applications were received from citizens across the country seeking information of various natures and information was made available to them on time.

Regarding appeals, during the year 2013-14 (for the period from 01.04.2013 to 30.11.2013), Five appeals have been received by the first appellate Authority, after examination all the appeals have been disposed off by the Appellate authority.

Besides, during the year 2013-14 (for the period from 01.04.2013 to 30.11.2013), two appeals have been taken up by Central Information Commission (CIC) at Delhi and same were disposed off by the commission.

NEEPCO

The Right to Information Act -2005 was implemented in NEEPCO on 24th October -2005.

Within the period from 1st April-2013 to 30th November-2013 we have received 48 numbers of Applications under RTI Act-2005 and out of which 39 numbers have been replied. As on 30th November 2013, 9 numbers of applications have been processed and within stipulated time, the replies/information shall be furnished to the concerned applicants.

DVC

The Right to Information Act is a law enacted by the Parliament of India "to provide for setting out the practical regime of Right to Information for citizens of India to secure access to information of the working of every public authority and access to information under the control of Public Authorities in order to promote accountability and transparency in the working of the Government and its various bodies and agencies.. This law was passed by Parliament on 15th June 2005 and came fully into force on 12th October 2005.

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 Secretariat Department, DVC, HQ, Kolkata. The RTI Cell acts as a nodal point for all RTI implementation issues within DVC, HQ as well as in the field formations of DVC. The Cell is created in the Secretariat Department, DVC, HQ, Kolkata and headed by a Senior Manager & CPIO under the guidance of Additional Secretary, DVC. There are one Transparency Officer and nine Public Information Officers (PIOs) in DVC for its HQ and for major projects. Senior Manager & CPIO, DVC, Kolkata takes care for compliance of the provisions of the RTI Act 2005 and overall monitoring. During the period 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 timeframe.

Apart from above, regular monitoring is done from the HQ on functioning of the PIOs posted at different projects of DVC. Any doubt clarification/explanation to all field formations of DVC is done by Senior Manager & CPIO, DVC, HQ. In case the applicant does not receive a reply/ decision 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. Mallik, Director (HRD), DVC, DVC Towers, VIP Road, Kolkata-700054 is the Appellate Authority, DVC.

For more details regarding the application format, address and contact details of the Appellate Authority, 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 and other related details are given in **Annexure-I.**

Annexure-I

Details relevant to RTI Act for the year 2013-14 (As on 30.11.2013)

Sl. No.	No of request received	No. of decisions	Decision where application 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.	679	679	NIL NIL	NIL	NIL	11,374/-

CPRI

a) Total no. of RTI application received : 24 Nos.
   i) RTI application directly received : 17 Nos.
   ii) RTI Applications forwarded by MoP : 7 Nos.

b Information to RTI Application provided by CPRI : 21 Nos.
   Information rejected under Sec. (8) : 3 Nos.

c) Applications received by Appellate Authority : 3 Nos.

d) RTI Applications disposed by CIC -2 and the Institute has provided information as per the directive of CIC.

BEE

In compliance with the Right to Information Act, 2005, BEE has uploaded the Proactive Disclosures under section 4(1)(b) of RTI Act, 2005 on BEE's website. All the applications received are attended to and the information furnished to the applicants as per the provision of the Act.

The President, Shri Pranab Mukherjee presented the National Painting Competition Prizes, at the National Energy Conservation Awards function, in New Delhi on December 16, 2013. The Secretary, Ministry of Power, Shri Pradeep Kumar Sinha is also seen

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 Official Language Act, 1963 and Official Language rules, 1976 in the Ministry and offices under the administrative control of the Ministry.

The Ministry and offices under the administrative control of the Ministry, are making several efforts to encourage progressive use of the Official Language. A Scheme through NTPC is in vogue for awarding a Vidyut Rajbhasha Shield for increasing the progressive use of Hindi under which the offices situated in regions "A" "B", "C" doing well in Hindi, are awarded a shield.

In order to encourage officials to write original books in Hindi relating to the power sector, Kendriya Pustak Puraskar Yojna is in operation since 01 January, 2003. For encouraging more & more writers to write 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.

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 02nd September, 2013 to 16th September, 2013. During this essay competition, noting and drafting competition, picture description competition, poetry competition, debate competition, Hindi Stenography, Competetion 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 taken 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.

To review the progressive use of Hindi in the attached and subordinate offices, Boards, orgainzation and public sector undertakings under the administrative control of the Ministry 30 offices were inspected and these inspections are being carried out from time to time.

During the year under review 36 offices were inspected by the Committee of Parliament on Official Language. Officers of the Ministry also participated in the inspection Meetings of the Committee of Parliament of Official Language. During the year 16 Offices have been notified under the rule 10(4) of the official Language Rules, 1976.

Meetings of the Official Language Implementation Committee meetings of the Ministry of Power are being organized regularly. 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, issuing of bilingual advertisement in newspapers and conducting refresher courses in Corporation/undertakings.

CEA

In CEA this year Hindi correspondence percentage remained around 75%. This year Hindi correspondence percentage in Region “A” 75%, in Region “B” 72% and Region “C” 54% respectively.

In CEA the official Language Implementation Committee (OLIC) meetings are held regularly and in regular intervals under the chairmanship of Chairperson, CEA. Prompt actions are taken on the decisions of the meetings.

All efforts are being made to promote the use of Hindi in official work in Central Electricity Authority. All incentive schemes sponsored by the Department of Official Language are in operation.

Hindi Fortnight was organised from 13.9.2013 to 27.9.2013 in the Authority. Prize distribution ceremony was held on 27.09.2013. During the fortnight four competitions were organised viz. Essay Writing, Noting and Drafting, General Knowledge and Hindi Dictation, (this competition was only for Multi Tasking Staff). Most of the officials and employees had participated in these competitions. 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. During the Fortnight organised in the month of September the divisions/sections/units who did their maximum work in Hindi throughout the year were awarded a Roving Shield. In addition to this Roving Shield, 7 Divisions/ Sections were also provided Official Language Shield where maximum correspondence made in Hindi with Region “A” and Region “B”.

Internal Official Language inspections of various sections are performed by the official language Officers from time-to-time so that the shortcomings, if any, can be reviewed. In this process, 12 sections/divisions of CEA were inspected. In addition to this, Sub-ordinate offices of CEA, located at Kolkata were also inspected by Deputy Director (OL) in November 2013.

During the year, a Hindi workshop was also organized on 19.12.2013 in which a lecture was delivered on the topic "How to fill quarterly report and information related to Official Language rules" by the Joint Director (OL), Ministry of Power. 26 officials have participated in this Workshop.

In CEA, most of the officers and employees are trained in Hindi Language. Newly appointed officers/employees are being trained in Hindi Language Courses/Shorthand/Typing classes organized by Department of Official Language from time-to-time.

PAO

All the communication received in Hindi are replied in Hindi. Efforts are also being made to encourage the staff to use the Hindi language in official work.

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 Projects and Regional HQ were inspected and proper suggestions were given to the Heads of the offices in this regard. Quarterly meetings of Official Language Implementation Committee were held in June and September, 2013 in which the implementation of Hindi in the organization was reviewed thoroughly.

Hindi Diwas and Hindi Competitions were organized during the Hindi fortnight from 1st to 13th September, 2013 in the Corporate Office as well as in all the Projects and Regional HQ of NTPC. The prize-winners of Hindi Competitions were awarded in the Hindi Diwas Function on 13th September, 2013. NTPC Limited received All India Indira Gandhi Rajbhasha Second Prize by Hon'ble President of India Shri Pranab Mukherjee. Various Hindi workshops and Hindi Computer Training were conducted for the employees of NTPC Limited.

NHPC

The provisions of the official language Act and Rules were complied with during the year, in the Corporation. 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 Corporation from 01 to 14 September, 2013. Various Hindi competitions and book exhibition was also organized during the Hindi Fortnight. And Prizes were distributed to the winner participants. 48 employees were also rewarded for doing Hindi Noting/Drafting during the year. Rajbhasha magazine **"Rajbhasha Jyoti"** was also released on this occasion.

Quarterly **meetings of OLIC** were organized and Director (Personnel) 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 Corporation. Prizes were given to employees under these schemes.

During the period 26 **Hindi workshops** were organized in the Corporate Office and 246 employees were imparted training in these workshops. Training Classes was conducted to impart training of Hindi Language & Hindi typing and stenography.

An **All India Kavi Sammelan** was organized by Corporate Office at Scope Complex, Lodi Road, New Delhi on 25th Oct.' 2013. 06 Hindi Renowned Poets recited their Poems in this Kavi Sammelan.

Meeting of **Hindi Salahkar Samiti of MOP** was organized on 24 May, 2013 and Hon'ble Minister of Power (independent charge) Sh. Jyotiraditya M. Scindia chaired the meeting. **'Vidyut Smarika'** was also released on this occasion. Responsibility of organizing the meeting and Publication of Smarika was given to NHPC.

Meetings of TOLIC, Faridabad were organized on 25.6.2013 & 22.11.2013 under the Chairmanship of Director (Personnel). Hindi Competitions were organized for member offices from 25 Oct to 01 Nov, 2013. Prizes were distributed to winner participants. **'Nagar Saurabh'** magazine was also released on this Occasion.

Rajbhasha Inspections were conducted in all Departments of Corporate Office and Power Stations/Projects/Regional Offices. Senior Officer's i.e. Directors/Executive Directors also conducted Rajbhasha inspections at Projects/Power Station.

The Second Sub-committee of Committee of Parliament on Official Language conducted Rajbhasha inspections of Parbati-III project on 28.05.2013, Regional Office, Itanagar on 19.06.2013, PID, Pathankot on 30.11.2013 and Chamera Power Station-I on 03.12.2013 at Delhi. During these inspections committee reviewed Implementation work of our projects and offices and appreciated our efforts for propagation of Official Language and gave suggestions for enhancement of Progressive use of Hindi.

NHPC has been conferred with first prize under the **"Indira Gandhi Rajbhasha Shield Yojna",** the highest award of this field, by the Govt. of India for the year 2011-12. Our Director (Personnel) received this Prize from Hon'ble President of India **Sh. Pranab Mukharjee** during the Award Ceremony held at Vigyan Bhawan, New Delhi on 14.09.2013.

NHPC also received the Rajbhasha Shield and Citation as First Prize for 2012–13 for outstanding work in implementation of Official Language among Power Sector under the NTPC Rajbhasha shield yojna on behalf of MOP.

In our Corporation during the remaining period of current Finance Year 2013-14 various programmes i.e. quarterly meeting of Official Language Implement Committee, Publication of 'Rajbhasha Jyoti', Hindi Pustak Pathan Saptah and All India Rajbhasha Sammelan will be organized up to March 2014.

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 on computers through organizing Computer trainings and Hindi classes; to change the mind set 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 Sammelans, Kavi Sammelans (Poetry sessions), Dramas, publication of Hindi Magazine (GRID DARPAN), various competitions and meetings etc. are also organized. POWERGRID has established one of the best Hindi libraries among Public Sector wherein popular / literary Magazines and News Papers have been made available for all the employees.

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 2013-14. POWERGRID has received under mentioned rewards and awards whose details are given below:

1. Various awards given by Town Official Language Implementation Committee (TOLIC) regarding best Implementation of Official Language :-

- 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.
- Jammu Office: First Prize; Rajbhasha Shield and Certificates.
- Secunderabad Office: First Prize; Rajbhasha Shield.
- Bangalore Office: Third Prize; Rajbhasha Shield and Certificate.
- Shillong Office: Second Prize; Rajbhasha Shield.
- Kolkatta Office: Second Prize; Rajbhasha Shield.
- Siliguri : First Prize; Rajbhasha Shield.
- Secunderabad Office: Second Prize; Rajbhasha Shield.

2. Awards received from Rajbhasha Vibhag, Ministry of Home, Govt. of India:-

- RHQ Jammu Office: First Prize Rajbhasha Shield & Certificate.

3. Inspections and discussions done by Hon'ble Committee of Parliament on Official Language:-

- The second sub-committee of Hon'ble committee of Parliament on Official Language inspected HVDC Dadri Substation under NR-1 at New Delhi on December 02, 2013 and given its suggestions to improve the consistency of work in Hindi.
- The second sub-committee of Hon'ble committee of Parliament on Official Language inspected Meerut Substation under NR-1 at New Delhi on November 29, 2013 and given its suggestions to improve the consistency of work in Hindi.
- The second sub-committee of Hon'ble committee of Parliament on Official Language inspected Gorakhpur Substation under NR-1 at Gorakhpur on October 01, 2013 and given its suggestions to improve the consistency of work in Hindi.
- The second sub-committee of Hon'ble committee of Parliament on Official Language inspected Amritsar Substation under NR-2 at Amritsar on September 29, 2013 and appreciated the work being done at Amritsar Substation.
- The second sub-committee of Hon'ble committee of Parliament on Official Language inspected Guwahati Office under NER at Guwahati on June 22, 2013 and appreciated the work being done at Guwahati Office.
- The second sub-committee of Hon'ble committee of Parliament on Official Language inspected Manimajra Substation under NR-1 at Chandigarh on May 13, 2013 and given its suggestions to improve the consistency of work in Hindi
- The second sub-committee of Hon'ble committee of Parliament on Official Language inspected Bassi Substation under NR-1 at Jaipur on April 15, 2013 and given its suggestions to improve the consistency of work in Hindi.
- The second sub-committee of Hon'ble committee of Parliament on Official Language inspected Corporate Office, Gugaon on February 14, 2013 and given appreciation letter after inspection.
- The second sub-committee of Hon'ble committee of Parliament on Official Language inspected Mapusa Substation under WR-1 at Goa on January 21, 2013 and given its suggestions to improve the consistency of work in Hindi.
- Grid Darpan' has bagged 'Rajbhasha Grih Patrika Samman' by Rashtriya Hindi Academy, Rupambare. And Centre for Training & Development,Bangalore.

- Jammu Office: Rajbhasha Shree Samman and Rajbhasha Kriti Samman to Sr. Hindi Officer and Sr. Officer were given by Bhartiya Rajabhsha Vikas Sansthan, Dehradun.

PFC

Power Finance Corporation Limited (PFC) believes in creating possibilities of better tomorrow. Following the same principal 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.

06 no. new Incentive Schemes were introduced to motivate the employees to do their official work in Hindi. Amount of the prize money given to the prize winners of various competitions was also increased to encourage more and more employees to participate in competitions.

To ensure the compliance of Offiical Language Policy in the Organisation, Office Order related to re-establishing check points were issued to all the employees under the signature of Director(Commercial) on 11 June, 2013. Personal orders under Section 8(4) of Official Languages Act, 1963 were again issued to all the employees having proficiency in Hindi on 17.10.2013 to do their work in Hindi.

In all, 10 Computer Training Programmes, especially related to use of Unicode, for 192 no. executives and non executives of the Corporation were organised with a view to improve their efficiency in doing their day to day official work in Hindi. Internal inspections of 37 no. of units were 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 15th October, 2013 respectively. During the Hindi Month, various competitions, like Vartani shodhan, Sansmaran, Bhav Pallavan, Kahani Buno and Mook Prahelika (Dumb Charades) were organized. In addition to these, a Nara/Slogan lekhan pratiyogita was organised in the month of April.

An inter PSU competition i.e. 'Chitra (Maukhik) Abhivyakti Pratiyogita' was also conducted on 28.11.2013 under the aegis of Town Official Language Implementation Committee on wherein employees of 25 various Public Sector Undertakings participated.

Copies of Annual Programme for the year 2013-14 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 18.06.2013.

April-June,2013 issue of Corporation's Quarterly magazine 'Urja Deepti' was dedicated to Munshi Prem Chand and Acharya Mahaveer Prasad Dwivedi.

Annual Report of the Corporation as well as its 14 no. subsidiaries 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.

Official of Ministry of Power conducted the inspections of Head Office at New Delhi and of Regional Office (South) at Chennai and commended the efforts made by PFC in implementing Official Language Policy in respective offices and made certain suggestions which have either been complied with or being implemented. Inspection of PFC Head Office was carried out by Parliamentary Committee also on 24.09.2013.

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. Several slogans were displayed at Reception area in Hindi and SMS were also sent to the employees in Hindi during the week.

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 Financial Year 2013-14 (Upto 30th November, 2013)

a. The provisions of the Official Language Act and Rules were complied with during the current Financial Year. The Company made sincere efforts to increase the progressive use of official language in accordance with the policy of the Government of India.

b. To encourage employees, all the incentive schemes introduced by the Government of India have been implemented in the Corporation.

c. A National Level Hindi Workshop was also organized on 22nd to 24th August 2013 at Central Institute for Rural Electrification (CIRE), Hyderabad for Hindi Nodal Officers of different Project Offices. Eighteen Nodal Officers participated.

d. To create a Hindi oriented environment in the Corporation, Hindi Pakhwara was organised from 14.09.2013 to 28.09.2013 in the Corporate Office, in which nine competitions were organised for Senior Officers, Middle Level Officers and Employees including class fourth also. Hindi Quiz Competition was introduced for the first time, in which our employees took keen interest.

e. A Prize Distribution Function was also organized on 28.10.2013. Winners of competitions were awarded Certificates of Merits & Cash Prizes.

To popularise Hindi in a big way, a Kavi Sammelan was orgainsed. Famous Hindi Poet Shri Hari Om Pawaar, Dr. Sunil Jogi and Ms. Sita Sagar charmed with their satyrical

poetry in Hindi and motivated at present 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 2012-13.

f. Parliamentary Committee inspected Hindi work at 4 Zonal/Project Offices at Shimla (24.5.2013), Guwahati (22.6.2013), Panchkula (18.9.2013) & Bhubaneswar (30.11.2013).

g. During the year, our Zonal Office, Panchkula and Project Office, Bengaluru were honoured with Shield and Certificates by the Regional Official Language Committee for better performance in Hindi.

h. Hindi books in required ratio were purchased during the year.

i. All publications, Press Releases, Annual Report, MoUs issued bilingually.

j. To give impetus to the correspondence in Hindi, Standard Forms made available on INTRANET.

The details of targets achieved during the period from 01.04.2013 to 30.11.2013 and likely to be achieved upto 31.03.2014 are as mentioned below:

Sl. No.	Particulars	Achievement upto 30.11.2013	Targets likely to be achieved upto 31.03.2014
1.	Inspection of Internal Divisions	7	12
2.	Inspection of Project Offices	2	10
3.	Meetings of Official Language	2	4
4.	Hindi Workshop	4	8
5.	Hindi Website	100%	100%

SJVNL

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 it is updated from time to time.

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 367 executives and non-executives have received prizes amounting to `4,43,460/- approximately.

Under the new "Rajbhash Samman" Scheme ₹ 25,000/- are paid to each employee doing best work in Hindi in different Projects including Corporate Office and "Rajbhasha Uttkrishtta Samman" of ₹ 30,000/- to the employee doing best work in Hindi at Corporate Level. This year eleven 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. 16 Hindi workshops/seminars have been organised and 331 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 292 no. of executives and non-executives were awarded cash prizes amounting to ₹ 2,08,300/-

Sub-Committee of Parliamentary Committee on Official Language inspected the progress of use of Hindi of Corpoate Office, Shimla and Rampur Hydroelectric Project, Jhakri on 25th May,2013 at Shimla separately and Coordination Office, New Delhi on 17th Sept.,2013 and expressed its satisfaction over the progress made in this regard.

Ministry of Power, Govt.of India has awarded "NTPC Rajbhasha Shield (IInd Prize)" to SJVN. Hon'ble Minister of State of Power(Independence charge), presented this award to the Director (Finance), Sh.A.S.Bindra & Dy.General Manager (Official Language), Dr.R.K.Pandey in the Meeting of Hindi Advisory Committee of the Ministry of Power on 24.05.2013 at New Delhi. Besides, Town Official Language Implementation Committee, Shimla awarded the Company with IInd Prize for its outstanding efforts towards implementation of Official Languge. Chief Income Tax Commissioner of Central Income Tax Office gave this award to Sh.A.K.Mukherjee, GM(P&A) & Dy.General Manager(Official Language), Dr.R.K.Pandey on 02.05.2013 in a ceremony at Shimla.

To give impetus to the multi-facet talent of employees an in-house bi-annual Hindi magazine "Himshakti " was published and circulated. Out of total expenditure on purchase of books, 80.80% of amount was spent on purchase of Hindi books.

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 46 employees were nominated for Hindi Language Training under regular course and 48 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, 11 (eleven) Hindi workshops were organized and 197 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.

THDC

The Corporation has made sustained 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, 11 (Eleven) Hindi Workshops have been conducted at Corporate Office, Rishikesh and subordinate Units/Offices to motivate the employees. Hindi Fortnight was conducted from 16th to 30th Sep, 2013 at all the Units/Offices of the Corporation. During the Fortnight various competitions like Hindi Essay, Noting & Drafting, Translation, Hindi word knowledge, Dictation, Poetry, Typing, Debate and Hindi Quiz etc. were organized. Employees participated with great zeal and enthusasiasm. The closing ceremony of Hindi Pakhwara was organized on dated 30.09.2013 wherin the cash prizes were distributed among the winning participant.

Besides the competitions conducted during Hindi Fortnight, a Hindi Slogan Competition was organized for the officers and employees on dated 15.04.2013 in Corporate office, Rishikesh. A number of Officers and employees participated in this competition. One another competition, Hindi Quiz based on the Literary books was organized on dated 27.06.2013 for the childern of the officers and employees of the Corporate Office, Rishikesh with the purpose to Dissemination the Hindi Language among the employees involving the children. Due to summer vacation, the childern enjoy the Literary books and got themselves prepared for the competition. The children were advised to got issue books from corporation's Library for preparation of the Quiz competition.

For the purpose of increase the number of readers of Hindi Language, Hindi house Journal " Pahel" is being published biannually by Hindi Section (P&A). The Vth Edition (Jan to June,2013) of this Journal was published with the interesting and knowledgeable material during the year. To provide bilingual working facility, Hindi software / fonts have been installed in all the computers/laptops in the Corporation and materials are also being displayed in the website bilingually.

Quarterly meetings of Official Language Implementation Committee at Corporate office and subordinate Offices/Units are also being organized at regular intervals. 03 Meetings, each in every quarter of Hindi Nodal Officers appointed in different departments have also been held 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 ₹ 1,41,119.00 during the year at Corporate office as well as subordinate offices in libraries.

The CMD & Senior Executives of the Corporation have attended the meeting of Hindi Advisory Committee of MOP held on 24.05.2013 at New Delhi. Beside this, the officer of the Corporation participated in various Rajbhasha Sammelen and programmes organized by various Organizations. The officers and employees of the Corporation have participated regularly in the meetings and competitions organized by TOLIC and A number of Officers and employees are awarded by TOLIC due to winning the competitions during the year.

DVC

During 2013 - 2014, 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. 19 employees qualified in the Prabodh, 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, 20 employees appeared for Hindi Typing examination and 06 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 organised for officiers 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, 03 (Three) special Official language workshop & regarding the use of Unicode on Computers were organised in which 120 employees 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 and Hindi speaking employees participated in these competitions and successful participants were given prizes. A Departmental Rajbhasa Shield was again awarded to Human Resorce Department at DVC Headquarters on the basis of using official language in Corporation's activities. During the 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. A musical programme was also organised during the occassion. A separate DVC Rajbhasha Shield was also run by the Corporation for its field formations which executes excellent work in Hindi. During the year under review, Bokaro Thermal Power Station, Soil Conservation Department, Hazaribagh and Chandrapura Thermal Power Station recieved First, Second & Third Prize respectively. Project Heads of the concerned stations were present in the programme & recieved the awards from the Chairman, DVC.

During the period under review, DVC received "Second Prize" for its better performance in execution of Official Language Policies among 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" (3rd Prize) was also awarded to DVC. On behalf of DVC Sri R.N. Sen, Chairman, DVC and Sri Pallav Roy, Additional Secretary, DVC received the award from Sri Jyotiraditya M. Scindia, Hon'ble Power Minister for State, MOP,GOI in a prestigious occasion held at New Delhi.

The anticipated programmes upto March, 2014 are to organise two more Hindi Workshops, one for staff and one for Officers exclusively.

The Corporation is ushering towards meeting new benchmarks in implementing Official Language in DVC.

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 90% correspondence of Board Secretariate with region 'A' offices, 95% 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 Secretariate 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 Secretariate, about 88% notings are being done in Hindi. Hindi workshops are organized in every quarter and subordinate offices are regularly inspected by the Board Secretariate 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 ₹ 1,03,045/- have been purchased out of which ₹ 1,00,900/- has been spent on Hindi books. 200 books have been distributed to all officers to read.

Hindi fortnight is organized in all the offices in the month of September, 2013 during which various Hindi competitions are organized 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. Besides this a Regional Official Language Implementation Sammelan has also been organized in which the officers from all PSUs have participated.

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.

CPRI

1. **Indira Gandhi Rajbhasha Award**
   Central Power Research Institute was awarded the Indira Gandhi Rajbhasha Award-II for excellent work done during the year 2011-12 for "C" Region which was awarded by the honourable President on 14th Sept. 2013 on the occasion of Hindi Divas celebrations at VigyanBhavan, New Delhi.

2. **"News letter "Award**
   CPRI was awarded Best News letter for CPRI News journal by Town Official Language Implementation Committee at CSIR, NAL, Bangalore on 11th December 2013 .

3. **Hindi Month**
   "Hindi Month" was observed on 02nd Sept 2013 with competitions organized separately for employees having proficiency in Hindi and those having working knowledge of Hindi .

4. **Hindi Divas**
   "Hindi Divas" was conducted in the Institute on 25th Sept. 2013 under the chairmanship of Shri N. Murugesan, Director General. Dr. Komal Prasad, Consultant, Neurosurgeon, Narayana Hrudayala was the Chief Guest. The Chief Guest distributed the prizes for the various competitions and Incentive Schemes. The session ended

with a lecture delivered on "Stress Management" by Dr. Komal Prasad.

5. **Publishing of CPRI News.**
   The quarterly journal of the Institute "CPRI NEWS" is brought out bilingually.

6. **Annual Report 2012-2013**
   The Annual Report of the Institute for the year 2012-13 is published bilingually

7. **CPRI Website**
   The website of CPRI is available completely in bilingual and is equivalent to its English website.

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 15th & 16th May, 2013 and 24th & 25th September, 2013 during the Hindi Pakhwara (14-27 September, 2013). 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 14-27 September 2013. 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 three consolation prizes were given to the winners of the competitions. Besides this, three special prizes were also given 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 24th & 25th September, 2013 two day Hindi workshop were 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.

CHAPTER - 33.2

VIGILANCE ACTIVITIES/DISCIPLINARY CASES

Ministry of Power

1. 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 on 26.07.2013 by Secretary, Ministry of Power with 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 was held by Central Vigilance Commission on 31.07.2013 at Satarkata Bhawan, New Delhi.
2. Regular monitoring and watch is being kept on the complaints being 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 off by the Vigilance Wing. Apart from dealing with some complaints of previous years, 155 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 officers of Ministry and PSUs. During the year, vacancies arose for the post of CVOs in PFC, THDC, NHPC and NEEPCO, the post of CVO, PFC and NHPC have since been filled up.
3. Vigilance awareness Week, 2013 was celebrated in this Ministry and PSUs/other organizations from 28th October 2013 to 2nd November 2013. 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 2013. Prizes were awarded to the five best participants.
4. In the scenario of constant security threats, strengthening the security of vital installations was continuously emphasized and regular interaction was under taken with MHA and PSUs to enhance the security and to comply with the security instructions received from various agencies.
5. Advisories received from IB and MHA regarding security of specific 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 to 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.
6. Three committees one each in Hydro Power Sector, Thermal Power Sector and Power Transmission Sector have been established with a view to benchmark the minimum physical, technological and IT security, standards for Power Sector, Final Report and Guidelines for physical security, Technological & IT on Hydro Sector, Thermal and Power Transmission Sectors have been received and sent to IB for further action.

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 facets 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 facilitates 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 transparency in its functions. Vigilance Awareness Week 2013 was observed in Central Electricity Authority and its Subordinate offices from 28th October to 2nd November, 2013. The Vigilance Awareness Week was celebrated to highlight the theme "Promoting Good Governance – Positive Contribution of Vigilance". Complaints other than anonymous/ pseudonymous were taken up for investigation promptly and after completion of investigations, reports submitted to the prescribed authority. As on 01.01.2013 one case of disciplinary action was pending under CEA's disciplinary jurisdiction. One case was added during the period. Thus at present (as on 31.12.2013) two cases are pending finalization. Prescribed periodical Returns were sent to the Ministry of Power in time.

PAO

No Vigilance or disciplinary case is pending or contemplated against any officer or Staff Member in this office as on date.

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:-

- For packages having estimated value (excluding taxes and duties) of Rs.10 Crores and above but less than ₹100 Crores with effect from 1st June, '09 and
- For packages having estimated value (excluding taxes and duties) of ₹ 100 Crores and above with effect from 3rd Aug.'09.

Sh.A.N.Tewari, IAS (Retd), Ex-CIC and Sh.V.S.Jain, Ex-Member, PESB have been appointed as Independent External Monitors w.e.f. 18.12.2012 for a period of 03 years.

The complaints are disposed well within the time-frame prescribed by the CVC. Total 123 nos. complaints were investigated during the relevant period. Out of these 123, 54 complaints were carried to a logical conclusion and the remaining 69 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 2013.

121 Surprise Checks were conducted. Recovery of ₹ 96,87,362/- was effected against various discrepancies detected during investigation. Vigilance Deptt. of NTPC had laid emphasis in the awareness process. In line with this during the relevant period 7 Preventive Vigilance Workshops were conducted at various projects/places in which 222 employees participated. Internal Audit Reports pertaining to NTPC Projects/Stations, sites and Regional Headquarters received from NTPC Finance Deptt. during the year were examined from vigilance angle.

During the period a series of system improvements guidelines/circulars have been issued with a view to promote good governance in the Company. Some of the important issues covered in the Circulars are:

1. Seeking information pertaining to extra items, substituted items and quantity deviation.
2. Sampling, Testing and Weighment of Imported Coal
3. Impressing upon the Empanelment and updation of Vendors List
4. System Improvement related to Material Handling at Projects
5. Single tender cases
6. Extra claims lodged by the contractor during execution and after completion of the work
7. Strict compliance of Corporate approved PQR and technical specifications for procurement of coal pulverizer parts related tenders
8. Receipt of substandard stainless steel/alloy steel in respect of Boiler Tube Shields, Burner Nozzle Tip, Coal Mill Centre Feed Pipes etc.
9. Open Tender procedure to be followed for Guest House Maintenance and Catering Work contracts.
10. Reconciliation of Owner issue Material
11. Ensuring working condition and correctness of In-motion Weighbridge
12. Procurement process in NTPC –Commitment for Quality with Zero Tolerance.
13. Delay in reconciliation and settlement of pending issues related to Imported Coal supplies
14. System improvement regarding procurement of LDO/Naptha/Heavy Fuel Oil
15. Maintaining of records like Site Order Book/Hindrance Register etc. for the packages awarded by CC/RHQ during project execution.

Apart from above as per guidelines of CVC, Complaint Handling Policy has been formulated and implemented in NTPC w.e.f.01.08.2013. The Whistle Blower Policy has been approved by the Board of Directors, NTPC in the Board Meeting dated 05.12.2013 and is under implementation. Property Returns relating to movable/immovable properties are being submitted by the employees 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 28th Oct. '13 to 2nd Nov. '13 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 "Promoting Good Governance – Positive Contribution of Vigilance". To continue further with the good work being done at the Projects and to promote enthusiasm among the vigilance awareness activities, the messages from CMD and CVO were also uploaded on the NTPC Intranet. All Vigilance Executive at Projects were also directed by the CVO to bring out the main points of various Circulars, issued in recent time from the Office of the Chief Vigilance Officer, to the notice of all officials, vendors and contracting agencies.

NHPC

NHPC's Vigilance Division at Corporate Office has been granted ISO 9001:2008 certification for implementation of Quality Management System by M/s BIS (Bureau of Indian Standard). All the procedures have been documented and system of monitoring of Vigilance complaints and disciplinary cases has been implemented to avoid delays.

Regular and surprise inspections are being conducted by the Vigilance Department at regular intervals. Actionable points identified by the Project Vigilance Officers are intimated to Head of the Projects time to time for implementing necessary corrections. Intensive examinations of works are carried out by Chief Technical Examiner (CTE) of the CVC time to time. Intensive examinations of works at Projects and Power Stations

are also carried out by Vigilance Division. 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 services of the value of ₹ 25 lacs and more as per guidelines of CVC. E-Procurement solution has been implemented for the 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. "Vigilance Awareness Week" and various vigilance awareness programmes are being conducted to promote transparency and ethics in working system.

POWERGRID

In its journey towards achieving excellence, POWERGRID strives to inculcate the factors of transparency, integrity, accountability, fairness, equity and adherence to rules, regulations and laws of the land, in its day to day functioning. The Central Vigilance Commission's directions regarding improving vigilance administration by leveraging technology and the Ministry of Power's directive regarding good governance has been taken up for implementation within the organization. With the introduction of e-payments, e-billing, e-procurement and reverse auction, e-auction, uploading of contract documents as well as award details, vendor registration for tracking of their bill status, online Inspection Management system, the concept of transparency and accountability has been inculcated within the system. It has also resulted in faster and cost effective communication, transparency, authenticity and building of mutual trust and confidence between the company and the bidder's community.

As part of pro-active and preventive vigilance, POWERGRID conducted process online inspections in which critical areas of projects are inspected at the initial stage of execution by the vigilance executive for shortcomings if any. On the basis of such inspections, corrective measures are advised. During the year 138 inspections were conducted. At both the regions as well as Corporate Centre, out of which 64 were surprise inspections. On the basis of inspections conducted, in some cases, adequate cost compensation were effected on matters not conforming to technical specifications or conditions of contract etc.

Besides this, several initiatives have been taken to strengthen internal systems in order to enhance the efficiency and effectiveness. As part of this, training has been imparted on ethics, vigilance matters and the RTI Act, through various workshops organized at both the regions as well as in Corporate Centre. Till date, 18 workshops have been conducted in 2013, out of which 2 workshops were organized on the RTI Act. 495 non-vigilance employees have so far been imparted training during this year. During this period, a preventive vigilance workshop was also organized for ED/GM level employees at Corporate Centre. Eminent faculties were invited from CBI, CVC and CERT-in to impart training to the participants. Shri J.M. Garg and Shri R. Srikumar, Vigilance Commissioners also addressed the participants. The event was attended by all regions through video conferencing.

Apart from this, vigilance executives have also been sent on training for capacity enrichment to various training programmes organized on vigilance matters. The Vigilance Executives have also undertaken awareness sessions while on tour or during inspections in order to have an idea about the practical issues being faced by employees at the working level. Bulk SMS are also being sent to all employees regularly in order to acquaint them with Conduct Rules and vigilance matters. Online complaint handling system and continuous improvement in systems and procedures are also steps in the same direction.

Vigilance Awareness Week 2013 was observed in POWERGRID from October 28, 2013 to November 02, 2013, as per the directives of the Central Vigilance Commission. The in-house journal of the Vigilance Department 'Candour' was released during the valedictory session in the presence of Shri J.M. Garg, Vigilance Commissioner, CMD and CVO.

PFC

During the financial year 2013-14 (upto 30th November 2013) the Vigilance Unit functioned as an effective tool of pro-active 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. The Project Appraisal Manual was notified after review and the review of the Fund Management & Banking Manual undertaken and is in process of finalization. The filing of Property Returns was made on-line. Property Returns are also displayed on the website of the PFC. In addition, during this period detailed investigations were carried out in several cases of registered complaints.

The Vigilance function 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 28th October to 2nd November, 2013 in the Head Office and Regional offices of the Corporation. During the Vigilance Awareness week a one day workshop on "Sustaining an Organization's Ethical Vision" was organized for the employees of this Corporation. In the programme, interactive sessions were organised with prominent faculty members on varied subjects like personal values and ethics and how to deal with day to day situations involving ethical dilemmas faced during working in an organization. The banners indicating observance of the Vigilance Awareness Week were displayed at the prime locations in the office premises. Further slogan and pictorials of previous years were also displayed on desktops of employees and TVs installed at designated places.

Slogan Writing Competition, Essay Writing Competition as well as Pictorial Theme Representation Competition were organised on themes relating to "Good Governance and National Prosperity", "Importance of Good Governance for social and economic development" and "Vigilant employees and Good Governance" respectively with the aim of involving employees and encouraging them to come forward with innovative ideas about dealing with Good Governance.

Disciplinary Cases

No major Disciplinary Cases are pending.

REC

Progress made during the Financial Year 2013-14 (upto 30.11.2013)

Vigilance Division endeavoured to optimize transparency, fairness and accountability in all operational areas. Streamlining of systems and procedures in matters relating to administrative and financial functions was also accorded priority. The thrust on leveraging of technology was continued, with the result that information relating to loans, schemes, tenders, third party bills, recruitment etc. has been made online. Tenders were scrutinized and various suggestions were given for enhancing competitiveness and fairness in purchase procedures. Wherever loopholes were noticed, the matter was taken up with concerned divisions, which led to strengthening of appraisal system/guidelines. With a view to enhance the knowledge of employees about vigilance related issues, a Vigilance Bulletin is being issued on a quarterly basis. 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.

Vigilance Division also pursued with HR Division to implement ERP, concerning matters pertaining to ACRs, leave record, attendance etc. after studying other PSEs where HR modules have already been successfully implemented and adopting best practices. HR Division was also advised to prepare HR Manual/handbook and to impart training to newly recruited/left over employees on REC CDA Rules, tendering, disciplinary proceedings etc. Agreed List and list of Officers of Doubtful Integrity were finalized. In compliance with the instructions of CVC, HR Division was informed of the posts identified as sensitive for the purpose of rotational transfers. Prescribed periodical statistical returns were sent to CVC, CBI, MoP on time.

As per directives of CVC, REC observed Vigilance Awareness Week from 28.10.2013 to 02.11.2013. Various activities were organized in the Corporate Office as well as at field offices to enlist the participation of the people at large. At the Corporate Office, Quiz and Essay Writing Competitions were organized for executives as well as non-executives, and dignitaries were invited to sensitise REC employees on various vigilance related topics. The performance of Vigilance Division was reviewed regularly by the CVC, Board of Directors and CMD in addition to constant reviews undertaken by the CVO in accordance with the prescribed norms.

Disciplinary Cases

As on date, no disciplinary case/proceedings are pending in REC.

Anticipated targets to be achieved during the remaining period of the year i.e. upto 31.3.2014

(i) Efforts will be made to take new initiatives/to streamline systems/procedures as under:-

- Preparation of comprehensive HR manual consisting of recruitment policy, service rules, CDA rules, promotion policy etc.
- Timely implementation of ERP-HR module.
- Devising an effective system of physical verification and recording/accounting of fixed assets.
- Streamlining system relating to indoor treatment of employees and their dependent family members so as to avoid the possibility of any misuse.

(ii) Pre-award and post award scrutiny of some tenders /contracts awarded.

(iii) Inspections to be carried out in respect of the remaining field offices.

(iv) Scrutiny of some Corporate Social Responsibility Projects.

NEEPCO

During the period from 01/04/2013 to 30/11/013, 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 2013, 5 (five) complaints were pending. During the period under report, 5 (five) new complaint have been added which have also been investigated and out of these, 5 (five) complaints have already been disposed off. As on 30/11/2013, there were 5 (five) 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 01/04/2013, 3 (three) disciplinary case were pending. During the period under report 1 (one) new disciplinary case was added and out of these 2 (two) cases have already been disposed off, remaining 2 (two) cases are pending for finalization.

The observations raised from time to time by 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 related to processing of tender of works and procurement etc, a number of suggestions have been forwarded to Management. During this period 49 (forty-nine) 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 and as a part of leveraging technology, the Vigilance Deptt. has also uploaded the Annual Immovable Property Returns (AIPRs) of Executives in the NEEPCO's Web site.

All the important CVC circulars and OMs issued during this period have also been circulated to all concerned with a view to improve overall system in the Corporation.

182 nos. of Annual Property Returns (APRs) of the employees have been scrutinized during the period from 01/4/2013 to 30/11/2013. Vigilance clearances against officials required for various purposes like DPC, promotion regularization, foreign visit, out-side employment, retirement, resignation, release of terminal benefit etc. were given as and when sought for.

The CVO has attended various meetings during the period under report as convened by the Central Vigilance Commission (CVC) and the Ministry of Power (MoP) on the agenda framed by them and subsequently follow-up action has been taken based on the respective minutes of the meetings. The CVO along with other senior Officials of the Vigilance Department visited Agartala Gas Turbine Power Plant, Tripura Gas Based Power Project, Kopili Hydro Electric Plant and Pare Hydro Electric Project during the period under report. A CTE type inspection was also carried out in one of the projects of NEEPCO. A Vigilance review meeting was held at Corporate HQ, Shillong on 17/5/2013 with in-charges of all Projects/Plants Vigilance Deptt.

The "Vigilance Awareness Week" was observed in the Corporation w.e.f. 28/10/2013 to 02/11/2013. Besides taking "Pledge" Essay Writing Competition and Slogan Writing Competition were organized amongst the employees of the Corporate HQ.

SJVN

Besides routine administrative matters, the prime emphasis has been mainly on the preventive vigilance in SJVNL. The preventive vigilance includes those steps which are instrumental in reducing or eliminating corruption from public services as listed below.

Extent of IT usage and the E - Governance :

(i) ERP Solutions for SJVN containing various Modules is under process. (ii) Online Status in respect of tenders / contracts awarded is provided on official website. (iii) Online Recruitment System in SJVN implemented / launched in SJVN. (iv) System for Online filing of Annual Property Returns by SJVN Employees made operational. (v) In line with the DOPT / MOP, GOI instructions, the vigilance clearance / status / NOC is issued only, if the official concerned, has submitted his Annual Property Return.

E - Procurement :

The E – Procurement has already been implemented in SJVN Ltd.. At SJVN Corp. Office Shimla, 1500 MW NJHPS and 412 MW Rampur HEP, 100 % tenders are now being put up through E - Procurement system, except for small petty purchases / spot purchases etc..

E - Banking :

All payments above the threshold value of Rs. 1.00 Lac are now being made through RTGS system / Electronic mode.

Other Preventive Measures :

(1) Finalization of the Policy to grant Mobilization and Equipment Advances.

(2) Implementation of guidelines regarding preparation of cost estimates.

(3) Finalization of Policy regarding Service Tax Reimbursement.

(4) Creating a dedicated cell for proper inventory and assets management.

(5) Fixing the number of candidates to be called for interview against each available vacancy.

(6) Proposal to sensitize SJVN Officers about legality and quality of replies being given to the contractors.

(7) The tenure of Officials of SJVN in sensitive departments, is continuously being monitored. Wherever possible, the SJVN Management is now rotating Officials on regular basis.

THDC

The aim 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. 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, meeting 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. 16 Nos. Surprise Check, 02 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 HOB, Central Bureau of Investigation, Dehradun and Ghaziabad office. Similarly list of officers of doubtful integrity was finalized.

Status of Registered complaints
w.e.f. 01.04.2013 to 31.11.2013

During period the Vigilance Department registered 07 complaints/cases for investigation. Out of these 5 have been completed and 02 (Two) are under investigation.

Letter issued on Systemic Improvement

During the period the Vigilance Department issued 4 numbers of letters of Systemic Improvement relating to various cases.

Vigilance Awareness Week -2013

Vigilance Awareness Week was observed from 28th October, 2013 to 2nd November, 2013.

Disciplinary Cases

During the period one Major Penalty of Dismissal was imposed. 10 Nos. of warning were issued to the executives.

DVC

A. CURRENT YEAR UP TO 30TH NOVEMBER, 2013

As per the instructions/guidelines received from Central Vigilance Commission and Ministry of Power special emphasis was given by the Vigilance Department of DVC to bring about objectivity, transparency and accountability for the purpose of promoting good governance keeping participative vigilance in particular. The details of various activities taken up during the said period are furnished as under.

1. Disposal of Complaints

All the complaints received by the Vigilance Department during the period under review were disposed after 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 30-11-13, about 80 complaints were received and processed as per its merit.

2. Inspections

Greater stress was laid on periodic inspections during the period as a part of preventive vigilance. 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 the need for effecting suitable changes in the procedure/manual regarding transparent system of tendering particularly qualifying requirements was also felt.

Recommendation for framing a fool proof system for all types of recruitment through offline or online was also made on the basis of a special inspection conducted by Vigilance Department,

3. System Improvement

On the basis of continuous monitoring and recommendation of Vigilance Dept., Kolkata the DVC management has taken the following actions for system improvement:

- Submission of Annual Property Return immediately after appointment and reporting of any transaction of movable property of value of two month basic within one month by all employees.
- Introduction of Enterprise Business Application(EBA) for processing the Payrolls, Pension, Material management and computation of Income tax for DVC as a whole through the system.
- Introduction of New Promotion Policy for Group – A employees in DVC.
- Non-relaxation of qualifying requirement after issuance of NIT.
- Formation of Standing Committee on Work Procurement.
- Publication of Revised and updated Work and Procurement Manual 2012 (Version -IV).
- Implementation of EBA enabled payrolls.
- Introduction of Employee Self Service Scheme (ESS) in DVC.

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. Other Activities

As a part of preventive vigilance, altogether 1951 Vigilance clearances in respect of DVC employees were given for different purposes. Around 220 Annual Property Returns of DVC employees were scrutinized during the period. As per CVC guidelines, Annual Work Plan for the year 2013-14 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 submitted to concerned authorities in time.

In accordance with CVC guidelines, Vigilance Awareness Week was observed between 28.10.13 to 02.11.13 in all field formations as well as DVC Head Qtrs. The theme of VAW -2013 was “Promoting good governance – Positive contribution of Vigilance."

The Review Meeting of Vigilance activities of DVC followed by training programme for newly inducted Project

Vigilance Officers was held at Maithon on 14 – 15th March 2013 which was attended by all the Officers of Vigilance dept. posted at Kolkata and different projects of DVC.

A structured meeting with Chairman, DVC on vigilance activities was also organized which was attended regularly by the CVO and other vigilance officials.

B. ANTICIPATED TARGETS FOR THE REMAINING PERIOD UP TO 31ST MARCH, 2014

- 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.
- Bedsides above, pending issues related to system improvement would be taken up with the management.

BBMB

The Vigilance Organisation in Bhakra Beas Management Board comprises of 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 – 2013 was celebrated w.e.f 28.10.13 to 02.11.2013 in BBMB offices at Chandigarh as well as at Project Stations. An interactive session on vigilance awareness was also conducted on 30.10.2013 at Chandigarh.

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

BEE

During the year 2013-14, there were no major complaints received and no disciplinary case initiated.

BPL - Electricity connection - Village Chachupali, Dist. Devogarh, Orissa

CHAPTER - 33.3

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 31.12.2013	Number of women employees	Percentage of overall staff strength
A	59	10	16.9
B	125	29	23.2
C	62	09	14.5
C(MTS)	54	01	1.8
Total	**300**	**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.

CEA

Representation of women in CEA is given below:-

Group	Total Employees on 30.11.2013	Number of Women employees	Percentage of overall staff strength (%)
A	294	31	10.54%
B	175	80	45.71%
C	109	38	34.86%
MT S-C	161	16	9.94%
Total	**739**	**165**	**22.33%**

PAO

Representation of women may be indicated in the format given below:-

Group	Total Employees as on 31.10.2013	Number of women employees	Percentage of overall staff strength
A	2	-	-
B	44	16	36%
C	24	3	13%
Total	**70**	**19**	**27%**

NTPC

Group	Total Employees on 30.11.2013	Number of Women employees	Percentage of overall staff strength (%)
A	14,186	909	6.41
B	5,844	359	6.14
C	4,184	261	6.24
D	1,152	24	2.08
D(S)	0	0	0
Total	**25,366**	**1,553**	**6.12**

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 in employment is as under:

Group	Total Employees as on 30.11.2013	Number of women employees	Percentage of overall staff strength
A	3077	248	8.1%
B	1327	123	9.3%
C	3895	247	6.3%
D (Excluding Sweepers	1679	294	17.5%
Sweepers	112	41	36.6%
Total	**10090**	**953**	**9.4%**

POWERGRID

As on November 30, 2013 there are 586 Women Employees working at different levels in the corporation. Details are given below:

Group	Total Employees as on 30.11.2013	Number of women employees	Percentage of overall staff strength
A	4031	272	6.75%
B	2533	192	7.58%
C	2606	105	4.03%
D	155	17	10.97%
Total	**9325**	**586**	**6.28%**

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 may be indicated in the format given below:-

Group	Total Employees as on 30.11.2013	Number of women employees	Percentage of overall staff strength
	445	88	19.77%
Total	**445**	**88**	**19.77%**

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 15.8%. Details of the number of women employed in the Corporation are as under:

Group	Total Employees as on 30.11.2013	Number of women employees	Percentage of overall staff strength
A	378	60	15.8
B	134	30	22.3
C	45	3	6.6
D	87	9	10.3
Total	**644**	**102**	**15.8**

SJVNL

Activities relating to Women Employees

Group	Total Employees as on 30.11.2013	Number of women employees	Percentage of overall staff strength
Total	**1472**	**141**	**9.58**

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 141 which comprise of 51 Executives and 90 Non-Executives. Their present strength accounts for about 9.58 % 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 women may be indicated in the format given below:

Group	Total Employees as on 30.11.2013	Number of women employees	Percentage of overall staff strength
A	737	56	13.64%
B	986	140	
C	993	149	
D	62	34	
Total	**2778**	**379**	

Activities relating to Women Employees of NEEPCO for the financial year 2013-14

1. International women's Day was observed on the 8th of March 2013 by the NEEPCO Women Welfare Association. A programme was organized on the theme of: "SAFE ENVIRONMENT FOR WOMEN". An Exhibition-cum- sale of Handicrafts made by the underprivileged women and children of the State was also held on this occasion.
2. The members of the Association had visited the Cyclone hit areas of West Khasi Hills on the 10th of May 2013. With the financial help extended by the NEEPCO Management the association had donated relief materials like CGI Sheets, Blankets, Food Items, etc. to the affected families of villages falling under Nongstoin C&RD Block. The materials were duly distributed in three villages in the presence of the Assistant District Project Officer, the Revenue and Disaster Management Department , West Khasi Hills District, Nongstoin, Meghalaya
3. A free Medical Camp for Women suffering from Osteoporosis was also held on the 18th of September, 2013. During the Camp BMD test was also conducted.
4. As done in the previous years the Association awarded Meritorious Award for the year 2013, to the Children of NEEPCO employees who excelled in the Class X and XII examination on the 24th of October.2013. Cash Awards, Mementos and Certificates were presented to the three toppers of all streams.
5. The NEEPCO Women Welfare Association will be celebrating their Silver Jubilee year during 2014 for commemorating their 25years of existence. Various programmes will be organized starting from the 1st week of January, 2014 which will continue for the entire year.

THDC

Representation of women may be indicated in the format given below:-

Group	Total Employees as on 30.11.2013	Number of women employees	Percentage of overall staff strength
Total	**2091**	**120**	**5.73%**

THDC India Limited believes that Women Employees are equal partners in the growth of the organization. Various activities have been organized in the Financial Year 2013-2014 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 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 have women representation. 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 :-

Group	Total Employees as on 30.11.2013	Number of women employees	Percentage of overall staff strength
A	2660	119	4.47
B	4864	299	6.14
C & D	2839	257	9.05
Total	**10363**	**675**	**6.51**

BBMB

Representation of women in BBMB is indicated below:-

Group	Total Employees as on 30.11.2013	Number of women employees	Percentage of overall staff strength
A	221	16	7.23
B	315	29	9.20
C	5436	527	9.69
D	4150	393	9.46
Total	**10122**	**965**	**9.53**

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.

CPRI

Women's cell is functioning since 1997 and looking after the welfare of women employees. The initiative taken by Women's cell includes running of crèche satisfactorily for over past fifteen years for the employees' children. This cell also addresses the grievance of the women employees of the Institute and relieves the complainant of any distress being undergone.

Women employees were sent for various conferences, seminars, workshops and training programme during the financial year 2012-13. To name a few, high impact leadership, decision styles for success, the science of living, dare to lead, round table conference, sensitization programme on prevention of sexual harassment at work place among others.

Women's cell initiated procurement of informative books on contract laws, protection of women from domestic violence and general law to benefit women employees.

Women's Cell organized a lecture exclusively for women fraternity of CPRI as a part of Women's welfare activity on the topic "Rights of Indian Women: General and in workplace" at CRTL, CPRI, Committee Room on 20th Feb. 2013 at 4.30 PM

This cell celebrated the International women's day by inviting a woman stalwart to promote the confidence of women fraternity of CPRI. Dr. Geetha Ramanujam, Founder Director, G. R. Educational Institutions Bangalore was Chief Guest on the International Women's Day celebrated on 8th March 2013. An inspirational and motivating lecture was delivered to the audience. CPRI felicitated Dr. G.N. Sangeetha who is the first visually impaired woman in Karnataka state to acquire Doctorate degree. Women's cell presented a documentary on "Tribute to women achievers".

Representation of Women Employee is as indicated :

Total Employees as on 15.12.2013	Number of women	Percentage of overall staff strength
566	77	13.60

BEE

Group	Total employee as on 31.12.2013	Number of Women employee	Percentage of overall staff strength
A	09	01	11.11%
B	02	-	-
C	07	03	42.85%
D	-	-	-
Total	**18**	**04**	**22.22%**

NMEEE

Group	Total employee as on 31.12.2013	Number of Women employee	Percentage of overall staff strength
A	07	01	14.28%
B	01	-	-
C	01	01	100%
D	N.A.	-	-
Total	**09**	**02**	**22.22%**

CHAPTER - 33.4

PHYSICALLY CHALLENGED EMPLOYEES

MINISTRY OF POWER

Ministry of Power appreciates the reservation for the Physically Challenged in appointments. The various Government directives in this regard are duly followed. The implementation of the reservation policy for Physically Challenged persons in the Ministry and various organisations under its administrative control is monitored by Deputy Secretary (Administration) & Liaison Officer (Physically Challenged) of the Ministry.

The representation of Physically Challenged employees in the Ministry as on 31.12.2013 is as under :

Group	Total Employees as on 31.12.2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
A	59	0	0	0	0	0.0
B	125	0	1	2	3	1.6
C	62	0	0	0	0	0.0
C(MTS)	54	1	0	0	1	1.8
Total	**300**	**1**	**1**	**2**	**4**	**1.33**

CEA

Representation of physically Challenged Employees in CEA is given below:-

Group	Total Employees as on 30.11.2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
A	294	-	-	-	-	-
B	175	-	-	6	6	3.42%
C	109	1	-	-	1	0.92%
MTS-C	161	-	-	-	-	-
Total	**739**	**1**	**-**	**6**	**7**	**0.95%**

PAO

Representation of Physically Challenged Employees may be indicated in the format given below:-

Group	Total Employees as on 31/10/2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
A	2	-	-	-	-	-
B	44	-	-	1	1	2%
C	24	-	-	-	-	-
Total	**70**	**-**	**-**	**1**	**1**	**1%**

NTPC

Group	Total Employees as on 31.11.2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
A	14186	06	07	98	111	0.78
B	5844	03	01	27	31	0.53
C	4184	63	65	105	233	5.57
D	1152	25	31	41	97	8.42
D(S)	0	0	0	0	0	0
Total	**25366**	**94**	**102**	**255**	**451**	**1.86**

NHPC

Group	Total Employees as on 30.11.2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
A	3077	5	0	26	31	1.0
B	1327	1	1	23	25	1.9
C	3895	2	1	16	19	0.5
D (Excl. Swprs)	1679	1	0	7	8	0.5
(Sweepers)	112	0	0	0	0	0.0
Total	**10090**	**9**	**2**	**72**	**83**	**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, 2013 there are 151 Physically Handicapped Employees working at different levels in the corporation. Details are given below:

Group	Total Employees as on 31/11/2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
A	4031	3	9	47	59	1.46%
B	2533	-	-	22	22	0.87%
C	2606	5	5	56	66	2.53%
D	155	2	-	2	4	2.58%
Total	**9325**	**10**	**14**	**127**	**151**	**1.62%**

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 current year No. of appointments made to candidates belonging to person with disabilities out of total appointments given is 4.2%.

PFC

Representation of Physically Challenged Employees may be indicated in the format given below:-

Group	Total Employees as on 31/11/2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
	445	1	2	8	11	2.47
Total	**445**	**1**	**2**	**8**	**11**	**2.47**

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 Persons with disabilities employees. The steps taken include due reservations and relaxation as applicable under the various directives for direct recruitment as well as for promotions. PFC provided the provisions at all floors for easy access to persons are engraved with Braille script for the comfort of visually challenged persons. A separate toilet is maintained for disable 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 31/11/2013	Physically Challenged employees	Percentage of Physically Challenged employees
A	378	7	1.85
B	134	1	0.74
C	45	1	2.2
D	87	1	1.14
Total	**644**	**10**	**1.55**

NEEPCO

Representation of Physically Challenged Employees may be indicated in the format given below:

Group	Total Employees as on 30/11/2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
A	737	-	-	3	3	1.11%
B	986	5	5	6	16	
C	993	8	3	1	12	
D	62	-	-	-	-	
Total	**2778**	**13**	**8**	**10**	**31**	

SJVN

Group	Total Employees as on 31/11/2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
Total	**1472**	**02**	**01**	**10**	**13**	**0.88**

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 0.88 % of the total manpower of the Corporation.

THDC

Representation of Physically Challenged Employees may be indicated in the format given below :-

Group	Total Employees as on 30/11/2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
Total	**2091**	**02**	**06**	**19**	**27**	**1.3%**

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. 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 to participate in the sports and cultural activities and other competitions organized round the year.

DVC

Group	Total Employees as on 30.11.2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
A	2660	-	-	26	26	0.98
B	4864	4	4	22	30	0.62
C & D	2839	7	3	15	25	0.88
Total	**10363**	**11**	**7**	**63**	**81**	**0.78**

BBMB

Representation of Physically Challenged Employees in BBMB is shown below:

Group	Total Employees as on 30.11.2013	Physically Challenged employees				Percentage of Physically Challenged employees
		VH	HH	OH	Total	
A	221	0	0	0	0	0
B	315	0	0	1	1	0.31
C	5436	7	1	33	41	0.75
D	4150	9	4	29	42	1.01
Total	**10122**	**16**	**5**	**63**	**84**	**0.82**

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 orthopedically 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

Representation of Physically Challenged Employees is as indicated :

Total Employees as on 15.12.2013	Physically Challenged employees				Percentage of Physically Challenged employees
	VH	HH	OH	Total	
566	02	02	09	13	2.29

Representation of Physically Challenged Employees in the Institute

Group	Total No. of Employees as on 15.12.2013	Physically challenged employees				Percentage of physically challenged employees
		VH	HH	OH	Total	
Group A	213	-	-	03	03	1.40
Group B	150	-	-	04	04	2.66
Group C	203	02	02	02	06	2.95
Group D	-	-	-	-	-	-
Total	566	02	02	09	13	2.29

BEE

Representation of Physically Challenged Employees may be indicated in the format given below:-

Group	Total No. of Employees as on 31.12.2013	Physically challenged employees				Percentage of physically challenged employees
		VH	HH	OH	Total	
A	09	-	-	-	-	-
B	02	-	-	-	-	-
C	07	-	-	01	-	14.28%
D	-	-	-	-	-	-
Total	**18**	**-**	**-**	**01**	**-**	**5.55%**

NMEEE

Group	Total No. of Employees as on 31.12.2013	Physically challenged employees				Percentage of physically challenged employees
		VH	HH	OH	Total	
A	07	-	-	-	-	-
B	01	-	-	-	-	-
C	01	-	-	-	-	-
D	-	-	-	-	-	-
Total	**09**	**-**	**-**	**-**	**-**	**-**

Village electrification infrastructure

CHAPTER - 33.5

RECREATION ACTIVITIES

- CPSEs of Ministry of Power have extended the facilities to employees & their dependants to avail recreational activities through various Clubs (These are Executive & Non Executive Club + Ladies Club).
- Gym facilities in Projects & Corporate Office.
- Indoor & Outdoor game facilities in Corporate & Projects.
- CPSEs organize Inter-departmental, Inter-Unit Sports activities such as Cricket, Athletic, Volleyball, Carrom, Chess, Badminton, Table Tennis etc.
- CPSEs teams also participated in Inter Central Power Sector Tournaments which is organized under the aegis of Ministry of Power (MOP), Govt. of India, Distt., & State & National level tournaments.
- Sports/Games also being organized for Employee's dependents.
- Health rejuvenating activities regularly organized for employees & for their dependents like Yoga, Art of living etc.
- Cable Net work facilities also provided at Project sites.
- Celebrating national festivals, organizing cultural events and blood donation camps for employees and their dependents.

MINISTRY OF POWER

Shri Randhir Singh Toor, continue to excel in Inter-Ministerial & other state sports tournaments. His contribution as a captain of Ministry of Power's (MoP) Kabbaddi & volley ball team will be remembered for a long time. As a true sportsman he always represented MoP Inter-Ministerial sports events & achieved distinction.

List of events in which he participated and achieved distinction :

Sr.	Tournament Name	Place	Date	Event Name	Position
1.	33rd Delhi State Veteran Championship	New Delhi	29th Dec., 2013	200m	Second
2.	33rd Delhi State Veteran Championship	New Delhi	29th Dec., 2013	1500m	Third
3.	Inter Ministry Wresting Tournament	New Delhi	23rd-24th Dec., 2013	55 kg. Wrestl.	Third

"MOP Carom Team lifted runners-up trophy fo team event in Inter-CPSU Carom Tournament Organized by NHPC in 2013-14."

510 MW Teesta V Power Station (Sikkim)

CHAPTER - 33.6

WELFARE OF SC/ST/OBC/MINORITIES

MINISTRY OF POWER

Welfare of Scheduled Castes, Scheduled Tribes and Other Backward Classes

An SC/ST Cell has been functioning in the Ministry since the early nineties under the direct control of the Deputy Secretary (Administration) 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 31.12.2013 is indicated below:

Group	Total Employees (as on 31.12.2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	59	05	8.4	06	10.1	00	00
B	125	21	16.8	03	2.5	15	12.0
C	62	16	25.8	02	3.2	08	12.9
C (MTS)	54	31	57.4	02	3.7	00	00
Total	**300**	**73**	**24.3**	**13**	**4.3**	**23**	**7.6**

WELFARE OF MINORITIES

The schemes, as recommended by the Government for the welfare of the Minorities from time to time, are implemented.

CEA

Group	Total Employees (as on 30/11/2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	294	50	17	13	4.4	13	4.4
B	175	17	9.7	6	3.4	2	1.1
C	109	18	16.5	6	5.5	10	9.2
MTS-C	161	27	16.8	3	1.9	2	1.2
Total	**739**	**112**	**15.2**	**28**	**3.8**	**27**	**3.7**

PAO

Representation of SC/ST/OBC may be indicated in proforma given below:-

Group	Total Employees (as on 31.10.2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	2	-	-	-	-	-	-
B	44	7	16%	1	2%	3	7%
C	24	4	17%	3	13%	5	21%
Total	**70**	**11**	**16%**	**4**	**6%**	**8**	**11%**

NTPC

DETAILS OF SC/ST/OBC EMPLOYEES IN NTPC (AS ON 30TH NOV.'12)

Group	Total Employees (as on 30.11.2012	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	14186	1715	12.09	599	4.22	2253	15.88
B	5844	936	16.02	409	7.00	369	6.31
C	4184	763	18.24	299	7.15	591	14.13
D	1152	214	18.58	129	11.20	172	14.93
D(S)	0	0	0.00	0	0.00	0	0.00
Total	**25366**	**3628**	**14.30**	**1436**	**5.66**	**3385**	**13.34**

POWERGRID

STATEMENT SHOWING THE NUMBER OF EMPLOYEES AND THE NUMBER OF SC, ST & OBC IN POWERGRID AS ON NOVEMBER 30, 2013.

Details are given below:

Group	Total Employees (as on 30/11/2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	4031	533	13.2%	204	5.1%	756	18.8%
B	2533	315	12.4%	112	4.4%	335	13.2%
C	2606	396	15.2%	301	11.6%	663	25.4%
D	155	27	17.4%	18	11.6	32	20.6%
Total	**9325**	**1271**	**13.6%**	**635**	**6.8%**	**1786**	**19.2%**

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 current year we have taken extra efforts to clear backlog vacancies in SC/ST/OBC categories by conducting a special recruitment drive through which we have selected candidates to fill up the backlog. Further 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 may be indicated in the proforma given below:-

Group	Total Employees (as on 30/11/2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
Total	**445**	**75**	**16.85**	**25**	**5.62**	**70**	**15.13**

PFC, as 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 30.11.2013 is as under:

Group	Total Employees (as on 30.11.2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	378	36	9.52	12	3.17	44	11.64
B	134	20	14.92	2	1.49	1	0.74
C	45	7	15.55	0	-	2	4.44
D	87	27	31.03	1	1.14	3	3.44
Total	**644**	**90**	**13.97**	**15**	**2.32**	**50**	**7.76**

NEEPCO

Representation of SC/ST/OBC may be indicated in Performa given below:

Group	Total Employees (as on 30/11/2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	737	78	10.58	123	16.68	99	13.43
B	986	36	3.65	260	26.36	142	14.40
C	993	66	6.64	391	39.37	153	15.40
D	62	7	11.29	50	80.64	1	1.61
Total	**2778**	**187**	**6.73**	**824**	**29.66**	**395**	**14.21**

SJVNL

Group	Total Employees (as on 30/11/2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
Total	**1472**	**321**	**21.86**	**92**	**6.25**	**141**	**9.58**

Human Resources

The total manpower on the rolls of SJVN is 1472 as on November 30, 2013. The strength of HPSEB/HP Govt. on deputation on the above date is 304. The strength of SC, ST and OBC employees as on the above date was 321, 92 and 141 respectively

Human Resources Development

SJVN 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 may be indicated in proforma given below :-

Group	Total Employees (as on 30.11.2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
Total	**2091**	**288**	**13.77**	**28**	**1.33**	**154**	**7.36**

Guidelines issued by Govt. of India from time to time on implementation of reservation policy, welfare, training, grievance redressal etc. are strictly followed. 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. 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.

NHPC

Group	Total Employees (as on 30.11.2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	3077	431	14.0	195	6.3	459	14.9
B	1327	189	14.2	81	6.1	232	17.5
C	3895	392	10.1	150	3.9	169	4.3
D (Excl. Swprs)	1679	220	13.4	127	7.6	90	5.4
(Sweepers)	112	92	82.1	1	0.9	0	0.0
Total	**10090**	**1324**	**13.1**	**554**	**5.5**	**950**	**9.4**

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.

DVC

Group	Total Employees (as on 30/11/2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	2660	443	16.65	157	5.9	527	19.8
B	4864	905	18.6	276	5.67	707	14.53
C & D	2839	279	9.82	166	5.84	78	2.74
Total	**10363**	**1627**	**15.7**	**599**	**5.78**	**1312**	**12.66**

10% quarters are reserved for allotment to employees of such categories in all DVC projects.

BBMB

Representation of SC/ST/OBC is indicated below:-

Group	Total Employees (as on 30/11/2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	221	25	11.31	0	0	3	1.35
B	315	29	9.20	0	0	8	2.54
C	5436	1033	19.00	3	0.05	489	8.99
D	4150	1352	32.57	6	0.14	377	9.08
Total	**10122**	**2439**	**24.09**	**9**	**0.08**	**877**	**8.66**

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 Re.1 per km.

ii) Auditorium for function on above occasions, free of charge.

Instructions have also been issued to all Heads of Deptts. In BBMB that the Heads of organizations and senior officials should meet their SC/ST officers/staff particularly on occasions like Dr.B.R.Ambedkar Jayanti and Maharrishi Balmiki Ji Jayanti etc.

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.

CPRI

Representation of SC/ST/OBC Employees is as indicated:

Total Employees (as on 15.12.2013)	Representation					
	SCs	SC%	STs	ST%	OBC	OBC%
566	140	24.73%	64	11.30%	53	9.36%

Group	Total Employees (as on 15.12.2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	213	38	17.84	15	7.04	24	11.21
B	150	32	21.33	16	10.66	17	11.33
C (Excluding Safaiwalas)	187	58	31.0	31	16.57	12	6.41
Safaiwalas	16	12	75.0	02	12.5	-	-
TOTAL	566	140	24.73	64	11.30	53	9.36

BEE

Representation of SC/ST/OBC may be indicated in proforma given below:-

Group	Total Employees (as on 31.12.2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	09	-	-	-	-	-	-
B	02	-	-	-	-	-	-
C	07	-	-	-	-	-	-
D	-	-	-	-	-	-	-
TOTAL	**18**	-	-	**-**	**-**	**-**	**-**

NMEEE

Group	Total Employees (as on 31.12.2013)	Representation					
		SCs	SC%	STs	ST%	OBC	OBC%
A	07	01	14%	-	-	01	14%
B	01	-	-	-	-	-	-
C	01	-	-	-	-	-	-
D	N.A.	-	-	-	-	-	-
TOTAL	**09**	**01**	**11%**	**-**	**-**	**01**	**11%**

CHAPTER - 34

E - GOVERNANCE / IT - INITIATIVES

MINISTRY OF POWER

IT Cell of the Ministry is responsible for implementing and executing various ICT (Information & Communication Technology) Projects/ activities like Design, Development & Implementation of e-Governance Projects and related training, Design, Development & Hosting of Web Site, Maintenance and Implementation of Web Portals and Web Based Applications, Maintenance of Local Area Network (LAN), Internet Services and Video Conferencing in coordination with National Informatics Centre (NIC) Cell of the Ministry.

Major Projects/ Activities during the year 2013 :

(1) Design, Development & Implementation of e-Governance Projects and related training. The following projects were implemented : -

(i) Fast Track Project Monitoring System for Hydro Projects:

A web based system for Fast Track Project Monitoring System for Hydro Projects has been designed and is under implementation phase after necessary Cyber Security Audit compliance. The system will facilitate capturing of on line data for Hydro Projects on aspects like Environment & Forest Clearance, National Highways projects, DPR Status and Survey & Investigation.

(ii) Foreign Deputation Information System

A web based system implemented in the Ministry for International Collaboration (IC) Division was extensively used by the Division. This system maintains the database of sanctions issued for foreign deputation by various divisions and generates organization-wise, official name-wise and visit duration-wise reports/queries. The system also generates a cover note assigning automated reference number to each sanction ensuring that the same has been entered in the database.

(iii) File Tracking System

File Tracking System implemented is used by all the sections/divisions of the Ministry and has been found to be very useful by officials in the Ministry to make query based tracking of movement of receipts/ files. The Data Entry/Report Modules were modified by incorporating time of Receipt/Dispatch along with Date. The database of the system is being updated regularly as and when changes in organization structure takes place.

(iv) Comprehensive DDO (CompDDO) Package

CompDDO package implemented for processing salary of Ministry officials was upgraded to latest version with additional software patches to incorporate new features. The new modules for Leave Encashment and Bonus were implemented. The cash section of the Ministry was given necessary support to process the salary of employees and generate pay bills using this system.

(v) Central Public Procurement Portal (CPPP) for tender publishing

Publishing of tenders in web based centralized application on Central Public Procurement Portal (CPPP) was continued 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.

(vi) INTRA Power System

The intranet application INTRA Power 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.). New modules for Training & Research was designed and implemented to publish Training Circulars for T & R Division.

(2) Design, Development & Hosting of Web Sites

(i) Web Site of the Ministry

Initiatives have been taken to redesign the bilingual web site for Ministry of Power as per Government of India Guidelines for Web Sites (GIGW) . The present web site available at http://powermin.nic.in was regularly updated. New module for Session-wise uploading of Lok Sabha/Rajya Sabha Question/Answers on the same day was designed and implemented. Uploading of eight standard monthly statements from Office of Controller of Accounts was continued. 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 under Ministry 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. Continuous support was given to these organizations on issues related to updating and auditing of their web sites. The new web site of NTPC Vidyut Vyapar Nigam Limited was hosted in NIC Data Center. CERC was provided necessary support to Co-locate

their servers on Regulatory Information Management System (RIMS) project at NIC Data Center, Hyderabad with Disaster Recovery Site at their office, Janpath, New Delhi. The hosting of web site of India Smart Grid Knowledge portal (indiasmartgrid.gov.in) has undergone Cyber Security Audit and will be hosted shortly.

(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 :

- ACC Vacancy Monitoring System
- Bharat Nirman Portal (with respect to RGGVY)
- Centralised Public Grievance Redressal System and Pensioners' Portal
- RTI Portal under the web site of Ministry
- 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 1350 clients in all three Ministries of the Bhawan. Out of these, about 425 clients of this Ministry are being maintained over LAN with internet facility. The clients are being updated with On Line Anti-Virus and time to time security guidelines from Cybe Security Division are being implemented.

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 used to conduct international video conferences of Joint Working Groups.

(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. The network of the Ministry is already operational on Dual Stack Mode of NICNET.

(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

Necessary coordination is done with Administration Division for smooth operation of Hardware and Software installed with Ministry officials.

SJVN

S. No	Name of Activity	Status/Action taken
1.	Online acceptance of Money Deposit (EMD) for SJVN Tenders	The system has been implemented Earnest for SJVN.
2.	Online Bill Tracking system/ Online Status of bill payments to contractors	Provision of same shall be made in the Web Based ERP Solution and hiring of consultant for ERP is under /suppliers.progress. However, all the payments to contractors/supplier are being released through RTGS/NEFT.
3.	Online status in respect of tenders/contracts awarded.	Awarded tenders status is displayed on SJVN website & provision for same has also been made on SJVN's e-tendering portal.
4.	Online status of Recruitment Applications	Online recruitment system has been implemented.
5.	Introduction of SJVN Employees Online Claim System	Provision of same shall be made in the Web Based ERP Solution and its status is explained at S.No.2.
6.	Introduction of online filing of property returns by SJVN employees	The system has been implemented.
7.	Online system of vigilance activities in the organization	The system has been implemented.
8.	File Tracking System	The system has been implemented in Corporate Office, Shimla
9.	Local Area Network (LAN) Connectivity/WiFi	The entire Corporate Office, Shimla has been connected through LAN/WiFi
10.	MPLS Connectivity	The Corporate Office, Shimla, Delhi Office and Project sites at Jhakri and Rampur have been connected through MPLS Network. Further, the case for addition of Patna location is also under progress.

NEEPCO

INFORMATION TECHNOLOGY INITIATIVES

Information Technology is not only a strategic necessity but a major enabler of strategic competitiveness. With this in view, NEEPCO has constantly strived to introduce, upgrade and procure hardware and software technologies in all its functional areas with ultimate objective of having a totally networked Corporation with all Applications running on an effective online system.

An IT road map is in place to provide the guidance on the most suitable hardware, network, software solutions, security, backup and disaster recovery for NEEPCO. A major application, namely MATFIN has been running across seven locations including the Corporate Office. It encompasses Material Management and Financial System. NEEPCO management is actively considering the proposal for implementing an ERP System in a phased manner. Besides other solutions like

digitization, documents management systems are also in the pipeline. The NEEPCO Wide Area Network is on VSAT catering to the need of both Data and Voice Connectivity. A 20 Mbps and 10 Mbps leased line internet have been subscribed from the PGCIL and BSNL. The internet facility has been extended to all remote locations over the HCL COMNET VSAT link. Recently a separate VSAT network has been established specially for the Video Conferencing System for the Construction Project Sites on 8 Mbps bandwidth and the system has been commissioned successfully. The internet facility has been also extended through this 8 Mbps pipe as a backup. Local Area Network has been revamped at Kopili Hydro Electric Project, Assam Gas Based Power Project, Agartala Gas Turbine Project.

A Project Monitoring Portal has also been implemented to display progress of construction projects. In the first phase Primavera Project Monitoring Software has been implemented in all the Construction Projects sites. Side by side a dashboard has been also developed to display the vital progress data and statistics of the Construction Projects. Besides the dashboard has the functionality to display real-time generation data of all O&M projects as well as single line diagram by capturing the live generation data through SCADA provided by the NLDC. Users located at various construction project sites remotely login to the Server installed at Shillong to update day to day data. A state of the art Video Conferencing facility has been implemented at thirteen locations. The locations include Corporate Office Shillong, Design Office Guwahati, Kameng Hydro Electric Project, Pare Hydro Electric Project; Tripura Gas based Power Project, Agartala Gas Turbine Project, Ranganadi Power House, Tuirial Hydro Electric Project and NEEPCO, New Delhi. The scope of the work includes Video Conferencing along with the live capturing of the construction activity of the Power House, Dam Site and Switch yard for the construction sites at Kameng, Tuirial, Pare, TGBP and AGTP. The e-Procurement System has been implemented successfully. Already numbers of tenders are floated through this system. Recently Online recruitment software has been developed in-house to facilitate job seekers to apply online. A bill tracking software has been developed to facilitate the monitoring of vendor bill online. Commercial billing software has been developed in-house for generating bill for beneficiaries.

DVC

IT initiatives in DVC during the year 2013-14 are enumerated below:

1. An Integrated Application covering Operation, Maintenance, Fuel, Finance, Accounts, Materials function is getting implemented across the Organization. The system has already been implemented and is in effective use at DTPS, BTPS, CTPS, MTPS and HQ. This has enabled the data flow through the system across the value chain of the mentioned functions. Implementation to other locations is being done.
2. IT Tool is being used for publishing the data on Declared Capacity and Schedule Generation towards UI optimization.
3. Various on- line Applications such as Recruitment application, New Consumer registration, Annual Property Return.
4. System has been developed for enablement of Unit Operator towards optimized operation of units within ABT framework.
5. Flood forecasting system has been developed for Damodar Valley area based on Rain Gauge Data and self learning process.
6. Biometric based Attendance system has been implemented at DVC HQ in June, 2012 which has improved employee attendance and punctuality considerably. Implementation of such system at field formations is under process.
7. An open web-based platform has been provided for direct communication with the CEO of the organization.
8. System based feedback mechanism has been enabled for an informed decision on new organization policies.
9. Several new initiatives for system based improvement for various processes viz. HRMS, DMS, Hospital Management, Project Management etc. have been undertaken.
10. GIS based monitoring of vehicle movement for Coal transport etc. has been planned.
11. Availability of expert medical advice through Tele-medicine facilities for patients at remote locations is under process.
12. All tenders over ₹ 2 lacs are done through e-tender system.

An ariel view of TG Hall in NTPC Talcher

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 30.11.2013

State	Ownership Sector	Modewise breakup							
		Thermal			Total Thermal	Nuclear	Hydro (Renewable)	RES** (MNRE)	Grand Total
		Coal	Gas	Diesel					
Delhi	State	135.00	1800.40	0.00	1935.40	0.00	0.00	0.00	1935.40
	Private	0.00	108.00	0.00	108.00	0.00	0.00	16.00	124.00
	Central	4421.37	207.61	0.00	4628.98	122.08	690.33	0.00	5441.39
	Sub-Total	**4556.37**	**2116.01**	**0.00**	**6672.38**	**122.08**	**690.33**	**16.00**	**7500.79**
Haryana	State	3160.00	25.00	3.92	3188.92	0.00	884.51	70.10	4143.53
	Private	1720.00	0.00	0.00	1720.00	0.00	0.00	53.10	1773.10
	Central	1202.03	535.29	0.00	1737.32	109.16	488.7	0.00	2335.18
	Sub-Total	**6082.03**	**560.29**	**3.92**	**6646.24**	**109.16**	**1373.21**	**123.20**	**8251.81**
Himachal Pradesh	State	0.00	0.00	0.13	0.13	0.00	393.60	625.91	1019.64
	Private	0.00	0.00	0.00	0.00	0.00	1748.00	0.00	1748.00
	Central	152.02	61.88	0.00	213.90	34.08	809.34	0.00	1057.32
	Sub-Total	**152.02**	**61.88**	**0.13**	**214.03**	**34.08**	**2950.94**	**625.91**	**3824.96**
Jammu & Kashmir	State	0.00	175.00	8.94	183.94	0.00	780.00	147.53	1111.47
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	329.32	129.14	0.00	458.46	77.00	878.03	0.00	1413.49
	Sub-Total	**329.32**	**304.14**	**8.94**	**642.40**	**77.00**	**1658.03**	**147.53**	**2524.96**
Punjab	State	2630.00	25.00	0.00	2655.00	0.00	2230.23	154.50	5039.73
	Private	500.00	0.00	0.00	500.00	0.00	0.00	143.08	643.08
	Central	660.88	263.92	0.00	924.80	208.04	799.30	0.00	1932.14
	Sub-Total	**3790.88**	**288.92**	**0.00**	**4079.80**	**208.04**	**3029.53**	**297.58**	**7614.95**
Rajasthan	State	3865.00	553.80	0.00	4418.80	0.00	987.96	23.85	5430.61
	Private	2140.00	0.00	0.00	2140.00	0.00	0.00	3459.20	5599.20
	Central	1014.72	221.23	0.00	1235.95	573.00	560.36	0.00	2369.31
	Sub-Total	**7019.72**	**775.03**	**0.00**	**7794.75**	**573.00**	**1548.32**	**3483.05**	**13399.12**
Uttar Pradesh	State	4923.00	0.00	0.00	4923.00	0.00	524.10	25.10	5472.20
	Private	2850.00	0.00	0.00	2850.00	0.00	0.00	821.38	3671.38
	Central	2909.95	549.97	0.00	3459.92	335.72	1335.35	0.00	5130.99
	Sub-Total	**10682.95**	**549.97**	**0.00**	**11232.92**	**335.72**	**1859.45**	**846.48**	**14274.57**
Uttrakhnad	State	0.00	0.00	0.00	0.00	0.00	1252.15	174.82	1426.97
	Private	0.00	0.00	0.00	0.00	0.00	400.00	15.05	415.05
	Central	300.50	69.35	0.00	369.85	22.28	353.86	0.00	745.99
	Sub-Total	**300.50**	**69.35**	**0.00**	**369.85**	**22.28**	**2006.01**	**189.87**	**2588.01**
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	32.54	15.32	0.00	47.86	8.84	52.88	0.00	109.58
	Sub-Total	**32.54**	**15.32**	**0.00**	**47.86**	**8.84**	**52.88**	**0.00**	**109.58**
	Central - Unallocated	977.19	290.35	0.00	1267.54	129.80	524.05	0.00	1921.39
Total Northern Region	State	14713.00	2579.20	12.99	17305.19	0.00	7052.55	1221.81	25579.55
	Private	7210.00	108.00	0.00	7318.00	0.00	2148.00	4507.81	13973.81
	Central	12000.50	2344.06	0.00	14344.56	1620.00	6492.20	0.00	22456.76
	Grand Total	**33923.50**	**5031.26**	**12.99**	**38967.75**	**1620.00**	**15692.75**	**5729.62**	**62010.12**

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 30.11.2013

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	0.00	48.00
	Central	326.17	0.00	0.00	326.17	25.80	0.00	0.00	351.97
	Sub-Total	**326.17**	**48.00**	**0.00**	**374.17**	**25.80**	**0.00**	**0.05**	**400.02**
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	36.71	4.20	0.00	40.91	7.38	0.00	0.00	48.29
	Sub-Total	**36.71**	**4.20**	**0.00**	**40.91**	**7.38**	**0.00**	**0.00**	**48.29**
Gujarat	State *	4470.00	1594.72	17.28	6082.00	0.00	772.00	15.60	6869.60
	Private	8620.00	2960.00	0.20	11580.20	0.00	0.00	4187.46	15767.66
	Central	2648.27	424.27	0.00	3072.54	559.32	0.00	0.00	3631.86
	Sub-Total	**15738.27**	**4978.99**	**17.48**	**20734.74**	**559.32**	**772.00**	**4203.06**	**26269.12**
Madhya Pradesh	State	3532.50	0.00	0.00	3532.50	0.00	1703.66	86.16	5322.32
	Private	1760.00	0.00	0.00	1760.00	0.00	0.00	558.22	2318.22
	Central	2256.39	257.18	0.00	2513.57	273.24	1520.00	0.00	4306.81
	Sub-Total	**7548.89**	**257.18**	**0.00**	**7806.07**	**273.24**	**3223.66**	**644.38**	**11947.35**
Chhatisgarh	State	2280.00	0.00	0.00	2280.00	0.00	120.00	52.00	2452.00
	Private	2618.00	0.00	0.00	2618.00	0.00	0.00	256.90	2874.90
	Central	1490.49	0.00	0.00	1490.49	47.52	0.00	0.00	1538.01
	Sub-Total	**6388.49**	**0.00**	**0.00**	**6388.49**	**47.52**	**120.00**	**308.90**	**6864.91**
Maharastra	State	8400.00	672.00	0.00	9072.00	0.00	2884.84	307.93	12264.77
	Private	8526.00	180.00	0.00	8706.00	0.00	447.00	4460.87	13613.87
	Central	3313.27	2623.93	0.00	5937.20	690.14	0.00	0.00	6627.34
	Sub-Total	**20239.27**	**3475.93**	**0.00**	**23715.20**	**690.14**	**3331.84**	**4768.80**	**32505.98**
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	44.37	27.10	0.00	71.47	8.46	0.00	0.00	79.93
	Sub-Total	**44.37**	**27.10**	**0.00**	**71.47**	**8.46**	**0.00**	**0.00**	**79.93**
	Central - Unallocated	1622.35	196.91	0.00	1819.26	228.14	0.00	0.00	2047.40
Total western Region	State	18682.50	2266.72	17.28	20966.50	0.00	5480.50	461.74	26908.74
	Private	21524.00	3188.00	0.20	24712.20	0.00	447.00	9463.45	34622.65
	Central	11738.01	3533.59	0.00	15271.60	1840.00	1520.00	0.00	18631.60
	Grand Total	**51944.51**	**8988.31**	**17.48**	**60950.30**	**1840.00**	**7447.50**	**9925.19**	**80162.99**

STATEMENT - III

NSTALLED CAPACITY (IN MW) OF POWER UTILITIES IN THE STATES/UTS LOCATED IN SOUTHERN REGION INCLUDING ALLOCATED SHARES IN JOINT & CENTRAL SECTOR

As on 30.11.2013

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	219.03	9046.06
	Private	600.00	3370.40	36.80	4007.20	0.00	0.00	1075.46	5082.66
	Central	2880.98	0.00	0.00	2880.98	275.78	0.00	0.00	3156.76
	Sub-Total	**8573.48**	**3370.40**	**36.80**	**11980.68**	**275.78**	**3734.53**	**1294.49**	**17285.48**
Karnataka	State	2720.00	0.00	127.92	2847.92	0.00	3599.80	995.26	7442.98
	Private	2060.00	0.00	106.50	2166.50	0.00	0.00	2697.93	4864.43
	Central	1378.39	0.00	0.00	1378.39	254.86	0.00	0.00	1633.25
	Sub-Total	**6158.39**	**0.00**	**234.42**	**6392.81**	**254.86**	**3599.80**	**3693.19**	**13940.66**
Kerala	State	0.00	0.00	234.60	234.60	0.00	1881.50	158.42	2274.52
	Private	0.00	174.00	21.84	195.84	0.00	0.00	35.10	230.94
	Central	914.56	359.58	0.00	1274.14	95.60	0.00	0.00	1369.74
	Sub-Total	**914.56**	**533.58**	**256.44**	**1704.58**	**95.60**	**1881.50**	**193.52**	**3875.20**
Tamil Nadu	State	4770.00	523.20	0.00	5293.20	0.00	2182.20	123.05	7598.45
	Private	400.00	503.10	411.66	1314.76	0.00	0.00	7823.08	9137.84
	Central	3306.23	0.00	0.00	3306.23	524.00	0.00	0.00	3830.23
	Sub-Total	**8476.23**	**1026.30**	**411.66**	**9914.19**	**524.00**	**2182.20**	**7946.13**	**20566.52**
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**
Puducherry	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	0.00	0.00
	Central	230.09	0.00	0.00	230.09	19.28	0.00	0.00	249.37
	Sub-Total	**230.09**	**32.50**	**0.00**	**262.59**	**19.28**	**0.00**	**0.00**	**281.87**
	Central - Unallocated	1329.58	0.00	0.00	1329.58	150.48	0.00	0.00	1480.06
Total Southern Region	State	12582.50	555.70	362.52	13500.72	0.00	11398.03	1495.76	26394.51
	Private	3060.00	4047.50	576.80	7684.30	0.00	0.00	11631.57	19315.87
	Central	10140.00	359.58	0.00	10499.58	1320.00	0.00	0.00	11819.58
	Grand Total	**25782.50**	**4962.78**	**939.32**	**31684.60**	**1320.00**	**11398.03**	**13127.33**	**57529.96**

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 30.11.2013

State	Ownership Sector	Modewise breakup							
		Thermal			Total Thermal	Nuclear	Hydro (Renewable)	RES** (MNRE)	Grand Total
		Coal	Gas	Diesel					
Bihar	State	210.00	0.00	0.00	210.00	0.00	0.00	70.70	280.70
	Private	0.00	0.00	0.00	0.00	0.00	0.00	43.30	43.30
	Central	1744.70	0.00	0.00	1744.70	0.00	129.43	0.00	1874.13
	Sub-Total	**1954.70**	**0.00**	**0.00**	**1954.70**	**0.00**	**129.43**	**114.00**	**2198.13**
Jharkhand	State	1190.00	0.00	0.00	1190.00	0.00	130.00	4.05	1324.05
	Private	900.00	0.00	0.00	900.00	0.00	0.00	16.00	916.00
	Central	268.88	0.00	0.00	268.88	0.00	70.93	0.00	339.81
	Sub-Total	**2358.88**	**0.00**	**0.00**	**2358.88**	**0.00**	**200.93**	**20.05**	**2579.86**
West Bengal	State	4970.00	100.00	12.06	5082.06	0.00	977.00	98.40	6157.46
	Private	1341.38	0.00	0.14	1341.52	0.00	0.00	33.05	1374.57
	Central	905.49	0.00	0.00	905.49	0.00	271.30	0.00	1176.79
	Sub-Total	**7216.87**	**100.00**	**12.20**	**7329.07**	**0.00**	**1248.30**	**131.45**	**8708.82**
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	5505.60	90.00	0.00	5595.60	0.00	193.26	0.00	5788.86
	Sub-Total	**6555.60**	**90.00**	**0.00**	**6645.60**	**0.00**	**193.26**	**0.00**	**6838.86**
Odisha	State	420.00	0.00	0.00	420.00	0.00	2061.92	64.30	2546.22
	Private	3100.00	0.00	0.00	3100.00	0.00	0.00	35.50	3135.50
	Central	1595.06	0.00	0.00	1595.06	0.00	105.01	0.00	1700.07
	Sub-Total	**5115.06**	**0.00**	**0.00**	**5115.06**	**0.00**	**2166.93**	**99.80**	**7381.79**
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	99.00	0.00	99.00
	Central	82.61	0.00	0.00	82.61	0.00	75.27	0.00	157.88
	Sub-Total	**82.61**	**0.00**	**5.00**	**87.61**	**0.00**	**174.27**	**52.11**	**313.99**
	Central - Unallocated	1454.16	0.00	0.00	1454.16	0.00	0.00	0.00	1454.16
Total Eastern Region	State	6790.00	100.00	17.06	6907.06	0.00	3168.92	289.56	10365.54
	Private	6391.38	0.00	0.14	6391.52	0.00	99.00	127.85	6618.37
	Central	11556.50	90.00	0.00	11646.50	0.00	845.20	0.00	12491.70
	Grand Total	**24737.88**	**190.00**	**17.20**	**24945.08**	**0.00**	**4113.12**	**417.41**	**29475.61**

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 30.11.2013

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	297.82	0.00	297.82	0.00	329.72	0.00	627.54
	Sub-Total	**60.00**	**598.52**	**20.69**	**679.21**	**0.00**	**429.72**	**31.11**	**1140.04**
Arunachal Pradesh	State	0.00	0.00	15.88	15.88	0.00	0.00	103.91	119.79
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	0.00	32.05	0.00	32.05	0.00	97.57	0.00	129.62
	Sub-Total	**0.00**	**32.05**	**15.88**	**47.93**	**0.00**	**97.57**	**103.91**	**249.41**
Meghalaya	State	0.00	0.00	2.05	2.05	0.00	282.00	31.03	315.08
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	0.00	65.61	0.00	65.61	0.00	74.58	0.00	140.19
	Sub-Total	**0.00**	**65.61**	**2.05**	**67.66**	**0.00**	**356.58**	**31.03**	**455.27**
Tripura	State	0.00	169.50	4.85	174.35	0.00	0.00	16.01	190.36
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	0.00	180.34	0.00	180.34	0.00	62.37	0.00	242.71
	Sub-Total	**0.00**	**349.84**	**4.85**	**354.69**	**0.00**	**62.37**	**16.01**	**433.07**
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	46.96	0.00	46.96	0.00	80.98	0.00	127.94
	Sub-Total	**0.00**	**46.96**	**45.41**	**92.37**	**0.00**	**80.98**	**5.45**	**178.80**
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	32.84	0.00	32.84	0.00	53.32	0.00	86.16
	Sub-Total	**0.00**	**32.84**	**2.00**	**34.84**	**0.00**	**53.32**	**28.67**	**116.83**
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	27.28	0.00	27.28	0.00	34.31	0.00	61.59
	Sub-Total	**0.00**	**27.28**	**51.86**	**79.14**	**0.00**	**34.31**	**36.47**	**149.92**
	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	445.70	142.74	648.44	0.00	382.00	252.65	1283.09
	Private	0.00	24.50	0.00	24.50	0.00	0.00	0.00	24.50
	Central	0.00	738.30	0.00	738.30	0.00	860.00	0.00	1598.30
	Grand Total	**60.00**	**1208.50**	**142.74**	**1411.24**	**0.00**	**1242.00**	**252.65**	**2905.89**

STATEMENT - VI

INSTALLED CAPACITY (IN MW) OF POWER UTILITIES IN THE ISLANDS

As on 30.11.2013

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	5.10	25.10
	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**	**10.35**	**70.40**
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	0.00	0.00
	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**	**0.00**	**9.97**
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	5.10	25.10
	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**	**10.35**	**80.37**

A view of the control room in NTPC Vindhyachal

STATEMENT - VII

ALL INDIA INSTALLED CAPACITY (IN MW) OF POWER STATIONS LOCATED IN THE REGIONS OF MAIN LAND AND ISLANDS (UTILITIES)

As on 30.11.2013

State	Ownership Sector	Modewise breakup							
		Thermal			Total Thermal	Nuclear	Hydro (Renewable)	RES** (MNRE)	Grand Total
		Coal	Gas	Diesel					
Northern Region	State	14713.00	2579.20	12.99	17305.19	0.00	7052.55	1221.81	25579.55
	Private	7210.00	108.00	0.00	7318.00	0.00	2148.00	4507.81	13973.81
	Central	12000.50	2344.06	0.00	14344.56	1620.00	6492.20	0.00	22456.76
	Sub Total	**33923.50**	**5031.26**	**12.99**	**38967.75**	**1620.00**	**15692.75**	**5729.62**	**62010.12**
Western Region	State	18682.50	2266.72	17.28	20966.50	0.00	5480.50	461.74	26908.74
	Private	21524.00	3188.00	0.20	24712.20	0.00	447.00	9463.45	34622.65
	Central	11738.01	3533.59	0.00	15271.60	1840.00	1520.00	0.00	18631.60
	Sub Total	**51944.51**	**8988.31**	**17.48**	**60950.30**	**1840.00**	**7447.50**	**9925.19**	**80162.99**
Southern Region	State	12582.50	555.70	362.52	13500.72	0.00	11398.03	1495.76	26394.51
	Private	3060.00	4047.50	576.80	7684.30	0.00	0.00	11631.57	19315.87
	Central	10140.00	359.58	0.00	10499.58	1320.00	0.00	0.00	11819.58
	Sub Total	**25782.50**	**4962.78**	**939.32**	**31684.60**	**1320.00**	**11398.03**	**13127.33**	**57529.96**
Eastern Region	State	6790.00	100.00	17.06	6907.06	0.00	3168.92	289.56	10365.54
	Private	6391.38	0.00	0.14	6391.52	0.00	99.00	127.85	6618.37
	Central	11556.50	90.00	0.00	11646.50	0.00	845.20	0.00	12491.70
	Sub Total	**24737.88**	**190.00**	**17.20**	**24945.08**	**0.00**	**4113.12**	**417.41**	**29475.61**
North Eastern Region	State	60.00	445.70	142.74	648.44	0.00	382.00	252.65	1283.09
	Private	0.00	24.50	0.00	24.50	0.00	0.00	0.00	24.50
	Central	0.00	738.30	0.00	738.30	0.00	860.00	0.00	1598.30
	Sub Total	**60.00**	**1208.50**	**142.74**	**1411.24**	**0.00**	**1242.00**	**252.65**	**2905.89**
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	5.10	25.10
	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**	**10.35**	**80.37**
ALL INDIA	State	52828.00	5947.32	602.61	59377.93	0.00	27482.00	3726.77	90586.70
	Private	38185.38	7368.00	597.14	46150.52	0.00	2694.00	25735.78	74580.30
	Central	45435.01	7065.53	0.00	52500.54	4780.00	9717.40	0.00	66997.94
	Total	**136448.39**	**20380.85**	**1199.75**	**158028.99**	**4780.00**	**39893.40**	**29462.55**	**232164.94**

Figures at second place of decimal may not tally due to rounding off

Abbreviation:

** Renewable Energy Sources (REC) include SHP, BP, U&I, Solar and Wind Energy

SHP=Smal Hydro Project (≤25MW), BP=Biomass Power, U&I=Urban & Industrial Waste Power,

RES=Renewable Energy Sources

Installed capacity in respect of RES as on 30.09.2013

NEEPCO'S POWER STATIONS UNDER OPERATION

Sl. No.	Name of the Plant	State	Installed Capacity (MW)	Year of Commissioning
HYDRO				
1	Kopili Power Station.	Assam	150	50 MW: May 1984. 100 MW: July 1988
2	Kopili Power Station, Stage- I Extension.	Assam	100	July 1997
3	Kopili Power Station, Stage- II Extension.	Assam	25	July 2004
4	Doyang Hydro Electric Plant.	Nagaland	75	July 2000
5	Ranganadi Hydro Electric Plant.	Arunachal Pradesh	405	March 2002
		Hydro Total	**755**	
THERMAL				
6	Assam Gas Based power Plant.	Assam	291	GTG: 1995/96 STG: 1998
7	Agartala Gas Turbine Plant.	Tripura	84	June 1998
		Thermal Total	**375**	
		TOTAL	**1130**	

CHAPTER - 36
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/Asstt. Controller of Accounts and seven Pay & Accounts Officers responsible for making all the payments, expenditure control & banking arrangements, 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 procedure, 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 conducts audit of Rajiv Gandhi Grameen Vidyutikaran Yojna (RGGVY) & Restructured Accelerated Power Distribution Reform Programme (R-APDRP) Schemes.

Performance of the Internal Audit Wing, during the year 2013-14 (up-to 30/11/2013) is as under:-

No. of Units due/ inspected (up-to 30.11.2013	No. of Paras raised (up-to 30.11.2013	No. of Paras settled	No. of Paras outstand-ing up-to 30.11.2013
37 / 27	38	19	452

AUDIT OBSERVATIONS

The Organization-wise Break-up of outstanding Audit Observations & Inspection Reports issued up-to 30.11.2013 is as under:-

Sl. No.	Name of Organization/ Office	No. of Inspection Reports issued upto 30.11.2013 in 2013-2014	No. of Paras outstand-ing as on 30.11.2013 (including old Paras)
01.	Ministry of Power	--	56
02.	Central Electrical Authority	03	186
03.	Appellate Tribunal for Electricity	01	26
04	BBMB, Nangal	--	7
05	JERC, Gurgaon	--	12
06	NPTI, Faridabad	--	17
07	CPRI Benguluru	01	13
08	Forum of Regulators (FoR)	01	07
09	Special Audit		
(i)	REC (AG&SP)	--	4
(ii)	REC (RGGVY)	--	1
(iii)	PFC (AG&SP)	--	-
(iv)	BEE (BLY)	--	6
(v)	BEE (NMEEE)	--	10
(vi)	BBMB (Chandigarh)	--	10
10	RGGVY Scheme	02	10
11	R-APDRP Scheme	03	13
12.	BEE	--	34
13.	Controller of Accounts		
(i)	Pr. AO Admn. & Accounts	--	12
(ii)	PAO(Secretariat & BMCC)	01	15
(iii)	PAO, CEA, New Delhi	01	08
(iv)	PAO, CEA, Benguluru	--	5
	Total	**13**	**452**

Pending ATNs of MOP/PSUs etc:-

The position of pending Action Taken Notes as on 30.11.2013 is as under:-

Paras	Pending		Total
	MOP	Audit	
(i) Commercial	8	8	16
(ii) Civil	1	-	1
Total	**9**	**8**	**17**

COMPUTERISATION

The Office is generating Computerized Accounts through two packages namely COMPACT (PAO-2000) for accounts of Pay &

Accounts Offices and CONTROLLER'S ACCOUNT through E-Lekha 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, CPFM package for New Pension Scheme and CPSMS package for monitoring plan scheme 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 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, ₹ 3803.17 Crores have been paid through e-payment up to November, 2013.

Report on e-payment is being regularly submitted to the O/o CGA. 99.51% payments have been done upto November, 2013 by this office through GePG.

DEFINED CONTRIBUTION PENSION SCHEME:

There were 149 subscribers under New Pension Scheme in M/o Power as on 30.11.2013.

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 Schemes of the Government of India. The System is envisaged to track fund disbursement from government of India up to the last beneficiary under Plan Schemes and ultimately report on fund utilization at different levels of implementation on a real time basis. This shall not only make monitoring of the Plan Schemes 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 schemes 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.

CHAPTER - 37
AUDIT OBSERVATIONS OF C&AG

SUMMARY OF THE REPORTS OF C&AG OF INDIA PERTAINING TO MINISTRY OF POWER

Report No. 13 of 2013 on Compliance Audit Observations Highlights of significant paras included in the Report are given below:

Damodar Valley Corporation

11.1 Ash Management in Thermal Power Stations

The Theme Audit on "Ash Management in Thermal Power Stations of DVC" covering the period 2009-10 to 2011-12 highlights deficiencies concerning generation and evacuation/disposal and utilization of ash. Audit observed that except the year 2009-10, the Corporation could not utilize the generated ash fully. It was also observed that the bulk of ash utilization centered on mine fillings by incurring huge avoidable transportation cost.

Failure of the corporation to limit fly ash generation by way of beneficiated/blended coal resulted in loss of opportunity to save generation cost. It was observed that despite two of its thermal power stations being under the Ministry of Environment and Forests (MoEF) coverage to use beneficiated/blended coal, the Corporation continued to violate such stipulation of MoEF.

The ash management situation aggravated due to considerable delay in acquisition of land at Bokaro Thermal Power Station (BTPS) and Mejia Thermal Power Station (MTPS). Audit also observed significant delays in installation of dry fly ash collection system in the thermal power stations despite it being a mandatory requirement from pollution control angle. This has not only brought one of the thermal power station's (BTPS) unit to the brink of closure due to the discharge of ash slurry into the Konar river but also created serious health related problems for the local inhabitants, destroyed agricultural land and polluted adjoining dams near MTPS. Further, it was observed that the Corporation did not exercise appropriate control in either framing a sound and feasible qualifying requirement for tendering of evacuation of ash or exercised any due diligence before awarding of contract to Lafarge India Private Limited.

11.2 Irregular/double payment

The Audit has pointed out non-observance of proper procedure and misuse of official capacity and absence of security and other safety measures led to irregular/double payment of Rs. 58.95 lakh. Due to non-observance of the existing system, payments were released to the parties for no work/job. It was further observed that important accounts and records/ documents were not kept under lock and key and were stored in open public places. Bank payment books for the period September and October 2011 were burnt and severely damaged in April 2012 by chemical burning as detected by the inspection team of the management. Thus, non-observance of proper procedure, absence of security and other safety measures led to irregular/double payment of Rs. 58.95 lakh that included Rs. 39.03 lakh for which no work orders were issued, no jobs were executed and vouchers were burnt and Rs. 19.92 lakh for which payments already released earlier.

NHPC Limited

11.3 Irregular encashment of casual leave and optional holidays

As per instructions of Department of Public Enterprises (DPE), leave rules are framed by Central Public Sector Enterprises (CPSEs) with the approval of their Board of Directors keeping in view the broad parameters of the policy/guidelines laid down by the Government of India. DPE has not issued any specific instructions/guidelines permitting encashment of casual leave and optional holidays. Audit observed that payment of Rs. 20.32 crore to employees were made on account of encashment of casual leave/optional holidays during the years 2001 to 2010 which was irregular.

Power Finance Corporation Limited

11.4 Performance Related payments (PRP) and perquisites to employees in excess of DPE norms

Department of Public Enterprises (DPE) issues instructions for regulating pay, allowances, perquisites and performance related payments by Central Public Sector Enterprises (CPSEs) to their personnel from time to time. Decision of Government to revise pay and allowances of executives of CPSEs with effect from 1st January, 2007 was conveyed (26 November 2008) by DPE. This was followed by a Presidential directive (30th April 2009) by Ministry of Power to Power Finance Corporation Limited (PFC) to revise the pay and allowances of their personnel strictly as per DPE guidelines. Audit observed that DPE guidelines did not prescribe protection of PRP drawn earlier by the employees and hence the rationale of financial loss to employees by the Board was flawed. Further, gradewise ceilings were fixed by DPE in addition to overall ceiling of 5 per cent of distributable profits and Board was not empowered under DPE instructions to approve PRP in

excess of these gradewise ceilings. Thus, PFC made payments of PRP/Baseline Compensation in violation of the guidelines of DPE.

In respect of payments towards perquisites in excess of DPE ceilings, Audit observed that in addition to the identified perks and allowances aggregating to 50 per cent of basic pay, PFC has been providing interest subsidy on housing loans to employees. The benefit in respect of interest subsidy on housing loans to executives which was beyond the maximum ceiling of 50 per cent of basic pay of executives as fixed by DPE, aggregated to Rs. 1.11 crore during 2007-12.

12.1 Irregular payment towards encashment of Half Pay Leave (HPL) and Sick Leave

It has been observed that CPSEs deviated from the DPE guidelines and made irregular payments of Rs. 391.31 crore from January, 2007 to November, 2012 to their employees towards HPL encashment on superannuation over and above the ceiling of 300 days. Out of total irregular payments mentioned above, the CPSEs of Ministry of Power namely NTPC Limited, PGCIL, NHPC Limited, REC, Bokaro Power Supply Company Pvt. Limited, PFC, NTPC SAIL Power Company Pvt. Limited and SJVNL paid Rs. 71.88 crore to their employees towards encashment of HPL on superannuation.

Report No. 1 of 2013

3.16 Saving of entire provision

In Ministry of Power under three sub heads viz. Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) (Rs. 600 crore), Transfer to National Investment Fund (NIF) (Rs. 52 crore) and National Electricity Fund (NEF) (Rs 249.57 crore) entire provision remained unspent which indicates that the estimates were not prepared after adequate scrutiny of the projects/schemes.

Report No. 27 of 2013

Performance Audit of Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY)

Performance Audit of RGGVY was conducted in 27 states. Out of 576 projects under implementation during Xth and XIth Plan, 169 projects were test-checked covering the period from 2004-05 to 2011-12. The report contains Audit Findings on formulation of scheme, financial management, project execution, monitoring & evaluation and outcomes of RGGVY. It has been observed that despite an implementation approach characterized by rushed approvals and involvement of numerous stakeholders, the objectives of providing access to electricity to all, giving electricity connection free of cost to every un-electrified BPL family and electrifying every un-electrified village/habitation by 2009 had not been achieved. Against the total approval of Rs. 33,000 crore for Xth Plan and first two years of XIth Plan by CCEA, allocation of funds during 2004-12 as per Budget Estimates and Revised Estimates was Rs. 31,338 crore and Rs. 27,488.56 crore respectively. MOP did not fully utilize the funds allocated under the scheme and released only Rs. 26,150.76 crore to REC up to March 2012 and the latter in turn released Rs.25,652 crore to PIAs up to March 2012. PIAs had intimated utilization of Rs. 22,510.14 crore (20 May 2012). Balances remaining unutilized with PIAs ranged from Rs. 1.47 crore to Rs.375.07 crore in 19 States while PIAs reported excess utilization ranging from Rs. 3.64 crore to Rs. 115.13 crore in eight States. As substantial unutilized fund remained with PIAs, an amount of Rs. 337 crore towards interest earned by PIAs on unutilized funds remained to be remitted to the Government account as of August 2013 and thus, did not further the cause of RGGVY.

REC did not link the terms of release of funds with achievement of physical targets set under approved RGGVY projects. In some cases, this resulted in release of 67 per cent to 90 per cent of the project cost to PIAs/contractors whereas the physical achievement against the released funds was less. During Xth and XIth Plan, 576 projects were sanctioned originally for Rs. 26,427.47 crore and awarded for Rs. 31,268.12 crore. Sanctioned cost estimates for all projects were revised to Rs. 34,070.87 crore as of December 2012.

Against the targeted coverage of 1,23,601 un-electrified villages and 4,12,88,438 rural households including 2,30,10,265 BPL households, only 1,04,496 un-electrified villages (84.54 per cent) and 2,15,04,430 rural households (52.08 per cent) including 1,90,80,115 BPL households (82.92 per cent) had been covered by 31st March 2012. However, actual achievement would need to be viewed against the fact that the scheme was beset with the problems as discussed in the report.

RGGVY also envisioned that Rural Electricity Distribution Backbone (REDB), Village Electrification Infrastructure (VEI) and Decentralized Distributed Generation (DDG) would indirectly facilitate power requirement of agriculture and other activities including irrigation pump sets, small and medium industries, khadi and village industries, cold chains, healthcare, education and IT etc.. It was felt that this would facilitate overall rural development, employment generation and poverty alleviation. However, in actual practice, the projects sanctioned were based on a minimalist approach of providing oneunit electricity per day per household.

The formulation of the scheme, from inception, was flawed as identification of villages and estimation of beneficiaries was based on unreliable data. Implementation of the scheme was characterized by several instances of non-adherence to the scheme guidelines, including important inputs like authenticated BPL lists and RE plans not being in place. RGGVY projects were planned without adequate survey work as DPRs

were prepared on the basis of old data and had many discrepancies. There were instances of inefficiencies in contract management, execution of works and violation of provisions of tripartite agreement by the concerned State Governments.

Project implementation was beset with slow execution of works, idle investments, weak monitoring, non-fulfilment of commitments made in the agreements, delays in award of contracts and non-handing over/charging of completed works.

Though considerable delays in the implementation of the projects were attributable to contractor, PIAs and REC, accountability for the delayed execution of projects was not determined at any level i.e. PIA, REC and MOP. As such, the LD clause in the Letters of Award were rendered irrelevant. Conversely, if the contractors were not responsible for the delays, then it would appear that the full responsibility would lie on the PIAs. However, no action has been taken by PIAs on erring officials nor has REC/MOP taken action against PIAs, thereby underlining lack of concern for time lines.

Monitoring mechanism for ensuring quality though in place, could not keep pace with progress of works and resultantly, there were delays in exercising significant and appropriate checks making the monitoring process largely ineffective.

The nodal agency, REC, on its part, was not able to ensure completion of projects within scheduled time to which delays in sanction of projects also contributed. Inadequacies could have been avoided had REC performed its role in a more effective manner by ensuring that DPRs were based on field surveys so that physical and financial estimates were more realistic and subsequent revisions were minimized.

Beneficiary survey revealed that publicity needed to be increased and made result oriented. The survey further revealed that concerned DISCOMs failed to (a) supply committed hours of electricity to BPL consumers and (b) raise and recover the energy bills from the connections.

Report No. 23 of 2013

Union government (Civil) Autonomous Bodies

The report contains results of test audit of financial transactions of the Central Autonomous Bodies. Three autonomous bodies viz. National Power Training Institute (NPTI), Bureau of Energy Efficiency (BEE) and Central Electricity Regulatory Commission (CERC) under Ministry of Power have been mentioned in the report. Audit has pointed out that there has been delay in presentation of audited accounts for the year 2010-11 to Parliament in case of CERC & BEE (para 1.2), internal audit of CERC was not conducted for the year 2011-12 (para 1.4.1 (a)), physical verification of fixed assets of NPTI, BEE & CERC was not conducted during the year 2011-12 (para 1.4.1 (b)) and physical verification of inventories in respect of NPTI, BEE & CERC was not conducted during the year 2011-12 {para 1.4.1 (C)}.

CSR activities by participating Women

CHAPTER - 38

RESULTS-FRAMEWORK DOCUMENT & ACHIEVEMENT OF MINISTRY OF POWER FOR 2012-13

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

(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 hydro-electric 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;
- To electrify about 1.10 lakh un-electrified villages;
- To provide electricity connections to about 2.31 crore rural BPL households;
- 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.A

SECTION 2

Inter se Priorities among Key Objectives, Success Indicators and Targets (Period: April 1,2012 to March 31,2013)

Sl. No.	Objectives	Weightage (out of 100)	Actions	Success Indicators	Unit	Weightage (out of 100)	Excellent 100%	Very good	Good 80%	Fair 70%	Poor (60%)
1	Improving Power availability	34	Fresh Capacity Addition (Total) of which	15956*	MW	11	15956	14361	12765	11169	9574
			Thermal	15154	MW		15154	13639	12123	10608	9093
			Hydro	802	MW		802	722	642	561	481
			Public Sector	8706	MW		8706	7836	6965	6094	5224
			Generation performance	920	BU	7	920	828	736	644	552
			Power generated per MW of monitored capacity	4.85	MU/MW	2	4.85	4.37	3.88	3.40	2.91
			Fresh Capacity addition saved through Energy Conservation Schemes including National Mission on Enhanced Energy Efficiency (Energy Savings)	950	MW	6	950	855	760	665	570
			No. of States to Adopt ECBC	4	NO.	1	4	3	2	1	-
			Finalization of Fuel Efficiency norms by BEE	15.03.2013	Date	1	15.03.13	20.03.13	25.03.13	31.03.13	31.03.13
			Issuance of RFQ for UMPPs	1	No.	1	1	-	-	-	-
			QPR of PSUs and monitoring performance of Autonomous Bodies biannually	24	No.	2	24	22	19	17	14
			No. of units taken up for implementation of R&M	2	No.	1	2	1	-	-	-
			No. of units where R&M is completed during the year	2	No.	1	2	1	-	-	-
			Monitoring of progress of coal blocks for captive mining	4	No. of meetings	1	4	3	2	1	-
2	Expanding the Transmission Network	10	Transmission lines addition/ ready for commissioning (Central)	7333	ckm	2	7333	6600	5866	5133	4400
			Transmission lines addition/ ready for commissioning (State)	8695	ckm	1	8695	7826	6956	6087	5217
			Transmission lines addition/ ready for commissioning (private)	1398	ckm	1	1398	1258	1118	979	839
			Transformation capacity addition/ready for commissioning (Central)	11210	MVA	2	11210	10089	8968	7847	6726
			Transformation capacity addition/ready for commissioning (State)	20459	MVA	2	20459	18413	16367	14321	12275
			Inter-regional Grid Capacity to be created	4100	MW	1	4100	3690	3280	2870	2460
			Field testing of 1200 KV system	26.03.2013	Date	1	26.03.2013	27.03.2013	28.03.2013	29.03.2013	30.03.2013
3	Access to electricity to all		Providing infrastructure for Electrification	4800	No.	5	4800	4320	3840	3360	2880
			Electricity connection to BPL Households	34	Lakh	5	34	30.6	27.2	23.8	20.4
			Getting to 5 States to notify the RE plan of the State.	5	No.	1	5	4	3	2	1
			Preparation of Cabinet note on grant of Incentives/funding of schemes for segregation of Agricultural/Rural feeders.	15.03.2013	Date	1	15.03.2013	20.03.2013	25.03.2013	30.03.2013	31.03.2013

4	Reducing AT&C losses through implementation of R-APDRP scheme	20	Part A IT - Integration of towns with Data Centre (Nos.)	400	No.	4	400	360	320	280	240
			Part A - SCADA - Appointment of SIA	25	NO.	4	25	23	20	18	15
			Part B - (a) Sanction Towns	51	No.	4	51	46	41	36	31
			Part B - (b) Award/Start of works in towns	400	No.	4	400	360	320	280	240
			No. of towns where consumer indexing system has been operationslised	400	No.	2	400	360	320	280	240
			Setting up Automatic Data Acquisition systems for HT consumers and 11kv feeders in towns	400	No of towns	2	400	360	320	280	240
5	Enhancing the availability of trained and skilled manpo-wer for the power sector	6	Persons imparted training by NPTI	16225	No.	3	16225	14603	12980	11358	9735
			Trainee weeks at NPTI	132000	No.	3	132000	118800	105600	92400	79200
6	International Co-operation with Bhutan, and Signing of JV Agreements	3	Bhutan : Preparation/ Updation of DPR	1	No.	1	1	-	-	-	-
			Signing of JV Agreements	4	No.	2	4	3	2	1	0
7	Efficient functioning of the RFD System	3	Timely submission of Deaft for Approval	On-time submission	Date	2	Mar.5 2012	Mar. 6 2012	Mar. 7 2012	Mar. 8 2012	Mar. 9 2012
			Timely submission of Results	On-time submission	Date	1	May, 1 2012	May, 3 2012	May, 4 2012	May, 5 2012	May, 6 2012
8	Administrative	6	Implement mitigating strategies for reducing potential risk of corruption	% of implemen-tation	%	2	100	95	90	85	80
			Implement ISO 9001 as per the approved action plan	Area of operations covered	%	2	100	95	90	85	80
			Identify, design and implement major innovations	Implement-ation of identified innovations	Date	2	Mar. 5 2013	Mar. 6 2013	Mar. 7 2013	Mar. 8 2013	Mar. 9 2013
9	Improving internal Efficiency/ responsiveness/ service delivery of Ministry/ Department	4	Implementation of Sevottam	Independent Audit of Implentation of Citizen's Charter	%	2	100	95	90	85	80
				Independent Audit of implement-ation of public grievance redressal system	%	2	100	95	90	85	80
10	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

SECTION 3

Trend Values of the Success Indicators

Sl. No.	Objectives	Actions	Success Indicators			Actual			Projected	
			Year 2012-13	Unit	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2013-14	FY 2014-15
1	Improving Power availability	Fresh Capacity Addition (Total) of which	15956	MW	3,454	9585	12160.5	20502[$]		
		Thermal	15154	MW						
		Hydro	802	MW						
		Public Sector	8706	MW						
		Generation performance	920	BU	723.8	771.5	811.104	876.44[$]		
		Power generated per MW of monitored capacity	4.85	MU/MW						
		Fresh Capacity addition saved through Energy Conservation Schemes including National Mission on Enhanced Energy Efficiency (Energy Savings)	950	MW	1,504	2868	2670	2998[@]		
		No. of States to Adopt ECBC	4	No.						
		Finalization of Fuel Efficiency norms by BEE	15.03.2013	Date						
		Issuance of RFQ for UMPPs	1	No.	-	-	1	-	1	1
		QPR of PSUs and monitoring performance of Autonomous Bodies biannually	24	No.	-	-	-			
		No. of units taken up for implementation of R&M	2	No.						
		No. of units where R&M is completed during the year	2	No.						
		Monitoring of progress of coal blocks for captive mining	4	No. of meetings	-	-	-	-	-	-
2	Expanding the Transmission Network	Transmission lines addition/ ready for commissioning (Central)	7333	ckm	5,556	5,515	4986	9774[$]	-	
		Transmission lines addition/ ready for commissioning (State)	8695	ckm	4,576	4,917	8847	7421[$]	-	
		Transmission lines addition/ ready for commissioning (private)	1398	ckm	0	1,358	1534	3239[$]	-	
		Transformation capacity addition/ready for commissioning (Central)	11210	MVA	6,580	10,290	5310	30675[$]		
		Transformation capacity addition/ready for commissioning (State)	20459	MVA	12,100	12,585	25717	23485[$]		
		Transformation Capacity addition/ ready for commissioning (Private)	0	MVA	0	1440	630	127[$]		
		Inter-regional Grid Capacity to be created	4100	MW						
		Field testing of 1200 KV system	26.03.2013	Date						
3	Access to electricity to all	Providing infrastructure for Electrification	4800	No.	12,056	18,374	18306	7934[$]		
		Electricity connection to BPL Households	34	(no. in Lakh)	30.9	47.18	58.83	34.44[$]		
		Getting to 5 States to notify the RE plan of the State.	5	No.						
		Preparation of Cabinet note on grant of Incentives/funding of schemes for segregation of Agricultural/Rural feeders.	15.03.2013	Date						

4	Reducing AT&C losses through implementation of R-APDRP scheme	Part A IT - Integration of towns withData Centre (Nos.)	400	No.	-				-	
		Part A - SCADA - Appointment of SIA	25	NO.	0				-	
		Part B - (a) Sanction Towns	51	No.	-					
		No. of towns where consumer indexing system has been operationslised	400	No.						
		Setting up Automatic Data Acquisition systems for HT	400	No of towns						
		consumers and 11kv feeders in towns								
5	Enhancing the availability of trained and skilled manpower for the power sector	Persons imparted training by NPTI	16225	No.	14225	14869	15825	17012$		
		Trainee weeks at NPTI	132000	No.	113302	115132	127207	135168$		
6	International Co-operation with Bhutan, and Signing of JV Agreements	Bhutan : Preparation/ Updation of DPR	1	No.	-	-	-		-	
		Signing of JV Agreements	4	No.	-	-	-		-	-

^-Excluding Nuclear, $-Achievement as on 31.03.2012, @-Achievements as on 31.12.2011.

#- Target for 2011-12 is electrification of 14,500 villages and 52 lakh connections to BPL households. Achievements shown is as on 31.03.2012.

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= 1x 109 units)
- R-APDRP – Restructured Accelerated Power Development & Reforms Programme.
- RGGVY – Rajiv Gandhi Grameen Vidyutikaran Yojana
- Electrification of Village - 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 347 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 70 Million Tons of coal during 2012-13.

8. Power Utilities having Captive Coal Mines : Ensuring supply of 25 Million Tons coal during the year 2012-13.

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.	Outcome/Impact of Department/ Ministry	Jointly with	Success Indication (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	18,374	18,306	7934*		
			ii. BPL household	47.18 lakhs	58.83 lakhs	34.44* 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	20502 MW*		
			ii. Power Generation	771.5 BU	811.104 BU	876.44 BU*		
			iii. Fresh Capacity Addition saved through energy conservation measures. iv. Reduction in Demand-Supply Gap in peak load. v. Reduction in Demand-Supply Gap in peak load.	2868 MW	2670 MW	2998 MW@		

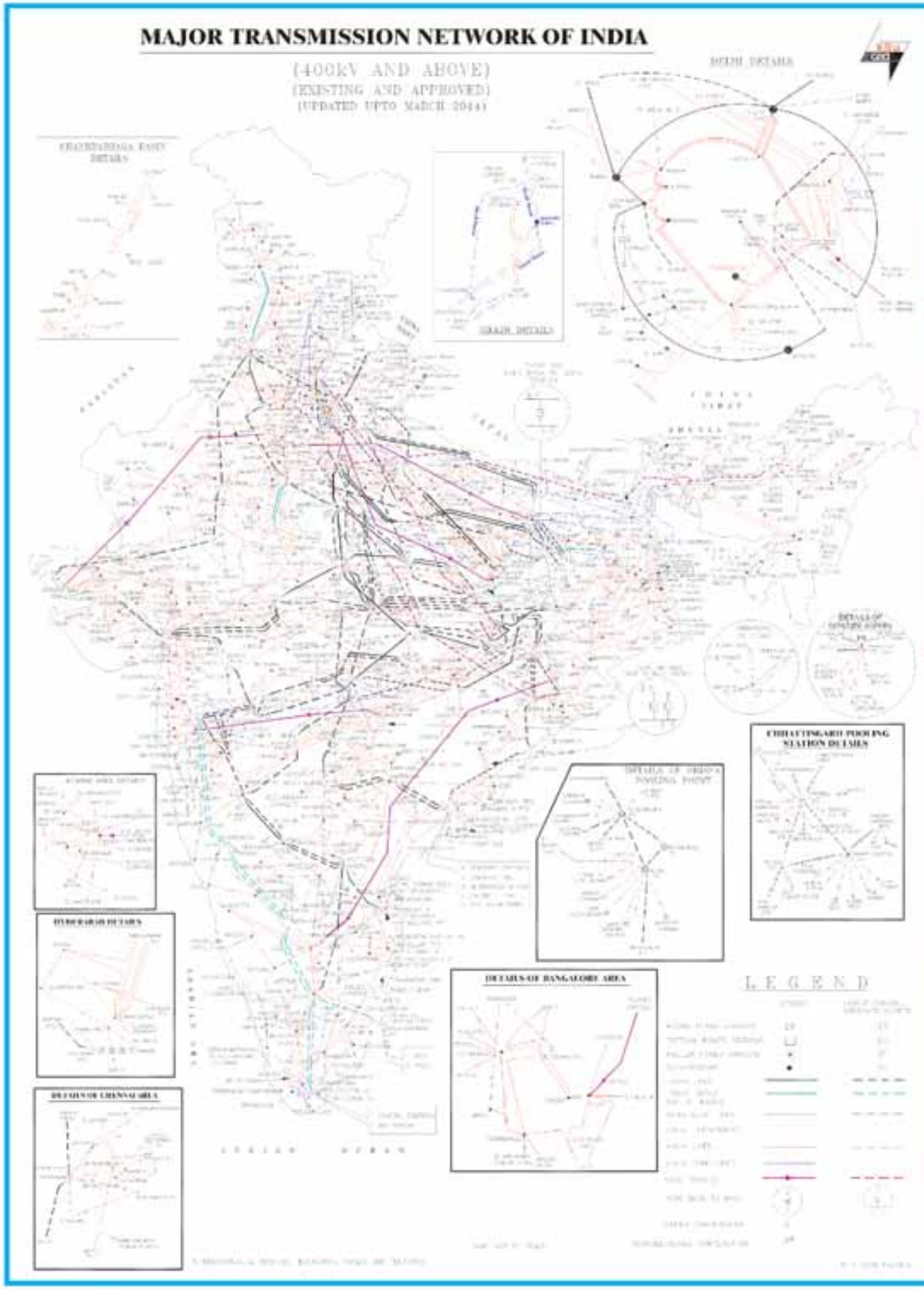
3.	Improving quality of power	Discoms, States. Regulators Developers	i. Minimizing grid Disturbance		2			
			ii. Transmission lines addition/ ready for commissioning (ckm)		15367	20434*		
			iii. Transformation capacity addition/ ready for commissioning (MVA)		31657	54287*		
			iv. Percent of time when frequency of the grid was within the operating band of IEGC band (49.5 to 50.2 Hz).					
			(NR/WR/ER/NER)			88.07	89.71	
			SR			86.37	92.87	
4.	Improved		i. No .of articies published in leading magazines and journals.			40	40	
			ii. No. of testing facilities, labs created			12	12	
			iii. No of new patents					
5.	Better project implementation		Number of delayed			3	3	
6.	Reducing AT&C losses		Measurement of agriculture consumption that is used by the regulators in tariff filing (%age of such tariff filling)					

*- Achievement as 31.03.2012, @- achievement as on 31.12.2011.

8 x 125 MW (1000 MW) Indira Sagar Power Station (Madhya Pradesh)

MAJOR TRANSMISSION NETWORK OF INDIA

(400kV AND ABOVE)
(EXISTING AND APPROVED)
(UPDATED UPTO MARCH 2044)



Ministry of Power

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