# MANAGEMENT DISCUSSION AND ANALYSIS

## The Power Sector Scenario of the Country

**THE YEAR 2011-12 IN RETROSPECT**

- All India Capacity reached 199877.03 MW
- Gross annual generation of the country was 876.89 Billion Units (BUs) (including Bhutan import) showing a growth rate of 8.11% over last year.
- Total thermal generation achieved growth rate of 6.59%. Coal based generation recorded growth rate of 9.24%, while the Gas based generation showed a negative growth rate of 6.77%.
- Growth rate of nuclear generation was 22.92% over last year.
- Hydroelectric generation achieved a growth rate of 14.22% as compared to previous year.
- PLF of coal & lignite based stations was 73.32% compared to 74.97% in the previous year.
- PLF of Gas/Liquid fuel based stations was 59.94% compared to 66.15% in the previous year.
- Nuclear Power Projects achieved PLF of 76.90% compared to 65.40% during the previous year.
- Double digit peak deficit of 10.6% (previous year 9.8%) and energy deficit of 8.5% (previous year 8.5%).
- 89% of power generated in the Country was transacted through the long term PPA route and the remaining 11% through trading and UI mechanism.
- 20434 CKT km of transmission lines installed against the target of 19792 CKT km.

*(Source: Central Electricity Authority (CEA) & Central Electricity Regulatory Commission (CERC))*

**Existing Installed Capacity**

The total installed capacity in the country as on March 31, 2012 was 199877.03 MW with State Sector having a share of 42.99%, followed by Central Sector with 29.86% share and balance 27.15% contributed by the Private Sector.

| Sector | Total Capacity (MW) | % share |
|---|---|---|
| State | 85918.65 | 42.99% |
| Centre | 59682.63 | 29.86% |
| Private | 54275.75 | 27.15% |
| **Total*** | **199877.03** | **100.00%** |

*(Source: CEA)*

* excluding captive generating capacity connected to the grid (31516.87 MW as on 31.03.2010)

Capacity addition gained momentum during the year 2011-12 with 20501.70 MW (excluding RES – 6048.93 MW) of capacity being added as compared to 12160.50 MW added during the previous year, registering a growth of 68.60%.

Out of 20501.70 MW (excluding RES) added during the year in the country, the Central Sector contributed to an addition of about 23.27%, state sector 18.35% and 58.38% was contributed by private sector. Overall, during the year 2011-12, 26550.63 MW (including RES) has been added.

The total installed capacity is represented by following fuel mix:

| Fuel | Total Capacity (MW) | % share |
|---|---|---|
| Thermal (Coal/Gas/Oil)* | 131603.18 | 65.84% |
| Hydro | 38990.40 | 19.51% |
| Nuclear | 4780.00 | 2.39% |
| R.E.S. | 24503.45 | 12.26% |
| **Total** | **199877.03** | **100.00%** |

*(Source: CEA)*

* Coal based capacity is 56.05% of the total capacity, thus coal remains the key fuel for power generation.

The total basket of Renewable Energy Sources (RES) in country (including small hydro power projects) was 24503.45 MW of which over 70% is contributed by wind power, 13% by biomass and bagasse, 12% by small hydro projects, 4% by solar and balance through urban/industrial waste. *(Source: Ministry of New and Renewable Energy (MNRE))*

**Capacity Utilization**

Capacity utilisation in the Indian power sector is measured by Plant Load Factor (PLF).

**Sector wise PLF% (Thermal)**

| Sector | 2009-10 | 2010-11 | 2011-12 |
|---|---|---|---|
| State | 71.13 | 66.75 | 68.00 |
| Central | 85.64 | 85.12 | 82.12 |
| Private | 82.41 | 76.70 | 76.19 |
| All India | 77.68 | 74.97 | 73.32 |

PLF of thermal stations declined from 74.97% to 73.32%. The decline in PLF was mainly on account of backing down/ shut down of units because of low schedule from beneficiary States, delay in stabilization of new units, transmission constraints and shortage / poor quality of coal.

**Achievement during XI plan**

In the XI Plan, 54964 MW (excluding RES) capacity has been added, a 12% shortfall (approx.) over the mid-term target of 62374 MW. Capacity Addition Programme vs Achievement during XI Plan is as under:

| Capacity in MW | | | | |
|---|---|---|---|---|
| **Sector** | **Thermal** | **Hydro** | **Nuclear** | **Total** |
| Central | 14920 | 2922 | 3380 | 21222 |
| State | 18501 | 2854 | 0 | 21355 |
| Private | 17336 | 2461 | 0 | 19797 |
| **Target (after mid-term review)** | **50757** | **8237** | **3380** | **62374** |
| **Achievement** | **48540** | **5544** | **880** | **54964** |

*(Source: CEA)*

However, in absolute terms, this capacity addition in the XI plan is much higher as compared to the capacity added in each of last three five year plans.

**Challenges in setting up power projects during XI Plan**

- ✓ Delay in placement of orders – mainly civil works and Balance of Plants (BoPs).
- ✓ Delay and non-sequential supply of material for Main Plant and BoPs.
- ✓ Shortage of skilled manpower for erection and commissioning.
- ✓ Contractual dispute between project developer and contractor and their sub vendors/sub-contractors.
- ✓ Inadequate deployment of construction machinery.
- ✓ Shortage of fuel.
- ✓ Delay in land acquisition.
- ✓ Inadequate infrastructure facilities like reliable construction power supply and constraints in transportation of heavy equipment.

**Target for XII Plan and way forward**

The addition of new capacities in earlier plans including the XI plan has been inadequate.

As per the report of Working Group on Power, set up by Planning Commission for finalizing the target for XII plan, the targets set for capacity addition during XII plan is 75785 MW (excluding RES):

| Fuel | XII Plan Target Capacity (MW) |
|---|---|
| Hydro | 9204 |
| Nuclear | 2800 |
| Gas | 1086 |
| Coal | 62695 |
| **Total** | **75785** |

During the XII Plan, emphasis has also been laid on adding capacity through Hydro, Nuclear and Renewable energy sources which is in line with the Government of India's low carbon growth strategy. However, fossil fuel based power remains indispensable to achieve the XII plan target. About 84% of the capacity is expected to be added through fossil fuel based plants.

The XII Plan target seems realisable subject to availability of land, environment clearances, fuel, water and signing of Power Purchase Agreements.

The power sector is in a better position to realise the target as ~58000 MW projects (Thermal, Gas/RLNG, Nuclear & Hydro) are already under construction for likely benefit during the XII plan apart from spill-overs of XI Plan. In addition, CEA and State Governments has concurred/approved schemes of ~ 9500 MW of hydro projects out of which ~ 8000 MW would benefit in XII Plan. Further, adequate manufacturing capacity of Main Plant Equipment including that for large super-critical thermal units, Balance of Plants (BoP), Construction Agencies and Construction equipment/ Construction techniques would be available since number of private participants in association with their international partners are establishing manufacturing capacities in India. BHEL has also enhanced its capability to deliver power plant equipment of 20,000 MW per annum.

**GENERATION**

Since 2001-02, the generation in India has grown at a CAGR of 5.46%. As per World Energy Statistics, 2010 India ranks 5th in the world in terms of total electricity generated. However, in terms of per capita consumption, it ranks among the lowest in the world. All India annual per capita consumption of electricity upto year 2010-11 is 813.30 units (provisional) *(Source: CEA)*.

The total power generation in the country during the year 2011-12 was 876.89 BUs as compared to 811.14 BUs during last year, registering a growth of 8.11%. (Generation figures exclude generation from hydro stations upto 25 MW but includes Bhutan Import)

Sector wise and fuel wise break-up of generation in BUs for the year 2011-12 and 2010-11 is detailed as under:

| Sector | 2011-12 | 2010-11 | Fuel | 2011-12 | 2010-11 |
|---|---|---|---|---|---|
| Central | 364.00 | 346.09 | Thermal | 708.81 | 665.01 |
| State | 367.95 | 343.30 | Hydro | 130.51 | 114.26 |
| Private | 139.65 | 116.14 | Nuclear | 32.29 | 26.27 |
| Others* | 5.28 | 5.61 | Others* | 5.28 | 5.61 |
| **Total** | **876.89** | **811.14** | **Total** | **876.89** | **811.14** |

*(Source: CEA)* *Import from Bhutan

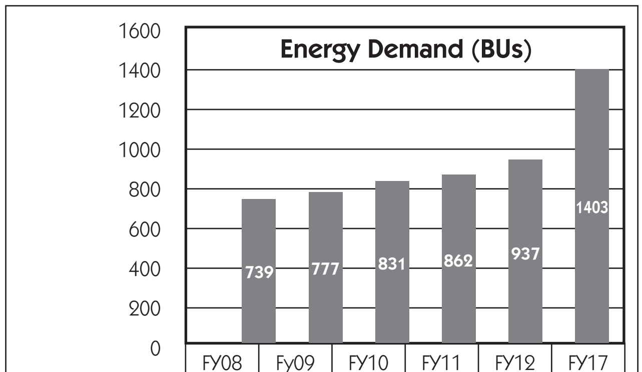
Of the total generation during the year 2011-12, the Central and State Sector utilities contributed 42% each whereas Private Sector & import from Bhutan together contributed 16%.

**Demand and Supply position**

The energy requirement during the year 2011-12 was 937.20 BUs. Energy deficit remained same on a year-on-year basis in 2011-12 at 8.5%.

Peak load demand, increased by 6.31% thereby increasing peak load deficit to 10.6% in 2011-12 from 9.8% in the previous year. *(Source: CEA)*

During 2012-13, India's GDP is expected to grow at 6.5% to 7%. In order to sustain the growth in GDP and bring it around 9%, India needs to add power generation capacity commensurate with this pace since growth of power sector is strongly co-related with the growth in GDP and going forward it is expected that supply will create further demand.




| | FY08 | Fy09 | FY10 | FY11 | FY12 | FY17 |
|---|---|---|---|---|---|---|
| Real GDP growth | 9.30% | 6.70% | 8.40% | 8.40% | 6.50% | |
| Y-O-Y Demand Growth | 6.95% | 5.14% | 6.95% | 3.73% | 8.72% | |
| Energy Demand (BUs) | 739 | 777 | 831 | 862 | 937 | 1403 |

*(Source- CEA, Economic Survey 2011-12 & FY17 Energy Demand from Report of Working Group on Power for XII plan)*

**Actual Power Demand – Supply Position**

Overall, the sector is characterized by acute shortages and the gap in the demand and supply position has been in the range of 8.5%- 11.1% in the past 5 years.

| Year | Requirement | Availability | Surplus/ Deficit (+/-) | |
|---|---|---|---|---|
| | (MUs) | (MUs) | (MUs) | (%) |
| 2007-08 | 737,052 | 664,660 | -72,392 | -9.8% |
| 2008-09 | 777,039 | 691,038 | -86,001 | -11.1% |
| 2009-10 | 830,594 | 746,644 | -83,950 | -10.1% |
| 2010-11 | 861,591 | 788,355 | -73,236 | -8.5% |
| 2011-12 | 937,199 | 857,886 | -79,313 | -8.5% |

*(Source: CEA)*

**Expected Demand**

The expected demand forecast of electricity during 2016-17 and 2021-22 is as under:

| Year | Energy Requirement (BUs) | Peak Load (MW) |
|---|---|---|
| 2016-17 | 1403 | 197686 |
| 2021-22 | 1993 | 289667 |

*(Source: Report of Working Group on Power, set up by Planning Commission, for finalizing the target for XII plan).*

**CONSUMPTION**

The end users of power can be broadly classified into industrial, agricultural, domestic and commercial consumers. These consumers represented approximately 39%,19%, 24% and 10% respectively, of the power consumption measured by units of electricity consumed in year 2010-11 *(Source: Ministry of Statistics and Programme Implementation- Energy Statistics 2012).*

India has very low per capita power consumption. The per capita consumption of power in India has increased from 631.50 units in 2005-06 to 813.30 units (Provisional) in 2010-11 *(Source: CEA).* India still has one of the lowest per capita power consumption compared to the world average of 2807 units in 2009 *(Source: World Development Indicators).*

**TRANSMISSION AND DISTRIBUTION**

The transmission systems in the country consist of Inter-State Transmission System (ISTS) and Intra State Transmission System (Intra-STS). ISTS is mainly owned and operated by Power Grid Corporation of India Limited (Powergrid) which is also the Central Transmission Utility (CTU).

The power transmission and distribution system is a three-tier structure comprising of distribution networks, state grids and regional grids. The distribution networks are owned by the Distribution licensees and the state grids are primarily owned and operated by respective state utilities. In order to facilitate the transmission of power among neighbouring States, the State grids are interconnected to form regional grids.

All regional grids except southern are now integrated to form a national grid enabling inter-regional transmission of power, facilitating optimal utilization of the national generating capacity. A fully integrated power transmission grid would help to even out supply demand mismatches.

Total inter-region transmission capacity at the end of XI Plan is 28000 MW *(Source: Power Grid)* which connects the northern, western, eastern, and north-eastern regions in synchronous mode operating at the same frequency and the southern region in asynchronous mode. This has enabled inter-regional energy exchanges of about 41635 million units in year 2011-12, thus contributing to greater utilization of generation capacity and an improved power supply position.

To match the generation capacity addition plans, transmission and distribution network has also been planned to facilitate power reaching the ultimate consumer. An Inter-Regional transmission capacity of 37,800 MW has been planned for the XII Plan, which includes transmission line of about 1,09,000 ckt. Kms, HVDC terminal capacity of 13000 MW and AC transformation capacity of 2,70,000 MVA. *(Source: Planning Commission Working Group Report for XII Plan)*

**Private Sector Participation in Transmission/ Distribution**

Under National Electricity Policy 2006, guidelines were issued for encouraging competition in development of transmission projects and tariff based competitive bidding guidelines for transmission services.

Consequently, some of the transmission schemes are being implemented by private sector. During the year 2011-12, 3239 ckt kms of transmission lines were commissioned by JV/ private sector *(Source: CEA)*

Electricity Act, 2003 (EA 2003) provides for private participation in distribution. It also envisages appointment of franchisee by distribution licencee, who may not hold the distribution license. Even though privatizing distribution is one of the simplest form of reform, the States have been reluctant to privatise distribution since it involves change in ownership thus directly affecting the employees. In this scenario, distribution franchising has emerged as an alternative solution as franchisee model is a softer approach and faces lesser resistance from various stakeholders and many States have initiated action in this direction.

**POWER TRADING**

Short term trading is an essential tool for optimization of resources and plays an important role in deficit scenario for harnessing additional / captive sources of generation for meeting the peak demand. Trading of electricity in India has picked up considerably after the advent of Electricity Act, 2003 which recognizes trading as a distinct licensed activity. In future, the quantum of electricity traded in the short term market is likely to grow considerably as the new generating capacity of many IPPs plants is not tied up in long term PPAs. Further open access in inter-state transmission is fully operational.

Current participants in the power trading business include PTC, NVVN, Tata Power Trading Company Limited and GMR Energy Limited, among others.

During the year 2011-12, 66.75 BUs of power was traded through power exchanges and bilateral mechanism as compared to 53.48 BUs in the previous year. *(Source: CERC)*

India has two power exchanges – Indian Energy Exchange (IEX) and Power Exchange India Limited (PXIL). During the year 2011-12, 14.82 BUs have been traded through these exchanges, out of which 13.79 BUs was traded through IEX and 1.03 BUs through PXIL.

## RURAL ELECTRIFICATION

The Central Government launched a scheme 'Rajiv Gandhi Grameen Vidyutikaran Yojana' (RGGVY) in April 2005 with the goal of electrifying all (around 118500) un-electrified villages and hamlets and providing access to electricity to all households in next five years. Under RGGVY, 105314 villages have been electrified and connections to 1.99 crore Below Poverty Line (BPL) households have been released up to 30.06.2012. *(Source: RGGVY)*

Some of the States have come out with specific schemes for rural electrification such as Akshay Prakash Yojana by Maharashtra, Biju Gram Jyoti by Odisha and Jyotigram Yojana by Gujarat.

## R-APDRP

Re-structured APDRP was approved as a Central Sector Scheme on 31.07.2008 with total outlay of ₹ 51,577 crore The focus of R-APDRP is on actual, demonstrable performance in terms of reduction in AT&C loss through application of IT for energy auditing and accounting and through technological upgradation and strengthening of distribution infrastructure. Projects under R-APDRP are taken up in two parts.

Part-A of R-APDRP is currently under implementation and is in an advanced stage of progress in several States. APDRP and R-APDRP have been successful in bringing down the AT&C losses from 38.86% in 2001-02 to 27.15% in 2009-10. Some States have shown an improvement in AT&C loss reduction, however, losses are still at a higher level. So far, the impact of the program on financials of State Utilities has not been significant.

## POLICY FRAMEWORK

The Indian Power Sector is governed by The Electricity Act, 2003 (EA 2003) which provides the overall legislative framework.

EA 2003 has promoted a liberal, transparent and enabling legal framework for power development, for creation of a competitive environment and reforming distribution segment of power industry. It allows open access in transmission and distribution. It provides for regulatory oversight for fixation of tariff.

Central Government has also framed following policies for overall development of the sector:

- National Electricity Policy, 2005
- Tariff Policy, 2006
- Rural Electrification Policy, 2006
- Hydro Power Policy, 2008
- Revised Mega Power Project Policy, 2009

## VARIOUS INITIATIVES OF THE GOVERNMENT

Various initiatives taken by the Government of India during the XI Plan were as under:

a) Development of Power Projects on Tariff Based Bidding
b) Development of Ultra Mega Power Projects
c) Allocation of Captive Coal Blocks
d) Hydro Power Policy, 2008
e) Private sector participation in transmission sector
f) Jawaharlal Nehru National Solar Mission
g) R-APDRP
h) Inter-State Trading Margin Regulations, 2010
i) New Indian Electricity Grid Code (IEGC), 2010
j) CERC (Open Access in Inter-State Transmission) Regulations, 2008
k) Regulations on "Terms and Conditions for tariff determination from Renewable Energy Sources", 2009.

## REGULATORY DEVELOPMENTS IN 2011-12

During 2011-12, CERC has notified a series of amendments in the Regulations related to Indian Electricity Grid Code, Connectivity, Long and Medium Term Access, Un-Scheduled Interchange, Transmission charges and losses, etc. and Tariff Regulations for Renewable Projects. The salient points of these amendments are captured as follows:

- The operating frequency band has been tightened from the existing 49.5 ~ 50.2 Hz to 49.7 ~ 50.2 Hz.
- The provision of Free Governing Mode Operation (FGMO) with manual intervention has been made mandatory for those units, which do not have the Restricted Governing Mode Operation (RGMO) capability.
- The maximum rate for UI has been increased to ₹ 9.00/ kWh from the existing ₹ 8.73 /kWh. The applicable cap rates have also been revised.
- Injection of infirm power allowed only upto a period of 6 months from synchronization. Commission may allow extension of this period on the basis of application filed by generator to Commission at least 2 months prior to expiry of 6 month period.
- Construction of dedicated line / augmentation of transmission system shall be taken up by Central Transmission Utility (CTU) or Transmission licensee after ensuring that generator has made advance payment for main plant packages, subject to minimum of 10% of contract values.
- Transmission charges for dedicated line shall be payable by generator even if generating project gets delayed or project is abandoned.
- Approved injection/ approved withdrawal shall be determined considering the Long Term Access and Medium Term Open Access granted to the generator.
- Yearly transmission charges for the Transmission lines shall be revised on a six monthly basis in the first year and on a quarterly basis in the subsequent years.
- The control period for renewable energy sources is 5 years (applicable for the period from 2012-13 to 2016-17).
- CERC has determined the Floor and Forbearance price of Renewable Energy Certificates, for solar and non-solar generation, which is applicable from 1st April 2012 and is valid for the control period.

## OPPORTUNITIES AND THREATS FOR THE SECTOR

### Opportunities

#### Conducive Regulatory Framework for investment in Power Sector

Over the years, Government of India has taken several policy initiatives for development of vibrant and sustainable power sector. Enactment of the Electricity Act, 2003 opened the electricity market. Opening up of the Power Sector has provided opportunity to Private Sector in Generation, Transmission as well as Distribution. Electricity Act, 2003 provides the consumers to choose their supplier of electricity.

The estimated fund requirement for power sector during the XII plan is of the order of ₹ 12,37,480 crore (excluding renewable resources). Out of which, about 50% will be towards capacity addition including advance action XIII plan projects, 25% for distribution, 15% for transmission and balance 10% towards R&M, R&D , Captive Power Plants and Human Resources. This provides enough opportunities to various entities in the power sector i.e. Central, State Utilities and Private Sector.

**Demand for Electricity**

**Generation**

Indian power sector is one of the fastest growing sectors in the world and energy availability has increased over the years. The demand for power has outstripped the supply. During the year 2011-12, the country faced a peak load deficit of 10.6% and energy deficit of 8.5%. As per the report of Working Group on Power for XII Plan, the energy requirement during the terminal year (2016-17) of XII Plan would be of the order of 1403 BUs, while the energy requirement at the end of XIII Plan (2021-22) would be 1993 BUs considering 9% GDP growth rate and 0.9 and 0.8 elasticity during the XII and XIII Plan respectively. The corresponding peak Load (MW) at the end of XII and XIII Plan would be 197686 MW and 289667 MW respectively. The envisaged capacity addition during XII plan and XIII Plan is 75785 MW and 93400 MW respectively (excluding Renewable), giving opportunity for every player in the sector.

**Transmission**

Various projects which are in the pipeline and likely to yield benefit during XII Plan period or early XIII Plan period for which CEA, in coordination with all the stake-holders i.e. Central Transmission Utility, State Transmission Utilities and Central Sector Generation Companies, have planned for transmission systems required for evacuation of power from such projects, and also the transmission systems required for strengthening of regional and inter-regional transmission networks.

For XII Plan, transmission schemes for the projects have been signed with the CTU as the nodal agency for Long Term Transmission Access to ISTS prior to the cut-off date of 5th January 2011. As such most of the ISTS schemes would be implemented by CTU. However, Dedicated Transmission Lines from the Inter-State Generating Stations would mostly be built by the generators as private sector lines. Further, most of the new transmission schemes required for system strengthening, drawl of power by the States and for power evacuation to be identified in future would be implemented through competitive bidding process as far as possible which would provide equal opportunity to all players.

**Renewable Energy**

There is a vast untapped potential in the Renewable Energy segment in India. The Ministry of New and Renewable Energy (MNRE) being the nodal agency for development of renewable energy is committed to the development of clean energy including wind energy, solar energy, small hydro-electric projects, biomass power, cogeneration-bagasse and waste to energy. The renewable energy ensures energy security with environmental sustainability and provides answer to decentralized distribution. It is the most appropriate, scalable and optimal solution for providing power to thousands of remote villages and hamlets across the country.

As on 31st March 2012, RES account for 12.26% of installed capacity. Ministry of New and Renewable Energy has ambitious plans of adding 29800 MW of grid-interactive renewable power comprising 15000 MW wind power, 2100 MW small hydro power, 10000 MW solar power and 2700 MW bio-power during the XII Plan.

As per the special report on Inter-governmental panel on climate change, 2012, India has become a major producer of wind turbines and now is among the top five countries in terms of installation.

During the last three years, there has been a rapid growth in deployment of clean/ renewable energy projects in the country attracting major investments, domestic as well as foreign. A total installed capacity of over 10400 MW has been added from various renewable power generation projects during this period and FDI inflows to the tune of ₹ 5,826 crore (USD 1,245 million) in 319 renewable energy projects have been reported. *(Source-MNRE).*

As per the report of Working Group on Power for XII Plan, the total estimated medium-term potential (2032) for power generation from renewable energy sources such as wind, small hydro, solar, waste to energy and biomass in the country is about 183000 MW.

The Government has taken several steps to encourage development of renewable energy sector which inter-alia includes:

(a) Jawaharlal Nehru National Solar Mission was launched in November 2009 with a target of deploying 20000 MW of grid connected solar power by 2022, which will be implemented in three stages. Private sector companies are partnering with government and co-investing in R&D and technology development.

(b) Fiscal and financial incentives, such as, capital/ interest subsidies, accelerated depreciation, nil/ concessional excise and customs duties.

(c) Preferential tariff for grid interactive renewable power in most potential States. Uniform guidelines by CERC for fixation of such preferential tariffs being issued every year.

(d) FDI up to 100% under the automatic route is permitted subject to provisions of Electricity Act, 2003.

(e) CERC has issued Renewable Energy Certificate Regulations, 2010 for increasing the share of renewable energy in the total generation capacity of the country. This concept seeks to address the mismatch between availability of renewable energy sources and the requirement of the obligated entities to meet their renewable purchase obligation.

**Hydro Potential**

The identified hydro electric potential of the country is above 145000 MW (excluding small hydro projects of less than 25 MW). However, installed capacity of hydro electric projects, as on 31.03.2012, is only 38990 MW. Government of India has adopted a multi pronged strategy to put the potential to use.

Some of the policy measures and initiatives taken by the Government are : an investor friendly Hydro Power Policy, 2008 offering incentives to investors in order to increase the installed capacity of hydro projects, a liberal National Rehabilitation and Resettlement policy, a 50000 MW hydroelectric initiative. The provisions of Hydro Power Policy, 2008 allow merchant sale of maximum upto 40% of the saleable energy for all developers.

Further, cost plus tariff regime has been extended for public as well as private sector hydro power projects upto December 2015. More than 430 projects/ schemes having a capacity of 128458 MW are at different stages of operation/approval/ investigation. *(Source- Economic Survey, 2011-12)*

**Demand Side Management**

The Energy Conservation legislation has sought to implement energy efficiency policies that lead to widespread market development through better standards for appliances and equipment, energy efficiency labelling, rational cost-of-service based tariffs, mandatory energy audits, awareness and training, financial and fiscal incentives. However, with ever increasing demand of electricity and efforts for unlocking of renewable energy potential, a renewed focus by power utilities on Demand Side Management (DSM) is essential. Various studies on the cost-effectiveness of DSM have reported that it costs between 1/5$^{th}$ to 1/10th to save a megawatt of power as compared to the capital investment needed to generate an equivalent megawatt in a power plant.

Government of India under National Mission on Enhanced Energy Efficiency (NMEEE) has embarked on one of the most ambitious and extensive energy saving initiatives with launch of Perform, Achieve, Trade (PAT) scheme. The PAT scheme is a trading mechanism designed for high energy consuming industries. It aims to incentivize industrial sectors and units to implement energy efficiency measures and to comply with energy consumption targets set by the regulator - Bureau of Energy Efficiency .

In the first cycle, 478 Designated Consumers (DCs) have been covered from eight industrial sectors including power sector. The DCs have been given targets to reduce specific energy consumption by 2014-15. In case, DCs are unable to achieve the allocated targets, they would be either required to purchase Energy Saving Certificates (ESCerts) or pay penalty corresponding to the shortfall in their target achievement.

**Financial Incentives to Power Sector**

The Finance Act, 2012 has allowed various incentives to power sector which include:

(a) Scrapping import levies on coal. Steam coal has been fully exempted from basic custom duty and CVD is also reduced to 1% till 31$^{st}$ March 2014.

(b) Full exemption from basic custom duty is extended to imports by coal mining projects.

(c) Withdrawal of import duty on natural gas, relaxation of withholding tax on External Commercial Borrowing – the rate has been reduced from 20% to 5%, enhancement of ECBs to part finance rupee debt of existing power projects.

(d) Extension of exemption u/s 80IA of Income Tax Act to new units which are starting generation of power by 31.03.2013.

**Threats**

**Fuel Constraint – Coal and Gas**

Constrained availability of fuel for power sector continues to be one of the key concerns affecting the power generation in India which is predominantly based on fossil fuel i.e. coal and gas. The production of coal as well as gas has not kept pace with the demand. During year 2011-12, to meet the shortfall of indigenous coal, an estimated 27.58 MT of coal was imported against the requirement of 35 MT (excluding requirement of imported coal based plants).

The generation loss reported due to coal supply shortages during 2011-12 has also increased to 8.82 BUs from 7.0 BUs for the same period last year.

Inspite of various measures being taken by Government of India, it is expected that Power Sector would continue to face fuel constraints. National energy requirement is expected to grow to almost 4 times of present level to 2 BMT/annum by 2030-31. To meet this demand, the domestic coal production has to grow in the range rate of 7%-9% range in order to match with the growth in demand.

As per the report of the Working Group on Power for XII plan, the estimated coal requirement for thermal power projects, based on the norms of 5 MT per 1000 MW, for terminal year of XII plan is 842 Million Tonne, while total availability is expected to be of the order of 604 MT leaving a shortfall of 238 MT which is expected to be bridged by import of coal.

The gap between demand and supply of coal is further expected to increase due to various ecological concerns. The indigenous coal supply has to be augmented to match the growth in power sector since most of the thermal plants can not use coal blended with more than 15% of imported fuel due to the design of the boilers.

Further, it is also necessary to create the requisite infrastructure to facilitate fuel to reach the intended destination.

During the year 2011-12, actual production of natural gas was 47549.40 MCM as against 52222.10 MCM during the previous year registering a decline of about 8.9% due to lower than anticipated production both by Public Sector as well as Private/JVC Sector. The gap in demand and supply is expected to grow. The expected gas requirement for power sector in the terminal year of XII plan is 100 MMSCMD, based on 90% PLF.

Due to unfavourable demand-supply balance of hydrocarbons in India, Government is encouraging national oil companies to pursue equity oil and gas opportunities overseas. DGH has also initiated steps to identify prospective areas for shale gas exploration as India has several shale formations which seem to hold gas.

Inspite of various measures taken by Government, non availability of coal and gas in desired quantity would have an adverse impact on the overall performance of the sector.

**Health of State Utilities**

Another area of key concern is the health of State Utilities. The return on assets has become negative for most of the SEBs. There are number of factors which have contributed to the poor financial performance such as high degree of commercial losses, tariff not determined on the basis of economics and increasing cross subsidies.

As per the report on "The working of state power utilities and electricity department 2011-12" of Power & Energy Division of the Planning Commission, the total commercial losses with subsidies increased from ₹ 10,509 crore in 1998-99 to ₹ 35,769 crore in 2009-10, while the anticipated losses for 2011-12 would be ₹ 37,836 crore. Similarly, commercial losses without subsidy increased from ₹ 20,860 crore in 1992-93 to ₹ 60,223 crore in

2009-10. The projected losses without subsidies for 2011-12 would be ₹ 56,458 crore. Such huge losses have put the question mark on the sustainability of the entire power sector. Due to poor paying capacity, some of the State utilities are not scheduling full capacity from our power stations, even though most of the NTPC stations are well placed in merit order. In case stations do not get schedule to generate upto its declared capacity due to lower demand, they nevertheless recover fixed charges including incentives.

During the last few years, some of the SEBs have increased the tariff to bridge this gap, however the rise has not been commensurate with increase in the cost of supply. The gap between cost of supply and the average tariff increased from ₹ 0.76/kWh in 1998-99 to ₹ 1.45/ kWh in 2009-10. It is expected that this gap would decline to ₹ 1.07/kWh in 2011-12.

**Sluggish Foreign Direct Investment in Power Sector**

The share of power sector in FDI as compared to other sectors is quite low, inspite of the fact that 100% foreign equity is permitted in generation, transmission, distribution and trading. During the period April,2000 to March,2012, Power sector has attracted FDI equity inflow of about 4% as compared to 19% by service sector and 7% each by telecommunications, construction activities, computer hardware & software and housing & real estate. *(Source: Department of Industrial Policy & Promotion)*

The low FDI inflow in the power sector is indicative of lack of confidence of foreign investors which stems from lack of politico-administrative support on containment of commercial losses, fragile financial health of state utilities, uncertainty of fuel availability, capped regulatory returns on equity coupled with delays in land, forest and environmental clearances which lead to cost escalation. The power generation business has high risk profile in the country; therefore, it is necessary to deal with the structural issues to reduce the risk profile to attract foreign investment in power sector.

**Other key concerns for the sector:**

(a) Delay in forest & environment clearance for coal projects.

(b) The enhanced compensation for land acquisition in the proposed Land Acquisition Bill.

(c) Availability of water for power plants and increase in the cost of water.

(d) The development of transport infrastructure in different transport sectors like railways, highways, roads, inland waterways, gas pipelines and ports.

(e) Downgrade of Sovereign Ratings by International Rating Agencies.

**OUTLOOK**

During the period 2001-02 to 2011-12, power generation in India has grown at a CAGR of 5.46%. As per the report of Working Group on Power for XII Plan, the energy requirement during the terminal year (2016-17) of XII Plan would be of the order of 1403 BUs. To achieve this target, generation has to grow at a CAGR of ~10% and hence, offers multiple opportunities of growth to public as well as private sector entities.

**COMPANY OVERVIEW**

**NTPC - LEADING THE INDIAN POWER SECTOR**

Your Company is the undisputed leader in Indian power sector. With 18.52% of total installed capacity of the country, your Company (including JVs and Subsidiaries) contributes over 27% of the country's generation as on 31.03.2012.

| | All India | NTPC | % share |
|---|---|---|---|
| Capacity (MW) | 199877.03 | 32650 | 16.34% |
| Generation* (BUs) | 876.89 | 222.07 | 25.32% |
| Capacity incl. JVs (MW) | 199877.03 | 37014 | 18.52% |
| Generation incl. JVs (BUs) | 876.89 | 240.31 | 27.40% |

*(Source: All India Data - CEA's executive summary)*

*including Bhutan import

Your Company is ranked 3rd in Asia among global electric utilities as per Forbes Global 2000 ranking published in the year 2012. It is also ranked as 337th largest Company in the world in the Forbes Global 2012. Your Company is also ranked no.1 Independent Power Producer Globally in the Platts Top 250 Global Energy Company Rankings -2011.

During the last year, operating stations of your Company performed better than collective performance of any other sector in terms of plant load factor.

To retain the status of sector leader, your Company has drawn a long term corporate plan to become a 128 GW Company by 2032 which means tripling the capacity from the existing levels. Ambitious capacity addition program brings number of challenges for the Company. Your Company has adopted multi-pronged strategy which includes adoption of new technology such as super-critical units of 660 MW and above, enhanced delegation of power for quick decision making, state-of-the-art project monitoring centre to have on-line monitoring of progress of projects.

In addition, diversification into new areas like coal mining, hydro electric, nuclear power brings challenges which are new to Company. With its proven execution and operational experience and highly skilled and motivated man power, the Company is geared to take all challenges in its stride.

Your Company is the largest power generating Company in India with a proven track record in operations as well as project execution. Your Company has been consistently rewarded for its performance and has won many prestigious awards and is among the few Public Sector Enterprises in India who has been awarded the coveted 'Maharatna' status. Your Company has also diversified its business to have its presence along the entire power value chain.

**STRENGTHS**

**Operational Performance**

The operating performance of your Company has been considerably above the national average. The availability factor for coal stations compares favourably with international standards. During the year 2011-12, NTPC group has generated 27.40% of the country's total power generation with an installed capacity of about 18.52% of the total installed capacity in the country. Over the years, Company has consistently operated at much higher operating efficiency as compared to all India operating performance.

In order to sustain the impressive operational efficiency levels, the Company's strategy includes the following:

- Use of tools like Integrated Data Acquisition and Analysis

System (IDAAS) for on-site efficiency evaluation, Performance Evaluation of Power System Efficiencies (PEPSE) for verifying equipment and system efficiencies and gap identification, Steam path audit for estimation of solid particle erosion (SPE) and efficiency of steam turbine components, etc.

- Introduction and roll out of Reliability Centered Maintenance (RCM), including Risk Evaluation and Associated Practices (REAP).
- Enhancing quality of plant overhauls to target zero forced outage by design.
- Implementation of Overhauling Performance Index (OPI) for systematic and advanced planning of overhauls.
- Setting up a central repair facility in order to improve availability and reliability as well as to reduce downtime of the units.

**Project Management**

Your Company has adopted an integrated system for the planning, scheduling, monitoring and control of approved projects under implementation covering all aspects of the project, from concept to commissioning.

Going forward, state-of-the-art project management practices are being adopted by the Company to accelerate the pace of project implementation besides benefiting in terms of cost reduction. We have set up a state-of-the-art IT enabled Project Monitoring Centre as part of the Growth Management Centre (GMC), first of its kind in the sector, which provides milestone based project monitoring, real time network updation, real time video capture apart from latest video conferencing facility.

Your Company has effected standardization and bulk ordering of Super-critical units of 660 MW and 800 MW to reduce engineering time and thereby reduce project execution time. It will also benefit in terms of bulk discounts, spares inventory optimization, concurrent execution and above all development of additional manufacturing of super-critical technology based units in the country.

For some of its units, it has been awarded with prestigious IPMA awards. Your Company has set a new national benchmark with its Dadri Unit-5 (490 MW) started commercial operation in 39 months from zero date.

**Robust Financials**

Your Company has strong financial systems in place. It believes in prudent management of its financial resources and strives to reduce the cost of capital. Your Company has robust financials leading to strong cash flows which are being progressively deployed in generating assets. Your Company has a strong balance sheet coupled with low gearing and healthy coverage ratios which provides it the "Most Favoured Borrower" status. Company's ability to service debt liability remains strong due to certainty of revenues. Often, your Company has been able to raise debt at a lower cost as compared to its peers in power sector.

**Sound Corporate Governance**

The Corporate Governance philosophy of your Company is based on conscience, openness, fairness, professionalism and accountability. These qualities are ingrained in its value system and are reflected in its policies, procedures and systems. The Company not only believes in adopting best corporate governance systems but also in proactive inclusion of public interest in its corporate priorities and has developed extensive social outreach. In recognition of it's excellence in Corporate Governance, various national and international accolades have been conferred upon it in recent years.

**Human Resources**

Your Company has a highly talented team of committed professionals. The commitment of the employees is also reflected in terms of operational and financial parameters such as generation/ employee, sales/employee, value added/per employee, etc. Consistently declining Man/MW ratio demonstrates the increasing engagement of our employees. We have a pool of ~ 25,000 employees, who are fiercely proud of their organization. Over the years, your Company has been time and again ranked among the best employers in prestigious surveys. Company has a very low executive attrition rate.

**Long-term Power Purchase Agreements (PPAs) with customers & Payment Security Mechanism**

All the stations of your Company have PPAs with its customers. The entire output of Company's power stations has been contracted for under long-term PPAs. Due to existence of secured payment mechanism which is available upto year 2016, your Company has been able to realize its 100% dues for last nine consecutive years.

Beyond 2016, the sales are secured through supplementary agreements with the customers under which the customers have agreed to create a first charge on their own receivables in our favour and in the event of a payment default assign such receivables into an escrow account.

**Long Term Fuel Supply Agreements**

Your Company has signed coal supply agreements with various subsidiary coal companies of CIL for all the coal based stations which were under commercial operation as on 31st March 2009 and the annual quantity of coal contracted under these agreements is 124.90 million tonnes. In addition, bilateral agreements have been signed with SCCL & North Eastern Coalfields (NEC) for supply of 5.0 million tonnes and 0.3 million tonnes respectively. In addition, agreement is in place for supply of imported coal of approx. 12 MMT.

Your Company has signed long term Gas Supply Agreements (GSAs) with GAIL for supply of Administered Price Mechanism (APM) gas of 14.76 MMSCMD and 2.0 MMSCMD RLNG on firm basis and 0.5 MMSCMD RLNG on fallback basis. We have also tied up 0.82 MMSCMD of non-APM gas of ONGC and 2.30 MMSCMD of KG D6 gas of RIL. GSPA for another 2.16 MMSCMD KG D6 gas is expected to be signed with RIL shortly.

**Low Cost Producer**

Most of the stations of your Company are pit-head stations and even future projects are likely to be low cost as most of the expansion projects are pit-head which provides a cost advantage as compared to our peers. The low average tariff of your Company also ensures lower risk concerning power off-take in the sector.

**RISKS & CONCERNS**

To sustain its leadership position in the country and befitting its 'Maharatna' stature, your Company has drawn an ambitious Corporate Plan up to the year 2032 and expects to be 128 GW Company with diversified fuel base. To reduce its dependence on fossil fuels, your Company has forayed into hydro, nuclear and renewable energy sources which will also help in reducing the Green House Gas effect. The Company has also taken several steps to be an integrated major in the power sector. As a step in backward integration, your Company has entered into coal mining business and is also exploring the possibilities in energy value chain through participation in NELP blocks.

Your Company recognizes that risks are not only inherent to any business but are also dynamic in nature. Your Company is also susceptible to certain risks arising out of various activities undertaken in the normal course of its business. Your Company has adequate measures in place to overcome/manage these risks. These risks also provide the challenges and opportunities to view the business with a different perspective.

Your Company has an elaborate Enterprise Risk Management (ERM) framework in place. As part of implementation of the ERM framework, an Enterprise Risk Management Committee (ERMC) comprising of Executive Directors representing geographically spread regions and core functions of the Company is in place. ERMC has been entrusted with the responsibility to identify and review the risks and formulate action plans and strategies for risk mitigation on short-term as well as long-term basis. The ERMC has identified 25 key risk areas out of which following 7 have been classified as the top risks for the Company:

- Fuel supply risks
- Project implementation delays risks
- Risks related to coal mining and coal washeries
- Risks pertaining to hydro projects
- Acquisition of land related risks
- Environmental, pollution and other related regulatory norms including ash utilization related risks
- Risks related to recruitment and retention of skilled employees

These areas are being regularly monitored through reporting of key performance indicators of identified risks and exceptions with respect to risk assessment criteria are being reported to the top management. The ERMC meets every quarter to deliberate on strategies.

## COMPETITION

Due to the gap between demand and supply in the Indian power sector, there has generally been a stable market for power generation companies. Your Company is the largest power generating Company in the country having a market share of approximately 16.34% in terms of installed capacity and 25.32% in terms of national generation. The Maharashtra State Power Generation Company Ltd. with an installed capacity of 9996 MW *(Source – website of Mahagenco)* with market share of about 5% is the next largest entity.

The share of private sector capacity has increased to 54276 MW as of March 31, 2012 from 36761 MW as on March 31, 2011 and going forward, the same is expected to increase even faster as is evident from capacity added during XI plan so far. As far as generation is concerned, private sector has contributed to around 16% of total electricity generation in the year 2011-12 as compared to 14% in the previous year.

Government of India has taken several policy measures which have provided an enabling environment for private investors to participate in power sector. With the entry of private players in power sector, the competition is expected to intensify. However, the Company is geared to face any competition. With proven in-house engineering capabilities built in the past and wide ranging experience of project execution and with long-term PPAs of over 100000 MW in place, your Company is confident that it shall be able to retain leadership position in the industry. Further, the high operational efficiency enables your Company to sell power at competitive prices and achieve savings. Your Company believes that its monitoring and maintenance techniques offer it a competitive advantage in an industry where reliability and maintenance costs are a significant determinant of profitability.

### Internal Control

Your Company has robust internal systems and processes in place for smooth and efficient conduct of business and complies with relevant laws and regulations. A comprehensive delegation of power exists for smooth decision making which is being further reviewed to align it with changing business environment and speedier decision making. Elaborate guidelines for preparation of accounts are followed consistently for uniform compliance. In order to ensure that all checks and balances are in place and all internal control systems are in order, regular and exhaustive internal audits are conducted by experienced firms of Chartered Accountants in close co-ordination with the Company's own Internal Audit Department. Besides, the Company has two Committees of the Board viz. Audit Committee and Committee on Management Controls to keep a close watch on compliance with Internal Control Systems.

A well defined Internal Control Framework has been developed identifying key controls and supervision of operational efficiency of designed key controls by Internal Audit. The framework provides elaborate system of checks and balances based on self assessment as well as audit of controls conducted by Internal Audit at process level. Gap tracking report for operating efficiency of controls is reviewed by management regularly and action is taken to further strengthen the Internal Control System by further standardizing systems and procedures. The system presents a written assessment of effectiveness of Company's internal control over financial reporting by the process owners; project/office heads to facilitate certification by CEO and CFO and enhances reliability of assertion.

## FINANCIAL DISCUSSION AND ANALYSIS

The financial statements for the year ended 31st March 2012 have been prepared as per Revised Schedule VI, consequent to the notification of Revised Schedule VI under the Companies Act, 1956. Accordingly, the previous year figures have also been reclassified to conform to this year's classification. The adoption of revised schedule VI for previous year figures does not impact recognition and measurement principles followed for preparation of financial statements.

Reference to Note in the following paragraphs refers to the Notes to the Financial Statements for the year 2011-12 placed elsewhere in this report.

A detailed financial discussion and analysis on Financial Statements is furnished below:

## A Results from Operations

### 1 Total Revenue

| | | FY 2011-12 | FY 2010-11 | Change |
|---|---|---|---|---|
| | **Units of electricity sold (MUs)** | **206,682** | **206,582** | **-** |
| | **Revenue** | Amount in ₹ Crore | | |
| 1 | Energy Sales (Including electricity duty) | 61,430.85 | 54,982.56 | **12%** |
| 2 | Consultancy & other services | 142.69 | 169.45 | **-16%** |
| 3 | Energy internally consumed | 80.75 | 64.68 | **25%** |
| 4 | Interest from customers | 510.57 | 116.16 | **340%** |
| 5 | Revenue recognized from deferred foreign currency fluctuation liability | 0.16 | - | - |
| 6 | Provisions written back | 315.86 | 7.81 | **3944%** |
| | **Revenue from operations (gross)** | **62,480.88** | **55,340.66** | 13% |
| 7 | Less:- Electricity duty | 428.65 | 278.01 | **54%** |
| | **Revenue from operations (net)** | **62,052.23** | **55,062.65** | 13% |
| 8 | Other income | 2,778.42 | 2,344.65 | **19%** |
| 9 | **Total revenue** | **64,830.65** | **57,407.30** | **13%** |

The revenue of the Company comprises of income from sale of electricity (net of electricity duty), consultancy and other services, interest earned on investments such as term deposits, bonds (issued under One Time Settlement Scheme) and dividend income from subsidiaries and joint ventures and mutual funds. The total revenue for financial year 2011-12 is ₹ 64,830.65 crore as against ₹ 57,407.30 crore in the previous year registering an increase of 13%.

The major revenue comes from energy sales. The tariff for computing energy sales is determined in terms of Central Electricity Regulatory Commission Regulations as notified from time to time which are briefly discussed below:

**Tariffs for computation of Sale of Energy**

The Central Electricity Regulatory Commission (CERC) has issued Tariff Regulations for the period 2009-14 - Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, which is a balanced regulation for both consumers and investors. As per the Regulations, 2009, the tariff for supply of electricity comprises of two parts i.e. Capacity Charges for recovery of annual fixed cost based on plant availability and Energy Charges for recovery of fuel cost. In addition, Regulations also provide for the recovery of certain miscellaneous charges. The CERC sets tariff for each stage of a station in accordance with the notified tariff regulations/norms .

**Capacity Charge**

The capacity charge is allowed to be recovered in full if plant availability is at least 85%. If the availability of the plant is lower than 85%, the capacity charges are recovered on a pro-rata basis based on normative parameters as specified in the said regulations.

**Energy Charge**

Energy charges for the electricity sold are determined on the basis of landed cost of fuel applied on the quantity of fuel consumption derived on the basis of norms for heat rate, auxiliary consumption, specific oil consumption etc.

**Other Charges**

Besides the capacity charge and the energy charge, the other elements of tariff are:

- Cost of hedging in respect of interest and repayment of foreign currency loans and exchange rate fluctuations for the un-hedged portion of interest and repayment of foreign currency loans on a normative basis.
- The unscheduled interchange charge for the deviation in generation with respect to schedule, payable (or receivable) at rates linked to frequency prescribed in the regulation to bring grid discipline. The unscheduled interchange charge is payable (or receivable) at rates notified by the CERC from time to time.
- Deferred tax liability for the period upto 31.03.2009 on generation income is allowed to be recovered from the customers on materialization.

Each element of total revenue is discussed below:

**Energy sales**

Your Company sells electricity to bulk customers comprising, mainly, electricity utilities owned by State Governments. Sale of electricity is made pursuant to long-term Power Purchase Agreements (PPAs) entered into for 25 years in case of most of our coal-fired plants and for 15 years in case of most of gas-fired plants in line with the estimated average life of the plants. The actual lives of the stations are often longer and unless, customer ceases to draw power, contracts continue to be in force until they are formally extended, renewed or replaced. With the issuance of CERC Tariff Regulation 2009, the estimated average life of the gas stations is also estimated as 25 years. Hence, the long-term power purchase agreements for new gas stations hence forth will also be for the same period.

Income from energy sales (net of electricity duty) for the financial year 2011-12 was ₹ 61,002.20 crore which constituted 94% of the total revenue. The income from sale of electricity has increased by 12% over the previous year's income of ₹ 54,704.55 crore. The increase in sales is also largely attributable to pass-through of higher fuel cost. During the year there is an increase in the commercial capacity by 1,160 MW comprising of unit #1 of 500 MW of Simhadri Stage-II w.e.f. 16.09.2011 and unit #1 of 660 MW of Sipat Stage-I w.e.f. 01.10.2011. In addition, the commercial capacity of 990 MW comprising of unit #2 of 490 MW of NCTPP Stage-II and unit #1 of 500 MW of Korba Stage-III was also available for the entire financial year 2011-12 as compared to part of financial year 2010-11.

During the year, the CERC has issued provisional/final tariff orders w.e.f. 1st April 2009 for all stations except Talcher Thermal Power Station (TTPS) under Tariff Regulations, 2009. Beneficiaries are billed in accordance with the said provisional/final tariff orders except for TTPS where it is done on provisional basis, as per applicable tariff as on 31.03.2009. For the stations, where final tariff orders have been issued by CERC considering the year-wise projected capital expenditure for the tariff period 2009-14, sales has been recognised as ₹ 13,196.36 crore by truing up capital expenditure to arrive at the capacity charges. For all other stations, pending determination of station-wise final tariff by the CERC, sales have been provisionally recognized at ₹ 47,486.43 crore on the basis of principles enunciated in the Tariff Regulations, 2009-14 (refer Note 22(b) on Revenue from operations (gross)).

The above sales also include an amount of ₹ 34.39 crore being advance against depreciation which has been recognized as sales in accordance with accounting policy and revised CERC orders for 2004-09 (discussed in detail under the heading Deferred Revenue).

Sales include ₹ 547.78 crore pertaining to previous years recognized based on the orders issued by CERC/APTEL. Sales also include income tax recoverable from beneficiaries amounting to ₹ (-) 266.14 crore. Thus, the total sales pertaining to previous year net of tax payable amount to ₹ 281.64 crore (Note 22 (c&e) on Revenue from operations (gross)).

As per Tariff Regulations 2009, the deferred tax liability for the period up to 31st March 2009 whenever it materializes shall be recoverable directly from the beneficiaries. Accordingly, the deferred tax liability recoverable from beneficiaries has been computed and an amount of ₹ 37.77 crore has been included in sales (Note 22 (e)).

The average tariff for the financial year 2011-12 is ₹ 2.96/kWh as against ₹ 2.63/kWh in the previous year. The average tariff includes adjustments pertaining to previous years. If the impact of such adjustments were to be excluded, the average tariff would be ₹ 2.94/kWh in financial year 2011-12 as against ₹ 2.59/kWh in the previous year. The increase in the average tariff is primarily due to increase in energy charges by ₹ 0.28/kWh on account of increase in fuel cost and increased consumption of imported coal.

There has been 100% realization of the dues during the last nine years. All the beneficiaries have opened and are maintaining Letter of Credit equal to or more than 105% of average monthly billing as per One-Time Settlement Scheme (OTSS). In order to ensure prompt and early payment of bills for supply of energy to beneficiaries, your Company has formulated a rebate scheme by way of providing graded incentive for early payment based on the bill(s) raised on state utilities who are the member of NTPC's rebate scheme.

Under OTSS, tri-partite agreements are valid up to 31st October, 2016. For the period beyond October 2016, the supplies which will be made to state utilities, the same shall be covered by an escrow arrangement. The supplementary agreements have been signed with all state utilities which have a provision of keeping a first charge on their revenue streams for supplies made by your Company. Under the supplementary agreement, the state utilities have agreed to provide payment security through execution of the hypothecation agreement and the default escrow agreement. Further, this will be over and above the LC requirement of 105% of average monthly billing. Moreover, NTPC can resort to regulation / diversion of power supply to third party at the risk and cost of defaulting utilities in case of non-payment of dues.

**Consultancy and other services**

Accredited with an ISO 9001:2000 certification, the Consultancy Division of your Company undertakes consultancy and turnkey project contracts for domestic and international clients in the different phases of power plants viz. engineering, project management, construction management, operation and maintenance of power plants.

During the year, Consultancy Division posted an income of ₹ 141.82 crore as against ₹ 167.85 crore achieved in the last financial year. In the financial year 2011-12, it has recorded a profit of ₹ 30.74 crore as against ₹ 57.07 crore in the last financial year. A total of 39 orders valued at ₹ 168.00 crore were secured by the division during the year including 10 overseas assignments.

**Energy Internally Consumed**

Energy internally consumed relates to own consumption of power for construction works at station(s), township power consumption, etc. It is valued at variable cost of generation and is shown in sales with a debit to respective expense head under power charges. The increase in energy internally consumed is 25% over the previous year due to increase in fuel cost.

**Interest from Customers**

Interest from customers amounting to ₹ 510.57 crore is on account of issuance of provisional/final tariff orders by the CERC, for the tariff period 2004-09 and 2009-14.

**Provisions written back**

During the financial year 2011-12, the Company had written back provisions made in earlier years amounting to ₹ 315.86 crore in comparison to ₹ 7.81 crore in the financial year 2010-11. Provision written back includes a write back of ₹ 312.75 crore on account of tariff adjustment (Note 22d).

**Other Income**

'Other income' mainly comprises of income from bonds issued under One Time Settlement Scheme (OTSS), income from investment in bank term deposits, mutual funds, dividend on equity investment in joint ventures & subsidiaries and miscellaneous income.

'Other income' in financial year 2011-12 was ₹ 2,778.42 crore as compared to ₹ 2,344.65 crore in the financial year 2010-11. Broadly, the break-up of other income is as under:

₹ Crore

| | FY 2011-12 | FY 2010-11 |
|---|---|---|
| Interest on OTSS bonds /Loan to State Govt. | 702.10 | 850.61 |
| Income from investment in bank term deposits, mutual funds | 1,692.66 | 1,248.49 |
| Dividend from JVs and Subsidiaries/Interest from subsidiaries | 82.19 | 38.29 |
| Income earned on other heads such as hire charges, profit on disposal of assets, etc | 405.83 | 263.57 |
| **Total** | **2,882.78** | **2,400.96** |
| Less: Transfer to EDC/ development of coal mines | 43.11 | 24.97 |
| Less: Transfer to Deferred Foreign Currency Fluctuation Liability | 61.25 | 31.34 |
| **Net other income** | **2,778.42** | **2,344.65** |

Interest income from OTSS bonds (including loan to State Government) for financial year 2011-12 is ₹ 702.10 crore as compared to ₹ 850.61 crore in financial year 2010-11. The reduction in interest income to the extent of ₹ 148.51 crore is due to redemption of OTSS bonds amounting to ₹ 1,636.95 crore and repayment of loan in lieu of settlement of dues to State Government amounting to ₹ 143.59 crore. We have earned income of ₹ 1,692.66 crore during financial year 2011-12 on account of investments made in bank term deposits / mutual funds as against ₹ 1,248.49 crore earned last year. The income from investment in bank term deposits, mutual funds, etc. has registered a 36% increase over last financial year mainly due to increase in interest earnings due to high interest rate regime during the current year as compared to the previous year.

We have earned ₹ 79.16 crore as dividend from our investments in joint venture and subsidiary companies. Further, ₹ 3.03 crore has been earned as interest from loan of ₹ 17.14 crore (as on March 31, 2012) extended to Kanti Bijlee Utpadan Nigam Limited, one of our subsidiaries. Also, an amount of ₹ 405.83 crore has been earned from various other sources mainly consisting of miscellaneous income of ₹ 191.28 crore, Income tax refund ₹ 65.42 crore, interest from contractors ₹ 32.88 crore and interest on loans to employees ₹ 25.31 crore, etc.

## 2 Expenses

### 2.1 Expenses related to operations

| Year | FY 2011-12 | | FY 2010-11 | |
|---|---|---|---|---|
| **Commercial generation (MUs)** | **220,696** | | **220,379** | |
| **Expenses** | | | | |
| | ₹ Crore | ₹ per kWh | ₹ Crore | ₹ per kWh |
| Fuel | 41,635.46 | 1.89 | 35,373.78 | 1.61 |
| Employee benefits expense | 3,090.48 | 0.14 | 2,789.71 | 0.13 |
| Generation, administration and other expense | 3,588.79 | 0.16 | 4,926.28 | 0.22 |
| **Total** | **48,314.73** | **2.19** | **43,089.77** | **1.96** |

The expenditure incurred on fuel, employees, generation, administration and other expense for the financial year 2011-12 was ₹ 48,314.73 crore which is 12% more than the expenditure of ₹ 43,089.77 crore incurred during the previous year. In terms of expenses per unit of power produced, it was ₹ 2.19 per unit in financial year 2011-12 in comparison to ₹ 1.96 per unit in the previous year. This increase is mainly due to increase in cost of coal and increase in operation and maintenance expenses. The increase in commercial generation due to commercial operation of new units has resulted in an additional operational expenditure of ₹ 2,080.97 crore. A discussion on each of these components is given below:

#### 2.1.1 Fuel

Expenditure on fuel constituted 86% of the total expenditure relating to operations. Expenditure on fuel was ₹ 41,635.46 crore in financial year 2011-12 in comparison to ₹ 35,373.78 crore in financial year 2010-11 representing an increase of 18%. The break-up of fuel cost in percentage terms is as under:

| | FY 2011-12 | FY 2010-11 |
|---|---|---|
| **Fuel cost (₹ Crore)** | **41,635.46** | **35,373.78** |
| | **% break-up** | |
| Coal | 82% | 80% |
| Gas | 15% | 15% |
| Oil | 1% | 1% |
| Naphtha | 2% | 4% |

The higher fuel expenses were on account of increase in coal consumption due to commercial operation of new units of 1160 MW and also due to increase in landed cost of coal and consumption of greater proportion of costlier imported coal in financial year 2011-12 than in financial year 2010-11. During the year Coal Price Notification No. 222021/1/2008-CRC-UU dated 31.12.2011 issued by the Ministry of Coal proposed migration from UHV based to GCV based pricing of coal. This resulted in a steep increase in the coal prices, which was subsequently rolled back partially (keeping the pricing methodology as GCV based), on the face of stiff resistance from various beneficiaries of coal companies. Fuel cost also include an amount of ₹ 658.71 crore being the MPGATSVA tax for the previous years. During the financial year 2010-11, an amount of ₹ 251.07 crore was paid for earlier years on the same account. Also, there has been increase in the price of gas and oil during financial year 2011-12. Fuel cost per unit generated increased to ₹ 1.89 in financial year 2011-12 from ₹ 1.61 in financial year 2010-11.

The power plants of the Company use coal and natural gas as the primary fuels. Oil is used as a secondary fuel for coal-fired plants and naphtha as an alternate fuel in gas-fired plants. Under the tariff norms set by the CERC, your Company is allowed to pass on fuel charges through the tariff, provided the Company meets certain operating parameters. The Company purchases coal under the long term coal supply agreements with subsidiaries of Coal India Limited (CIL) and with Singareni Collieries Company Limited (SCCL). Based on the revised model Coal Supply Agreement (CSA) signed with CIL on May 29, 2009, we have CSAs in place for all our units commissioned before 31.03.2009. The CSAs are valid for 20 years and has a provision for review after every 5 years.

The annual quantity contracted under these CSAs signed with the subsidiary coal companies of CIL and SCCL is 124.90 million tonnes. For units commissioned after 31.03.2009 the coal is being supplied under an MOU, as per the allocation made by CEA/coal company.

Coal India has recently announced that it will be signing new fuel supply agreements for the units which are commissioned after 31.03.2009.

During the financial year 2011-12, coal based stations consumed 141.13 Million Tonnes of coal as against 136.95 Million Tonnes in the financial year 2010-11. This was including 11.89 Million Tonnes of coal which was imported as compared to 10.58 Million Tonnes imported in financial year 2010-11.

In order to ensure uninterrupted supply of coal to its power stations, your Company during financial year 2011-12 continued to source coal through e-auction and bilateral arrangements. A bilateral agreement has been reached with SCCL for supply of 5.0 million tonnes of C/D/E grade coal. These supplies are at a premium of ₹ 804/MT over SCCL's revised notified price of 15th April 2011. Further, a bilateral agreement has been reached with North Eastern Coalfields Limited (NEC) for supply of 0.300 million tonnes of A grade coal, beyond the annual linkage quantity, to Farakka at notified prices. Your Company participated in 5 e-auctions announced by various coal subsidiaries of CIL. Against these e-auctions 74,600 Tonnes of coal was allotted to the Company.

The Company sources gas domestically under an administered price mechanism regime. The main gas supplier is GAIL. Gas prices are fixed by the Ministry of Petroleum and Natural Gas (MoP&NG). 13.09 Million Metric Standard Cubic Meters per Day (MMSCMD) of gas was received during the financial year 2011-12, which includes 0.87 MMSCMD of spot gas and fall back gas and 1.90 MMSCMD of KG D6 gas. Gas received during 2010-11 was 13.77 MMSCMD.

The Company has Gas Sales and Transmission Contracts (GSTCs) with GAIL for supply of Administered Price Mechanism (APM) gas and Panna Mukta Tapti (PMT) gas to Anta, Auraiya, Dadri, Faridabad, Kawas & Gandhar for a combined quantity of 14.48 MMSCMD. The validity of the APM gas agreements is upto 6th July 2021 while the PMT gas agreements are valid upto 21st December 2019. As per the terms of these agreements, the gas price is regulated in terms of the Government pricing orders issued from time to time. The present applicable price of APM/PMT gas (at APM price) inclusive of royalty is US$ 4.2/ MMBtu as per GoI order dated 31.05.2010. The total quantity of APM & PMT gas supplied during 2011-12 was around 3148 MMSCM.

A long term agreement has been signed by your Company with GAIL for supply of 2.0 MMSCMD RLNG on firm basis and 0.5 MMSCMD on fallback basis for the NCR stations viz. Anta, Auraiya, Dadri & Faridabad valid upto 2019. The price is as declared on a monthly basis by Petronet LNG Ltd. as per the directives of GoI on "Pooled Price" basis. Around 541 MMSCM of RLNG was supplied by GAIL during the year 2011-12 under this agreement.

Your Company has tied up GoI allocated 0.82 MMSCMD non-APM gas of ONGC (through GAIL) for WR stations (Kawas & Gandhar). Supplies of this gas have commenced w.e.f. 18.11.2011. Around 86 MMSCM of non-APM gas was supplied by GAIL during the year 2011-12.

Government of India has allocated 4.46 MMSCMD of KG D6 gas for NTPC's NCR stations viz. Anta, Auraiya, Dadri & Faridabad. Gas Supply & Purchase Agreements (GSPAs) have been signed with Reliance Industries Ltd. (RIL) and its JV partner Niko and BPEAL for the supply of 2.30 MMSCMD of this gas which is valid till March 2014. MoP&NG has directed RIL and its JV partners for signing the GSPA for the balance quantity of 2.16 MMSCMD. The pricing of this gas is as decided by the Empowered Group of Ministers (EGoM) which at present is US$ 4.2 /MMBtu. The total quantity of KG D6 gas supplied during year 2011-12 was around 694 MMSCM.

To meet the shortfall in supply of Gas, your Company procures Spot RLNG on limited tender basis from domestic suppliers and on 'Single Offer' basis from public sector gas marketing companies. During the year 2011-12, twelve rounds of limited tendering and seven rounds on 'Single offer' basis have been conducted. The approximate delivered price for these supplies ranged between US$ 13.07/MMBtu to US$ 23.97/MMBtu which has been off-taken strictly in the ascending order of prices. These RLNG supplies are being contracted on 'Reasonable Endeavour' basis with no penalty on either party for short supply / short off-take. The supply of Spot RLNG was around 316 MMSCM during the year 2011-12.

Rajiv Gandhi Combined Cycle Power Project (RGCCP), Kerala generates power on naphtha as no gas supply is available. Besides RGCCP, other gas based stations also used naphtha depending upon the demand from customers and schedule from load dispatch centres. During the financial year 2011-12, 0.123 million MTs of naphtha was consumed as against 0.331 million MTs in the previous year.

### 2.1.2 Employees benefits expense

Employees benefits expense have increased by 11% from ₹ 2,789.71 crore in financial year 2010-11 to ₹ 3,090.48 crore in financial year 2011-12 of which ₹ 91.42 crore is attributable to additional commercial capacity. Employees' remuneration and benefits expenses include salaries and wages, bonuses, allowances, benefits, contribution to provident and other funds and welfare expenses. These expenses account for approximately 6% of our operational expenditure in financial year 2011-12.

There is an increase in the employee cost per unit of generation from ₹ 0.13 in the previous financial year to ₹ 0.14 in the current financial year. The reason for increase in employee cost is normal increments, increase in dearness allowance, etc.

### 2.1.3 Generation, Administration and Other Expenses

Generation, administration and other expenses consist primarily of repair and maintenance of buildings, plant and machinery, power and water charges, security, insurance, training and recruitment expenses and expenses for travel, communication and provisions. These expenses are approximately 7% of operational expenditure in financial year 2011-12. In absolute terms, these expenses decreased to ₹ 3,588.79 crore in financial year 2011-12 from ₹ 4,926.28 crore in financial year 2010-11 registering a decline of 27%. In financial year 2010-11, provision towards tariff adjustment for ₹ 1,526.45 crore was made and excluding this amount the expenses under these heads registered an increase of 6%. In terms of expenses per unit of generation, it is ₹ 0.16 in financial year 2011-12 as compared to ₹ 0.22 in previous financial year. An increase of ₹ 208.55 crore is attributable to addition of commercial capacity during financial year 2011-12.

Repair & maintenance expenses constitute 43% of total generation, administration and other expenses and have increased to ₹ 1,529.59 crore from ₹ 1,284.21 crore resulting in an increase of 19%.

During financial year 2011-12, the Company had made provisions amounting to ₹ 65.18 crore. Provision made during the year include a provision of ₹ 8.14 crore for the diminution in the value of investment in one of our subsidiary company – NTPC Hydro Ltd. Another provision of ₹ 41.19 crore is made towards demand made by MoP&NG for the cost of unfinished minimum work under exploration activities in the block AA-ONN-2003/2.

## 2.2 Finance Costs

The finance costs for the financial year 2011-12 were ₹ 1,711.64 crore in comparison to ₹ 1,420.96 crore in financial year 2010-11. The details of interest and finance charges are tabulated below:

₹ Crore

| | FY 2011-12 | FY 2010-11 |
|---|---|---|
| **Interest on:** | | |
| Borrowings | 3,558.47 | 2,850.78 |
| Others | 60.99 | 75.85 |
| **Total interest** | **3,619.46** | **2,926.63** |
| Other borrowing costs | 84.18 | 62.86 |
| Exchange differences regarded as adjustment to interest costs | 350.21 | 174.16 |
| **Total** | **4,053.85** | **3,163.65** |
| **Less: Adjustments and transfers** | | |
| Finance cost capitalised | 2,308.47 | 1,735.09 |
| Transfer to coal mines | 33.74 | 7.60 |
| **Net interest and finance charges** | **1,711.64** | **1,420.96** |

Interest on borrowings (including interest during construction) has increased by 25% over last financial year due to increase in long term borrowings (net of repayment) during the year by ₹ 5,213.46 crore. The average cost of borrowing has increased marginally to 7.7092% in financial year 2011-12 from 7.2985% in previous financial year mainly due to the repayment of loans carrying lower rate of interest and raising of new loans at comparatively higher rate of interest.

During the financial year 2011-12, an unfavourable exchange rate variation treated as adjustment to interest cost amounted to ₹ 350.21 crore as compared to ₹ 174.16 crore in financial year 2010-11, which is on account of depreciation of Indian Rupee against other foreign currencies namely US Dollar, Japanese Yen and Euro which contributed about 73%, 24% and 3% respectively in the foreign currency loan basket.

The 'Other borrowing costs' have increased by 34% from ₹ 62.86 crore in financial year 2010-11 to ₹ 84.18 crore in financial year 2011-12. The increase is mainly due to expenditure made for issue of USD 500 million Fixed Rate Senior Unsecured Notes under USD 1 billion MTN programme.

For the financial year 2011-12, an amount of ₹ 2,308.47 crore relating to finance costs of projects under construction was capitalized while the corresponding amount for the previous year was ₹ 1,735.09 crore. Thus, finance costs capitalized registered an increase of 33%. In addition, ₹ 33.74 crore has been capitalized in respect of development of coal mines as against ₹ 7.60 crore in previous year.

### 2.3 Depreciation and amortization expense

The depreciation and amortization expense charged to the profit and loss account during the year was ₹ 2,791.70 crore as compared to ₹ 2,485.69 crore in financial year 2010-11, registering an increase of 12%. This is due to increase in the gross block by ₹ 9,075.11 crore i.e. from ₹ 72,755.15 crore in the previous financial year to ₹ 81,830.26 crore in the current financial year. The increase in gross block is largely on account of increase in commercial capacity by 1160 MW resulting from additional capitalization amounting to ₹ 6,555.87 crore on account of unit #1 of 500 MW of Simhadri Stage-II and unit #1 of 660 MW of Sipat Stage-I. Further, depreciation for unit #2 of 490 MW of NCTPP Stage-II and unit #1 of 500 MW of Korba Stage III were charged pro-rata during financial year 2010-11 while depreciation on the same has been charged for the entire financial year 2011-12. The impact on depreciation from additional capitalization during the financial year 2011-12 is ₹ 308.13 crore.

As per the accounting policy of the Company, depreciation on the assets of the generation of electricity business is charged on straight line method following the rates and methodology notified by the CERC Tariff Regulations, 2009 in accordance with Section 616 (c) of the Companies Act, 1956 and depreciation on the assets of the coal mining, oil & gas exploration and consultancy business, is charged on straight line method following the rates specified in Schedule XIV of the Companies Act, 1956.

In case of certain assets, the Company has continued to charge higher depreciation based on technical assessment of useful life of those assets.

### 2.4 Prior Period Items (net)

Certain elements of income and expenditure have been charged to the profit and loss account relating to previous years. For the financial year 2011-12 a net amount of ₹ 313.58 crore was booked as prior period income whereas in the previous year a net amount of ₹ 1,638.72 crore was accounted as prior period income mainly on account of adjustment for depreciation written back and prior period sales consequent to change in depreciation policy. During the financial year 2011-12, an amount of ₹ (-) 341.83 crore is included as prior period expenditure on account of employee benefit expenses which is for reversal of excess provision for pension.

## 3 Profit Before Tax

The profit of the Company before tax is tabulated below:

₹ Crore

| | FY 2011-12 | FY 2010-11 |
|---|---|---|
| Total revenue | 64,830.65 | 57,407.30 |
| **Less:** | | |
| Expenditure related to operations | 48,314.73 | 43,089.77 |
| Finance cost | 1,711.64 | 1,420.96 |
| Depreciation | 2,791.70 | 2,485.69 |
| Prior period items | (313.58) | (1,638.72) |
| **Profit Before Tax** | 12,326.16 | 12,049.60 |

## 4 Tax Expense

The Company provides for current tax and deferred tax computed in accordance with provisions of Income Tax Act, 1961.

Under Tariff Regulations, 2009, w.e.f. 1st April 2009, income tax is recoverable on normative basis as return on equity following the applicable rate of tax for respective year. The actual income tax liability, if any (more or less than the normative) is to be borne by the Company. Accordingly, provision for current tax has been computed at the applicable rate of 32.445% for the financial year 2011-12.

The deferred tax liability related to the period upto 31st March 2009 is recoverable from customers as and when the same materializes. However, the deferred tax liability/asset for the period after 1st April, 2009 is to the account of the Company.

**Provision for Current tax**

A total provision of ₹ 3,068.48 crore has been made towards current tax for the year.

**Provision for Deferred Tax**

The deferred tax liability arisen during the year on account of timing difference is ₹ 33.95 crore and has been charged to Statement of Profit and Loss.

| | FY 2010-11 (₹ Crore) | | |
|---|---|---|---|
| | **Current tax** | **Deferred tax** | **Total** |
| Provision for FY 2010-11 | 2,497.30 | 133.24 | 2,630.54 |
| Adjust. for earlier years | 56.02 | 260.45 | 316.47 |
| Net prov. as per statement of P&L | 2,553.32 | 393.69 | 2,947.01 |

| | FY 2011-12 (₹ Crore) | | |
|---|---|---|---|
| | **Current tax** | **Deferred tax** | **Total** |
| Provision for FY 2011-12 | 2,913.64 | 327.85 | 3,241.49 |
| Adjust. for earlier years | 154.84 | (293.90) | (139.06) |
| Net prov. as per statement of P&L | 3,068.48 | 33.95 | 3,102.43 |

Net provision of tax for the financial year 2011-12 was ₹ 3,102.43 crore in comparison to ₹ 2,947.01 crore in the financial year 2010-11, an increase of ₹ 155.42 crore.

**5 Profit After Tax**

The profit of the Company after tax is tabulated below:

₹ Crore

| | **FY 2011-12** | **FY 2010-11** |
|---|---|---|
| **Profit Before Tax** | **12,326.16** | **12,049.60** |
| Less:- Tax as per statement of P&L | 3,102.43 | 2,947.01 |
| **Profit After Tax** | **9,223.73** | **9,102.59** |

The profit after tax has grown by 1.33%.

**6 Segment-wise Performance**

For the purpose of compiling segment-wise results, the business of the Company is segregated into 'Generation' and 'Other Business'. The Company's principal business is generation and sale of bulk power. Other business includes providing consultancy, project management and supervision, oil and gas exploration and coal mining.

The profit before tax and interest in the generation business for the financial year 2011-12 was ₹ 12,300.36 crore as against ₹ 12,083.33 crore for financial year 2010-11. The profit before tax from 'Other Business' represented by income from consultancy, coal mining and oil exploration was ₹ (-) 19.46 crore for financial year 2011-12 and ₹ 50.21 crore for the previous financial year registering a decline of 139%. The decline is mainly on account of reduction in profit from consultancy business from ₹ 57.07 crore in financial year 2010-11 to ₹ 30.74 crore in financial year 2011-12 and due to provision of ₹ 41.19 crore towards demand by MoP&NG for the cost of unfinished minimum work under exploration activities in the block AA-ONN-2003/2.

**B. Financial Position**

Assets and liabilities in the Balance Sheet have been classified under head 'Current' and 'Non Current' categories consequent to adoption of revised Schedule VI to the Companies Act, 1956.

The items of the Balance Sheet are as under:

**1 Net worth**

The net worth of the Company at the end of financial year 2011-12 increased to ₹ 73,291.17 crore from ₹ 67,892.25 crore in the previous year registering an increase of 8% due to retained earnings. Correspondingly, the book value per share also increased from ₹ 82.34 to ₹ 88.89.

**2 Deferred Revenue**

Deferred Revenue (Note 4) consists of two items as under:

₹ Crore

| **On Account of** | **As at March 31** | |
|---|---|---|
| | **2012** | **2011** |
| Advance Against Depreciation (AAD) | 718.47 | 792.05 |
| Income from foreign currency fluctuation | 711.59 | 62.43 |
| **Total** | **1,430.06** | **854.48** |

The amount of AAD required to meet the shortfall in the component of depreciation in revenue over the depreciation to be charged in accounts in future years, has been assessed station-wise and wherever the balance in AAD is in excess of the shortfall so determined, the excess balance has been recognized as sales during the year. In line with the above and significant accounting policy number L.2 (Note 1) and the revised CERC Orders for 2004-09, an amount of ₹ 34.39 crore has been recognized as sales during the year after reversal/deferment of revenue of ₹ 39.19 crore during the year from AAD and included in energy sales.

Foreign exchange rate variation (FERV) on foreign currency loans and interest thereon is recoverable from/payable to the customers in line with the Tariff Regulations. Keeping in view the opinion of the Expert Advisory Committee (EAC) of the Institute of Chartered Accountants of India (ICAI), the Company is recognizing Deferred foreign currency fluctuation asset by corresponding credit to Deferred income from foreign currency fluctuation in respect of the FERV on foreign currency loans or interest thereon adjusted in the cost of fixed assets, which is recoverable from the customers in future years as provided in accounting policy no. L.3 (Note 1). This amount will be recognized as revenue corresponding to the depreciation charge in future years. The increase in amount for the year is mainly on account of depreciation in value of Indian Rupee vis-à-vis other currencies.

**3 Non-Current and Current Liabilities**

Details of non-current and current liabilities are discussed below:

**a. Borrowings:**

Total borrowings as at March 31, 2012 were ₹ 50,279.37 crore in comparison to ₹ 43,188.24 crore as at March 31, 2011. Consequent upon revision of Schedule VI, current maturities out of long term borrowings have been shown under current liabilities. Details of the total borrowings are as under:

₹ Crore

| | As at March 31 | |
|---|---|---|
| | **2012** | **2011** |
| Long term borrowings in non-current liabilities (Note 5) | 45,908.27 | 39,735.68 |
| Current maturities of long term borrowings included in other current liabilities (Note 10) | 4,371.10 | 3,452.56 |
| Total Borrowings | 50,279.37 | 43,188.24 |

A summary of the borrowings outstanding is given below:

₹ Crore

| | Non-Current Liabilities | | Other Current Liabilities | | Total Borrowings | | % Change |
|---|---|---|---|---|---|---|---|
| | **2012** | **2011** | **2012** | **2011** | **2012** | **2011** | |
| **Secured** | | | | | | | |
| Bonds | 9057.00 | 8920.00 | 693.00 | 650.00 | 9750.00 | 9570.00 | 2% |
| Foreign currency term loans | 99.09 | 256.56 | 186.38 | 157.91 | 285.47 | 414.47 | -31% |
| Other | 0.21 | 0.65 | 0.43 | 0.56 | 0.64 | 1.21 | -47% |
| **Sub-total** | **9156.30** | **9177.21** | **879.81** | **808.47** | **10036.11** | **9985.68** | **1%** |
| **Unsecured** | | | | | | | |
| Fixed deposits | 0.47 | 12.39 | 11.79 | 0.87 | 12.26 | 13.26 | -8% |
| Foreign currency bonds / notes | 4130.40 | 1356.90 | - | - | 4130.40 | 1356.90 | 204% |
| Foreign currency loans | 8799.15 | 8151.04 | 1049.32 | 768.55 | 9848.47 | 8919.59 | 10% |
| Rupee term loans | 23821.95 | 21038.14 | 2430.18 | 1874.67 | 26252.13 | 22912.81 | 15% |
| **Sub-total** | **36751.97** | **30558.47** | **3491.29** | **2644.09** | **40243.26** | **33202.56** | **21%** |
| **Total** | **45908.27** | **39735.68** | **4371.10** | **3452.56** | **50279.37** | **43188.24** | **16%** |

Over the last financial year, total borrowings have increased by 16%. Debt amounting to ₹ 8,736.39 crore was raised during the year 2011-12. The amount raised through term loans, bonds and foreign currency borrowings was used for capital expenditure and refinancing, while amount raised through public deposits have been used for working capital purposes. The domestic debt funds raised during the year included term loans amounting to ₹ 5,214.00 crore and bonds aggregating to ₹ 830.00 crore. Details in respect of proceeds and repayment of borrowings are as under:

₹ Crore

| **Source** | **Debt Raised & Utilised** | **Repayment** | **Net** |
|---|---|---|---|
| Term loan | 5,214.00 | 1,874.68 | 3,339.32 |
| Bonds | 830.00 | 650.00 | 180.00 |
| Foreign currency debts | 2,692.39 | 996.68 | 1,695.71 |
| Others (Public deposits/finance lease) | - | 1.57 | -1.57 |
| **Total** | **8,736.39** | **3,522.93** | **5,213.46** |
| FERV on FC borrowings | | | 1,877.67 |
| **Total** | | | **7,091.13** |

Banks and domestic financial institutions continued to show interest in extending term loans for financing the on-going capacity expansion plans. During the year, fresh agreements for term loans aggregating ₹ 13,500.00 crore were entered into including the loan agreement of ₹ 10,000.00 crore executed with State Bank of India, being the largest ever loan extended by the bank to any corporate. The cumulative amount of domestic loans tied up till March 31, 2012 is ₹ 59,799.35 crore.

During the year 2011-12, the Company issued bonds amounting to ₹ 330.00 crore to Army Group Insurance Fund (AGIF) under the funding line extended by AGIF for ₹ 1,200.00 crore. So far, ₹ 855.00 crore of bonds have been placed with AGIF. Further, bonds amounting to ₹ 500.00 crore were issued to eligible institutions.

During the financial year 2011-12, the Company issued USD 500 million Senior Unsecured Fixed Rate Notes under its USD One Billion MTN programme and tied up two term loan facilities, one for USD 100 million and the other for EUR 72.5 million for financing its capital expenditure. The two term loans shall be drawn in the financial year 2012-13. The EUR 72.5 million loan has been extended by KfW, Germany and is backed by Euler Hermes cover.

Your Company has redeemed bonds amounting to ₹ 650.00 crore during the year. Repayments amounting to ₹ 1,874.68 crore were made under various term loans extended by Indian Banks and Indian Financial Institutions. Repayment of ₹ 996.68 crore was made during the year towards foreign currency loans. Public Deposits for ₹ 1.00 crore were also discharged during the year.

The Company continues to enjoy highest credit ratings for its bonds programme, borrowings from banks as well as fixed deposits. The rating assigned by CRISIL, ICRA and CARE for rupee bonds program as well as term loans continue to be 'CRISIL AAA', 'ICRA AAA' and 'CARE AAA' respectively. The rating assigned by CRISIL for Company's fixed deposit schemes is 'FAAA'.

The Company's current foreign currency issuer ratings are at par with the sovereign ratings of India. The rating assigned by Fitch and S&P is 'BBB-/negative'.

The debt to equity ratio at the end of financial year 2011-12 of the Company increased to 0.69 from 0.64 at the end the previous financial year. The Debt Service Coverage Ratio (DSCR) for the financial year is 3.21 and Interest Service Coverage Ratio (ISCR) for financial year 2011-12 is 9.81.

Formula used for computation of coverage ratios DSCR = Earnings before Interest, Depreciation and Tax/ (Interest net off transferred to expenditure during construction + Principal repayment) and ISCR = Earnings before Interest, Depreciation and Tax/(Interest net off transferred to expenditure during construction).

The maturity profile of the borrowings by the Company is as under:

₹ Crore

| | **Rupee Loans incl. Bonds & PDS** | **Foreign Currency Loans** | **Total** |
|---|---|---|---|
| Within 1 year | 3,135.40 | 1,235.70 | 4,371.10 |
| 2 – 3 years | 7,723.32 | 1,758.39 | 9,481.71 |
| 4 – 5 years | 7,376.79 | 3,717.76 | 11,094.55 |
| 6 – 10 years | 13,595.28 | 5,662.66 | 19,257.94 |
| Beyond 10 years | 4,184.24 | 1,889.83 | 6,074.07 |
| **Total** | **36,015.03** | **14,264.34** | **50,279.37** |

**b. Deferred Tax Liabilities (net):**

Deferred tax liabilities (net) (Note 6) have increased from ₹ 602.95 crore as at 31.03.2011 to ₹ 636.90 crore as at 31.03.2012. These have increased mainly due to timing difference of depreciation and other expenses in accounts and as per allowability under the Income Tax Act.

**c. Other Long Term Liabilities:**

Other long term liabilities (Note 7) primarily consist of liabilities for capital expenditure and deferred foreign currency fluctuation liability. Liabilities for capital expenditure has decreased from ₹ 1,941.94 crore as at 31.03.2011 to ₹ 1,589.28 crore as at 31.03.2012. Certain liabilities for capital expenditure in respect of some of the stations have become due for payment within 12 months from the reporting date and the same have been classified under Other Current Liabilities (Note 10) in 2011-12.

Further, as per the opinion of the Expert Advisory Committee of the ICAI pronounced in earlier years, exchange differences on account of translation/settlement of foreign currency monetary items which are payable to the beneficiaries in subsequent periods as per CERC tariff regulations are accounted as 'Deferred Foreign Currency Fluctuation Liability'. Accordingly, an amount of ₹ 134.43 crore has been accounted towards the same upto 31st March 2012 in line with accounting policy no. L.3.

**d. Long Term Provisions:**

Long term provisions (Note 8) consist of amounts provided towards employees benefits as per actuarial valuations which are expected to be settled beyond a period of 12 months from the Balance Sheet date. Long term provision as at 31.03.2012 increased to ₹ 603.70 crore from ₹ 561.90 crore as at 31.03.2011.

**e. Current Liabilities:**

The current liabilities as at March 31, 2012 were ₹ 17,238.64 crore as against ₹ 14,041.04 crore as at the end of previous year. The break-up of current liabilities is as under:

₹ Crore

| | As at March 31 | | y-o-y Change | % Change |
|---|---|---|---|---|
| | 2012 | 2011 | | |
| Trade payables (Note-9) | 4,468.07 | 4,088.01 | 380.06 | 9% |
| Other current liabilities (Note-10) | 9,554.95 | 7,762.50 | 1,792.45 | 23% |
| Short term provision (Note-11) | 3,215.62 | 2,190.53 | 1,025.09 | 47% |
| **Total** | **17,238.64** | **14,041.04** | **3,197.60** | **23%** |

The Trade payables mainly comprise of amount payable towards supply of goods & services, deposits & retention money from contractors. Other current liabilities mainly comprise of current maturities of long term borrowings, payable towards capital expenditure and other statutory liabilities. The details of other current liabilities are as under:

₹ Crore

| | As at March 31 | |
|---|---|---|
| | 2012 | 2011 |
| Other current liabilities | 9,554.95 | 7,762.50 |
| Less: Current maturities of long term borrowings, Finance lease obligations | 4,371.10 | 3,452.56 |
| Other current liabilities (net) | 5,183.85 | 4,309.94 |

Other current liabilities (net) have increased mainly due to increase in amount payable for capital expenditure on account of performance and guarantee test results of SG/TG at some of the stations which has become due as well as increase in liability for capital expenditure in respect of stations under construction.

Short-term provisions mainly consists of provisions for employee benefits, provision for proposed dividend and taxes thereon, provision for obligations incidental to land acquisition and provision for tariff adjustment. As at 31.03.2012, your Company had outstanding short term provisions of ₹ 3,215.62 crore as against ₹ 2,190.53 crore as at 31.03.2011. The increase is due to transfer of provision for tariff adjustment as at 31.03.2012 amounting to ₹1,213.70 crore to short-term provisions while the corresponding amount in the previous year amounting to ₹1,526.45 crore has been netted off with 'unbilled revenues' under other current assets (Note 21).

Provision for tariff adjustment was created in the books of accounts as a prudent and conservative policy in the year 2010-11, to the extent of the impact of the issues challenged by CERC in Supreme Court on the APTEL's judgment. The Appeal is still pending for disposal and the CERC tariff orders are subject to the outcome of this appeal.

On comparable basis, after including provision for tariff adjustment, short-term provisions for previous year amount to ₹ 3,716.98 crore.

The reduction in short-term provisions is mainly due to lower provisions for final dividend and dividend distribution tax thereon in 2011-12 at ₹ 475.10 crore which was at ₹ 763.56 crore in the previous financial year. The proposed final dividend for the year 2011-12 is 5% as compared to 8% in the previous year.

During the year 2010-11, the CERC issued draft notification of proposed amendment to Tariff Regulations, 2009 for upfront truing up of capital cost as at 01.04.2009, with regard to undischarged liability for tariff determination. As a measure of abundant precaution, your Company had provided ₹ 263.59 crore as provision for tariff adjustment. Upon issuance of second amendment to the Tariff Regulations, 2009 in July 2011, which stated that the undischarged liabilities would not be considered for arriving at capital cost, this provision has been reversed as the corresponding impact has been considered in the sales for the year. In addition, ₹ 49.16 crore has been written back from the provision for tariff adjustment consequent upon issue of tariff order under Regulations, 2009 for some of the stations. Thus, the net write-back of provision for tariff adjustments during the year 2011-12 amounts to ₹ 312.75 crore.

Further, Other provisions include ₹ 41.19 crore (previous year ₹ Nil) towards cost of unfinished minimum work programme demanded by the Ministry of Petroleum and Natural Gas (MoP&NG) in relation to block AA-ONN-2003/2. [Refer Note 44 b) ii)].

An amount of ₹ 341.83 crore was written back out of provisions for employee benefits during the year on review of the liability towards employee pension benefits.

**4 Fixed Assets**

During the year gross block of the Company increased by 12% over the previous year by ₹ 9,075.11 crore. This was mainly on account of capitalization of one 500 MW unit of Simhadri- II and one 660 MW unit of Sipat-I. Correspondingly, net block increased by 15%. Due to increase in construction activities, there was an addition of ₹ 6,332.53 crore in the capital work-in-progress registering an increase of 18% over the last year.

₹ Crore

| | As at March 31 | | % Change |
|---|---|---|---|
| | 2012 | 2011 | |
| Tangible assets | 81,511.59 | 72,458.72 | 12% |
| Intangible assets | 318.67 | 296.43 | 8% |
| Total gross block | 81,830.26 | 72,755.15 | 12% |
| Total net block | 45,258.36 | 39,235.96 | 15% |
| Capital work-in -progress and Intangible assets under development | 41,827.86 | 35,495.33 | 18% |

**5 Investments**

As per revised Schedule VI, investments have been bifurcated into non-current investments and current investments and discussed accordingly:

₹ Crore

| | As at March 31 | | % Change |
|---|---|---|---|
| | 2012 | 2011 | |
| Non-current investments (Note 14) | 9,583.92 | 10,532.84 | -9% |
| Current investments (Note 16) | 1,622.46 | 1,812.00 | -10% |
| **Total** | **11,206.38** | **12,344.84** | **-9%** |

Investments mainly consist of bonds issued under One Time Settlement Scheme (OTSS) and equity participation in joint ventures and subsidiaries. During the financial year 2011-12, the investments decreased by about 9% mainly due to redemption of bonds. Broadly the break-up of investments is as follows:

₹ Crore

| | As at March 31 | |
|---|---|---|
| | 2012 | 2011 |
| Bonds issued under One Time Settlement Scheme (OTSS Bonds) | 6,533.34 | 8,170.29 |
| Investments in Joint Ventures* | 3,672.93 | 3,133.63 |
| Investment in Subsidiaries | 1,000.11 | 865.88 |
| Investment in Mutual Funds | - | 175.04 |
| **Total investments** | **11,206.38** | **12,344.84** |

*Includes investment in PTC Limited.

OTSS Bonds account for 58% of total investments at the end of financial year 2011-12. These bonds carry a 'call option' giving right to SEBs to redeem the bonds before scheduled redemption date. However, no call option was exercised by any SEB during the financial year 2011-12. During the year, OTSS Bonds of ₹ 1,636.95 crore were redeemed as per scheduled redemption.

Your Company invested ₹ 539.30 crore in following joint venture companies during the year:

(₹ Crore)

| Name of JV Co. | Amount |
|---|---|
| NTPC-Tamil Nadu Energy Co. Ltd. | 258.00 |
| Ratnagiri Gas & Power Private Ltd. | 84.00 |
| Aravali Power Company Private Ltd. | 112.03 |
| Meja Urja Nigam Private Limited | 28.00 |
| Anushakti Vidhyut Nigam Ltd. | 0.05 |
| Pan-Asian Renewables Private Ltd. | 0.50 |
| Trincomalee Power Company Ltd. | 6.72 |
| Nabinagar Power Generating Co. Pvt. Ltd. | 50.00 |
| **Total** | **539.30** |

The Company also invested ₹ 134.23 crore in subsidiaries during the year. The details are:

₹ Crore

| Name of Subsidiary | Amount |
|---|---|
| Kanti Bijlee Utpadan Nigam Ltd. | 135.27 |
| NTPC Hydro Ltd. | 7.10 |
| Total investment during the year | 142.37 |
| Less: Provision for permanent diminution in the value of investment in NHL | 8.14 |
| **Total** | **134.23** |

The Board of your Company has accorded in-principle approval for merger of NHL with NTPC subject to the approval of the Government of India/Cabinet. Ministry of Power has also conveyed its approval for the merger. Accordingly, following the procedure prescribed under the Companies Act, 1956, NHL will be merged with NTPC. An amount of ₹ 8.14 crore, being the accumulated loss in the subsidiary company NHL, has been provided for towards permanent diminution in the value of investment.

**6 Long Term Loans and Advances**

Long term loans and advances (Note 15) include those loans and advances which are expected to be realized after a period of 12 months from Balance Sheet date. Total long term loans and advances as at 31.03.2012 were ₹ 3,883.26 crore as against ₹ 3,901.96 crore as at 31.03.2011. Long term loans and advances consist of advances for capital expenditure and other advances to contractors, security deposits and loans to employees. They also include a loan of ₹ 335.04 crore (previous year ₹ 478.63 crore) to the Govt. of Delhi subsequent to conversion of the dues of Delhi Vidyut Board under the One-Time-Settlement Scheme. The Govt. of Delhi pays 8.5% tax-free interest on this loan.

**7 Other Non-Current Assets**

As per the opinion of the Expert Advisory Committee of the ICAI (referred at para 3c above), exchange differences on account of translation of foreign currency borrowings which are recoverable from the beneficiaries in subsequent periods as per CERC tariff regulations are accounted as 'deferred foreign currency fluctuation asset'. Accordingly, an amount of ₹ 1,371.88 crore has been accounted under this head upto 31.03.2012 (Previous year ₹ 459.15 crore) which is disclosed under Other non-current assets (Note 15A). Deferred foreign currency fluctuation asset has increased due to depreciation in value of Indian Rupee vis-à-vis other currencies in loan basket.

## 8 Current Assets

The current assets as at March 31, 2012 and March 31, 2011 and the changes therein are as follows:

₹ Crore

| Current Assets | As at March 31 | | Y-o-Y Change Amount | % Change |
|---|---|---|---|---|
| | 2012 | 2011 | | |
| Current investments (Note 16) | 1,622.46 | 1,812.00 | -189.54 | -10% |
| Inventories (Note 17) | 3,702.85 | 3,639.12 | 63.73 | 2% |
| Trade receivables (Note 18) | 5,832.51 | 1,434.96 | 4,397.55 | 306% |
| Cash & bank balances (Note 19) | 16,146.11 | 16,185.26 | -39.15 | - |
| Short term loans & advances (Note 20) | 2,754.73 | 3,777.86 | -1,023.13 | -27% |
| Other current assets (Note 21) | 8,853.86 | 9,264.44 | -410.58 | -4% |
| **Total current assets** | **38,912.52** | **36,113.64** | **2,798.88** | **8%** |

A major portion of current assets comprised of cash and bank balances. As at March 31, 2012, cash and bank balances stood at ₹ 16,146.11 crore being 41% of the total current assets in comparison to ₹ 16,185.26 crore as at March 31, 2011 which was 45% of the total current assets as at that date. Of this, ₹ 15,657.98 crore was kept as term deposits with banks as at March 31, 2012 against ₹ 15,847.23 crore as at March 31, 2011.

### Trade Receivables

Trade receivables as at 31.03.2012 are ₹ 5,832.51 crore as against ₹ 1,434.96 crore as at 31.03.2011. The trade receivables collection period is 35 days as against 10 days as at 31.03.2011. Trade receivables before provision for bad and doubtful debts stand at ₹ 6,673.21 crore as at 31.03.2012 and ₹ 2,275.80 crore as at 31.03.2011. The trade receivable collection period is 40 days as at 31.03.2012 as against 15 days as at 31.03.2011 before considering the provision for bad and doubtful debts.

Keeping in view the requirements of revised Schedule VI to the Companies Act, 1956, unbilled revenues have been included under 'Other current assets' which were included in 'Sundry debtors' as at 31.03.2011. The amount of trade receivables considering the unbilled revenues and provisions for bad and doubtful debts/tariff adjustment amounts to ₹ 12,289.31 crore as at 31.03.2012 as against ₹ 10,330.80 crore as at 31.03.2011 which represent the collection period of 73 days as at 31.03.2012 and 69 days as at 31.03.2011 respectively.

### Short term loans and advances

Short term loans and advances as at 31.03.2012 comprise of advance tax and tax deducted at source (net of provisions), advances to contractors and suppliers including materials issued on loan and short term advances to employees. Short term loans and advances have decreased from ₹ 3,777.86 crore in 2010-11 to ₹ 2,754.73 crore in 2011-12 mainly on account of income tax refund on the basis of summary assessment amounting to ₹ 1,071.85 crore during 2011-12.

### Other Current Assets

Other current assets excluding unbilled revenue (explained above) are as under:

₹ Crore

| | As at March 31 | |
|---|---|---|
| | 2012 | 2011 |
| Other current assets as per Note 21 | 8,853.86 | 9,264.44 |
| Less: Unbilled revenue | 5,616.10 | 6,528.55 |
| Net Other current assets | 3,237.76 | 2,735.89 |

Other current assets include interest accrued on OTSS Bonds, term deposits with banks, other deposits, claims recoverable and security deposits. Claims recoverable include ₹ 766.12 crore (previous year ₹ 748.82 crore) recoverable towards the cost incurred upto 31st March 2012 in respect of Loharinag Pala Hydro Power Project which has been discontinued on advice of Ministry of Power, Government of India. Claims recoverable also include claims against railways ₹ 852.28 crore (previous year ₹ 781.35 crore) and claims against insurance companies and suppliers amounting to ₹ 216.89 crore (previous year ₹ 123.20 crore).

### Inventories

Inventories as at March 31, 2012 were ₹ 3,702.85 crore (being 10% of current assets) as against ₹ 3,639.12 crore as at March 31, 2011. Inventories mainly comprise of components and spares and coal which are maintained for operating plants. Components and spares were ₹ 1,899.57 crore as against ₹ 1,741.25 crore in previous year end. Coal inventory amounted to ₹ 1,096.14 crore as at 31.03.2012 against ₹ 1,255.50 crore in previous year.

## 9 Cash flows

Cash, cash equivalents and cash flows on various activities for the past five years are tabulated below:

**For the financial year ended March 31** ₹ Crore

| | 2012 | 2011 | 2010 | 2009 | 2008 |
|---|---|---|---|---|---|
| **Opening cash & cash equivalents** | **16,185** | **14,460** | **16,272** | **14,933** | **13,315** |
| Net cash from operating activities | 13,867 | 11,085 | 10,611 | 9,688 | 9,786 |
| Net cash used in investing activities | -11,037 | -7,656 | -10,514 | -7,500 | -5,819 |
| Net cash flow from financing activities | -2,869 | -1,704 | -1,909 | -849 | -2,349 |
| Change in cash and cash equivalents | -39 | 1,725 | -1,812 | 1,339 | 1,618 |
| **Closing cash & cash equivalents** | **16,146** | **16,185** | **14,460** | **16,272** | **14,933** |

Note: figures rounded off to nearest ₹ crore

Net cash used in investing activities increased by 44% and was ₹ 11,037 crore in financial year 2011-12 as compared to ₹ 7,656 crore in the previous year. Cash flows on investing activities arise from expenditure on setting up power projects, investment of surplus cash in various securities, investments in joint ventures and subsidiaries. Cash invested on purchase of Fixed Assets increased by 18% i.e. from ₹ 11,115 crore in financial year 2010-11 to ₹ 13,136 crore in financial year 2011-12. During the year, there was sale of non-trade investments and redemption of OTSS Bonds. Cash flows from sale of investment (net of purchase of investment) was ₹ 1,804 crore. Cash generated from investing activities also reduced due to reduction in interest amount on OTSS bonds on account of redemption of such bonds during the year.

During the year, out of cash raised from operating activities the Company paid net ₹ 2,869 crore of cash for servicing financing activities as against ₹ 1,704 crore in the previous year. During the financial year 2011-12 the Company had an inflow of ₹ 8,736 crore from long term borrowings as against ₹ 9,046 crore in the previous year. Cash used for repayment of long term borrowings during the financial year 2011-12 was ₹ 3,523 crore as against ₹ 3,999 crore repaid in the previous year. Cash used for paying dividend and the tax thereon was ₹ 4,115 crore.

**BUSINESS AND FINANCIAL REVIEW OF SUBSIDIARY COMPANIES**

Your Company has five subsidiary companies as at 31.03.2012 out of which three are wholly owned.

The detailed financial statements of the subsidiaries are included elsewhere in this Annual Report. The performance of the five subsidiaries is briefly discussed here:

**(a) NTPC Electric Supply Company Limited (NESCL)**

The Company was formed on August 21, 2002 as a wholly owned subsidiary company of NTPC with an objective to make a foray in the business of distribution and supply of electrical energy as a sequel to reforms initiated in the power sector. Presently, the Company is undertaking the following activities:

The Company has been involved in the execution of work on turnkey basis under the government's rural electrification program namely 'Rajiv Gandhi Grameen Vidyuti-Karan Yojana' in 29 districts in 5 states, namely, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha and West Bengal. During the year 2011-12, 273 Un-electrified/De-electrified (UE/DE) villages and 3,582 Partially electrified (PE) villages were made ready and 2.61 Lakh Below Poverty Line (BPL) Rural house hold connections were provided. Cumulative progress till 31.03.2012 is 14,706 UE/DE villages, 14,861 PE villages and 25.84 lakh BPL connections.

The Company is also involved in supplying electricity in 5 Km area around NTPC power plants under a Govt. of India scheme.

**Other key on-going assignments of NESCL**

a. Project management consultancy work for setting up 220 kV substations, switch-yard and associated facilities at BPCL Kochi Refinery obtained through competitive bidding process.
b. Turnkey execution of 2x20 MVA, 66/11 kV sub station and augmentation of 66/11 kV sub station with new 1x30MVA power transformer for Union Territory of Chandigarh.
c. Turnkey execution of work of power supply arrangement for all the coal mining projects of NTPC.

The financial highlights of the Company are as under:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity | 0.08 | 0.08 |
| Gross Income | 55.67 | 64.05 |
| Profit /(Loss) After Tax | 7.66 | 6.01 |
| Earnings Per Share (Basic) (in ₹) | 946.59 | 743.42 |

The Company has proposed a final dividend of ₹ 5 crore for the year 2011-12.

**Joint venture of NESCL**

The Company has made a foray into the distribution sector by formation of a JV Company KINESCO Power & Utility Pvt. Ltd. With Kerala Industrial Infrastructure Development Corporation (KINFRA) to take up retail distribution of power in various Industrial Parks developed by KINFRA in Kerala and other SEZs and industrial areas. The new JV Company has taken over the operations from 1st February 2010.

As at 31.03.2012, the paid up share capital of the Company is ₹ 0.10 crore and ₹ 0.26 crore of share application money is pending for allotment.

**(b) NTPC Vidyut Vyapar Nigam Limited (NVVN)**

The Company was formed on November 1, 2002 as a wholly owned subsidiary company of NTPC with an objective to undertake business of sale and purchase of electric power, to effectively utilise installed capacity and thus enabling reduction in the cost of power. During the year 2011-12, the Company transacted business with various state electricity boards spread all over the country and traded 8,200 MUs of electricity in comparison to 6,933 MUs traded in the previous year which amounts to an increase of 18% over the previous year.

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 upto 1000 MW as a part of Phase-I (2009-2013) of Jawaharlal Nehru National Solar Mission (JNNSM) and for sale of such power to Distribution Utilities after bundling with equivalent megawatt of the unallocated power at the disposal of Govt. of India from NTPC coal power stations. So far, 173 MW of solar PV has been commissioned. Further, 861 MW Solar Projects are scheduled for commissioning during 2012-13 and 2013-14.

NVVN has also been designated as the nodal agency for cross border power trading with Bhutan and Bangladesh. NVVN has signed a Power Purchase Agreement (PPA) with Bangladesh Power Development Board on 28th February 2012 for supply of 250 MW power from NTPC stations for 25 years. The power supply is expected to commence from July 2013.

The financial highlights of the Company are as under:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity | 20.00 | 20.00 |
| Gross Income | 69.98 | 54.48 |
| Profit /(Loss) After Tax | 111.93 | 30.06 |
| Earnings Per Share (Basic) (in ₹) | 55.97 | 15.03 |

The Company has proposed a final dividend of ₹ 20.00 crore for the year 2011-12.

**(c) NTPC Hydro Limited (NHL)**

NTPC Hydro Ltd. was set up as a wholly owned subsidiary company of NTPC Ltd., in December 2002 for furtherance of NTPC's efforts to take forward the hydro capacity addition and to give exclusive thrust to small and medium sized hydro power projects upto 250 MW capacity.

Your Board in its 368th meeting held on 22.06.2011, has accorded in-principle approval for merger of NHL with NTPC subject to the approval of the Government of India/ Cabinet considering the benefits of synergy of operation, reduction in overhead expenditure, enhancement of efficiency & administrative control and to optimize utilization of resources. Further, Ministry of Power, Government of India through Letter No. 5/5/2012-Th.II dated 10.04.2012, has conveyed the approval of the Competent Authority, for allowing merger of NTPC Hydro Limited with NTPC Limited in terms of section 391-394 of the Companies Act, 1956. The merger process is in progress.

Presently, the Company is implementing the following projects:

- **Lata Tapovan hydro electric project (171 MW)** is proposed as a run of river hydro project in the state of Uttrakhand. All the statutory clearances have been obtained and entire land required for the project has been physically acquired. The project shall be developed as a regional power station with 12% free power to Govt. of Uttarakhand. The power generated from the project would be provided to the beneficiaries of Northern Region States. The project is slated for commissioning during XIII Plan period. The estimated cost of the project is ₹ 792 crore (includes IDC) at October 2005 price level. Annual generation from the project is estimated as 869 MUs.
- **Rammam-III (120 MW) in the state of West Bengal-** All the statutory clearances have been obtained and majority of land acquisition activities have been completed. Various infrastructure developmental works are under progress. The project is for the benefit of West Bengal and Sikkim states and is slated for commissioning during XIII Plan period. Annual generation from this project is estimated as 476 MUs.

The financial highlights of the Company are as under:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity (incl. share capital deposit) | 121.56 | 114.46 |
| Profit /(Loss) After Tax | (0.01) | Nil |
| Fixed Assets including CWIP | 115.79 | 108.74 |

As at 31.3.2012, the paid up share capital of the Company is ₹ 121.36 crore and ₹ 0.20 crore of share application money is pending for allotment.

**(d) Kanti Bijlee Utpadan Nigam Limited (KBUNL)**

As per the decision of Govt. of India, a Company named 'Vaishali Power Generating Company Ltd.' was incorporated on September 6, 2006 as a subsidiary of NTPC to take over Muzaffarpur Thermal Power Station (MTPS) (2 x 110 MW). The Company was rechristened as 'Kanti Bijlee Utpadan Nigam Limited' on 10.04.2008. The equity contribution in the Company as at 31.03.2012 is 64.93% by NTPC and 35.07% by Bihar State Electricity Board (BSEB).

Unit # 2 of 110 MW of Stage–I was declared commercial in October 2010. Renovation and Modernization (R&M) of existing units 2X110 MW is being carried-out by BHEL.

For Stage II (2x195 MW) BSEB has given consent for equity participation and paid ₹ 171.42 crore towards equity and NTPC has given ₹ 300.00 crore towards equity upto 31.03.2012.

Out of 31 packages of Stage-II, 22 packages have been awarded upto 31.03.2012.

Term loan amounting to ₹ 2,341.28 crore has been arranged from consortium led by SBI.

The other financial highlights of the Company are given below:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity (incl share capital deposit) | 357.15 | 221.88 |
| Gross Income | 127.76 | 51.06 |
| Profit /(Loss) After Tax | 5.35 | (14.58) |
| Earnings/(Loss) Per Share (Basic)(in ₹) | 0.15 | (1.66) |

As at 31.3.2012, the paid up share capital of the Company is ₹ 527.87 crore and ₹ 39.00 crore of share application money is pending for allotment which includes ₹ 342.74 crore and ₹ 14.41 crore respectively as the share of NTPC Ltd.

**(e) Bhartiya Rail Bijlee Company Limited (BRBCL)**

'Bhartiya Rail Bijlee Company Limited' was incorporated as a subsidiary of NTPC on November 22, 2007 having equity participation of 74:26 by NTPC Ltd. and Ministry of Railways, Govt. of India respectively for setting up of 4 units of 250 MW each of coal based power plant at Nabinagar, district Aurangabad, Bihar. PPA was signed with Indian Railways on 16.12.2010.

The financial highlights of the Company are given below:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity (incl. share capital deposit) | 509.46 | 509.46 |
| Profit /(Loss) After Tax | (0.01) | (0.02) |
| Earnings Per Share (Basic) (in ₹) | - | - |

As at 31.3.2012, the paid up share capital of the Company is ₹ 688.46 crore of which NTPC's share is ₹ 509.46 crore. Share application money pending allotment as on March 31, 2012 is ₹ 83 crore of which NTPC's share ₹ 39,000/-.

**BUSINESS AND FINANCIAL REVIEW OF JOINT VENTURE COMPANIES**

**a) Utility Powertech Limited (UPL)**

UPL is a 50:50 joint venture company of NTPC and Reliance Infrastructure Limited formed to take up assignments of construction, erection and supervision in power sector and other sectors in India and abroad as well as to provide man power to power, telecom and other sectors.

The financial highlights of the Company are as under:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity | 1.00 | 1.00 |
| Gross Income | 402.35 | 311.18 |
| Profit /(Loss) After Tax | 15.23 | 2.79 |
| Earnings Per Share (Basic) (in ₹) | 38.06 | 6.97 |

As at 31.03.2012, the paid up share capital of the Company is ₹ 4 crore. NTPC has a share of ₹ 2.00 crore in the paid up share capital which includes ₹ 1.00 crore of bonus share allotted in the earlier years.

The Company has declared a dividend of ₹ 8.00 crore during the year of which NTPC's share is ₹ 4.00 crore.

b) **NTPC-SAIL Power Company Pvt. Ltd. (NSPCL)**

NSPCL, a 50:50 joint venture company of NTPC and SAIL was incorporated on 08.02.1999 for running the captive power plants of SAIL at Durgapur, Rourkela and Bhilai.

NSPCL owns and operates a capacity of 814 MW mostly as captive power plants for SAIL's steel manufacturing facilities located at Durgapur, Rourkela and Bhilai. Captive power plants (314 MW) of NSPCL recorded generation of 2,653 MUs at 96.45% PLF. Further, both 250 MW units of Bhilai Expansion (2X250MW) achieved 90.82% PLF and generated 3,978 MUs.

The financial highlights of the Company are as under:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity | 475.25 | 475.25 |
| Gross Income | 1,780.06 | 1,441.00 |
| Profit /(Loss) After Tax | 194.23 | 191.33 |
| Earnings Per Share (Basic) (in ₹) | 2.04 | 2.01 |

As at 31.03.2012, the paid up share capital of the Company is ₹ 950.50 crore and out of this, 50% has been contributed by NTPC Ltd.

NSPCL has recommended a final dividend of ₹ 114.06 crore of which NTPC's share is ₹ 57.03 crore.

c) **NTPC-ALSTOM Power Services Private Limited (NASL)**

NASL is a 50:50 joint venture company between NTPC Limited and Alstom Power Systems GmbH, Germany. The Company was formed on 27.09.1999 for taking up Renovation & Modernization assignments of power plants both in India and SAARC countries. Apart from above, the Company has ventured into various studies like Residual Life Assessment (RLA) Studies, Steam Path Audit, etc.

During the year 2011-12, the Company has received an order to the tune of ₹ 21.33 crore from SAIL Rourkela, and other orders to the tune of ₹ 3.00 crore. NASL is also engaged in execution of various contracts in power station of various State Electricity Boards at Amarkantak, Tanda, Talcher, NALCO Angul Odisha and SAIL Rourkela besides executing various RLA jobs.

The financial highlights of the Company are as under:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity | 3.00 | 3.00 |
| Gross Income | 78.43 | 28.48 |
| Profit /(Loss) After Tax | 2.84 | 0.99 |
| Earnings Per Share (Basic) (in ₹) | 4.73 | 1.66 |

As at 31.03.2012, the paid up share capital of the Company is ₹ 6.00 crore with 50% being contributed by your Company and the remaining 50% by Alstom Power Systems GmbH, Germany. The Company declared a dividend of ₹ 0.72 crore during the year 2011-12 of which NTPC's share was ₹ 0.36 crore.

d) **NTPC Tamil Nadu Energy Company Ltd. (NTECL)**

NTPC Tamil Nadu Energy Company Ltd. was formed as a 50:50 joint venture between NTPC and Tamilnadu Generation and Distribution Company (TANGEDCO) on May 25, 2003 to develop and operate 1500 MW power project at Vallur. The project is named as Vallur Thermal Power Project and is expected to use Ennore port infrastructure facilities. Mega Power Project Status was accorded to the project (3x500 MW) on 12.03.2008.

Unit-I (500 MW) of the project was synchronized on 09.03.2012 and full load operation was achieved on 28.03.2012.

The paid up share capital of the Company is ₹ 1,688 crore and out of this, 50% had been contributed by NTPC Ltd. Further, as at 31.03.2012, the amount of share capital deposit pending for allotment is ₹ 110 crore out of which NTPC's share is ₹ 55 crore.

e) **Ratnagiri Gas and Power Pvt. Limited (RGPPL)**

Ratnagiri Gas and Power Private Ltd. was formed in July 2005 as joint venture between NTPC (31.52%) and GAIL (31.52%) as promoters and MSEB Holding Co. Ltd. (16.68%) and Indian Financial Institutions (20.28%) as other equity participants for taking over and operating erstwhile Dabhol Power Project assets consisting of 1967.08 MW gas based combined cycle power block and 5 MMTPA LNG block. The assets were transferred to RGPPL in October 2005.

The Power Block, spearheaded by NTPC, has been fully revived and under commercial operation since May 19, 2009 supplying 43.5 BUs so far to the Western Grid. Power Block generated 11,619 MUs during 2011-12 (68.4% against a target availability of 80%). The generation loss (about 3080 MUs) was due to gas supply shortfall from KG Basin gas fields of RIL/NIKO/BPEAL and from marginal gas fields of ONGC, supplied by GAIL although GoI has allocated full quantum of domestic gas required for Power Blocks (about 8.5 MMSCMD). State of Maharashtra (95%), UT of Daman & Diu (2%), UT of Dadra and Nagar Haveli (2%) and State of Goa (1%) are the beneficiaries of the power generated from the facility.

The LNG Block, spearheaded by GAIL, is under commissioning with commissioning cargo arriving at Dabhol port in the last week of March 2012. Since the power generation is envisaged using the domestic gas entirely, integrated LNG Terminal shall be utilized for tolling purpose. RGPPL has entered into a long term agreement with GAIL for commercial utilization of LNG Terminal.

RGPPL has since turned into a standard asset after financial restructuring in March 2009 and has been meeting its full debt servicing obligation so far as also has been able to wipe out its accumulated losses as at March 31, 2012.

The financial highlights of the Company are as under:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity | 776.90 | 692.90 |
| Gross Income | 5,223.83 | 4,565.50 |
| Profit /(Loss) After Tax | 1,089.24 | 504.91 |
| Earnings Per Share (Basic) (in ₹) | 4.60 | 2.20 |

As at 31.03.2012, the paid up share capital of the Company is ₹ 2,465 crore and out of this, NTPC's share contribution is ₹ 776.90 crore. Further, share application money pending allotment is ₹ 118.36 crore of which NTPC's share is Nil. The Company declared a dividend of ₹ 123.25 crore of which NTPC's share is ₹ 38.85 crore

f) **Aravali Power Company Private Limited (APCPL)**

Aravali Power Company Private Limited (A joint venture company of NTPC Ltd., Indraprastha Power Generating Co. Ltd. [IPGCL] of Delhi Govt. and Haryana Power Generating Co. Ltd. [HPGCL] of Haryana Govt.) is setting up Aravali Super Thermal Power Project of 1500 MW (3x500 MW), a coal fired power plant, in Jhajjar District of Haryana. The project is being set up by NTPC on concept-to-commissioning basis. NTPC would also operate and maintain the station on Management Contract basis for at least 25 years. The power from this Project will be shared on 50:50 basis, between Haryana and NCT of Delhi.

Unit-I and Unit-II (500 MW each) started commercial operation w.e.f. 05.03.2011 and 21.04.2012 respectively. Construction activities for Unit - III are in full swing.

The financial highlights of the Company are as under:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity (incl. share capital deposit) | 1,089.51 | 977.48 |
| Gross Income | 1,408.93 | 47.43 |
| Profit /(Loss) After Tax | 34.15 | (37.64) |
| Earnings Per Share (Basic) (in ₹) | 0.18 | (0.29) |

As at 31.03.2012, the paid up share capital of the Company is ₹ 2,179.02 crore with 50% being contributed by NTPC Ltd. Further, as at 31.03.2012, the amount of share capital deposit pending for allotment is ₹ 35.01 crore out of which NTPC's share is ₹ 60,000.00.

g) **NTPC-SCCL Global Venture Pvt. Ltd (NSGVPL)**

NTPC Limited along with Singareni Collieries Company Limited formed a 50:50 joint venture company under the name 'NTPC-SCCL Global Ventures Private Limited' on July 31, 2007 to undertake various activities in coal and power sectors including acquisition of coal/lignite mine blocks, development and operation of integrated coal based power plants and providing consultancy services. Both NTPC and SCCL hold 50% equity each.

As at 31.03.2012, the paid up share capital of the Company is ₹ 0.10 crore, out of which 50% has been contributed by your Company.

h) **Meja Urja Nigam Private Limited (MUNPL)**

NTPC has formed a JV Company with Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited (UPRVUNL) under the name 'Meja Urja Nigam Private Limited' on April 2, 2008 for setting up a power plant of 1320 MW (2X660 MW) at Meja Tehsil in Allahabad district in the state of Uttar Pradesh.

After the approval by the Board of Director of Meja Urja Nigam on 28.04.2012, package of SG & TG has been awarded.

SG package has been awarded to BGR Energy on 30.04.2012 and TG package has been awarded to Toshiba Corporation, Japan and Toshiba JSW Turbine & Generator Pvt. Ltd. on 01.05.2012.

As at 31.03.2012, the paid up share capital of the Company is ₹ 214.86 crore and out of this, 50% has been contributed by NTPC Ltd. Further, as at 31.03.2012, out of share capital deposit pending for allotment amounting to ₹ 10.00 crore, ₹ 5.00 crore being 50% of the total Share Capital Deposit has been contributed by NTPC Ltd.

i) **NTPC BHEL Power Projects Pvt. Ltd. (NBPPL)**

'NTPC BHEL Power Projects Pvt. Ltd.' was formed on April 28, 2008 as a JV Company with Bharat Heavy Electrical Ltd (BHEL) for carrying out Engineering Procurement and Construction (EPC) activities in the power sector and to engage in manufacturing and supply of equipment for power plants and other infrastructure projects in India and abroad.

Manufacturing plant of NBPPL is being constructed at Mannavaram, Tirupati Distt., A.P. Currently, NBPPL is executing EPC contracts for balance of plant packages of Palatana Combined Cycle Power Plant in Tripura and Namrup Combined Cycle Power Plant in Assam for BHEL and BOP including and E&C Works of entire plant for Monarchak, Tripura for NEEPCO.

The financial highlights of the Company are as under:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity | 25.00 | 25.00 |
| Gross Income | 146.92 | 109.23 |
| Profit /(Loss) After Tax | 13.06 | 9.26 |
| Earnings Per Share (Basic) (in ₹) | 2.61 | 1.85 |

As at 31.03.2012, the paid up share capital of the Company is ₹ 50.00 crore, out of this, 50% has been contributed by your Company.

j) **BF-NTPC Energy Systems Limited (BFNESL)**

BF-NTPC Energy Systems Limited was formed on June 19, 2008 with Bharat Forge Limited 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.

Discussions with prospective technology partners for technology tie-up for their product line are under progress.

As at 31.03.2012, the paid up share capital of the Company is ₹ 12.00 crore with 49% i.e. ₹ 5.88 crore being contributed by NTPC Ltd.

k) **Nabinagar Power Generating Company Private Limited (NPGC)**

'Nabinagar Power Generating Company Private Limited' was incorporated as a JV Company on September 9, 2008 with equal equity contribution from Bihar State Electricity Board for setting-up of a coal based power project at New Nabinagar in district Aurangabad of State of Bihar. The project will have a capacity of 1980 MW (3X660 MW). The Company will also undertake operation & maintenance of the project after its commissioning.

Feasibility report of the project was approved by NPGCL Board on 02.07.2009. MoEF has accorded environmental clearance for stage – I (3x660 MW) on 27.12.2010. In-principle approval for coal linkage received from the MOC. Currently, land acquisition activities have been initiated and civil works have commenced at site.

As at 31.03.2012, the paid up share capital of the Company is ₹ 306.00 crore of which NTPC has contributed ₹ 153.00 crore. Further, as at 31.03.2012, the amount of Share Capital Deposit pending for allotment is ₹ 177.00 crore out of which NTPC's share is ₹ 50.00 crore.

l) **National Power Exchange Limited (NPEX)**

'National Power Exchange Limited' was incorporated as a JV Company with NHPC Ltd., Power Finance Corporation Ltd. and Tata Consultancy Services Ltd. on December 11, 2008 to set up and operate a Power Exchange at National level. This Power Exchange would provide a neutral and transparent electronic platform for trading of power on 'day ahead basis' and ensure clearing of all trades in a transparent, fair and open manner with access to all players in the power markets. An in-principle approval by CERC to set up and operate a national level power exchange was received on July 1, 2009. New regulations for power exchange have been issued by CERC on 20th January 2010. The Company has initiated action for compliance and aligning itself to these regulations.

NPEX has submitted the revised Rules and Bye Laws for CERC approval on 30.03.2011. CERC approval for the same has been accorded on 24.04.2012.

The Company has an authorized share capital of ₹ 50.00 crore and paid-up share capital of ₹ 13.13 crore.

Shareholding pattern of the Company as at 31.03.2012 is as under:

| # | Name of Shareholder | Share-holding |
|---|---|---|
| 1. | NTPC Limited (Promoter) | 16.67% |
| 2. | NHPC Limited (Promoter) | 16.67% |
| 3. | Power Finance Corporation Ltd. (Promoter) | 16.66% |
| 4. | Tata Consultancy Services Ltd. (Promoter) | 19.04% |
| 5. | Bombay Stock Exchange Ltd. | 16.66% |
| 6. | IFCI Ltd | 5.72% |
| 7. | Meenakshi Energy Infrastructure Holding Pvt. Ltd | 4.77% |
| 8. | DPSC Ltd. | 3.81% |

m) **International Coal Ventures Private Limited (ICVL)**

A JV Company was incorporated on May 20, 2009 under the name 'International Coal Ventures Private Limited' (ICVL) in association with Steel Authority of India (SAIL), Coal India Limited (CIL), Rashtriya Ispat Nigam Limited (RINL) and NMDC Limited (NMDC). SAIL, CIL, RINL, NMDC and NTPC shall contribute in the equity share capital of the Company in the ratio of 2:2:1:1:1 respectively. The Company has been incorporated for the purpose of carrying on business for overseas acquisition/ operation of coal mines or blocks/ companies for securing coking and thermal coal supplies. ICVL is pursuing coal opportunities from countries like Australia, Indonesia, Mozambique, South Africa and USA. Your Company's Board of Directors in its meeting on 27th January 2012, accorded approval for NTPC opting out of International Coal Ventures Ltd (ICVL). A letter permitting the same has also been received from the Ministry of Power. Your Company's decision has also been communicated to ICVL in February 2012. ICVL is in the process of obtaining Cabinet clearance for the same.

As at 31.03.2012, the paid up share capital of the Company is ₹ 9.80 crore in which NTPC's contribution is ₹ 1.40 crore. Further, as at 31.03.2012, share application money pending allotment is ₹ 4.00 crore.

n) **National High Power Test Laboratory Private Limited (NHPTL)**

NTPC has formed a JV Company on May 22, 2009 under the name 'National High Power Test Laboratory Private Limited' in association with NHPC Limited, Power Grid Corporation of India Limited and Damodar Valley Corporation. On 24.02.2012, Central Power Research Institute was formally inducted as fifth equity JV partner. All JV partners will contribute equally to the share capital of the Company. The Company has been incorporated for setting up an On-line High Power Test Laboratory for short-circuits test facility in the country.

The site for setting up the Laboratory is located at Bina, M.P. and site office is being established there. Award of packages is in progress.

As at 31.03.2012, the paid up share capital of the Company is ₹ 10.50 crore which includes ₹ 2.62 crore (25%) being NTPC's share.

o) **Energy Efficiency Services Limited (EESL)**

A JV Company has been formed on December 10, 2009 under the name 'Energy Efficiency Services Limited' with Power Finance Corporation Limited (PFC), Powergrid Corporation of India Limited (PGCIL) and Rural Electrification Corporation Limited (REC) to carry on and promote the business of energy efficiency and climate change including manufacture and supply of energy efficiency services and products. NTPC, PFC, PGCIL and REC hold shares in the equity share capital of the Company equally.

As at 31.03.2012, the authorized share capital of the Company is ₹ 190.00 crore and paid up share capital is ₹ 2.50 crore of which NTPC has contributed ₹0.63 crore. Share application money pending for allotment in the Company is ₹ 97.50 crore of which NTPC's share is ₹ 24.38 crore.

p) **Transformers and Electricals Kerala Limited (TELK)**

In line with the Business Collaboration and Shareholders

Agreement executed between NTPC Limited, Government of Kerala and Transformers and Electricals Kerala Limited (TELK), 44.6% of presently paid-up capital of TELK was acquired from Government of Kerala at a total value of ₹ 31.34 crore.

TELK is engaged in manufacturing and repair of heavy duty transformers. During the year 2011-12, the transformer industry witnessed its worst ever period due to over capacity and intense price war amongst the domestic players, further compounded with entry of Chinese and Korean players. Despite such adverse market scenario, TELK produced 5,789 MVA transformers which is the highest production ever achieved till date, registering a plant capacity utilization factor of 130 % as against the industry utilization factor of 75 %.

As at 31.03.2012, the paid up share capital of the Company is ₹ 42.97 crore with NTPC Limited holding 44.60% of the paid-up capital of TELK at an acquisition cost of ₹ 31.34 crore.

The financial highlights of the Company are:

| Particulars | FY 2011-12 | FY 2010-11 |
|---|---|---|
| | | ₹ Crore |
| NTPC's investment in equity (incl. share capital deposit) | 31.34 | 31.34 |
| Gross Income | 202.37 | 197.20 |
| Profit /(Loss) After Tax | 13.21 | 12.20 |
| Earnings Per Share (Basic) (in ₹) | 3.07 | 2.84 |

q) **CIL NTPC Urja Private Limited (CNUPL)**

CIL NTPC Urja Private Limited was formed as a joint venture Company between NTPC Ltd. and Coal India Limited (CIL) on April 27, 2010.

This Company has been formed with the aim of undertaking the development, operation & maintenance of coal blocks at Brahmini and Chichro Patsimal in Jharkhand and integrated coal based power plants.

The job of exploration and preparation of Geological Report has been assigned to Central Mine Planning & Design Institute Limited. However, the coal blocks allocated to the Company has been de-allocated by MoC on 14.06.2011. The Company is pursuing for withdrawl of deallocation with MoC.

The authorized capital of the Company is ₹ 10.00 crore and as at 31.03.2012, paid up share capital is ₹ 0.05 crore. Total share application amount pending allotment is ₹ 0.05 crore and NTPC's share of pending allotment is ₹ 0.05 crore.

r) **Anushakti Vidhyut Nigam Limited (ASHVINI)**

Anushakti Vidhyut Nigam Limited has been incorporated as a joint venture company between NTPC Limited and Nuclear Power Corporation of India Limited (NPCIL) on January 27, 2011. NPCIL and NTPC would hold 51% and 49% of the equity share capital respectively. The Company has been formed for the purpose of development of nuclear power projects in the country within the framework of Atomic Energy Act, 1962. Certificate of commencement of business has been received by the Company on 04.04.2011.

As at 31.03.2012, Company has a paid up share capital of ₹ 0.10 crore and NTPC has released ₹ 0.05 crore as initial equity contribution.

s) **Trincomalee Power Company Limited**

A joint venture Company between your Company and Ceylon Electricity Board, Srilanka (CEB) was incorporated in Srilanka on September 26, 2011 under the name 'Trincomalee Power Company Limited'. Both NTPC and CEB hold 50% each of the equity share capital of the Company. The joint venture Company has been formed to set up a 2X250MW coal based power project in Trincomalee region in Srilanka.

The authorised share capital and paid-up capital of the Company is Srilankan Rupees 300 million, subscribed equally by NTPC Limited and Ceylon Electricity Board. NTPC's contribution in paid up share capital in INR is ₹ 6.72 crore.

t) **Pan-Asian Renewables Private Limited**

A joint venture company amongst NTPC Limited, Asian Development Bank (ADB) and Kyuden International Corporation, a wholly owned subsidiary of Kyushu Electric Power Company Inc. (Kyushu) was incorporated on October 14, 2011 under the name 'Pan-Asian Renewables Private Limited'. NTPC, ADB and Kyushu shall contribute in the ratio of 50:25:25 in the equity share capital of the Company. The Company has been incorporated to develop renewable energy projects and shall initially establish over a period of three years a portfolio of about 500 MW of renewable power generation resources in India.

The authorised share capital of the Company as at 31st March 2012 is ₹ 6.50 crore and paid up share capital is ₹ 1.00 crore. NTPC's contribution in paid-up share capital is ₹ 0.50 crore.

**Consolidated financial statements of NTPC Ltd.**

The consolidated financial statements have been prepared in accordance with Accounting Standards (AS)-21-'Consolidated Financial Statements' and Accounting Standards (AS)-27-'Financial reporting of Interests in Joint Ventures' and are included in this Annual Report.

A brief summary of the results on a consolidated basis is given below:

₹ Crore

| | FY 2011-12 | FY 2010-11 |
|---|---|---|
| Gross Income | 68,831.25 | 60,008.18 |
| Profit before Tax | 13,137.26 | 12,392.33 |
| Profit after Tax | 9,814.66 | 9,348.23 |
| Net Cash from operating activities | 15,061.97 | 12,067.50 |

**CAUTIONARY STATEMENT**

Statements in the Management Discussion and Analysis and in the Directors' Report, describing the Company's objectives, projections and estimates, contain words or phrases such as "will", "aim", "believe", "expect", "intend", "estimate", "plan", "objective", "contemplate", "project" and similar expressions or variations of such expressions, are "forward-looking" and progressive within the meaning of applicable laws and regulations. Actual results may vary materially from those expressed or implied by the forward looking statements due to risks or uncertainties associated therewith depending upon economic conditions, government policies and other incidental factors. Readers are cautioned not to place undue reliance on these forward-looking statements.

For and on behalf of the Board of Directors

Place : New Delhi (Arup Roy Choudhury)
Date : 3rd August 2012 Chairman & Managing Director