

Sustainability Report FY-14

GRI G3.1 & EUSS
Compliant
A+ Level Report



Powering
India's Growth



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Assurance Statement





Statement of CMD, NTPC

Dear Stakeholder,

I feel immensely pleased to present you the NTPC Sustainability Report for the FY 14.

This is the third Sustainability Report of NTPC, covering all sustainability parameters of A+ level, which is the highest level as per the most widely accepted GRI (Global Reporting Initiative) 3.1 frame work.

With its vision, "Powering India's Growth," NTPC has been playing a lead role by providing reliable and affordable power. The Company has also been a pioneer in deploying technology and practices that are environment friendly. We have continued to strengthen our performance in the areas of economic, environmental and social parameters. The philosophy of sustainability is embedded in all aspects of our business activities.

Accelerating Growth: Strengthening Performance

NTPC has added nearly 13,000 MW of power during last four and a half years. This is more than one fourth of its total installed capacity built since inception of the Company (over 39 years). This marks a quantum leap in terms of pace of growth.

The current installed capacity of NTPC is 45,548 MW, which is nearly 18% of India's total installed capacity. With this, NTPC group accounted for as much as ~26% of India's total generation during FY 14.

Power sector has encountered many uncertainties and challenges. These include, inadequate fuel supply, delays in land acquisition, issues concerning environment clearance, high Aggregate Technical and Commercial (AT&C) losses, and strained financial health of State Power Utilities.

Even amid such above-mentioned uncertainties, NTPC performed very well, and achieved excellent rating under the GOI MOU system for the FY 14. Some of the significant achievements of the Company are:

- i) In the FY 14, NTPC coal based stations recorded the highest PLF in the country with 81.5% as compared

to the national average PLF of 65.5%, 59% for the state sector, 62% for the private sector, and 76% for other central sector generators.

- ii) Maintaining strong investor confidence as demonstrated in the 3.7 times' oversubscription of NTPC's issue for tax free bonds of ₹ 1000 crore in Dec. 2013. This was in keeping with the tradition of strong investor support witnessed earlier in raising over USD 2 billion during offer for sale of 9.5% GOI stakes, and raising USD one billion at very competitive rates.
- iii) NTPC became the only public sector company in India to issue debentures in March 2015. At ₹ 10,307 crore, it was the largest of its kind by any Indian company.
- iv) Operationalised the system for transporting 3 MT imported coal in line with the pioneering tri-partite agreement with Inland Waterways Authority of India (IWAI) and a private developer.
- v) Coal Supply Agreements (CSAs) for 14,010 MW capacity, commissioned or to be commissioned during the period April 2009 to March 2015, bringing the total capacity covered by CSAs to 37,905 MW.
- vi) Achieved 100 % realization of energy bills, amounting to over ₹ 70,000 crore, from our customers.
- vii) In line with its commitment towards renewable energy, NTPC commissioned 8 numbers of grid connected solar plants with total 110 MW capacity. Various roof top solar initiatives have also been taken up at various stations. Also, NTPC has commissioned 800 MW Koldam Hydro project. This marks the commencement of emission-free hydro power generation.
- viii) Customer Focus has been central to NTPC's commercial philosophy. Customer Relationship Management (CRM), as one of our key initiatives, provides a platform for regular and structured interaction with customers.

Thrust on Environment Friendly Power

In line with its environment vision of 'Going Higher on Generation-Lowering GHG Intensity'. NTPC has adopted a multi-pronged approach towards achieving the goal of producing environmentally sustainable power. Advanced

technologies and efficient layouts worked out during design stage, coupled with robust O&M practices, help to reduce environmental impact during the life cycle of power plants. All these efforts have translated into reduced GHG levels on per unit basis.

NTPC is ensuring installation of high-efficiency and low-emission, super-critical and ultra-super critical units of 660 MW and 800 MW. Based on this 'cleaner' technology, three units at Sipat and one unit at Barh are already under commercial operation. Construction of 660 MW and 800 MW units based on super critical technology is underway. NTPC is engaged in the development of advanced ultra-super critical technology with cycle efficiency of 45-47%, which would result in 20% reduction in carbon emission, as compared to conventional subcritical technology based plants.

NTPC has implemented various water conservation measures by using the 3R Principle (Reduce, Reuse and Recycle). NTPC is the first company in India to venture into Air Cooled Condenser (ACC) technology for its 1980 MW (3 X 660 MW) North Karanpura Project thus replacing Water Cooled Condensers (WCC).

A massive R&M work is underway to upgrade environment protection facilities, such as, old ESPs in our plants.

Various projects for bio-diversity, energy conservation & management, waste management, water management and air emissions are implemented under sustainable development initiatives.

NTPC Energy Technology Research Alliance (NETRA), R&D wing of NTPC, focuses on cutting edge technology research on CO₂ fixation, efficiency improvement, climate change & environment protection etc. NTPC uses state-of-the-art systems in all its plants to assess air and water quality and to minimise the impact of its operations on the environment and local communities. The Company has developed a sizable green cover by planting more than 21 million trees across the country, which acts as a carbon sink.

NTPC has an ambitious plan to become a 128 GW company by 2032. Towards this, the Company has adopted a multi-pronged growth strategy focussing on diversified fuel mix. NTPC plans to have 28% of its 128 GW from non fossil sources. The Company has made a 'green energy commitment' of putting up 10,000 MW Solar PV capacity by the FY 2019.

Working with Communities for Promoting Inclusive Growth

As one of the most admired companies in the country, NTPC gives priority to all aspects related to Sustainable Development. A Board level committee on Corporate Social Responsibility (CSR), and Sustainability, headed

by CMD with two independent Directors, guides the sustainability agenda.

During FY 14, NTPC enhanced its allocation of funds for CSR and Sustainable Development (SD) activities to 1% of its Net Profit after Tax (PAT) of the previous year. NTPC exceeded the target by incurring an expenditure of ₹ 128.35 crore towards CSR and SD activities during the FY 14. The Company has reviewed and aligned its activities as mandated by changes in the Companies Act 2013.

Social inclusion is a guiding feature of NTPC's business strategy with specific initiatives in the areas of infrastructure development, healthcare, education, water supply, sanitation, women empowerment, and many other areas. These initiatives benefit the neighbourhood populations around the sites. The Company has made major contributions in rural electrification in several states.

Besides intensive community and peripheral development, NTPC has given special focus on promoting skill creation and employability among people. The Company has entered into MoU with NSDC (National Skill Development Corporation) to implement various skill development programs. These programs are expected to train appx. 30,000 youths. Further short term training programs on technical and vocation trades are organized through established agencies like M/s IL&FS, M/s CIDC, M/s RUDSET, etc.

NTPC has introduced the annuity scheme in its R&R plan to safeguard the interest of PAP's. The Company has tied up with M/s LIC to operationalize the scheme.

Under "Swachh Bharat Mission" NTPC has identified schools for construction of more than 24,000 toilets in the FY 15 & FY 16.

This Sustainability Report FY 14 seeks to share NTPC's efforts for a sustainable world.

I am thankful to all our stakeholders who have demonstrated unstinted faith in NTPC's philosophy of Sustainable Development and have contributed to our impressive all round success. For me each one of you is an extremely important fellow traveller on this planet, which needs urgent and effective answers to all issues concerning sustainability.

We enthusiastically look forward to your feedback and suggestions about this report. Your inputs may help us refine our strategies and measures for sustainability.



(Dr. Arup Roy Choudhury)
Chairman & Managing Director

Vision

To be the world's largest and best power producer, powering India's growth

Mission

Develop and provide reliable power, related products and services at competitive prices, integrating multiple energy sources with innovative and eco-friendly technologies and contribute to society

Values

- B**usiness Ethics
- E**nvironmentally & Economically Sustainable
- C**ustomer Focus
- O**rganisational & Professional Pride
- M**utual Respect & Trust
- M**otivating Self & Others
- I**nnovation & Speed
- T**otal Quality for Excellence
- T**ransparent & Respected Organisation
- E**nterprising
- D**evoted

CORPORATE OBJECTIVES

To realize the vision and mission, eight key corporate objectives have been identified. These objectives would provide the link between the defined mission and the functional strategies :

Business Portfolio Growth

- To further consolidate NTPC's position as the leading thermal power generation Company in India and establish a presence in hydro power segment.
- To broad base the generation mix by evaluating conventional and non conventional sources of energy to ensure long run competitiveness and mitigate fuel risks.
- To diversify across the power value chain in India by considering backward and forward integration into areas such as power trading, transmission, distribution, coal mining, coal beneficiation etc.
- To develop a portfolio of generation assets in international markets.
- To establish a strong services brand in the domestic and international markets.

Customer Focus

- To foster a collaborative style of working with customers, growing to be a preferred brand for supply of quality power.
- To expand the relationship with existing customers by offering a bouquet of services in addition to supply of power-e.g. trading, energy consulting, distribution consulting, management practices.
- To expand the future customer portfolio through profitable diversification into downstream businesses, inter alia retail distribution and direct supply.
- To ensure rapid commercial decision making, using customer specific information, with adequate concern for the interests of the customer.

Agile Corporation

- To ensure effectiveness in business decisions and responsiveness to changes in the business environment by:
 - Adopting a portfolio approach to new business development.
 - Continuous and coordinated assessment of the business environment to identify and respond to opportunities and threats.
- To develop a learning organizations having knowledge based competitive edge in current and future businesses.
- To effectively leverage Information Technology to ensure speedy decision making across the organisation.

Performance Leadership

- To continuously improve on project execution time and cost in order to sustain long run competitiveness in generation.
- To operate & maintain NTPC stations at par with the best-run utilities in the world with respect to availability, reliability, efficiency, productivity and costs.
- To effectively leverage Information Technology to drive process efficiencies.
 - To aim for performance excellence in the diversification businesses.
 - To embed quality in all systems and processes.

Human Resource Development

- To enhance organisational performance by institutionalizing an objective and open performance management system.
- To align individual and organisational needs and develop business leaders by implementing a career development system.

- To enhance commitment of employees by recognising and rewarding high performance.
- To build and sustain a learning organisation of competent world-class professionals.
- To institutionalise core values and create a culture of team building, empowerment, equity, innovation and openness which would motivate employees and enable achievement of strategic objectives.

Financial Soundness

- To maintain and improve the financial soundness of NTPC by prudent management of the financial resources.
- To continuously strive to reduce the cost of capital through prudent management of deployed funds, leveraging opportunities in domestic and international financial markets.
- To develop appropriate commercial policies and processes which would ensure remunerative tariffs and minimize receivables.
- To continuously strive for reduction in cost of power generation by improving operating practices.

Sustainable Power Development

- To contribute to sustainable power

development by discharging corporate social responsibilities.

- To lead the sector in the areas of resettlement and rehabilitation and environment protection including effective ash-utilisation, peripheral development and energy conservation practices.
- To lead developmental efforts in the Indian power sector through efforts at policy advocacy, assisting customers in reforms, disseminating best practices in the operations and management of power plants etc.

Research and Development

- To pioneer the adoption of reliable, efficient and cost-effective technologies by carrying out fundamental and applied research in alternate fuels and technologies.
- To carry out research and development of breakthrough techniques in power plant construction and operation that can lead to more efficient, reliable and environment friendly operation of power plants in the country.
- To disseminate the technologies to other players in the sector and in the long run generating revenue through proprietary technologies.

Sustainable Development Policy*

We at NTPC, commit ourselves to generate and provide reliable power at competitive prices in sustainable manner by optimizing the use of multiple energy resources with innovative eco-friendly technologies thereby contributing to the economic development of the nation, social upliftment of the society and promoting a healthy environment.

In this process, NTPC shall strive to

- Contribute towards clean and sustainable environment with respect to Land, Water and Air.
- Conserve resources by reduction, reuse and recycling.
- Initiate and support measures to optimize usage of renewable energy, increase energy efficiency and reduce GHG emissions.
- Support measures for biodiversity conservation by following the practices of protecting, conserving and restoring ecosystems.
- Be transparent, ethical and fair to all stakeholders.
- Be supportive in developing and enhancing people's standard of living in and around our business units.
- Generate awareness, share knowledge and support training programmes on sustainable development among the employees, communities under its area of influence and public at large.

* FY 14

Performance Highlights FY 2014



NTPC Performance

- ✔ NTPC achieved PLF of 81.50% as against all India PLF of 65.55% with four stations recording more than 90% PLF. Talcher Thermal station was the highest ranked station in the country in terms of PLF 95.02%
- ✔ Declared 2,675 MW (including JV Companies) on commercial generation
- ✔ Achieved a coal PAF of 90.32 % in FY 14 against 90.20% in FY 13
- ✔ Commissioned solar plants of 65 MW capacity in FY 14 (110 MW as on 31st Mar'15)
- ✔ The only PSU among the top 35 companies, ranked 6th in the prestigious study of 'The Economic Times and Great Place to Work Institute' for 2013 covering 550 companies and 22 industries

Environmental Performance

- ✔ Lube oil consumption reduced by 30% (Base year FY10)
- ✔ ODS emissions reduced by 55% (Base year FY 11)
- ✔ Water withdrawal reduced by 10.31 % (Base year FY 10)
- ✔ NTPC is the first company to venture into Air Cooled Condenser technology for its 660 MW North Karanpura Project replacing water cooled condenser
- ✔ Plantation of more than four lakh trees in FY 14 by NTPC stations. NTPC planted more than 21 million trees till FY 14 to (cumulative up to FY 14) increase green cover to act as carbon sink for the country
- ✔ Commissioned one Bio-methanation plant

Economic Performance

- Exceeded the Capital expenditure (CAPEX) target of ₹20,200 crore.
- For 11 years in succession, 100% realization of energy bills from customers.
- Recorded total income of ₹ 74,707.82 crore - an increase of 8.5% as compared to ₹ 68,855.81 crore in FY 13.
- Issued Bonds for an aggregate amount of ₹ 2,250 crore. (Tax-free, Secured, Redeemable Non-Convertible Bonds)



Social Performance

- 44 toilet blocks constructed for girl students at various locations during FY 14. Under Swachh Bharat Mission, NTPC has identified schools for construction of more than 24,000 toilets by FY 16.
- Subsidized education to children of around 20 schools run by NTPC, benefitting about 20,000 students of the areas neighboring the company's stations.
- Distribution of uniforms, books, stationery, equipment, and infrastructural support to schools around NTPC stations, benefitting more than 65,000 students.
- About 1200 medical health checkup camps and about 365 eye camps organized at various locations. About 2000 surgeries were performed during these camps. Mobile medical services benefitted around 60,000 people of 80 villages.
- NTPC provided around ₹ 8 crore for flood and disaster relief in Himachal and Uttarakhand.
- 1,442 villages were electrified and 24,742 Below Poverty Line (BPL) connections were provided. The cumulative achievement till 31st March 2014 is 33,807 villages electrified and 26,27,485 BPL connections provided.



Sustainable Development Projects



Afforestation

FY 14

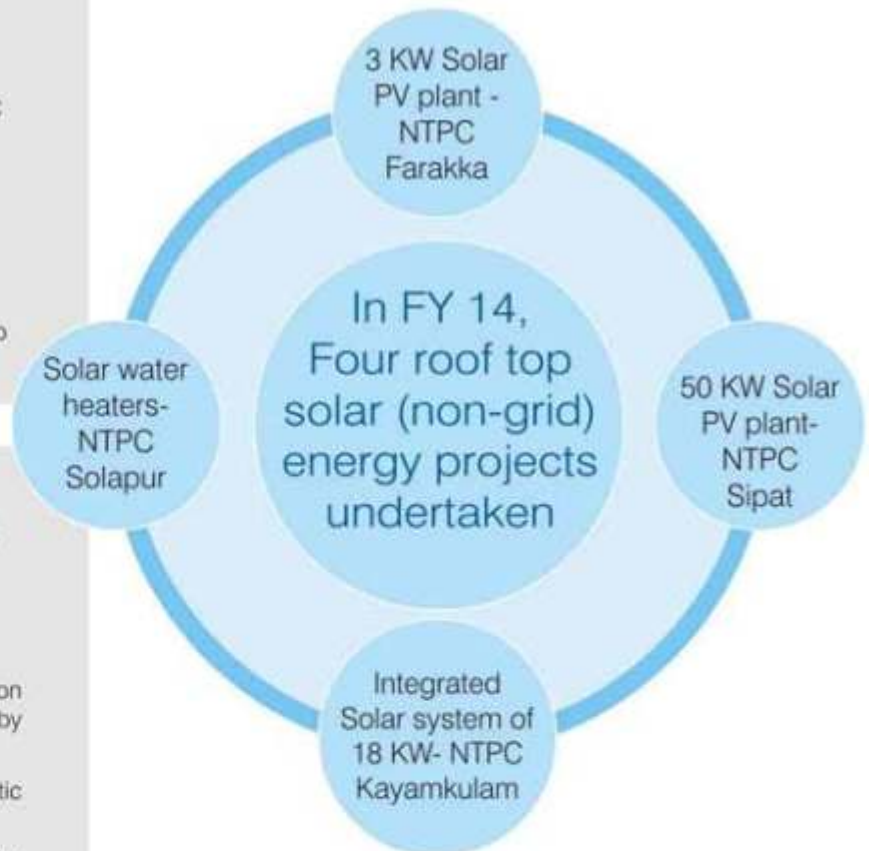
- Plantation of more than 4 lakh trees by NTPC during FY14
- 21 million trees planted upto FY 14

FY 15 (Plan)

- Plantation of more than 2 lakh trees
- Maintenance of trees planted in year FY 14 to ensure survival

Energy Conservation Projects FY 14

- Variable Frequency Drive (VFD) in NOx injection pump (15 KW) and raw water pump (37 KW) by NTPC Kayamkulam.
- Replacement of fluid couplings with magnetic couplings by NTPC Tanda.
- Replacement of alternate street lights with solar lights by NTPC Kayamkulam.
- Replacement of sodium vapour lamps with LED lamps at NTPC stations.



Energy Conservation & Renewable Energy Projects FY 15 & FY 16 (Plan)

Solar Projects (non grid connected)

6 Solar roof top PV systems- NTPC stations:

- i) 100 KW Solar PV system and 7.5 KW Solar PV panels - NTPC Ramagundam
- ii) 100 KW Solar PV system - NTPC Sipat
- iii) 50 KW Solar PV system - NTPC Tanda
- iv) 40 KW Solar PV system - NTPC Kayamkulam
- v) 10 KW Solar PV system - NTPC Auraiya
- vi) 17 KW Solar PV system - NTPC Dadri

Solar Lights - NTPC stations:

- i) 180 nos. of solar street lights - NTPC Solapur
- ii) 12 nos. of Solar lighting mast - NTPC Mouda
- iii) Replacement of street lights with solar lights by 10 NTPC stations
- iv) Solar lighting for communities at NTPC Kahalgaon and at NTPC Simhadri.

Other Solar applications :

- i) Solar water heater - NTPC Sholapur
- ii) Solar powered submersible pump (5 nos.)-NTPC Mouda
- iii) Hybrid power system (Wind and Solar) - NTPC Solapur

LED Projects : Replacement of street lights with LED lights at NTPC stations

Environment Studies

FY 2014

Following studies have been undertaken during FY 14

- Environment Cost Benefit analysis study - NTPC kawas
- Life Cycle Mass Balance study- NTPC Ramagundam
- Impact of pollutant from Gas power plant on crops and other vegetation - NTPC Gandhar
- Post operation Environment Impact Assessment (EIA) study - NTPC Kawas
- Pollutant Source apportionment study NTPC Mouda

FY 15 & FY 16 (Plan)

Following studies are scheduled to be undertaken during FY 15 and FY16

- Carbon Foot Printing study -NTPC Dadri and Sipat
- Human Health Risk Assessment study - NTPC Kayamkulam, Bongaigaon, Barh and Mouda.
- Pollutant Source Apportionment study - NTPC Bongaigaon and Barh
- Post operational EIA study -NTPC Simhadri
- Study of Impact of station activities on crops and other vegetation - NTPC Ramagundam, Talcher Thermal, Sipat, Anta, Faridabad, Auraiya and Dadri
- Mass Balance study - NTPC Dadri and Badarpur
- Ash Water Leachate study - NTPC Talcher, Kaniha and Farakka
- Effect of station activities on Saryu river by NTPC Tanda and Ganga river by NTPC Unchahar

Waste Management



FY-14

Vermi-composting system of organic waste by NTPC Auraiya

Bio-methanation plant by NTPC Kayamkulam

Waste Management study by NTPC Kahalgaon for identification and categorization of different types of wastes

FY 15 & FY 16 (Plan)

E-bio toilets in Public Health Centres by NTPC Simhadri

Bio-methanation plant for domestic waste by NTPC Sipat

Bio-gas plant at various locations in and around NTPC Sipat

Domestic waste conversion to organic fertilizer by NTPC Rihand

Case Study – Bio-methanation Plant at NTPC Kayamkulam

A Bio-methanation plant (100 kg capacity) was commissioned at NTPC Kayamkulam with following objectives:

- Solid Waste Management – Scientific disposal of canteen and kitchen waste through anaerobic

degradation to produce useful bio-gas (Methane) for cooking.

- Conservation of natural resource and thus reducing carbon footprint.



Benefits:

- Environment friendly disposal of organic waste.
- During initial 16 months, 87 cylinders of bio-gas produced, resulting into savings of ₹ 1,60,067.
- The waste slurry from plants is being used as manure.

Case Study: Paper Recycling Machine at NTPC Kayamkulam

NTPC has implemented various measures for resource conservation by using the 3R approach (Reduce, Recycle and Re-use) as a guiding principle. With a view to recycle waste paper in an environment friendly way, a paper recycling machine has been installed by NTPC Kayamkulam.

The machine has a capacity to handle 8-10 kgs of paper per day. This is sufficient to ensure full reuse of paper waste collected at Kayamkulam office. The operation of machine is simple -- two persons can operate the unit smoothly. A video of its operation has been hosted on NTPC Kayamkulam web page which will also help in training for operation purposes.

As per generally accepted norm, 1 ton of paper recycling indirectly saves three tons of wood or 6 trees.



Water Management



FY-14

Sewage treatment by Soil Biotechnology - NTPC Kahalgaon

Rain water harvesting - NTPC Auraiya

Rain water harvesting - NTPC Talcher Kaniha

Rain water harvesting - NTPC Kahalgaon

Restoration and rehabilitation of one Kachcha water pond at one of the villages near NTPC-Unchahar

FY 15 & FY 16 (Plan)

Rain water harvesting by NTPC stations (Faridabad, Anta, Auraiya, and Simhadri)

Case Study - Rehabilitation of Water Body by NTPC Unchahar

Commonly a village Taalaab (water body, pond) serves the twin purpose of meeting immediate water requirements of villagers, like washing, bathing etc., and recharging the ground water source. At Arkha, Raebareli, one such water body was being utilized by nearby villagers. During stakeholder engagement with community by NTPC Unchahar, Gram Pradhan and other villagers of village Arkha, Raebareli communicated their need for rehabilitation of the water body.

NTPC Unchahar took up the work of rehabilitation of the water body as Sustainable Development activity involving following works:

- (i) Marking out the boundary of Taalaab with Pucca pathways and Jagat.
- (ii) Making steps at downstream slope for ease of use of Taalaab.
- (iii) Strengthening the downstream slope through boulder pitching for better retention of water.

The rehabilitation work was completed during FY 14. The project was very well accepted by the villagers.

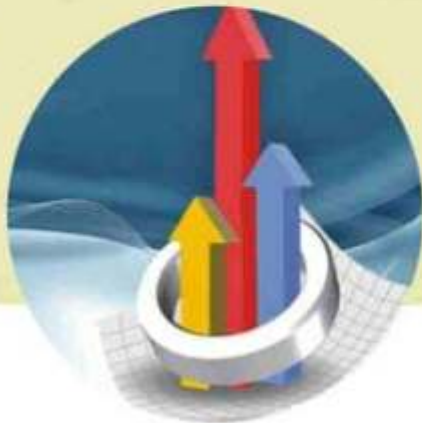
Before Rehabilitation



After Rehabilitation



About the Report



This is the third Sustainability Report of NTPC. The details on reporting period, scope, report boundary and methodology are given below:

REPORTING PERIOD

The reporting period for this report is from April 1, 2013 to March 31, 2014. NTPC is committed to report its sustainability performance annually. The report is aligned in accordance with the GRI (Global Reporting Initiative) 3.1 reporting framework, along with its Electric Utility Sector Supplement (EUSS). The report is in line with ISO 26000, IS 16010, NVG and UNGC guidelines.

The report conforms to A+ level as per GRI 3.1 framework and has been assured by an independent external assurance provider, M/s Bureau Veritas (India) Ltd. engaged by a well defined tendering process. The 'GRI EUSS Index and Mapping' section of this report shows the mapping of NVG, UNGC, ISO 26000 and GRI indicators. UNGC COP and Business Responsibility have also been published along with NTPC Annual Report FY 14 for which the link is given below:

<http://www.ntpc.co.in/en/investors/annual-reports>

REPORT SCOPE AND BOUNDARY

The report covers data and information from 22 operating thermal stations and 2 solar plants. As a part of scope enhancement, the current report includes NTPC Mouda Thermal Power Station Stage -I, and solar stations of Dadri and Andaman & Nicobar. All

these power plants are in India. Joint ventures and subsidiaries are excluded from the reporting boundary of the report. Hydro projects, mining projects, under construction projects, corporate, regional offices have been included in economic and social indicators (unless otherwise stated), but have been excluded from environmental indicators. The details of inclusion of performance indicators are depicted in the given chart.



The report includes the data pertaining to 54 core indicators, 30 additional indicators, and 30 EUSS indicators. There is no change in the identified stakeholders from the previous year FY 13 report.

REPORT METHODOLOGY

NTPC has a robust mechanism for reporting performance on the triple bottom line, i.e., economic, environmental and social. The economic data in the report covers the financial results of NTPC, i.e., the economic value added. The consumption and emission figures reported in the environment segment

About the Report

reflect NTPC's efforts towards environmental improvement. The social performance section of the report covers the whole range of activities concerning Human Rights, Society, Human Resources and Product Responsibility.

A uniform approach has been followed across all NTPC stations for collection of data on performance indicators. The collected data is, then, processed at individual operating stations in accordance with universally accepted methodologies following approaches of measurement, calculation and analysis. To ensure a fair representation of performance parameters, necessary variations and assumptions are made, wherever required. There is no significant change in measurement methods applied in this report with respect to previous report except mentioned wherein applicable. NTPC, by well-defined tendering process, has engaged M/S Bureau Veritas (India) Ltd. as its external assurance provider for the

report. The information and the data contained in the report have been assured in line with the Assurance Standard AA1000AS.

The online Sustainability Report FY 14 is available at:
<http://www.ntpc.co.in/>

NTPC appreciates feedback from all internal and external stakeholders. For any additional information, please reach out to the address given below:

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Organization's Profile



NTPC - THE LEADING INTEGRATED POWER COMPANY:

NTPC, established in 1975, has come a long way to become India's Largest Power Company. It was recognised as a Maharatna company by the Government of India in May 2010. As per Platts 250 Rankings 2013, NTPC was rated No. 1 Independent Power Producer and Energy Trader Globally.

With such unmatched achievements, NTPC has emerged as a diversified power major with its presence in the entire value chain network of the power generation business.

The total installed capacity of the Company is 43,108 MW (including JVs) with 17 coal based, 7 gas based, 7 joint venture stations, and 7 renewable energy projects, as on 1st April 2014.

CORE BUSINESS OF CAPACITY ADDITION AND ELECTRICITY GENERATION

Capacity Addition FY 14

During the year 2013-14, NTPC commissioned 1,835 MW, including 65 MW of solar PV projects. With this, the total capacity added in the first two years of 12th Plan Period has reached 6,005 MW as against the XII Plan (2012 - 2017) target of 14,038 MW.

NTPC has made the single largest thermal capacity addition in the country during the first two years of 12th Plan

The total installed capacity of the NTPC Group has become 43,108 MW as on 1st April 2014.

Installed Capacity of NTPC Group as on 31st March 14

Fuel Mix	No. of Plants	Capacity (MW)
NTPC Owned		
Coal	17	33,015
Gas/Liquid Fuel	7	4,017 [#]
Solar	7	75 ^{**}
Sub-Total	31	37,107
Owned by JVs and Subs		
Coal	6	4,034
Gas	1	1,967
Sub-Total	7	6,001
Total	38	43,108

[#]Barh 660 MW has been commissioned, COD-FY 2014-15

^{**}20 MW Solar plant commissioned in FY 14-15

[#]For gas based power projects, till previous year, the capacity was indicated based on Net Guaranteed Output as per Main Plant Specification. It has been revised to capacity at Generator Terminal w.e.f. 01.04.2014

Organization's Profile

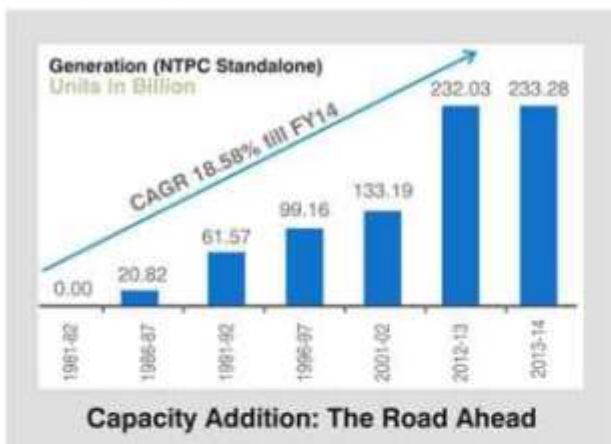
Generation FY 14

NTPC has been operating its plants at high efficiency levels. During the FY 2013-14, the Company generated 233.28 BUs (250.63 BUs including JVs) of electricity which was 24% (26% including JVs) of the total power generated (including import from Bhutan) in India. The total generation contributed by coal stations is 220.7 BUs during the year against the generation of 212.32 BUs the previous year, registering a growth of 3.94%.

Generation from coal based units could have been still higher but due to less generation schedule from the beneficiaries, there was a generation loss of 23.08 BUs. The coal based stations of NTPC operated at an average Plant Load Factor (PLF) of 81.50% (All India PLF 65.55%) and at an average Availability Factor of 90.32% on bus bar during the year.

NTPC achieved a coal PAF of 90.32% in FY 14 against 90.20% in FY 13

The gas stations having a capacity of 4,017 MW achieved annual generation of 12.56 BUs during the year as against 19.69 BUs during FY13. This was due to lower demand and less generation schedule which accounted for a generation loss of 20.65 BUs. The average Declared Capacity (DC %) of gas based stations for the year was 95.24% as compared to 93.14% during previous year.



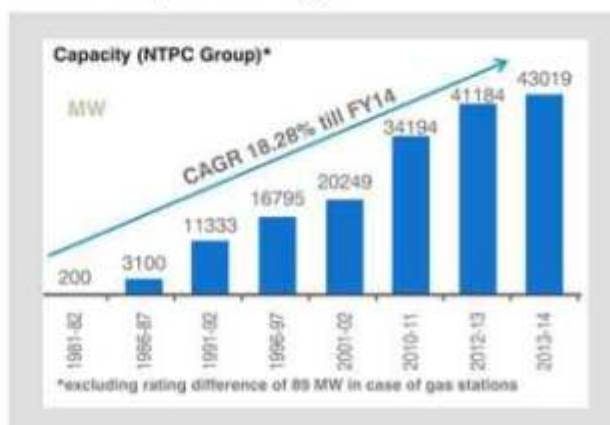
NTPC has set a target to have an installed generating capacity of 128 GW by the year 2032 with diversified fuel base. Towards this, NTPC has adopted a multi-pronged growth strategy, which includes capacity addition through green field projects, brown field expansions, joint ventures and acquisitions.

75 MW Solar power capacity has been commissioned till 31.03.2014 (110MW as on 31st March'15)

The Company envisages to reduce its dependence on fossil fuel and to achieve diversified fuel mix comprising 56% coal, 16% gas, 28% carbon free energy source (solar, nuclear and hydro).

NTPC's various projects having aggregate capacity of 22,434 MW (including 4,690 MW being undertaken by Joint Venture companies) are under implementation as on 31.03.2014.

This includes 20,900 MW through coal based projects, 1,534 MW through renewable energy projects, comprising 1,499 MW through hydro capacity and 35 MW through solar energy.



Nature of Ownership & Legal Form

NTPC Limited is a Government Company within the meaning of Section 2(45) of the Companies Act, 2013 as the President of India holds 75.00 % of total paid up share capital as on 31st Mar'14. (74.96% total paid up share capital as on 31st Mar'15). Remaining equity in the Company is held by the FIs, FII, NRIs, Banks and public at large.

Markets Served

- a) NTPC is the largest Power Utility in India. It is a bulk supplier of the electricity. Amongst its fifty beneficiaries are various State Electricity utilities, like, State Electricity Boards, State Electricity Distribution Companies, SEB Holding Companies, State Power Departments, and some specified Bulk consumers.
- b) Having attained the leading market-share of about 26 percent, NTPC have effective strategies to not only sustain the market share, but also to take it further ahead. Such strategies include:
 - i. Capacity addition targets of becoming 128 GW Company by 2032 and maintaining sector leadership.
 - ii. Strategic integration along the value-chain through presence in coal mining, power equipment manufacturing, power trading,

power distribution. Lateral diversification into hydro, solar and nuclear would add further value to the company's efforts of reducing carbon footprints.

Significant Changes For The Reporting Period

a) Generation Capacity

NTPC's installed capacity and generation vis-à-vis All India capacity and generation are as follows –

Parameters		All India ^	NTPC	% Share
Capacity (MW)	Standalone	243029	37107#	15%
	Including JVs		43108#	18%
Generation (Bus)	Standalone	967.15*	233.28	24%
	Including JVs		250.63**	26%

* include imports from Bhutan

**include generation from captive plants

includes re-rated capacity of gas stations on standalone basis 62MW and NTPC Group basis 89MW

^ (Source: CEA) (Capacity data as on 31.03.14, Generation data for FY2013-14)

b) Capacity Addition

During the year FY 2013-14, the Company added 1,835 MW as per details are as follows:

Project/ Unit	Capacity(MW)
Coal Based Power Projects	
Barh-II, Unit#4	660
Rihand-III, Unit#2	500
Sub-Total	1,160
Renewable Energy Projects	
Ramagundam Solar PV	10
Unchahar Solar PV	10
Talcher Solar PV	10
Faridabad Solar PV	5
Rajgarh Solar PV	30
Sub-Total	65
Subsidiary/ Joint Venture	
Kanti Unit # 1	110
Vallur (JV with TANGEDCO)	500
Sub - Total	610
Total	1,835

10 MW Solar Plant at NTPC Ramagundam



Organization's Profile

c) Commercial Capacity

The following units were declared commercial during the year FY 2013-14, adding 2,675 MW to commercial capacity of the Company:

Project/ Unit	Capacity(MW)
Coal Based Power Projects	
Rihand-III, Unit#2	500
Vindhyachal-IV, Unit#2	500
Mauda-I, Unit#2	500
Sub-Total	1500
Renewable Energy Projects (Solar PV)	
Ramagundam Solar PV	10
Talcher Solar PV	10
Faridabad Solar PV	5
Unchahar Solar PV	10
Rajgarh Solar PV	30
Sub-Total	65
Under JVs (Coal Based)	
Jhajjar, Unit#3 (JV with IPGCL and HPGCL)	500
Vallur, Unit#2 (JV with TANGEDCO)	500
Kanti, Unit#1 (subsidiary of NTPC in JV with BSPGCL)	110
Sub-Total	1,110
Total	2,675

A list of wholly owned operating stations of NTPC along with their installed capacity & Gross Generation during FY 14 is as follows:



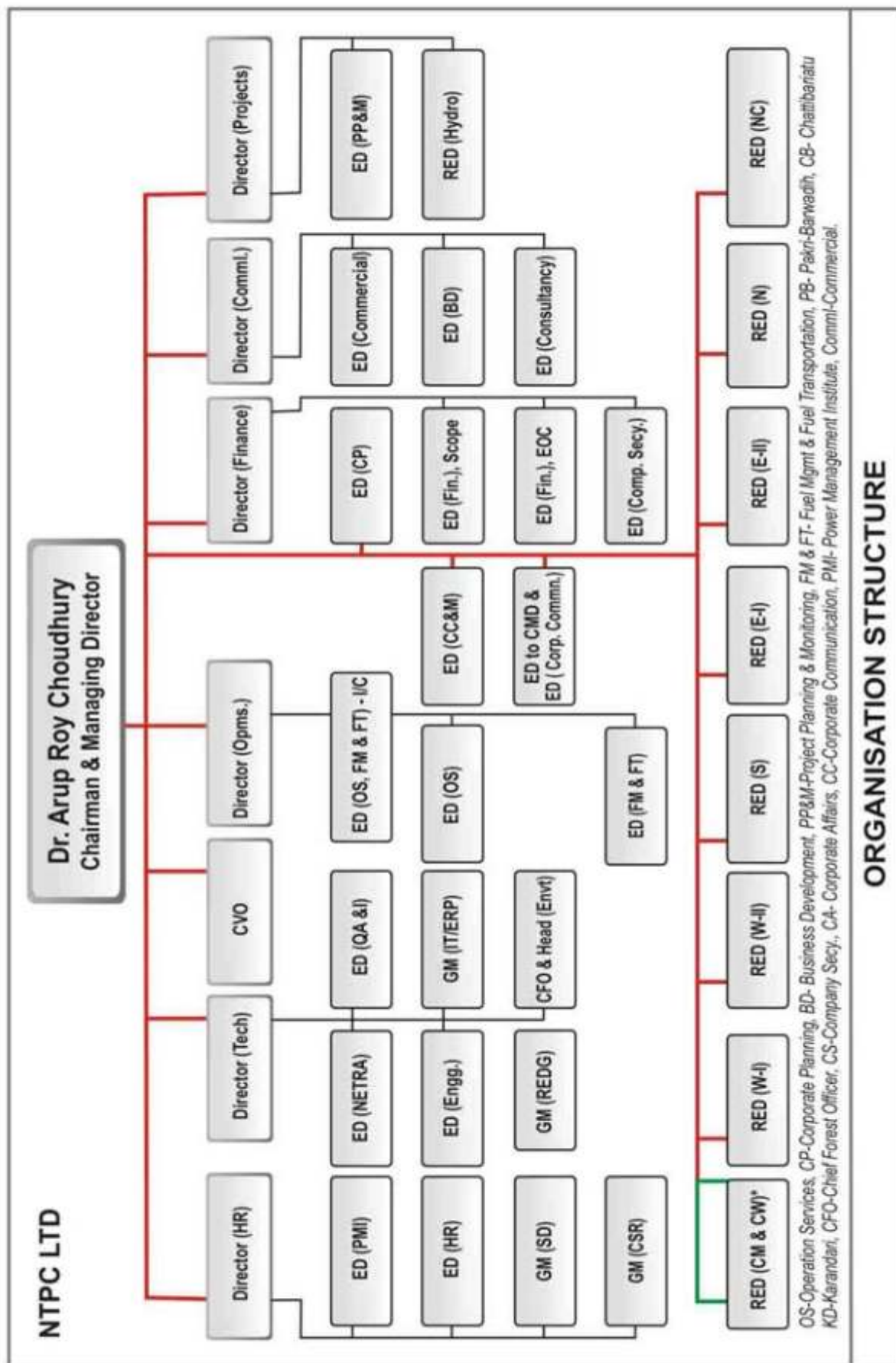
Station	Fuel	Capacity (MW)	Gross Gen (MW)
Northern Region			
Singrauli	Coal	2,000	16,045
Rihand	Coal	3,000	18,396
Unchahar	Coal	1,050	7,913
*Unchahar	Solar	10	-----
Tanda	Coal	440	3,577
National Capital Region			
Badarpur	Coal	705	4,147
Dadri	Coal	1,820	13,194
Anta	Gas	419	1,965
Auraiya	Gas	663	1,792
Dadri	Gas	830	3,400
Faridabad	Gas	432	1,732
Dadri	Solar	5	6.131
*Faridabad	Solar	5	-----
Western Region			
Mouda	Coal	1,000	750
Korba	Coal	2,600	20,653
Vindhyachal	Coal	4,260	28,692
Sipat	Coal	2,980	19,169
Kawas	Gas	656	1,389
Jhanor Gandhar	Gas	657	1,322
*Rajgarh	Solar	50	-----
Eastern Region			
Farakka	Coal	2,100	13,278
Kahalgaon	Coal	2,340	14,577
Talchar- Kaniha	Coal	3,000	21,762
Talchar- Kaniha	Solar	10	0.001
Talchar - Thermal	Coal	460	3,829
**Barh	Coal	660	-----
Southern Region			
Ramagundam	Coal	2,600	19,746
Ramagundam	Solar	10	2.573
Simhadri	Coal	2,000	14,684
Rajiv Gandhi CCP	Liquid Fuel	360	968
A&N Islands	Solar	5	4.583
Total		37,127	2,32,993

*Solar plants are commissioned in March'14

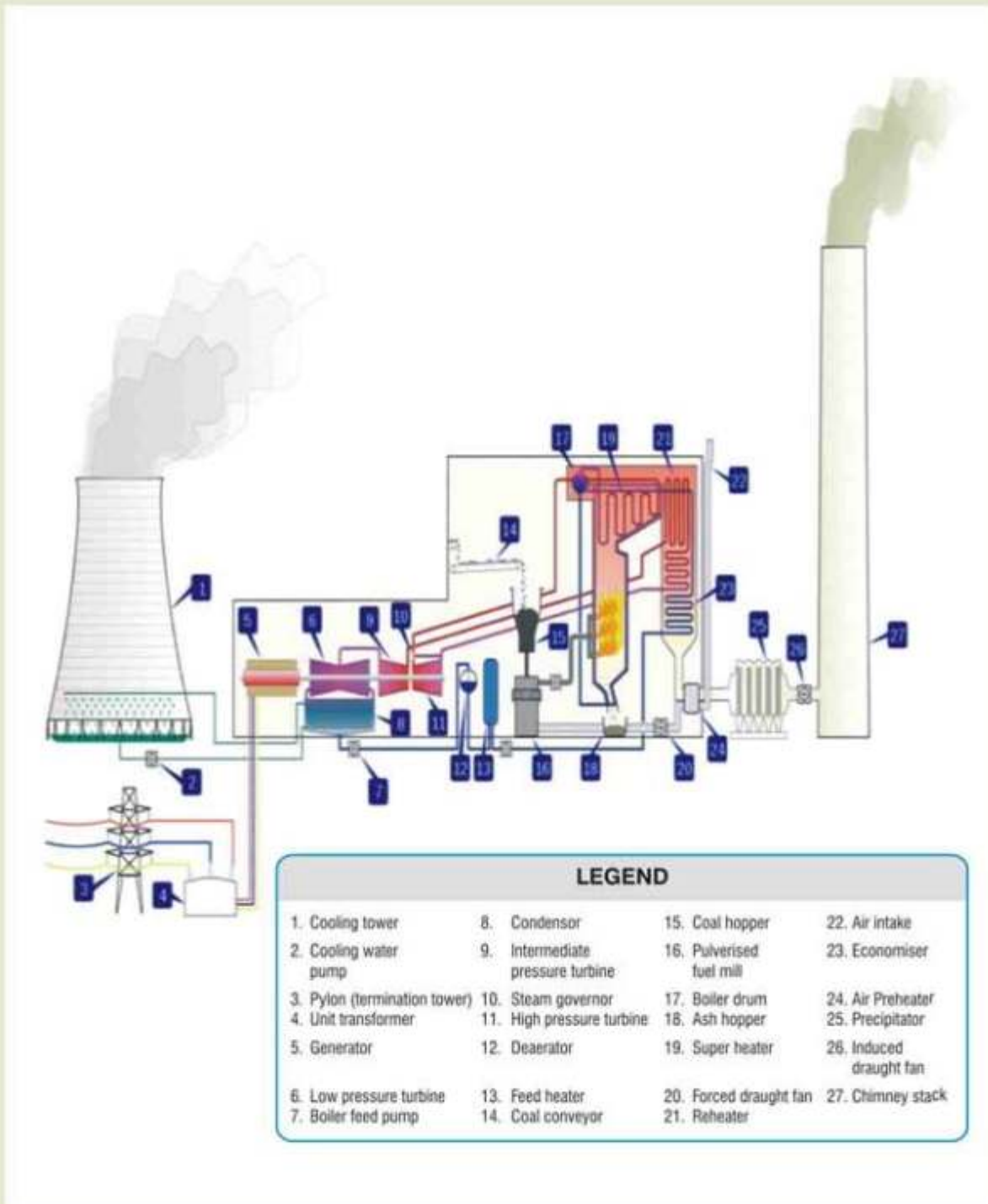
**Barh COD- FY 2014-15.

NTPC Pan India Presence





Flow Chart of Coal Based Thermal Power Plant



Organization's Policies



Policies And Initiatives For Effective Governance

NTPC, based on continuous feedback during stakeholder engagement and subsequent risk analysis, realized that certain new policy initiatives could help improve the overall performance of the Company. Hence, during FY14, the Company came up with a few policy initiatives that are given below with links:

a) POLICY AND PROCEDURES FOR BANNING OF BUSINESS DEALINGS

Being an organisation of high repute, credibility and holding business ethical values, NTPC expects all the agencies that it deals with to respect the same. The agencies linked with NTPC must practice the ethics of highest standards, high degrees of integrity, transparency, commitment and sincerity towards the work undertaken. The company will not endure any sort of deception, fraud or other misconduct of whatsoever nature in the tendering process or execution by any of the agencies. With a view to address the above concerns "Policy and Procedure for Banning of Business Dealings" was implemented during FY 14.

Suspension or banning of business dealing involves civil consequences for a concerned agency. Therefore, it becomes incumbent for NTPC that adequate opportunity of hearing is provided and explanation, if tendered, be considered before passing any order in such regard. Any orders thus passed shall be based on facts, evidence and circumstances of the case.

Banning Policy details are available in the following link:
<http://www.ntpc.co.in/en/vigilance>

b) COMPLAINT HANDLING POLICY

The salient features of the policy are as follows:

- The Complaint Handling Policy is readily accessible to all stake holders. The policy is easy to understand. It includes details on how to make complaints and the process of the resolution of the complaints made.
- Complaints given in person are acknowledged immediately. Complainants are treated courteously.
- Each complaint is addressed in an equitable, objective and unbiased manner in line with the policy.
- For making a complaint, there is no fee to the complainant.
- Complainant's identity and other credentials shall not be disclosed by the company, if so desired by the complainant.

The Complaint Handling Policy is available on NTPC website.

<http://www.ntpc.co.in/en/vigilance>

c) WHISTLE BLOWER POLICY

The Whistle Blower Policy has been conceptualised strictly to ensure building of strong culture of transparency and trust within the organisation. It equips the NTPC employees with a sound framework

for responsible and secure reporting of improper activities and irregularities within the organisation. The Policy, thus, aims at protecting employees, who take a step forward and report such incidences. All employees of NTPC are eligible to make 'Protected Disclosures'.

Guiding Principles of the Policy are:

- Protected disclosures are acted upon in a time bound manner.
- Complete confidentiality of the Whistle Blower is maintained.
- The Whistle Blower and the person(s) processing the Protected Disclosures are not subjected to victimization.
- Evidence of the Protected Disclosure is not concealed. An appropriate action, including disciplinary action, shall be taken in case of attempts to conceal or destroy evidence.
- Subject of the Protected Disclosure, i.e., the person against or in relation to whom a Protected Disclosure has been made, shall be provided an opportunity of being heard.

The policy, in detail, is available at the following link:

<http://www.ntpc.co.in/en/vigilance>

d) PLACEMENT & TRANSFER POLICY

The Transfer Policy has been framed with following objectives:

- To cater to the changing needs of the organization
- To ensure optimum utilization of manpower
- To accomplish specific tasks/objectives with available resources
- Towards development and growth related needs of the executive
- To align individual employee needs of Executive with those of the organization.
- To ensure greater objectivity, transparency and consistency in placement of employees.

With the introduction of these new policies, major benefits in terms of streamlining the systems and improving the governance have been achieved by NTPC

Besides the above new policies introduced in FY 14, other existing policies can be referred at the web links as follows:

- **Code of Conduct**
http://www.ntpc.co.in/images/content/investors/Code_of_Coduct2015.pdf
- **Sustainable Development Policy**
<http://www.ntpc.co.in/en/sustainability/strategy-and-policies>
- **Facilities to be given to Land Oustees 1980**
<http://www.ntpc.co.in/download/ntpc-policy-facilities-be-given-land-oustees-1980>
- **R & R policy**
<http://www.ntpc.co.in/download/ntpc-rr-policy-2010>
- **Safety Manual**
http://10.0.20.70/Specialists/Safety/Documents/Information/safety_manual.pdf
- **Policy on HIV-AIDS at Workplace**
<http://www.ntpc.co.in/en/sustainability/reports-and-policies>
- **Community Development Policy**
<http://www.ntpc.co.in/download/initial-community-development-policy-2009>

Policy Manuals Available on NTPC Intranet

- HR Manual
- Employees Handbook
- Behaviour Values – Do(s) & Don't(s)
- Energy & Efficient Management System
- CDA Rules

Policy Manuals Available in Hardcopy:

- Training Policy
- Environment Policy
- Ash Management Policy
- Quality Policy
- Fraud Prevention Policy
- Vigilance Do(s) and Don't(s)
- Risk Management Manual

Governance and Ethics



NTPC, being a Maharatna Public Sector Enterprise, conducts business with integrity and fairness. The Company goes much beyond statutory framework to bring transparency, accountability and equity in all facets of its operations. Accordingly, the corporate governance philosophy of NTPC is:

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

BOARD OF DIRECTORS

NTPC is a Government Company - within the meaning of section 2 (45) of the Companies Act, 2013 - as the President of India presently holds 75.00% of total paid up shares capital as on 31st March '14 (74.96% as on 31st Mar' 15).

The composition of the Board, as on 31st March 2014, is as under:

- (i) Seven whole-time Directors, including the Chairman & Managing Director (CMD).
- (ii) Two Directors are nominees of the Government of India.
- (iii) Nine independent Directors as per the requirement of the Listing Agreement executed with SEBI.

The Company has one woman independent Director on its Board. The Board of Directors is the highest governing body headed by Chairman & Managing Director. The details regarding appointment and

remunerations of CMD, whole-time directors, and independent directors have been covered in NTPC's Annual Report FY 14 in chapter, "Report on Corporate Governance."

CODE OF CONDUCT

NTPC has ensured the formulation and execution of a Code of Conduct, in line with the requirements of the Listing Agreement, for its Board members and other senior management personnel. This is to help realise the goals emanating from the core principles of the company's Corporate Governance Philosophy. The aim of this Code of Conduct is purely to strengthen ethics and to enhance transparency in managing the affairs of the Company. All members of the Board and senior management personnel have affirmed compliance of the Code of Conduct for the FY 14. A copy of the Code of Conduct is available at the website of the Company.

CONFLICT OF INTERESTS

By rule, all Directors of the Company have to declare their personal interests in the prescribed Disclosure of Interests form pursuant to Section 184 of the Companies Act, 2013. In compliance to the aforementioned, the Directors refrain from participating in discussions on such agenda items that include their interest in any form to any extent, directly or indirectly.

BOARD SUB-COMMITTEES

The Board of Directors has constituted the following fifteen sub-committees:

- i) Audit Committee

- ii) Shareholders'/Investors' Grievance Committee
- iii) Remuneration Committee
- iv) Committee on Management Controls
- v) Project Sub-committee
- vi) Investment/Contribution Sub-committee
- vii) Contracts Sub-committee
- viii) Committee of Functional Directors for Contracts
- ix) Committee of the Board for Allotment and Post-Allotment activities of NTPC's Securities
- x) Corporate Social Responsibility and Sustainability Committee
- xi) Committee for Vigilance Matters
- xii) Committee for Review of Coal Mining Activities
- xiii) Committee for Review of Coal Import Policy
- xiv) Exchange Risk Management Committee
- xv) Committee of Directors for Inorganic Growth

The terms of reference on these committees and details of the members have been given in NTPC's Annual Report FY 14.

A new Committee of Directors for Inorganic Growth has been constituted in the FY 14 to guide the Board in the process of collection of data, evaluation, due diligence in respect of proposed acquisition of certain distressed thermal power projects, and for making recommendations for acquisition of assets.

SUSTAINABILITY AND CORPORATE SOCIAL RESPONSIBILITY

NTPC has been following the top-down approach in Corporate Social Responsibility (CSR) and Sustainability governance. For this, it has put in place a Sustainability Policy that acts as a fundamental building block for propagating responsible behaviour among its employees and other stakeholders.

NTPC had reconstituted its CSR and Sustainability Committee in FY 14. The committee reviews NTPC's CSR and Sustainable Development activities. The Committee, chaired by CMD, NTPC, has following members:

Director (Operations)	Member
Director (Technical)	Member
Director (Human Resources)	Member
Director (Finance)	Member
Ms. H. A. Daruwalla (Independent Director)	Member
Prof. Sushil Khanna (Independent Director)	Member

Note: The Committee's terms of reference have been amended after 31st March 2014, in line with the Companies Act, 2013. The constitution of this Committee has also been changed after 31st March 2014 by inducting Dr. Pradeep Kumar, Government Nominee Director, as a Member of the Committee. Also, Director (Operations) and Director (Technical) have ceased to be the Members of this Committee after 31st March 2014.

Implementation of Integrity Pact

NTPC is committed to have total transparency to its business processes and as a step in this direction; it signed a Memorandum of Understanding with Transparency International India in December, 2008. The Integrity Pact shall be applicable for all tenders having estimated value (excluding taxes and duties) of ₹ 10 Crore and above. Three Independent External Monitors have been nominated by the Central Vigilance Commission to oversee the implementation of Integrity Pact. Regular meetings are being organized with Independent External Monitors (IEMs).

Directors responsible for implementation of policies & systems during FY 14 on sustainable development and business responsibility aspects are:

No	Policies/systems	Director (s) Responsible
1.	<ul style="list-style-type: none"> • Code of Conduct for Board Members and Senior Management Personnel • Core Value 	All Directors
2.	All Financial systems	Director (Finance)
3.	<ul style="list-style-type: none"> • Safety Policy • Energy Efficiency • Ash Utilization Policy 	Director (Operations)
4.	<ul style="list-style-type: none"> • Environment Policy • New Technologies and Renewable Energy 	Director (Technical)
5.	<ul style="list-style-type: none"> • Human Resource (HR) Policies • R&R Policy • CSR & Sustainable Development(SD) Policy • Community Development (CD) Policy • Transfer Policy 	Director (HR)
6.	<ul style="list-style-type: none"> • Commercial Systems and Procedures 	Director (Commercial)
7.	<ul style="list-style-type: none"> • Fraud Prevention Policy • Whistle Blower Policy • Complaint Handling Policy • Banning Policy 	Chief Vigilance Officer

NTPC is using systems approach by adopting and implementing ISO-14001, Six Sigma, OHSAS-18001, 5S, ISO 9001-2000, Benchmarking etc. as per International Norms and getting certified by world class certification agencies.

NTPC has a Memorandum of Understanding (MoU) with the Government of India (GoI) under which a system of target setting has been instituted. According to this system, the annual performance is assessed at year-end against the targets set under the MoU on the basis of various parameters, like productivity, human resource development activities, project implementation, operational performance etc. NTPC's performance against the set targets in the MoU FY 14 was rated excellent. The performance of the Functional Directors of the Board is also measured through the Performance Evaluation System, also formed under the system of target setting.

MANAGING ORGANIZATIONAL RISK RELATED TO CORRUPTION

To curtail the organisational risk in terms of corruption, NTPC has taken following measures during FY 14:

- On the basis of past experience and continuous feedback during the FY 14, the Company has implemented the Whistle Blower Policy, the Complaint Handling Policy, and the Policy for Banning of Business Dealings to ensure strict anti-corruption measures.
- E-Procurement process, using SRM Module of ERP, is used to improve efficiency and to ensure transparency in the process of procurement.

- No policy can be brought to effect without complete awareness and optimum participation of the entire fraternity. The same has been ensured through imparting nineteen training sessions on the company's anti-corruption policies and procedures throughout various projects and stations. 529 employees have attended these sessions.
- In another effort to continue creating anti-corruption consciousness, a Vigilance Awareness Week was observed from 28.10.2013 – 02.11.2013 across all projects and stations. During this week, posters and banners based on the policies were prepared in Hindi and English. The same were then displayed at key locations throughout the NTPC stations.
- Project Vigilance Executives and the Technical Cell together conduct regular preventive checks at the corporate centre. During the FY 14, thirty vigilance cases were finalized.
- To have a close monitoring of the heavy expenditure, Quarterly Progress Reports (QPRs) are collected from all the departments where the value of contracts is exceeding a predetermined threshold value.

Data for vigilance cases are given in 'Key Data at a Glance' section.

Corporate Memberships: With a view to advocate such policies that are conducive for sustainable development of the power sector, NTPC has associated itself with various national and international organisations. The list of such organisations is present along with the 'Key Data at a Glance' section.



Power Sector Scenario, Opportunities & Challenges



INDIA'S POWER SECTOR SCENARIO

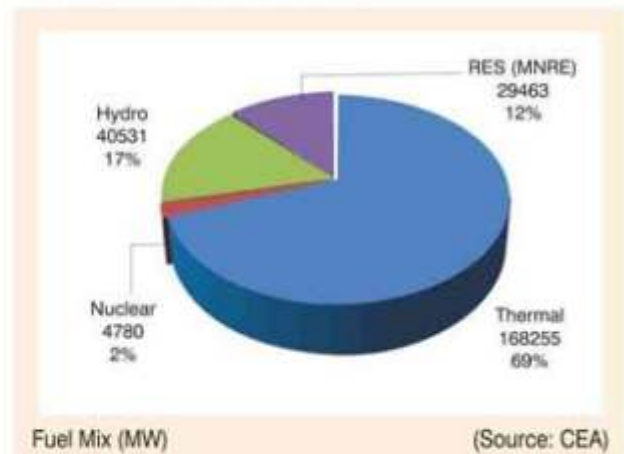
Significant capacity addition has taken place in India over last few years. Here are some updates on the current scenario of the Power sector in India:

- As on March 31, 2014, the total installed capacity in the country was 2,43,029 MW. The State sector was leading in terms of installed capacity with a share of 38% followed by the Private sector and Central sector with 34% and 28%, share respectively.
- During the FY 2013-14, the total thermal capacity addition of 16,767 MW exceeded the target of 15,234 MW with a maximum contribution of 71.5% from the Private sector. The State and the Central sectors followed with 18.3% and 10.2%, contribution respectively.
- The country's total thermal capacity, including gas and diesel based stations, accounts for about 69%



of the total installed capacity of the country followed by hydro capacity at 17%. Nuclear stations account for 2% and the balance 12% is contributed by Renewable Energy Sources (RES).

- The total thermal capacity, including gas and diesel stations accounts for about 69% of installed capacity of the country followed by hydro capacity at 17%. Nuclear stations account for 2% and the balance 12% is contributed by RES.



- With 1,45,273.39 MW of the installed capacity based on coal which is 59.8% of all India capacity, coal remains the key fuel for power generation.

The fuel mix in financial year 2013-14 has remained almost same as in the previous financial year. India's total generation during financial year 2013-14 was 967.15 Billion Units (BUs) as against 912.06

Power Sector Scenario, Opportunities & Challenges

BUs in the previous year, recording an increase of ~6%. The sector wise and fuel wise break-up of generation in BU for the financial year 2013-14 and financial year 2012-13 is detailed as under:

Generation Sector Wise (BUs):

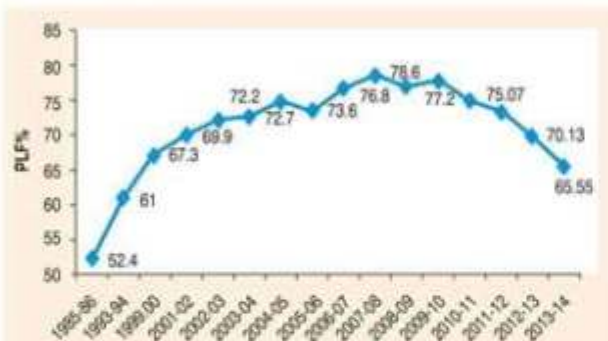
Sector	FY 14	FY 13	Y-O-Y %
Central	384.91	375.97	2.4
State	350.4	347.15	0.9
Private	226.24	184.15	22.9
Others*	5.6	4.79	16.9
Total	967.15	912.06	6.0

*Import from Bhutan (Source: CEA)

Generation Fuel Wise (BUs):

Fuel	FY 14	FY 13	Y-O-Y %
Thermal	792.48	760.68	4.2
Hydro	134.85	113.72	18.6
Nuclear	34.23	32.87	4.1
Others*	5.6	4.79	16.9
Total	967.16	912.06	6.0

Though the overall generation in the country has increased due to higher capacity, the Plant Load Factor of coal and lignite stations (PLF) fallen below the levels it was a decade back. The all India PLF over the years is reflected in chart below:

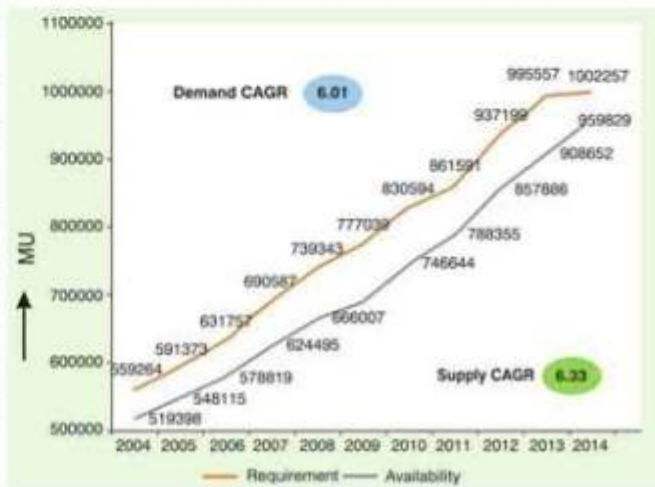


(Source: CEA)

NTPC has generated around 26% of the country's total Power generation with an installed capacity of around 18% of the nation's total installed capacity.

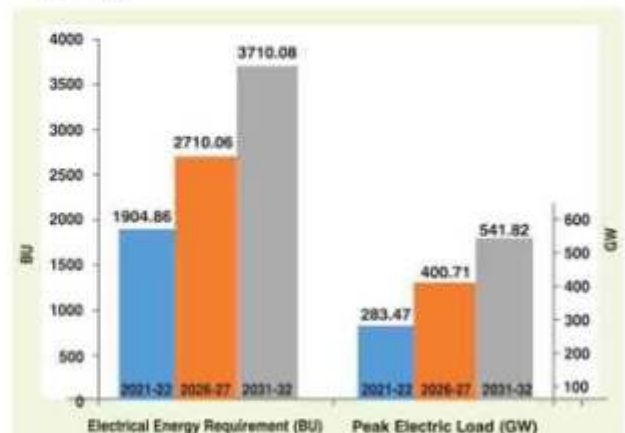
NTPC has made single largest thermal capacity addition in the country during the first two years of 12th Plan

➤ In India, the Power sector has been facing reduction in demand in the past few years. The energy and peak deficit, which was more than 11% in FY 09, has dropped to 4.2% and 4.5%, respectively, in FY 14. The fall in power demand could be a short term issue mainly arising from the industrial slowdown, lack of power procurement by utilities and seasonal fluctuations. The energy demand and supply trend for the last 10 years is as per following chart:



(Source: CEA, the year in horizontal axis reflects financial year ending)

During FY 10, India's per capita consumption was 884 kWh vis-a-vis world's per capita consumption of 2892 kWh. Low per capita consumption and expected growth of economy are pointers to the long-term energy requirement. The all India per capita consumption of electricity in FY 13 was 917.18 kWh (provisional). The low per capita electricity consumption suggests a large latent demand in the country. With the exception of FY 14, the energy deficits and peak deficits during the past 10 years have remained generally in the range of 7% to 17%.



(Source: 18th EPS)

- The Indian power sector provides significant opportunities for growth and investment. The anticipated Energy Requirement and Peak Demand for the FY 15 is ~1048.67 BU and ~147.82 GW, respectively, which is expected to increase by ~3.5 times by the FY 32 (Source: LGBR 2014-15 of CEA). Long term demand outlook of electricity in India looks positive and adequately sums up the huge unlocked potential of the sector.

OPPORTUNITIES IN POWER SECTOR

- In order to pull off the high economic growth targets of India, sustained growth of the Power sector is inevitable. Government of India's focus on attaining 'Power for All' has accelerated capacity addition in the country. Simultaneously it has resulted in increased competition that has further improved the chances of growth of the sector. The power sector in India which was traditionally dominated by central and state utilities is now witnessing interest from many newer and bigger players keen for investment across the value chain.
- Noteworthy capacity addition over the last few years has taken place in India. Almost 43% of the XII Plan target of 88,537 MW (excluding Renewable Energy Sources, "RES") has been achieved in first two years.

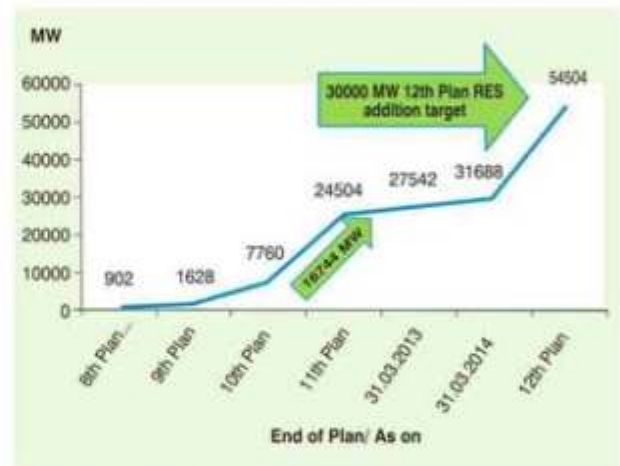


Source: Central Electricity Authority 'CEA'; 12th five year plan report (12th Plan); all figures excluding RES.

The power developers have extensive plans for capacity augmentation in the sector. The rate of capacity addition has risen from ~4 GW p.a. during 1992-93 to 2001-02 to ~9 GW p.a. during 2002-03 to 2011-12. The rate of capacity addition has further gained pace and is expected to be maintained during XII and XIII Plans.

- Renewable energy (excluding large Hydro) currently comprises 12% of the total generation capacity. The growth of renewable sources based

generation capacity is given in the chart below:



(Source: CEA and 12th Plan)

Renewable energy had been one of the key components of India's energy planning process for some time. Now, it is all set to become a significant part of India's total energy space. The Government of India has formulated an Integrated Energy Policy covering all sources of energy including renewable resources. If all plans for renewable and other fuel sources are realized, this segment will account for 15-20% of the total installed capacity by end of XII Plan.

The MNRE has revised its renewable energy capacity target to 175,000 MW by 2022, comprising 100,000 MW solar, 60,000 MW wind, 10,000 MW biomass, and 5,000 MW small hydro.

- New fuel opportunities are expected to emerge, in the generation space, in addition to coal. Improved gas supply and strengthening of commensurate pipeline infrastructure would facilitate increased gas based generation. Government of India's thrust on Hydro projects (50,000 MW initiatives) will provide attractive opportunities, especially, for providing electricity to meet customer demand of peak hours. Nuclear energy is also expected to witness strong growth at the back of Indo-US civil nuclear agreement.

CHALLENGES IN POWER SECTOR

While the power sector is poised for a rapid growth, there are some critical enablers that need to fall in place to support the future of the industry.

- **Improving Transmission Network and Transformer Capacity:** Transmission network strengthening, which is critical to achieving the ambitious growth in the Power sector, has gained momentum. The inter-regional transmission

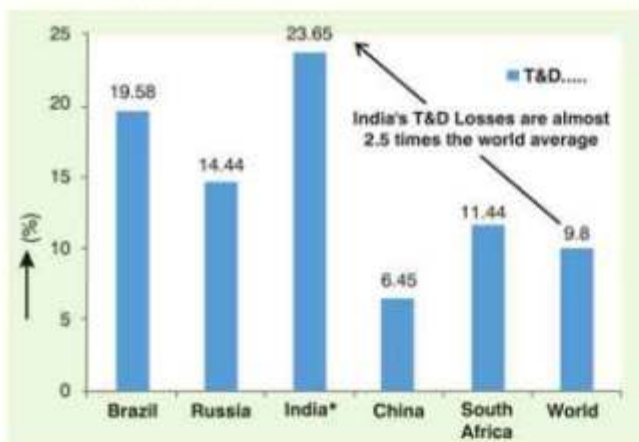
Power Sector Scenario, Opportunities & Challenges

capacity as on 31st March 2014 was 33950 MW and it is targeted to increase to 65550 MW by the end of XII Plan (Source: CEA). Increasing voltage profile of network (765kv and HVDC lines) and improving frequency management would further strengthen the transmission network in India.

➤ Distribution Presents Potential Challenges:

Power distribution is the final and a crucial link in the electricity supply chain and, unfortunately, in India it is the weakest link. It assumes great significance as the segment has a direct impact on the sector's commercial viability. Poor financial health of state distribution utilities has affected the distribution network causing poor upkeep and maintenance. Effective implementation of the financial restructuring plan during the XIIth plan would be a positive step towards the path of financial viability.

a. Losses in Distribution: Amongst the BRICS nations, India has the highest Transmission and Distribution Losses.

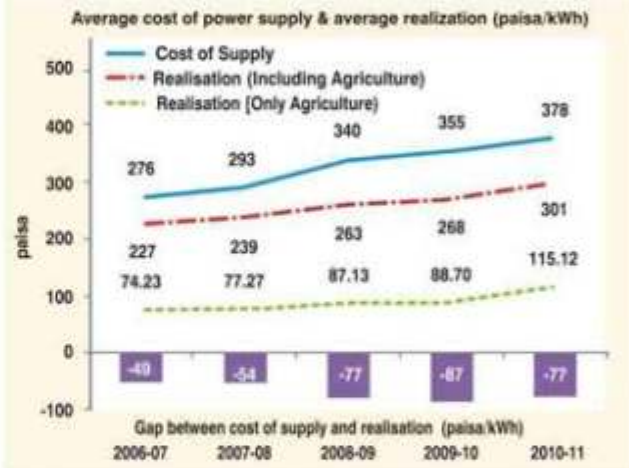


*T&D losses (%) for India pertains to for FY 12 for other countries year 2010. (Source: CEA).

The Aggregate Technical & Commercial (AT&C) loss in India for FY 12 was 27% and Transmission & Distribution loss for FY 12 was 23.65%. (Source: CEA).

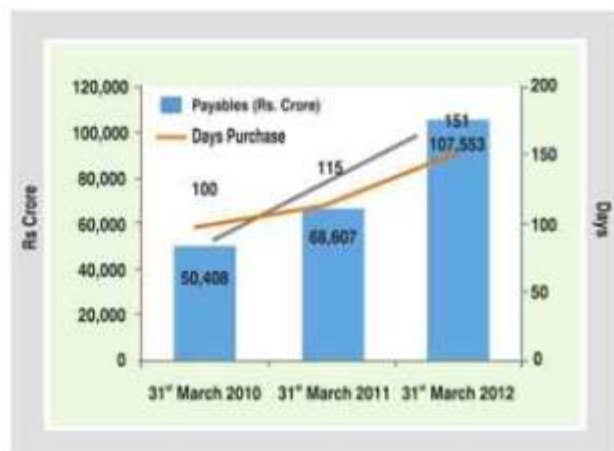
b. Poor Financial Health of State Electricity Boards/State Utilities and DISCOMs: The financial health of SEBs/ State utilities and DISCOMs (Distribution Companies) remain in poor conditions.

The cost of supply and realization gap remains high as depicted in the chart as follows:



(Source: CEA-the realization is without considering subsidy)

The huge outstanding dues of power utilities selling directly to consumers is ₹ 1,07,553 crore.

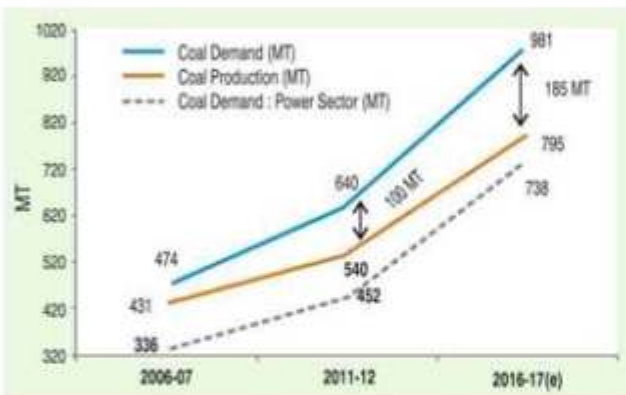


(Source: PFC Report on the Performance of the State Power Utilities)

Financial turnaround of the distribution sector is essential for its commercial viability. In this direction, the Government of India has introduced various measures like R-APDRP (Restructured Accelerated Power Development and Reforms Programme), Financial Restructuring Plan (FRP), Integrated Rating Methodology for state DISCOMs, etc.

➤ **Fuel Supplies:** Coal is the most widely used fuel in the Indian Power sector. As on 31.03.2014, nearly 60% of the country's total capacity was coal based, and approximately 79% of the additional generating capacity (excluding RES) planned for XII plan is coal based.

The coal demand and supply gap status is shown in the figure as follows:



E- Estimated

The gap may further increase in case supply from captive blocks till FY 17 does not pick up and meet the estimates (Source: 12th Plan). The gap between demand and supply of coal is likely to be met through import of coal.

POLICY FRAMEWORK

The Electricity Act, 2003 provides the overall legislative framework for the Indian electricity sector. It has promoted a liberal, transparent and enabling framework for development of the sector. Further, the Electricity Act (EA), 2003 brought about revolutionary changes in Power value chain by de-licensing of Power generation, introduction of Open Access, licensing for trading, etc.

The Act paved the way for policy initiatives for the overall development of the sector. The initiatives are - National Electricity Policy, 2005; Tariff Policy, 2006; Rural Electrification Policy, 2006; Hydro Power Policy, 2008.

Major Regulatory Developments in FY 14

The important regulatory developments that took place in the FY 14 are:

- Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations 2014 (Regulations),
- Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014, and
- Central Electricity Regulatory Commission (Power System Development Fund) Regulations, 2014 (PSDF).

STRENGTHS FOR NTPC

Operational Performance

Over the years, NTPC has consistently performed at much higher operating efficiency as compared to all-India performance.

During the FY 14, NTPC has generated ~26% of the country's total power generation with an installed capacity of ~18% of the nation's total installed capacity.

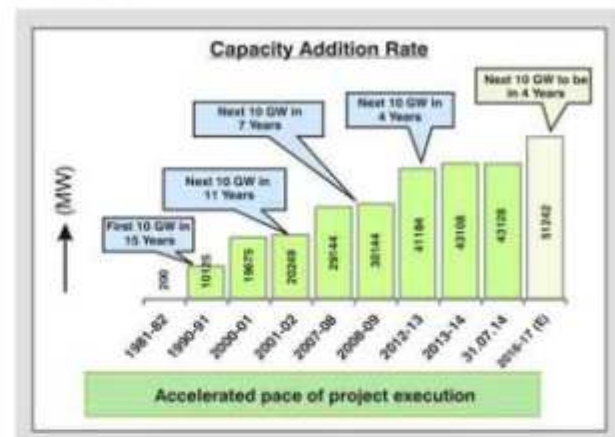
Project Management

NTPC has set up an integrated platform for monitoring and controlling of critical project activities spread across various functions.

The company has also established a state-of-the-art IT enabled Project Monitoring Centre (PMC) to facilitate fast track project implementation. PMC is integrated web based collaborative system to facilitate consolidation of project related issues and their resolution.

Total 19 units of 660 MW each and 9 units of 800 MW each were awarded under bulk tendering. These are under various stages of construction. 3 units of 660 MW each at North Karanpura, Jharkhand, and 1 unit of 500 MW at Unchahar, UP, have been awarded on EPC basis. By adopting bulk ordering and EPC contracting, the company has reduced engineering time and project execution time.

NTPC has added nearly 13,000 MW during last four and half years, which is more than one fourth of its total installed capacity built in over 39 years since inception of the company. This marks a quantum leap in terms of pace of growth.



(E)-Estimated

Long Term Power Purchase Agreements (PPAs) with our Customers & Payment Security Mechanism

Almost the entire output of NTPC's power stations has been contracted under long-term PPAs. NTPC has been able to realize its 100% dues for last eleven consecutive years.

Beyond 2016, the sales shall be secured through supplementary agreements with the customers. Under

Power Sector Scenario, Opportunities & Challenges

the agreements, the customers have agreed to create the first charge on their own receivables in our favour, and, in the event of a payment default, the agreement is to assign such receivables into an escrow account.

Reallocation of Coal Blocks to NTPC

Hon'ble Supreme Court of India, vide order dated 24.09.2014, has cancelled the allocation of 204 coal blocks, thus, sparing only Pakri-Barwadhi coal block of NTPC. Allocations of Chhatti-Bariatu & Chhatti-Bariatu (South), Kerandari, Dulanga and Talaipalli coal blocks of NTPC were cancelled because of the Hon'ble SC order.

Subsequently, Ministry of Coal vide letters dated 24.03.2015 declared allocation of Talaipalli, Kerandari, Chhatti-Bariatu & Chhatti-Bariatu (South) and Dulanga Coal Blocks to NTPC. NTPC has signed the Allotment Agreements for the Chhatti-Bariatu & Chhatti-Bariatu (South), Kerandari, Dulanga and Talaipalli Coal Blocks with Nominated Authority of Ministry of Coal on 30.03.2015. Allotment orders for these coal blocks will be issued by the Ministry of Coal after payment of the 1st instalment of upfront payment and submission of performance security. (As on 30.03.2015)

• Low Cost Producer

The average cost of tariff for the FY14 was ₹ 3.30/kwh. Low average tariff of NTPC ensures better Power off-take.

• Long-Term Fuel Security

NTPC implements projects only upon establishing availability of fuel. The 'Maharatna' status endows a high level of autonomy upon the company with regards to investment in backward integration and new fuel sources. NTPC's entire standalone commercial capacity, as on 31.03.2014, is covered by long term coal supply agreements with Coal India Limited, and Singareni Collieries Company Limited.

• Robust financial system

NTPC has a robust financial system that facilitates effective cash flow which further aids progressive asset generation. This makes way for a steady balance-sheet coupled up with low gearing and healthy coverage ratios. As a result, NTPC has been able to raise resources for its capital expansion projects at very competitive interest rates. NTPC has been accorded AAA (Triple A) rating for domestic loans and bonds from CRISIL, ICRA and CARE.

• Human Resources

NTPC has a team of unswerving professionals. The

Company has always been able to induct, develop and retain the best talent in the industry. The commitment of the employees is reflected in terms of one of the key parameters for any organization, i.e., the financial aspect, such as, sales/employee, PAT/employee, value added/employee etc. There is a pool of ~25,000 employees creating value for the company. Over the years, NTPC has been consistently ranked amongst the best employers in prestigious surveys.

RISKS AND CONCERNS

With the increased presence of private players in the Power sector, the competition is expected to intensify. The private sector with ~83GW installed capacity has ~34% share of the total installed capacity of the country as on March 31, 2014. However, the Private sector has contributed only ~23% of total electricity generation in the FY 14 while NTPC has generated ~26% of the country's total Power generation with an installed capacity of ~18% of the nation's total installed capacity.

NTPC has drawn a long term corporate plan to become a 128 GW company by 2032 to retain the status of sector leader. Ambitious capacity addition program brings along a number of challenges for the company. Risks are inherent to any business and are dynamic in nature. NTPC is susceptible to certain risks arising out of various activities undertaken in the normal course of business. The company has adequate measures in place to overcome and manage risks.

NTPC is confident that it will be able to retain its leadership position in the industry with proven in-house engineering capabilities and wide ranging experience of project execution.

To face the growth related challenges, NTPC has adopted a 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 projects' progress, etc. The Company has initiated a number of projects with high efficiency super critical units. These include placement of letter of award for 19 units of 660 MW and 9 units of 800 MW.

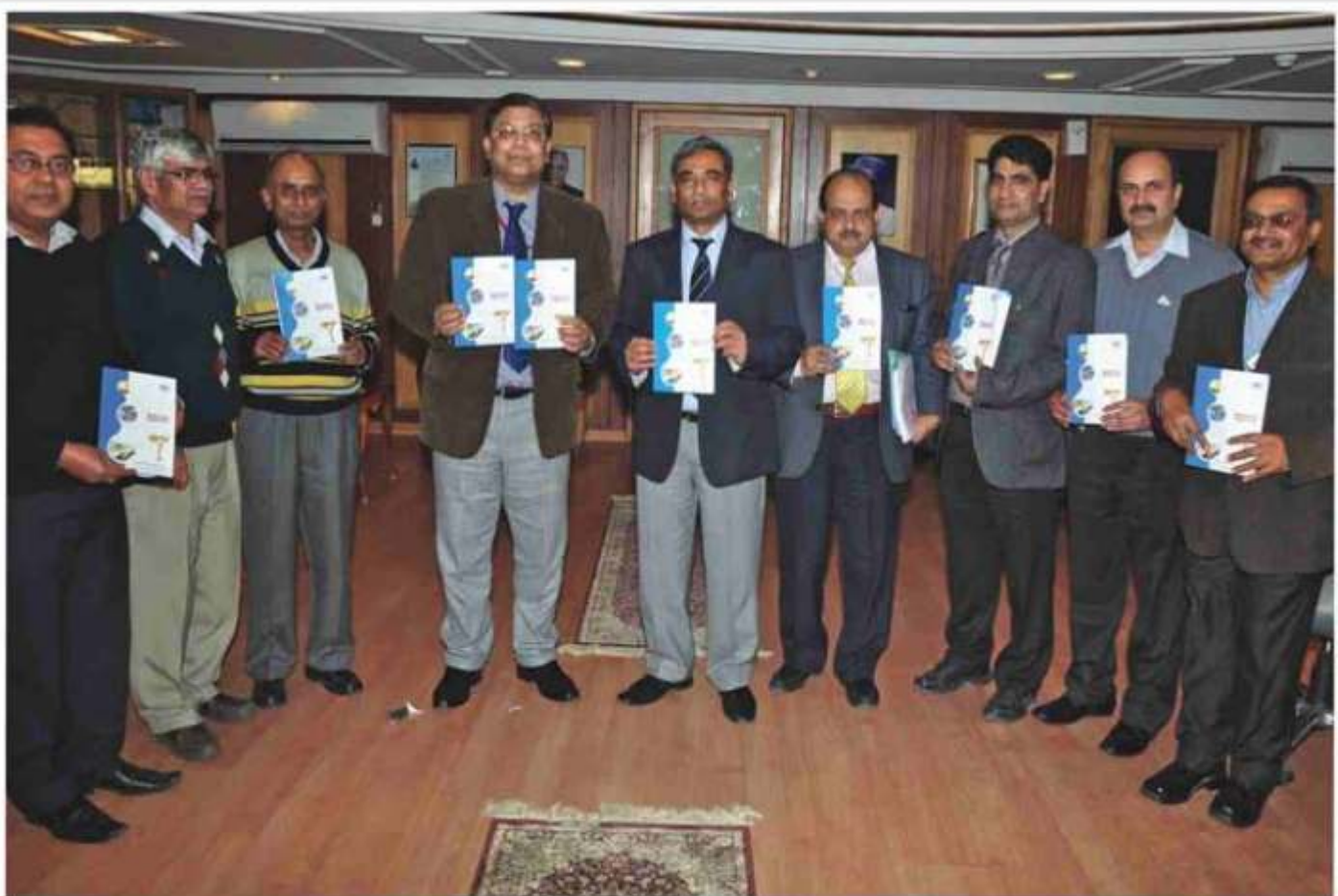
By diversifying in to the areas of coal mining, hydro-electric, nuclear power, etc., NTPC has not only entered new arenas, but also taken on to new challenges. With its proven execution and operational experience, and highly skilled and motivated man

power, the company is fully geared to take on such challenges in its stride. NTPC has commissioned seven Solar Power Projects with total capacity of 110 MW and has set a target of 10,000 MW renewable energy installed capacity by FY 19.

NTPC has also planned to overcome the fuel risk by initiating several measures, like, development of coal mines in India, use of imported coal, and use of inland waterways for transportation. Operation Inland Waterways started with the transportation of imported coal to Farakka station. Nearly 2.65 lakh MT imported coal was supplied to the station through inland waterways till June 2014 end.

Poor financial health of DISCOMs is another key concern area that may broadly impact the sustainable development of the Power sector. To foresightedly

cater to the issue, NTPC has signed long term Power Purchase Agreements (PPAs) with its customers. Due to Payment Security Mechanism, the Company has been able to realize its 100% dues for last eleven consecutive years. Beyond 2016, the sales are secured through supplementary agreements with the customers under which the customers have agreed to create the first charge on their own receivables in favour of NTPC and, in the event of a payment default, to assign such receivables into an escrow account. Further, NTPC's high operational efficiency enables it to sell Power at competitive prices and achieve exemplary savings. The Company's monitoring and maintenance techniques lend it a competitive advantage in an industry where reliability and maintenance costs are a significant determinant of profitability.



Stakeholder Engagement & Materiality Analysis



NTPC's stakeholder engagement is an ongoing journey where the company aims at understanding the expectations of its stakeholders and collaborates with them to achieve desired results.

Nine stakeholders have been identified on the basis of internal analysis.



There is no change in the list of stakeholders identified last year. To ensure effective stakeholder engagement, NTPC follows the principles of engagement as given below:

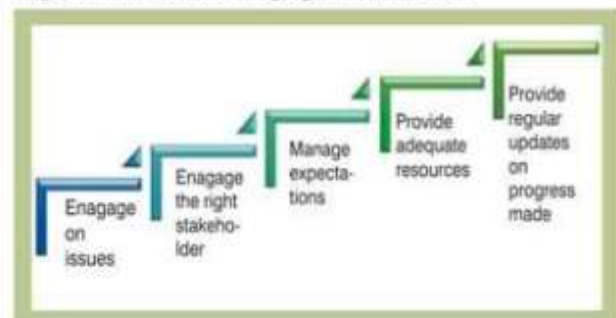
Principle of Openness: Ensure open and transparent communication with stakeholders on issues that are of mutual interest.

Principle of Accountability: NTPC's stakeholders have always shown incredible trust in the company that is not only the company's greatest strengths, but

also reflects in its reputation as a highly credible power generator and a great workplace.

In order to take on to the trust of its stakeholders, NTPC deems it inevitable to link the engagement processes and their results with the core business decision making.

Ntpc Stakeholder Engagement Model



Stakeholder engagement is a part of the business process involving continuous dialogue between the company and one or more of its stakeholders. NTPC has well defined forums for stakeholder consultation with defined frequencies. These forums have been used for identifying stakeholders' expectations in context of sustainability. The feedback is utilized for deciding the company's strategies to fulfil these expectations.

ENGAGEMENT WITH GOVERNMENT:

The Government of India is our major stakeholder. NTPC constantly interacts with the Government entities like the Ministry of Power, MNRE, Departments, BEE, Parliamentary Committees, Comptroller and

Auditor General of India, and the Members of the Parliament, etc.

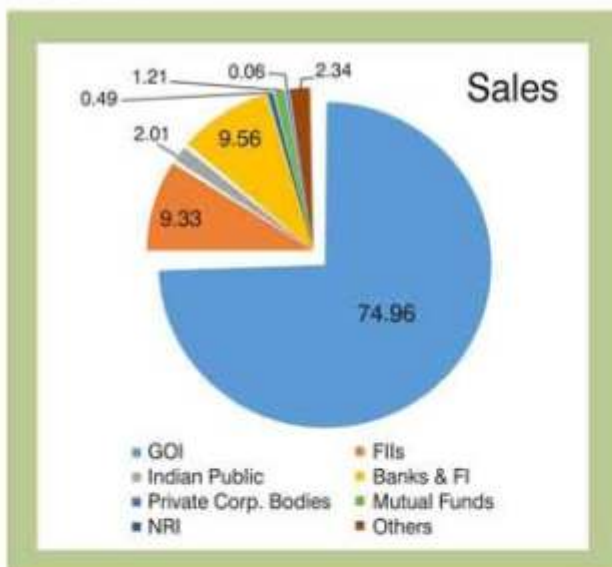
The Government of India (GoI) holds 75.00% of NTPC's shares as on 31st Mar'14 (74.96% as on 31st Mar'15) and the Ministry of Power (MoP) is the administrative ministry for the Company. The Government has nominated its representatives on the Company's Board.

NTPC signs Memorandum of Understanding (MoU) with the Ministry of Power annually. This MoU fixes elaborate targets in all aspects of NTPC's business, viz. financial, operational, project execution, CSR & Sustainability, HR Management, R&D etc.

The GOI regularly reviews the performance of the Company through various means. This includes Quarterly Power Review (QPR) and reviews by Parliamentary Committees, Comptroller and Auditor General of India, Department of Public Enterprises and the Members of the Parliament.

ENGAGEMENT WITH SHAREHOLDERS & INVESTORS

Other than the 74.96 % of NTPC's equity with GoI, the balance 25.04% of its equity comprises of domestic institutional investors, foreign institutional investors, individuals investors and others (as on 31st Mar'15) as depicted in chart:



Apart from the Govt., there are more than 7,50,000 shareholders of NTPC stock reflecting the widespread interest and confidence in the Company. Presently, NTPC is under study by around 50 research analysts. There is a dedicated Investor Services Department (ISD) apart from the Company Secretariat which deals with the statutory compliances and other related matters.

Investing and Financial Community has the following expectations:

- Creation of value
- Transparency and timeliness with regard to economic and financial information
- Corporate governance and risk management

NTPC ensures a transparent flow of information, regarding its working, with its investing community, as part of its sound corporate governance practice. By communicating in a targeted, systematic and transparent manner, NTPC provides the capital market with shareholder-relevant information and cultivates long-term relationships with its target groups so as to increase trust in the company.

Various modes adopted for addressing investors' concerns and dissemination of information are as follows:

• Annual Analysts and Investors Conference:

NTPC's Annual Investors Conference is a platform for the Company's Board to interact with the investing community, and addresses their concerns about the Company. A link to the Minutes of the 9th Annual Investors Meet held on 1st August, 2013 is given below:

<http://www.ntpc.co.in/en/investors/presentations>

- **One-on-one Meetings:** NTPC ensures regular one-on-one meetings of its analysts and fund managers with the functional Directors. Additionally, there is regular participation in investor conferences to address investors' concerns and to take their feedback about the Company.
- **Road Shows:** Proactively participating in domestic and international road-shows to extend the Company's reach to a wider array of potential investors.
- **Conference Calls:** Quarterly Conference Calls with investors by NTPC management to disseminate information behind quarterly financial numbers.
- **Public Updates:** Regular disclosures through Stock Exchanges and Press about important developments in the Company.
- **Online Updates:** There is an Investors page on the Company's website that is dedicated to providing information on Share Transfer Agent, contact references of the Company Secretary and the Investor Services officials. The page also provides latest announcements, investors' presentations, press releases, transcripts of con-calls, annual reports, calendar of important events and investors contact points, etc.

Stakeholder Engagement & Materiality Analysis

Compliance of Guidelines Issued by DPE on Investor Relations: NTPC complies with the guidelines issued by DPE on Investor Relations. Actions taken in this regard are:

- Four meetings of the Shareholders' Grievance Committee were held during the FY 14.
- There is a dedicated e-mail id isd@ntpc.co.in wherein complaints are received and redressed either over the phone or through e-mail or through postal mail.
- Karvy Computershare Pvt. Ltd., Share Transfer Agent, of the Company has provided a customized package with the URL - <http://karisma.karvy.com> wherein NTPC is able to track the investors complaints sent to Karvy and reply to the investors is forwarded timely.

ENGAGEMENT WITH REGULATORS:

NTPC, being a Central Power Generating Company, is guided by the regulations framed by Central Electricity Regulatory Commission (CERC). The tariff for electricity sold by NTPC stations is determined by CERC.

NTPC's engagement with its Regulators is broadly of the following types:

- Formulation of New Regulations: NTPC provides its comments on the draft regulations and presents its views to the Regulator.
- Tariff determination process for different stations: NTPC files detailed petitions for tariff separately for each station in the formats prescribed by CERC.
- Besides, NTPC also engages with CERC on any other matter, such as, taking up on the difficulties faced during implementation of any regulation, relaxation required, etc.

ENGAGEMENT WITH EMPLOYEES:

Employees form the most important stakeholder strata of a Company. They are the ones who drive the Company and help realize its vision and mission.

NTPC ensures continuous interaction between its management and employees at the unit, regional and apex levels. The apex fora for workmen and executives



are National Bipartite Committee (NBC) and NTPC Executives Federation of India (NEFI), respectively. The Company holds regular meetings and workshops for workmen and executive association wherein issues relating to performance and productivity are discussed and addressed. Employee satisfaction, professional & career growth opportunities, social welfare, health, safety, and quality of life are some of the issues that are continuously addressed in consultation with the employees.

NTPC has identified various participatory forums, such as, Power HR forum, NOCET, Professional Circles (PC), Quality Circle (QC), Suggestion scheme, NCYM, Quest for Excellence, International and QCFI QC conventions, presentations in conferences, etc. These Centres for Excellence help in image building, policy advocacy, excellence & competence development, and knowledge dissemination.

Jyotikiran QC of NTPC, Faridabad participated in

International QC convention at Taipan FY 14 and secured the Excellence Award, which was the highest award in the convention.

ENGAGEMENT WITH NEIGHBOURHOOD COMMUNITIES:

NTPC has always been sensitive to its neighbourhood communities. Those affected by the setting up of NTPC projects may have their concerns and aspirations with reference to environment, community development, or any other relevant aspect. Public hearings as well as meetings with local interest groups, like, Village Development Advisory Committee and Village Panchayat help NTPC to identify such specific needs or concern areas. To meet the needs of local communities and the Project Affected People (PAP) comprehensive programmes have been implemented in line with ICD, R&R policy of the Company.

The consultation process is continued even after





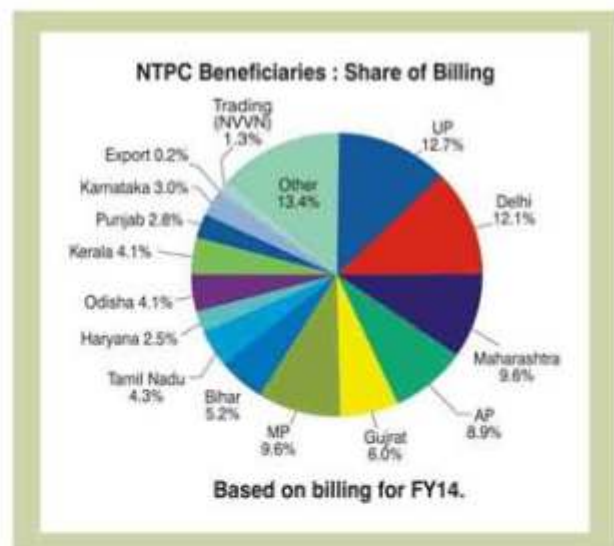
setting up the projects. The community development initiatives, at NTPC, are taken in a planned way as per CD policy. CSR activities are identified after appropriate consultation with relevant stakeholders based on Needs Assessment Surveys. Community involvement is ensured during implementation and monitoring of the community development initiative. The assets developed for community development initiatives are handed over to local authorities and Gram Panchayats for maintenance.

Community participation along with involvement of local administration & village Panchayats ensures the successful adoption of initiatives by the community. Every two years, NTPC conducts a third party Social Impact Assessment Survey for all its major CSR activities at various stations. During the FY14, NTPC has taken up impact evaluation at 13 stations.

ENGAGEMENT WITH CUSTOMERS:

Customer Relations are of utmost importance for NTPC. The Company recognises Customer Focus as one of its core values. It supplies bulk Power to fifty distribution companies under varied agreements. A list of NTPC beneficiaries can be found later in the report in 'Key Data at Glance' section.

An account of the Company's geographically diversified customers is as follows:



NTPC believes in Customer Focus. The Company has an elaborate system of Customer Relationship Management (CRM) through which it tries to reach out to its customer base. Under CRM, structured interaction with customers takes place regularly for sharing of experiences and expectations. Following are the key features of the NTPC Customer Relationship Management System:



The Project Meet 2013 with theme "Managing Time and Cost for Project Execution" was organized at NTPC - Koldam

• **Customer Support Services:**

Under CRM, NTPC offers support services to its customers on technical and managerial areas as per their specific requirements. Customer support activities, in the form of workshops and seminars, are organized on different functional areas, like, O&M, Efficiency, HR, IT, Finance, etc. The objective is to share NTPC's expertise and best practices with its customers. Officials of the customer organization participated in various technical and managerial training programmes being organized at our Power Management Institute, Noida for knowledge update.

A workshop was organized at Chennai for officials of TANGEDCO on 15th October 2014. Around 45 officials from different stations participated in the programme. The topic was, 'Start-up, Shut-down and Synchronization Procedures of 500MW units.'

• **Interactive Forums:**

NTPC interacts with its customers regularly in the following forums:

- Regional Power Meet is organized at regular intervals to provide a platform for interaction with the top level officials of the beneficiaries.

- Business Partner Meets organized for specific customers to facilitate interaction and provide opportunity to discuss specific issues.
- Meetings of Regional Executive Directors with Heads of various customer organizations.
- Day-to-day interaction with SEB Managers (NTPC Officials posted at SEB headquarters) for understanding and resolving issues.
- In addition to the above forums, structured meeting involving NTPC and beneficiaries are held in forums i.e. Regional Power Committee, Commercial Committee, Operation Coordination Committee Meetings etc.

ENGAGEMENT WITH SUPPLIERS:

Suppliers are the lifeline of operations at NTPC. A good supplier relation is of utmost importance for timely construction and operation of a plant. It is only on account of the suppliers' on-time and quality performance that the Company can satisfy the demands of its customers.

At NTPC, fair, equitable and transparent tendering procedures are adopted for selection of suppliers. The tendering procedures have been devised incorporating best national and international practices in consultation with major NTPC suppliers. These

Stakeholder Engagement & Materiality Analysis

procedures are regularly updated based on experiences and feedback received from suppliers. In case of all major packages, NTPC organizes pre-bid conferences with prospective suppliers to discuss the latest developments in the relevant areas and appropriately incorporates the inputs in its bidding documents before commencement of the tendering process. Further, it is a matter of pride for NTPC that the suppliers have lauded robust procurement systems of the Company during vendors meet. As regards the appointment of contractor for a package is concerned, a tender evaluation committee is nominated for evaluation of proposals submitted by the bidders. Based on the evaluation criteria specified in tender documents, tender evaluation committee finalises the evaluation report and puts up Award recommendation for the appointment of lowest evaluated Bidder who meets the qualifying requirements prescribed in tender documents.

ENGAGEMENT WITH MEDIA:

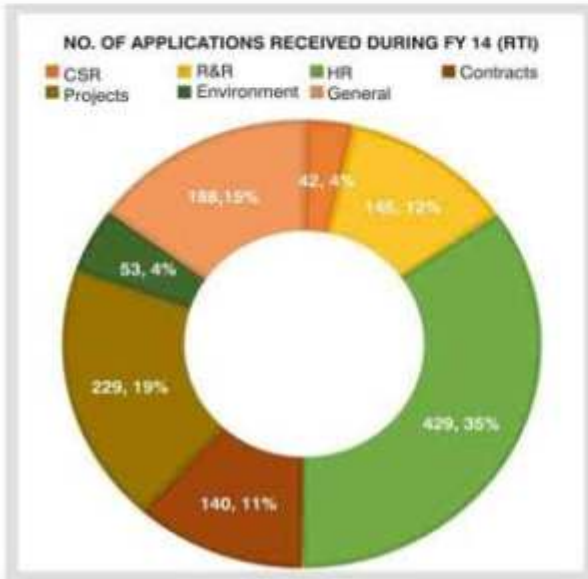
NTPC regularly interacts with media both print and electronic, on various occasions including publication of quarterly results, annual results and other important events. NTPC issues press releases and advertisements on various activities as per requirement.

ENGAGEMENT WITH THE CITIZENS OF INDIA:

NTPC generates 26% of the total electricity in the country. It is in this perspective that all citizens of India have been identified as stakeholders. CPSEs, like NTPC, are instruments of socio-economic development and change besides being corporate entities. The Right to Information Act, 2005 is also applicable to the Company. Any citizen of India can seek information from NTPC through a simple application under RTI Act 2005. 23 RTI applications were pending as on 31.03.2013 and 1226 applications were received during FY14. Out of these, 1194 were



replied during the year 2013-14 and 55 (received in March 14) were pending as on 31.03.2014. However, these pending applications have also been replied to, subsequently, as per the provisions of the RTI Act. These applications sought information about various areas, such as, R&R, CSR, environment, HR, Contracts, Projects and other general issues as depicted below:



Vendor Meets Organised in FY 14



Media Interaction & Press Meet

Stakeholder Engagement & Materiality Analysis

Stakeholder participation in the decision making process related to energy planning and infrastructure development

Energy Planning

NTPC's plans and targets are based on the plans developed by the Govt. of India and Ministry of Power. NTPC also participates in various working groups formed during the process of energy planning and infrastructure development.

Infrastructure Development

For infrastructure development, stakeholders involved are community, employees, Expert Appraisal Committee of MoEF, Central Govt. (MoEF), State Govt. (SPCB), Consultants for EIA Studies, and Investors. NTPC has a robust system for infrastructure development involving stakeholder participation.

Steps to be followed involving stakeholder engagement:

1. Selection of environmentally compatible sites, conforming to the guidelines of MoEF (by employees of concerned groups).
2. Approval of draft terms of reference for EIA studies (by MoEF), which also serves as site clearance for the project.
3. Undertaking detailed EIA studies (by consultants) as per TOR approved (by MoEF).
4. Conducting public consultation (by SPCB) based on EIA report (prepared by consultants) in which community and civil society is invited to participate through advertisements in print media and local publicity.
5. Appraisal of the project by Expert Appraisal Committee of MoEF and recommendation.
6. Accord of Consent or rejection of project by MoEF based on the recommendations of MoEF.
7. Accord of Consent to Establish/Operate by SPCBs.
8. Environmental appraisal of projects by investors based on EIA reports and clearances granted by MoEF/SPCB.

Materiality Analysis

NTPC is the single largest electricity generator in India. It contributes to 26% of the country's power generation. The Company has earned repute and recognition as a committed organization known for its ability for efficiency in power generation and project

delivery. NTPC recognizes that risks are not only inherent to any business, but are also dynamic in nature. These risks also provide challenges and opportunities to the organization that help the Company to grow.

To identify and manage risks, NTPC has an elaborate Enterprise Risk Management framework in place. An Executive Director level Committee, namely, 'Enterprise Risk Management Committee (ERMC),' has been entrusted with the responsibility to identify and review the risks, formulate action plans and strategies to mitigate risks on short term as well as long term basis. The ERMC meets at defined intervals to deliberate on strategies. The ERMC has identified following 26 key risks:

No.	Key Risks
1.	Inadequate fuel supply.
2.	Difficulties in acquisition of land.
3.	Inadequate water availability
4.	Delay in execution of projects
5.	New business venture risks
6.	Sustaining efficient plant operations
7.	Reduced generation capacity of ageing plant
8.	Failure to develop technological solutions for operation of plants at high performance.
9.	Compliance of emission, ash utilization and regulatory norms
10.	Legal Risks
11.	Breach of information security
12.	Non-availability/failure/sub-optimal use of ERP
13.	Challenges in attracting and retaining skilled and experienced employees
14.	Inadequate succession planning
15.	Threats to Safety & security of people & property
16.	Natural/ manmade disasters
17.	Sustaining market share

No.	Key Risks
18.	Sustaining Realization
19.	Fluctuation in Exchange Rates
20.	Financial Resource mobilization at competitive rates.
21.	Misstatement in financial accounts and reports
22.	Inadequate/non accounting of fixed assets
23.	Risks pertaining to Hydro Projects
24.	Risks related to coal mining
25.	Risks pertaining to subsidiary companies
26.	Risk of not getting schedule

Out of above 26 risks, ERMIC has classified following 8 risks as the high risks for the company.

High Risks:

1. Inadequate fuel supply
2. Compliance of emission, ash utilization and regulatory norms
3. Difficulties in acquisition of land
4. Sustaining efficient plant operations
5. Risks related to coal mining
6. Risk of not getting schedule
7. Risks pertaining to Hydro Projects
8. Delay in execution of projects

These areas are being regularly monitored through reporting of key performance indicators of identified risks. Exceptions with respect to risk assessment criteria are reported regularly to the Board of Directors. To deliberate on strategies for mitigating risk, ERMIC meetings are held quarterly.

Stakeholder Engagement Process			
Engagement Forum	Frequency	Purpose of Engagement	Key Sustainability Concerns Identified
a) Government of India			
Secretary level review	Quarterly	<ul style="list-style-type: none"> • Policy development in line with national priorities • Meeting 5 year national plans • Target monitoring – Annual MoUs • Compliance with Govt. Directives and Guidelines • Transparency and Governance • Company Performance and its reporting • Performance Constraint • New initiative 	<ul style="list-style-type: none"> • Delay in execution of Projects • Sustaining Efficient Plant Operations • Coal Mining (Land Acquisition) • Climate Change • Environmental Issues • Community Development
Meetings with MoP, DPE, Parliamentary Committees, CEA etc	As per requirement		
b) Shareholders & Investors			
Conference Calls	Quarterly	<ul style="list-style-type: none"> • Management Vision and future plans • Company performance • Sustainability Challenges and concerns • Growth opportunities of the Company • Handling queries of investors, fund managers & analysts • To discuss debt requirements 	<ul style="list-style-type: none"> • Delay in execution of Projects • Sustaining Efficient Plant Operations • Sustaining Growth
Analyst and Investors Meeting	Annual		
Annual General Meeting	Annual		
One on One Meetings and Investor Conferences	Regular		
Review meets with Bankers (Domestic and Foreign)	Annual		

Stakeholder Engagement & Materiality Analysis

Stakeholder Engagement Process			
Engagement Forum	Frequency	Purpose of Engagement	Key Sustainability Concerns Identified
c) Regulators (CERC) & Other Statutory Authorities (CAG, MoEF, CPCB/SPCB etc.)			
Public hearings	Need based	<ul style="list-style-type: none"> • Issues relating to tariffs • Optimising cost of electricity 	<ul style="list-style-type: none"> • Environmental Clearances
Statutory Audits & Inspections, Meetings for Clearances, Consents & Compliances	As per statutory provisions; Need based	<ul style="list-style-type: none"> • Financial Audits & Transparency • Obtaining Project clearance, • Environment Clearance & Clearance Conditions • Obtaining Consents and meeting Consent Conditions 	<ul style="list-style-type: none"> • Ash Management • Compliance with changing environmental norms
d) Employees			
Participative forums, Communication meetings, Employee Climate Surveys, Intranet, Trainings and Workshop, Internal Magazines	As per defined frequency or as per requirement	<ul style="list-style-type: none"> • Grievances and feedback • Employee Satisfaction • Professional Growth • Health, Safety & Security Issues • Work – Life balance • Quality of Life • Remuneration and Rewards • Actualisation of Core Values 	<ul style="list-style-type: none"> • Attracting and retaining skilled and experienced employees • Safety & security of people and property
e) Neighborhood Communities			
Public hearings, VDAC, Public Information Centres	Need based; at least once in a year	<ul style="list-style-type: none"> • Rehabilitation & Resettlement Issues • Community development Issues • Environmental Issues • Community Grievances 	<ul style="list-style-type: none"> • Community Development • Land Acquisition
f) Customers			
Regional Customer Meets	Once in two years for each region	<ul style="list-style-type: none"> • Top & Middle level Interactions between Customers & NTPC • Resolving Technical Issues • Resolving Commercial issues • Grid Operation, Scheduling and other related issues • Support services to customers on various area of power business 	<ul style="list-style-type: none"> • Health of State Utilities • Risk of not getting schedule
Regional Power Committees (RPCs)			
1. Commercial Co-ordination Committee	Quarterly		
2. Technical Co-ordination Committee	Quarterly		
3. Operation Co-ordination Committee	Monthly		
Business Partner Meet	Yearly		
Customer Support Services	As per requirement		

Stakeholder Engagement Process			
Engagement Forum	Frequency	Purpose of Engagement	Key Sustainability Concerns Identified
g) Suppliers			
Pre-bid conference, Suppliers Meet, Vendor Enlisting, NTPC Website	Before tendering & Need based	<ul style="list-style-type: none"> Finalisation of Technical specifications Qualifying Requirements of Vendors Sharing Latest Technological Developments in the Area Resolving Contractual Disputes 	Inadequate Fuel Supply
h) Media			
Press Releases Press conference	Need based, Event based	<ul style="list-style-type: none"> Information Sharing Brand Image Keeping the general public and community apprised of developments such as new capacity additions, performance and new developments 	Brand Image
i) Citizens of India			
Right To Information (RTI) Act, NTPC Website	Continuous	<ul style="list-style-type: none"> Rehabilitation & Resettlement Issues Community Development Issues Environmental Issues Employee Grievances Contractual Disputes 	<ul style="list-style-type: none"> Community Development Environmental Issues

Management approach on sustainability issues - To address key material issues, various initiatives were taken by NTPC during FY14 and the same are summarized below:

Issue	Sustainability Impact	Initiatives to address Materiality Issues
Inadequate fuel supply	<ul style="list-style-type: none"> Availability of Power Sustaining Growth Economic Performance 	<ul style="list-style-type: none"> Signing of Long Term Coal Supply Agreements with Coal Companies valid for 20 years For any shortfall, coal procurement through e-auction, import and bi-lateral agreements with coal companies Backward Integration into coal mining Changing product mix by diversifying into renewable energy sources.
Delay in execution of projects	<ul style="list-style-type: none"> Availability of Power Sustaining Growth 	<ul style="list-style-type: none"> Identification of Critical Project implementation risks. Implementation of Integrated Project Management & Control System (IPMCS) Timely resolution of disputes Standardisation and bulk ordering of 660MW & 800MW Units.
Financial health of State Distribution Utilities	<ul style="list-style-type: none"> Risk of not getting schedule Sustaining appropriate tariff and realisation 	<ul style="list-style-type: none"> Signing of Long Term Power Purchase Agreements (PPAs) with State Utilities for 25 years Minimising cost of electricity production Rebate Schemes for timely payments Supplementary agreements signed with all DISCOMS for first change over state utilities receivables after 2016 Geographically diversified customers Payment security mechanism in place PPAs have been signed for all stations/projects Policy of securing PPAs for all new plants before Investment approval.

Stakeholder Engagement & Materiality Analysis

Issue	Sustainability Impact	Initiatives to address Materiality Issues
Sustaining efficient plant operations	<ul style="list-style-type: none"> • Availability of Power • Economic Performance • Environmental Performance 	<ul style="list-style-type: none"> • Enhancing energy efficiency • Advanced overhaul planning • Well defined predictive, preventive and corrective maintenance practices • Adoption of New Technologies
Competition	<ul style="list-style-type: none"> • Economic Performance • Retaining skilled and experienced employees 	<ul style="list-style-type: none"> • Long Term Power Purchase Agreements • In-house Engineering Capabilities • High operational efficiency • Competitive Energy pricing • Retaining best employer status
Environmental Clearances	<ul style="list-style-type: none"> • Difficulty in obtaining environmental approvals • Delay in capacity addition 	<ul style="list-style-type: none"> • Comprehensive EIA Studies • Careful Site Selection • New Technology Adoption • Policy Advocacy
Changing Environmental Laws	<ul style="list-style-type: none"> • Compliance of emission, ash utilization and regulatory norms 	<ul style="list-style-type: none"> • Enhancing Environmental Performance • Reducing Pollution • Minimizing waste generation • New Technology adoption • Renovation & Modernisation
Ash Management	<ul style="list-style-type: none"> • Ash dyke availability (MoEF has prescribed only 0.25 acres / MW land for new ash dyke, which is not sufficient) 	<ul style="list-style-type: none"> • Policy advocacy to enhance land being provided for ash dykes • Maximise Ash Utilisation • Effective Ash Pond Management • Use of new technologies for ash disposal & storage. • Ash Water Recycling
Availability of water for power plants	<ul style="list-style-type: none"> • Scarcity of Water 	<ul style="list-style-type: none"> • Use of new technologies to reduce the requirement of water • Promoting recycle and reuse
Climate Change issues	<ul style="list-style-type: none"> • Global warming • Water scarcity 	<ul style="list-style-type: none"> • Enhancing energy efficiency • Diversification into renewable energy sources. • Changing product mix ratio • New Technology adoption
Difficulties in acquisition of land	<ul style="list-style-type: none"> • Delay in capacity addition 	<ul style="list-style-type: none"> • Implementation of R&R Policy • Best possible R&R package for the PAPs in consultation with stakeholders and State Government • Community Development • Land acquisition cell created at corporate centre to support the activities at site
Community Development	<ul style="list-style-type: none"> • Inclusive Growth 	<ul style="list-style-type: none"> • Implementation of NTPC CD Policy • Need Assessment Surveys • Taking up specific CSR Projects for the local community
Safety & Security of people and property	<ul style="list-style-type: none"> • Occupational Health & Safety • Achieving "Zero Accident" rate 	<ul style="list-style-type: none"> • Conducting Safety Audits • Implementation of Safety Policy • Elimination of all unsafe actions and conditions. • Need based mobilization of security manpower at projects • Up-gradation of security technology • Capacity building.

Economic Performance



DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED

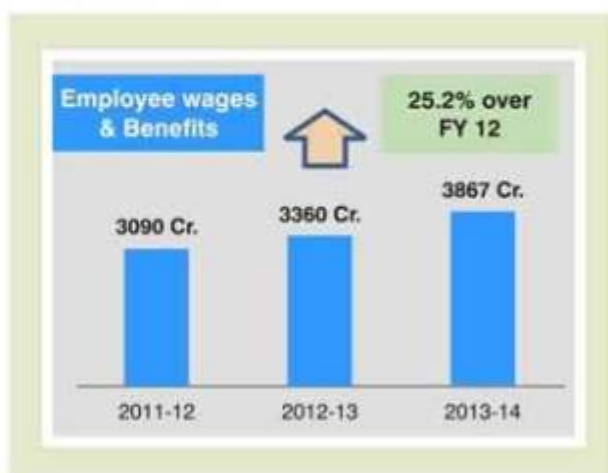
Direct Economic Value Generated

NTPC's operational performance during the FY 14 has resulted in an increase in its direct economic value generated from ₹ 69,614.92 crore in the FY 13 to ₹ 74,507.95 crore.

Particulars	FY 2012-13 (₹ in crores)	FY 2013-14 (₹ in crores)
A: Direct Economic Value Generated		
Revenues	69,614.92	74,507.95
Total (A)	69,614.92	74,507.95
B: Direct Economic Value Distributed		
Operating Cost	44,881.02	50,031.33
Employee Wages & Benefits	3,360.12	3,867.99
Payments to Providers of Capital	6,665.52	7,147.74
Payments to Government	4,527.83	3,664.00
Community investments	77.08	120.21
Total (B)	59,511.57	64,831.27

Direct Economic Value Distributed

Elements of direct economic value distributed, i.e., employee wages, payments to providers of capital and community investment, have shown improvement as depicted below:



Economic Performance



NTPC's financial performance in the FY 14 was excellent - the adjusted profit increased by 16.44% reaching ₹10,562 crore. Details of financial performance are given in the Annual Report FY 14 which is available at the following link: www.ntpc.co.in

MITIGATING CLIMATE CHANGE IMPACTS

NTPC is conscious about the impacts of economic development on climate change and appropriate measures are taken to minimize the same. The Company's approach towards low carbon future includes the following:

1. Increasing the cycle efficiency of fossil fuel based units
2. Increasing the share of non-fossil based generation
3. The Centre for Power Efficiency & Environmental Protection (CenPEEP) functions as a resource centre for acquisition, demonstration and dissemination of state-of-the-art technologies and practices for performance improvement of power plants for the entire power sector of India minimizing GHG emissions
4. Participation in Clean Development Mechanism (CDM) projects through small hydro projects, energy efficiency projects, Solar PV projects, etc.

These measures are expected to minimize the impact of climate change related issues on NTPC and will

improve the preparedness of the Company for adapting to the changed scenario.

NTPC has not carried out the quantification of financial implications on business due to climatic risks. However, the Company has determined financial implications due to constantly increasing coal costs. Suitable measures like energy conservation, process modification, etc are in place for reducing the impact of increased coal cost on cost of electricity supply.

Policy and Practices Adopted for Suppliers & Local Sourcing

Under the Procurement and Works Policy of NTPC, transparent tendering procedures are adopted for all procurements. In order to encourage Indian suppliers, provisions regarding price preference and deemed export benefits (Customs & Excise Duty benefits) are stipulated in the bidding documents as per the extant policy of Government of India. The provisions in respect of labour, welfare, safety, etc. are being incorporated in the bidding documents for supply cum erection packages, invited on international competitive bidding and domestic competitive bidding basis.

There are economic opportunities for the local suppliers arising out of the need for goods and services by NTPC projects. Many indirect benefits are available to project affected families as additional facilities, over and above the entitlements. Project Affected Persons are given preferences for following opportunities of projects and townships:

- Employment with contracting agencies
- Allotment of Shops, Kiosks in township
- Award of petty contracts
- Vehicle hiring in projects

FINANCIAL ASSISTANCE FROM GOVERNMENT

NTPC is running on self-sustained basis and is giving regular dividends to the Government of India on its equity. No capital has been invested by the Government of India in NTPC since the year 1999-2000. NTPC does not receive any direct government benefit by way of subsidies, grants or royalties. The Government of India has given exemption of Section 80-IA of Income Tax Act, 1961 to all companies in the infrastructure sector and the same is applicable to some NTPC power plants.

STRATEGIES TO ENSURE AVAILABILITY AND RELIABILITY OF POWER

The Power sector is suffering from demand-supply gap, as deliberated earlier in the report. Also, the sector is facing resource constraint for new capacity additions. To meet the expectations of its customers, NTPC deploys following strategies to ensure higher availability and reliability of its units.

1. Renovation & Modernization
2. Research & Development
3. Reliability Improvement Measures

1. Renovation & Modernization (R&M)

In India, around 30% of the installed capacity is more than 15 years old. Due to aging, difficulties are faced in maintaining the rated capacity of such units. R&M of such plants help improve performance upto the rated capacity. R&M is cost effective and less time consuming in comparison with new installations. Hence, it is considered to be one of the best options for bridging the gap between demand and supply of Power.

In NTPC, R&M of old units are being carried out not only for the purpose of life extension and performance

improvements but also for improved environmental compliance. With a view to comply with increasingly stringent environment norms of reduced emission levels, prescribed by State Pollution Control Boards, retrofitting of Electrostatic Precipitator (ESP) is in progress in NTPC stations like Singrauli, Korba, Rihand, Vindhyachal, Farakka, Unchahar, Talcher Kaniha, Talcher Thermal etc.

2. Research & Development (R&D)

The R&D wing of NTPC - Energy Technology Research Alliance (NETRA) - focuses on following areas:

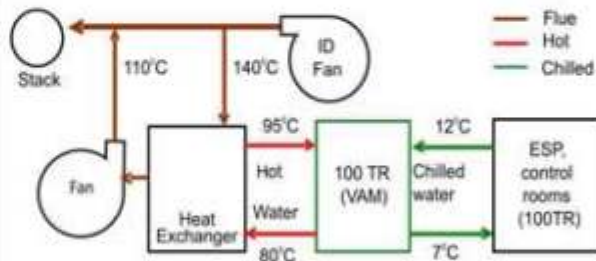
- Efficiency & availability improvement
- Renewable energy and alternate energy source
- Climate change & environmental protection
- Advance scientific services

Research Area	Description	Benefit
Focus Area: Efficiency & Availability Improvement		
RFID (Radio Frequency Identifier) technology based system for detection of Fish Plate removal in MGR	RFID system was implemented to detect any removal of fish plate in one MGR. RFID tags were deployed in each and every fish plate joints. These RFID Tags have contact and proximity sensors which will indicate a problem in case of any fish plate removal attempt. Application software associated with RFID indicates the tempered fish plate joint number.	<ol style="list-style-type: none"> 1. Derailment due to fish plate removal avoided. 2. Improved Coal availability 3. Damages to Loco & Wagons due to these accidents avoided.
Development of Nano-lubricants for ID fan	A new kind of lubricant oil, using Graphene nano additives, has been developed for ID fan. The lab scale demonstration showed a reduction of -15°C in operating temperature and -25% in friction coefficient.	<ol style="list-style-type: none"> 1. Improved equipment & oil life with reduction of operating temperature 2. Expected annual energy savings of ~ 33000 units per ID fan (500MW)
Development of transformer winding moisture assessment technique (PDC-RVM) for stations.	For assessment of paper moisture in transformer, Integrated PDC-RVM (Polarisation Depolarisation Current - Recovery Voltage Measurement) system has been developed.	<ol style="list-style-type: none"> 1. Expert System will help in taking maintenance decisions, such as, dry-out of transformer. 2. Cost of the instrument is much less than other comparable commercially available technique.
Focus Area: Renewable Energy and Alternate Energy Sources		
3-mode Solar Thermal Cooking System (STCS)	STCS is a system where all three modes of cooking (boiling, frying and baking) are envisaged. The proposed system comprises of 2 blocks - solar and cooking. Solar block consists of solar concentrators, thermic fluid expansion-cum-storage tank and thermic fluid pump. A cooking block comprises of various types of cooking vessel required for baking, frying and boiling along with LPG thermic fluid heater which shall cater to cooking needs during non-lean solar period.	<ol style="list-style-type: none"> 1. Capable of cooking in all 3 modes - boiling (100°C), frying (220°C) and baking (280°C). 2. Quick start-up - almost 50% time needed for solar steam cooking system. 3. Thermal Energy Storage - buffer for no / low solar period & quick start up in morning. 4. No chemicals required - no steam generation. 5. Estimated 40-50% savings compare with existing open burner LPG cooking system.
Agreement has been signed with KFW, Germany for setting up of (i) Advanced Test and Qualification Centre for Concentrating Solar Thermal Technologies with DLR Germany, and (ii) Advanced pilot test setup for 91kwp concentrating solar PV and PV characterization test lab with ISE-Fraunhofer, Germany.		

Research Area	Description	Benefit
Focus Area: Climate Change & Environmental Protection		
Sintered fly-ash based light weight aggregate (LWA); mix design & testing for M25 grade concrete.	The mechanical properties, i.e., compressive strength, flexural strength, and split tensile strength of sintered fly ash based LWA are investigated to produce M25 grade concrete mixtures. Compressive strength of concrete (28 days) about 37 to 40 MPa has been achieved.	1) Utilization of fly-ash as resource material 2) Conservation of natural aggregate
Algae based process for conversion of CO ₂ in flue gas to useful product(s) Pilot project	Flue gas passed through algae-water medium for accelerated growth of algae. Study is being carried out to optimize the algae growth condition, algae separation & extraction of bio-oil from algae.	Development of an algae based process for CO ₂ mitigation and its utilization.
Focus Area: Advance Scientific Services		
Flow analysis using CFD modelling to address flow induced vibration in CW Pumps	Flow induced problems, like, swirl and vortices were identified in the sumps using CFD Model and suitable flow correcting devices were designed to eliminate these anomalies in the sumps. Modifications in the CW sumps in Farakka St-III were carried out based on the above analysis. Flow induced problems were also analyzed in CW sumps of Korba St-III, Vallur and NSPCL Bhilai	Reduction in CW Pump vibration from earlier level observed in Farakka St-III CW Pumps.
Application of TOFD for fast and reliable inspection of welds on pipelines	Detection of defects using diffraction of ultrasonic waves from the edges of defects, calculating the time of flight to estimate the defect size and shape.	1. Fast and accurate for analyzing of internal defects 2. Suitable for inspection of pipelines welds.

Case Study: Air Conditioning using Low Grade Waste Heat of Flue Gas at Ramagundam

Research Area	Description	Benefit
Utilization of Low Grade Waste Heat of Flue Gas for Air conditioning	In coal fired Power Plants, the low grade thermal heat emitting from flue gas exit with temperature of around 135°C to 140°C. This waste heat can be gainfully recovered for producing air-conditioning using Vapour Absorption Machines. A pilot plant of 100TR capacity utilizing small quantity (50T/hr) of flue gas has been set up and commissioned on 25 th Oct. 2013 at NTPC Ramagundam STPS. The pilot plant is in continuous operation till then.	1. Air conditioning using waste heat of flue gas instead of electricity or auxiliary steam. 2. Green House Gas (CFC & HCFC) free thermally driven 100 TR VAM based AC system. 3. Expected saving of 0.4 mu/annum 4. Expected Reduction in CO ₂ emission is 321 T/Yr for Ramagundam STPS





Research Advisory Council (RAC) of NETRA comprising eminent scientists and experts from India and abroad is in place to steer research. Scientific Advisory Council (SAC) with Executive Directors as its members provides directions for undertaking specific applied research projects aimed to develop techniques in power plant for efficient, reliable and environment friendly operation with emphasis on reducing cost of generation. The meetings for both these Advisory Councils were held periodically. During FY 14, a total of ₹ 134.34 crores was spent on various R&D activities in NTPC.

3. Reliability Improvement Measures

NTPC has taken many initiatives for enhancing availability and improving reliability of its generating units. Some of the significant initiatives are as follows:

Reliability Improvement Measures	
Initiatives	Systems & Benefits
SACS (Special Analytics & Computational Services)	SACS has been established at corporate office to improve system wide reliability. The system provides early warning of equipment problems using state-of-the-art technologies.
IDAAS (Integrated Data Acquisition and Analysis System)	IDAAS is used for on-site efficiency evaluation. Modeling tools, like, PEPSE (Performance Evaluation of Power System Efficiencies), are used for verifying equipment and system efficiencies and gap identifications.
PEM (Performance Evaluation Matrix)	Relative evaluation of the performance of various Power Plants covering a set of comprehensive performance indicators is conducted to create an environment of in-house challenge and competition.
PI System and PI System based applications	Real time efficiency and loss calculations are computed. This ensures early actions to minimize station losses.

NTPC MoU with Gol

Targets and Achievements: The targets and achievements of some of the relevant sustainability parameters in Gol MoU FY 14 are as follows:

No	Parameters	MoU FY 14	
		Target (Excellent)	Achievement
1.	Gross Generation (MU)	2,42,000	*2,33,284
2.	Availability Factor – Coal (%)	89	90.32
3.	Capacity Addition :		
	i) Coal (MW)	1855	1770
	ii) Solar PV (MW)	20	65
4.	Gross Margin (₹ Crores)	15,897	20699
5.	Net Profit / Net Worth (%)	8.37	12.79
6.	Labour Productivity –PBDIT / Total Employment (₹ crore / Employee)	0.669	0.884
7.	Expenditure (% of PAT of FY 13) :		
	i) CSR & SD activities	0.6%	1.0%
	ii) R&D	1.0%	1.07%
8.	Employee Training Expenditure (% of employee cost)	1.3	1.54

*The gross generation target, excellent category, could not be met due to shortage of fuel and non-availability of schedule, not entirely in NTPC's control.

Targets as per MoU FY15 are given below:

No	Parameters	MoU Target 2014-15
1.	Gross Generation (MU)	2,44,000
2.	Availability Factor – Coal (%)	88
3.	Capacity Addition :	
	1) Coal (MW)	1355
	2) Solar PV (MW)	60
	3) Hydro (MW)	608
4.	Gross operating margin (₹ Crores)	11,261.42
5.	Net Profit / Net Worth (%)	5.73
6.	Labour Productivity –PAT / Employee (₹ Lakh/ Emp.)	21.49
7.	Attrition as % of total employees	3
8.	Employee Training (Days / Employee)	7
9.	Training Budget (% of employee cost)	1.3

Environmental Performance



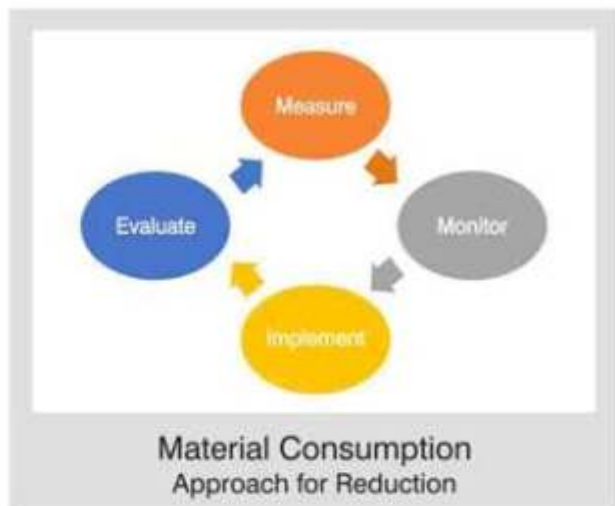
NTPC's Environment Policy forms the base for the company's approach towards environment management. The policy focuses on efficient utilization of resources, minimization of waste, adoption of latest technologies for higher efficiencies and minimal impact on environment.

NTPC has implemented various measures to reduce its environmental impact. All NTPC plants ensure adherence to regulatory compliance. The company has designed its power plants and environmental protection systems with due consideration to emerging requirements. Most of the NTPC operating stations are EMS (Environment Management System) ISO 14001 certified.

MATERIAL CONSUMPTION

Since NTPC is a Thermal Power Generating Company, its primary input materials are fuel (coal, gas) and water. These have been covered later in the report under energy and water sections. However, some other resource materials used by NTPC are oils, lubricants, chemicals and gases, such as, Alum, Chlorine, Hydrochloric acid (HCl), Sulphuric acid (H₂SO₄), Ammonia (NH₃) and Hydrogen (H₂) etc.

NTPC follows a comprehensive approach for improving material consumption efficiency, with due focus to the regular evaluation of resource consumption intensity. The resource consumption intensity is improved through measurement,

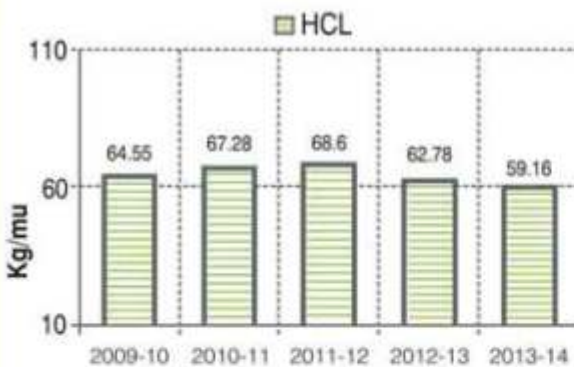
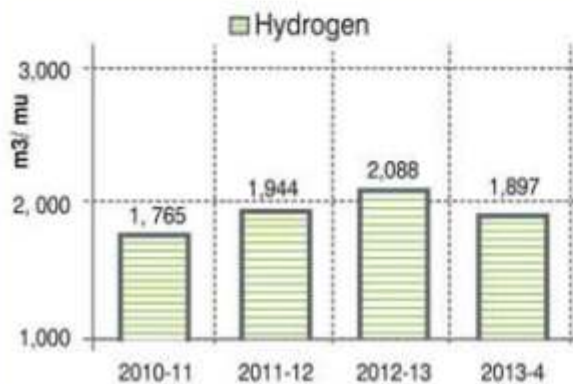
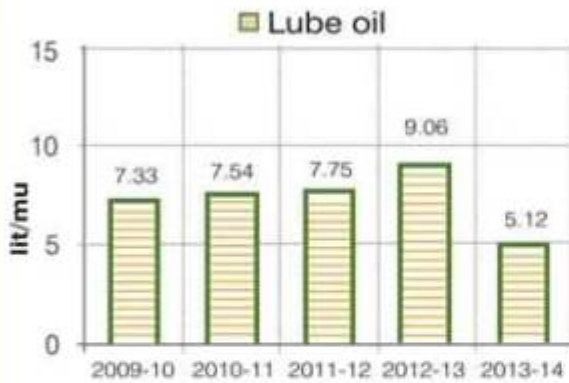


Material Consumption Approach for Reduction

monitoring of the consumption and implementation of improvement plans.

During the FY 14, specific consumption of Lube oil, Hydrogen and HCL has decreased at NTPC as compared to FY 10. Some of these chemicals are mainly consumed for water treatment and their consumption depends upon the quality of water intake, which is continuously deteriorating. The consumption of other materials also varies based on specific requirements and change in total generation, plant load factor, etc. NTPC takes due care to reduce consumption of these materials. Details of such consumption can be seen in the 'Key Data at a Glance' section of this report.

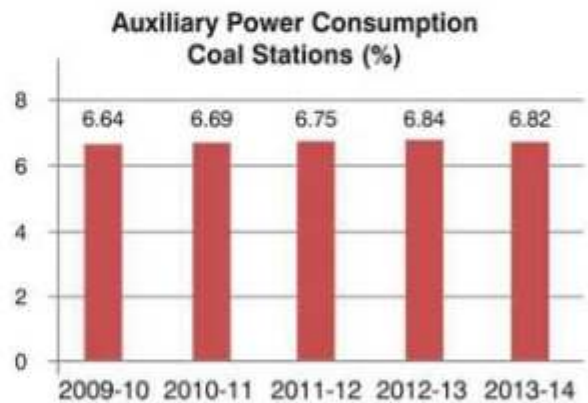
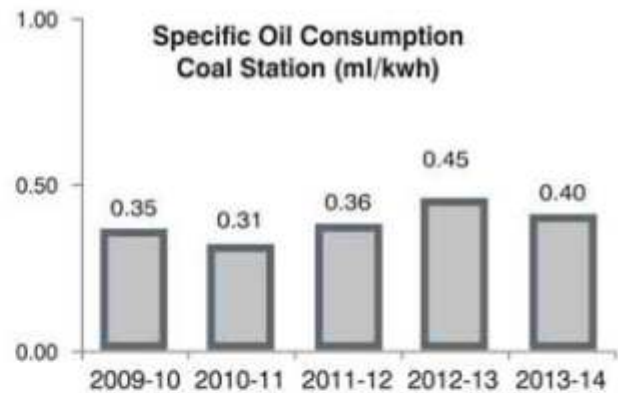
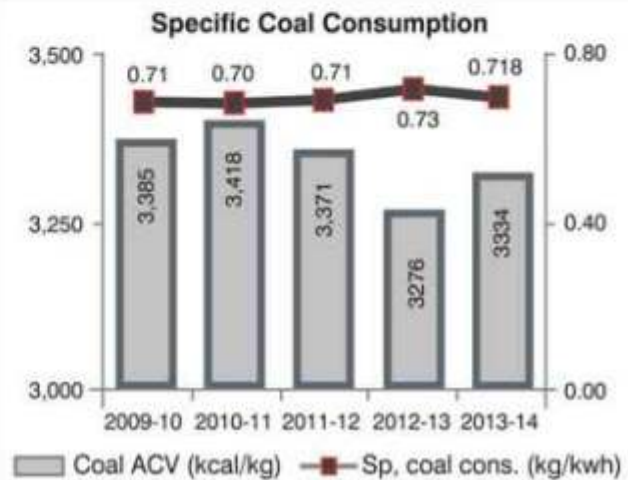
Environmental Performance



NTPC does not use any significant recycled material. Chemicals, like Lube oil, Hydrogen, HCL, and other such materials are mostly completely consumed in the process. Hence, none of them can be recycled. However, used oil, batteries, waste scrap, etc. generated in the plants are sold to registered recyclers for recycling. It is noteworthy that NTPC does not use any Polychlorinated Biphenyl (Persistent Organic Pollutants, POP) in any of the generation processes across all locations.

ENERGY CONSUMPTION – Direct & Indirect

Coal and Gas, being the main raw materials for NTPC, are used as fuel for power generation. The company focuses on the efficient use of these resources. Performance parameters of specific coal consumption, auxiliary power consumption and specific oil consumption have shown improvement during the FY 14, with respect to FY 13. The trends for these parameters are shown in graphs below:



Energy Conservation

Some of the important energy conservation measures taken by NTPC during FY 14 are as under:

- Energy audit carried out regularly in all the power stations to monitor and control energy utilisation.
- Offline GT compressor washing during opportunity shutdown at gas stations.
- Application of efficiency improvement coating on cooling water and other pump internals.
- Installation of Variable Frequency Drive (VFD) in NOx injection pump (15 KW) and raw water pump (37 KW) by NTPC Kayamkulam.
- Replacement of fluid couplings with magnetic couplings by NTPC Tanda.
- Replacement of alternate street lights with solar lights by NTPC Kayamkulam.
- Replacement of Sodium Vapours lamps with LED lamps at all NTPC stations.
- Replacement of inefficient BFP cartridge, attending BFP recirculation values, attending duct leakages and APH seal replacement at various projects.
- Optimization of operation of circulating water pumps, clarified water pumps, cooling tower fans, and optimizing differential pressure across feed regulating stations at various projects.
- Flue gas duct modification using Computational Fluid Dynamics (CFD) at Tanda.

New Technology Absorption for Improvement in Energy Efficiency

Super critical technology with improved steam parameters have enormous potential for improvement in thermal cycle efficiency of Power plants, resulting into reduction of specific coal consumption and resultant lesser GHG emissions.

NTPC has adopted super critical and ultra-super critical technologies in its upcoming projects for improvement in thermal cycle efficiency as given below:

Initiatives for Thermal Cycle Efficiency Improvement

- a) Adoption of ultra-super critical technology with steam parameters (269 Kg/cm², 596°C, 596°C in 3x660 MW units at North Karanpura .
- b) Adoption of supercritical technology with steam parameters (247 Kg/cm², 537°C, 565°C) in 660 MW units at Sipat, Stage-I and Barh , Stage-I.

- c) Adoption of super critical technology with even higher steam parameters (247 Kg/cm², 565°C, 593°C) at Barh, Stage-II and all 660/800 MW units being taken up thereafter. The improved heat rate at these parameters will have an efficiency gain of about 5.79% over a conventional sub-critical 500 MW unit.
- d) Increase of reheat temperature to 565°C in all new sub-critical 500 MW Units (resulting in about 0.7% gain in efficiency)

RENEWABLE ENERGY & DISTRIBUTED GENERATION

Renewable energy technologies provide an environmentally clean and low noise source of power. NTPC has taken following initiatives for renewable energy projects:

1. Solar Projects – Grid Connected

- Projects commissioned upto FY 14 - 75 MW
 - i. Andaman - 05 MW
 - ii. Dadri - 05 MW
 - iii. Ramagundam - 10 MW
 - iv. Unchahar - 10 MW
 - v. Talcher Kaniha - 10 MW
 - vi. Faridabad - 05 MW
 - vii. Rajgarh* - 30 MW
- Projects commissioned upto FY 15 - 35 MW
 - viii. Singrauli - 15 MW
 - ix. Rajgarh - 20 MW

2. Wind Projects – 80 MW (Under Tendering)

- i. Karnataka - 40 MW
- ii. Maharastra - 40 MW

3. Geothermal Projects

- i. MoU with CREDA (Chhattisgarh Renewable Energy Development Agency) for development of geothermal projects at Tattapani
- ii. MoU with GSI (Geological Survey of India) for preparation of feasibility report. Pre-feasibility Report is being prepared in association with GSI, Nagpur to ascertain exact potential and place for deep drilling.

Other Key Initiatives:

The Company has taken an initiative for Hybrid Solar Thermal Plant of about 3.6 MW by integration of solar heat with 210 MW coal based unit at NTPC Dadri. Once integrated, this initiative will reduce the overall coal consumption, thereby, reducing CO₂ emissions. This technology is being pioneered by NTPC for the first time in India.

NTPC, BHEL, and Indira Gandhi Centre for Advanced Research (IGCAR), together, have entered into an MOU for indigenous development of advanced ultra-super critical technology under National Mission on Clean Coal (Carbon) Technologies. The power plant with this new technology will have cycle efficiency as high as 46% and reduce CO₂ emission by 20% as compared to conventional 500 MW sub-critical thermal power units. The program is targeted to deliver a plant, having 800 MW units, with steam parameters of pressure 310 kg/cm², super heater outlet temp of 710°C, re-heater outlet temp of 720°C.

Clean Development Mechanism (CDM)

The status of CDM projects as on Mar'14 is as follows:

- i. Two Solar PV projects, viz., 5 MW solar PV Power Projects at NTPC – Dadri, and 5 MW solar PV Power Projects at Port Blair, have been registered with the United Nations Framework Convention on Climate Change (UNFCCC) CDM Executive Board;
- ii. 5 MW solar PV projects at NTPC - Faridabad have been submitted to the UNFCCC for CDM registration;
- iii. 8 MW small hydro power project at NTPC-Singrauli is in advanced stage of validation and is likely to be submitted shortly to the UNFCCC for registration;
- iv. Eight CDM projects, viz., North Karanpura Project, Tapovan Vishnugad Hydro Project, Energy Efficiency Project at NTPC-Singrauli, Energy Efficiency Project at NTPC-Dadri, Small Hydro Power Project at NTPC-Singrauli, 5MW Solar PV Power Project at NTPC-Dadri, 5MW Solar PV Power Project at NTPC-Faridabad & 5MW Solar PV Power Project at Port Blair (A & N) have got Host country approval;

PAT: Perform, Achieve & Trade

PAT (Perform, Achieve and Trade) is one of the schemes of National Mission on Enhanced Energy Efficiency (NMEEE). It is a market based mechanism to enhance cost effectiveness of improvements in energy efficiency, in energy intensive large industries and facilities, through certification of energy savings that could be traded.

PAT is a multi-cycle program. The first cycle of PAT which started in April 2012, had completed in March 2015. BEE (Bureau of Energy Efficiency) is the nodal agency for implementation of PAT.

144 thermal and gas power plants, including 22 NTPC coal & gas Power stations, are identified as designated consumers. It is mandatory for designated consumers to implement PAT efficiency improvement programme. A specific energy saving target has been mandated on the basis of baseline period performance for all NTPC stations.

PAT targets of Net Heat Rate (NHR) improvement for the NTPC stations vary from 9 to 66 kcal/kwh for coal stations, and 3 to 27 kcal/kwh for gas stations.

For one ton of oil equivalent of energy savings, over and above the target savings, one Energy Saving Certificate (ESCert) will be issue by BEE, after verification of improvement by accredited auditor. Each certificate will be a unique tradable commodity.

For ESCerts calculation, the targets have been converted to 'ton of oil' equivalent. For NTPC, in terms of oil equivalent, targets are 0.292 million ton of oil equivalent (mtoe) for coal stations and 0.027 mtoe for gas stations - the total for NTPC being 0.319 mtoe.

First PAT Cycle is completed. Each designated consumer's performance will be assessed through M&V (Measurement and Verification) audit and, after normalisation of performance for external factors, actual achievements will be declared. Based on the performance of Designated Customers, Energy Savings Certificates (ESCert) will be issued by BEE.



GRID CONNECTED SOLAR PLANTS - NTPC



a) 5 MWp Solar Plant at Port Blair

Key Benefits

- Estimated annual generation : 7.2 MU
- CO₂ avoidance: 6173 Tons

b) 5 MWp Solar Plant at NTPC-Dadri

Key Benefits

- Estimated annual generation : 7.9 MU
- CO₂ avoidance: 6714 Tons



Solar plant Inauguration at NTPC- Dadri

Roof Top Solar Plant

Solar Plant at NTPC EOC, NOIDA

Roof top Solar PV modules of capacity 110 kWp have been installed.

Key Benefits

- Estimated annual generation: 1,70,000 KWh
- CO₂ avoidance: 163 Tons/Year



WATER

NTPC is a responsible user of limited natural resources. It withdraws fresh water from natural surface water sources, such as, rivers, reservoirs, etc. A small quantity of water is drawn from underground water sources at NTPC-Dadri during canal closure periods. The company takes care not to withdraw water from such water bodies that are recognized to be particularly sensitive due to their relative size and purpose, or that act as a source of support for endangered species.

None of the water sources being used by NTPC is adversely affected by any of its stations. The consumption of water is being monitored and the water use efficiency of the stations is being improved constantly by means of various water conservation measures using 3R principle (Reduce, Recycle & Reuse). Some of the water conservation initiatives being undertaken by NTPC are:

- i. Recycling water in the process, thus, increasing the cycle of concentration (CoC) up to 5;
- ii. Water Harvesting;
- iii. Treated water from Effluent Treatment Plants (ETP), Sewage Treatment Plants (STP) and Ash Water

Recirculation System (AWRS) is used for other purposes, such as, service water, horticulture, etc.

NTPC is the first company in India to place Letter of Award (LOA) for its upcoming North Karanpura project (3 660MW) with Air Cooled Condenser (ACC) replacing Water Cooled Condenser (WCC) to reduce water footprint.*

Liquid Waste Treatment Plant (LWTP)

The effluents from various points in the plant, such as, coal handling area, main plant area, etc., are brought to central monitoring basin of LWTP. The collected effluent is, then, treated for maintaining effluent quality within prescribed norms. The treated effluent water is reused to the maximum extent possible.

Sewage Treatment Plant (STP)

Sewage Treatment Plants (STPs) have been provided at NTPC stations to take care of sewage effluent from the plants and townships. The effluent quality is monitored regularly. The treated effluent is further used for horticulture purposes.





Ash Water Recirculation Systems (AWRS)

Ash Water Recirculation Systems (AWRS) have been provided at most of the NTPC stations. The effluent from ash ponds is re-circulated and sent back to the stations for further ash sluicing to the ash pond, thus, saving a lot of fresh water. In old NTPC plants, like, Singrauli, Tanda and Talcher Thermal plants, where AWRS was not provided earlier, the same has now been installed to reduce water consumption as well as effluent discharge.

The above measures have led to conservation of water as well as maintaining effluent quality within the prescribed limits and no significant impact is envisaged on water body due to discharge of treated water. NTPC has been actively pursuing the goal of near zero waste water discharge.

Total water withdrawal by NTPC in the FY 14 for its 22 operating stations was 46,711 lakh KL.

RESPECT FOR BIODIVERSITY

Biodiversity is both essential for the existence of mankind and intrinsically valuable in its own right. Biodiversity conservation can ensure the survival of many species and habitats which are threatened due to human activities. It can also secure valuable natural resources for future generations, and protect the well-being of ecosystem functions. Sustainable development requires balancing economic, social and environmental concerns. NTPC is rightfully moving in the direction of biodiversity conservation.

The Company's site selection procedure is structured so as to avoid being located within 10 km of the protected areas, or the areas of high biodiversity outside the protected areas. As a result, any impact on IUCN Red List Species and National Conservation List Species, and their habitats is highly unlikely. Hence, no offset habitats have been created.

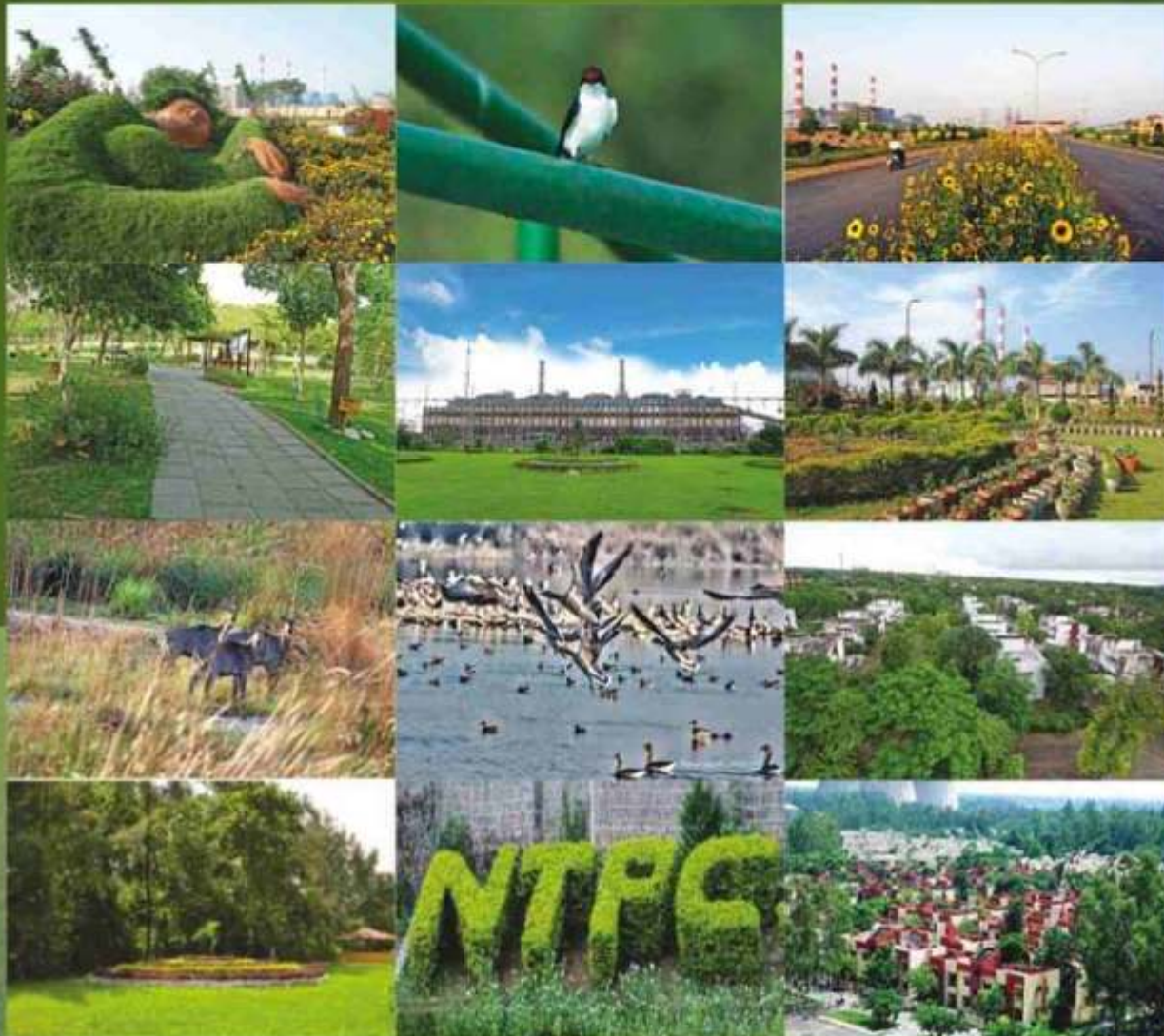
It is worth mentioning that treated effluents from none of the NTPC Power stations are discharged in to any protected water body.

In case of following three projects, wildlife sanctuaries were declared near the projects (within 10 km) after the project was accorded environmental clearance or constructed:

1. Kahalgaon Station: The stretch of river Ganga, adjacent to the project, was declared a sanctuary by the State Govt. after the project was accorded environmental clearance by the Ministry of Environment and Forests, and the construction of the project was nearing completion.
2. Badarpur Thermal Power Project: Okhla Bird Sanctuary and Asola Bhatti Wildlife Sanctuary were declared as sanctuaries by the State Govts. (Uttar Pradesh and Delhi Govts., respectively) after almost a decade of commissioning of the project.
3. Feroz Gandhi Unchahar Thermal Power Station: Samaspur Bird Sanctuary was established by the State Govt. in 1987 much after the project construction was started by the UP State Electricity Board in 1981. NTPC took over the project in 1992.

NOTE: None of the above projects or any part of them is located within the sanctuary.

Bio Diversity



Biodiversity - NTPC is committed to minimize impacts on biodiversity through following measures:

- Minimizing the land requirement for power plants.
- Compliance with the siting criteria for thermal power plants published by MOEF at the time of site selection.
- Locating the power plants away from protected areas (like national parks and wildlife sanctuaries) or non-protected areas rich in biodiversity.
- Avoiding acquisition of forest land for the project, as far as possible.
- Detailed environmental impact assessment study before construction of a project and implementation of environmental management plan during construction and operation phases.
- Site specific ecological assessment studies, as and when required.
- Ecological improvements and habitat enhancement through afforestation and creation of water bodies.

EMISSIONS

Stack Emissions

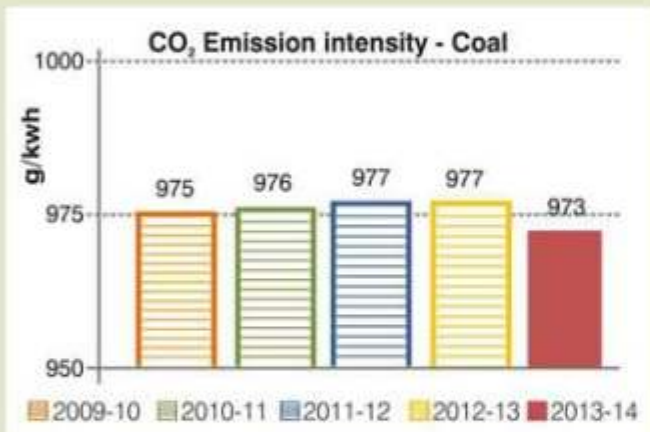
Emissions released from the stack of a coal based power plant are Carbon Dioxide (CO₂), Particulate Matter (PM), Sulphur-Di-Oxide (SO₂) and Oxides Of Nitrogen (NO_x). In NTPC Power plants, several measures are taken to minimize emission levels. Some significant steps undertaken are described below:

Reduction in GHG emission

Thermal Power Plants are the main emitters of CO₂, a Green House Gas. Various steps are being taken across the globe to reduce CO₂ emission intensity from coal based power plants. Continuous efforts are being made at NTPC to reduce its CO₂ emission intensity in line with the Company's Environment Management Philosophy, 'Going Higher on Generation, lowering GHG intensity'.

NTPC has adopted advanced and high efficiency technologies, such as, ultra-super critical units for the upcoming green field projects, details of which are covered in previous section of this report. Further, the impact of its super & ultra-super critical units on CO₂ reduction will be reflected in coming years. The Company is also designing its upcoming plants for use of beneficiated coal and imported low ash coals. The above measures are aimed to achieve reduction in pollution and minimize the use of precious natural resources. This will also reduce CO₂ emissions, thereby, reducing global warming.

Further, during the FY 14, CO₂ emission intensity of coal stations has decreased to 972.60 g/kwh from 977 g/kwh in the FY 13.



During FY 14, there are no indirect GHG emissions, as no electricity was purchased by 22 operating stations of the company.

NTPC initiated a unique voluntary program of GHG emission reduction by establishing a 'Centre for Power Efficiency and Environmental Protection (CenPEEP)'. Such initiatives have resulted into an estimated avoidance of over 37 million tons of CO₂ emission since 1996.

Reduction in Other Major Emissions

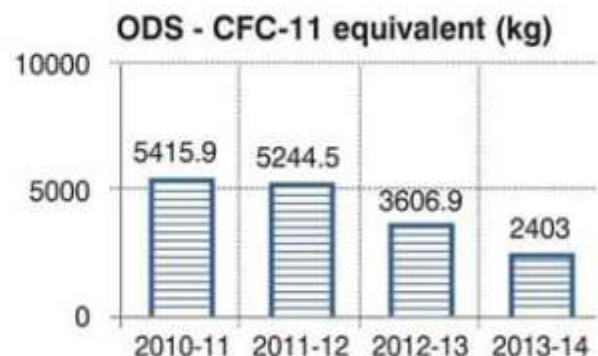
All NTPC stations are equipped with advanced environmental protection and pollution control systems, such as, high efficiency Electrostatic Precipitators (ESPs) with efficiency of the order of 99.99% in its coal based units. ESPs in 9 NTPC plants are being augmented by adding fields, replacing energisers & controllers with advanced versions. Flue Gas Conditioning (FGC) system has also been provided at old units, reducing SPM emissions below statutory limits.

NTPC has taken steps to provide Continuous Emission Monitoring System (CEMS) with latest technology to monitor emissions of SO₂, NO_x & CO₂ in flue gases on real time basis.

NTPC has taken a lead in installation and operation of 67 nos. of AAQMS to monitor air quality around its power plants on real time basis.

Ozone Depleting Substances (ODS)

During the FY 14, NTPC recorded consumption of 2403 Kg of CFC-11 equivalent, which is a reduction of 55% as compared to consumption of 5415 Kg of CFC-11 equivalent for the FY 11. Reduction in ODS substances is achieved by replacing ODS substances with less ODS potential substitutes like R-22, R-134A & R-410A.



Special Efforts by NTPC in Critically Polluted Areas

Central Pollution Control Board had initiated an exercise to identify polluted areas in the country in order to take concerted action as well as to improve the current status of their environmental components, such as, air quality, water quality, ecological damage, and visual environmental conditions. Some of the NTPC stations that have fallen in such zones are: Singrauli, Rihand, Vindhyachal, Talcher Thermal, Talcher Kaniha, Badarpur, Faridabad and Simhadri.

The states, respective to these stations have come up with specific actions plans to combat the problems of pollution within their cluster. Consequently, directives have been issued to all industries located therein to adhere to these action plans and Bank Guarantees have been sought to back up adherences. Wherever a State Pollution Control Board has issued directives to any of the NTPC stations, the Company has taken immediate corrective actions thus, ensuring satisfactory compliance.

For further improvement in the environmental conditions of these critically polluted areas, respective SPCBs have revised the statutory environmental norms applicable to the areas. These revised norms pose challenges at stations due to various factors, such as, design constraints, space limitations,

prolonged shutdowns, non-availability of original equipment supplier, etc. These issues are being addressed and NTPC has already initiated necessary actions to comply with such requirements in respective plants. Extensive design and technology review of these stations was undertaken for taking up retrofitting measures. NTPC undertook the challenging task to look for least costly, technically feasible engineering solutions for minimising the impact of compliance on cost of generation. Implementation of time bound action plans are in progress. For some of the plants, the plans have also been backed up with Bank Guarantees. Details of Bank Guarantees submitted by NTPC are as below:

Station	Bank Guarantee (₹ Lakhs) (as on 31.03.2014)
Korba	2750
Vindhayachal	10
Singrauli	20
Simhadri	125
Talcher Thermal	20
Kahalgaon	25
Mauda	48

WASTE MANAGEMENT

Being a coal based thermal Power company, the primary waste generated at NTPC is ash. Other waste generated during operation and maintenance of the plants includes lubricating oil, transformer oil, metal and non-metal scraps etc. In addition, domestic waste is generated in township and bio-medical waste is generated in NTPC hospitals.

The company has adopted integrated approach to proper handling and disposal of all types of wastes in a scientific manner as detailed in the table below:

Waste Type	Disposal Method
Lube oil, Transformer oil, Batteries	Sold to registered recyclers or manufacturers under buy-back arrangement.
Ferrous/Non- Ferrous Scrap	Disposed through e-Auctions
Hazardous Waste	<ul style="list-style-type: none"> Non-recyclable waste sent for Treatment, Storage and Disposal Facility (TSDF), wherever available. No radioactive waste generated at NTPC stations.
Domestic Waste	<ul style="list-style-type: none"> Waste segregated into biodegradable & non-biodegradable categories. Biodegradable waste is converted into manure through composting/vermi-composting/Bio-gas/Bio-methanation process. Bio-methanation plants are operational at NTPC stations. Non-biodegradable waste is being disposed off at identified places.
Bio-Medical Waste	<ul style="list-style-type: none"> Disposed through authorised agencies approved by SPCB.
E- waste	<ul style="list-style-type: none"> Disposed through registered and approved recyclers of CPCB or respective SPCB.

Waste	Disposal Method
Fly and Bottom Ash	<ul style="list-style-type: none"> • Ash issued to user industries from ash storage silo in closed container. • Fly ash issued to user industries, cement industries, ready mix concrete plants, brick, block manufacturers, tile manufacturers, etc. • Ash used in back filling of coal mines as per the guidelines of mine closure plan. • Manufacturing of ash bricks.

Ash Management

Indian coal has higher ash content (30-45%), resulting in generation of huge amounts of ash from coal based power plants. Disposal of this ash in ash dykes requires vast areas while the availability of spaces is becoming a progressive challenge at many NTPC stations. Sustainable ash utilization is one of the key concerns of NTPC and the Company strives to maximize the ash utilization in following ways:

Areas of Ash Utilization

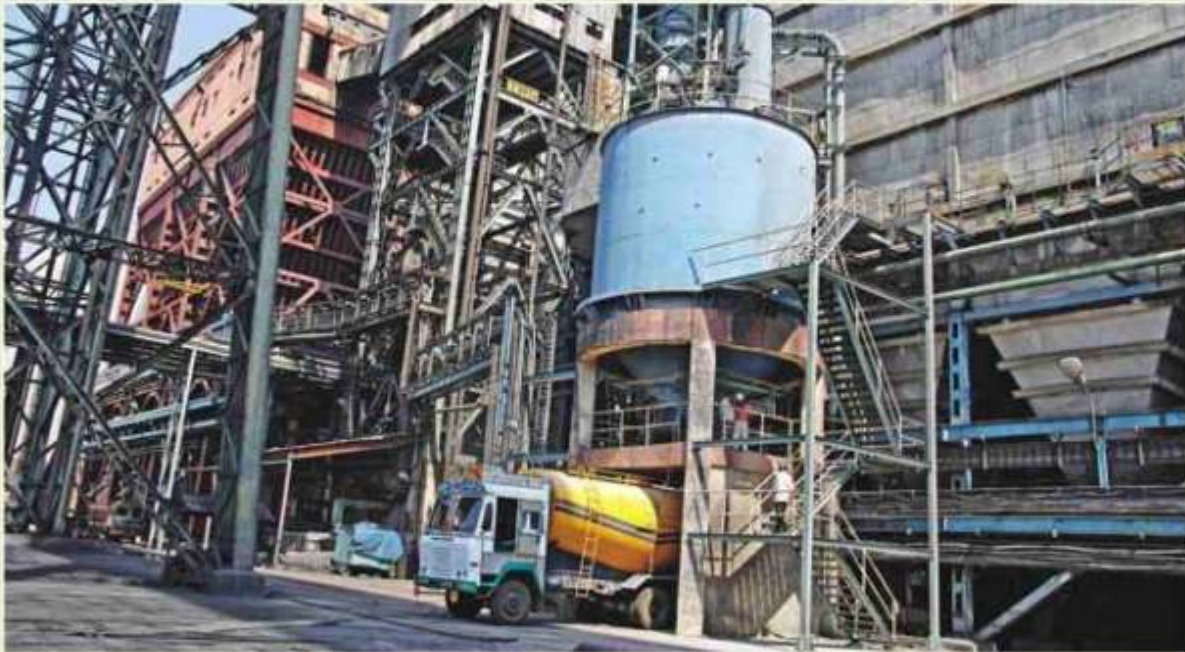
- Issue to industry: Cement & Concrete
- Low lying land and wasteland development
- Ash dyke raising
- Mine filling
- Roads & railway embankments
- Ash based bricks, blocks, tiles
- Bottom ash as a replacement of sand

Ash dykes, at NTPC stations, are designed to ensure that all environmental concerns are addressed. Salient features for effective handling and disposal of ash are as follows:

- Multi-lagoon ash ponds with provision of overflow lagoons.
- Ash slurry pipe lines garlanding arrangement for change-over of ash slurry feed points.
- Water sprinklers for spraying water in dried up portion of lagoons for control of fugitive dust.
- Frequent ash dyke inspection by cross-functional committee at each station for proper monitoring of dyke health.
- Proper raising plan for dyke, as per requirement, prepared in advance for individual stations keeping in mind the expected ash generation and its utilization potential.

In the FY 14, 57.83 million tonnes of ash was produced by NTPC coal based Power stations, out of which, 25.37 million tonnes was utilized.





Several initiatives have been taken for enhancing ash utilization level, such as:

- Augmentation of dry fly ash extraction and storage system.
- Creating rail loading facility.
- Entering into agreement with cement and other ash user agencies.
- Creating awareness about ash based products through newspapers, brochures, documentary films, etc.
- Organizing workshops for potential users to motivate them for increase in ash utilization.

NTPC uses only ash based bricks and Fly Ash Portland Pozzolana Cement (FAPPC) in most of its construction activities in all expansion projects as well as in green field projects. Ash brick manufacturing plants have been set up at all NTPC stations. More than 750 million ash bricks have been manufactured by these plants for use in construction activities during FY 14.

NTPC Talcher-Thermal, Unchahar, Tanda & Rihand are augmenting ash brick manufacturing capacity by setting up additional units. Barh and Mouda are setting up new ash brick manufacturing Plants in FY 15.

Entire ash generated is being disposed in an environment friendly manner and without any impact on environment due to transportation of ash.

New Initiatives for ash utilization

- Study for improvement of technology for manufacturing of fly ash bricks in association with CPRI-Bangalore.
- Study for manufacturing Sintered Lightweight Aggregate (LWA) from ash.
- Efforts are being made with Bureau of Indian Standard for developing code for use of LWA in structural concrete.
- Pursuing with technical institutes and engineering colleges for inclusion of chapter in Civil Engineering curriculum – Fly ash, a resource material for construction sector.

Oil Spills: During the FY 14, no significant oil spills have been reported at any of NTPC stations.

ENVIRONMENTAL COMPLIANCE

NTPC is bound by the environmental laws and regulations promulgated from time to time by the authorities concerned. Hence, the company is on a continuous look-out for least cost and technically feasible engineering solutions to ensure compliance of these specific directives. Frequent revision of these environmental norms and introduction of new norms, even in case of old stations, require retrofitting and up

Environmental Performance

gradation of related equipments in old units and stations.

There is no incidence of fines or monetary sanctions issued to NTPC by any regulatory agency on environmental issues during the year. However, some of the NTPC power stations were issued specific directives to make action plan for mitigation, backed by Bank Guarantee (BG), details for which have been covered earlier in the report.

OTHER ENVIRONMENTAL ASPECTS

Product and services

The scope of NTPC is to generate power and to make it available up to its own switch yard. From the switch yard, the electricity is transmitted for distribution through overhead transmission lines which are out of scope of NTPC. Therefore, initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation are not applicable to NTPC. No packaging material is used in electricity transmission. Transport impacts of electricity transmission have not been considered as they are not of significant proportion for the Company.

Environmental Expenditure

Environmental protection expenditure for the reporting period FY 14 was about ₹ 135.4 crores.



Social Performance



WE - THE PEOPLE

NTPC's approach towards human resource management is governed by its HR vision: "To enable our people to be a family of committed world class professionals making NTPC a learning organisation".

NTPC is a signatory to the United Nations Global Compact (UNGC), which is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption. The human resource focus areas in NTPC are elaborated below:

HUMAN RIGHTS

NTPC is an equal opportunity employer and never discriminates on the criteria of gender, caste, creed, colour, race, religion, or disability. In this regard, the company is committed to UNGC principles number 1, 2 & 10 as stated below:

UNGC Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights.

UNGC Principle 2: Ensure that businesses are not complicit in human rights abuses.

UNGC Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

LABOUR PRACTICES

The company is committed to operate in line with the

UNGC principles number 3, 4, 5 & 6 on labour standards as mentioned below:

UNGC Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.

UNGC Principle 4: The elimination of all forms of forced and compulsory labour.

UNGC Principle 5: The effective abolition of child labour.

UNGC Principle 6: The elimination of discrimination in respect of employment and occupation.

NTPC has shared its performance on all the 10 principles of UNGC through the 'Communication on Progress' (COP) section of the NTPC Annual Report FY 14.

Following measures are taken at NTPC for prevention of forced, compulsory and child labour:

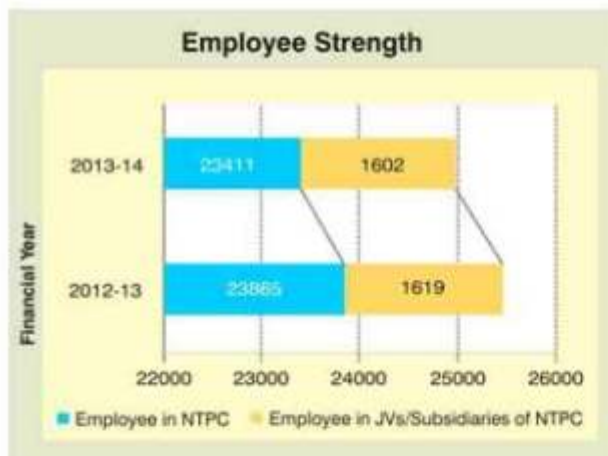
- NTPC service rules stipulate that minimum age for employment is 18 years.
- As a responsible corporate citizen, NTPC ensures prohibition of engagement of child labor in its plants and offices.
- In NTPC, there are provisions in contractual conditions wherein contractors are also not allowed to employ child labour.

Social Performance

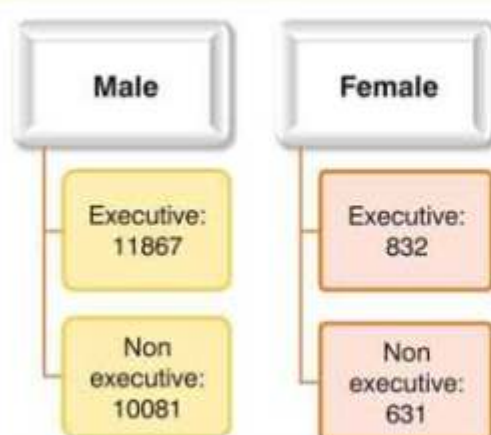
- The company ensures compliance to the Factories Act and Labour Laws across all its operations.
- NTPC projects and stations are protected places and there are checks and balances to eliminate any possibility of employing child, forced or compulsory labour.
- Appropriate systems and checks are in place to ensure that all contractors' workers are paid at least minimum wages and are given all the benefits stipulated in various laws.
- None of its operations were found to have risk of child, forced or compulsory labour in the FY 14 and no complaints were received in this regard.

EMPLOYEE WORKFORCE

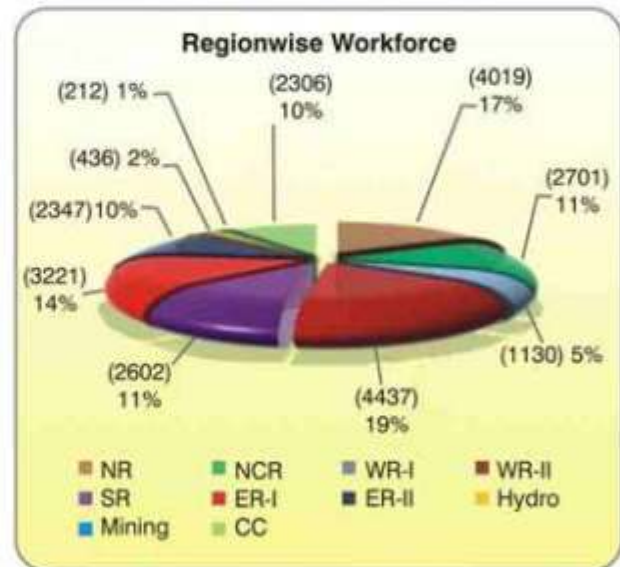
NTPC has a highly motivated and competent regular workforce of 23,411 employees (excluding joint ventures and subsidiaries) as on 31st March '14.



NTPC Employees - Male & Female



Region wise employee strength as on 31.03.14 is as follows:

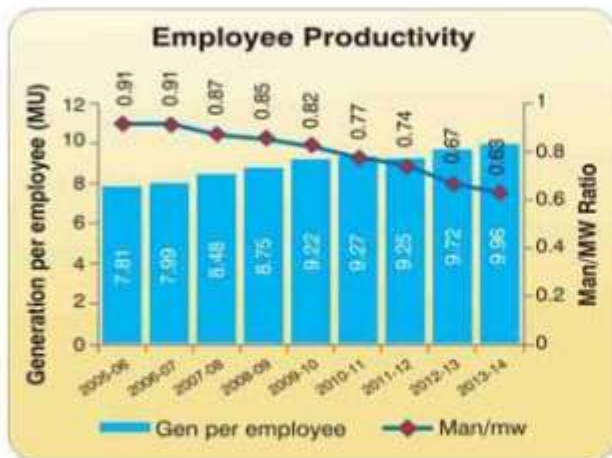


NTPC has a process in place for the induction of executives in the company on all India basis after due notification through Press advertisements, campus interviews, etc. Hiring of non-executives is done at local and regional levels with appropriate notifications to the employment exchanges of the respective locations. The wage of a lowest level employee in NTPC is same across all locations of the company, which is much above the minimum wage as stipulated by respective State Governments.

NTPC has been conferred with India Today Award 2014 for best HR practices in MAHARATNA category

The productivity of employees is demonstrated by increase in generation per employee and reduction of Man-MW ratio. The over-all Man-MW ratio for the FY 14 (excluding JVs and Subsidiaries) is 0.63. During the FY 14, generation per employee was 9.96 MUs as against 9.72 MUs for the FY 13.





During the FY 14, the attrition rate of NTPC executives is 1.66 % (including JV & Subsidiaries). The retention rate after parental leave is 100% during the year. Percentage of employee eligible to retire in the next 5 and 10 years by job category and by region is given in the 'Key Data at a Glance' section of this report.

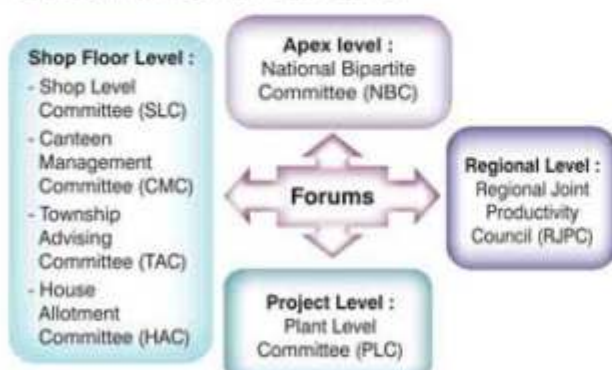
EMPLOYEE-MANAGEMENT RELATIONSHIP

NTPC respects the rights of its employees to freedom of association in accordance with applicable laws. All NTPC employees in the workman category have freedom to associate themselves with various unions to facilitate collective bargaining agreements. These collective bargaining agreements are in line with the applicable laws including the provisions of specified minimum notice period for significant operational changes, wherever applicable.

There was no operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk

All non-executives in NTPC, comprising of ~46% total workforce, are covered under collective bargaining agreements.

Following collective bargaining forums have been formalized for regular and structured meetings between management and unions:



During FY14, NTPC surpassed the GoI MoU target of 10 nos. of structured meetings with employee forums (NEFI, NBC, NJPC, RJPC etc.) and conducted 27 nos. of the meetings.

There was no incidence of violation involving rights of indigenous people and right to exercise freedom of association and collective bargaining in the reporting period. Also, there was no incidence of unrest in the company during the reporting period.

Total full time equivalent mandays worked by the workers of the contractors involved in plant activities are given in 'Key Data at a Glance'.

Prevention of Discrimination at Workplace

- NTPC provides equal opportunity to women employees and minorities at all levels.
- Statutory requirements and policy guidelines are adhered to without any discrimination.
- There was no incidence of discrimination reported in the reporting period.

Grievance Handling

NTPC has employee grievance redressal mechanism at each project. The objectives of the grievances handling system are:

- To settle grievances of the employees in shortest possible time and at lowest possible level of authority.
- To provide for various stages of grievance resolution so that the aggrieved employees derive satisfaction of communicating their grievance to the appropriate level.

The employee grievances are captured through different forums, like, participative forums, communication meetings, employee organizational climate surveys, etc.

NTPC has constituted Internal Complaints Committees under the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 at all stations and offices. These committees are responsible for investigating complaints related to sexual harassment of working women.

Social Performance

EMPLOYEE BENEFITS : Some of the salient employee benefits are given below:

Medical Treatment	Facilities for Higher Studies	Contributory scheme for Post Retirement Medical Facilities	Separation / Insurance Benefits	Loans and Advances
<ul style="list-style-type: none">• Free medical treatment to self and dependant family members at company/ empanelled hospitals for both in-patient and out-patient treatment• Regular medical check-up	<ul style="list-style-type: none">• Study leave• Incentives for acquiring off campus additional relevant qualifications• Long term career oriented education programmes	<p>Inpatient and out patient medical expenses covered subject to limitations for both, retired employee and spouse</p>	<ul style="list-style-type: none">• Group Personal Accident Insurance• Group Insurance• Leave Encashment• House Building Advance Insurance• Employee Death Relief Scheme• Gratuity• Provident Fund• Employees Family Economic Rehabilitation scheme• Contributory Pension	<ul style="list-style-type: none">• House Building advance• Multipurpose Advance• Conveyance Advance• Children Education Advance• Household Furnishing Advance



In addition to maternity leave provided to woman employee, a provision of special Child Care Leave of two years is available to woman employee which is beyond the statutory obligation. During this leave period, the seniority of the employee is maintained in the organization. Applicable benefits are also provided during this period.

OCCUPATIONAL HEALTH AND SAFETY

NTPC recognizes its responsibility for maintaining a safe working environment for all its employees and associates. The company has a 3-tier structure for management of occupational health and safety, covering stations, regions and corporate centre. The entire workforce is represented in formal joint management-worker health and safety committees to advice on occupational health and safety programmes. The company takes following steps to ensure best possible conditions of work:

Steps taken for Occupational Health and Safety

Safety norms are included in general conditions of contract.

Systems approach followed by adopting and implementing ISO 14001, ISO 9001-2000 and OHSAS 18001

Height permit and height check list are implemented to ensure safety of workers while working at height.

Detailed emergency plans developed and responsibilities assigned to handle emergency situations.

Qualified safety officers posted at all units.

Cross functional safety task force is functional at stations and construction projects to monitor working conditions as well as taking remedial actions.

Installation of state-of-the-art surveillance systems at projects and stations.

Mock drills are conducted regularly to check the health of the system and observations are complied with.

Regular interactions with MHA, IB and CISF as well as the State and District level authorities to augment the security preparedness in the power installations.

Participation in onsite & offsite emergency plans and playing a Leader's Role among neighboring industries in association with the State Government.

Regular plant inspection held with the Head of Project.

Internal and external safety audits undertaken by NTPC safety officers and external safety auditors. Recommendations of auditors are regularly reviewed and complied with.

Steps taken for Occupational Health and Safety

Annual medical health check-ups conducted for the employees above the age of 45 years and once in two years for the employees in the age group of 40-45. These annual check-ups have led to timely diagnosis of diseases and life style changes of many employees.

Training programmes conducted for contractors' employees on regular basis, covering occupational health and safety aspects.

Awareness programmes, covering all topics on occupational health and safety, conducted regularly for employees, contractors' workers and nearby villagers

No occupational disease has been reported in NTPC during the reporting period FY 14.

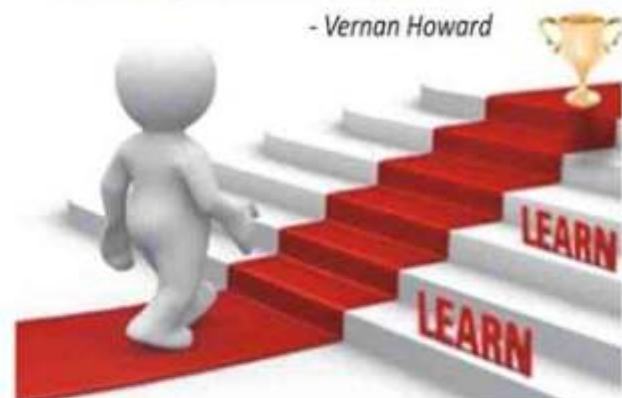
Frequency rate and injury rate for NTPC is given in the 'Key Data at a Glance' section of this report.

No fatalities of NTPC employees have been reported during FY14. No fatalities of female employees of associates were reported during FY14.

LEARNING AND DEVELOPMENT

Always walk through life as if you have something new to learn and you will

- Vernan Howard



NTPC subscribes to the belief that success of the organization depends largely on the skills, abilities and commitment of the employees. The company is keen to take utmost care of its employees' intellectual and growth needs. The Company carries out diverse series of learning activities annually with a view to increase employees' knowledge base and develop their skills.

NTPC training policy envisages minimum 7 mandays of training per employee per year. A combination of in-house trainings and external institution led training opportunities are provided to various employees as

Social Performance

per the needs. The training requirements of employees are assessed based on their roles, domains and individual needs. NTPC has developed its own Employee Development Centers (EDC) at all the stations and Power Management Institute (PMI) at Noida. The training institutes at NTPC regularly analyses the effectiveness of various training programmes through feedback from participants.

Training Programmes in Human Rights and Labour Issues: NTPC gives a lot of importance to imparting training to its employees in various Human Rights and Labour issues that are relevant to its operation. During FY 14, NTPC conducted various programmes covering Human Rights and Labour issues details of which are given in the following table:

Training Programmes in Human Rights and Labour Issues

S. No.	Name of Training Module containing aspects of Human Rights	No. of Participants	% of Emp Trained	Training hours
1	Safety Training	1761	8.60	17168
2	Work life Balance, Art of Living	1212	5.92	20792
3	Safety, First Aid, Fire Fighting	114	0.55	2736
4	Core Value Actualization	1198	5.85	17792
5	Disaster Management	622	3.03	5466
6	First aid, Health, Occupational Hazard, Safety, SA-8000	60	0.29	768
7	Company Information and HR Policies	232	1.133	3136
8	SA 8000	195	0.95	2192
9	Statutory Requirement of Contract Labour & Industrial Laws	17	0.08	272
10	Labour Laws in Power plant	85	0.42	1328
11	Participative Management & Participative Forum	17	0.08	136
12	Concept of RTI	180	0.88	1440
13	Reservation Policy, SC/ST Policy	983	4.8	12128
14	CSR & Sustainability, Land Acquisition, R&R	1971	9.63	19496
15	Sexual Harassment at Workplace (Prevention)	125	0.61	1352
16	Preventive Vigilance	726	3.54	7848
17	Human Rights	217	1.06	1736
18	Contract Labour Act	97	0.47	1472
19	Labour Laws	24	0.12	544
20	Legal Aspects of Contract and Dispute Settlement	59	0.29	728
21	Industrial Relations and Related Laws	58	0.28	688
22	Environment	1002	4.89	10368

Special Training Programmes In General Management and Energy Related Areas During FY 14

Senior Management level conclave for NTPC Board members (Directors & CMD) called SIR (Strategic Institutional Renewal) programme.

SMILE (Strategic Management Initiative for Leadership Effectiveness) program for Executive Directors of NTPC and BHEL.

Hands-on training of 197 participants on the 660 MW supercritical simulator at PMI.

Technical training in Supercritical and Ultra-supercritical technology.

Integrated conclave on Data Analytics and Business Intelligence in Dubai.

A Knowledge Management workshop was held in Goa.

Intensive program on developing cross-functional insights and developing Boundary Management skills for newly promoted General Managers of the Company.

An Integrated International Project Management framework being developed through international faculties for achieving competitive advantage, and entering into a long term institutional tie-up with IIM-Indore. A similar tie-up has been done with IIM-Ahmadabad for knowledge creation.

Training Programmes Related to CSR and Sustainability: In NTPC's Gol MoU FY 14, specific targets have been assigned, pertaining to the training programmes covering the CSR & Sustainability aspects. The performance against the Gol MoU targets is as follows:

CSR and Sustainability Training Parameter	MoU Target FY 14	Actual Achievement FY 14
No. of training sessions for employees	20	33
Total no. of employees covered in above-stated sessions	800	1080
Presence of top management	10	33

Safety and Health Awareness Programmes: Safety induction training is imparted to new employees, before they are deployed at power stations. Several prevention and risk control programmes are in place to assist employees and their family members regarding serious diseases. Training sessions and programmes on first-aid are organized. Contract workers are also given trainings on different safety subjects regularly.

Retirement Planning Workshops: NTPC organizes a three days workshop on retirement planning twice in a year for those retiring in near future. The workshop aimed at encouraging the employees to welcome their lives' fresh innings with crucial inputs on sound financial management and preventive health measures.

Performance Management System (PMS): The Company offers ample opportunity to its employees to work at different locations based on preference, career needs and organizational requirements. With varied exposure, there is sufficient platform for the employees to gain wide experience. NTPC has established a Performance Management System (PMS) for aligning the employee performance with the Company's goals and targets. Under PMS, all the executives finalize performance targets at the beginning of the year. Performance feedback is provided during mid-year review and during final appraisal held annually. The non-executives are also given feedback regarding their performance. With a view to reward high performers, NTPC has introduced a performance related incentive scheme.

In addition to the above, the details of various training programmes held during the FY 14 are as under:

Training Programmes held during 2013-14			
Name of Programme	No. of participants	Mandays	No. of Hrs.
AMC	58	696	5568
EMC	50	474	3792
CAPSULE COURSE	43	516	4128
FOUNDATION COURSE	14	182	1456
EXEC. DEVELOPMENT COURSE	46	1380	11040
DEPT. EXAM CLASSES	1251	3582	28656
PRE - PROMOTION TRG	280	593	4744
OTHER PROGRAM	65927	114320	914560

SOCIETY

NTPC envisions its corporate social responsibility as an integral part of the company's mission, and has contributed to the social well-being of the neighbourhood communities. The company's commitment towards serving the communities is governed by R&R, ICD, CSR and SD policies of the company. NTPC's CSR initiatives strive to enhance value creation in the society and community. Some of the areas in which CSR initiatives have been undertaken are described ahead:

Education

- Setting up polytechnic at Kaladungi, Dist. Nainital, Uttarakhand.
- Subsidized education to children of about 20 schools run by NTPC predominantly for community children, benefitting about 20,000 students of neighborhood areas.
- Financial support to Ramakrishna Mission, New Delhi, for taking up identified Value Education Initiative for students of schools, affiliated with Central Board of Secondary Education, teachers & parents.
- Merit scholarships to more than 2600 students.
- Financial assistance for construction of classrooms and installation of Solar Street lights at Sadhana Vidyalaya, Ramnagara District, Karnataka.
- Financial Assistance for the Construction of 1st Floor for extension of the building of Shirdi Sai Baba School, Faridabad.
- Financial Support to Cluster Innovation Centre (CIC) of Delhi University for 16 Educational Projects for Social Sensitization by students of B. Tech (Humanities), Delhi University.
- Solar lanterns distributed to nearly 1300 students.
- 44 toilet blocks constructed for girl students at village schools to support education of girl child and reduce dropout rate. NTPC is committed for contribution of more than 24,000 toilets in coming years in line with Swachh Bharat Mission.
- Distribution of uniforms, books, stationery, equipment and infrastructural support to schools covering about 500 schools around NTPC stations benefitting more than 65000 students.
- Till 31.03.2014, a total of 19,377 students have benefitted by taking admission in NTPC adopted ITIs. For these ITI students, NTPC organized total 23,459 man-days of industrial training and plant visits.

Case Study - Promotion of Sanitation & Hygiene

Individual Household Toilets



The Needs Assessment Survey held in the vicinity of NTPC- Auraiya revealed that women in the nearby village were resorting to open defecation due to the absence of individual household toilets. Open defecation is not only unhygienic, but also especially unsafe for women, as they had to wait for dawn & dusk to carry out the process.

NTPC- Auraiya undertook a pilot project of construction of 20 individual household toilets in Vaisundhara village with an objective to foster safe and hygienic conditions for the community, especially women. The work was awarded to M/s Sulabh Sanitation Mission Foundation.

Implementation of the activity does not only involve construction of toilet but also creating awareness about sanitation and benefits of using toilets.

Beneficiaries of Vaisundhara village are now using & maintaining the toilets regularly. The success of the initiative lies in the fact that requests for development of the similar facility are received from other villages.

Healthcare

Mobile Medical services benefitting around 60000 people of 80 villages

- Financial assistance to Impact India Foundation for "Lifeline Express Project" at Dalmau Railway station in Raebareli district, UP. The services included curative interventions for disabled poor by general treatment & various surgical operations.
- Financial assistance to District Hospital, Aurangabad, Bihar for procurement of medical equipment for modular ICU.
- Funds committed for development of new block at King George Hospital, Visakhapatnam.
- Mobile health clinics are operational at 7 locations covering 80 villages providing health care facility at doorsteps to more than 60000 people.
- About 1200 medical health check-up camps and about 365 Eye camps organized at various locations. About 2000 surgeries were performed during these camps.
- Regular health related initiatives in the communities around NTPC stations benefitted more than 165000 individuals.
- Under sanitation, 45 individual toilets & 6 community toilets were constructed.
- More than 100 Animal Health Camps & other animal health related activities were organized, benefitting populations of more than 100 villages.
- Installation of about 500 hand pumps & bore wells in Jharkhand (Garhwa and Dhanbad districts), Uttar Pradesh (Raebareli, Siddharthnagar, Jaunpur and Sant Ravidas Nagar districts) and Bihar (Arrah and Darbhanga districts).
- Piped water scheme and RO plants provided at 11 locations.
- A total of 124 bore-wells were sunk and hand pumps installed at various locations.
- During extreme summer supply of water through water tankers to 32000 individuals.

Infrastructure Strengthening

- Installation of more than 500 solar lights in UP (Siddharthnagar, Sant Ravidas Nagar and Barabanki districts) and West Bengal (Malda district) to promote use of non-conventional energy.
- Installation of 20 High Mast Lights (HMLs) in Kerala (Alappuzha district), West Bengal (Berhampore district) and Tripura.
- Laying of cement concrete road in various villages in Chhindwara district, MP.
- Construction of culvert over Pikia Nala at Pakaaria ghat, Sant Kabir Nagar, UP.
- Financial assistance being provided to District Administration of Prakasam & Guntur districts of AP for construction of Community Bhavans for catering to the needs of SC/ST persons.
- Additionally, regular infrastructure related CSR activities in the villages around NTPC stations like construction of 12 community centres, installation of 101 street lights, 80 solar street lights, construction & repair of more than 30 kms of road and other infrastructure development activities at various locations, covering more than 110 villages.

Case Study - Drinking Water Facility

Dual Pump (Solar based) for Drinking Water Supply



NTPC Unchahar has taken up safe drinking water projects at 25 rural locations of Raebareli District in UP. The project includes installation of solar dual pumps along with water storage tank and distribution pipe network. The solar dual pump is designed to utilize the power generated by Solar PV module during the day and acts as a normal hand pump when the solar energy is not available, hence, ensuring uninterrupted water supply.

The requirement for drinking water supply was raised by stakeholders during consultation sessions held with local community and District authorities at Raebareli. The project was executed by Zila Panchayat, Raebareli. Periodic site visit and physical verification of work were conducted by NTPC officials as well as community stakeholders. Five percent of the total amount (@ 1% per year) reserved for comprehensive maintenance of solar panel & pumping plant for five years by the Zila Panchayat. Thereafter, the system shall be handed over to Gram Panchayat, as per the MoU.

Water Supply Scheme of NTPC improved the quality of life of about 7500 villagers. They now have access to potable piped drinking water round the year. The project helped in improving the health and reducing the incidence of water-borne diseases. The initiative strengthened the company's relationship with the local people resulting in better industrial harmony.

Capacity Building

- 4000 students trained in various ITI trades in 17 adopted Institutes at various locations partnering with the State and Central Governments.
- 36 weeks training program organized for 41 Jammu & Kashmir youths in Thermal Power Plant Engineering under special industry initiative-Udaan.
- Imparted skill up-gradation training in backward districts identified under BRGF of planning commission for improving employability benefitting 1388 village youths including women.
- Regular vocational training in CSR activities held for the communities around NTPC stations. A total of 165 villages were covered, benefitting amongst others close to 700 youths through skills up gradation.
- Assistance committed to part-finance Chanderi Development Society for Handloom Weavers for construction of Weavers Blocks of Common Facility Centre (CFE) in Handloom Park at Chanderi, Ashoknagar district, M.P.



Women Empowerment

- Construction of building in Women's Polytechnic, Kayamkulam, Kerala.
- Construction of ladies waiting room & providing furniture at government Women's Polytechnic Nedupuzha, Thrissur district, Kerala.
- Bicycles provided to 8000 poor & indigent school going girls in West Bengal.
- Training imparted to more than 2500 women in various vocational courses like sewing, beautician, food processing etc. for self-employability. Tool kits & sewing machines were provided to approximately 300 women after successful training.

Social Performance

Heritage Conservation and Sports

- NTPC had signed a MoU with Archaeological Survey of India (ASI) and National Culture Fund (NCF) in order to provide financial support for preservation and conservation of 3 monuments. These monuments are at Mandu (MP), excavated site at Vikramshila (Bihar) and archaeological site (Lalitgiri and Dhauli in Odisha). The preservation & conservation works are in progress at all the 3 sites.
- To promote traditional art & culture, NTPC has taken up various activities covering more than 100 schools (46 villages).
- To promote rural sports, Rural Sports Meet and various sports events held covering nearly 200 schools in about 170 villages.
- 400 students benefitted from sports coaching.

Disaster Relief

- NTPC was prompt in extending activities for relief during natural calamities in Uttarakhand and Himachal Pradesh. Additionally, NTPC provided financial support for relief during Cyclone Phailin and flood affected areas of Odisha.



Case Study - Rehabilitation of People with Special Ability



Pooja and Sadiq Amin, residing in village Tanda, had lost their leg due to some disease. This immobility resulted into discontinuation of their education and thus shattering their self-confidence.

NTPC was informed about this problem during a VDAC meeting. NTPC Tanda runs a Disability Rehabilitation Centre (DRC). An advanced modular prosthetic leg was designed for Pooja and Sadiq Amin at this centre to restore their mobility. After wearing the prosthetic leg, both of them were once again able to walk on their own. Both of them resumed their studies with self-confidence.

The efforts of NTPC were appreciated by neighboring community which helped in strengthening the relationship with local people.

Social Performance

CARING FOR THE SPECIALLY-ABLED

With a view to focus on its role as a socially responsible and socially conscious organization, NTPC works towards the integration of specially-abled people into mainstream society through various programmes. These programmes encompass rehabilitation, employment, training, education, consultation to maximise their potential, and to help them to be self-reliant and independent. The company undertakes these initiatives through NTPC Foundation.

Some of the activities taken up by NTPC during the FY 14 are as follows:

- Providing IT education to physically/visually challenged students: New Information and Communication Technology (ICT) Centres established at Guwahati University, Guwahati and Devi Ahilya Vishwavidyalaya, Indore, benefitted approx. 60 students during FY 2013-14. This is in addition to ICT centres established earlier at Delhi University and four Govt. Blind Schools at Ajmer, Lucknow, Thiruvananthapuram and Mysore.

- Disability Rehabilitation Centre (DRC) was established, in collaboration with National Institute for the Orthopedically Handicapped (NIOH), at NTPC Tanda, Rihand, Korba, Dadri and Bongaigaon under the Ministry of Social Justice and Empowerment, Government of India. This has benefitted about 3700 physically challenged people.

In line with the revised guidelines on CSR and Sustainable Development (SD) issued by DPE, NTPC enhanced its allocation of funds for CSR and SD activities to 1% of its PAT (of the previous year) with effect from FY 2013-14.

Expenditure of Rs 128.35 crore was incurred on Sustainable Development and Corporate Social Responsibility activities during the FY 2013-14.

LOCAL COMMUNITIES

NTPC growth plans necessitate acquisition of land, which may involve relocation of people. As a responsible corporate citizen, the company is aware of

the needs of Project Affected Persons (PAPs) and neighbouring communities around its projects for establishing an amicable environment.

NTPC carries out Socio Economic Survey (SES) to collect detailed information of PAPs. The survey is conducted immediately after land boundaries are frozen. It includes the details of PAPs, i.e., ownership of movable, immovable property, and deprivation of property including land, structures, etc. The company takes adequate measures and formulates plans based on Initial Community Development (ICD), R&R policy to address issues arising due to displacement.

ICD ACTIVITIES	
Area	Activity
Health	Mobile clinics and community health related activities as per need of the locality.
Education	Emphasis on girl education, primary education and adult education.
Water	Emphasis on safe drinking water to villagers and other water related facilities.
Capacity Building	Vocational training to local people to develop income generating skills.
Infrastructure	Construction of roads, community halls, school buildings, health centres, street lighting, providing furniture & equipment to educational institutions, public utilities and sanitation facilities etc.

NTPC tries to acquire minimal houses to avoid physical displacement of persons. PAPs are provided compensation for land. Additionally following benefits are provided to PAPs:

- Free of cost plot in resettlement colony
- Resettlement grant and annuity
- Shifting-grant or self-resettlement grant

All the above facilities are provided to facilitate effective self-relocation of the inhabitants. So far, all the displaced persons have been resettled and relocated satisfactorily, mutually and peacefully.

PAPs Resettled & Rehabilitated (FY14)

Project	Affected families (In nos.)	Displaced Homesteads (In Nos.)	Total Nos
Lara	2100	17	2117
Gadarwara	427	63	490
Barethi	830	120	950
Total	3357	200	3557

Remarks: Land was acquired in FY 2012-13 and R&R grants paid in FY 12-13 & 13-14

PUBLIC POLICY PARTICIPATION

The public policy advocacy, at NTPC, encompasses a wide range of activities. NTPC is corporate member of 51 varied national & international organizations, and participates in these forums for issues pertaining to public policy. The company takes up the issues for policy advocacy conducive for sustainable development of the Power sector. A comprehensive list of the organizations is given in the 'Key Data at a Glance' section of this report.

Being in the electricity generation business, NTPC shares its experiences and views on key public policy issues, such as, Electricity Tariff Regulations, Electricity Policy, Grid Code etc., with relevant authorities as and when required. The advocacy includes capacity building, relationship building, networking, and leadership establishment. It aims at achieving the best for the maximum number of people and communities.

The company does not give any contribution (in-kind or in-cash) to political parties, politicians and related institutions.

Due care is taken to ensure that the company complies with all the statutory requirements from time to time. There has never been an instance of non-compliance with laws and regulations pertaining to workplace discrimination, corruption, fraud etc. No fines or penalties were imposed on NTPC during the reporting period.

Investor Grievances

NTPC has attended its investor grievances expeditiously except for the cases constrained by disputes or legal impediments. The details of the complaints received, resolved and disposed off during the year are as given in table below:

Particulars	Opening Balance	Received	Resolved	Pending
SEBI / Stock Exchange Complaints	1	47	46	2
Other Dividend Related complaints	0	6694	6694	0
Other complaints	0	17	17	0
Total	1	6758	6757	2*

**includes one consumer forum case*

As a matter of good corporate governance practice, grievances relating to Public Issue of Tax Free Bonds 2013 were also put up to Stakeholders Relationship Committee. The details of the complaints received, resolved and disposed off during the reporting year are as follows:

Particulars	Opening Balance	Received	Resolved	Pending
Complaints relating to Public Issue of Tax Free Bonds-2013	0	321	311	10

During the year, No case filed by any stakeholder against the company regarding unfair trade practices, irresponsible advertising and / or anti-competitive behaviour.

*10 investor complaints shown pending as on 31st March, 2014 were attended subsequently except one Consumer Forum Case.

NTPC or different beneficiaries of NTPC have filed customer complaints against CERC orders/APTEL judgments related to the company. As on 31.03.2014, 116 cases are pending, out of which, 34 cases are with Appellate Tribunal for Electricity (APTEL), and 82 cases are with the Supreme Court of India. Additionally, 22 cases on other matters are pending with various consumer forums of the country.



PRODUCT RESPONSIBILITY

NTPC values its relationship with the customers and recognizes Customer Focus as one of the core values of the company.

NTPC endeavours, in line with its mission, to provide reliable power and services at competitive prices, integrating multiple energy sources with innovative and eco-friendly technologies. The Company participates extensively in various sector development programmes of the Ministry of Power, GoI, to ensure inclusive growth in the Power sector. Some of these programmes are as follows:

- Re-structured Accelerated Power Development and Reforms Programme (R-APDRP)
- Rural Electrification programmes
- Jawaharlal Nehru National Solar Mission (JNNSM) programmes

Besides the above programmes, NTPC has been actively associated with following initiatives of the Government of India for improving access to electricity.

- Guidelines for tariff based competitive bidding
- Development of Ultra Mega Power Projects
- Allocation of captive coal blocks
- Private sector participation in transmission sector
- Establishment of the Power Exchanges
- Promotion of renewable energy
- Financial restructuring plan for DISCOMs
- Demand side management initiatives e.g.
 - i. National Mission for Enhanced Energy Efficiency (NMEEE)
 - ii. Perform, Achieve and Trade (PAT) Scheme
 - iii. Energy Conservation Building Code (ECBC)

With a vision to power India's growth, NTPC contributes in the above initiatives.

CUSTOMER FOCUS

NTPC has taken up Customer Relationship Management (CRM) initiatives to strengthen its relationship with its customers. Under the CRM initiatives, the company has undertaken several structured activities with the objective of sharing customer experiences, capturing the feedback and

customer expectations. Based on the feedback received, it provides its customers with various support services, identifies potential areas of cooperation and shares best practices with the customer utilities. The CRM initiative has been deliberated in "Stakeholder Engagement" section of this report.

During the FY 2013-14, 62 numbers of services were provided to various customers on the basis of the requirement expressed by them. In FY 2013-14, a Power Meet was organized with the top officials of Southern Region beneficiaries, and 4 Business Partner Meets were conducted with 9 beneficiaries of different regions. Besides the above, NTPC has rolled out a Customer Satisfaction Index (CSI) survey for FY 15 to gather customers' feedback. The initiative shall serve as a useful tool for further strengthening customer relationship.

PRODUCT SAFETY

NTPC's core business is generation of electricity and the Company is not directly involved in the businesses of transmission and distribution. However, as a responsible Power generation company, it offers technical and managerial support services to its customers, as per their requirements. Various customer support activities in different areas, including, health and safety aspects, are extended to the customers in the form of workshops and seminars.

As per the requirements of the people around, NTPC takes due care in displaying safety instructions in the local languages. Electricity, the sole product of NTPC cannot be labelled due to its intrinsic nature. However, NTPC has been complying with the Grid Code and Grid Standards - national and international - wherever applicable.

MARKETING STRATEGY

The Indian Power sector is governed by the Electricity Act, 2003 which provides the overall legislative framework for the sector. Electricity Act, 2003 has promoted a liberal, transparent and enabling framework for development of the sector through creation of a competitive environment. At the same time, the Act protects the interests of the consumers. The Act has enabled introduction of some path breaking initiatives in the sector, such as, de-licensing of Power generation, introduction of Open Access in transmission and distribution, licensing for trading as a distinct activity, unbundling of the distribution sector etc. It seeks to promote availability of quality supply of electricity to consumers at competitive rates.

Though NTPC is not in the business of Power distribution, and so, it does not directly deal with the demand side management, yet its training centre, at the Power Management Institute (PMI), Noida, conducts educational programmes on demand side management.

Being in the generation business only, Power outage indexes, such as, SAIFI & SAIDI, are not applicable to NTPC. However, the average planned outage, forced outage and availability factor of NTPC Coal Stations and Gas Stations during FY 14 are given below:

Description	Planned Outage, %	Forced and Other Outage, %	Availability Factor YTD (%)
Coal Stations	4.2	2.8	90.3
Gas Stations	3.7	0.46	47.4

There has been no incidence of non-compliance or wrong business practices pertaining to marketing and communication, including, advertising, promotion and sponsorship during the reporting period.

NTPC complied with all the laws and regulations concerning provision and use of products and services. There has been no monetary fines for non-compliance with laws and regulations concerning the provision and use of products during the reporting period.



Key Data at a Glance



ECONOMIC INDICATORS

Particulars	FY 2010-11 (₹ in Crores)	FY 2011-12 (₹ in Crores)	FY 2012-13 (₹ in Crores)	FY 2013-14 (₹ in Crores)
A: Direct Economic Value Generated				
Revenues	57,399.49	64,514.79	69,614.92	74,507.95
Sub Total (A)	57,399.49	64,514.79	69,614.92	74,507.95
B: Direct Economic Value Distributed				
Operating Cost	38,666.55	45,099.40	44881.02	50,031.33
Employee Wages & Benefits	2,789.71	3,090.48	3360.12	3,867.99
Payments to Providers of Capital	4,554.22	5,009.83	6665.52	7,147.74
Payments to Government	3,072.01	3,600.58	4527.83	3,664.00
Community investments	77.44	55.49	77.08	120.21
Sub Total (B)	49,159.93	56,855.78	59,511.57	64,831.27
Economic Value Retained (A-B)	8,239.56	7,659.01	10,103.35	9,676.68
C: Employee remuneration and other benefits				
Nos. of Employees (year end)	23,797	24,011	23,865	23,411
Average Salary, Wages and Benefits per Employee per Annum (₹)	13,04,935	14,48,117	15,76,840	1,828,865
Average Cost of other Benefits per Employee per Annum (₹)	1,86,050	1,82,660	2,17,199	2,70,514
Average Cost of Employee Remuneration & Benefits per Annum (₹)	14,90,985	16,30,777	17,94,039	20,99,379

*Annual Report FY 14 --page no. 159

ENVIRONMENTAL INDICATORS

Name of Indicator		Unit	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Input Material	Material used						
	Lube Oil	KL	1,604	1,662	1,711	2,093	1192.2
		Lt/MU	7.34	7.54	7.75	9.06	5.12
	Transformer Oil	KL	198	232	344	259	410
		Lt/MU	0.91	1.05	1.56	1.12	1.76
	Chlorine	MT	3,740	3,563	4,914	3,559	4,317
		Kg/MU	17.12	16.17	22.26	15.41	18.53
	Ammonia	MT	470	394	1,249	1,764	550
		Kg/MU	2.15	1.79	5.66	7.64	2.36
	Alum	MT	8,985	9,411	10,746	9,838	10,672
		Kg/MU	41.13	42.70	48.69	42.59	45.81
	HCl	MT	14,126	14,827	15,140	14,500	13,784
		Kg/MU	64.67	67.28	68.60	62.77	59.16
	H ₂ SO ₄	MT	9,913	9,434	9,252	6,156	10,392
		Kg/MU	45.38	42.80	41.92	26.65	44.60
	Hydrogen	KL	-----	3,88,957	4,29,046	4,82,349	4,41,950
Lt/MU		-----	1,765	1,944	2,088	1,897	

Name of Indicator		Unit	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Energy	Direct energy consumed						
	Coal	MMT	135	137	141	155	158.2
		Kcal/Kg	3,385	3,418	3,371	3,276	3,334
		TJ	19,13,263	19,60,536	19,90,032	21,19,115	22,08,839
		Kg/Kwh	0.708	0.702	0.713	0.731	0.718
	Natural Gas	MMSCMD	13.88	13.77	13.09	10.70	6.88
		Kcal/SCM	9,420	9,420	9,372	9,465	9,400
		TJ	1,99,809	1,98,226	1,87,477	1,54,767	98,830
		SCM/Kwh	0.184	0.199	0.208	0.198	0.200
	Naptha	MT	4,17,004	3,30,783	1,23,403	2,67,296	1,66,790
		Kcal/ Kg	11,340	11,342	11,348	11,401	11,385
		TJ	19,799	15,708	5,863	12,759	7,950
	LDO	KL	10,836	11,563	13,856	25,583	34,733
		Kcal/KL	8,309	8,742	9,540	9,551	9,098
		GJ	377	423	553	1,023	1,323
	HFO	KL	55,095	48,265	57,863	70,062	53,116
		Kcal/KL	9,625	9,734	9,848	9,784	9,838
		GJ	2,220	1,967	2,386	2,870	2,187
	Specific Oil consumption	ml/Kwh	0.35	0.31	0.36	0.45	0.40
	HSD	KL	1,80,056	8,885	279	998	434
Kcal/KL		9,036	8,932	8,669	9,052	8,760	
GJ		6,811	332	10	38	16	

Key Data at a Glance

Name of Indicator	Unit	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Sector Disclosures - Coal Stations						
Installed Capacity	MW	24,885	26,875	28,695	31,855	#33,015
Commercial Generation	MU	1,90,857	1,95,124	1,97,682	2,11,294	2,20,411
Net Generation	MU	1,77,937	1,81,908	1,84,186	1,96,688	2,05,198
PLF	%	90.81	88.29	85.00	83.10	81.50
Cycle Efficiency	%	35.86	35.86	35.83	35.83	35.88
Planned Outage	%	4.26	4.87	5.14	4.92	4.2
Forced Outage	%	2.41	2.46	2.81	2.93	2.8
Availability Factor	%	91.76	91.62	89.73	90.20	90.3
#including 660 MW of Barh -II						
Sector Disclosures - Gas Stations						
Installed Capacity@	MW	4,017	4,017	4,017	4,017	4,017
Commercial Generation	MU	27,581	25,255	23,014	19,699	12,569
Net Generation	MU	27,004	24,680	22,504	19,235	12,222
PLF	%	78.4	71.8	65.2	56.0	35.7
Cycle Efficiency	%	42.89	42.72	42.76	42.55	42.57
Planned Outage	%	3.24	3.34	3.20	3.50	3.7
Forced Outage	%	1.03	0.17	0.15	0.58	0.46
Availability Factor	%	93.14	89.57	80.86	71.40	47.4
@For gas based power projects, earlier the capacity was indicated based on Net Guaranteed Output as per Main Plant Specifications. It has been revised to capacity at Generator Terminal w.e.f. 01.04.2014.						
Sector Disclosures - Solar Stations						
Installed Capacity	MW	----	----	----	----	75
Commercial Generation	MU	----	----	----	----	13,289
PLF	%	----	----	----	----	12.66
Total Installed Capacity (Coal + Gas + Solar)	MW	28,840	30,830	32,650	35,820	37,107
TOTAL Commercial Generation (Coal + Gas)	MU	2,18,438	2,20,379	2,20,696	2,30,993	2,32,980
Total Net Generation (Coal + Gas)	MU	2,04,941	2,06,588	2,06,690	2,15,923	2,17,421
Total Gross Generation (Coal + Gas)	MU	2,18,840	2,20,536	2,22,068	2,32,028	2,33,284

Name of Indicator		Unit	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Auxiliary Power Consumption							
Coal Stations	MU		12,673	13,052	13,346	14,451	15,029
	%		6.64	6.69	6.75	6.84	6.82
Gas Stations	MU		563	575	515	468	351
	%		2.04	2.28	2.24	2.38	2.80
Energy Saved							
Electrical	MU		93.8	102.3	111.2	119.9	115.1
Heat Energy (equivalent MT of coal)	MT		72,747	22,774	36,530	9,366	11,678
Heat Energy (equivalent MCM of Gas)	MCM		2.55	6.58	0.51	1.97	----
Heat Energy (equivalent KL of Naptha)	KL		----	10.30	21.24	253	----
Water	Total Drawn	Lakh KL	48,835	49,988	45,981	44,414	46,711
		Lt/Kwh	22.36	22.68	20.83	19.23	20.05
Stack Emissions							
SPM	MT		99,985	1,04,529	1,06,922	1,00,226	1,03,016
Specific SPM**	gm/Kwh		0.49	0.51	0.52	0.46	0.47
SO ₂	MT		7,76,324	8,39,086	7,90,889	8,47,919	9,42,700
Specific SO ₂ **	gm/Kwh		3.79	4.06	3.83	3.93	4.34
NO _x	MT		4,65,340	4,90,891	4,64,822	4,89,711	522,375.0
Specific NO _x **	gm/Kwh		2.27	2.38	2.25	2.27	2.40
Greenhouse Emissions							
CO ₂ (Coal Stations)	MT		17,34,89,881	17,74,74,064	17,99,02,214	19,22,28,461	19,22,28,262
CO ₂ emission intensity (Coal Stations)**	gm/Kwh		975	976	977	977	973
CO ₂ (Gas Stations)	MT		1,20,94,282	1,10,39,917	1,00,84,744	87,66,230	88,08,232
CO ₂ emission intensity (Gas Stations)**	gm/Kwh		448	447	448	456	459
** Based on Net generation							
Ozone Depleting Substances							
ODS	CFC-11 equivalent (Kg)		----	5416	5245	3607	2404

Key Data at a Glance

	Name of Indicator	Unit	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Waste Material	Non Hazardous						
	Misc. Ferrous Scrap	MT	15,661	24,278	15,503	40,053	26,271
		mg/Kwh	71.69	110.16	70.25	173.40	114.69
	Non Ferrous Scrap	MT	875	626	497	867	893
		mg/Kwh	4.00	2.84	2.25	3.75	3.83
	Hazardous						
	PCB	MT	0	0	0	0	0
	Used Batteries	MT	37	101	110	144	115
		Kg/MU	0.17	0.40	0.48	0.62	0.49
	Spent Resin	Lt	1,478	1,271	8,879	17,952	27,880
		ml/MU	6.77	5.77	40.23	77.72	136
	Used lube oil	KL	870	827	997	702	1,012
		Lt/MU	3.98	3.75	4.51	3.04	4.34
	Transformer Oil	KL	381	412	148	197	230
Lt/MU		1.74	1.87	0.67	0.85	0.99	
Bio- medical waste	Kg	-----	10,370	10,727	10,678	19,565	
Effluents	Main Plant Effluents						
	Quantity	KL	46,09,78,765	45,94,40,374	44,55,92,309	43,00,81,284	406,330,545
		Lt/Kwh	2.11	2.08	2.01	1.86	1.74
	(Excluding once through CCW of Farakka & Singrauli)						
	PH	-	7.7	7.6	7.5	7.6	7.6
	TSS	mg/Lt	42.6	38.5	43.7	39.4	39.9
	O & G	ppm	2.1	2.3	2.4	2.7	2.1
Ash	Ash generated	Lakh Ton	462.19	472.05	500.5	562.9	578.26
Ash Utilized	Total Ash utilized	Lakh Ton	276.07	260.27	275.31	309.7	253.74
		%	59.73	55.14	55.01	55.02	43.88
	Land Devpmt	Lakh Ton	78.43	63.86	68.74	40.92	24.71
		%	16.97	13.53	13.73	7.27	4.27
	Issue to cement & other industry	Lakh Ton	88.05	80.81	72.42	81.45	71.53
		%	19.05	17.12	14.47	14.47	12.37
	Ash Dyke Raising	Lakh Ton	35.15	36.14	42.2	86.01	75.43
		%	7.61	7.66	8.43	15.28	13.04
	Bricks	Lakh Ton	21.49	18.74	19.17	27.24	23.36
		%	4.65	3.97	3.83	4.84	4.04
	Roads/Rail Embankment	Lakh Ton	13.41	14.77	17.97	18.46	7.22
		%	2.9	3.13	3.59	3.28	1.25
	Mine filling	Lakh Ton	11.28	11.8	11.68	13.34	18.04
		%	2.44	2.5	2.33	2.37	3.12
Others	Lakh Ton	28.26	34.14	43.13	42.27	33.51	
	%	6.11	7.23	8.62	7.51	5.79	
Environment Expenditure	Total	₹ (Crores)	52.20	59.12	94.12	124.8	135.4
		₹/MU	2,390	2,682	4,265	5,403	5,811

SOCIAL INDICATORS

Name of Indicator		Unit	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	
Total Workforce	Employment						
	Executives	Male	----	11,502	11,761	11,867	
		Female	----	792	827	832	
	Non-Executives	Male	----	11,055	10,637	10,081	
		Female	----	662	640	631	
	TOTAL			23,797	24,011	23,865	23,411
	Region Wise Distribution						
	CORPORATE & CONSULTANCY	No.	----	2568	2401	2306	
	NORTH	No.	----	4267	4151	4019	
	NATIONAL CAPITAL	No.	----	3067	2880	2701	
	SOUTH	No.	----	2637	2667	2602	
	EAST - I	No.	----	3184	3207	3221	
	EAST - II	No.	----	2338	2403	2347	
	WEST - I	No.	----	971	1095	1130	
	WEST - II	No.	----	4332	4399	4437	
HYDRO	No.	----	438	449	436		
MINING	No.	----	209	213	212		
TOTAL	No.		23,797	24,011	23,865	23411	
New Employee joined during the year							
Gender Diversity	Male		1,075	841	633	149*	
	Female		151	82	53	11*	
Total	No.		1,226	923	686	160*	
Employee Turnover	Employee Turnover * Employees joined through corporate						
	Gender Diversity	Male		133	115	166	154
		Female		04	08	18	20
	Age Diversity	= <30 yr		49	84	151	143
		30 < 50 yr		56	26	27	28
		> =50 yr		32	13	6	3
	Region Wise Turnover	CC		---	24	20	9
		NORTH		---	15	32	24
		NATIONAL CAPITAL		---	11	16	7
		SOUTH		---	14	12	18
		EAST - I		---	16	21	21
		EAST - II		---	11	22	16
		WEST - I		---	5	17	25
		WEST - II		---	20	35	38
		HYDRO		---	5	8	13
MINING			---	2	1	3	
TOTAL		---	123	184	174		

Key Data at a Glance

Name of Indicator		Unit	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Executive Attrition	Attrition Data	CC	---			0.47
		NORTH	---			1.29
		NATIONAL CAPITAL	---			0.53
		SOUTH	---			1.28
		EAST - I	---			1.33
		EAST - II	---			1.47
		WEST - I	---			2.98
		WEST - II	---			1.79
		HYDRO	---			3.43
		MINING	---			1.54
		TOTAL* (Excl JV & Subsidiary)	---			1.37
Employee Productivity	Gen /Employee	MU	9.27	9.25	9.72	9.96
	Man/MW*	Ratio	0.77	0.74	0.67	0.63
Average hours of training per yr per employee by gender by employee category	Training imparted to employees (Nos)					
	Executives	Male	---	---	7,562	9,479
		Female	---	---	416	705
	Non-Executives	Male	---	---	9,772	9,718
		Female	---	---	466	573
	Total		23,797	22,221	18,216	20,475
	Average no. of hours training per employee(PMI)					
	Executives	Male	---	---	52.83	47.56
		Female	---	---	57.98	47.66
	Non-Executives	Male	---	---	55.85	47.57
Female		---	---	52.37	47.57	
Total		58.64	56.64	54.56	47.57	
Vigilance	No. of Training Conducted in various stations	No.	39	37	29	19
	No. of Employee Participated	No.	1,474	1,057	745	529
Total No. of Work related Fatalities by Region and Gender*	Reportable Accident*	Fatal	5	11	10	15
		Non Fatal	45	40	19	28
	Total Workforce* (Regular + Contract)	No.	50,699	53,232	47,070	51,294
	Total Man hours	Hrs	12,67,86,173	15,09,98,366	12,33,19,841	12,17,350,30
	Total Man Days Lost	Days	31,255	68,100	61,288	91,216
	Frequency Rate	FR	0.39	0.34	0.24	0.33
	Incident Rate	IR	0.99	0.96	0.62	0.84

* including extension projects in operating stations

Name of Indicator	Unit	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	
Injury Rate	IR'	0.08	0.07	0.05	0.07	
Occupational Disease Rate	---	0	0	0	0	
Percentage of employees eligible to retire in the next 5 and 10 years broken down by job category and by region						
Retirement in 5 Yrs (in %)	CC	Executives	---	---	15.81	18.64
		Non- Executives	---	---	28.92	30.91
	EAST - I	Executives	---	---	13.33	14.38
		Non- Executives	---	---	31.27	21.25
	EAST - II	Executives	---	---	17.92	10.86
		Non- Executives	---	---	34.50	33.57
	HYDRO	Executives	---	---	10.69	12.14
		Non- Executives	---	---	6.41	17.54
	MINING	Executives	---	---	13.95	10.26
		Non- Executives	---	---	22.53	5.88
	NATIONAL CAPITAL	Executives	---	---	20.00	19.54
		Non- Executives	---	---	24.39	32.78
	NORTH	Executives	---	---	13.25	17.29
		Non- Executives	---	---	18.02	37.13
	SOUTH	Executives	---	---	10.70	22.18
		Non- Executives	---	---	32.06	28.97
	WEST - I	Executives	---	---	10.45	11.34
		Non- Executives	---	---	23.40	8.56
	WEST - II	Executives	---	---	8.29	16.25
		Non- Executives	---	---	5.00	24.83
Retirement in 10 Yrs (in %)	CC	Executives	---	---	25.33	25.14
		Non- Executives	---	---	27.47	30.65
	EAST - I	Executives	---	---	25.09	20.27
		Non- Executives	---	---	38.12	33.25
	EAST - II	Executives	---	---	22.09	15.36
		Non- Executives	---	---	20.69	17.14
	HYDRO	Executives	---	---	19.29	12.40
		Non- Executives	---	---	18.86	8.77
	MINING	Executives	---	---	20.23	14.36
		Non- Executives	---	---	30.02	29.41
	NATIONAL CAPITAL	Executives	---	---	25.07	23.66
		Non- Executives	---	---	37.73	24.66
	NORTH	Executives	---	---	18.82	24.76
		Non- Executives	---	---	30.86	36.21
	SOUTH	Executives	---	---	13.05	23.88
		Non- Executives	---	---	20.18	35.60
	WEST - I	Executives	---	---	11.44	20.64
		Non- Executives	---	---	12.77	17.12
	WEST - II	Executives	---	---	12.44	19.51
		Non- Executives	---	---	20.00	30.60

Key Data at a Glance

CORPORATE MEMBERSHIP

No	Organization
1.	All India Management Association
2.	All India Organization of Employees
3.	American Society For Quality
4.	Association Membership of National Association of Vocational Training Providers (NAVTP)
5.	British Society Council
6.	British Standards Institute
7.	Central Board of Irrigation And Power
8.	Centre For Public Sector Studies
9.	Coal Preparation Society of India
10.	Committee For International Commission on Large Dams (India)
11.	Confederation of Indian Industry
12.	CSO forum
13.	Delhi Productivity Council
14.	Doble Engineering Company
15.	Excellence Enhancement Centre, EEC
16.	Federation of Indian Chambers of Commerce & Industry
17.	Forum of The Hydro Power Producers In Sattuj Basin
18.	Global Carbon Capture And Storage Institute, Australia
19.	Global Compact Network
20.	Indian Trust For Rural Heritage And Development
21.	India Habitat Centre
22.	Indian Geotechnical Society
23.	Indian Green Building Council
24.	Indian Institution of Plant Engineers (IIPe)
25.	Indian International Centre
26.	Indian Member Committee (World Energy Council)
27.	Indian Society For Tock Mechanics And Tunneling Technology
28.	International Council Of Large Electric System (CIGRE)
29.	International Electric Research Exchange (IERE) Japan
30.	International Geosynthetics Society
31.	International Tunneling Association (India)

No	Organization
32.	National Association of Corrosion Engineers (NACE) International
33.	National Accreditation Board For Testing & Calibration Laboratories
34.	National Safety Council, India
35.	National Safety Council, USA
36.	North American Electric Reliability Corporation
37.	Petrotech Society
38.	Power HR Forum
39.	Shri Ram Centre For Industrial Relations And Human Resources
40.	South Asia Forum For Infrastructure Regulation
41.	Standing Conference Of Public Enterprises (SCOPE)
42.	Strategic Human Resource Management (SHRM)
43.	The Energy And Resources Institute (TERI)
44.	TERI- BCSD
45.	The Foreign Correspondents Club of South Asia
46.	The Indian CFO Forum
47.	The Institute of Company Secretaries of India
48.	The Institute of Internal Auditors of India
49.	The Mining, Geological & Metallurgical Institute of India
50.	Thought Arbitrage Research Institute
51.	World Economic Forum

During FY 2013-14, following vigilance cases were finalized:

- ▶ 05 cases of major penalty proceedings were finalized resulting in imposition of penalty of
 - "Removal from Service" on 02 employees,
 - "Reduction to 02 stages lower" on 01 employee,
 - "Withholding of increment of pay" on 01 employee.
 - "Fine of Rs.1000/-" on 01 employee
- ▶ 25 cases of minor penalty proceedings were finalized resulting in imposition of penalty of
 - "Reduction to lower stage" on 05 employees,
 - "Withholding of promotion" on 03 employees,
 - "Censure" on 16 employees.
 - "Suspension without wages for 04 days" on 01 employee.

LIST OF BENEFICIARIES

No.	Name of the Beneficiary
1.	A&N
2.	AP CPDCL (Andhra Pradesh)
3.	AP EPDCL (Andhra Pradesh)
4.	AP NPDCL (Andhra Pradesh)
5.	AP SPDCL (Andhra Pradesh)
6.	Arunachal Pradesh
7.	ASEB (Assam)
8.	AVVN (Rajasthan)
9.	BESCOM (Karnataka)
10.	BSEBL (Bihar)
11.	BRPL (Delhi)
12.	BYPL (Delhi)
13.	CESCO (Karnataka)
14.	Chandigarh
15.	CSEB (Chhattisgarh)
16.	D&D
17.	DNH
18.	DVC
19.	GEB/ GUVNL (Gujarat)
20.	GESCOM (Karnataka)
21.	GOA
22.	HVPN (Haryana)
23.	HESCOM (Karnataka)
24.	SEB (Himachal Pradesh)
25.	Indian Railways

No.	Name of the Beneficiary
26.	SEZ (Indore)
27.	J&K
28.	ID VVN (Rajasthan)
29.	JSEB (Jharkhand)
30.	JVVN (Rajasthan)
31.	KSEB (Kerala)
32.	MSEDCL (Maharashtra)
33.	Meghalaya
34.	MES (Delhi)
35.	MESCOM (Karnataka)
36.	Mizoram
37.	MPPTCL (Madhya Pradesh)
38.	Nagaland
39.	NDMC (Delhi)
40.	NVVN
41.	GRIDCO (Orissa)
42.	Pondicherry
43.	Power Grid
44.	PSPCL (Punjab)
45.	Sikkim
46.	TANGEDCO (Tamil Nadu)
47.	TPDDL (Delhi)
48.	UPPCL (Uttar Pradesh)
49.	UPCL (Uttarakhand)
50.	WBSEDCL (West Bengal)

GRI, NVG, ISO 26000 and UNGC Index



I. STANDARD DISCLOSURES

GRI No*	Aspect	UNGC Advanced Criteria	NVG	ISO 26000 Core Social Responsibility Subjects & Themes	Report Page
1.1	Strategy and Analysis	CEO Commitment and Leadership	Part A, A-2	Organizational governance	2-3, 31-33
1.2			Part A, A-2		29-33, 52
2.1	Organization Profile	High Standards of Transparency and Disclosure	Part A, A-1		15-16
2.2			15-16		
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2.4			15-16		
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2.8			Part A, A-1		13,15, 48, 84-85
2.9			17-18		
2.10			105-108		
3.1	Report Parameters		Part A, A-2	13	
3.2			13		
3.3			Part A, A-2	13	
3.4			14		
3.5			Part A, A-2	13-14, 43-46, 42-43	
3.6			13		
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3.8			13		
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3.10			No-restatement		
3.11			14,18		
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3.13			External COP Assessment	Verification	13

GRI No*	Aspect	UNGC Advanced Criteria	NVG	ISO 26000 Core Social Responsibility Subjects & Themes	Report Page	
4.1	Governance, Commitment and Engagement	Main streaming into Corporate Functions and Business Units, Board Adoption and Oversight	Principle 1	Organizational governance	24	
4.2					24	
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4.4					24, 34-42	
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4.6					Principle 1	24
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4.15			34-40			
4.16			34-46			
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II. Performance Indicators

No	GRI Indicators*	UNGC	NVG	ISO 26000 Core Social Responsibility Subjects & Themes	Report Page
Environmental Performance Indicators					
1.	EN 1	Principle 7 & 8		6.5, 6.5.4	53,54,85
2.	EN 2	Principle 8	Principle 2& 6		48
3.	EN 3	Principle 7 & 8	Principle 6		54,85-86,55
4.	EN 4	Principle 8	Principle 6		54
5.	EN 5				55,95
6.	EN 6	Principle 8 & 9	Principle 2& 6		54-56
7.	EN 7				54-56
8.	EN 8	Principle 7 & 8	Principle 6		59-80,87
9.	EN 9	Principle 8			59
10.	EN 10		Principle 6		60
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13.	EN 13		61		
14.	EN 14	Principle 8	Principle 6		61
15.	EN 15	Principle 8		61	
16.	EN 16	Principle 7 & 8	Principle 6	6.5, 6.5.5	62, 87
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18.	EN 18	Principle 8 & 9			62
19.	EN 19	Principle 7 & 8		6.5, 6.5.3	62, 87
20.	EN 20		62, 87		
21.	EN 21	Principle 8	Principle 6	6.5, 6.5.3, 6.5.4, 6.5.6	59, 87
22.	EN 22				63-64, 88
23.	EN 23				65
24.	EN 24				NA
25.	EN 25			6.5, 6.5.3, 6.5.4, 6.5.6	NA
26.	EN 26	Principle 7, 8 & 9		6.5, 6.5.4, 6.6.6, 6.7.5	66
27.	EN 27	Principle 8			NA
28.	EN 28			6.5	53-66
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GRI, NVG, ISO 26000 and UNGC Index

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32.	EC 2	Principle 7		6.5, 6.5.5	47
33.	EC 3				70
34.	EC 4				48
35.	EC 5	Principle 6		6.8, 6.3.7, 6.4.4	68
36.	EC 6		<i>Principle 2</i>	6.8, 6.8.5, 6.8.7, 6.6.6	48
37.	EC 7	Principle 6		6.8, 6.8.5, 6.8.7	68
38.	EC 8			6.8, 6.8.3, 6.8.4, 6.8.5, 6.8.6, 6.8.7, 6.8.9, 6.3.9	73-80
39.	EC 9			6.8, 6.3.9, 6.6.6, 6.6.7, 6.7.8, 6.8.5, 6.8.6, 6.8.7, 6.8.9	73-80
Social Performance Indicators					
40.	SO 1	Principle 1	<i>Principle 8</i>	6.8, 6.8.3, 6.8.9, 6.3.9	73-80
41.	SO 2	Principle 10		6.6, 6.6.3	26
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43.	SO 4	Principle 10	<i>Principle 7</i>	6.6, 6.6.4, 6.8.3	26, 92
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46.	SO 7			6.6, 6.6.5, 6.6.7	81
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48.	SO 9	Principle 1		6.8, 6.3.9, 6.5.3, 6.5.6	80
49.	SO10		<i>Principle 8</i>		80
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51.	PR 2		<i>Principle 9</i>	6.7, 6.7.3, 6.7.4, 6.7.5, 6.7.6, 6.7.9	82-83
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54.	PR 5			6.7, 6.7.4, 6.7.5, 6.7.6, 6.7.8, 6.7.9	82
55.	PR 6			6.7, 6.7.3, 6.7.6, 6.7.9	82-83
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62.	LA 4	Principle 3		6.4, 6.4.3, 6.4.4, 6.4.5, 6.3.10	69
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NVG Principles

Principle 1	Businesses should conduct and govern themselves with Ethics, Transparency and Accountability.
Principle 2	Businesses should provide goods and services that are safe and contribute to sustainability throughout their life cycle.
Principle 3	Businesses should promote the well being of all employees.
Principle 4	Businesses should respect the interests of, and be responsive towards all stakeholders, especially those who are disadvantaged, vulnerable and marginalized.
Principle 5	Businesses should respect and promote human rights.
Principle 6	Business should respect, protect, and make efforts to restore the environment.
Principle 7	Businesses, when engaged in influencing public and regulatory policy, should do so in a responsible manner.
Principle 8	Businesses should support inclusive growth and equitable development.
Principle 9	Businesses should engage with and provide value to their customers and consumers in a responsible manner.

UNGC

Principle 1	Businesses should support and respect the protection of internationally proclaimed human rights.
Principle 2	Businesses should make sure they are not complicit in human rights abuses.
Principle 3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.
Principle 4	Businesses should uphold the elimination of all forms of forced and compulsory labour.
Principle 5	Businesses should uphold the effective abolition of child labour.
Principle 6	Businesses should uphold the elimination of discrimination in respect of employment and occupation.
Principle 7	Businesses should support a precautionary approach to environmental challenges.
Principle 8	Businesses should undertake initiatives to promote greater environmental responsibility.
Principle 9	Businesses should encourage the development and diffusion of environmentally friendly technologies.
Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.

Glossary



T Together
E Everyone
A Achieves
M More

GLOSSARY

Abbr.	Details
A&N	Andaman & Nicobar
AAQMS	Ambient Air Quality Monitoring Station
AC	Alternating Current
ACC	Air Cooled Condenser
ACV	Actual Calorific Value
ADB	Asian Development Bank
AFGC	Ammonia Flue Gas Conditioning
AMP	Advanced Management Programme
APC	Auxiliary Power Consumption
APH	Air Pre Heater
APIO	Assistant Public Information Officer
APM	Administrative Price Mechanism
APTEL	Appellate Tribunal for Electricity
ASCI	Administrative Staff College on India
ASI	Archaeological Survey of India
AT&C	Aggregate Technical and Commercial
ATDC	Apparel Training & Design Centre
AWRS	Ash Water Recirculation System
BCSD	Business Council for Sustainable Development
BD	Business Development
BEE	Bureau of Energy Efficiency

Abbr.	Details
BFP	Boiler Feed Pump
BG	Bank Guarantee
BHEL	Bharat Heavy Electrical Ltd.
BOP	Balance of Plant
BP	Basic Pay
BPL	Below Poverty Line
BRICS	Brazil Russia India China and South Africa
BTPS	Badarpur Thermal Power Station
BU	Billion Units
CAG	Comptroller and Auditor General of India
CAGR	Compounded Annual Growth Rate
CAPEX	Capital Expenditure
CARE	Credit Analysis and Research Ltd.
CBIP	Central Board of Irrigation & Power
CBOs	Community Based Organisations
CC	Corporate Centre
CCP	Combined Cycle Plant
CD	Community Development
CDA	Community Development Authority
CDM	Clean Development Mechanism
CDSL	Central Depository Services (India) Limited

Abbr.	Details
CEA	Central Electricity Authority
CEMS	Continuous Emission Monitoring System
CenPEEP	Centre for Power Efficiency & Environmental Protection
CEO	Chief Executive Officer
CERC	Central Electricity Regulatory Commission
CFC	Chloro fluoro Carbons
CFD	Computational Fluid Dynamics
CFL	Compact Fluorescent Lamps
CFO	Chief Forest Officer
CIC	Cluster Innovation Centre
CIGRE	International Council of Large Electric Systems
CII	Confederation of Indian Industry
CIL	Coal India Limited
CISF	Central Industrial Security Force
CMC	Canteen Management Committee
CMD	Chairman and Managing Director
CO ₂	Carbon Dioxide
COC	Cycles of Concentration
COP	Communication on Progress
CP	Corporate Planning
CPCB	Central Pollution Control Board
CPIO	Central Public Information Officer
CPSE	Central Public Sector Enterprise
CREDA	Chattisgarh State Renewable Energy Development Agency
CRISIL	Credit Rating Information Services of India Ltd.
CRM	Customer Relationship Management
CRO	Chief Risk Officer
CSA	Coal Supply Agreement
CSI	Customer Satisfaction Index
CSR	Corporate Social Responsibility
CTU	Central Transmission Utility
CVO	Central Vigilance Officer
CW	Cooling Water
D&B	Dun & Bradstreet
DA	Dearness Allowance
DC	Designated Commission
DDCMIS	Distributed Digital Control Monitoring and Information System
Deptt.	Department

Abbr.	Details
DGH	Directorate General of Hydrocarbons
Dir.	Director
DISCOMs	Distribution Companies
DM Water	Demineralised Water
DMC	Designated Microscopy Centre
DNV	Det Norske Veritas
DOT	Directly Observed Treatment
DPE	Department of Public Enterprises
DRCs	Disability Rehabilitation Centres
DSIJ	Dalal Street Investment Journal
DSM	Demand Side Management
EA	Electricity Act
EPI	Economic Performance Indicator
ECBC	Energy Conservation Building Code
ECS	Electronic Clearing Service
ED	Executive Director
EDC	Employee Development Centre
EIA	Environmental Impact Assessment
EMC	Enhancing Managerial Competence
EMS	Environmental Management System
EN	Environmental Performance Indicator
EOC	Engineering Office Complex
EPC	Engineering Procurement Construction
EPS	Electric Power Survey
ER	Eastern Region
ERM	Enterprise Risk Management
ERMC	Enterprise Risk Management Committee
ERP	Enterprise Resource Planning
ES Certi	Energy Saving Certificates
ESP	Electrostatic Precipitator
ETP	Effluent Treatment Plants
EUSS	Electric Utility Sector Supplement
EVOICE	Employees Voluntary Organization for Initiative in Community Empowerment
FAPPC	Fly Ash Portland Pozzolana Cement
FGC	Flue Gas Conditioning
FICCI	Federation of Indian Chambers of Commerce and Industry
FIIs	Foreign Institutional Investors
FIs	Financial Institution
FRP	Financial Restructuring Plan
FSA	Fuel Supply Agreement
FTL	Fluorescent Tube Light

Glossary

Abbr.	Details
FY	Fiscal Year
GCN	Global Compact Network
GCV	Gross Calorific Value
GDP	Gross Domestic Product
GHG	Green House Gases
GJ	Giga Joules
GM	General Manager
GOI	Government of India
GPP	Gas Power Plant
GPTW	Great Place to Work
GRI	Global Reporting Initiative
GSAs	Gas Supply Agreements
GSI	Geological Survey of India
GT	Gas Turbine
GW	Giga Watt
HAC	House Allotment Committee
H ₂	Hydrogen
H ₂ SO ₄	Sulphuric Acid
HCA	Host Country Approval
HCFC	Hydro Chloro Fluoro Carbon
HCl	Hydrochloric acid
HFO	Heavy Fuel Oil
HIV	Human Immunodeficiency Virus
HMLs	High Mast Lighting
HPGCL	Haryana Power Generation Corporation Limited
HPSV	High Pressure Sodium Vapours Lamps
HQ	Head Quarters
HR	Human Resources
HR	Human Rights Performance Indicator
HVDC	High Voltage Direct Current
HW	Hardware
IB	Intelligence Bureau
ICD Policy	Initial Community Development Policy
ICRA	Investment Information and Credit Rating Agency
ICT	Information and Communication Technology
ICU	Intensive Care Unit
IDAAS	Integrated Data Acquisition and Analysis System
IERE	International Electric Research Exchange
IGCAR	India Gandhi Centre for Advanced Research
IGCC	Integrated Gasification Combined cycle
IGP	Inspector General of Police
IIFE	Indian Institute of plant Engineers

Abbr.	Details
IMS	Integrated Management System
IOCL	Indian oil corporation Limited
IPGCL	Indraprastha power Generation Corporation Limited
IPMA	International Project Management Association
IPMCS	Implementation of integrated project Management and control system
IIP	Independent power producers
IPS	Indian police service
ISD	Investor service department
ISO	International Organization for Standardization
IT	Information Technology
ITES	Information Technology Enabled services
ITIS	Industrial Training Institutes
ITRHD	Indian Trust for Rural Heritage and Development
IUCN	International Union for the Conservation of Nature
JNNSM	Jawaharal Nehru National Solar Mission
JV	Joint Ventures
Kg	Kilograms
KL	Kilo Litres
km	Kilometer
kwh	Kilo watt hour
kwp	Kilo watt peak
LA	Labor Practices & Decent performance indicators
LED	Light Emitting Diode
LPG	Liquified Petroleum Gas
LOA	Letter of Award
LWA	Light Weight Aggregate
LWTP	Liquid Waste Treatment Plant
M&V	Measurement and Verification
MCM	Million cubic metre
MDGS	Millennium development Goals
MDI	Management development institute
MF	Mutual Funds
MGR	Merry go round
MHA	Ministry of home Affairs
ml	Milli liters
MOP	Ministry of Power
MMSCMD	Million Metric standard cubic meter per day
MNRE	Ministry of New & Renewable Energy
MOEF	Ministry of Environment and Forests

Abbr.	Details
MOU	Memorandum of understanding
Pa	Megapascal
MT	Metric Ton
MMT	Million Metric Ton
MU	Million Units
MW	Mega Watt
NBC	National Bipartite Committee
NBPPL	NTPC BHEL Power Project Limited
NCF	National Culture Fund
NCR	National Capital Region
NCTPP	National Capital Thermal Power Plant
NCYM	National Competition for Young Managers
NECL	North Eastern Coalfields Limited
NEFI	NTPC Executives Federation of India
NEFT	National Electronic Funds Transfer
NELP	New Exploration Licensing Policy
NESCL	NTPC Electric Supply Company Limited
NETRA	NTPC Energy Technology Research Alliance
NFCH	National Foundation for Communal Harmony
NGOs	Non Governmental Organizations
NHR	Net Heat Rate
NH3	Ammonia
NIOH	National Institute for the Orthopedically Handicapped
NIT	Notice Inviting Tender
NMEEE	National Mission On Enhanced Energy Efficiency
NOCET	NTPC Open Competition for Executive Talent
NJPC	NTPC Joint Productivity Council
NRIs	Non Resident Indian
NO2	Nitrogen Dioxide
NOX	Oxides of Nitrogen
NR	Northern Region
NSDL	National Security Depository limited
NSPCL	NTPC SAIL Power Company Pvt. Limited
NVG	National Voluntary Guidelines
NVN	NTPC Vidyut Vyapar Nigam Ltd
O & G	Oil & Grease
O & M	Operations and Maintenance
OBC(CL + NCL)	Other Backward Class (Creamy Layer + No Creamy Layer)
ODP	Ozone Depleting Potential
ODS	Ozone Depleting Substances

Abbr.	Details
OHSAS	Occupational Health and Safety Assessment System
OS	Operation Services
OTSS	One Time Settlement Scheme
PADO	Performance Analysis & Diagnostic Optimization
PAF	Plant Availability Factor
PAPs	Project Affected People
PAT	Perform, Achieve and Trade
PAT	Profit After Tax
PBDIT	Profit Before Depreciation Interest and Tax
PC	Professional Circles
PDC-RVM	Polarisation Depolarisation Current – Recovery Voltage Measurement
PE	Partially Electrified
PEM	Performance Evaluation Matrix
PEPSE	Performance Evaluation of Power System Efficiency
PFC	Power Finance Corporation
PHCs	Primary Health Centre
PhD	Doctor of Philosophy
PI	Process Interface
PICs	Public Information Centre
PLC	Plant Level Committee
PLF	Plant Load Factor
PM	Particulate Matter
PMC	Project Monitoring Committee
POP	Persistent Organic Pollutants
PMI	Power Management Institute
PMS	Paryavaran Monitoring System
PPA	Power Purchase Agreements
PPEs	Personal Protective Equipments
PR	Product Responsibility Performance Indicator
PSDF	Power System Development Fund
PSE	Public Sector Enterprise
PSU	Public Sector Undertaking
PV	Photo Voltaic
Q4E	Quest for Excellence
QC	Quality Circle
QCFI	Quality Circle Federation of India
QMS	Quality Management System
QPR	Quarterly Progress Report
3 R's	Reduce, Recycle & Reuse
R&D	Research & Development

Glossary

Abbr.	Details
R&M	Renovation & Modernization
R&R	Resettlement and Rehabilitation
RAC	Research Advisory Council
RAP	Rehabilitation Action Plan
R-APDRP	Re-Structured-Accelerated Power Development & Reforms Program
RCM	Reliability Centered Maintenance
RED	Regional Executive Director
REDG	Renewable Energy and Distributed Generation
RES	Renewable Energy Sources
RFD	Result Framework Document
RFID	Radio Frequency Identifier
RGCCP	Rajiv Gandhi Combined Cycle Power Project
RGVY	Rajiv Gandhi Grameen Vidyutikaran Yojna
RJPC	Regional Joint Productivity Council
RLDC	Regional Load Dispatch Centers
RNTCP	Revised National Tuberculosis Control Programme
RO	Reverse Osmosis
RPCs	Regional Power Committees
RPO	Renewable Purchase Obligation
RTI	Right to Information
SA-8000	Social Accountability 8000 Standard
SAC	Scientific Advisory Council
SACS	Special Analytical and Computational Sciences
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SC	Scheduled Caste
SCCL	Singareni Collieries Company Limited
SCOPE	Standing Conference of Public Enterprises
SD	Sustainable Development
SEB	State Electricity Board
SEBI	Stock Exchange Board of India
SERC	State Electricity Regulatory Commission
SES	Socio Economic Survey
SHRM	Strategic Human Resource Management
SIE	Social Impact Evaluation
SLC	Shop Level Committee

Abbr.	Details
SMILE	Strategic Management Initiative for Leadership Effectiveness
SO	Society Performance indicators
SO ₂	Sulphur Dioxide
SPCB	State Pollution Control Board
SPM	Suspended Particulate Matter
SR	Southern Region
ST	Scheduled Tribes
STCS	Solar Thermal Cooking System
STP	Sewage Treatment Plant
STPP	Super Thermal Power Plant
SW	Software
T&D	Transmission and Distribution
TAC	Township Advisory Committee
TANGE-	Tamil Nadu Generation and Distribution DECO Corporation Limited
TEKL	Transformers and Electricals Kerala Limited
TERI	The Energy and Resources Institute
TL	Tube Light
TOR	Term of Reference
TSDF	Treatment Storage and Disposal Facilities
TSS	Total Suspended Solids
UE/DE	Un-Electrified/ De-Electrified
UMPP	Ultra Mega Power Project
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UNGC	United Nations Global Compact
USAID	United States agency for International Development
VAM	Vapour Absorption Machine
VDAC	Village Development Advisory Committees
VFD	Variable Frequency Drive
WBCSD	World Business Council for Sustainable Development
WCC	Water Cooled Condenser
WEC	World Energy Council
WHRB	Waste Heat Recovery Boiler
WR	Western Region

Awards and Recognition



NTPC has been conferred with a series of awards amongst which the much recognized ones are as follows:



NTPC has been conferred with the **'Golden Peacock Award'** for Sustainability for the year 2013 in National Category.



NTPC bagged Five National Meritorious Performance Awards in Power Sector instituted by the Ministry of Power, Government of India.

NTPC has been ranked No. 1 Independent Power Producer and Energy Trader Globally as per Platts Top 250 rankings 2013.

NTPC has been ranked No. 424 amongst the World's 2000 largest and powerful public companies by the Forbes Global 2000 rankings.

Awards and Recognition



NTPC Limited has been awarded as Business Leader in the Power Sector at the NDTV Business Leadership Awards held in New Delhi in April, 2013.

NTPC Limited has been awarded with Golden Peacock Global Award for Excellence in Corporate Governance - 2014.



NTPC Limited has been conferred with the Golden Peacock Award 2013 for CSR.

NTPC is Sourya Urja PSE of the year – The SEFI (Solar Energy Forum of India) – "SOURYA URJA Puraskar 2014" has been conferred on NTPC.





NTPC has won the best performing thermal power utility award from Central Board of Irrigation & Power (CBIP).

NTPC ranked amongst top 10 companies of the country in the Annual Business World 500 List 2014, at a function held in New Delhi on Nov. 6, 2014.



BT-Star Award 2013:
Dr. Arup Roy Choudhury, CMD, NTPC, received the 'BT-Star Award 2013 for Excellence in Human Resource Management. Shri U.P. Pani, Director (HR), NTPC, was awarded BT- Star Award in the Individual Excellence category

NTPC has been conferred with the award for Best HR Practices in Maharatna Category at prestigious India Today Awards 2014.



Awards and Recognition

NTPC - Faridabad, Quality Circle (QC), Jyotikiran has got top position in NTPC for solving gas skid reliability problem through 'Introduction of Redundant Controller'. The QC represented NTPC at International QC Convention held at Taipei (Taiwan) in Oct., 2013 and won the Excellence Award, which was the highest level award of the Convention.



INTERNAL AWARDS AT NTPC

There are various avenues being provided to NTPC employees in the form of competitions that not only help develop general management skills, but also encourage creativity and innovative thinking. These events are mostly based on such activities that require the participants work in teams, thus, further strengthening the on-board bond. Some of these competitive events are like, NOCET (NTPC Open Competition for Executive Talent), Q4E (Quest for Excellence), NCYM (National Competition for Young Managers), Business Minds, PC (Professional Circles) and QC (Quality Circles).



Salient Highlights FY 15



MoU signed between NTPC, NSDF & NSDC, Ministry of Skill Development & Entrepreneurship, Govt. of India

NTPC Limited India's largest power utility entered into the MoU with Ministry of Skill Development & Entrepreneurship (NSDF – National Skill Development Fund) and National Skill Development Corporation (NSDC) on 8th May, 2015 and allocated ₹ 6.50 Cr. from its CSR Fund for year 2015-16 and 2016-17 for various skill development programs. These skill development projects will be pursued at various locations with special focus on the eastern part of the country where NTPC power plants are located. 30000 youths will be trained in various vocational skill sets.

The tripartite MoU was signed by Shri. Pawan Agrawal, IAS, Jt. Secretary, Ministry of Skill Development & Entrepreneurship, Govt. of India (NSDF), Shri U.P. Pani Director (HR), NTPC and Shri Dilip H. Chenoy, MD & CEO, NSDC.

These Programs are linked to the employment



requirement of the industries and encourage entrepreneurship through Skill Development Partners like NSDC or its Training Providers. NTPC will provide fund to NSDF (National Skill Development Fund) as per the provisions of the MoU and NSDC will execute the programme as implementing body in selected areas based on the Baseline Survey and Skill Gap Analysis of the population carried out by its Training Partners.

NTPC in association with IL&FS Center, organised a skill development training programme

As part of its CSR initiative, NTPC in association with IL&FS Centre, organised a skill development training programme on automotive services technician trade for 15 youths from leprosy-affected families. After 40 days of training, the youth were suitably employed.

Additionally, NTPC has distributed sewing machines

to poor women at its southern region headquarters on 25th May 15. The company had also arranged vocational training programme in tailoring for these women at Prakrithi Environment Society, an NGO. Thirty women from Balanagar and nearby slums benefitted from the vocational training.

NTPC Mobile Science Labs for Underprivileged Students in Rural India

NTPC the largest power utility of the country introduced Mobile Science Lab (MSL), a vehicle fitted with LCD TV, carrying working Science Models emphasizing curiosity based learning for children in rural India. It is an initiative to revolutionize rural education and make hands-on learning accessible amongst underprivileged children.

The three Mobile Service Labs were flagged off by Shri Piyush Goyal Hon'ble Minister of State for Power, Coal and New & Renewable Energy I/C, Government of India in the presence of Shri P. K. Sinha, Secretary Power, Govt. of India, Dr. Arup Roy Choudhury, CMD, NTPC, Shri U. P. Pani, Director (HR) and senior officials of Ministry of Power and NTPC.

Three Mobile Science Labs shall be initially deployed at NTPC's ongoing projects at Darlipalli, Pakri Barwadih and Kahalgaon through Agastya International Foundation. Each Mobile Science Lab will cover a set of about 20 schools around NTPC project generating about 16000 student exposures per year. More than 1,40,000 student exposure will be generated in three years enhancing level of curiosity and creativity among children. The instructors for mobile science lab will be from neighborhood community.

Mobile Science Lab will focus on:

- **School visits:** Each Mobile Science Lab will travel to doorstep of remote schools with 100+ hands-on science models covering topics in Physics, Chemistry & Math for awareness amongst children upto Secondary school level in line with National Curriculum Framework and NCERT syllabus.
- **Young Instructor's Program:** Apart from teaching &

demonstrating through experiments, students will be trained as Young Instructors to teach their peers.

- **Science Fairs:** Science Fairs shall be organized for wider participation using simple models, and Young Instructors will demonstrate scientific phenomena such as solar and lunar eclipse, seasonal changes, pressure & volume relationship etc.
- **Activity Camps:** Emphasis on activity based learning for community during summer & winter vacations. At night, MSL team will visit villages and demonstrate models & experiments in gathering spots of villages, with focus to impart sense of responsibility amongst parents, motivating them to send their children to schools.
- **Teacher Training:** MSL shall organize Teacher Training programs to diffuse & propagate creative-thinking with problem-solving skills among school teachers. The instructors will work with mixed groups of teachers & children to bridge the gap between teacher training and classroom requirement.



NTPC Commits to Add 10K MW of Solar



NTPC has committed to add 10,000 MW through Solar Projects at RE-Invest-2015 the First Renewable Energy Global Investment Meet held in New Delhi. Dr. Arup Roy Choudhury, CMD, NTPC presented the certificate of commitment to Hon'ble Prime Minister, Shri Narendra Modi in the presence of Shri Piyush Goyal, Hon'ble Minister of State (Independent Charge) for Power, Coal and New & Renewable Energy and Shri PK. Sinha, Secretary, Power, GOI.

Skill Building Efforts by NTPC: Signs Contract Agreement with NPTI

NTPC and National Power Training Institute (NPTI) signed a contract agreement in New Delhi on 24th Sep, 2014 for Skill Development of Power Plant Engineers across the country. Under this agreement NTPC will provide consultancy services to NPTI for procurement, engineering, supervision and testing of Simulators at six locations in the country.

The agreement was signed in the presence of Shri I. J. Kapoor, Director (Commercial), NTPC and Shri Subodh Garg, Director General NPTI. These Simulators will be installed at NPTI buildings at Badarpur in Delhi, Faridabad in Haryana, Durgapur in West Bengal, Nagpur in Maharashtra, Shivpuri in Madhya Pradesh and Allappuzha in Kerala.



MOA between NTPC & Govt. of Jharkhand for Patratu Power Station

A Memorandum of Agreement (MoA) has been signed between Govt. of Jharkhand, with Government of India's NTPC Ltd on May 03, 2015 for taking up Patratu Thermal Power Station (PTPS) through a Joint Venture Company to be promoted by NTPC and Jharkhand Bidyut Vitaran Nigam Ltd.

(JBVNL) with 74:26 equity participation. This will be a great step towards:

- Performance improvement of existing station
- Build an efficient Super Critical project of 4000 MW in 2 phases

NTPC Signs PPA with AP Power Utilities for Ultra Mega Solar Power Project (250 MWp) in Andhra Pradesh

NTPC Limited and the Andhra Pradesh power utilities Andhra Pradesh Eastern Power Distribution Company Limited (APEPDCL) and Andhra Pradesh Southern Power Distribution Company Limited (APSPDCL) signed a power purchase agreement (PPA) for procurement of power to be generated from the 250 MW solar power plant, the first phase of the 1,000 MW ultra solar power project being set up by NTPC in Anaparthi District in Andhra Pradesh. The PPA was signed in the presence of Shri I



J Kapoor, Director (Commercial), NTPC, Shri Ajay Jain, Secretary, Energy, Govt. of A.P., Shri Vijayanand, CMD, APTRANSCO, Shri R. Venkateswaran, RED(South) in Hyderabad on 24th April, 2015.

In September 2014 NTPC had signed an MoU with AP government for the development of 1,000 MW solar project, which is largest solar power project at a single location by a single developer, in the state.

Maharatna of the Year Award to NTPC

NTPC Limited, the largest power utility of the country has been adjudged the Maharatna of the Year- Manufacturing by the premier Investment Journal Dalal Street.



The Award was received by Dr. Arup Roy Choudhury, CMD NTPC and Shri K.K. Sharma, Director (Ops) from Shri K. D. Tripathi, Secretary, DPE at the 6th DSJ Awards Ceremony held in New Delhi on 23rd March 2015.

NSB ties up with NBS, Singapore for PGDM



NTPC School of Business (NSB), has entered into an MoU for international immersion component with Nanyang Business School (NBS), of Nanyang Technological University (NTU) Singapore. Indian regulator, AICTE has accorded approval to this - Post Graduate Diploma in Management (Executive) program; which has specific focus on power and energy domains of Indian economy. The objective is to foster collaboration for teaching, research, training, cultural understanding, as well as

international reputation of both institution through providing consultancy, conduct of leadership program, provision of faculty (exchange of faculty by both), writing of case studies and exploring out consulting project between the two stakeholders. Nanyang Business School (NBS) will offer all help and support towards design, delivery and management of programs including global immersion programs launched by NTPC School of Business. The MoU was signed by Dr. Arup Roy Choudhury, CMD NTPC as the Chairman of Governing Board of NTPC School of Business (NSB) and Dr. K. Ravi Kumar, DEAN, Nanyang Business school (NBS), Singapore on 12th June, 2015

NTPC School of Business (NSB), under aegis of NTPC Educational and Research Society (NEARS) is scheduled to start its maiden PGDM (Executive) program (15 Months Full Time) in August 2015.

Director (Finance) NTPC Honored

Shri Kulamani Biswal, Director (Finance) NTPC has been honored with BT-STAR PSU Director Finance of the Year Award (Maharatna & Navratna) for his diligence and continuous arduous efforts in the area of Financial Management.

Award was presented by Lt. Gen. A. K. Singh, Lt. Governor of Andaman & Nicobar Islands, Shri Ram Shankar Katheria, Minister of State for HRD (Higher Education) and Ustad Gulam Ali, renowned singer at a function held in New Delhi on 18th May, 2015.



CSR & Sustainability Policy FY 2014-15: NTPC revised its CSR & Sustainability policy in FY 2014-15, keeping in view the changed Business environment, Global practices, Companies Act 2013 and guidelines issued from Department of Public Enterprises, Ministry of Heavy Industry & Public Enterprises. The policy is available on NTPC web.

Assurance Statement



INDEPENDENT ASSURANCE STATEMENT



**BUREAU
VERITAS**

Introduction and objectives of work

Bureau Veritas Certification (India) Pvt. Ltd. (Bureau Veritas) has been engaged by NTPC Limited to conduct an independent assurance of its Sustainability Report 2013-14. This Assurance Statement applies to the related information included within the scope of work described below.

This information and its presentation in the Sustainability Report 2013-14 (hereafter referred to as Report) are the sole responsibility of the management of NTPC Limited. Bureau Veritas was not involved in the drafting of the Report. Our sole responsibility was to provide independent assurance on the accuracy and reliability of information included, and on the underlying systems and processes established to collect, analyse and review.

Scope of Assurance

NTPC Limited requested Bureau Veritas to verify the accuracy and reliability of the following:

- Data and information included in the **Sustainability Report 2013-14 of Corporate Functions and 22 Power Stations across India covering Thermal Power (Coal based and Gas Based) and Two Solar Power Generation Plants.**
- The assurance process was conducted to meet the requirements of a **Type 1 assurance engagement** as defined by AA1000 2008

Assurance Standard (AA1000 AS). The assurance process was designed to provide a reasonable level of assurance concerning the nature and extent of NTPC's adherence to the AA1000 AS accountability principles and a Moderate level of assurance of the reliability of specified performance information within the report.

Methodology

As part of its independent assurance, Bureau Veritas Assurance team planned and carried out the assurance engagement based on offsite document review and site visit at NTPC Limited Head Office at Scope Complex, Lodhi Road, New Delhi; Sustainable Development Group and Environment Management Group Office at Corporate Centre, Noida; Power Management Institute (PMI), Noida; Thermal Power Stations at Dadri & Auriya and 5 MW Solar Power Generation Facility at NTPC Dadri between 19th to 27th March 2015 and undertook broadly the following activities:

1. Conducted Interviews with the core team of the SD group responsible for preparing the Sustainability report and the Senior Management of NTPC Limited- Including but not limited to Director-HR, GM-SD Group, CFO and Head EMG, GM (Engg), GM (OS), GM (HR), AGM (Fin), AGM-SD Group, GM-Finance, GM-CENPEEP, GM-EMG,

HOD-Corporate Safety, AGM-CSR and R&R, GM-Corporate Planning, Company Secretary, AGM-CPIO, AGM-Vigilance, AGM-HR, AGM-PMI and GM-Dadri, and Auriya power stations.

2. On-site and off-site review of documentary evidence such as Performance Monitoring Reports and Factual information (for the period 1st April 2013 to 31st March 2014) contained in the Report, achievement against Internal and External Memorandum of Understanding (MoU) targets, Enterprise Risk Management (ERM) framework, Environmental Compliance of the Stations, CSR-R&R expenditure records from SAP system etc. shared by NTPC Limited to Bureau Veritas Assurance team.
3. Evaluation of information against Global Reporting Initiative (GRI G3.1, Electric Utility Sector Supplement, UNGC Principles, ISO 26000 and National Voluntary Guidelines) disclosure frameworks and principles of Accuracy, Accessibility, Balance, Clarity, Comparability, Reliability and Timeliness.
4. Audit of performance Indicator data (samples of which traced back to source).
5. Review of NTPC Limited's internal mechanisms for implementing Sustainable Development and other policies, data and information systems for collection, aggregation, analysis and review at Corporate SD Group Level and Power Station Level.
6. Review of process for identification and management of material issues, risks to the Company and its stakeholders; and justification for subsequent inclusion within the report;

Our work was conducted against Bureau Veritas' standard procedures and guidelines for external Assurance of Sustainability Reports, based on current best practice in independent assurance. The work was planned and carried out to provide moderate level of assurance and we believe it provides a reasonable basis for our conclusions.

Our findings and recommendations

On the basis of our methodology and the activities described above, it is our opinion that:

- The information and data included in the scope of our assurance are accurate, reliable and free from material mistake or misstatement. The information is presented in a clear, understandable and accessible manner and the Report provides a fair and balanced representation of activities during the FY 2013-14.
- NTPC Limited has established appropriate systems for the collection, aggregation and

analysis of relevant information as per GRI G3.1 Economic, Social, Human Resource, Labour and Environmental & EUSS disclosure requirements and as per yearly communication in progress as UN global Compact signatory.

- The Report properly reflects the organisation's alignment to and implementation of the AA1000 Assurance Standard (2008) principles of Inclusivity, Materiality and Responsiveness in its operations.
- The internal assurance system can be established for specific standard disclosure indicators data related to material aspects of the information submitted by the power stations & regional offices.
- R&R and CSR budget of NTPC at individual project sites can be monitored as per the direct & institutional spend for project affected people to showcase involvement of the organisation.

Adherence to AA1000 AS Principles

Inclusivity – NTPC Limited continues to deploy robust processes for engaging with key stakeholders including undertaking centralised stakeholder engagement with key audiences such as Socially Responsible Investors and non-governmental organisations. The site visits also indicate that operations regularly engage with local stakeholders. The willingness of NTPC Limited to engage with stakeholders in order to develop its approach to relevant issues has been particularly evident during this reporting period through activities of the engagement forums listed in the Sustainability Report 2013-14.

Materiality – The internal materiality determination process results has been strengthened by input from the Corporate Planning department, ERM framework continues to provide a comprehensive, balanced understanding and prioritisation of NTPC Limited's 26 key material corporate responsibility issues. However, the continued investment and expansion of its power generation activities in Hydro and Renewable means that there is a need to enhance the scope for the company to incorporate the impact of its activities on its overall materiality matrix.

Responsiveness – The report provides a comprehensive response to the issues and stakeholder concerns relating to its activities. Through the assurance process it is evident that NTPC Limited is responding to concerns raised by specific stakeholder groups and seeking proactive discussions to ascertain their views and progress towards addressing any concern. At the sites visited it was apparent that stakeholder views are listened to and that site level management are willing to work with local communities to achieve appropriate solutions.

Evaluation against Global Reporting Initiative (GRI) G3.1 Sustainability Reporting Guidelines

Bureau Veritas undertook an evaluation of NTPC Limited's Sustainability Report 2013-14 against the G3.1 Sustainability Reporting Framework and Electric Utility Sector Supplement (EUSS) Guidelines. This included cross checking the GRI index table against all the reference documents to provide an opinion on the self-declared GRI application level. Based on our work, it is our opinion that NTPC's Sustainability Report 2013-14 has been prepared in accordance with the GRI G3.1 Reporting Framework including appropriate consideration of the Reporting Principles and necessary indicators to meet the requirements of GRI Application Level [A+].

Limitations and Exclusions

Excluded from the scope of our work is any assurance of information relating to:

- Activities outside the defined assurance period of FY 2013-14 and Positional statements (expressions of opinion, belief, aim or future intention by NTPC Limited and statements of future commitment).
- The data and information under assurance related to all GRI 3.1 standard disclosure and performance indicators of 22 operating power station & 2 solar power plants of NTPC Limited only. Subsidiaries and Joint Ventures are excluded from the Assurance activity. Hydro projects, mining projects, under construction projects,

corporate offices and regional offices have been included in economic and social indicators (unless otherwise stated) but have been excluded from environmental indicators in the report. Assurance activity does not cover the physical site visit verification at hydro projects, mining and under construction projects. Energy Indirect GHG emission (wherever applicable) is excluded.

Statement of independence, impartiality and competence

Bureau Veritas is an independent professional services company that specialises in QHSE, Social Accountability & Sustainability Assurance with almost 180 years history in providing independent assurance services, and an annual turnover in 2014 of Euros 4.17 billion. Bureau Veritas has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day to day business activities. We are particularly vigilant in the prevention of conflicts of interest. No member of the assurance team has a business relationship with NTPC Limited, its Directors or Managers beyond that required of this assignment. We have conducted this verification independently, and there has been no conflict of interest. The assurance team has extensive experience in conducting verification and assurance over environmental, social, ethical and health and safety assessments and has over 30 years combined experience in this field and an excellent understanding of Bureau Veritas standard methodology for the Assurance of Sustainability Reports.

BUREAU VERITAS CERTIFICATION INDIA (PVT.) LTD.



Sanjay Patankar

Lead Assuror
Product Manager, Climate Change
and Sustainability




Mumbai, India
31st March 2015



Rupam Baruah

Technical Reviewer
General Manager – Eastern Region

Report Application Level

Report Application Level	C	C+	B	B+	A	A+
 Profile Disclosures OUTPUT	Report on : 1.1 2.1-2.10 3.1-3.8,3.10-3.12 4.1-4.4,4.14-4.15		Report on all criteria listed for Level c plus : 1.2 3.9, 3.13 4.5-4.13,4.16-4.17		Same as requirement for Level B	
 Management Approach Disclosures OUTPUT	Not Required	Report Externally Assured	Management Approach Disclosures for each Indicator Category	Report Externally Assured	Management Approach disclosures for each Indicator Category	Report Externally Assured
 Performance Indicators & Sector Supplement Performance Indicators OUTPUT	Report fully on a minimum of 10 Performance Indicators, including at least one from each of : social, economic, and environment.**	Report Externally Assured	Report fully on a minimum of 20 Performance Indicators, at least one from each of : economic, environment, human rights, labor, society, product responsibility.***	Report Externally Assured	Respond on each core and Sector Supplement* indicator with due regard to the materiality Principle by either: a) reporting on the indicator or b) explaining the reason for its omission.	Report Externally Assured

* Sector supplement in final version

** Performance Indicators may be selected from any finalized Sector Supplement, but 7 of the 10 must be from the original GRI Guidelines

*** Performance Indicators may be selected from any finalized Sector Supplement, but 14 of the 20 must be from the original GRI Guidelines





A Maharatna Company

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