

पावरग्रिड

Power Grid Corporation of India Limited  
(A Government of India Enterprise)

SUSTAINABILITY REPORT  
2013-15

**POWERGRID**

'One Nation' - 'One Grid' - 'One Frequency'



# Vision

World Class, Integrated, Global Transmission Company with  
Dominant Leadership in Emerging Power Markets Ensuring  
Reliability, Safety and Economy



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# SUSTAINABILITY REPORT

2013-15

## About the Report

This is our fourth Sustainability Report and is for the period 2013-15. The report has been prepared in accordance with GRI-G4 guidelines (Core).

## Reporting Parameters

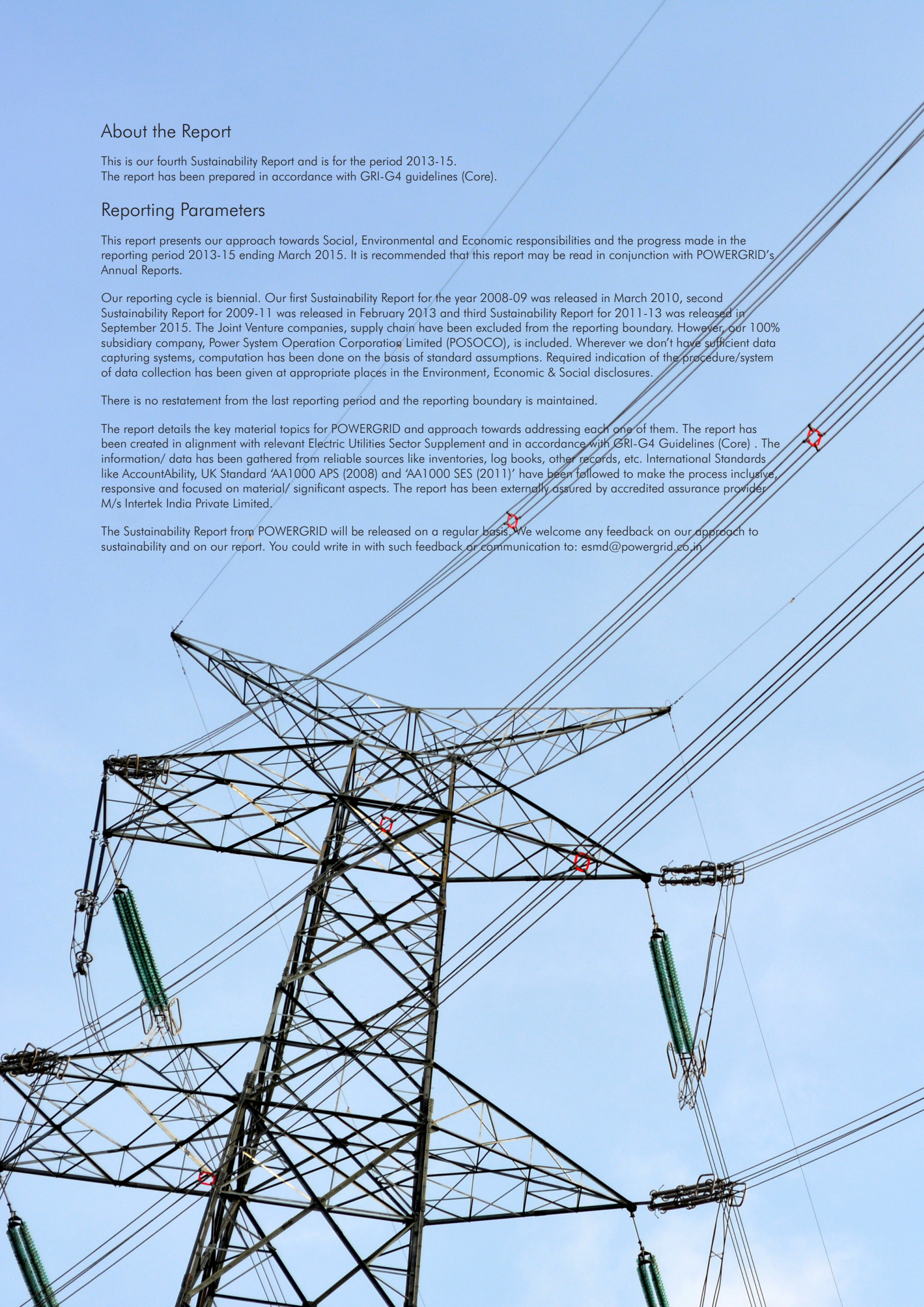
This report presents our approach towards Social, Environmental and Economic responsibilities and the progress made in the reporting period 2013-15 ending March 2015. It is recommended that this report may be read in conjunction with POWERGRID's Annual Reports.

Our reporting cycle is biennial. Our first Sustainability Report for the year 2008-09 was released in March 2010, second Sustainability Report for 2009-11 was released in February 2013 and third Sustainability Report for 2011-13 was released in September 2015. The Joint Venture companies, supply chain have been excluded from the reporting boundary. However, our 100% subsidiary company, Power System Operation Corporation Limited (POSOCO), is included. Wherever we don't have sufficient data capturing systems, computation has been done on the basis of standard assumptions. Required indication of the procedure/system of data collection has been given at appropriate places in the Environment, Economic & Social disclosures.

There is no restatement from the last reporting period and the reporting boundary is maintained.

The report details the key material topics for POWERGRID and approach towards addressing each one of them. The report has been created in alignment with relevant Electric Utilities Sector Supplement and in accordance with GRI-G4 Guidelines (Core). The information/ data has been gathered from reliable sources like inventories, log books, other records, etc. International Standards like AccountAbility, UK Standard 'AA1000 APS (2008) and 'AA1000 SES (2011)' have been followed to make the process inclusive, responsive and focused on material/ significant aspects. The report has been externally assured by accredited assurance provider M/s Intertek India Private Limited.

The Sustainability Report from POWERGRID will be released on a regular basis. We welcome any feedback on our approach to sustainability and on our report. You could write in with such feedback or communication to: [esmd@powergrid.co.in](mailto:esmd@powergrid.co.in)



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## From the Chairman

“ We have been able to accelerate change by aligning our business and sustainability concerns. ”

“**Making Sustainable Progress Possible**” has been a cornerstone of our commitment to our customers, shareholders and employees. We have long known that sustainable progress requires balancing the economic, environmental and social aspects of our business. We have been able to accelerate change by aligning our business and sustainability concerns. Our sustainable growth strategies build on the strength of our business and leverage our technical expertise to create a company that all stakeholders value, people aspire to work for, and communities embrace.

POWERGRID’s Board of Directors is committed to ensuring integration of environment, social and governance (ESG) principles through extensive periodic reviews. As a responsible corporate entity, we always address negative externalities associated with our business processes. Our

“**Environmental and Social Policy & Procedures**” (ESPP) provides comprehensive guidance on minimization and mitigation of Environmental impacts, ensuring safe working conditions for employees and contract labour, addressing social issues arising from business practices and taking up relevant community development projects and activities. POWERGRID’s commitment to follow the provisions of ESPP in true spirit has resulted in enhanced transparency in project implementation, reduced legal liability and a better public image of the organization.

Our long-term view of sustainability derives from an understanding of the intricate relationship between a responsible corporation and today’s society and is grounded in the four areas that ensure shared value creation – **financial strength, customer focus, talent focus and responsible impact**.

AT POWERGRID, WE GROW  
TOGETHER – AS A COMPANY, AS A  
COMMUNITY, AS A COUNTRY as

We believe that better access to  
electricity means a better quality of  
life for all.

During the reporting period, our business activities continued to grow and we achieved new heights. Our net profit grew by 26% over the previous reporting period. During 2014, our Silver Jubilee year, **we achieved our long cherished dream of “One Nation, One Grid, One Frequency”**. While maintaining the Transmission Availability above 99.5%, we were able to commission new projects and were able to achieve transformation capacity of 2,31,709 MVA by the end of reporting period.

Though our efforts towards growth and value creation for our stakeholders got global recognition, we did not lose focus on our social commitments. In 2013, we revamped our social responsibility strategy to better reflect and align our priorities, specifically targeting areas where we believe we can have a direct impact. Participating in the **“Swachh Bharat Abhiyaan”** of the Government of India, we constructed 9437 toilets in 4,244 Government schools, many of which were remotely located, in seven states of the country. As always, through our high impact CSR projects we touched thousands of lives.

Our focused endeavour on Environment protection and Sustainable development was given impetus through many initiatives such as technological innovations for conserving Right of Way (ROW), provision of harvesting rain water as an integral part of substation design, fuel catalyst devices for DG sets, etc. Additionally, to reduce our carbon footprint, large scale installations of clean and efficient sources of energy such as photovoltaic panels, solar lights, LED bulb, etc., were also undertaken.

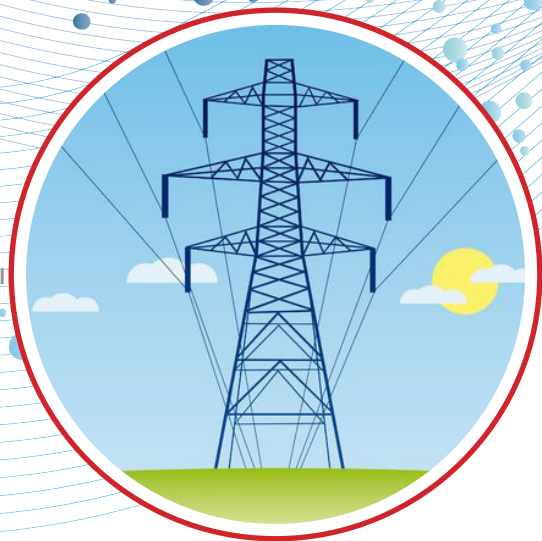
One of our primary objectives is to minimize the risk of accidents and injuries. **We were able to reduce the number and severity of accidents as well as the number of fatalities during the reporting period.** Health & Safety remain our core concern and we are constantly working towards complete prevention of accidents and fatalities.

In order to be future ready, it is important to identify areas of improvement. In spite of many effective steps, management of RoW remains a challenge. Recognizing its importance for our business as well as the inadequacy of present regulations in addressing this issue, POWERGRID has suggested to the Government of India, an overhaul of the compensation concept by including the principle of diminution value of land for tower base and line corridor. Once approved, it will have revolutionary impact on transmission sector and will pave the way for **actual inclusive growth** through enhanced compensation to farmers and land owners. We have well-defined plans to contribute to the **“Skill India Programme”** that strategizes to convert 60% population below the age of 35 into demographic dividend.

I would like to sincerely thank my fellow Directors on the Company’s Board, the management team, and all of our employees for playing an active part in our ongoing sustainability journey. We also appreciate the inputs from leading sustainability experts of the External Review Committee that played an important role in our reporting process.

I know that everyone put in a tremendous amount of effort to not only surmount our recent regulatory challenges, but more importantly, to quickly shift gears towards an orientation of sustainable growth. I believe that we have built a strong foundation for some very exciting times. I also want to thank all of our customers, partners and our shareholders who have supported us through tough challenges. With all your support, we will continue to grasp the opportunities and meet the challenges that lie ahead, in pursuit of our sustainable business goals.

I. S. JHA  
Chairman & Managing Director



# POWERGRID: An Overview\*

“Fastest Growing Electric Utility in the World” - M/s Platts

1,15,637 Ckm of EHV lines

2,31,709 MVA Transformation Capacity

46,450 MW Cumulative Inter-Regional Power Capacity of National Grid

75 Substations being operated remotely

Availability of transmission network above 99%

192 EHVAC & HVDC Substations

Line losses maintained at < 4%

Telecom Network Spanning 33,241 km

Prestigious NKN Project Successfully Completed

9033 Employees

\* As on 31<sup>st</sup> March 2015



# Forbes list of Global 2000 Largest and Most Powerful Public Companies

Power Grid Corporation of India Limited (POWERGRID), a Navratna public sector enterprise under the Ministry of Power, Government of India, is a notified Central Transmission Utility (CTU) of the country. It is engaged in planning, construction, operation & maintenance of Inter State Transmission System (ISTS) making it one of the largest Power Transmission Utilities in the world.

In 2014-15, POWERGRID completed 25 glorious years as the major contributor to the development of Indian power sector through development of National Grid. The dream of **'One Nation' - 'One Grid' - 'One**

**Frequency'** was also achieved during the reporting period which has led to emergence of one of the largest electrical grids operating at a single frequency in the world.

Over the course of two decades, POWERGRID has consistently demonstrated excellence and exceeded most of the performance targets agreed under the MoU signed with the Ministry of Power, GoI. Its sustained performance, also reflected through continuous asset creation, increasing revenues and profits, has led to creation of value for its stakeholders.

## BUSINESS SEGMENTS

### TRANSMISSION

#### Development of Central Sector Transmission System

- Generation linked
- Associated Transmission System for Ultra Mega Power Projects
- Grid Strengthening
- Inter-state, Inter-regional and International links

#### Grid Management

- Real-time Grid Operation
- Optimum scheduling & despatch
- Energy accounting including settlements
- Administering Renewable Energy Certificates
- Mechanism for trading in Green Certificates

### CONSULTANCY

- In-house expertise in various facets of transmission, sub-transmission, distribution and telecom
- Provides services to both national and international clients including SAARC nations

### TELECOM

- NLD, ISP and IP-I licensee to provide a variety of services
- Owns & operates Fibre optic cable network of more than 33,241 km



# Transmission

Transmission of power is our core business, contributing more than 90% to our revenues. Over the years, we have mastered the technology and have been recognized globally for our work on multiple forums. As the CTU of the country, POWERGRID is involved in planning short and long term availability of transmission systems and demand management, planning, coordination, supervision and control over Inter-state Transmission System (ISTS) and operation of National & Regional Grids. It ensures development of an efficient, coordinated and economical system of Inter-state transmission lines for smooth flow of electricity from generating stations to the load centres. It provides non-discriminatory open access to its transmission system for use by all licensee or generating companies.

POWERGRID continues to put in its best efforts to complete its transmission projects within scheduled timelines, thereby extracting the maximum commercial benefit. The Company achieves this through its Integrated Project Management and Control System (IPMCS), timely review meetings, effective troubleshooting, intensive monitoring by top management through video conferencing/ regular site visits and undertaking various pre-emptive initiatives.

On the project implementation front, POWERGRID has commissioned about 8,830 Ckm of EHV (Extra

High Voltage) transmission lines and 25,786 MVA transformation capacity with 8 new substations during 2014-15, and 6,604 Ckm EHV lines, 17 substations and about 41,160 MVA transformation capacity in 2013-14.

The Company continues to take pioneering steps in bringing Smart Grid technology in entire value chain of electricity in the country.

Integration of Renewable Energy (RE) sources into the grid is one of the top priorities of the Government of India towards energy security and Environmental Sustainability. Towards this agenda, POWERGRID has evolved Green Energy Corridors comprising Intra-state and Inter-state transmission infrastructure to facilitate integration of envisaged renewable capacity addition of about 33 GW in RE resource rich states at an estimated cost of about ₹ 38,000 Crore Inter-state Transmission System (ISTS) is being implemented as part of Green Energy Corridors.

We have evolved transmission schemes for integration of proposed Ultra-Mega Solar Power Parks of about 22,000 MW in various states as part of Green Energy Corridors-II. Government of India assigned POWERGRID to develop Inter-state transmission system for nine solar parks of about 10,000 MW capacity in seven states. Implementation of transmission scheme for One Solar park in Andhra Pradesh is under progress.





Achieved transmission network availability of 99.87% for FY 2015 and 99.92% for FY 2014



### Operational Excellence

Managing such a vast transmission network of POWERGRID requires meticulous planning and stringent processes. We make consistent efforts to deploy technologically advanced techniques to maintain operational excellence which is required for ensuring power availability throughout the country. With deployment of advanced techniques including use of helicopters for live line aerial patrolling, hot line maintenance upto 765 kV voltage level, dynamic testing, thermo-vision scanning, frequency response analysis of the transformers and reactors etc, we were able to achieve transmission network availability of 99.87% for FY 2015 and 99.92% for FY 2014.

Being a customer centric organization, we ensure that the power is restored in the shortest possible time during advent of any disaster. POWERGRID deploys state-of-the-art 'Emergency Restoration System' for immediate restoration of collapsed transmission lines due to natural calamities before permanent restoration work is taken up. This was evident on multiple occasions in which power supply was interrupted due to disasters such as HUDHUD cyclone in Andhra

Pradesh in October 2014 and during floods in J&K. The Company has also taken initiative for development of mobile substation (truck mounted) for emergency restoration in case of eventuality.

National Transmission Asset Management Centre (NTAMC) has been established for remote operation and monitoring of the substations, which is manned by experts on 24x7 basis to provide expert handling of system & equipment. At the end of FY 2015, 75 substations are being operated through remote operation including 44 substations without operating staff.

MSH (Maintenance Service Hub) facility has been established where specialized group of experts of all areas like control & protection, switchyard equipment, transformer & reactor are available to carry out repair/overhauling of equipment as & when required.

### Development of National Grid

Seamless power transmission across the regions through synchronous National Grid, as envisaged by the company, became a reality in the reporting period. This was achieved upon successful commissioning of 765 kV S/c Raichur-Sholapur line on 31<sup>st</sup> December, 2013. During the reporting period, POWERGRID commissioned 765 kV S/c Sasaram-Fatephur and 765 kV S/c Ranchi-Sipat Inter-regional lines, having 2100 MW power transfer capacity each and 765 kV D/c Jharsuguda-Dharamjaygarh line, enhancing the power transfer capacity between Eastern Region and Western Region by 4,200 MW.

As on March 31, 2015, the total Inter-regional power transfer capacity of the National Grid is 46,450 MW

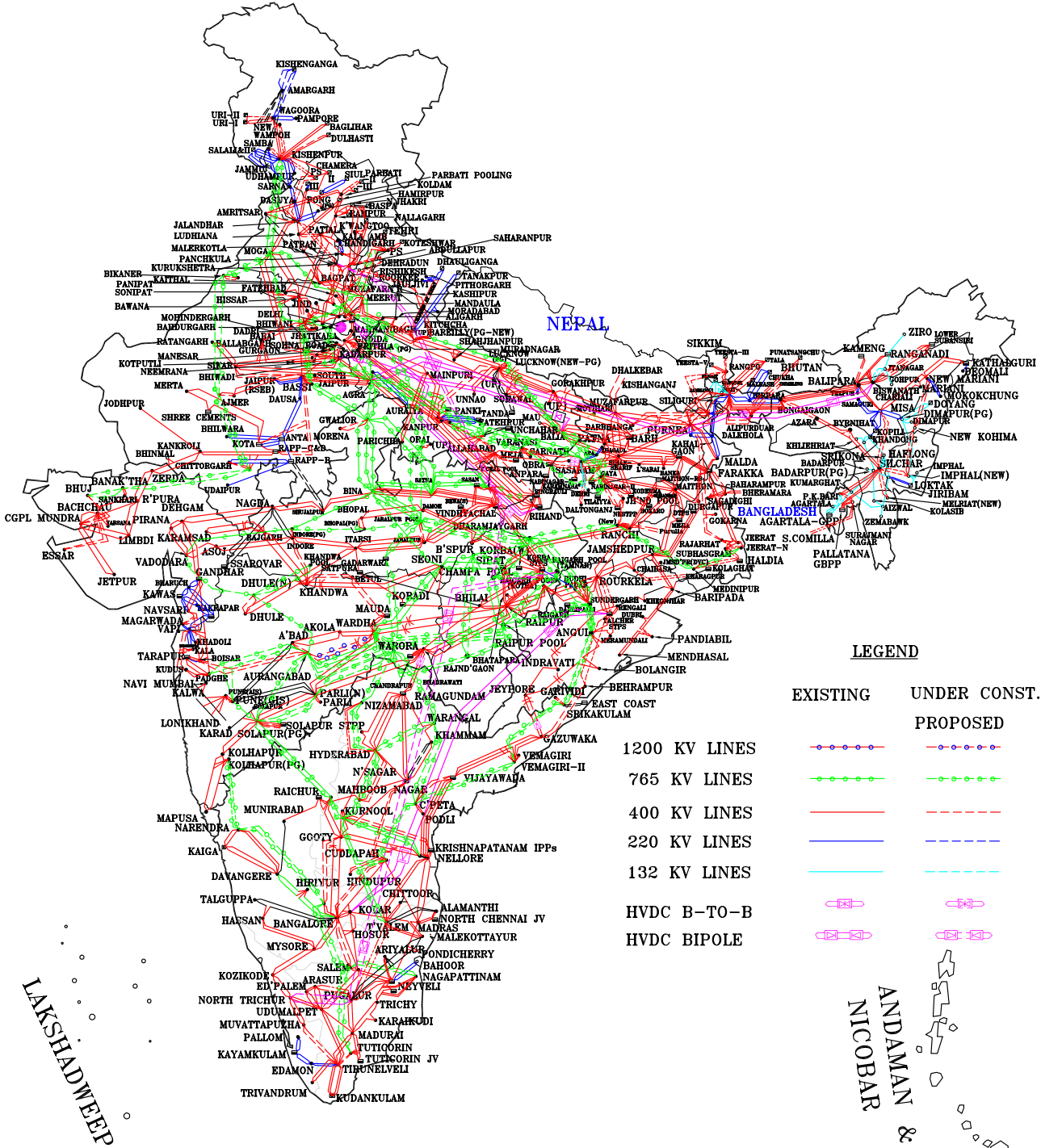
### Grid Management and Open Access

Power System Operation Corporation Limited (POSOCO), a fully owned subsidiary of POWERGRID, is entrusted with the Grid management of the country. Its state-of-the-art Unified Load Dispatch & Communication facilities enables it to function efficiently and



# POWER MAP OF INDIA

## POWERGRID LINES



### LEGEND

	EXISTING	UNDER CONST./ PROPOSED
1200 KV LINES		
765 KV LINES		
400 KV LINES		
220 KV LINES		
132 KV LINES		
HVDC B-TO-B		
HVDC BIPOLE		



transparently. Further, POSOCO facilitates transfer of power through its National Load Despatch Centre and Regional Load Despatch Centres through bi-lateral and multi-lateral transactions and is playing important role in creating vibrant electricity market in the country.

POWERGRID is the nodal agency for processing & grant of Connectivity, Long Term Open Access/ Long Term Access (LTOA/LTA) and Medium Term Open Access (MTOA) of various applicants.

During the reporting period, 71,965 transactions involving about 168 BUs of energy were approved under Short Term Open Access (STOA), a substantial increase of 27% in transactions over the last reporting period.

## Consultancy

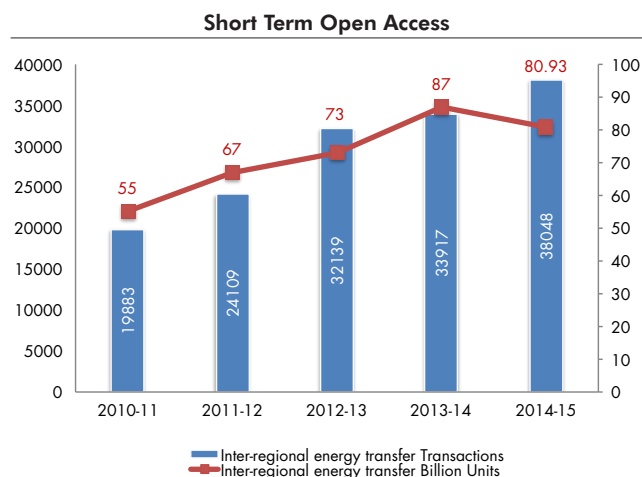
Consultancy services at POWERGRID have gained grounds, supplemented by exceptional techno-managerial expertise in Transmission, Sub-Transmission, Distribution and Telecom. This is demonstrated well by the number and nature of assignments bagged by the company. During the reporting period, POWERGRID earned more than ₹ 1000 Crore in International and Domestic Consultancy.

In Domestic Consultancy, POWERGRID secured 67 new consultancy assignments which include Srinagar-Leh Transmission System, NER Power System Improvement Project (being implemented with The World Bank assistance), Lalitpur Transmission System, Strengthening of 400 kV & 220 kV Transmission System of Delhi Transco Ltd.

Capacity Building Trainings were imparted to the employees of transmission utilities in Maharashtra, Madhya Pradesh, Bhakra Beas Management Board (BBMB) and Damodar Valley Corporation (DVC).

In order to broaden the consultancy avenues, exploratory initiatives have been undertaken into Oil sector & Railways, which are expected to fructify into business assignments in near future.

In International Consultancy, POWERGRID secured 17 new consultancy assignments during the Reporting Period. With completion of FY 2015, POWERGRID



has provided Consulting Services in countries, viz. Afghanistan, Bangladesh, Bhutan, Congo, Ethiopia, Nigeria, Nepal, Kazakhstan, Kenya, Kyrgyz Republic, Myanmar, Senegal, Tajikistan, Tanzania, Uzbekistan, Sri Lanka, Pakistan and UAE.

The reporting period was marked by notable achievements such as a contract with Myanmar Electric Power Enterprise (MEPE) worth 64.01 million USD.

POWERGRID has also emerged as a leader in the proposed cross country grid involving SAARC nations. It has strengthened its relations with Bangladesh, Nepal and Bhutan by establishing inter-connections and mutual exchange of power. A milestone has been achieved in this direction with the commissioning of an asynchronous inter-connection between countries India & Bangladesh, through 500 MW High Voltage Direct Current (HVDC) back-to-back terminal along with Bheramara (Bangladesh) - Baharampur (India) 400 kV D/c line in September, 2013, enabling power flow of the order of 500 MW from India to Bangladesh.

Further, for evacuation of power from various upcoming Hydro-Electric Power (HEP) projects in Bhutan, Punatsangchu-I HEP (Bhutan) - Alipurduar (India) 400 kV Double Circuit (D/c) line between countries Bhutan & India, is under implementation. Also, for transfer of bulk power, inter-connection between India and Nepal through 400 kV Dhalkebar (Nepal) - Muzaffarpur (India) D/c transmission line is under implementation.



POWERGRID's international presence



# Telecom

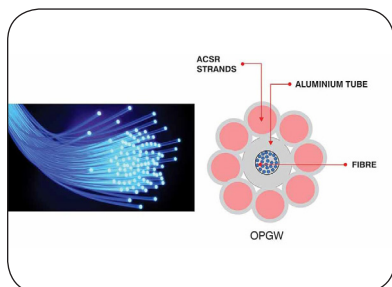
Our telecom business portfolio under the brand name POWERTEL strengthened in the reporting period with enhanced customer base and new assignments. Leveraging our country wide transmission line network, we increased the network coverage to 33,241 km and 352 POPs, thereby providing connectivity to all the major cities, state capitals, metros, remote locations of NER and J&K.

We are the only utility in the country providing telecom services on overhead optic fibre network using Optical Ground Wire (OPGW) on power transmission lines. POWERGRID possesses Infrastructure Provider Category-I (IP-I), Internet Service Provider 'A' (ISP 'A')

and National Long Distance (NLD) Service License to provide a variety of Telecom services. Through the telecom assignments, POWERGRID generated a net revenue of ₹ 589.16 Crore in the reporting period and also maintained the telecom backbone availability at 99.97% in FY 2015.

POWERGRID, as one of the implementing agencies of the prestigious National Knowledge Network (NKN) project devised by GoI, successfully connected all knowledge centers across the country such as Indian Institute of Technology (IITs), Indian Institute of Science (IISc) etc., on high speed connectivity.

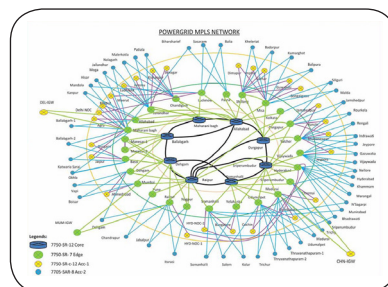
## TECHNOLOGIES DEPLOYED



Underground optic fibre - where overhead line is not available



OPGW – Optical Fibre Ground Wire over high voltage transmission line



MPLS – Multi Protocol Label Switching



ECONOMIC PERFORMANCE



ENVIRONMENTAL STEWARDSHIP



HARNESSING HUMAN CAPITAL



SOCIAL ENRICHMENT

Under the ambitious National Optical Fiber Network (NOFN) project of Gol, we have connected 977 Gram Panchayats with optical fiber network utilizing existing facilities of Bharat Sanchar Nigam Limited (BSNL), POWERGRID and Rail Tel Corporation of India Limited.

Additionally, an agreement has been signed with Bharat Sanchar Nigam Limited (BSNL) to improve the telecommunication connectivity of the North Eastern states including Sikkim.

## Research & Development

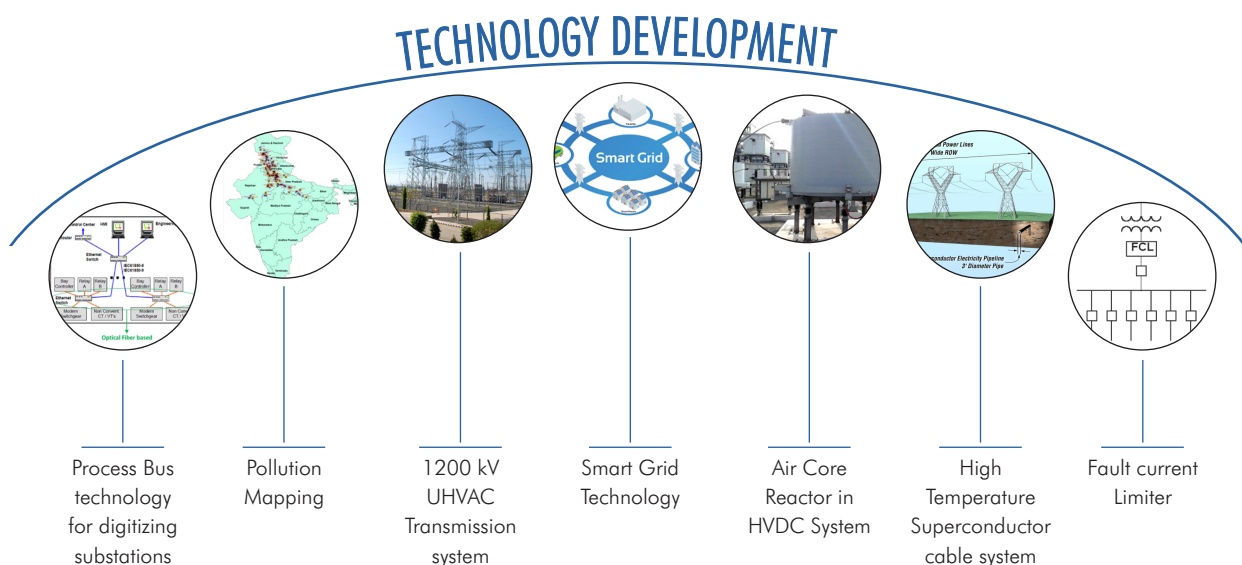
Research and Development is at the realm of our business proposition which makes us a leader in the power industry. POWERGRID has always been in the forefront of adoption of state-of-the-art technologies for improving the efficiency in power transmission and for overcoming the challenges associated with establishment of high capacity power transmission corridors and the National Grid. One of the key focus areas is the adoption of transmission of power at higher voltage level. Implementation of  $\pm 800$  kV HVDC & development of 1200 kV Ultra High Voltage AC (UHVAC) system are important milestones in this direction.

POWERGRID increased its expenditure in R&D from ₹ 45.74 Crore in 2013-14 to ₹ 46.85 Crore in 2014-15. We give priority to technology development activities with potential for societal, environmental and national benefits by application of advance technologies and finding solutions to gear up for future

challenges. The main focus is on reduction of losses and optimization of RoW requirement while establishing transmission corridors as well as reducing the land requirement for construction of substations.

The major projects undertaken in Technology Development are development of new type of tower design including multi circuit type, digital substation through process bus architecture, air core reactor suitable for HVDC terminal, Fault Current Limiter, 1200 kV Test Station, Pollution Mapping, Superconducting Technology etc.

Further, POWERGRID Advanced Research and Technology Centre is being established at Manesar, Gurgaon with state-of-the-art simulation and laboratory facilities for power system analysis, advanced equipment diagnostics, Wide Area Monitoring System, substation automation, etc.





# Corporate Governance

'ICSI National Award for Excellence in Corporate Governance' 2014 by Institute of Company Secretaries of India (ICSI)

Power Line Award 2013 for being the 'Best Performing Transmission Company'

'Power Persona of The Year' Award by CBIP to the CMD, POWERGRID

'IEF Meritorious Energy Service Award' to the CMD, POWERGRID



Meet the short term, medium term & long term objectives and specific targets every year set by the Government of India and the persons at the helm of its affairs, i.e. the Board, by empowering people at the most appropriate levels keeping the job profile/ functions in view



Respond to the challenges and the emerging opportunities and to play a pivotal role in the economic development of the country

POWERGRID believes that good governance should entail trusteeship, empowerment and accountability of the management while remaining proactive to the Government policies. Its Governance processes are derived from its Vision of “World Class, Integrated, Global Transmission Company with Dominant Leadership in Emerging Power Markets Ensuring Reliability, Safety and Economy”.

POWERGRID has been a “NAVRATNA PSE” since May 2008. The NAVRATNA status has given it more flexibility and autonomy in terms of making investments and operational decisions. Its Board has the power to approve capital expenditure on purchase of new items or for replacement without any monetary ceiling. The ceiling on equity investment to establish joint ventures and wholly

owned subsidiaries in India or abroad is 15% of the net worth of POWERGRID. However, in one project the ceiling on equity investment is limited to ₹ 1000 Crore. The overall ceiling on such investment in all projects put together is 30% of the net worth of POWERGRID.

POWERGRID, being a CPSE, is administered by Government of India through the Ministry of Power. The President of India holds 57.89% of the total paid-up share capital. The responsibility of appointing the Board of POWERGRID rests with the Government of India. The services of the Directors cease on either the completion of the tenure or upon superannuation, whichever is earlier. The ratio of Basic Salary of the Board of Directors to the Executive Director to the Executive Trainee is 3.01:2.49:1.



Board of Directors as in September 2014



### BOARD OF DIRECTORS

- Chairman & Managing Director
- Functional Directors
- Government Nominee Directors & Independent Directors

**Strategic Direction**

### FUNCTIONAL COMMITTEES

- Audit Committee
- Stakeholders' Relationship Committee
- Nomination and Remuneration Committee
- Committee on Investment on Projects
- Committee on Award of Contracts
- Committee for Transfer/ Split/ Re-materialization etc. of Shares
- Committee for Bonds
- Committee for Award of Contracts relating to RE and other Deposit Works
- CSR Committee
- Risk Management Committee
- Vigilance Disciplinary Cases Committee
- ESPP Review Committee of Eminent Experts

**Strategic Management**

### ADVISORY BOARDS

- R&D

**Advisory Direction**

These are fundamentals of our decisions at every level of the company. Our Governance structure comprises of Board of Directors at the top of the hierarchy; Functional Committees at the corporate level followed by sub-committees at each of the business units. POWERGRID's Board comprised 14 Directors in FY 2014 including 7 Independent Directors, which was reduced to 12 Directors in FY 2015 including 5 Independent Directors. All strategic decisions regarding investments, diversification and major decisions regarding procurement, commercial and finance were taken during

27 meetings held during FY 2014 & FY 2015.

Further details regarding number of meetings, role of the committees, members, etc., can be referred to in our Annual Reports at the following links:

[http://www.powergridindia.com/sites/default/files/Investor\\_Relation/Reports\\_Filings/Annual\\_Report/AR\\_2013-14.pdf](http://www.powergridindia.com/sites/default/files/Investor_Relation/Reports_Filings/Annual_Report/AR_2013-14.pdf) (Pages 58-73)

[http://www.powergridindia.com/sites/default/files/Investor\\_Relation/Reports\\_Filings/Annual\\_Report/Power%20Grid%20Annual%20Report%202015%20Final%20web.pdf](http://www.powergridindia.com/sites/default/files/Investor_Relation/Reports_Filings/Annual_Report/Power%20Grid%20Annual%20Report%202015%20Final%20web.pdf) (Pages 87-106)

POWERGRID has a dedicated Board Level Stakeholders' Relationship Committee to look after grievances of share-/ debenture-holders and other security holders of the company.

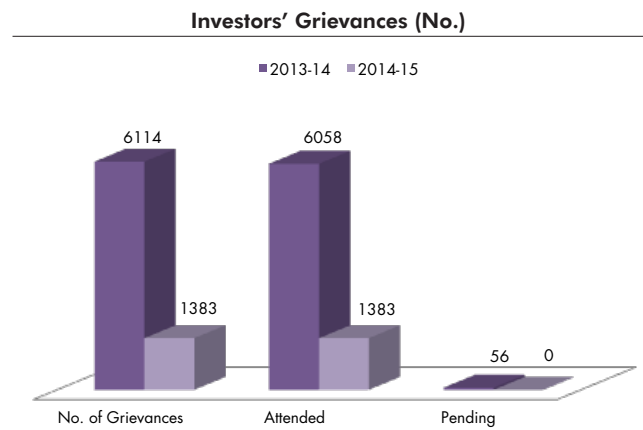
POWERGRID has constituted a CSR Committee in line with the requirements of the Companies Act, 2013 and Department of Public Enterprises' Guidelines on Corporate Social Responsibility and Sustainability for Central Public Sector Enterprises. Details on external initiatives can be accessed through the above links and in the Annual Report 2014-15 (page 55).



POWERGRID follows the Guidelines on Corporate Governance issued by Department of Public Enterprises, Government of India.

We share a long standing relationship with the Government of India for being a major contributor in developing the power sector of the country. Hence, as a Central Transmission Utility (CTU) of the country, we are entrusted with the responsibility of planning and development of Inter-state Transmission System. Our annual targets are set in association with the Government of India through a formal Memorandum of Understanding (MoU). Year on year we challenge our capacities to achieve bigger targets, strengthen our policies to operate efficiently and minimize the impact on communities affected by our business. While implementing the same, Government of India plays a very important role in facilitating necessary approvals, securing settlement of dues with the State Discoms and providing sovereign guarantee for loans from multilateral funding agencies such as World Bank, Asian Development Bank, KfW, etc.

Along with our board of directors, our independent advisory committees have played an important role for taking various sector specific strategic decisions. We have committees specifically appointed to review and advise



us on various issues including ESPP implementation. These committees comprise of subject matter experts and representatives from various reputed agencies/institutions.

Quarterly reports are regularly disclosed in public domain with updated information including all compliances required in line with the Listing Agreement. The board ensures timely completion of all on-going projects. It follows a completely transparent approach in discussing all project matters from inception to completion of projects and also provides necessary direction and assistance.

## Transparency in Governance

POWERGRID is working progressively to instill a culture of transparency and accountability by making sure that all our stakeholders are well informed, involved and fully understand the work of the company through a positive and open relationship.

We disclose and communicate our performance to our stakeholders through various mediums such as Annual Reports, Sustainability Report, Website ([www.powergridindia.com](http://www.powergridindia.com)), etc. making sure that all the information presented is updated with all latest development and announcements. In addition, we have a well-established process to respond to our stakeholder queries under the Right to Information Act, 2005. Appellate Authorities have been nominated at Corporate and Regional offices across the country to provide required information to the citizens under the provisions of Act.

POWERGRID has two distinct Codes of Business Ethics & Conduct – one for Board Members and another for Senior Management Personnel. Such codes are also aligned with Company's Vision & Mission for enhancing ethical and transparent process in managing the Company's affairs.

The CDA Rules of POWERGRID define the desirable and non-desirable acts and conduct for the employees and extend to all employees working with it. The aspects of bribery and corruption are also covered under CDA rules. There are laid procedures for actions in cases of non-compliance with the defined terms as well as for any misconduct.

The company has formulated the Whistle Blower Policy as per the DPE Guidelines on corporate governance in addition to the PIDPI resolution of GoI. The Policy extends



not just to all our employees but also provides a platform to our vendors for reporting fraud or any other fraudulent activity without fear of retribution and helps in eliminating any kind of unethical conduct in the system.

In order to execute the work in a systematic and timely manner, POWERGRID has well-defined "Delegation of Powers" for different level of executives which helps in quick decision-making due to decentralization of authority/powers.

We are also implementing "Works and Procurement Policy and Procedure (WPPP)" for Pre-award and Post-award stages of procurement to enhance transparency and quick decision-making in our business operations.

To enhance our transparency quotient, we have also reached an agreement with the Transparency International by signing an "Integrity Pact" which allows access to "Independent External Monitors (IEMs)" for contracts above ₹ 100 Crore.

In addition, manuals and procedures are also in place for construction, operation & maintenance, e-procurement, reverse auction, Enterprise Resource Planning (ERP), on-line payment, etc.

POWERGRID has a dedicated Vigilance Department. Vigilance Team mainly conducts 3 types of inspections – process online, CTE and surprise inspections to prevent any unscrupulous activity in the allotment or implementation of projects.

Many system improvement initiatives such as classification for foundations of tower, identification of

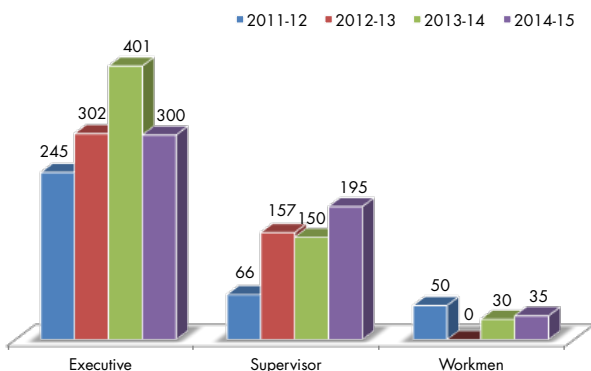
safety measures, adherence to specifications & field quantity norms and standardization of cost estimates, have been put in place to strengthen the processes. To attain desired level of capacity, we have conducted various workshops/training programmes on Preventive Vigilance, Ethics and on the RTI Act, across the country. During the reporting period, 125 employees in FY 2014 and 9 employees in FY 2015 were disciplined for corruption.

The Company continued its focus on spheres of functioning like communication of assessment to the concerned bidders, incorporation of provision relating to conflict of interest, installation of surveillance cameras to increase security, putting contract evaluation rooms under IT enabled surveillance, storage of materials at construction sites, etc.

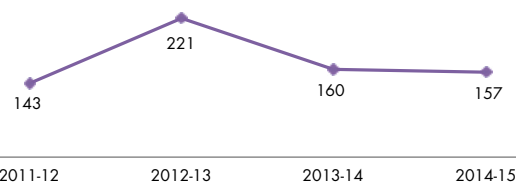
Various competitions were organized during 'Vigilance Awareness Week 2013', under the theme "Promoting Good Governance – Positive Contribution of Vigilance" and 'Vigilance Awareness Week 2014' under the theme "Combating Corruption – Technology as an Enabler" for employees as well as for their family members. In addition, talk on ethics & values and on anti-corruption topics were delivered by eminent personalities.

During the reporting period, no significant fines were levied on account of non-compliance with applicable laws and regulations.

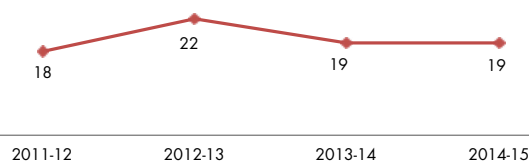
Anti-Corruption Training (No. of Employees)



Vigilance Inspections (No.)

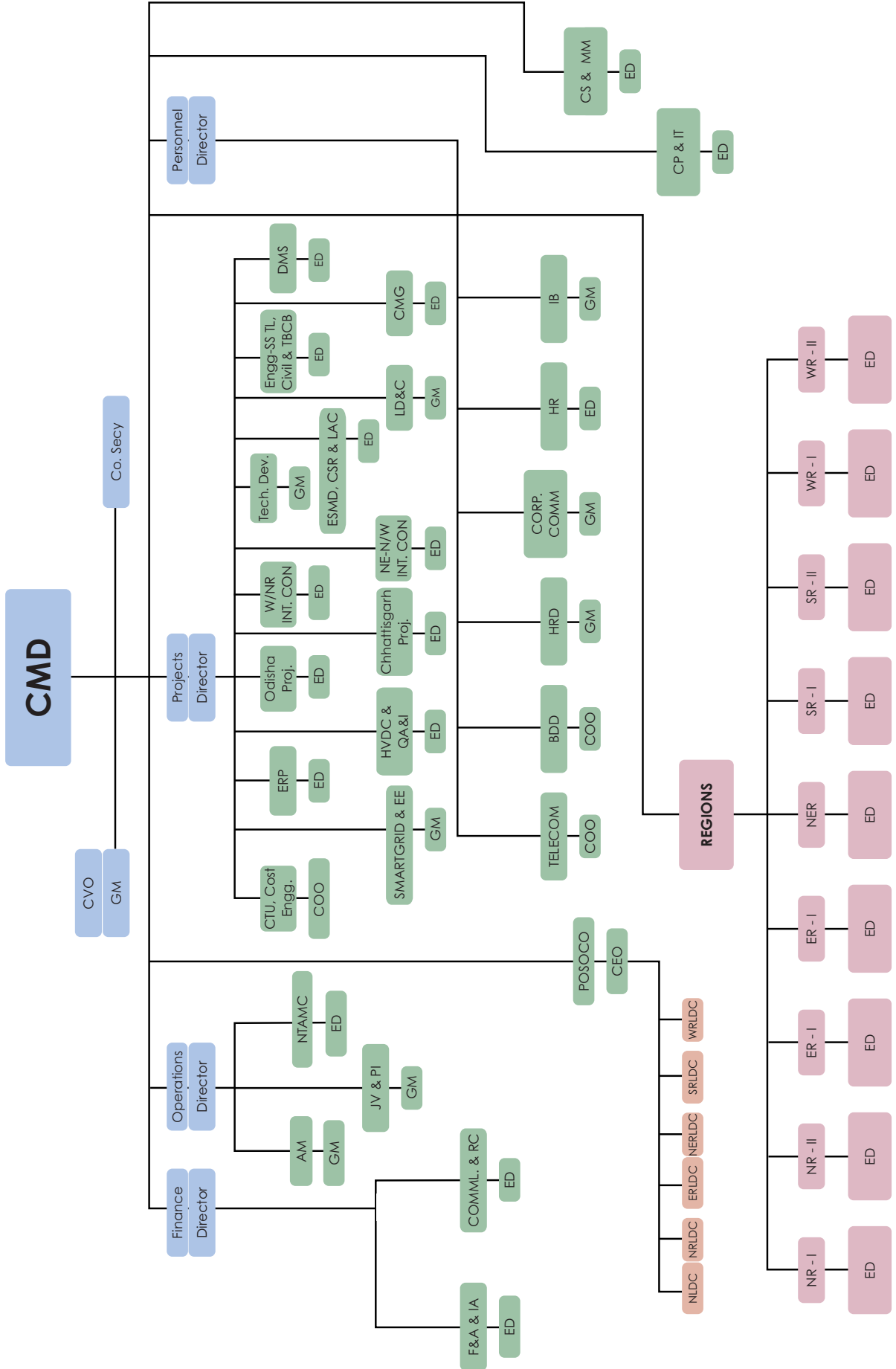


Vigilance Training Programmes (No.)





# Organization Structure (as on March 31, 2015)





# Sustainability Management

Developed a comprehensive and innovative ESPP to manage all possible Environmental and Social issues

Development of 'Green Energy Corridors'

Use /promotion of energy efficient LED bulbs

Waste Paper Recycling Plant

Rain Water Harvesting Facility in all Substations

Smart Grid Technology

Integrating renewable/solar power to National Grid for enhanced penetration

CSR initiatives with thrust on Health, Education, Environment, Livelihood Generation, etc

Implementation of Community Development Works in the Projects Areas

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## Sustainability Statement

“POWERGRID is committed to the goal of sustainable development and conservation of nature and natural resources. While continually improving its management system, accessing specialist knowledge and introducing state of the art and internationally proven technologies, while strictly following the basic principles of Avoidance, Minimization and Mitigation in dealing environmental and social issues. Where necessary, restoration and enhancement is also undertaken.”

---



### SOCIAL OBJECTIVES

Follow prescribed precautions to minimize disturbance to habitation, tribal areas and places of cultural heritage  
.....

Consult/involve Affected Persons during all stages of project implementation particularly on issues related to RoW and land acquisition  
.....

Guarantee entitlements and compensation at market rate to affected persons as per “Social Entitlement Framework”  
.....

Special attention to marginalized and vulnerable groups and secure their active participation  
.....

Maintain highest standards of health and safety to avoid possible accidents



### ENVIRONMENTAL OBJECTIVES

Avoid operations in environmentally sensitive areas, eco-sensitive zones, forests, sanctuaries, national parks, tiger/biosphere reserves, and coastal areas covered under CRZ through study of alternatives  
.....

Consider/design innovative/practical engineering/biological solutions by considering environmental implications of project implementation  
.....

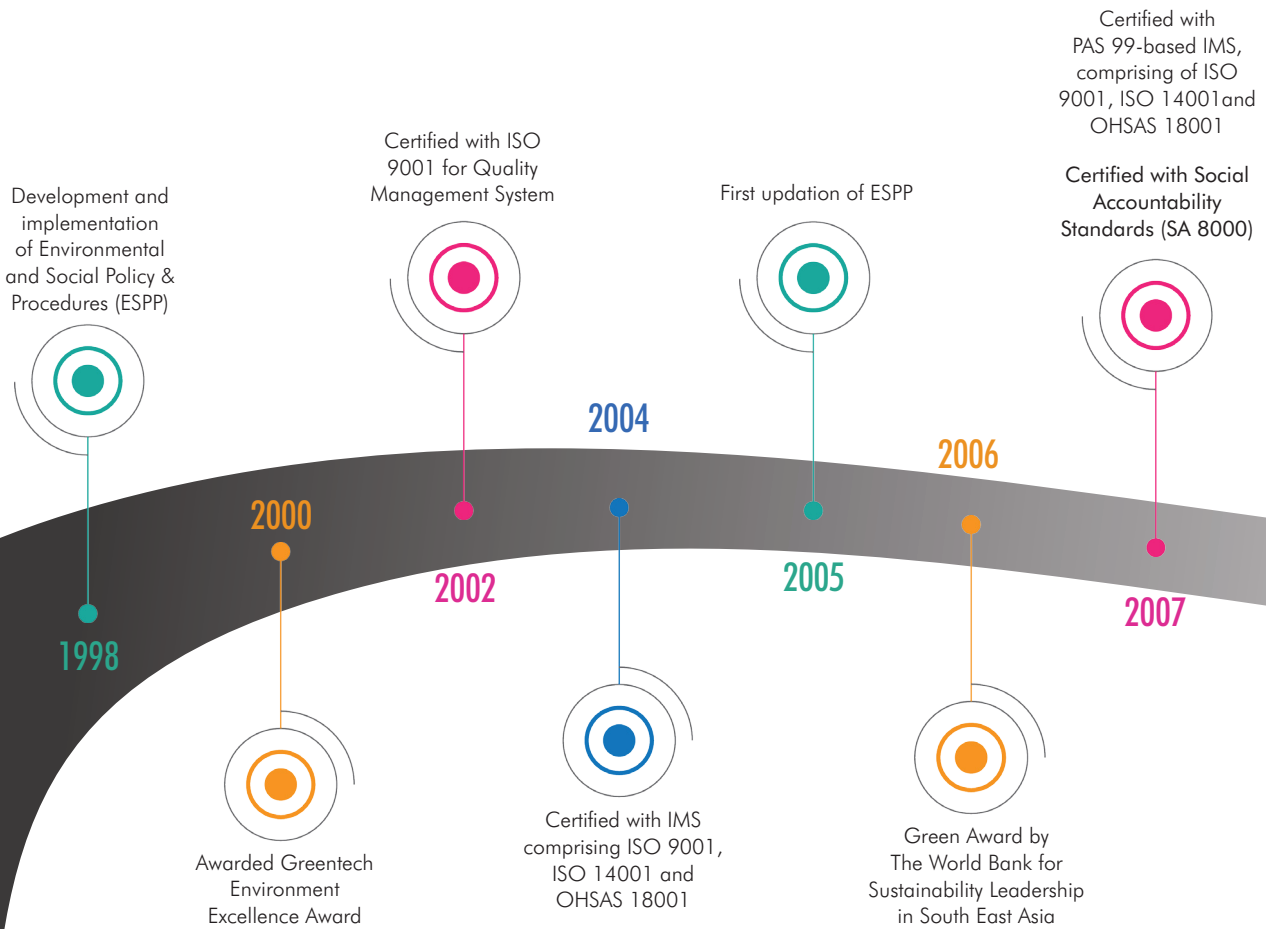
Application of efficient and safe technology practices  
.....

Abate pollution in all activities and operations  
.....

Minimize energy losses and promote energy efficiency



# Sustainability Journey







ECONOMIC PERFORMANCE



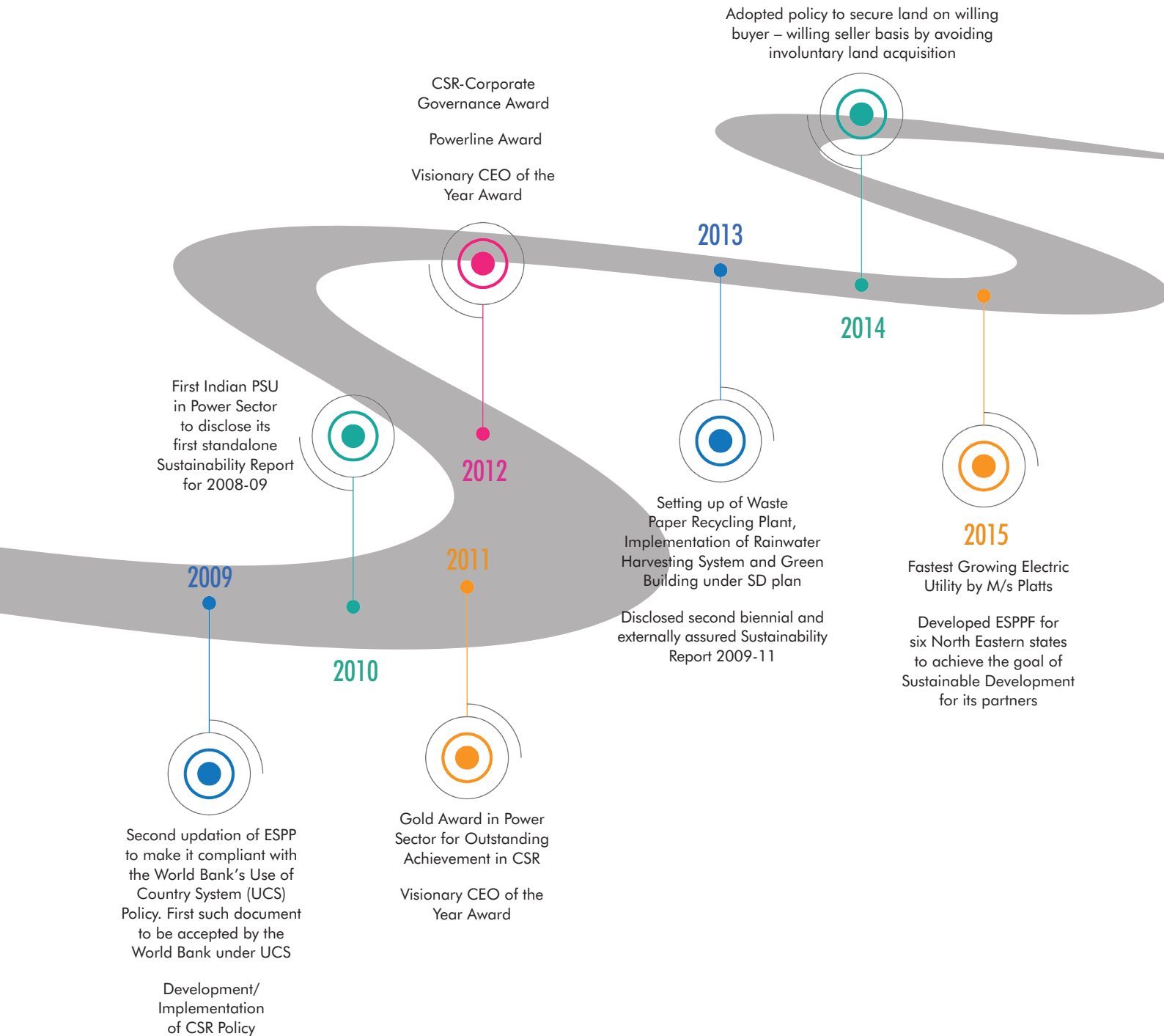
ENVIRONMENTAL STEWARDSHIP



HARNESSING HUMAN CAPITAL



SOCIAL ENRICHMENT





POWERGRID takes great pride in its commitment towards the people and environment where we operate. Our commitment to sustainability is manifested in our pursuit to understand the need of the people, and our persistence to develop new efficient technologies that can meet the needs of the present and the future generations. It is also reflected in our investment in social causes and our close collaboration and engagement with our stakeholders. Sustainability is a cornerstone of our business strategy that enables us to deliver our services in the most efficient and cost effective manner.

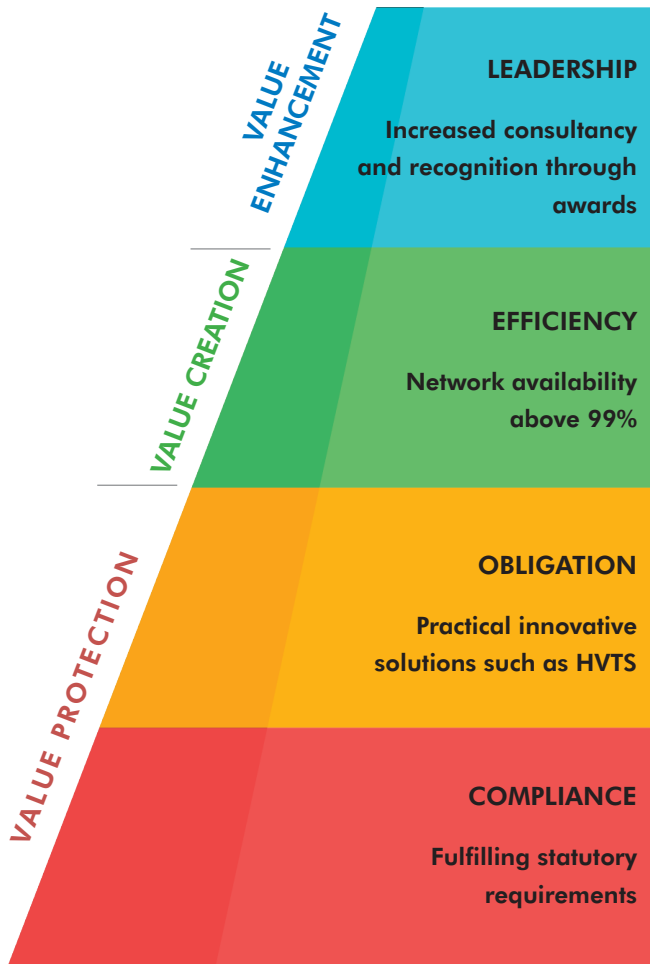
In realizing the mission of 'One Nation' - 'One Grid' - 'One Frequency', we have taken utmost care to address issues arising from our business operations

through established channels of communication. Voluntary introduction of Environmental and Social Policy & Procedures (ESPP) in the year 1998, and its revision in 2005 & 2009 has further exhilarated our commitment towards achieving our objectives in a sustainable manner. ESPP lays out our approach to deal with all possible environment and social issues and lays out management procedure and protocols for the same. The ESPP has been accepted by the World Bank under their policy of Use of Country System. The three principles of ESPP – Avoidance, Minimization and Mitigation are embedded in all our operations and are extended beyond our direct influence to suppliers and contractors facilitating effective implementation of our projects.





## Sustainability Maturity Steps



POWERGRID aspires not only to become the leading organization in power transmission but also in sustainability through continual improvement.

Ensuring availability of network above 99% through technological innovations and adoption of state of art technologies such as hot line maintenance, thermo-vision scanning, etc.

Integration and standardization of transmission system based on requirement.

We obtain all statutory clearances before commencing work. A testimony of our adherence is that during the reporting period, no non-compliance has been reported. In addition to necessary clearances, we implement environment and social management practices described in our ESPP.

We understand that our business activities may have certain impacts on the communities where we operate. We therefore undertake community development works around the area of our operations, thereby enriching the quality of life of communities directly or indirectly.

Further, POWERGRID through its CSR, focuses on improving socio-economic development of

marginalized and the under privileged sections of the society and overall development of the affected areas.

Operationally, we have aligned our business with internationally recognized systems such as PAS-99 based Integrated Management System comprising of ISO 9001, ISO 14001, OHSAS 18001. We have also been certified under SA 8000.

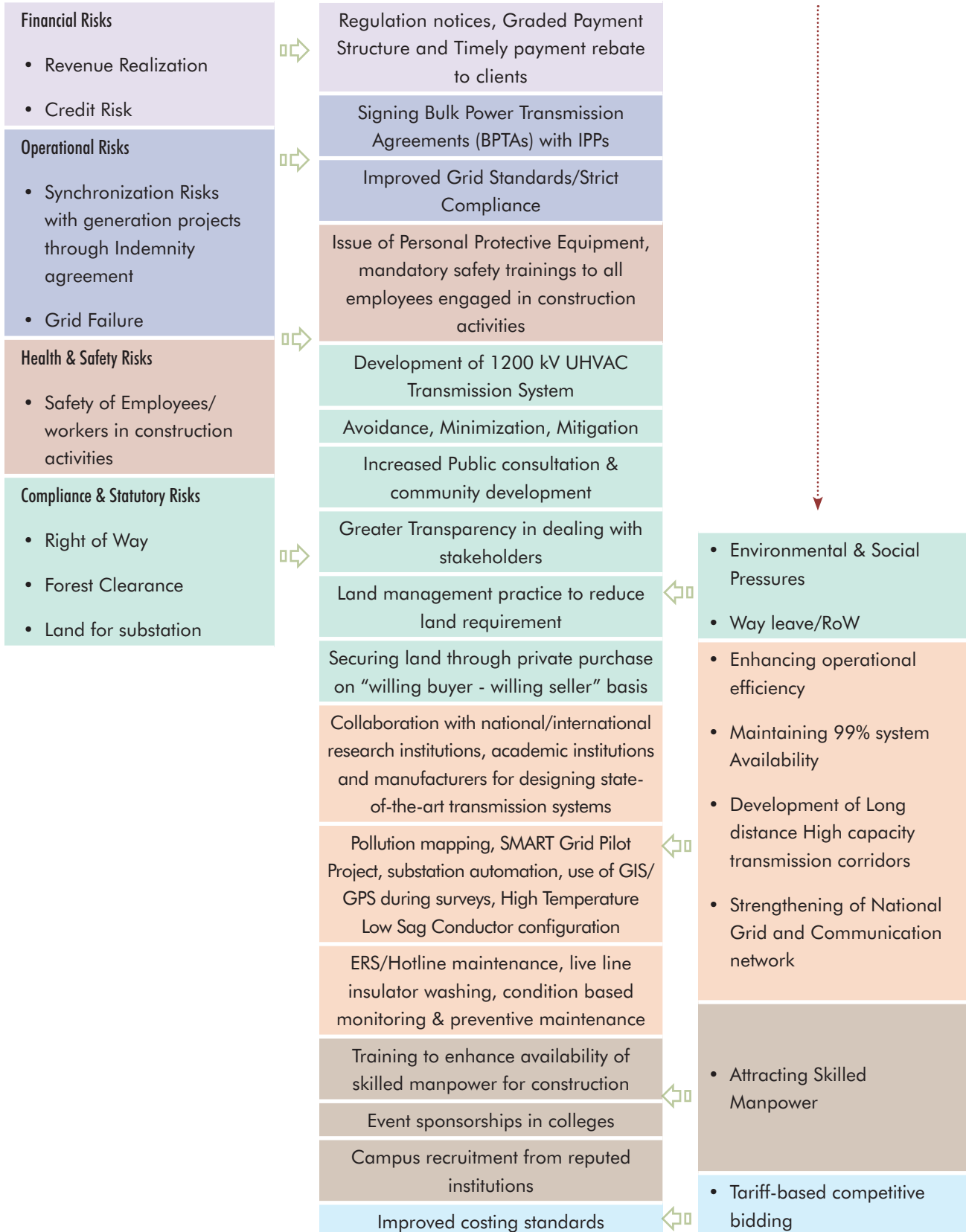


# Risk Management

## Risks

## Opportunities

## Challenges





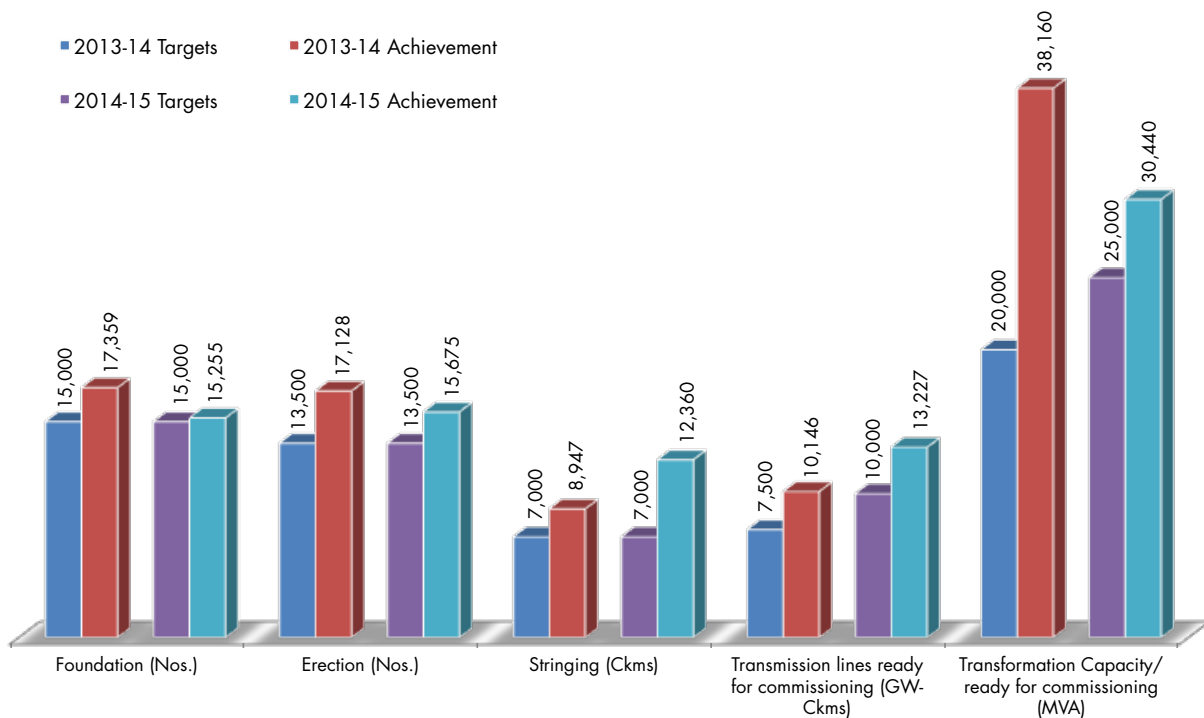
The most critical challenge of the power sector is providing uninterrupted power supply to all. Even though Power sector has grown many-fold, providing reliable and uninterrupted power to all is still a challenge. POWERGRID constantly innovates and develops technologies to mitigate such challenges. Over the years, we have developed state-of-the-art technologies and models for improving quality of power supply while optimizing the cost and enhancing efficiency as well as constantly maintaining international norms on transmission losses.

POWERGRID's Risk Management structure spans across different levels and the Company continuously identifies, classifies and formulates mitigation measures. Enterprise Risk Management framework is in place in POWERGRID which enables the identification and in depth analysis of risks, setting of accountability, development of mitigation plan and periodic reviews of

its implementation and effectiveness. The management engages with stakeholders to review the relevance of risk management framework and address the challenges effectively. POWERGRID has a dedicated Board Level Risk Management Committee to review the performance indicators. As on March 2015, the Risk Management Committee comprised 2 Independent and 2 Functional Directors.

Various risks have been identified by POWERGRID which affect/ may affect our services. Major Area of concern are RoW, Land Acquisition, Clearances, Skilled Manpower, Increase in Operational Efficiency, Synchronization Risk and Revenue Risk. POWERGRID has taken steps for identification of these risks and challenges and has put in control mechanisms to convert these risks and challenges into opportunities. A comprehensive mapping of risks, challenges and opportunities is presented herewith.

**MoU Targets Vs Actual Achievement**





# Building Trust

Designated as the nodal agency for power restoration during Jammu & Kashmir floods, worst one in 60 years

1200 kV National Test Station established under public private partnership model in collaboration with 35 Indian equipment manufacturers and Central Power Research Institute (CPRI)

Stakeholders are the most important link to conducting business ethically and profitably. We believe in building trust and communicating transparently with our stakeholders at various levels. POWERGRID engages with its identified stakeholders through an ongoing process. The Stakeholder Engagement Matrix details specific engagement mechanisms including mode & frequency of engagement for each stakeholder category.



Identification of Stakeholders

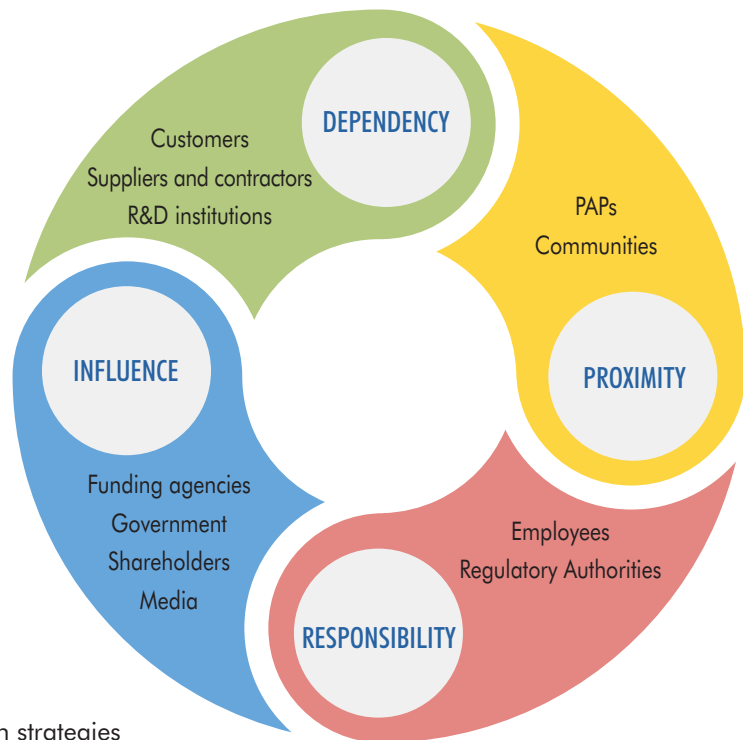
Prioritization of Stakeholders

Dialogue with Stakeholders



## Identification and prioritization of stakeholders

Through years of conducting business and engaging with various groups, we have identified the following key stakeholders who may affect our organization in economic, environment & social dimensions. The key stakeholders have been grouped based on 4 aspects of our relationship with them – Dependency, Influence, Proximity and Responsibility.



## Communication Management

POWERGRID adopts various communication strategies to highlight itself as an infrastructure major, contributing substantially towards development of a robust national economy. The Company engages with various stakeholders on aspects such as achievements, growth and recent developments through press communiqué, web portal and various internal communication tools. In addition, Quarterly Press & Analysts' meets are also organized to facilitate one-to-one interaction of the management with eminent journalists, analysts and stakeholders. Such measures help in building trust and improving the brand image of POWERGRID.

During the execution of the Company's second Follow-on Public Offer, the focal strengths and expertise of the Company were presented to the investors in various campaigns comprising print and electronic media, outdoor hoardings including investor road shows on pan India basis. We also participated in the India International Trade Fair (IITF) 2013 & 2014 and Vibrant Gujarat exhibition by displaying a stall based on the theme of inclusive growth. We also participated in business-oriented exhibitions in Mumbai, Delhi and Tanzania to showcase our expertise.



## Stakeholder Engagement Matrix

STAKEHOLDER CATEGORY	MODES OF ENGAGEMENT	FREQUENCY
Shareholders	Annual General Meeting	Once a year
	Board meetings	Minimum 4 times a year
	Annual Report	Once a year
	Analyst meetings	Minimum 4 times a year
<b>Customers</b> ▶ SEBs ▶ Telecom -Private firms (BRPL, Reliance etc.) Consultancy (National & International)	Signing of Transmission Service Agreement (TSA)	With every project
	Billing Collection & Disbursement Meetings	Quarterly
	Meetings with customers	Once a month
Funding Agencies (World Bank, ADB, IFC, KfW, etc.)	Signing of Loan Agreements	With each Loan
	Review Missions	Half-yearly
	Progress Reports	Quarterly
Employees	Employee Engagement Survey	As per HRD plan (Conducted 1 EES during the current reporting period)
	Open House	Quarterly
	Performance Review	Once in year
	<b>Magazines</b>	
	▶ e-Transmit	Monthly
	▶ Regional Magazines (10)	Quarterly
	▶ Saudamini Vaarta	Quarterly
	▶ Grid Darpan (Rajbhasha)	Quarterly
	▶ Candour (Vigilance)	Yearly
	<b>Department specific meets</b>	
▶ HRD Conclave	Twice a year.	
▶ PNBC meetings	Thrice a year.	
▶ HR meetings	As and when required	
Community	Public Consultation	At every stage of the project from conceptualization to Operation & Maintenance
	Participation of community through community development	At projects where involuntary land acquisition takes place
	CSR initiatives	Need based
Government	Compliance to Laws	On a continuous basis
	Comments/observations on proposed legislations	As & when a new enactment is proposed
	RPC (Regional Power Committee)	25 during 2013-14 and 2014-15
Suppliers & Contractors	Pre-award discussions	With every award
	Open bid discussions (OBD)	With every award
	Review meeting at various management levels	Monthly
	MPR of each contractor & suppliers	Monthly
	Joint discussions on technological advancements including Research & Development institutions	On a regular basis
Media		41 Media coverage/ Press briefings
	Press Briefing/Invitations to events	11 Domestic exhibitions
		1 International exhibition

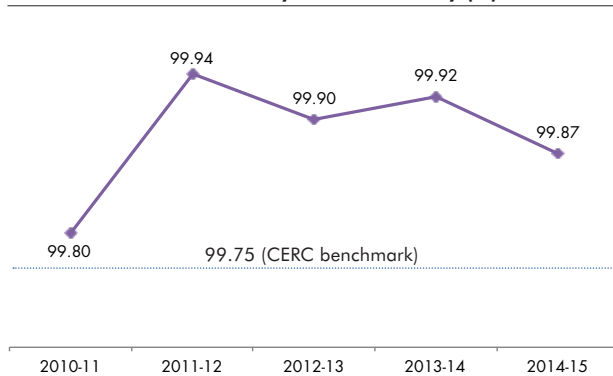




# Building Trust in Customers

Serving our customers is our primary mission which entails uninterrupted and quality power supply. We have constantly maintained our transmission system availability well above the 99%, achieving 99.87% availability during 2014-15. We have also restricted the number of tripping per line to 0.56 in 2013-14 to 0.53 in 2014-15, indicating high reliability of our transmission system. We have continuously maintained transmission losses to international benchmark of less than 4% level that makes POWERGRID the most trust-worthy power transmission entity in the country.

**Transmission System Availability (%)**



As mentioned in last report, many measures were taken after grid disturbance and we are pleased to report that no such incidence has occurred in the current reporting period indicating our strong commitment towards addressing such important issues. We are also pleased to inform that no incident of customer privacy breach or loss of customer data was reported during the reporting period.

Maintaining our assets 24x7 involves extensive planning and monitoring. Preventive maintenance is carried out using various advanced technologies such as Thermo-vision Camera, High resolution Digital video cameras, helicopter fitted with Light Detection and Ranging, Frequency Response Analysis, Third harmonic resistive current measurement, etc.

In order to optimize the resources, we have established National Transmission Asset Management Centre (NTAMC) for remote operation and monitoring of the



substations. The project constitutes of three distinct areas such as Supervisory Control and Data Acquisition System (SCADA), for gathering of electrical data & control of the switchgear of substation, Remote Accessibility System (RAS) and Video Monitoring System (VMS), which can be remotely controlled from the NTAMC.

To enhance value and trust, we are constantly working on developing and integrating latest technologies and devices.

We deploy state-of-the-art Emergency Restoration System for restoration of power supply within shortest possible time. The company was designated as a nodal agency for power restoration during devastating floods of Jammu & Kashmir in 2014.

To remain at par with international standards, POWERGRID endeavours to continue its thrust on research and development of new technologies. For harmonious co-existence, POWERGRID has taken many initiatives such as optimization of Right of Way and development of high capacity transmission corridor to meet the increasing demand of power across the country.

Over the years, POWERGRID has done feasibility study of several technologies, carried out application research through field testing and deployed them in the transmission system.



## Establishment of 1200 kV Test Station, Bina

To meet long term power transfer requirements in the country, 1200 kV UHVAC system has been considered as the next level of transmission voltage in India. In view of the measurable advantages of 1200 kV system and absence of existing 1200 kV system world over, POWERGRID has decided to develop the technology indigenously in collaboration with Indian equipment manufacturers and Central Power Research Institute. 1200 kV National Test Station was established by POWERGRID at Bina, Madhya Pradesh in-order to validate the engineering and design of 1200 kV bays and 1200 kV lines as well as to facilitate the field operation and testing of 1200 kV equipment which will pave the way for optimization of equipment design also. The design and detailed engineering of the 1200 kV switchyard was carried out in a time where there were no guidelines or standards available at international level for UHVAC system.

The 1200 kV National Test Station was established under public private partnership model in collaboration with

35 Indian equipment manufacturers and Central Power Research Institute (CPRI). 1200 kV National Test Station comprising of 1200 kV bays, 1200 kV S/C line (1.1 km) and 1200 kV D/C line (0.8 km) were established by POWERGRID whereas the 1200 kV equipment were developed and provided by Indian equipment manufacturers (35 different manufacturers) for field operation and gaining operational experience.

## New Tower designs and proto development & testing

POWERGRID has carried out the design, proto development and testing of 765 kV D/C towers DB & DC type (Vertical Configuration) (Wind Zone - III). Development of 400 kV Multi Circuit tower offers a saving of 32 MT of steel in comparison to the same tower type with reliability level 3.

## Pollution Mapping of Southern Region

With the intent of mapping the pollution severity levels across the country, POWERGRID had taken up pollution measurements in Northern Region initially. Subsequently, pollution mapping of Southern Region has also been taken up in collaboration with State Transmission Utilities of Andhra Pradesh, Karnataka, Kerala, Puducherry, Tamil Nadu and Telangana. Two sets of pollution measurements are under process.

## Indigenous development, testing and Installation of Air Core reactor in HVDC Station

POWERGRID had always given thrust for indigenous development of equipment's and systems in order to reduce the import component in its projects. In the high value projects of HVDC, majority of the components and systems are imported including Air core reactor, a relatively less technologically complex product. To have air core reactor available locally, POWERGRID collaborated with an Indian manufacturer





as per Manufacturing Quality Plan of POWERGRID. The reactor was tested, installed and successfully commissioned at Talcher HVDC terminal in November 2014. The operational performance of the unit is under observation.

## Demonstration of Process Bus architecture in Substation Automation System

POWERGRID has adopted Substation Automation through Station Bus Technology. In this scheme, Protection relays & Bay control devices are connected to each other and to the substation gateway and local Human Machine Interface (HMI) through a communication network known as Station Bus. Point-to-point connection is provided between various process equipment and protection relays & bay control devices. Station Bus Technology suffers from various disadvantages such as huge point-to-point copper wiring; technology specific details of the switchgear need to be handled at bay level devices, etc. To overcome the above deficiency, adoption of Process Bus Technology is a suitable option.

In Process Bus technology, a Process Bus is also provided other than Station Bus. Process Bus facilitates time critical communication between Control & Protection system to the primary process equipment. In this technology, data gathered at the Process Level is immediately sampled, digitalized, formatted and transmitted through the process bus LAN to Bay/Unit Level. This architecture helps in solving the inter-operational issues and digitizing the substation.

As the technology is relatively new, POWERGRID has carried out a pilot project at 400/220 kV Bhiwadi substation to evaluate the process bus technology along with Non-Conventional Instrument Transformers (Optical Current Transformer) in place of conventional current transformers.

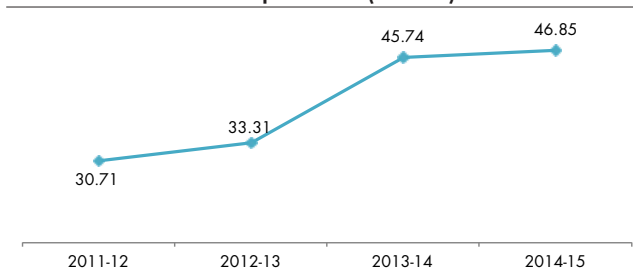
Commissioning of Non-Conventional Instrument Transformer and Demonstration of Process-bus technology were completed at Bhiwadi substation in January 2015. Process Bus scheme will ease the maintenance and trouble-shooting in future and will reduce the restoration time in case of any eventuality.

Also, the replacement of large amount of copper cables with minimal fiber optic cables is expected to optimize space requirement.

## R&D Centre, Manesar

POWERGRID is establishing an R&D Centre at Manesar, Gurgaon (Haryana) for pursuing its R&D objectives in order to continue its technological leadership in power transmission sector. Facilities under this R&D Centre include state-of-the-art simulation & laboratory facilities for Power System Simulation, Advanced Diagnostics, Wide Area Monitoring Systems, Substation Automation System, Material Science Lab, Civil Engineering simulations, Transmission line and Substation design, simulation and validation, Smart Grid knowledge centre, etc.

R&D Expenditure (₹ Crore)





# Building Trust in Community

Community plays a crucial role of a facilitator in implementation of our projects. Therefore, POWERGRID ensures that it operates, constructs and maintains its projects in a manner, respecting the rights of the community without violating any national and state laws. Public is kept well informed of all the activities through transparent communication channels and its views are accounted at each stage of project execution through a well-defined public consultation process.

Power transmission projects normally do not involve any displacement due to requirement of small size of land for substations and inherent flexibility in locating such substations and as per the prevailing law, land below transmission lines is not required to be acquired. Even for such small piece of substation land, POWERGRID follows the practice of land management to minimize the land requirement to the barest minimum. Our endeavor is always to locate substations on government/waste/barren land as far as possible and in the absence of such land, structure free private land is acquired. Moreover in order to reduce the land area further we have adopted new technologies like Gas Insulated Switchyard (GIS) which requires less land area (almost 1/4) in comparison to the traditional Air Insulated Switchyard (AIS).

POWERGRID has also developed a "Social Entitlement Framework" in its Environmental and Social Policy & Procedures (ESPP) to tackle R&R issues. This is based on the national policy and other progressive directives emanating from the government or the multilateral funding agencies. It provides "people directly/indirectly affected by our projects, means to improve or at least restore their former living standards, earning capacity and production levels" through a process in which they participate through their own social and cultural institutions. The provisions of above referred "Social Entitlement Framework" were implemented in all cases of land acquisition till 31<sup>st</sup> December 2013.

During the reporting period, new land acquisition act viz. "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013" came w.e.f. 1<sup>st</sup> January, 2014. However,



POWERGRID has not invoked provisions of this new act for securing land for its substation, instead lands are secured directly from land owners on "Willing Buyer Willing Seller" basis at a negotiated rate. Subsequently, land is transferred in name of POWERGRID through registered deed after full and final payment.

As a testimony, POWERGRID has spent ₹ 3.65 Crore & ₹ 5.14 Crore during FY 2014 & FY 2015 respectively towards various Community Development Works for affected villages in the vicinity of its projects.

In addition, POWERGRID supports the principles of inclusive growth and equitable development through Corporate Social Responsibility (CSR) initiatives as well as through our core business. Our commitment towards Social Responsibility is amply reflected in our policies such as Environmental and Social Policy & Procedures (ESPP), OHSAS 18001, Social Accountability SA 8000 and CSR Policy.

Corporate Social Responsibility is primarily to showcase our abiding commitment to pay back to the society and environment for the benefits reaped so far. CSR has always been an integral part of our vision and the cornerstone of Core Values of Good Corporate Citizenship. We are committed towards taking responsibility for our impact, though very minimal in nature, on society and being accountable to the inhabitants of Mother Nature. We emphasize on socio-economic and integrated development of areas and communities primarily around our areas of operations, and thus carry out various community development activities such as Livelihood



Generation programmes, Healthcare, Education, Plantation, Sanitation, Drinking Water, Roads, Drainage System, Community Centres, Development and Conservation of water bodies, etc.

We have been making strides in ensuring access to electricity to all rural areas under the Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) launched by the GoI. Cumulatively, till March 2015 infrastructure has been created in 71,622 villages and service connections were provided to 35.9 lakh BPL households.

We also ensure safety of the community by complying with General Safety Provisions and Standards as laid down in our policies. Improved mechanisms of emergency rescue and user-side safety check ensures that there are no major accidents during the construction and maintenance activities. We also advertise safe and proper usage of electricity via newspaper advertisements. Both in-house and independent studies have confirmed that EMF levels are well within the prescribed international limits/norms. It is heartening to report that there were no fatalities during the reporting period involving public.

Infrastructure created for 2263 partially electrified villages and 125 un-electrified villages and 5315 villages energized in 2013-14

Infrastructure created for 581 partially electrified villages and 2666 villages energized in 2014-15

71,622 villages electrified, 35.9 lakh BPL households connected until March 2015

## Building Trust in Employees

We have built a culture that ensures personal and professional development of our employees. The employee attrition rate has been maintained considerably low at 1% during the reporting period, reflecting POWERGRID as a preferred employer. Communication tools such as monthly newsletters, house journals, wall magazines, lounge and regular media updates are regularly used to engage with the employees. We also organize open house for one-to-one interaction between management and employees. On the occasion of Silver Jubilee year, POWERGRID prepared a corporate movie to showcase its journey.

As an OHSAS 18001, ISO 14001 and SA 8000 certified organization, we ensure that all the processes and systems regarding safety and health at work are strictly adhered to, creating a safe working environment for our employees. To achieve this, employees are trained on basic health & safety norms. Moreover, all regular employees also undergo regular preventive checkups demonstrating the company's commitment towards the wellbeing of its employees.

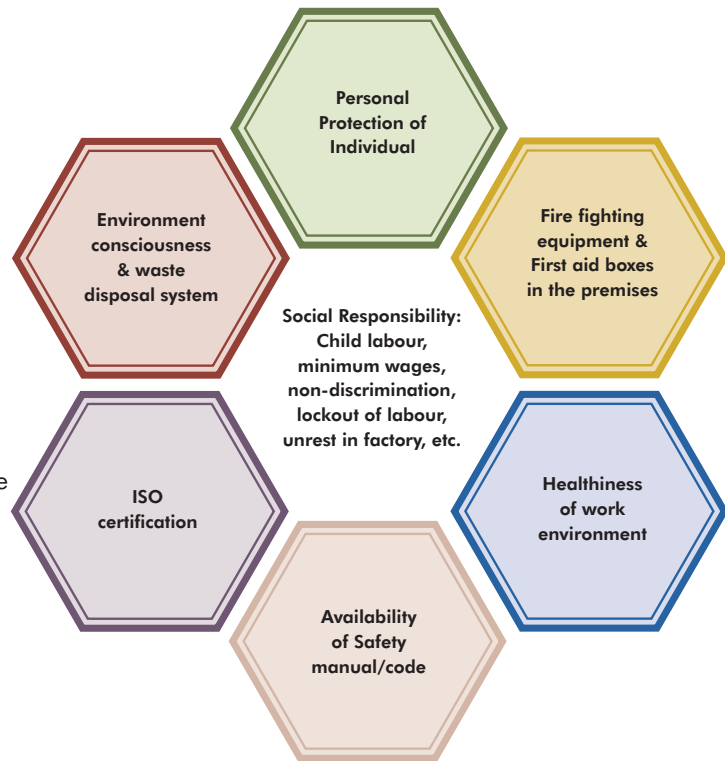




# Building Trust in Supply Chain

All our suppliers including international bidders are subject to our vendor selection process that ensures open, transparent and non-discriminatory approach in decision-making. Vendors are further scrutinized on the basis of innovation quotient, supply assurance, product quality and cost competitiveness. In order to enhance transparency and avoid any influence, we follow a structured e-tendering/award process.

We promote local hiring and encourage technical cooperation with suppliers, promoting localization and domestic production. Over the decade, we were successful in developing indigenous technologies through well-established supply chain. The Company has mandated its international suppliers to set up manufacturing facilities in India in the field of 765 kV transformer, 800 kV HVDC equipment, GIS & major equipment etc. Safety plan is an



Year	Total Contracts Awarded <sup>§</sup>		Domestic Bidding		International Bidding	
	Number	Amount (₹ Crore)	Number	Amount (₹ Crore)	Number	Amount (₹ Crore)
2013-14	161	10765	97	5459	64	5307
2014-15	223	20228	155	11621	68	8607

integral part of contract document and all vendors are advised through various vendor meets regarding such plans and their compliances before submitting their bid. The environment, social issues, labour compliance and sustainability issues are also given due importance in such vendor meets.

Through our continuous dialogue process including visit and detailed deliberations on the technical requirements, POWERGRID is able to create harmonious partnerships with its suppliers. Such partnerships enable us to receive superior quality product at optimum cost. However, with enhanced quantum of work and supply value, capacity building and development of new vendors remains a major challenge. We have initiated a process of assessment and evaluation of new vendors who meet our rigorous selection criteria for procurement of 765 kV

transformers, reactors, transmission towers, to meet project requirements.

During the reporting period we added 175 new suppliers (136 Domestic and 39 International), adding to our pool of resources. Process audits continued to be carried out in the manufacturing units of various vendors, sub-vendors & even further below in supply chain, which are spread all over the country, to achieve the target of zero product inspection. POWERGRID undertook various quality audits to ensure that the equipment/material conform to the technical specifications and are supplied in time to meet the completion targets of the projects, such as defining proper processes, quick approval of Quality plans and intelligent inspection of materials (in process & before acceptance). During the period, continuous

<sup>§</sup> Corporate Office



ECONOMIC PERFORMANCE



ENVIRONMENTAL STEWARDSHIP



HARNESSING HUMAN CAPITAL



SOCIAL ENRICHMENT

follow up with manufacturers for timely manufacturing, testing of various critical items and issue of requisite clearances were expedited.

POWERGRID has been encouraging indigenisation in line with 'Make in India' Policy of Government of India. In order to meet the above policy requirement, a mandatory provision regarding establishment of manufacturing facility in India by all foreign suppliers has been made

a part of the bidding document. Also, few Indian suppliers have been provided some relaxation without compromising the qualifying parameters. Moreover, Indian manufacturers are also allowed to bid in technical collaboration with a foreign supplier as partner. In line with Government of India's Public Procurement Policy, Micro and Small Enterprises (MSE) are given preference at least for 20% of the package value in domestically-funded projects.

## Building Trust in Shareholders

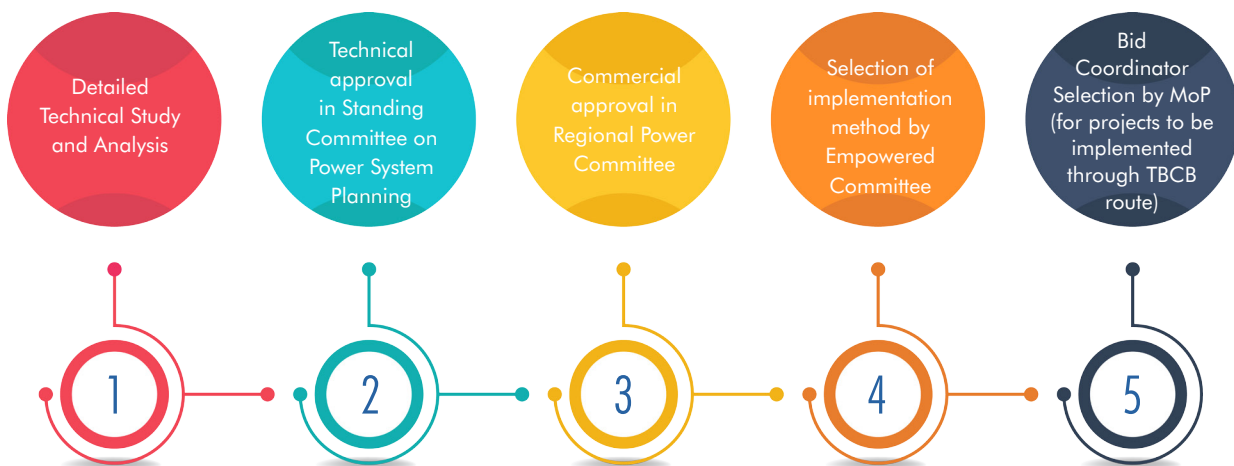
POWERGRID's primary responsibility is to create value and wealth for its shareholders whose expectations are centered on growth and profitability. The company has been continuously outperforming all targets set by MoU and expanding its business, demonstrating a strong foundation and team work.

The CMD addresses all its shareholders in the presence of a board at least once a year at the Annual General Meeting and on several other analyst meets. Shareholders are also kept abreast with the performance of the company through communication channels such as Annual Reports, Newsletters, Press Conferences, and Sustainability Reports, etc. The Board ensures that effective measures are in place for open and transparent dialogue with all shareholders including individuals, corporates and investors.



## Building Trust in Government

The continuation of CTU responsibility with POWERGRID is a clear testimony of Government of India's faith in our capability. As a backbone of the Indian Power Sector, it interacts extensively with various state and national level government departments on a regular basis.

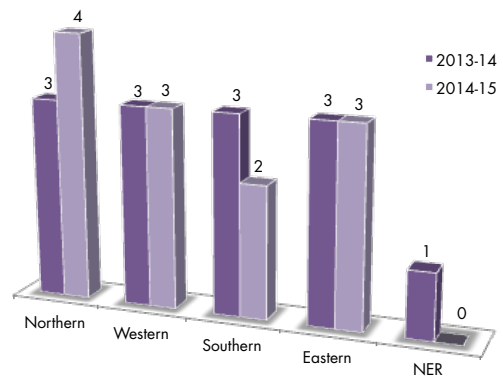




The basic responsibility of transmission system planning lies with the CEA based on the projection of energy demand and supply. The intricacies of transmission system are discussed and planned in consultation with CTU, POSOCO and other state utilities.

As a listed Public Sector entity, POWERGRID is regulated by the guidelines of Ministry of Corporate Affairs and SEBI. For ensuring revenue generation from our transmission business, various technical discussions are held with Central Electricity Regulatory Commission (CERC).

Number of Standing Committees



We regularly interact with Ministry of Environment, Forests and Climate Change and State Forest Department, for forest and wildlife clearances.

POWERGRID being the CTU of the country acts as a coordinator of all stakeholders including CEA, RPCs, STUs, Generating Companies, etc.

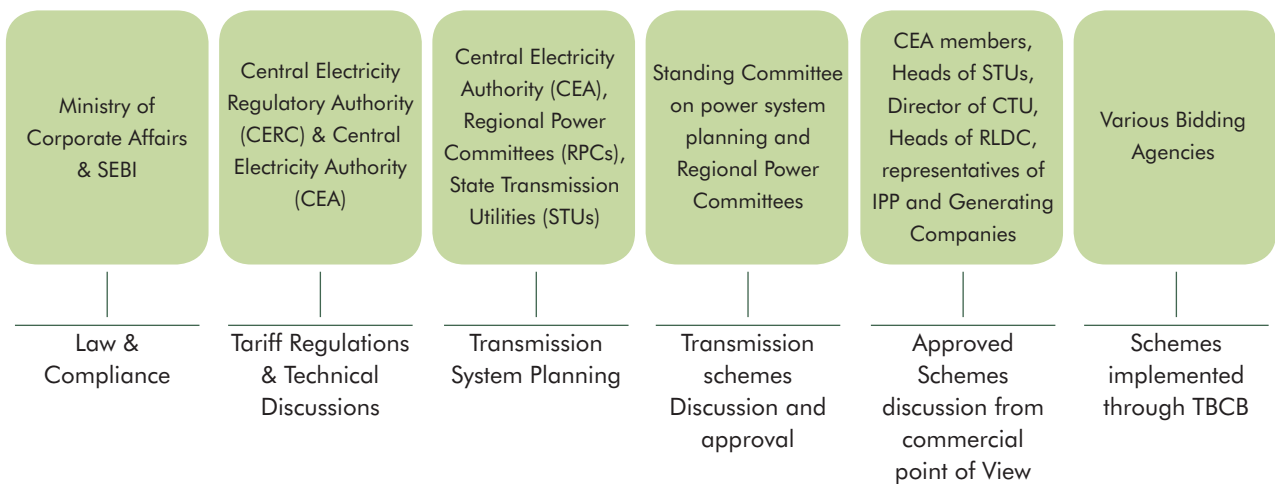
*Detailed Technical Study and Analysis: CEA & CTU*

*Standing Committee on Power System Planning: CEA, CTU, POSOCO, STUs and Central Generating companies*

*Regional Power Committees: STUs, DISCOMs, CTU, POSOCO, Central Generating companies & IPPs*

*Empowered Committees: CEA, Niti Aayog (formerly Planning Commission), MoP, BPCs & CTU*

STAKEHOLDERS

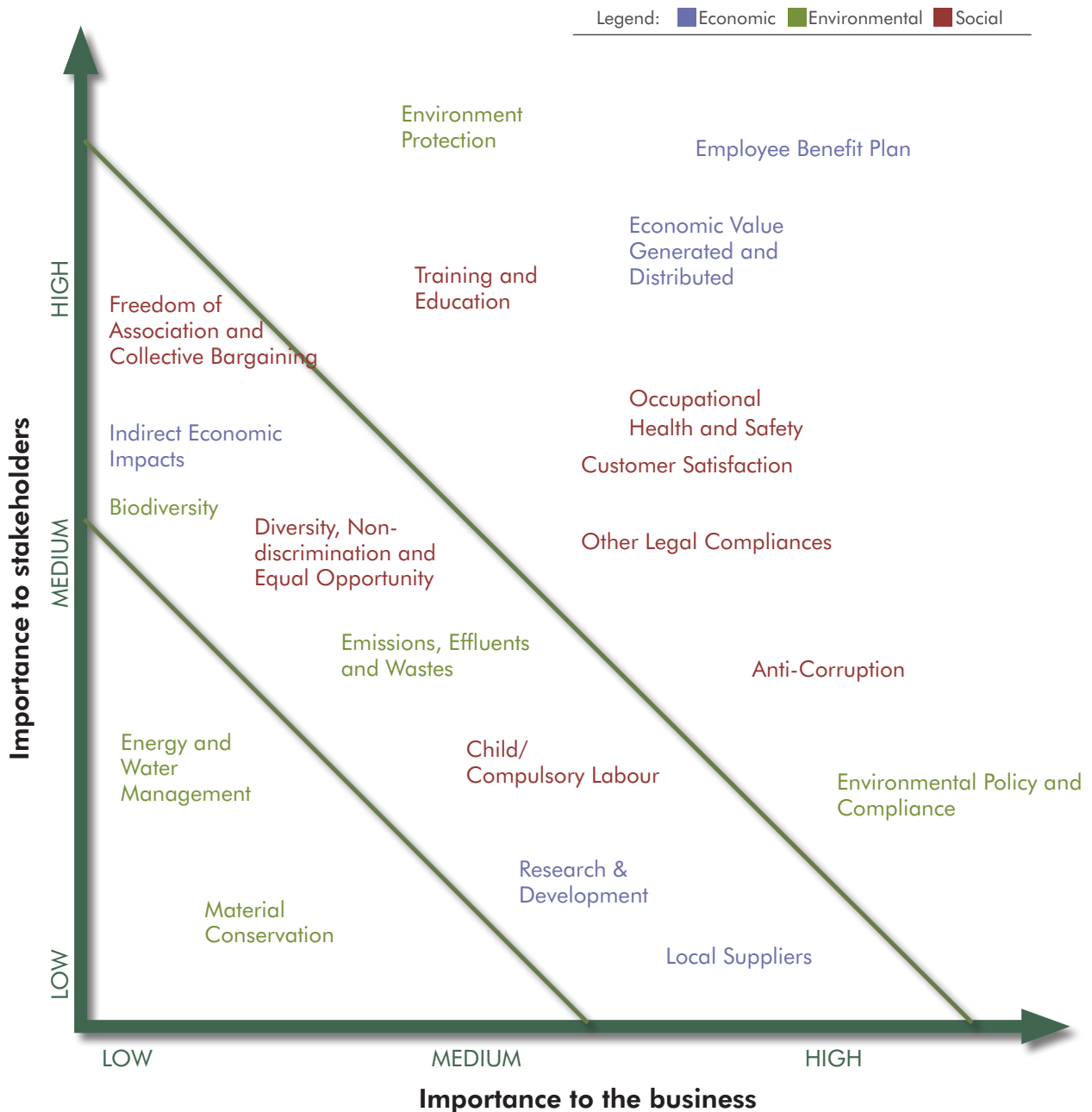






# Materiality Analysis and Mapping

POWERGRID's sustainability strategy is aligned with its principal business and operational risks. Over the years, the strategy has been reassessed and reworked to align the organization with the existing market conditions. Our sustainability prioritization exercise helps us segregate and prioritize sustainability issues on severity of impact/ importance.





# Economic Performance

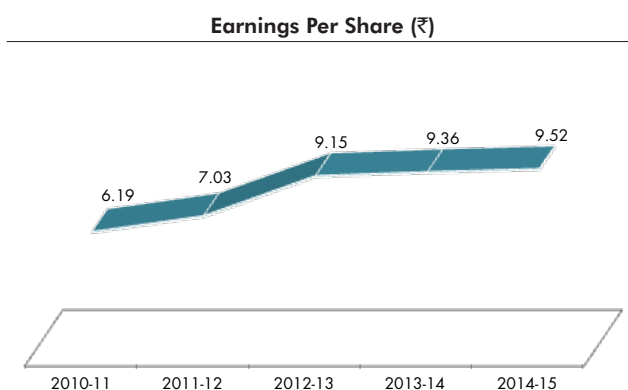
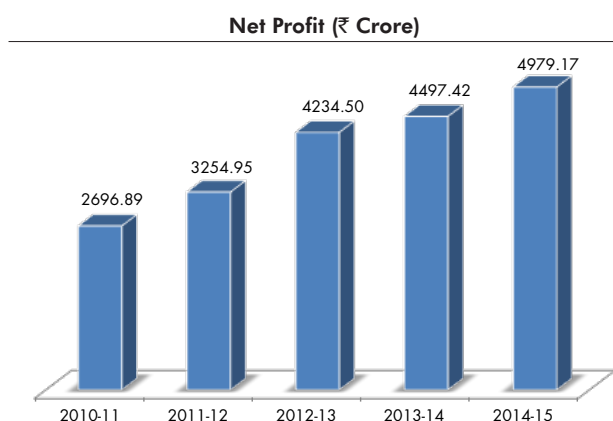
Director (Finance) felicitated with the “CA-CFO-Power Sector Award” by the Institute of Chartered Accountants of India in recognition of exceptional performance as CA-CFO in Power Sector for the Year 2014

The present reporting period marks completion of 25 glorious years of our Company. From inception to the 'Silver Jubilee' year, POWERGRID has maintained growth momentum and attained a number of splendid achievements.

The Company's meritorious performance is linked with continuous thrust on commissioning of transmission assets for extraction of maximum commercial benefits through Integrated Project Management and Control System (IPMCS).

We have recorded a total profit of ₹ 9,476 Crore in the current reporting period of 2013-15, an increase in growth of 26% over the net profit gained in 2011-13.

POWERGRID's stock has shown tremendous performance since its first issue. Earnings per share (EPS) increased to ₹ 9.52 in FY 2015 as against ₹ 9.15 in FY 2013.



During the reporting period, POWERGRID took up 52 new projects for implementation worth more than ₹ 34,000 Crore. Moreover, POWERGRID has invested ₹ 45,614 Crore for implementation of its projects and achieved assets capitalization of ₹ 37,664 Crore. Funds for the same were mobilized through private placement of bonds, proceeds of Supplier's credit, loans from multilateral funding agencies.

One of the major financial development was issue of our second Follow-On Public Offer of equity shares comprising fresh issue of 13% of existing paid-up equity capital and disinvestment of 4% by Government of India. The issue was oversubscribed 6.74 times.

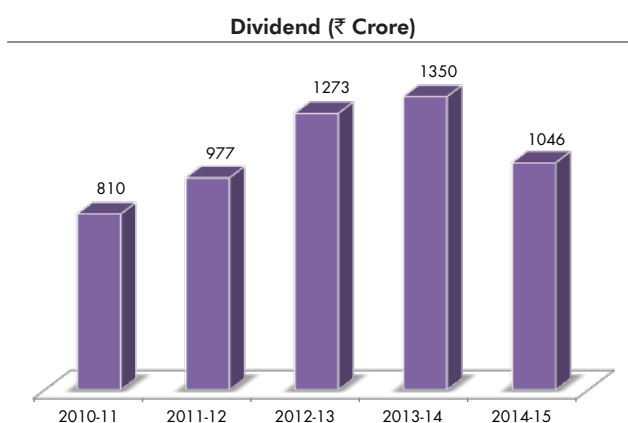
POWERGRID continues to maintain its rating as 'AAA/stable' (triple A with stable outlook) by CRISIL, ICRA and CARE ratings domestically.

In 2014, we commenced implementation of Green Energy Corridors across the Country, giving boost to renewable generation by facilitating its integration with the National Grid, displaying the Company's efforts towards realization of sustainable and inclusive growth. Consultancy and telecom business have picked up grounds for the company, contributing significantly to its income. However, Power

Transmission business is the main focus of POWERGRID that continued to be the highest contributor to the revenue – 92% of the total revenue of the company an increase of 2% from the previous reporting period 2011-13.

During 2013-15, POWERGRID received ₹ 2828.88 Crore in tax relief from the Government of India (₹ 1482.21 Crore in 2013-14 and ₹ 1346.67 Crore in 2014-15).

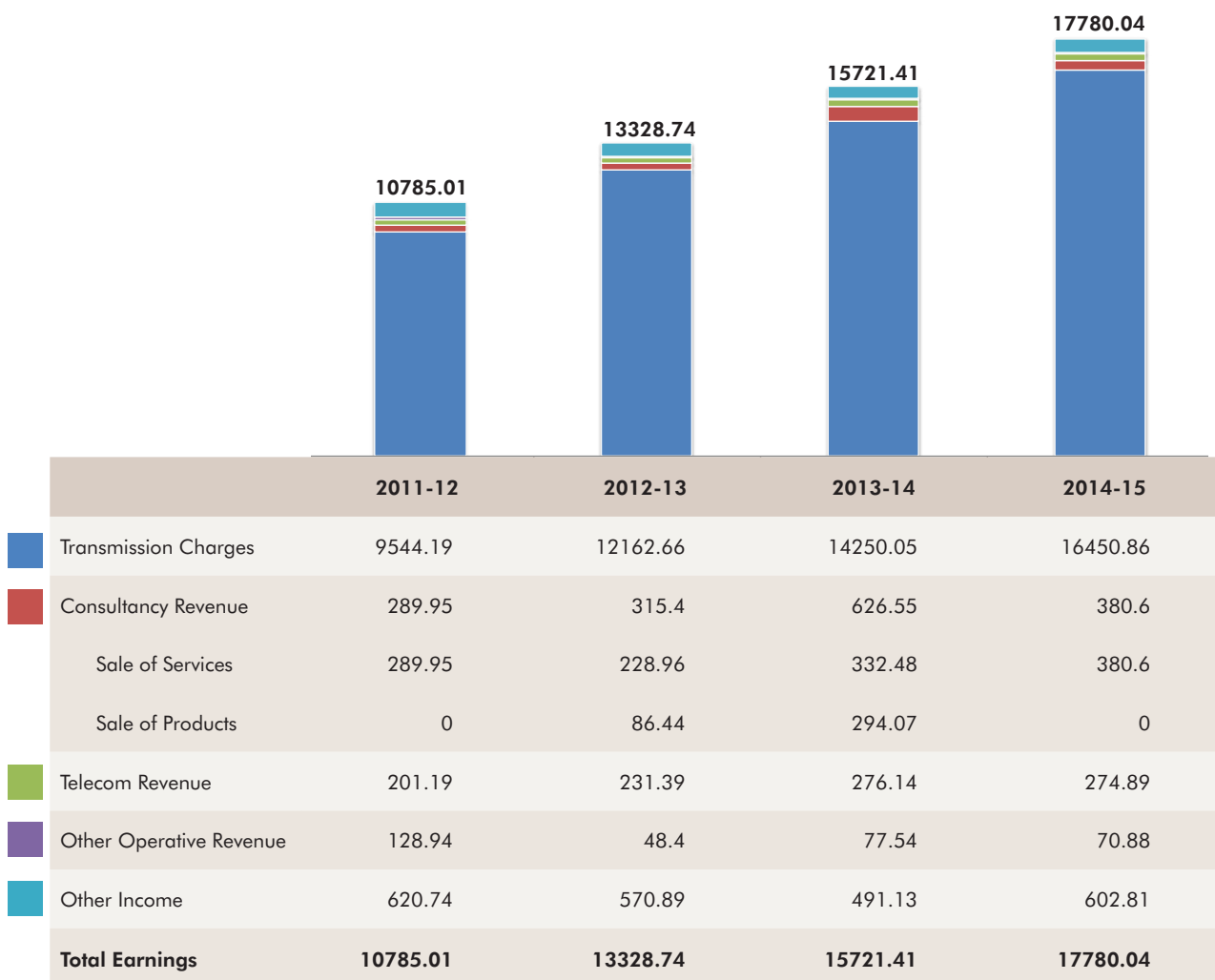
POWERGRID has been consistently paying dividends to its shareholders throughout the reporting period as per the profits registered.





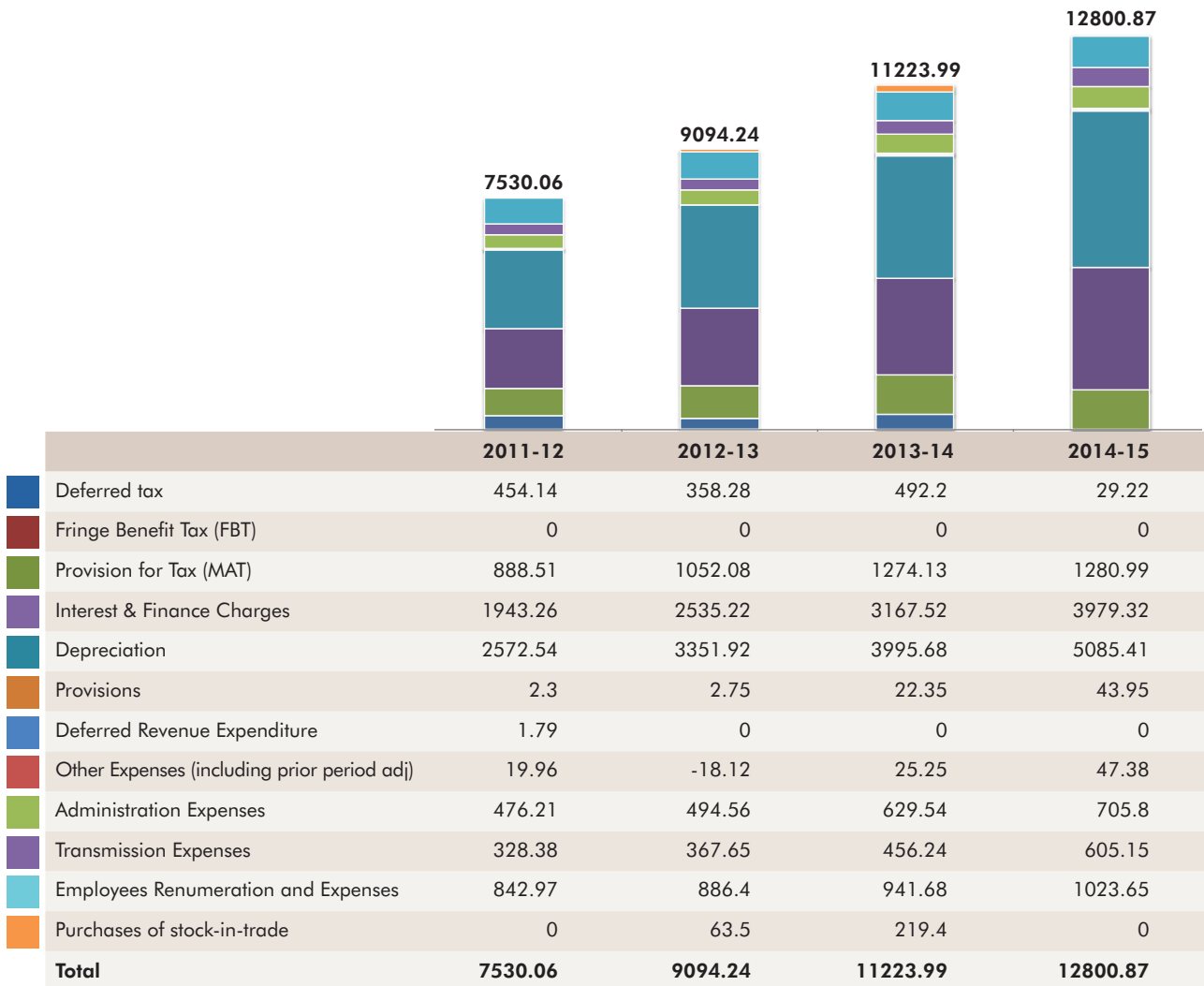
In continuation to our efforts towards sustainability, our Company has been sending the Annual Report and other communications to large number of shareholders from the FY 2011 onwards through e-mail of the shareholders registered with NSDL/ CDSL and after seeking their consent to send the Annual Reports through e-mail. This was in compliance of 'Green Initiative in the Corporate Governance' by Ministry of Corporate Affairs, Government of India and now under Sections 101 & 136 of the Companies Act, 2013 allowing paperless communication by the companies to the shareholders.

#### Direct Economic Value Generated (₹ Crore)

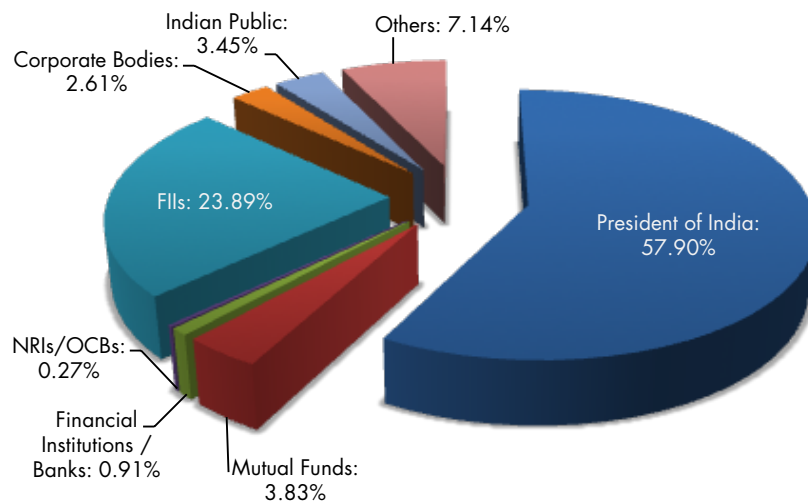




## Direct Economic Value Distributed (₹ Crore)



## Shareholding Pattern





# Environmental Stewardship

“The ESPP is the first document of its kind for any Indian utility company and, as far as known, for any Private Sector business as well. As such, it provides an excellent model for other Government and Private Sector Companies to adopt for their own purposes. POWERGRID should consider marketing this newly acquired expertise on a consultancy basis.”

- WS Atkins, London, UK, a leading International consultant in the field of Environmental studies



POWERGRID's activities are non-polluting in nature and do not involve disposal of any pollutant in land, air, water or any large scale excavation resulting in soil erosion and its contribution towards environmental pollution is minimal. In spite of that given the scale of its operations, POWERGRID realizes that there may be some impact on both natural environment and communities.

Strengthening our commitment towards Sustainable Development, POWERGRID has integrated environmental and social management procedures into its corporate operations by enunciating Environmental and Social Policy & Procedures (ESPP). POWERGRID is the first company in Asia to have a comprehensive and written "Environmental and Social Policy & Procedures (ESPP)" to manage environmental & social issues of transmission projects. POWERGRID developed its ESPP in 1998 through nationwide consultation involving Stakeholders, General public, Representatives from Ministry of Power, MoEF, CEA, State Electricity Boards, Allied Organizations, Academia, NGOs, Multilateral funding agencies and Project Affected Persons (PAPs). The basic principles of the ESPP are Avoidance, Minimization and Mitigation and it outlines POWERGRID's commitment to deal with environmental and social issues, and lays out management procedures and protocol to address them. The ESPP has been revised twice in 2005 and 2009 to make it updated in line with the changed rules and guidelines of the Government of

India, multilateral funding agency like World Bank, ADB, JBIC, etc. and suggestion/best practices and feedback received from different sites. The World Bank has certified ESPP under their Use of Country System (UCS) after a comprehensive review and awarded POWERGRID with The Green Award, 2006 for Sustainability leadership in Southeast Asia in recognition of its efforts.

The provisions of ESPP are followed in all our projects. A detailed Environment and Social Assessment Study is carried out prior to project implementation to identify and minimize/mitigate the possible risks and impacts. During the reporting period, POWERGRID incurred an expenditure of ₹ 632 Crore towards environmental protection. Our ESPP has been formulated based on applicable National and State laws thereby the provisions of ESPP ensures compliance with all statutory requirements. During the reporting period, there were no reported actions/ penalties related to non-compliance with environmental laws and regulations.

POWERGRID has a dedicated Environment and Social Management Deptt. (ESMD) at the Corporate Level headed by an Executive Director and supported by skilled professionals with Technical, Social and Environment expertise. A dedicated Environment and Social Management Cell is in place in all Regions to manage environment and social activities and works under the supervision of Corporate Environment Deptt.



# Conservation of Right of Way

POWERGRID is fully conscious of the need to conserve natural resources and avoids ecological sensitive area, eco-sensitive zones, forest, sanctuaries, national parks, tiger/biosphere reserves and CRZ covered coastal areas to the extent possible.

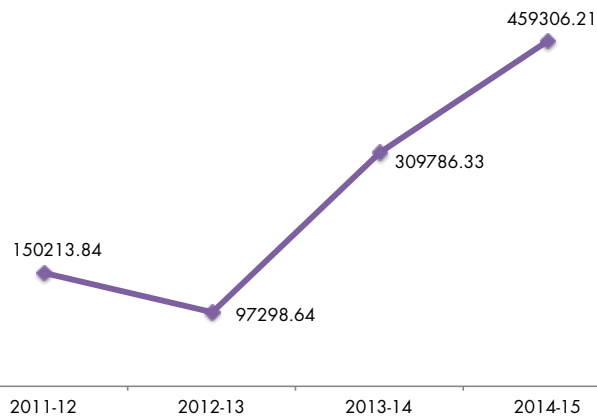
Land has become scarce natural resource. POWERGRID has already taken initiatives for conservation of land for both transmission lines and substations by adopting various technological measures. Land for substation has been optimized by adoption of new and emerging technologies like Gas Insulated Switchyard (GIS) that reduces the land requirement to approximately 1/4 in comparison to normal Air Insulated Switchyard (AIS).

At the initial stage itself while finalizing the route alignment of a given line, we avoid involvement of

environmentally sensitive areas like Wildlife Sanctuary/ National Park/Tiger Reserve, even if line length is to be increased, to achieve complete avoidance of such sensitive areas. This is evident from lines such as Vindhychal-Satna 765 kV D/c line that has avoided Sanjay Gandhi and Bandhabgarh Tiger Reserve, and Dehradun-Abdullapur 400 kV D/c line that avoided Kalesar National Park.

However, avoidance of forest area completely is not possible in all cases due to terrain and topographical constraints including the location of load centres. In such cases, our endeavour is always to utilize minimum forest area and reduce tree felling through technological interventions such as extensions and multi circuit towers.

**RoW Savings due to Construction of 765 kV Lines ('000 sq.m.)**



POWERGRID has also taken initiatives for installing high voltage lines with higher power-carrying capacity to reduce RoW impact. For example, a 765 kV line can carry power which would have required two to three 400 kV lines.

During the reporting period, none of the commissioned lines were routed through any protected areas.

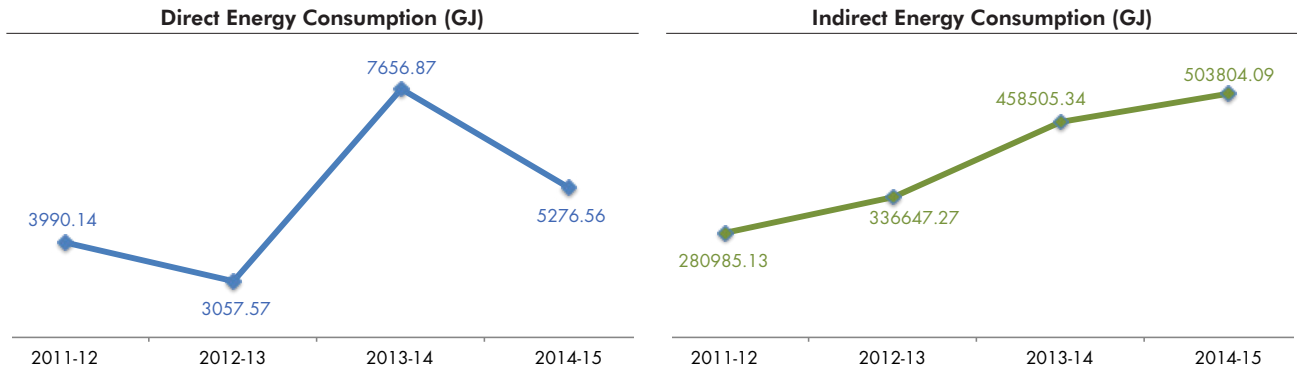
We pay compensation to all affected persons for damages to their crop and trees at market rate. In some cases, during the reporting period, land cost for tower base has also been paid on orders of Deputy Commissioner.





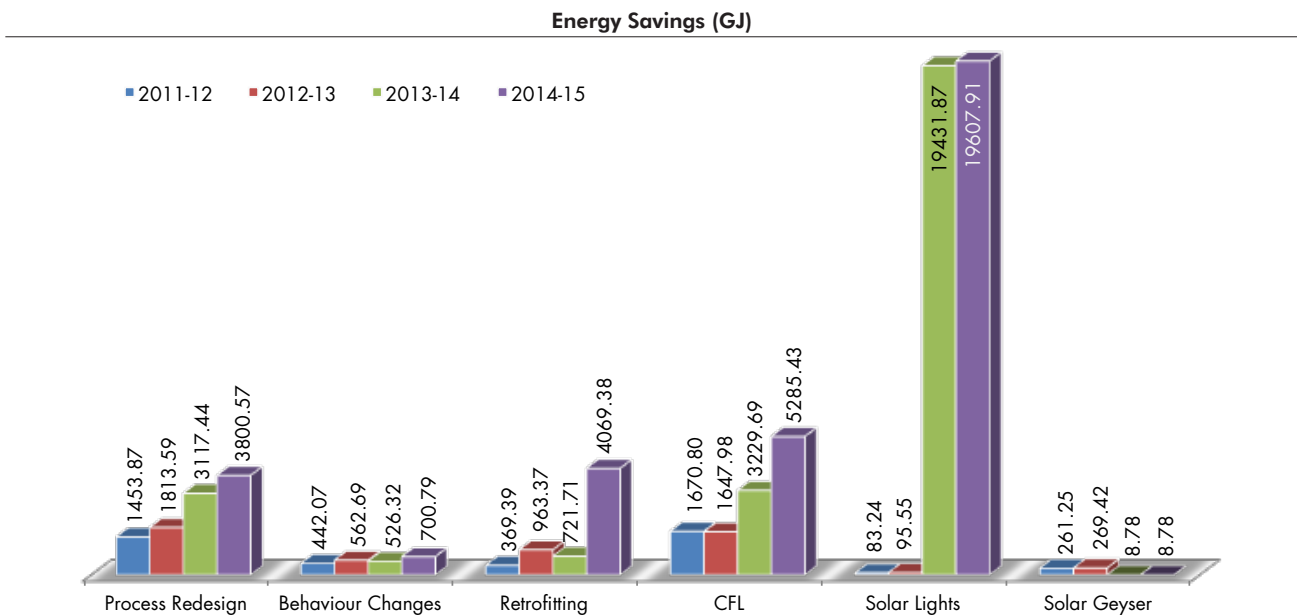
# Energy Management

Our approach toward energy conservation is based on adopting a low carbon growth path through reduction in specific energy consumption and enhancing the use of renewable energy sources. Since our major electricity consumption is for lighting purpose at substations, colonies and office buildings, to optimize energy consumption, various initiatives such as installation of LED lighting in control room, optimization of AC temperature, switching to CFL lamps from conventional lamps, etc., are being taken up to reduce specific consumption.



Apart from this solar lights are being installed in control rooms and also for street lighting at substations. We are focusing on energy efficiency initiatives and sourcing energy from renewable sources. Towards this, we have designed & constructed our buildings at Manesar, Yehalanka as per green building norms. A 50 kW solar photovoltaic has been installed on the roof top of NTAMC building, which will cater to 30% of energy requirement. Primary source of indirect energy consumption is through State Electricity Boards and for direct energy consumption, through Diesel Generators, which are used for backup/ emergency power only.

Corporate Office and 2 Regional Offices (Nagpur and Shillong) have been certified for ISO 50001 for Energy Management System.





## Renewable Energy Integration

As reported in previous reporting period, implementation of Green Energy Corridors across India has been taken up. POWERGRID has been entrusted by the Government of India for development of Inter-state transmission system and mitigating measures for grid inter-connection of variable & intermittent renewable energy. The projects are under implementation with the funding assistance of KfW and ADB.

Further, to harness huge renewable energy potential of solar and wind, POWERGRID has also evolved an integrated development plan for establishment and

grid integration of 300 GW by 2050 through hybrid transmission corridors utilizing High Voltage Direct Current (HVDC) (including VSC based) as well as 1200 kV UHVAC/ High temperature superconductor technologies, etc. A report on the plan, DESERT POWER INDIA – 2050, has been submitted to Ministry of Non-Renewable Energy (MNRE), Ministry of Power (MoP), Ministry of Finance, Planning Commission, Central Electricity Authority (CEA) and Central Electricity Regulatory Commission (CERC).

## Smart Grid

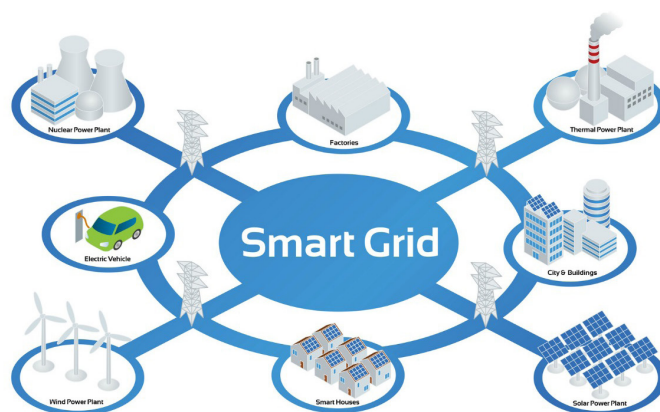
POWERGRID is a pioneer in encompassing efficient power supply value chain through development of Smart Grid oriented Smart City in the country. One of the world’s largest Wide Area Measurement System (WAMS) is being implemented by POWERGRID through deployment of state-of-the-art Phasor Measurement Units (PMU) under Unified Real Time Dynamic State Measurement (URTDMS) scheme.

After demonstration of Smart Grid attributes at Puducherry in a comprehensive manner through open collaboration, the company is extending services for implementation of Smart Grid projects in other states like Himachal Pradesh, Punjab, West Bengal, Tripura, Chhattisgarh, Rajasthan, Haryana and Karnataka.

For facilitating enhanced penetration of renewables in the overall generation capacity portfolio, POWERGRID has pioneered implementation of battery energy storage systems of about 1 MW capacity as pilot project in Puducherry.

POWERGRID has taken initiatives to measure various power quality parameters in different cities across India at all voltage levels to create data repository for identification and application of technological solutions.

We are indigenously developing/developed products like smart meter, data concentrator unit, home energy management system, micro grid controller, active



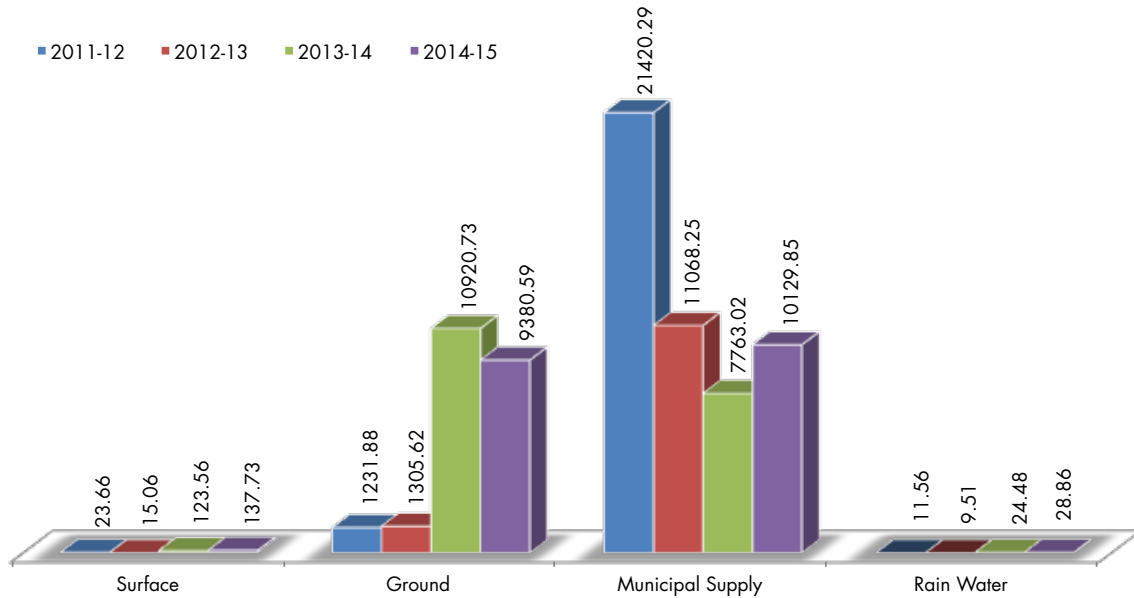
power filter etc., for varied applications under different smart grid projects and have already applied for their patents.

POWERGRID is also establishing a Smart Grid Knowledge Center equipped with working model of various technologies at POWERGRID Advance Research and Technology Centre (PART) at Manesar for dissemination of knowledge on smart grid technologies in an enabling environment. Besides, capacity building programmes for utility/consumer and other stakeholders are also undertaken.

We also operate Secretariat of the prestigious “India Smart Grid Task Force (ISGTF)” of Ministry of Power, Government of India for activities related to Smart Grid.

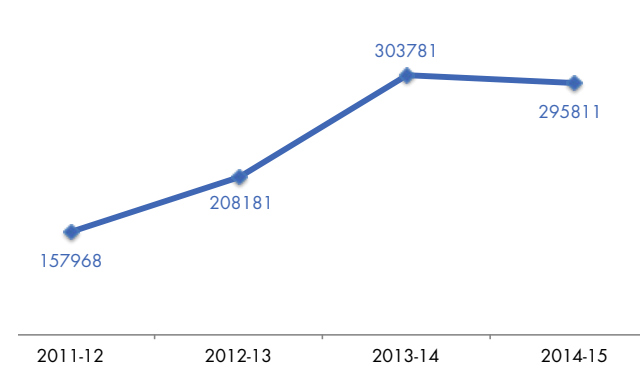


# Water Conservation

**Water Consumption (In '000 cu.m.)**

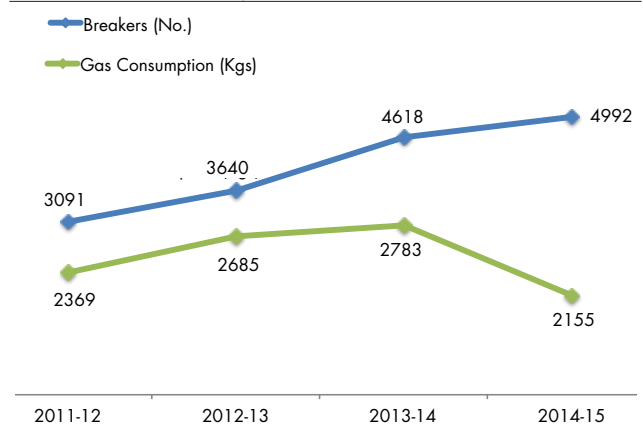
POWERGRID's integrated water management approach is focused on rain water harvesting, improving the efficiency of water use and treatment of waste water to achieve zero discharge target. Rain Water Harvesting System is now an integral part of every new substation design.

Our activities are not water intensive as water is not required for operations and processes and is only used for domestic consumption for offices, colonies and horticulture. Therefore, we do not have any significant impact on water resources since there is no requirement of water for operations and processes at substations.

**Volume of Water Recharged (In cu.m.)**

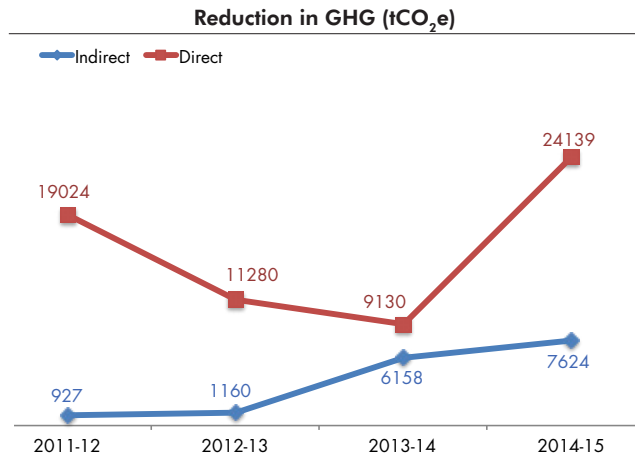
## Emission Control

Power Transmission projects do not involve any activity which directly emits gases like SO<sub>x</sub>, NO<sub>x</sub>, CO<sub>2</sub>, etc. Small quantity of GHG emission may be attributed to DG sets, which are used for backup and emergency power. Installed DG sets are maintained regularly to ensure its compliance with the prescribed emission standards/norms. Leakage of SF<sub>6</sub>, a potent GHG used in Circuit Breakers, is arrested through systematic and regular monitoring. All SF<sub>6</sub> filled equipments are monitored regularly for any drop in SF<sub>6</sub> pressure. Any such drop in SF<sub>6</sub> pressure is

**SF<sub>6</sub> Gas Consumption**



acted upon & those particular equipment are tested for leakage points by a very sensitive SF<sub>6</sub> Leakage Detector. The Leakage points are attended to immediately to arrest any SF<sub>6</sub> discharge into the atmosphere. Considering the potential of SF<sub>6</sub> gas, efforts are on to find its replacement as well as to make the leakage norms stringent. For eg. for GIS, permissible limit of SF<sub>6</sub> leakage has been restricted to 0.5% instead of 1%. Due to our commitment and measures already in place, the gas consumption has reduced by 10% w.r.t. 2011-12 inspite of 61% increase in the number of breakers. Procurement of equipment using ODS like CFC, Halon, has been banned in line with the Montreal protocol signed by India.



# Waste Management

Our waste management program is based on reduce, reuse and recycle principle. There is no major solid or liquid waste generated due to our activities except metal scraps, used batteries and transformer oil. However, we have put systems in place for segregation/disposal of waste material for reuse and recycling.

Disposal of used batteries follow the norms laid down by MoEF under 'Batteries (Management and Handling) Amendment Rules, 2010' that is either through buy-back or registered recyclers. Since used transformer oil has been declared as a hazardous waste, it is disposed off only in 10-15 years and the disposal process followed is as per norms stipulated in the 'Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2008'.



To arrest any oil spill, construction of oil sump/pits are made an integral part of design with connection of individual pits to main collection sump. During the reporting period, no major spills resulting in contamination of ground water were reported and there was no transportation or treatment of hazardous waste under the terms of Basel Convention.

The "Waste Paper Recycling" plant established at our Gurgaon GIS is helping in utilization of used paper and is contributing economically as well, by reducing the direct procurement of office stationery, paper, etc.

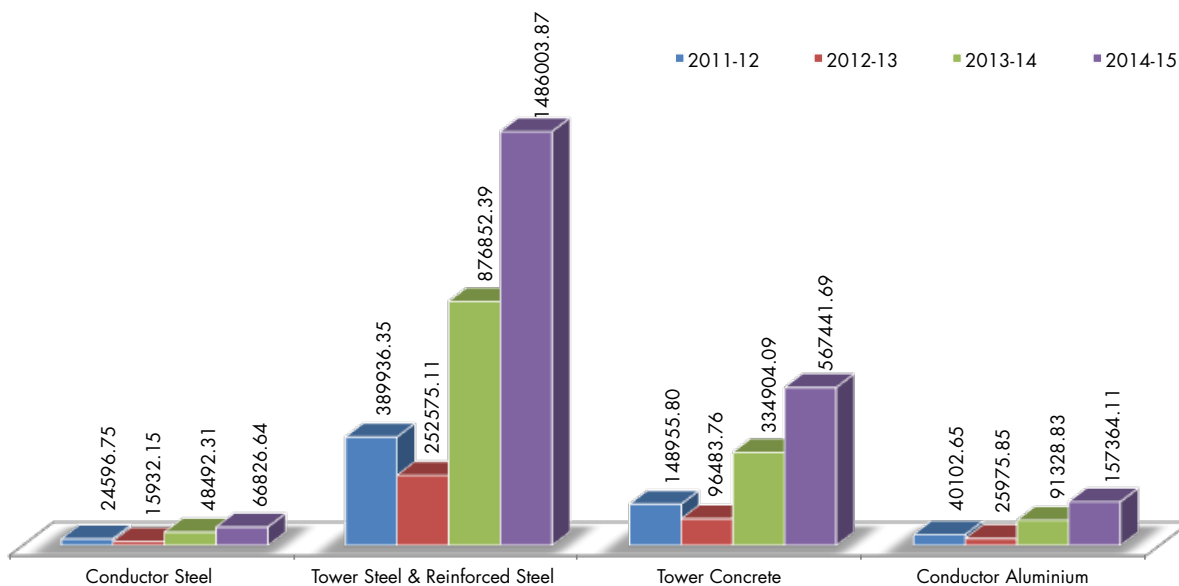


# Material Management

Our commitment to conserve the natural resources combined with enabling measures to optimize its use, is an integral part of corporation's sustainability strategy. Our focus is on reducing the consumption of major raw materials like Steel, Aluminum etc., through efficient designs. Accordingly, the specific consumption of these raw materials have been reduced over the years through technological innovation using high capacity transmission lines i.e. 765 kV,  $\pm 800$  HVDC for transmitting bulk power.

The scrap is recycled again to reproduce finished products which may be reused in our tower parts/equipment.

**Savings in Raw Material Consumption (MT) due to shifting from 400 kV to 765 kV lines**  
 (765 kV D/c: 5000 MW, 400 kV D/c: 1000 MW)

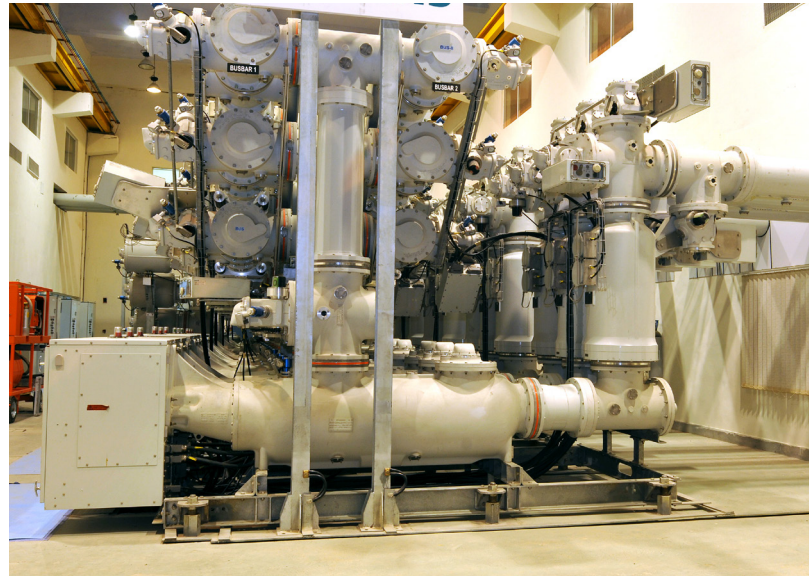




# Improvement in Operational Efficiency

POWERGRID is recognized as an efficient entity whose operational standards are at par with international norms. To achieve desired efficiency level, following measures are in place:

- Remote operations of substations and creation of Maintenance Service Hub facilities.
- State-of-the-art condition monitoring techniques for transmission equipments for detection of defects at their incipient stage. These include Frequency Response Analysis (FRA), Dissolved Gas Analysis (DGA), etc.
- Hotline maintenance, a highly specialized maintenance activity wherein highly skilled manpower carry maintenance activities such as



replacement of insulator, vibration dampers, hardware etc. on live lines and thus avoid outages.

- Aerial Patrolling of lines using Helicopters for the first time in India in selected areas such as deep forests, hilly terrain & snow bound areas where ground patrolling is difficult and very time consuming. Helicopter equipped with Gimbal mounted LIDAR (Light Detection and Ranging), Thermo-vision Camera, High resolution Video and Digital camera has been deployed to identify the defects and taking corrective actions.
- POWERGRID is in the process of mapping pollution intensity of various regions of the country on a geographical map in association with State Power Transmission Utilities.
- Installation of lightning arrestors in transmission lines to minimize trippings due to lightning, particularly in areas prone to lightning like Northern and North Eastern Regions of the country.



## Consolidated Environment Performance Data

### EN-1: Materials used by weight or volume

Raw materials Used/Consumed	Materials Used	
	2013-14	2014-15
Steel (Tower Parts & Reinforcement) (MT)	6,69,120.40	8,47,244.71
Steel (Conductor) (MT)	25,296.40	37,705.27
Aluminium (Conductor) (MT)	1,08,215.00	1,25,309.70
Concrete (MT)	18,91,936.43	20,92,548.80
Transformer Oil (KL)	22,929.98	23,392.54
Insulators (120 KN & 160 KN) (Nos)	31,20,631.00	43,65,925.00

### EN-23: Total weight of waste by type & disposal method

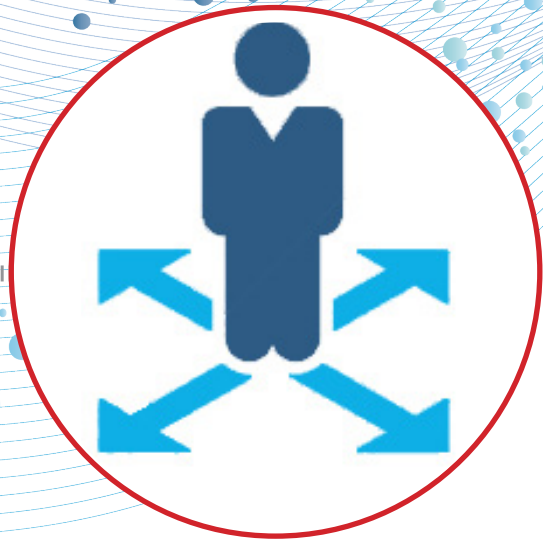
Type of waste	2013-14		2014-15	
	Non Hazardous		Hazardous	
Steel (Scrap) (MT)	994.74	898.45		
Aluminium (Conductor) (MT)	535.76	103.13		
Insulator (Nos)	87,321.00	16,213.00		
Used Batteries (Nos)			1,853.00	457.00

### EN-28: Products sold and their packaging materials that are reclaimed by category

Name of Packaging Material	Quantity Sold/Disposed off (Kg)	
	2013-14	2014-15
Wood such as Wooden Boxes, Cable drums etc	9,94,628.80	5,20,055.00
Oil Drums	70,909.50	44,028.00
Steel	1,81,323.76	3,640.00

### EN-31: Total environmental protection expenditures and investments by type

Description of Protection measures	Cost Incurred (In ₹ Crore)	
	2013-14	2014-15
Plantation activity undertaken at substation	0.69	0.63
Cost of Compensatory afforestation (CA), Net Present Value (NPV), Wildlife Management Plan, supervisory charges, tree cutting cost, Medicinal plantation and any types of expenditure as per forest clearance	351.1	268.54
Installation of Rain water harvesting system	0.08	0.51
Implementation of EMP/certification	5.07	5.42
<b>Total</b>	<b>356.95</b>	<b>275.10</b>

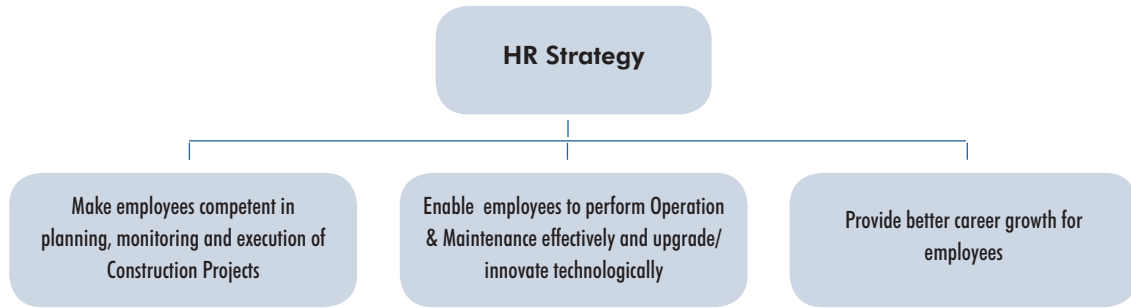


# Harnessing Human Capital

POWERGRID's CMD has been conferred with the "Eminent Electrical Engineer Award" by the Institution of Engineers (India), the largest professional body of Engineers in India

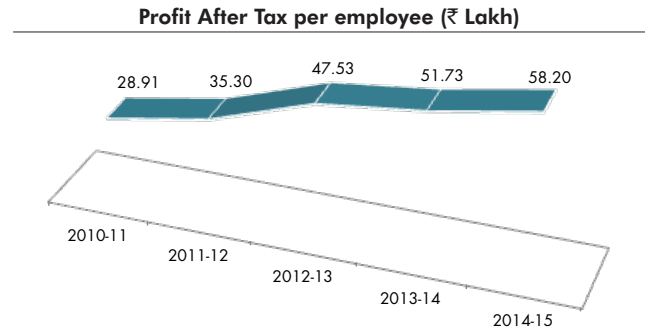
Runners-up trophy of National Championship of Business Management Simulations - 2013 and represented India in the Asian Championship





Human Capital is the most valued asset in POWERGRID, which is strategically nurtured and stimulated for attaining competitive advantage. Within the company, we foster a culture of wellbeing for our employees, who contribute to a better annual growth rate year on year. To promote employee engagement and retention, we also provide employees with rewarding growth opportunities and a variety of training and development programs. These efforts create a vibrant, collaborative and fulfilling workplace.

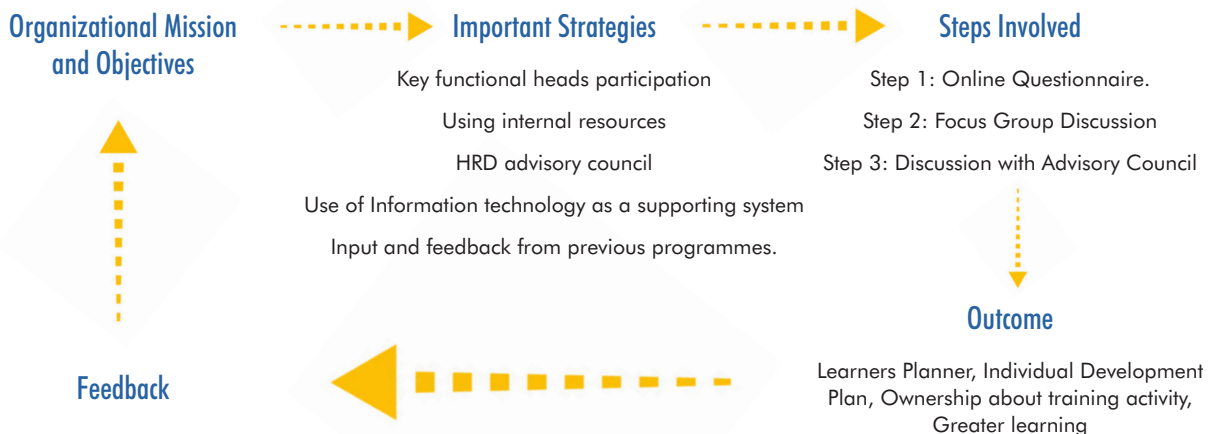
POWERGRID pursues the philosophy that human value is the most vital asset of the organization and accordingly its policies are focused on development of human potential through sustained efforts in providing adequate skill upgradation, career enhancement and job rotation towards ultimate objective of attaining the organization goals. These HR policies and practices have enabled the Corporation to manage its growth and expansion at a remarkable pace. In order to align with the organizational objectives and to keep the employees abreast of latest technological developments, consistent efforts are being made through interventions for sustainable competitive advantage in different spheres of business activities. Evolving a common culture



of performance, efforts to build a well-knit professional team and enhance the competency of employees have remained the areas of focus for POWERGRID.

We recognize the importance of retaining our high-quality and engaged employees, along with the necessity of attracting talented new employees. With this in mind, we have top-tier policies to encourage our workforce and state-of-the-art development programs to help our employees remain updated with new skills and technologies. POWERGRID's strategies guide & enable it to develop its talent pool in a sustainable manner. This strategy has been aligned to the business strategy in order to boost our endeavours in creating & nurturing a world class learning organization.

## Learning and Development at POWERGRID



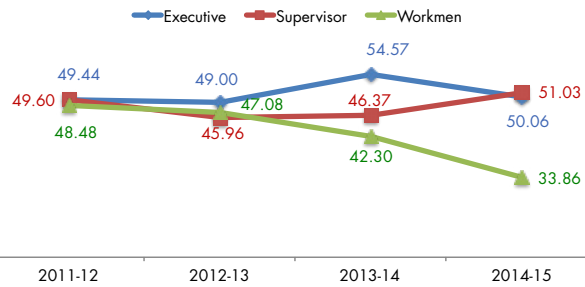


The training expenditure (excluding travelling expenses) increased from ₹ 12.63 Crore in FY 2014 to ₹ 16 Crore in FY 2015

Organizational Need Assessment (ONA) and Training Need Analysis (TNA) are conducted from time to time, based on which the training programs for the next few years are formulated. These assessments help in determining individual competency enhancement requirement, on the basis of which the HRD plan of action is formulated. The gap analysis of such assessments is presented to HRD advisory board that suggests schemes and recommendations for implementation. HRD Action Plan is finalized through multi-disciplinary interaction, as a strategic instrument to encounter performance challenges and evolve programmes for operational excellence and strategic value addition. Employees are trained in the areas based on their training need and Training Plan Matrix. Evaluation of participants is conducted before and after the programmes.

In FY 2014 and FY 2015, the average training man days per employee were 6 and 5.7 respectively. During the reporting period, POWERGRID imparted training on Right of Way & new Land Acquisition Act, Project Management programmes, latest survey techniques & PLS CADD, Networking Skills, Hands on training on Transformer & Reactor etc. For overall skill development in the country particularly in the area of Power

Training Hours Per Employee



Transmission Line Construction, Capacity Building Programmes are being conducted with the help of Transmission Line (TL) construction contractors under Public Private Partnership (PPP) mode.

For enabling senior executives in their career advancement, Transformational Leadership Programme (TLP) and Transformation Management Programmes (TMP) were conducted at reputed institutions. POWERGRID also conducted programmes on Women Empowerment and Empowerment of employees by self-growth (for reserve category employees) and special programme for differently-abled employees.

For bolstering new business area of Energy Auditing, POWERGRID trained additional group of executives for the process of National Certification Examination for Energy Auditors and subsequent accreditation by Bureau of Energy Efficiency (BEE).

As a part of POWERGRID Competency Assessment and Skill Gap Analysis, Corporate HRD along with external consultant has updated the Competency Directory (both functional and behavioural) for various functions keeping in view the existing/ emerging business of POWERGRID.

As part of Training Consultancy, training has been imparted to employees of Haryana Vidyut Prasaran Nigam Ltd. (HVPNL), Bhakra Beas Management Board (BBMB), Powergrid Company of Bangladesh Ltd. (PGCB), Kenya Electricity Transmission Company Limited (KETRACO), Ceylon Electricity Board, Nepal Electricity Authority, Tanzania Electric Supply Co Ltd and US Energy Association, World Bank – CASA countries and Bhutan Power Corporation.

POWERGRID has signed Memorandum of Understanding (MoU) with premier educational Institutions such as IIT (Delhi), IIT (Madras), IIM (Bangalore), IIM (Lucknow),





ISB (Hyderabad), CPRI (Bangalore), IIFT (New Delhi) & MDI (Gurgaon) to leverage each other's capability and resources in areas of pedagogy, training, research and innovation in systems, process etc. In addition to above institutions, during FY 2014, POWERGRID signed MoU with IIT (Roorkee), ASCI (Hyderabad), Fore School of Management (New Delhi), Asia Pacific Institute of Management (New Delhi), Jaipuria Institute of Management (Noida) and ITM University (Gurgaon).

POWERGRID has also established "POWERGRID Academy of Leadership" (PAL) at Manesar, Gurgaon to train its senior level employees and staff.



## Career Development

Appraising employee performance aids the personal development of individual employees and contributes to both skills management and the development of human capital within the organization. In POWERGRID our endeavour is that the Appraisal System is used as an instrument for improving the work culture. The focus is on the developmental and not subjective aspects and the company is utilizing the appraisal system as an instrument for:

- Performance planning, analysis and review
- Generating a healthy problem-solving dialogue between reporting officer and subordinate
- For improving communication and performance counselling
- For improving levels of motivation through goal clarity.
- A new PMS system has been introduced in POWERGRID focusing on the use of Key Result Areas (KRA) to measure performance.

The Performance Management System (PMS) of the Company under "HR Policy" provides the basis for determination of merit, efficiency, potential and suitability of Executives and Managers for positions of

higher responsibility in the appropriate higher grade. Departmental succession planning is also carried out in POWERGRID based on the job-rotation and retirement pattern of executives and non-executives in their respective areas of work. Heads of departments are groomed and trained to assume leadership positions with posting in similar jobs or parallel orientation planning. Performance appraisals are carried out annually. The process involves setting of KRAs in consultation with seniors and followed for its review mid-year and finally at the end of the year.

Career Planning and development of employees is an important component of POWERGRID HR policy. Employees are given ample opportunities to identify key trainings which will help to develop their skill set and build career in their area of interest. At a very initial phase, employees undergo a year-long orientation program comprising of both technical and soft skills trainings on various aspects/ functions of the company. The Middle Management executives are groomed by top management and trained in various management skills to assume senior leadership positions.

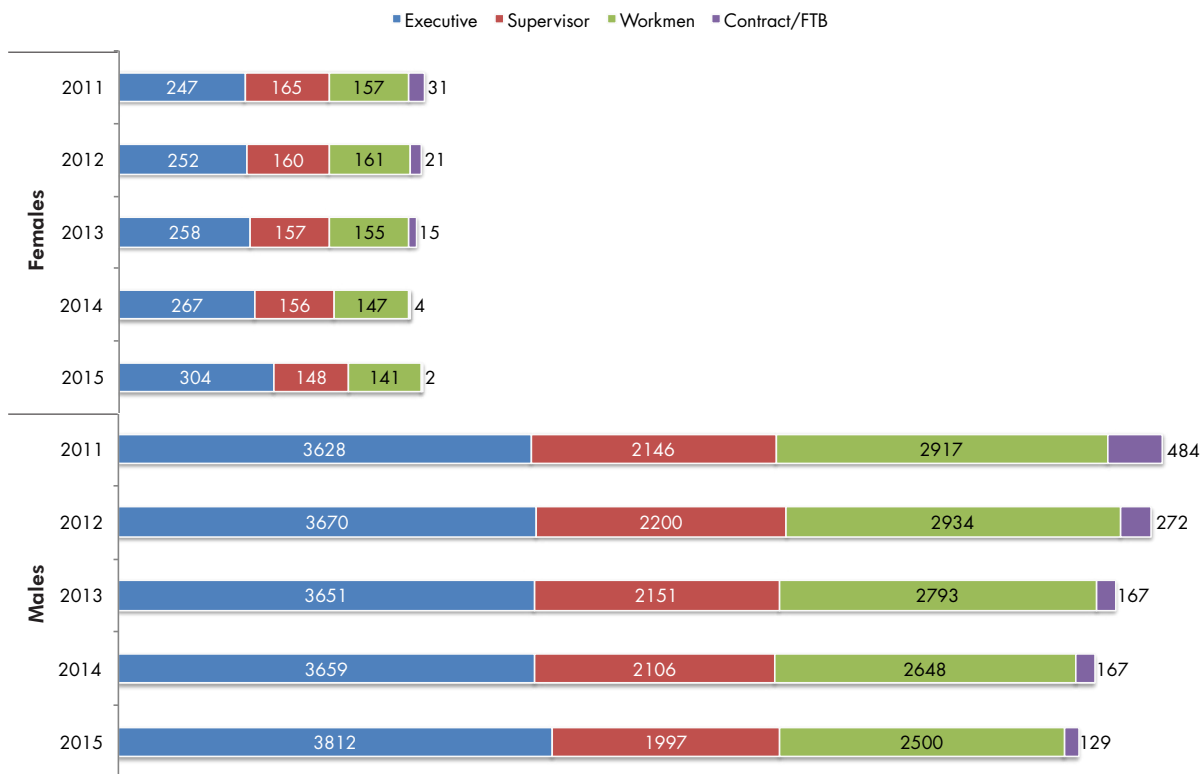
Accelerated Career Growth Scheme for non-executives is already in place and encourages employees to take up skills related to new technology for ensuring faster growth in the organization.



# Diversity & Inclusion

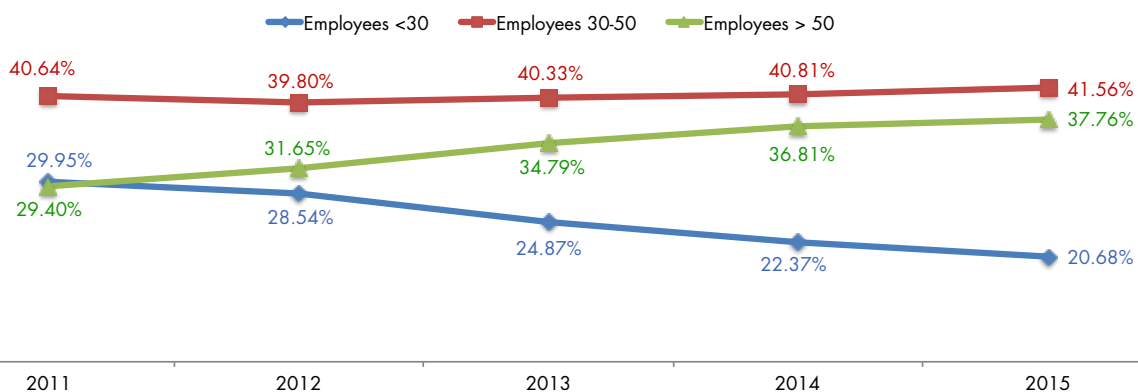
POWERGRID is an equal opportunity employer with strict adherence to pay norms. All our employees are compensated equally based on the level or grade of their employment. Equal remuneration is paid to men and women and salaries are uniform across the country for a given grade. Due to locational constraints, our sector is traditionally dominated by male working force, and therefore we are making efforts to make our workplace more gender balanced. The strength of women in our company has improved from 5.95% in FY 2010 to 6.58% in FY 2015.

Employee Distribution by Gender (Numbers)



The average age of our employees is 42.41 years with Executives forming the major part of age group 30-50 years. The percentage of employees in the age group < 30 years, 30-50 years and > 50 years is 21%, 38% and 41% respectively in the FY 2015.

Employee Distribution by age (Percent)



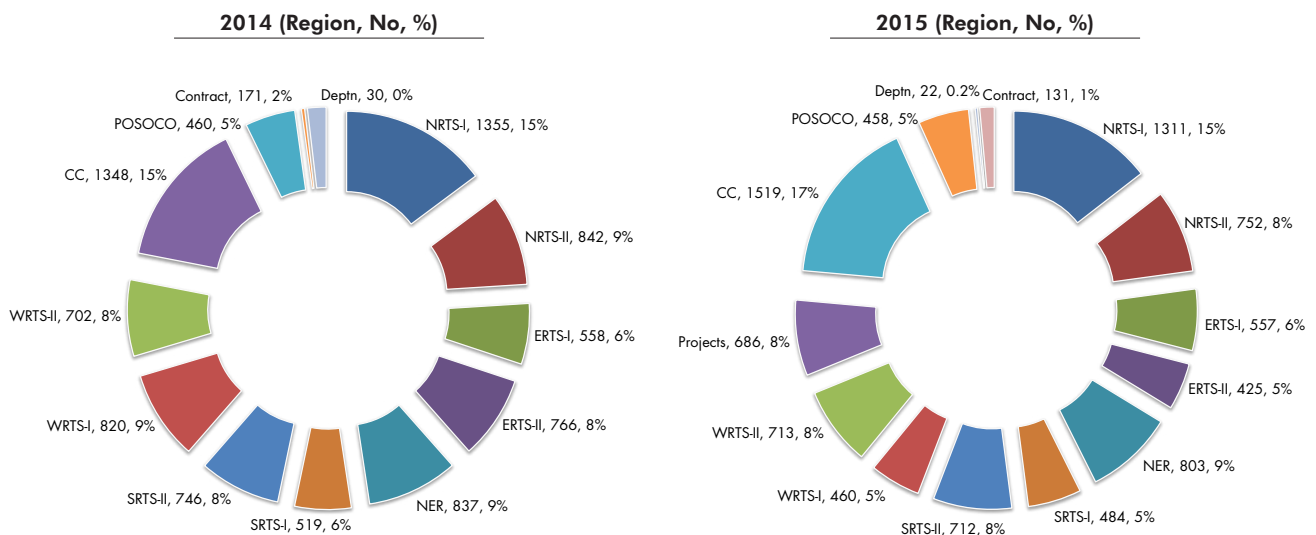


The construction of transmission lines generally takes 2 to 5 years and is spread over many locations. Due to nature of activity and deployment of manpower at different locations, it is very difficult to document the exact number of man-days spent during the reporting period.

For better implementation of our policies and efficient management, POWERGRID is operating through 12 regions/projects:

- **Corporate Centre:** Located at Gurgaon
- **Northern Region Transmission System I:** UP, Rajasthan, Uttarakhand, and Delhi & NCR (NRTS -I RHQ: New Delhi)
- **Northern Region Transmission System II:** Jammu, Punjab, Himachal Pradesh, Haryana, (NRTS-II: Jammu)
- **Eastern Region Transmission System I:** Bihar and Jharkhand (ERTS- I RHQ: Patna)
- **Eastern Region Transmission System II/ Odisha**
- **Project:** West Bengal, Sikkim, Odisha (ERTS- II RHQ: Kolkata, Odisha Proj.: Bhubaneswar)
- **Southern Region Transmission System I:** Andaman & Nicobar island, Andhra Pradesh, Telangana, Parts of Karnataka, parts of Tamil Nadu (SRTS-I RHQ: Hyderabad)
- **Southern Region Transmission System II:** Tamil Nadu, Karnataka, Kerala, and Puducherry (SRTS-II, RHQS: Bangalore)
- **Western Region Transmission System I/ Chhattisgarh Project:** Maharashtra, Goa, parts of Madhya Pradesh, Chhattisgarh (WRTS-I RHQ: Nagpur, Chhattisgarh Proj.: Raipur)
- **Western Region Transmission System II:** Dadar & Nagar Haveli, Gujarat, Parts of Madhya Pradesh (WRTS-II RHQ: Vadodara)
- **North Eastern Region Transmission System:** Assam, Meghalaya, Mizoram, Tripura, Arunachal Pradesh, Nagaland, and Manipur (NERTS RHQ: Shillong)

#### Regionwise Workforce Distribution



POWERGRID undertakes job rotation as an effective means to ensure availability of skilled workforce throughout its locations. However, in states such as J&K, NER etc., involving difficult terrains and states in which local language is dominant, in order to ensure smooth functioning in coordination with locals, employees belonging to the same state are posted at locations. 43% and 42% employees have been posted in the same state in FY 2014 and FY 2015 respectively.

POWERGRID ensures diversity at all levels. The same is also reflected in our composition of the Board. The details for the same can be assessed at the link given in the corporate governance chapter (Page no. 18).

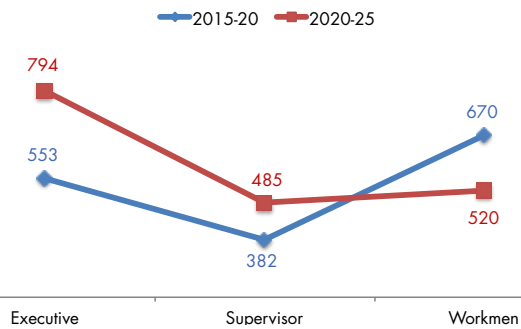


# Recruitment and Attrition

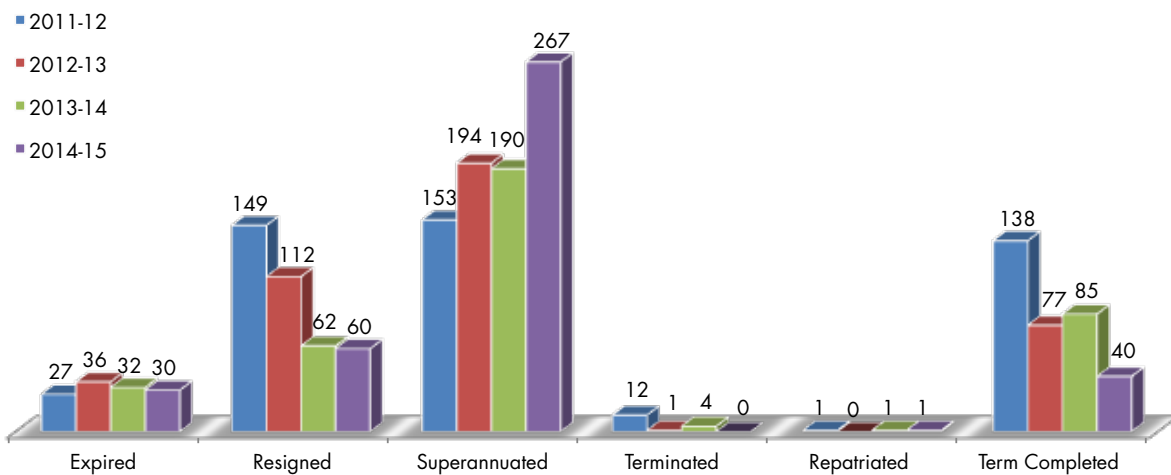
For maintaining quality, efficiency and fairness, all our recruitment process is centralized. However, for specialized projects which necessitate the engagement of local talent, we conduct campus recruitment drive in and around the region of operation. We place people from various locations at one place to maintain diversity and prevent domination. During the FY 2014 & FY 2015, 269 & 321 people were recruited respectively.

Our policies, best practices and growth opportunities make us an attractive employer which is evident in our low attrition rate of 1% for the reporting period. Most of the attrition is attributed to superannuation and contract term ending for our contract employees.

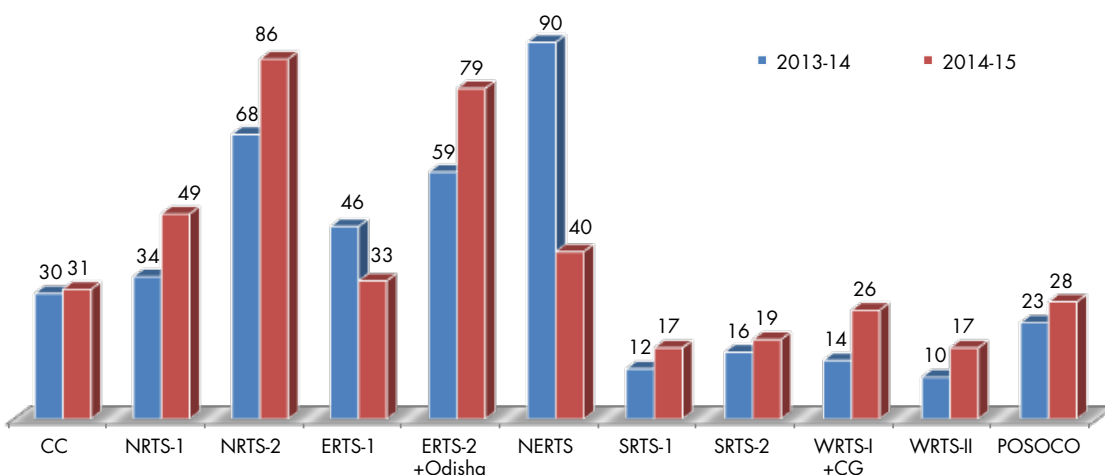
Employee due for Retirement (No.)



Employee Attrition Trend (No.)



Regionwise Attrition (No.)





# Progressive Workforce Policies

A healthy work-life balance is an essential benefit for POWERGRID as well as our employees. Recognizing that employees have responsibilities outside of work, we provide paid time off for their personal commitments.

POWERGRID adheres to applicable National and State Laws regarding contract labour. Payment of wages to labour is ensured through contract provisions and regular monitoring at site level by its representatives. POWERGRID ensures that contract workers are paid wages as per local minimum wages prevalent for skill category.

POWERGRID provides superannuation benefits as per statutory requirements and DPE (Department of Public Enterprises) Guidelines. The following benefits are provided to all employees as per their entitlement:-

**Provident Fund** is contributed by both employer & employee. The provident fund is maintained by POWERGRID Employees Provident Fund Trust. The total assets of the Trust were ₹ 1581.28 Crore and ₹ 1827.62 Crore at the end of FY 2014 and FY 2015 respectively.

**Pension (Defined Contribution):** The pension fund is maintained by the POWERGRID Pension Trust. At the time of superannuation the employee may commute one third of the amount accumulated in the pension fund and the remaining amount is paid in the form of annuity to enable them to draw pension from reputed financial organizations like LIC. As on 31<sup>st</sup> March 2015, total assets of the Trust were ₹ 637.87 Crore.

**Gratuity:** Gratuity is paid upto a maximum of ₹ 10 Lakhs and is paid only in case of completion of minimum

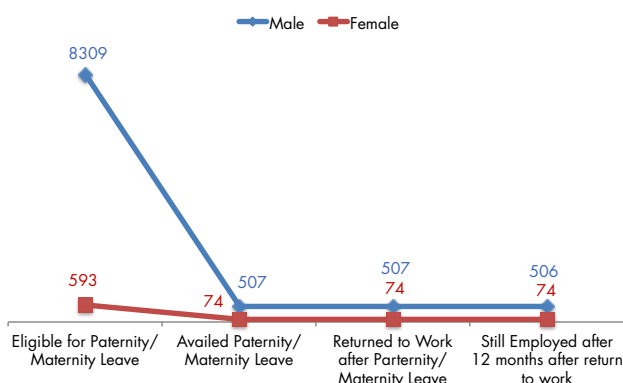
5 years of continuous service; however this condition does not apply in case of death of employee. The POWERGRID Employees Gratuity Fund Trust maintains the gratuity account. As on 31<sup>st</sup> March 2015, total assets of the Trust were of ₹ 495.34 Crore. During the reporting period ₹ 51.46 Crore was paid to employees as gratuity.

**Post-Retirement Medical Benefit (PRMB)** under which retired employees and their spouse are provided medical facilities on making a one-time contribution. The total liability of the company on 31<sup>st</sup> March 2015 was ₹ 256.8 Crore.

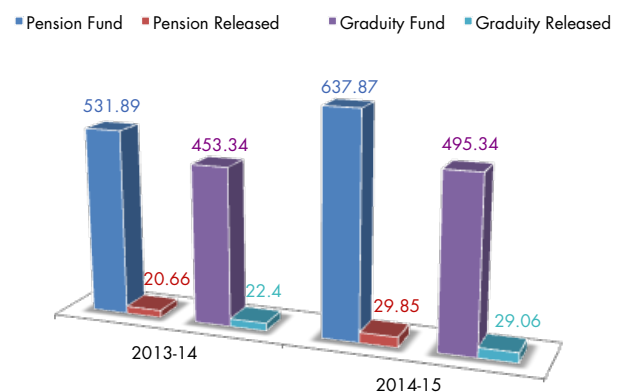
Apart from above, POWERGRID provides many other benefits such as Other Defined Retirement Benefits (ODRB), Medical coverage (Self, Spouse, dependent children and dependent parents), Group Personal Accident Insurance Scheme, Death Relief Scheme, House Building Advance (HBA) & Conveyance Advance etc. (low rate of interest). In case of death of employee, spouse and the minor children of the deceased employee are provided with medical facility. Children can avail medical facilities till the deemed date of retirement of deceased employee or till they reach 25 years of age, whichever is earlier. However, spouse can avail medical facility lifelong.

Full time employees are provided all above facilities. However, Contract/ FTB employees are not eligible for Pension (Defined Contribution), Gratuity, Post-Retirement Medical Benefit (PRMB), Other Defined Retirements Benefits, HBA & Conveyance Advance and Medical Facility to spouse & dependent children in case of death of employee.

Maternity/Paternity leave - 2014-15 (No.)



Benefits (₹ Crore)





In case of eventuality resulting in death or disability, an additional ex-gratia payment is provided to employees posted in hardship areas

We take special care of the employees who are posted at tough locations as we understand the hardships that they face due to the location. Such benefits include: facilities of additional leave/leave permission, retention of company quarters/leased accommodation/HRA anywhere in India for keeping family members, special leave passage for visiting family members, transfer benefits by allowing 1/3 of baggage allowance besides all other transfer facility and choice in next posting. In case of eventuality resulting in death or disability, an additional ex-gratia payment equal to 100 times (Category-2) or 50 times (Category-1) of maximum pay scale and DA is provided to employees posted in hardship areas like Northeast, Uri etc. Other monetary benefits such as North-East allowance which is 12.5% of basic pay and special allowance which is 10% of basic pay are also provided to employees. Extra weightage in promotion is given to employees posted in hardship locations. Free lodging and air travel are provided between certain sectors while on tour. Woolen uniforms are also provided to employees working in chilly weather conditions.

## Human Rights

Human Rights issues are incorporated under related policies & practices of POWERGRID which extend to the employees including those deputed in Subsidiaries/ Joint Ventures and relative aspects pertaining to Vendors/ Suppliers/Contractors through contract condition. The Conduct and Discipline Appeal rules ("CDA Rules") define the desirable and non-desirable acts and conduct for the employees (including those deputed in Subsidiaries/ Joint Ventures). There is a laid procedure for actions in case of non-compliance with the defined terms as well as any inappropriate or unwelcome sexually-determined behavior. To promote fair and equitable employment relationship, a scheme for Grievance Redressal of employees is also in place which ensures a time bound mechanism for the redressal of grievances. As per the requirement of The Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressal) Act, 2013 and Rules made thereunder, the Company has constituted Internal Complaints Committees (ICC). POWERGRID promotes awareness of the importance of respecting Human Rights within its value chain and discourage instances of abuse. Besides conducting technical and behavioral trainings, the training on Human Rights issues to sensitize people towards women, the differently-abled and the socially weaker sections of the society have also been imparted.

POWERGRID also got certified to Social Accountability standard SA 8000:2008 for its human resource and labor management policies and practices. Vendors / Suppliers / Contractors are required to comply with the provisions of the labour laws/ Human rights etc







through stipulations in the conditions of contract. As per the Contract agreement, contractors are prohibited from subjecting their workers to forced or compulsory labour. All contractors are required to comply with various compensation and regulatory acts. All suppliers to POWERGRID have to conform to General Conditions of Contract and SA 8000 clauses. POWERGRID takes declaration regarding Social Accountability from the bidders/contractors for compliance of all requirements of Social Accountability Standards i.e. SA 8000, this declaration forms part of the contract documents. Provision of penalties for non-adherence of the same are also included in the contract conditions.

## Grievance Redressal Mechanism

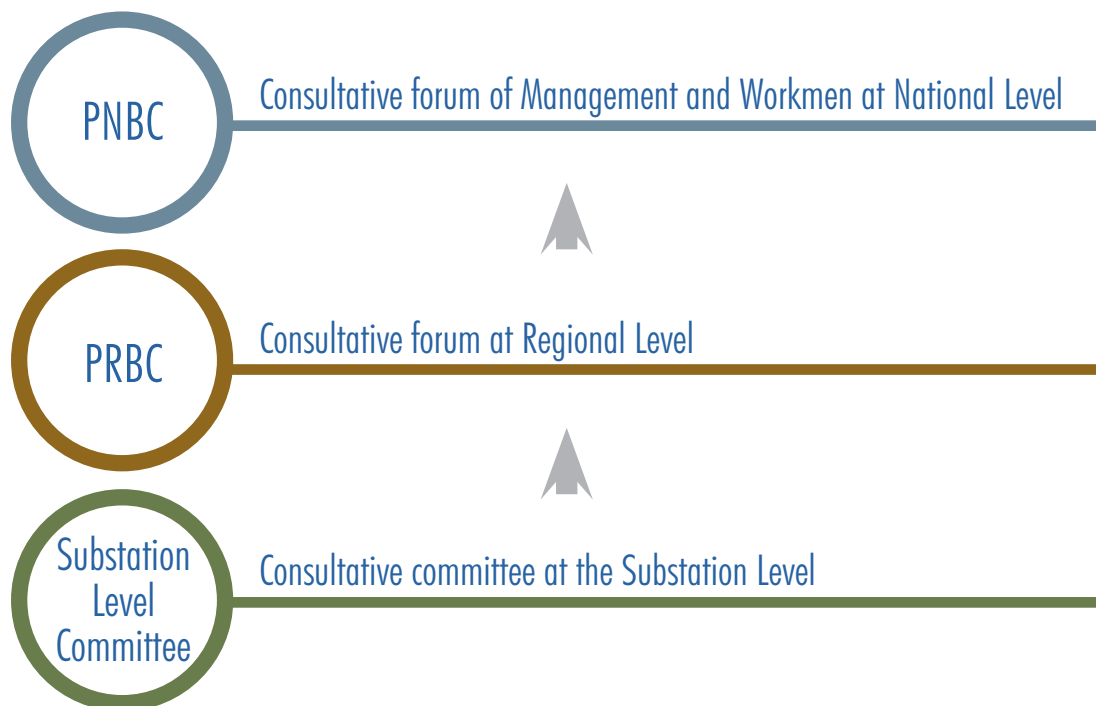
POWERGRID has a very effective Grievance Redressal System that addresses all grievance issues in a fair, transparent and time bound manner. It has led to increase in employee satisfaction and lower attrition rate. Complaints raised by the workmen are resolved through the POWERGRID National and Regional Bipartite Committee (PNBC/PRBC).

An Internal Complaints Committee (ICC) under Sexual Harassment of Women in Workplace (Prevention,

Prohibition, Redressal) Act, 2013 exists in the company in order to handle complaints related to harassment of women. During the reporting period, one case was brought to the ICC, which was resolved.

A Reservation Cell has been constituted at the corporate, as well as regional level to comply with Gov directives on reservation matters for SC/ST/OBC/Ex-servicemen/ Persons with Disabilities (PWD). This cell is under control of nominated liaison officer. The Liaison Officers are available on a pre-fixed day and time for interaction once in a week. Wide publicity regarding availability of the liaison officer is ensured amongst SC/ST employees. Regular meeting with SC/ST/OBC Employee's Association are conducted. 'Awareness Programme' are organized to acquaint the SC/ST/ OBC/PWD employees about the relaxations and concessions available to them under Government directives. During the reporting period, one grievance was brought to the reservation cell, which was successfully resolved.

Moreover, no grievances have been received related to Human Rights, labour practices during the reporting period. However, from community/ society, 54 and 136 grievances were filed in 2013-14 and 2014-15, of which 53 and 134 have been resolved respectively.





# Employee Engagement

POWERGRID undertakes requisite changes in various policies from time to time in line with the needs and welfare of employees. It has empanelled various hospitals nearby to its establishments including Corporate Centre for the healthcare of employees and their dependents. The issues related to workmen are successfully addressed through the PNBC/PRBC, a joint consultative forum comprising management and workmen representatives.

An effective work culture has been established in the Company through empowerment, transparency, decentralization and practice of participative management. Healthy community living is spread through periodically conducted cultural programmes for celebrating various occasions like Diwali get-together, Holi Milan, New Year, Raising Day, etc., in all establishments of the Company. Quality food is served to the employees in the ISO 22000:2005 conferred Cafeteria. POWERGRID also conducts various sport competitions for boosting the interest of employees in sports and games at intra and inter-regional level for Kabaddi, Cricket, Volleyball, and Badminton etc. We also participate regularly in Inter-PSU Sports meet and our players stood meritorious in Table Tennis, Cricket,

Carrom, Badminton & Kabaddi tournaments and bagged a number of awards. On the occasion of Silver Jubilee Celebrations a Mini-Marathon was organized at Corporate Centre, Gurgaon in which employees including CMD & Directors participated with their family.

Employee grievances are settled through an effective Grievance Redressal System.

POWERGRID instituted an 'Internal Complaints Committee' (ICC) in 2014 to address sexual harrasment issues, reflecting the Company's commitment to provide safe and caring environment to its female employees



ECONOMIC PERFORMANCE



ENVIRONMENTAL STEWARDSHIP



HARNESSING HUMAN CAPITAL



SOCIAL ENRICHMENT

## Freedom of Association and Collective Bargaining

POWERGRID activities have been classified as Public Utility Service under the Industrial Disputes Act 1948. POWERGRID management has facilitated workmen to exercise the right of freedom of association and collective bargaining through the functioning of the POWERGRID National Bipartite Committee (PNBC) since the inception of the company. PNBC is an apex level joint consultative forum comprising of management and workmen representatives. Unions represented in the PNBC are selected through an Election Process – Secret Ballot. PNBC provides a platform for addressing issues related to the workmen category at the national level. Regional / local level issues are addressed in the POWERGRID Regional Bipartite Committee (PRBC) and Sub-station level Joint Committees. Some of the landmark achievements of this forum have been the signing of three long term wage agreements. All the workmen are covered under collective bargaining agreements. The workmen represent 31% in 2013-14 & 29% in 2014-15 of the total strength in POWERGRID. The forum has also been instrumental in communicating company’s vision, business plans, core values and important business developments upto the grass root level. During the financial year 2013-14 & 2014-15 the IR scenario in the corporation has been cordial and no man-days have been lost due to strike.



### Promoting Right to Exercise Freedom of Association and Collective Bargaining



Behavioral / soft skills training programs for workmen



Training of Union Leaders



Regular PNBC, PRBC & S/s Level Joint Meetings





# Safety of our Employees



In line with our mission statement, we have carefully defined our Safety Policy that dedicates our safety performance and strives towards zero accidents. POWERGRID is certified with OHSAS 18001:2007, ensuring a healthy work environment for employees by strict adherence to norms on Occupational health & safety at workplace. Designated safety officers at the grass root level ensure the absolute implementation of the safety policy.

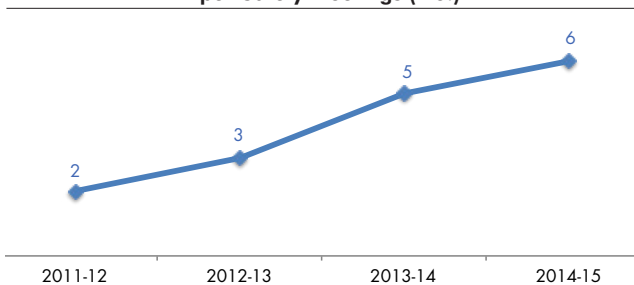
POWERGRID APEX SAFETY BOARD, with CMD as Chairman and the functional Directors as members, has been established at the Corporate level to periodically review the safety performance. Accidents are looked into by the Apex Safety Board and corrective actions are taken to prevent recurrence of such incidents. Review Meetings / Safety Meets are also held at Corporate / Regional level wherein the Regional / Project In-charges / Executives of

POWERGRID as well as the Construction Agencies are invited to discuss the Safety related issues. At the substation level, the station in-charges hold monthly meetings with the worker representatives wherein the safety issues are also discussed. In addition PRBC at Regional level and PNBC at Corporate level conduct periodic meetings with the representatives of workers where safety issues, if any, are discussed.

A detailed procedure for Reporting of accidents, Investigation and Analysis has been established. Standing Committees have been established at Regional level to enquire into the accidents. A member from Corporate Office associates with the enquiry process in case of fatal accidents. All incidents / accidents are reported by the construction agencies to POWERGRID, which are put up to the senior management.

A Safety Cell under Corporate Asset Management Department is established to coordinate all safety promotion & accident prevention related activities of transmission lines and substations under construction as well as under operation, and to provide technical support to sites for ensuring proper implementation of the Safety Policy & Procedures of the Company and applicable safety requirements during various activities.

**Apex Safety Meetings (No.)**





Site surveillance inspections are carried out by the POWERGRID Regional Safety Officers in all the construction sites in their region to identify the hazardous conditions / activities and the concerned construction agencies are notified for rectification of the same.

All contractors are required to comply and adhere to POWERGRID Safety Rules & applicable laws and are bound by contract terms and conditions. The Project Manager monitors the health and safety conditions provided by the contractors to the workmen. Contracts provide penalties to be imposed on the Vendors/ suppliers / contractors in the event of breach of the said provisions.

Contractor gang leader/supervisor/senior most member available at site briefs each worker daily before start of work about safety requirement and warn about imminent dangers and precautions to be taken against them (Daily safety drill). Trainings are conducted on many aspects of health & safety such as safety in construction of line & substation, safety

management in transmission system, safety practices in O&M of substation, rural electrification works, stress and health management, fire safety, first aid, etc. Moreover POWERGRID also undertakes awareness programs for labour on serious diseases such as HIV, Cancer etc. 100% of our employees and contractor workers working on our site undergo job related safety training. During the reporting period, there were 77 fatalities and a total of 10908 mandays were lost. The fatalities are substantially low from 96 fatalities during the previous reporting period.

No. of fatalities reduced by 20% over the previous reporting period

	No. of fatal accidents	No. of non-fatal accidents	Total persons affected	
			No. of Fatalities	No. of injuries
2013-15	56	17	77	52

Some major initiatives for ensuring health and safety of workers are:

- Workmen Compensation policy: Contractor is required to take workmen compensation policy in accordance with the statutory requirement applicable in India.
- Safety Pact: POWERGRID and the bidders/contractors enter into an agreement called SAFETY Pact which forms part of bid. It covers compliance to all statutory norms on health and safety by POWERGRID and contractors. It also covers mandatory training programs, Safety films, etc.
- Monitoring of health and safety compliance: Health Checkup of contract workers at construction sites are done through their respective employers to ascertain their healthiness to work at the respective construction sites / activities. Safety Audits are conducted at Construction Sites as well as O&M Sites by Corporate / Regional level Audit Committees and the findings are notified for compliance of the short comings / non-conformities.





# Social Enrichment

Public Service Excellence Award 2014 by New Delhi Institute of Management for exemplary leadership qualities and contribution to the society through CSR

During the FY 2014 and FY 2015, POWERGRID spent ₹ 21.66 Crore and ₹ 47.42 Crore respectively on various CSR activities.

POWERGRID takes the impacts that its activities have on the Society and Environment seriously, and has therefore been proactive in aligning Environmental and Social Policy & Procedures (ESPP) across its operations.

## Land Acquisition

Acquisition of land for development projects can cause social, economic and environmental distress among the affected population, on account of depletion of productive assets, habitat, community assets, etc. Such impact however, are not associated with land acquisition / purchase related to transmission projects. Land requirement for substations is small and locationally flexible. Most substations can be located on government waste/barren land. In the absence of such land, structure-free private land is acquired.

Even for a small piece of substation land, POWERGRID follows the practice of land management to minimize the land requirement to the barest minimum and hence negates any significant social impact.

As per the prevailing law, land below transmission lines need not be acquired. In order to reduce the land area further, we have adopted new technologies like Gas Insulated Switchyard (GIS) which require less land area (almost ¼) in comparison to the traditional Air Insulated Switchyard (AIS). Recently, POWERGRID has taken a policy decision to have GIS substations in city areas and to install multi-circuit towers in and around 1 km radius of all new substations. This will significantly reduce any public distress caused due to land acquisition /ROW restrictions in crowded urban centers.

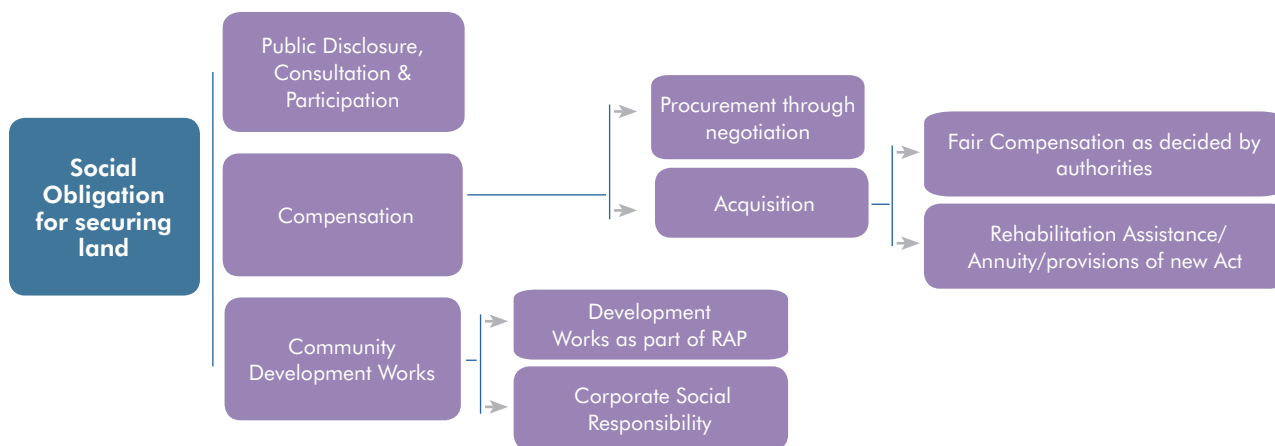
POWERGRID developed a “**Social Entitlement Framework**” in its Environmental and Social Policy &

Procedures (ESPP) to address R&R issues. This is based on the national policy and other progressive directives emanating from the government or the multilateral funding agencies. It provides “people directly/indirectly affected by our projects, means to improve or at least restore their former living standards, earning capacity and production levels” through a process in which they participate through their own social and cultural institutions.

In addition to land compensation, we provide Rehabilitation Assistance (RA), in cash as well as Income Generating Scheme (IGS), to promote alternate mode of livelihood. Social Assessment is carried out by an independent agency to assess the need of affected population.

Besides focused intervention for Project Affected Persons, ‘Community Development Works’ for overall upliftment of the affected area are also undertaken. Social Assessment plans are disclosed on POWERGRID’s website and in local panchayat offices for wider circulation. An expenditure of ₹ 15.59 Crore was incurred on Rehabilitation Assistance (RA) for project affected persons, during the reporting period.

New land acquisition act viz. “**The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013**” was introduced w.e.f. 1<sup>st</sup> January, 2014. However, POWERGRID has not invoked provisions of this new act for securing land for its substation, rather land is secured directly on “**Willing Buyer Willing Seller**” basis at a negotiated rate and subsequently transferred to POWERGRID through registered deed.





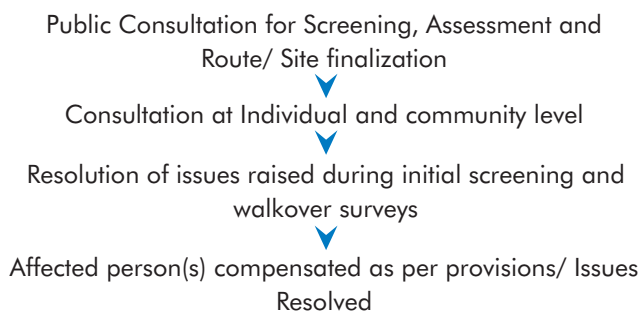
# Public Participation & Consultation



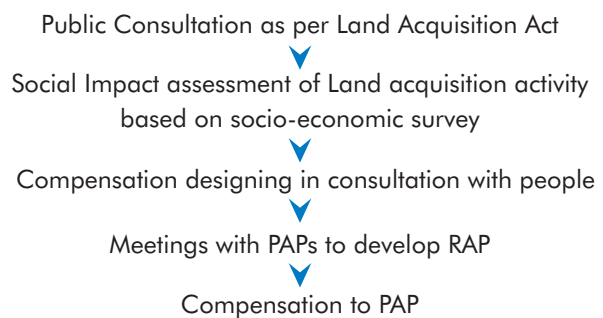
Public participation and community consultations are integral part of the project’s social and environmental assessment process. Consultation is used as a tool to inform the people about each and every stage of the project. POWERGRID initiates all its activities with active involvement of its key stakeholders. Public disclosure and participation forms the important step in our project planning and implementation. Our corporate policy is aligned to minimize communication gap between the company and its stakeholders, thereby ensuring long-term symbiotic relationship.

The consultation processes are carried out during construction of transmission lines and substations. In cases of land acquisition through buyer seller agreements, disclosures and consultations begin much before the negotiation meeting.

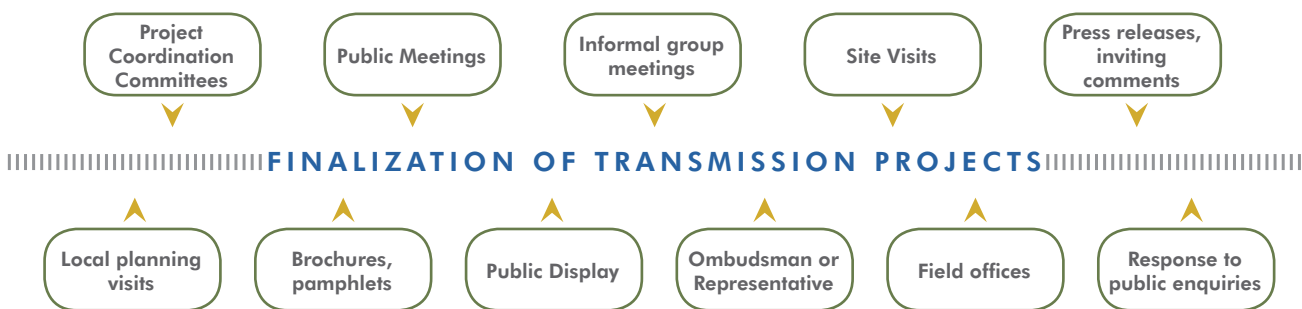
## Transmission line Construction



## Substation Construction



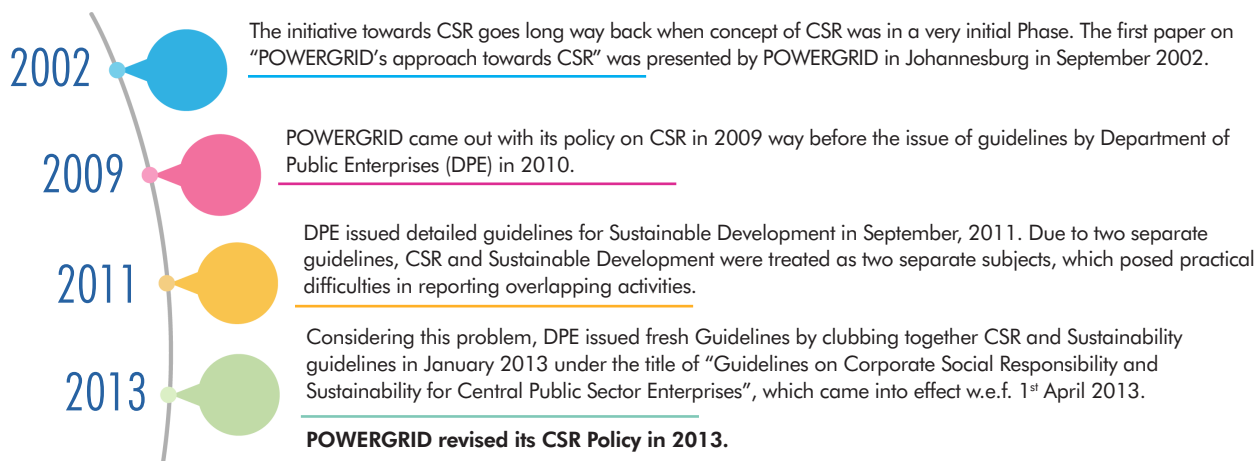
## Modes & techniques of Public Consultation







# Corporate Social Responsibility



## CSR Mission

To align CSR and Sustainability policy with the business policy so as to conduct business in a sustainable manner adhering to the principles of Avoidance, Minimization and Mitigation in dealing with environmental and social issues and to undertake high impact community development projects of national and local importance in consultation with stakeholders

POWERGRID supports the principles of inclusive growth and equitable development through Corporate Social Responsibility (CSR) initiatives as well as through its core business.

Our commitment towards Social Responsibility is reflected in our Integrated Management Policy, Environmental and Social Policy & Procedures (ESPP), Corporate Objectives, OSHAS-18001 and Social Accountability SA 8000.

Corporate Social Responsibility (CSR) is our commitment to conduct business in an economically, socially and environmentally sustainable manner. It primarily focuses on inclusive social-economic growth for development of marginalized and under-privileged sections of the society primarily residing around its areas of operation. With this approach, POWERGRID carries out various CSR activities with thrust on Rural Development/Infrastructural

Development, Livelihood Generation, Health, Education, Tree plantation, Relief/Restoration during National Calamities, etc.

## Community Development

As part of R&R activities, we undertake several community development initiatives in and around the areas of our operations. This results in developing mutual trust with the communities enabling smooth implementation of our project. In the year FY 2014 & FY 2015, we spent ₹ 3.65 Crore & ₹ 5.14 Crore respectively on Community Development Works such as construction of roads, drinking facility and school furniture etc. These community development works are associated with the project and are separate from works undertaken by POWERGRID under CSR.



## CSR Governance

In line with the requirements of the Companies Act, 2013 and Department of Public Enterprises Guidelines on Corporate Social Responsibility and Sustainability for Central Public Sector Enterprises, POWERGRID constituted a CSR committee. As on 31.03.15, the CSR committee comprised of 4 Independent Directors and 4 Functional Directors. The CSR function is driven at the corporate level by the Board level CSR Committee that overlooks the CSR function of the company. Corporate CSR department services the Board through the CSR Committee in all matters related to CSR. A Nodal Officer of the rank of Executive Director, heading the CSR Deptt. of POWERGRID, is responsible for coordinating the overall CSR activities in POWERGRID.

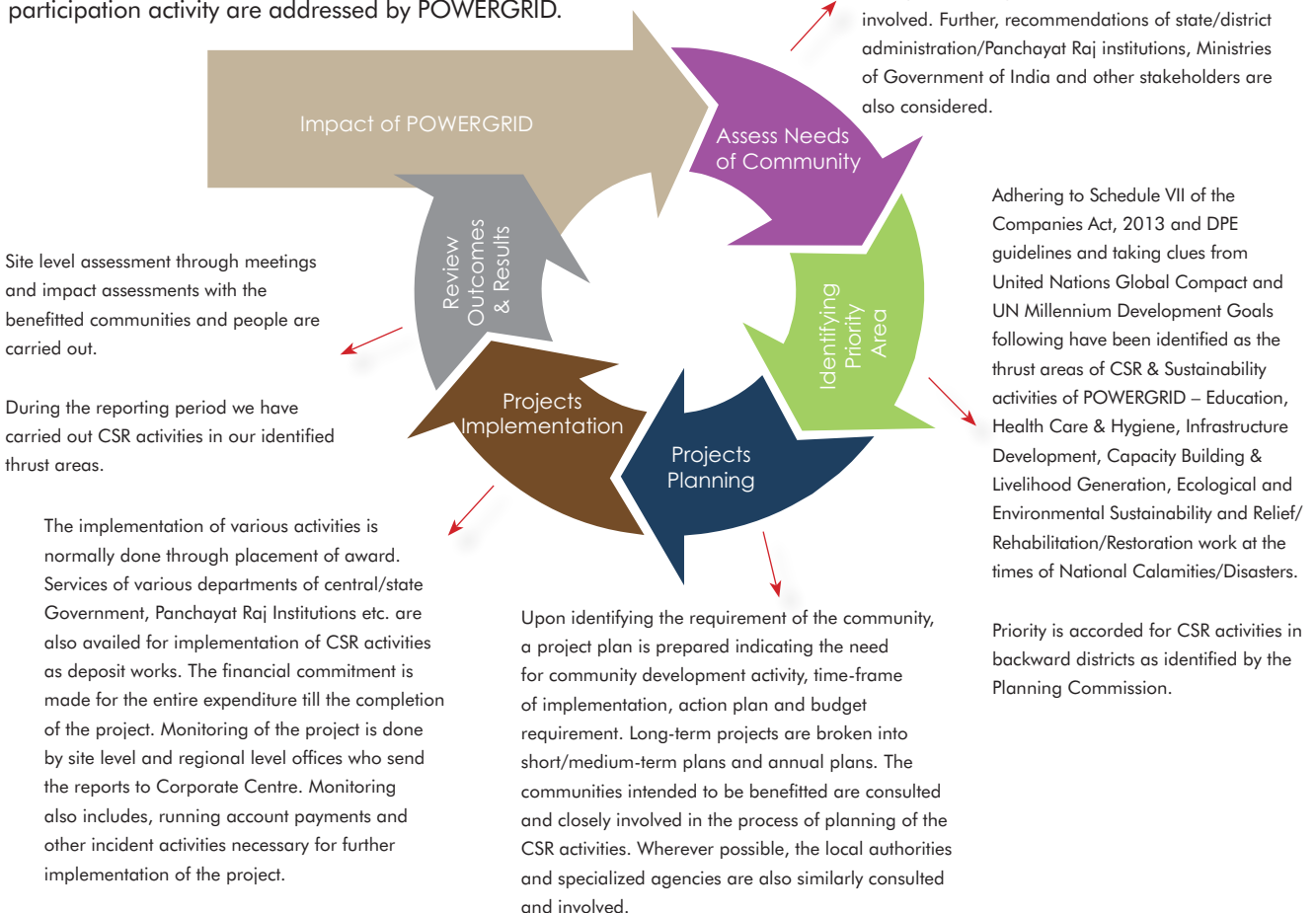
## Process of implementation of the CSR project

The CSR activities are mostly implemented as projects. The implementation of various activities is normally done through placement of award by the Corporation as per Works & Procurement Policy of the Corporation. Services of various departments of Central/State Government, Panchayat Raj Institutions etc., are also availed for implementation of CSR activities as deposit works.

## Understanding the Impact of Organization on the Community

While continually improving its management systems and introducing state-of-the-art technologies, **POWERGRID strictly follows the basic principles of Avoidance, Minimization and Mitigation in dealing with Environmental and Social issues.** Feedback & inputs received by society/communities during the public disclosure, consultation & participation activity are addressed by POWERGRID.

In-house experts or external agencies assess the needs through survey/study. The affected communities are consulted and closely involved in the process of identifying, planning and implementation of the CSR activities, programs or projects. Wherever possible, the local authorities and specialized agencies are consulted and involved. Further, recommendations of state/district administration/Panchayat Raj institutions, Ministries of Government of India and other stakeholders are also considered.





ECONOMIC PERFORMANCE



ENVIRONMENTAL STEWARDSHIP



HARNESSING HUMAN CAPITAL



SOCIAL ENRICHMENT

## THRUST AREAS



## Education

POWERGRID emphasizes on creating conducive environment for imparting effective education in several backward and remote regions of the country spanning Andhra Pradesh in South, J&K in North and Odisha in East. Through its concerted efforts in education, POWERGRID has contributed significantly to the Millennium Development Goal of achieving universal primary education. Selecting remote locations for the above mentioned projects is a challenge in achieving the goal of universal primary education.

Education is an important lever for social, economic and political transformation and helps in building an equitable and just society. India has legislated The Right of Children to Free and Compulsory Education Act or Right to Education Act (RTE) under Article 21a of the Indian Constitution, which describes the modalities and importance of free and compulsory education for children between 6 and 14.

Considering the challenges of achieving universal primary education, POWERGRID has aligned its CSR policy to supplement the activities of Government of India, state and local governments in the area of education. POWERGRID aims at significantly improving

the quality of education and ensuring that educational opportunities are available to all segments of the society.

Focus has been on taking up comprehensive educational initiatives in project mode rather than providing financial support. POWERGRID has been emphasizing on developing the ecosystem for effective education particularly in remote and backward villages of the country. POWERGRID has taken up 360 degree developmental activities pertaining to schools which cater to the health, hygiene, nutrition, infrastructure, sports, culture, technology, medical, teaching equipment and personnel.

POWERGRID's adopts a methodical and comprehensive approach towards implementing its educational initiatives. Need assessment is carried out in consultation with stakeholders. The needs of the concerned government schools are prioritized for determining the areas of intervention.

Under the Swachh Bharat Abhiyaan of the Government of India, we constructed about 9437 toilets in 4244 schools located in 23 districts of seven states.





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Sponsored 15 under-privileged students of Kashmir, for free residential coaching at "Super 30" at Srinagar through M/s CSRL.

Organized "RINGI-CHINGI Patashala" for rural and backward class school students in Raipur, Chhattisgarh

Scholarship to 850 orphan students of Assam & Manipur, through National Foundation for Communal Harmony (NFCH) (Ministry of Home Affairs)

Supply of furniture for Government schools at Neemrana of Rajasthan, Patna of Bihar, Vishakapatnam and Macharla of Andhra Pradesh

## Health & Sanitation



Over the years governments have been laying increased emphasis on health care and as a result there has been increase in the total investment in the health sector aimed at developing infrastructure and manpower. Parallel to the efforts of the Government, corporate contribution in the healthcare sector has also been growing over the years.

Health is a focus area for POWERGRID. The company aims to make health care more accessible and affordable for all. We supplement government's efforts

in strengthening the healthcare delivery systems through capital investments in medical infrastructure, medical camps and awareness programmes.

POWERGRID strengthens primary health care, which includes preventive and curative treatment ensuring that these services are accessible and affordable to the community. POWERGRID prioritizes provision of clean drinking water and sanitation as these have been identified as principal factors in control of diseases.



ECONOMIC PERFORMANCE



ENVIRONMENTAL STEWARDSHIP



HARNESSING HUMAN CAPITAL



SOCIAL ENRICHMENT

Supply of aids and appliances to around 2500 disabled persons at 9 locations through ALIMCO

Supply of 4 ambulances to Government hospitals

Starting of Construction of 10 Storied, 325 bedded Dharmshala at AIIMS, New Delhi, for providing shelter to patients and their attendants

Preventive Health Checkup camps at 30 locations in Chhattisgarh, Maharashtra, Uttar Pradesh & Haryana

Supply of medical equipment to Government hospitals at Birpara, Jalpaiguri District and Alipurduar of West Bengal

## Rural Development

People in rural areas should have an equally good quality of life as is enjoyed by people living in sub-urban and urban areas. Poverty, unemployment, poor & inadequate infrastructure in clusters in urban areas have a cascading effect leading to rise in slums and consequential social and economic stress manifesting in economic deprivation and urban poverty.

Lack of opportunities and infrastructural constraints results in migration of population towards the urban areas, which in turn creates stress in the social, economic and infrastructure conditions of the urban areas.

Hence rural economic growth, social justice, improvement in the living standard of the rural people, has become essential. Inequality can be reduced by providing adequate services and basic infrastructure. Thrust in rural areas is thus considered very important in providing impetus to Government initiatives.

POWERGRID accords due weightage to developing infrastructure in rural areas and undertook initiatives such as building roads, anganwadi building, community centres, classrooms, tube wells, bore wells, renovation of ponds, toilets, roads, submersible pumps, culverts, water facilities, sewage drains, etc.





Improving Rural Livelihoods through Farmer-centric Integrated Watershed Management in Kudgi (Karnataka) and Kurnool (Andhra Pradesh), of about 5000 ha. each, for a period of 5 years w.e.f. 2013-14

Construction of community centres in the villages of districts of Mau of UP, Patna of Bihar, Giridih of Jharkhand, Prakasam of Andhra Pradesh, Salem of Tamil Nadu, Yelahanka and Madikeri of Karnataka, Narsinghpur of Madhya Pradesh

Installation of hand pumps in villages of districts of Garwah and Dhanbad of Jharkhand, Sitapur, Bilsarayan and Kanpur of UP and Banka of Bihar

Construction and renovation of 18 existing Shamshanghat/cremation sites in Guna region of Madhya Pradesh

Drainage system at Rajpura Gram Panchayat, Yamuna Nagar district, Haryana

## Livelihood & Skill Development

Skills & Knowledge are the driving forces of economic growth and social development of society. Countries with skilled population adjust more effectively to the challenges of globalization. The shortage of skilled labour across many industries is a significant and complex challenge to India's growth. The demand for skilled individuals in both the private as well as the public sector in India is growing exponentially in this era of economic growth and investment.

The National Policy on Skill Development formulated by the Government of India has set a target of skilling

500 million people by 2022. The objective of this policy is to empower all individuals through improved skills, knowledge, nationally and internationally recognized qualifications to gain access to decent employment and ensure India's competitiveness in the global market. "Skill India", a project of national importance provides thrust on this critical aspect of the national importance.

POWERGRID through its CSR initiative, extends its commitment to the objective of Skill Development by creating an empowered workforce with the necessary skills & knowledge to gain access to decent employment. It aims at increasing the productivity and employability of workforce (wage and self employed) both in the organized and the unorganized sectors. It seeks increased participation of youth, women, disabled and other disadvantaged sections and to synergize efforts of various sectors and reform the present system with the enhanced capability to adapt to changing technologies and labour market demands.

To address the unemployment problem amongst the rural youth as well as to create a pool of skilled manpower, capacity building programmes in the areas of transmission line stringing & tower erection were





conducted at various locations of the country. Till March'15, POWERGRID has trained more than 1500 persons under its "Transmission Line Tower Erection and Stringing" programme.

Moreover, vocational trainings were conducted for women & unemployed youth in the field of tailoring, stitching, embroidery, automobile repairing & servicing, handloom weaving, food & fruit processing, and repairing of household electrical equipments & domestic wiring, etc.

## Environment Sustainability

Currently, environmental sustainability is a topical issue that received plenty of attention from the media and from different governments. The long-term implications of this serious issue are not yet fully understood. However, it is generally agreed that the risk is high enough to merit an immediate response. Being the biggest contributors to environmental degradation, businesses are expected to invest and lead in the area of environmental sustainability.

POWERGRID's intent is to make a positive difference to the society which has resulted in framing of an Environmental and Social Policy & Procedures (ESPP) in 1998. The document outlines POWERGRID's approach and commitment to deal with environmental and social issues related to its activities and lays down procedures and protocols for identification, assessment, and management of environmental and social concerns at both organizational and project levels.

POWERGRID strictly follows the basic principles of Avoidance, Minimization and Mitigation in dealing with Environmental and Social issues. Restoration and enhancement is undertaken, wherever it is necessary. In addition, the Company undertakes activities such as restoration of water bodies, installation of solar street lights and tree plantations.



**Solar street lights have been installed in 308 locations**

**Installation of 14 solar hand pumps for providing drinking water facility to far off hostels/ashrams in district Joshpur, Chhattisgarh**

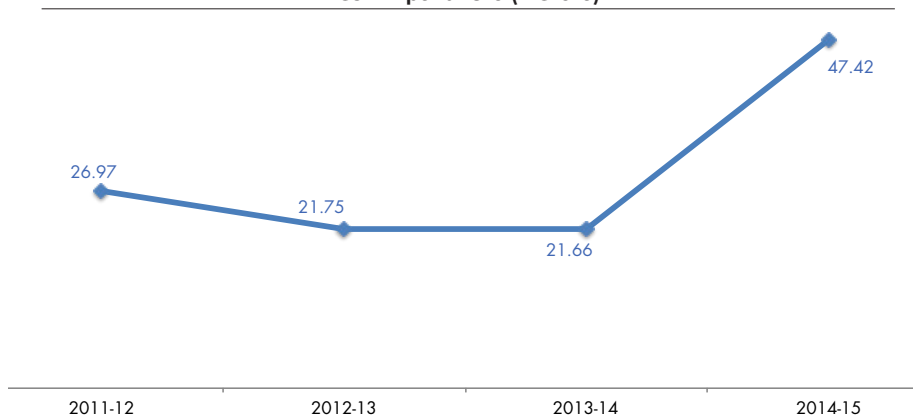
**Ponds has been renovated in Angul District of Odisha and Raigarh District of Chhattisgarh**



# Knowing our impact



CSR Expenditure (₹ Crore)



Measuring the impact of our projects is one of the critical steps in implementation of CSR. While it enables us to perform better and improve upon our limitations, it also provides a platform to engage with our stakeholders.

During 2013-14, construction of 765 kV S/c Angul-Jharsuguda Line encountered hindrances from various villages of Angul Dist. for issues not directly attributable to POWERGRID. During various meetings, amongst different demands raised by the agitating villagers

from time and again, they requested POWERGRID to undertake various community development activities in their villages.

The needs of the villages highlighted by the villagers were confirmed by POWERGRID officials. The villages were located about 200-1000 mts. from POWERGRID's transmission lines and substation. Most of the villagers were economically poor and infrastructure such as road, street light, drainage, drinking water, sanitation and





ECONOMIC PERFORMANCE



ENVIRONMENTAL STEWARDSHIP



HARNESSING HUMAN CAPITAL



SOCIAL ENRICHMENT



decent place for meeting and get together were not available in these villages.

Responding to the needs of the villages, 39 CSR projects valued at ₹ 3.06 Crore were sanctioned in 32 villages. Projects such as construction of community centre, construction of Rahasbari, construction of roads, drains and culverts, construction of classroom in Panchayat school, renovation/digging of pond, drinking water system in Government Schools, etc.

The projects were spread out over a large area and were executed in collaboration with village committees, through the DRDA (District Rural Development Agency), Odisha. Due to their involvement, the villagers developed a sense of ownership of the projects which resulted in substantial changes in the scope of work. For example, additional rooms were added, cement floors were replaced with tiles and in one case with marble. Top quality wood work and iron railings/doors were installed.

The fund required for the additional scope of work,

39 CSR projects valued at ₹ 3.06 Crore were sanctioned in phases for execution in 32 villages

beyond the sanctioned amount of POWERGRID, was mobilized by the village panchayat. Involvement of local villagers enhanced their economic well-being. Realizing their ownership on the project, the villagers were themselves involved in the project execution, which resulted in improved quality of construction and completion of the works within a reasonable timeframe.

As a result, the villagers started taking interest in the activities of POWERGRID and have become partners and facilitators in the Nation Building process.

## Independent Assurance Statement

### Introduction

Intertek India Private Limited ('Intertek') has carried out an independent assurance on, 4<sup>th</sup> Sustainability Report 2013-15 ('the Report') of Power Grid Corporation of India Limited, a Government of India Enterprise (POWERGRID, "the Company"). The Report is prepared by the Company based on the principles of AccountAbility Principles Standard AA1000APS (2008), AccountAbility Stakeholder Engagement Standard AA1000SES (2011) and the Global Reporting Initiative Sustainability Reporting Guidelines Version 4 (GRI G4) "In accordance-Core" including Electric Utilities Sector Supplement (EUSS).

The intended user of this assurance statement is the management of the Company who is responsible for all information provided in the Report as well as the processes for collecting, analyzing and reporting the information presented in the Report. Our responsibility in performing this task was limited to the verification of the Report, in accordance with the agreed scope of work. This assurance engagement is based on the assumption that the data and information provided to us is authentic and complete. Our assurance task was planned and carried out during Jan 2018.

### Scope, Boundary and Limitations of Assurance

The scope of the assurance includes the verification of the content of the Report, prepared based on GRI G4 "In accordance-Core" and EUSS. In particular the assurance covers following:

- Verification of the application of the Report content, principles set out in GRI G4 and quality of information presented in the Report covering reporting period from 1<sup>st</sup> April, 2013 to 31<sup>st</sup> March, 2015;
- Review of the disclosures with respect to policies, initiatives, practices and performance described in the Report;
- Review of the Report against the requirements of Type 1, Moderate level assurance based on AccountAbility's AA1000 Assurance Standard 2008 AA1000AS (2008);
- Verification of the reliability of GRI G4 & EUSS performance indicators and specific information related to the requirements for "In Accordance-Core".

The reporting boundary is as set out in the Report, covering sustainability performance of POWERGRID. During the assurance process, we did not come across limitations to the scope of the agreed assurance engagement. No external stakeholders were interviewed as part of this assurance engagement.

### Verification Methodology

The assurance task was planned and carried out in accordance with the AA1000AS (2008) i.e. Type 1, Moderate and based on assessment criteria of principles of Inclusivity, Materiality and Responsiveness as per AA1000 APS (2008) as well as Reliability of specified sustainability performance information as per of GRI G4 "In Accordance-Core" and EUSS.

Risk based approach was adopted and verification efforts were concentrated on the identified issues of high material relevance to Company's business and its stakeholders.

We did following to form our conclusions:

- Visited POWERGRID's Complex at Village Gwalior, P.O – Pachgaon, Taoru road, Tehsil-Manesar, Gurgaon, Haryana, India.
- Reviewed approach to stakeholder engagement and its materiality determination process;
- Verified the sustainability-related statements and claims made in the Report and assessed the robustness of the data management system, information flow and controls;
- Examined and reviewed documents, data and other information made available;
- Conducted interviews with key representatives including data owners and decision-makers from different functions;
- Performed sample-based reviews of the mechanisms for implementing the company's sustainability related policies, as described in the Report;
- Performed sample-based checks of the processes for generating, gathering and managing the quantitative data and qualitative information included in the Report.



## Conclusions

Based on the assurance task, the Report provides a fair representation of the Company's sustainability related disclosures. The Report includes statements and claims that reflect Company's achievements and challenges supported by documentary evidences and internal records. It is confirmed that the Report, along with the referenced information meets the requirement of Type-1, Moderate Assurance according to the AA1000AS (2008) and GRI G4 "In accordance – Core" & EUSS.

**Inclusivity:** The Company engages in direct and indirect dialogue with key stakeholders to identify emerging issues through different channels. The material issues emerging from the stakeholder consultation were collected and prioritized, and the results are fairly reflected in the Report.

**Materiality:** The Company has reported its material issues of significance. The identified material issues are adequately covered in the Report.

**Responsiveness:** We consider that the Company's response to key stakeholder concerns, through its policies and management systems including governance are fairly reflected in the Report.

## Specific evaluation of the information on Sustainability Performances

We consider the methodology and processes for gathering information developed by the Company for its sustainability performance reporting to be appropriate and the qualitative and quantitative data included in the Report was found to be identifiable and traceable; the personnel responsible were able to demonstrate the origin and interpretation of the data and its reliability. We observed that the Report presents a faithful description of the Company's sustainability activities.

## Positive Observations

- New technology on GIS has reduced significantly the land requirement and has improved the safety as well.
- NTAMC center has optimization of operation and maintenance. It has also resulted in reduction of time for fault analysis and quick action.
- Strong thrust from one and all, within the Organization, on Sustainable Development

## Opportunities for Further Improvement

- Processes for improving contractor safety to reduce incidents can be further strengthened.
- Alignment/ Integration of Business Responsibility Reporting and Sustainability Reporting.

## Intertek's Competence and Independence

Intertek is a global provider of assurance services with a presence in more than 100 countries employing more than 45000 people. The Intertek assurance team included Certified Sustainability Assurance Professionals, who were not involved in the preparation of any statements or data included in the Report except for this Assurance statement. Intertek maintains complete impartiality towards any people interviewed.

For Intertek India Private Limited,



Gayathri R.  
Lead Verifier  
New Delhi, Jan 11, 2018



Sandeep Vig  
Director  
(Business Assurance and Food Services)

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# List of Abbreviations

ADB	Asian Development Bank	MT	Metric Ton
APS	AccountAbility Principles Standard	MVA	Mega Volt Ampere
BPL	Below Poverty Line	MW	Megawatt
BU	Billion Units	NABARD	National Bank for Agriculture and Rural Development
CDA	Conduct Discipline and Appeal	NKN	National Knowledge Network
CEA	Central Electricity Authority	NLD	National Long Distance
CFC	Chloro Fluoro Carbon	NLDC	National Load Dispatch Centre
Ckm	Circuit kilometre	NRLDC	Northern Regional Load Despatch Centre
CPRI	Central Power Research Institute	O&M	Operation & Maintenance
CPSE	Central Public Sector Enterprises	ODRB	Other Defined Retirement Benefits
CRZ	Coastal Regulation Zone	OEM	Original Equipment Manufacturer
CSR	Corporate Social Responsibility	OHSAS	Occupational Health and Safety Assessment Series
CTE	Chief Technical Examiner	PAP	Project Affected Persons
CTU	Central Transmission Utility	PAS	Publicly Available Specification
D/c	Double Circuit	PMU	Phasor Measurement Unit
DA	Dearness Allowance	PNBC	POWERGRID National Bipartite Committee
DG	Diesel Generator	POSOCO	Power System Operation Corporation Limited
DPE	Department of Public Enterprises	PPE	Personal Protective Equipment
EAMP	Environment Assessment Management Plan	PRBC	POWERGRID Regional Bipartite Committee
EHV	Extra High Voltage	PRM	Project Review Meeting
EHVAC	Extra High Voltage Alternating Current	PRMB	Post-Retirement Medical Benefit
ERS	Emergency Restoration System	PSU	Public Sector Undertaking
FACTS	Flexible Alternating Current Transmission System	RA	Rehabilitation Assistance
GHG	Green House Gases	RAP	Rehabilitation Action Plan
GIS	Gas Insulated Switchyard	RGGVY	Rajiv Gandhi Grameen Vidhyutikaran Yojana
GJ	Giga Joule	RoW	Right of Way
Gol	Government of India	RTI	Right to Information
GRI	Global Reporting Initiative	S/c	Single Circuit
HR	Human Resource	S/s	Substation
HRD	Human Resource Development	SA	Social Accountability
HVDC	High Voltage Direct Current	SAMP	Social Assessment Management Plan
IFC	International Finance Corporation	SAARC	South Asian Association for Regional Cooperation
IP	Internet Protocol	SCADA	Supervisory Control & Data Acquisition
IPP	Independent Power Producers	SEB	State Electricity Board
ISO	International Organization for Standardization	SES	Stakeholder Engagement Standard
ISP	Internet Service Provider	SF <sub>6</sub>	Sulphur Hexafluoride
ISTS	Inter-state Transmission System	SHG	Self Help Group
kV	kilo Volt	T/L	Transmission Line
kWh	kilo Watt-hour	TBCB	Tariff Based Competitive Bidding
LED	Light Emitting Diode	UHVAC	Ultra High Voltage Alternating Current
LIDAR	Light Detection and Ranging	WB	The World Bank
MoU	Memorandum of Understanding		
MPR	Monthly Progress Report		





पावरग्रिड

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