



पावरग्रिड
POWERGRID

**ONE NATION
ONE GRID
ONE FREQUENCY**

SUSTAINABILITY REPORT 2017-19

VISION

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

ABOUT THE REPORT

This 6th Sustainability Report is for the period 2017-19. The previous report was for the period 2015-17, disclosed in June 2018. Our reporting cycle is biennial. The report has been prepared in accordance with GRI Standards (Core).

REPORTING PARAMETERS

This report presents our approach towards Social, Environmental and Economic responsibilities and the progress made in the reporting period 2017-19 beginning 1st April 2017 and ending 31st March 2019. It is recommended that this report may be read in conjunction with POWERGRID's Annual Reports.

The Joint Venture companies have been excluded from the reporting boundary. 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 GRI Standards (Core) . The information/ data has been gathered from reliable sources like inventories, log books, other records, etc. International Standards like AccountAbility, UK Standard 'AA1000 AP(2018)' and 'AA1000 SES (2015)' 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.



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FROM THE DESK OF CMD



It gives me great pleasure to present POWERGRID Sustainability Report for period of 2017-19, focusing on the Environment, Social and Economic performance of the company. The present biennial Sustainability Report 2017-19 is our 6th report. While presenting our latest biennial report we are witnessing a time of extraordinary turbulence because of the spread of the COVID-19 pandemic since early 2020. It has affected countless people around the world and many have lost their lives. At POWERGRID, we are focused on protecting not only our staff but all associated including the labour force and communities where we operate.

The introduction of UN Sustainable Development Goals (SDGs) and the landmark Paris Agreement were instrumental in framing our future sustainability strategy. I am of the firm belief that to achieve such challenging milestones, collaboration is essential between the business and the society to address the limiting factors in achieving such targets. These restraining factors need to be converted to opportunities through timely and

efficient management measures. In line with the SDGs, we have already aligned our business activities with 11 SDGs with emphasis on energy, health, economic growth etc. Our dialogues with various stakeholders form a major part of our business strategy and growth focusing on People, Safety, Environment and Community.

It is very pleasing to note that we have made significant progress in improving the safety of our operations. This is largely due to more effective standards and requirements. It is also the result of a stronger safety culture, guided by our Zero fatality ambition to achieve no harm and no leaks. But sadly we have not been able to eliminate all fatal incidents. However, we are building on our current approach to safety with a more consistent focus on the way people, culture, equipment, work systems and processes all interact.

During present reporting period, demands for urgent action on climate change grew even louder. Every section of the society, starting from consumers, to



businesses, to governments, recognized the need to accelerate global efforts to reduce greenhouse gas emissions. POWERGRID shares this sense of urgency and is committed to play its part in the global transition by facilitating more and more clean energy. This is evident from our efforts in contributing to Government of India's (GoI's) target of 175 GW installed capacity of renewable energy by 2022, in accordance with our NDC of 40% non-fossil-based power capacity by implementing Green Energy Corridors (GEC) - Inter-State Transmission System (ISTS) for carrying renewable power over the National Grid. Similarly, to achieve GoI E-Mobility mission towards lowering vehicular pollution and to ensure energy sustainability, we have started using e-vehicles for our day to day official transportation and are also facilitating operation of Electric Vehicle (EV) Charging Stations across India. Another major innovative & pioneering initiative is to purposefully utilize induction power in earth wire for powering of telecom antennas. This will eliminate the use of DG sets, a constant source of pollution and GHGs emission.

The steps towards Sustainable Development kick off from a responsible and profitable business. During the reporting period, our business profits grew by more than 35% over the previous reporting period. Such revenue generation has been ensured by our high transmission system availability of more than 99.5% and state-of-the-art maintenance practices. We have undertaken many technological interventions for optimization of Right of Way which still remains the most critical aspect of our business.

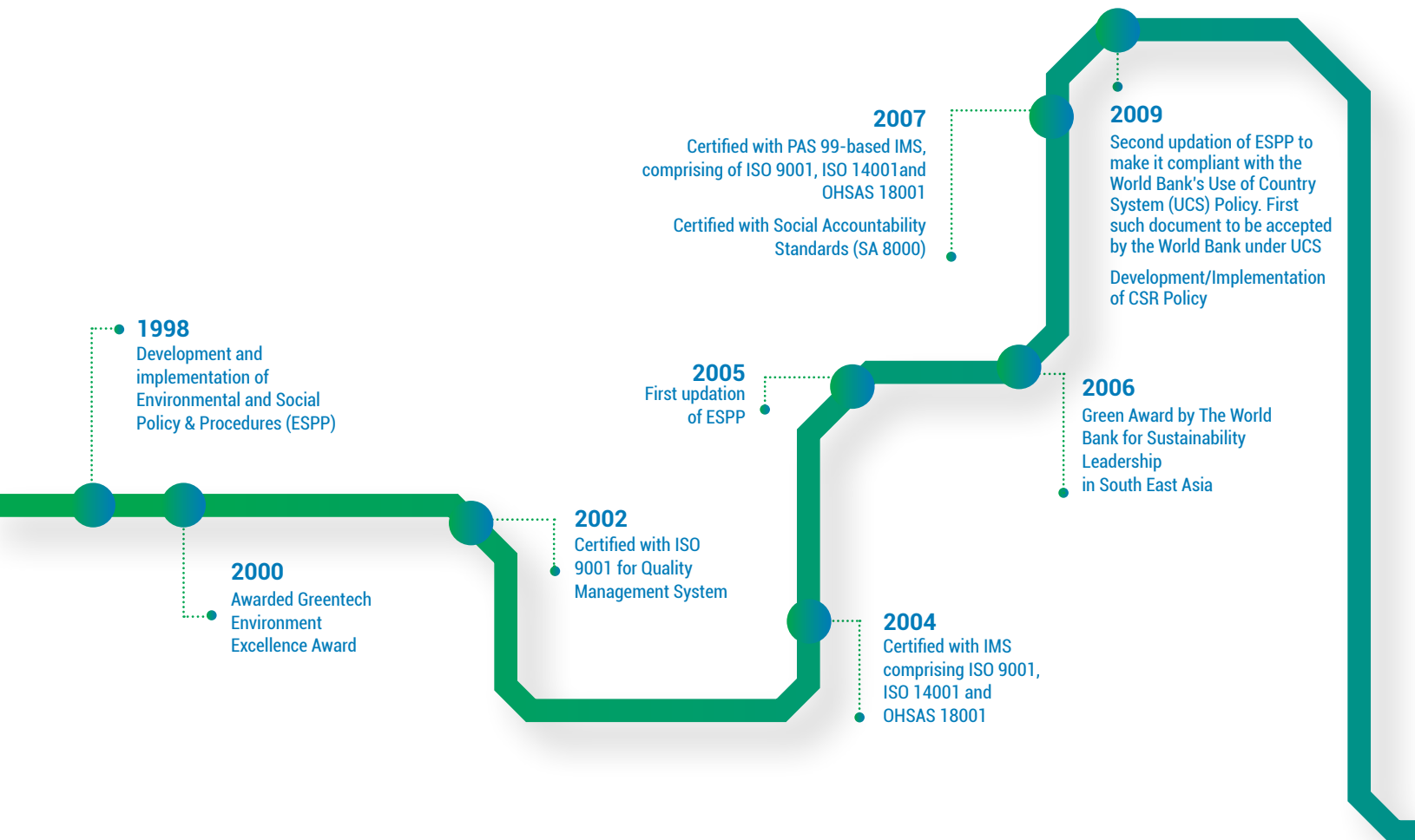
Another very important and critical area of sustainability for us is to make positive contribution

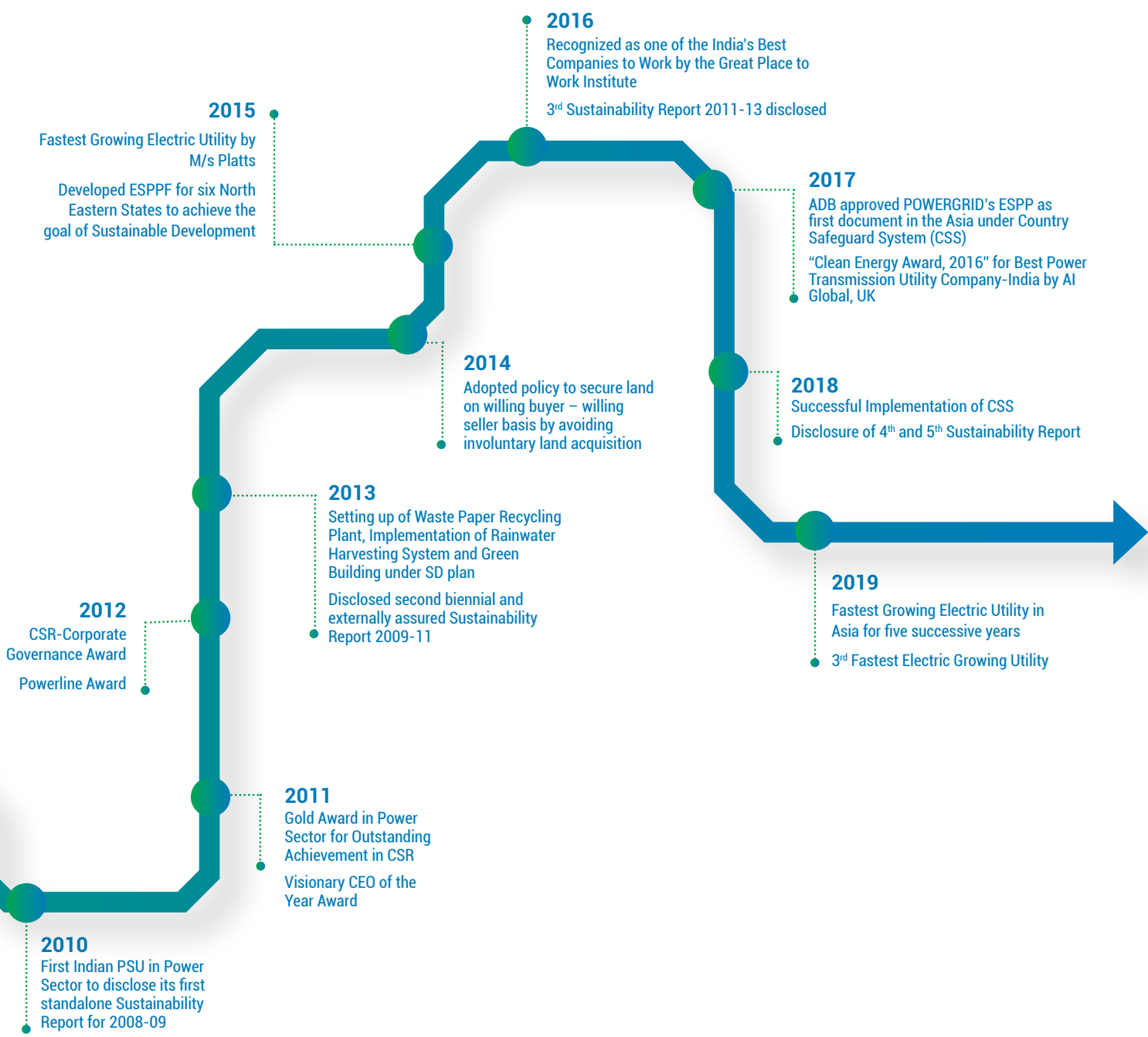
to society. Meeting society's expectations involves playing a positive role in communities where we operate and in wider society. We do this by creating jobs, developing talent and using local suppliers. We also invest in education programmes to equip young aspiring engineers and scientists with the tools and skills needed to become future innovators. During the reporting period we have invested more than ₹ 350 Crore towards our CSR initiatives focusing on health, sanitation, rural development, education, skill development etc.

I would like to sincerely thank my fellow Directors on the Company's Board, the management team, and all our employees for playing an active part in our ongoing sustainability journey. We also appreciate the inputs from leading sustainability experts of the Independent Review Committee that played an important role in our reporting process. I thank all our customers, partners and shareholders who have supported us in our journey towards sustainability in spite of tough challenges. We believe that it was possible only by keeping our approach to sustainability at the heart of the way we do business. We assure all that we will continue to listen, process, and act on the constructive feedback our stakeholders are willing to provide to ensure continual improvement.

(K. Sreekant)
Chairman and Managing Director

SUSTAINABILITY JOURNEY





OVERVIEW



Fastest Growing Electric Utility in Asia for five successive years (2018, 2017, 2016, 2015, and 2014) based on Platts Top 250 Global Energy Company Rankings

Positioned as the 3rd Fastest Growing Electric Utility

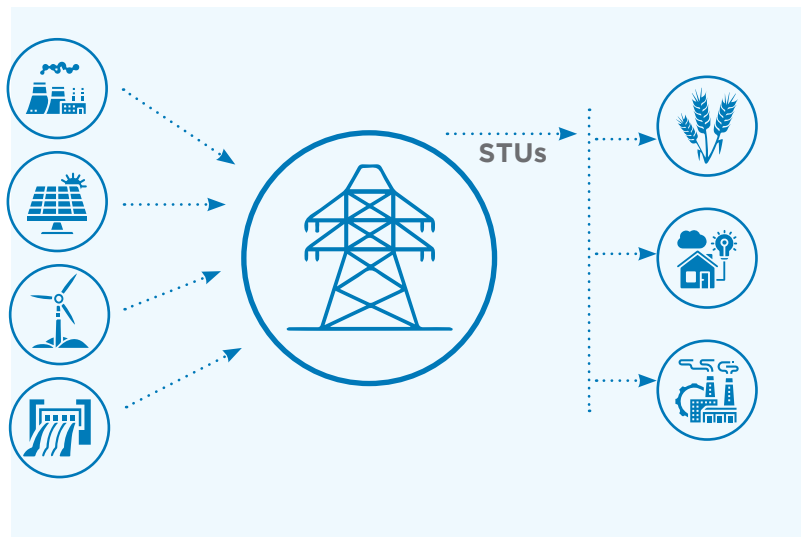
CBIP Award 2018 & 2019 for Best Performing Power Transmission Utility

Awards for Overall Best Overall Navratna, Best Navratna in Services and Electricity: Power Transmission categories at Dun & Bradstreet PSU Awards 2018

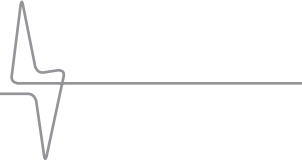
Power Grid Corporation of India Limited (POWERGRID), a Navratna (elevated to 'Maharatna' w.e.f. 23.10.2019) Public Sector Enterprise under the Ministry of Power, is the notified Central Transmission Utility (CTU) of the country. It is primarily involved in planning, implementation, operation and maintenance of Inter-State Transmission System (ISTS), making it one of the largest Power Transmission Utilities in the world.

Since its inception in 1989, POWERGRID has contributed extensively to the growth of the country and its industries through development and maintenance of a strong, integrated and resilient National Grid. It has always demonstrated itself to be a dependable entity by exceeding most of the performance targets agreed upon in the annual MoU signed with the Ministry of Power, Government of India.

POWERGRID's presence in Power Sector



BUSINESS SEGMENTS OF POWERGRID



Transmission

- Transmission Systems for CGSs, IPPs, UMPPs and Renewable Energy Integration
- Grid Strengthening Schemes
- Inter-state, Inter-regional and International Links
- Green Energy Corridors
- Transmission Schemes for Ultra Mega Solar Power Parks
- High Capacity Transmission Corridors for IPP Projects



Telecom

- Telecom business under Brand Name 'POWERTEL'
- Range of services under Unified License as National Long Distance (NLD) and Internet Service Provider – Category 'A' (ISP-'A') Service authorizations



Consultancy

- In-house expertise in various facets of transmission, sub-transmission, distribution and telecom
- Provides services to both National and International Clients including SAARC regions
- Providing consultancy for implementation of Smart Grid Pilot Projects, Energy Efficiency & Energy Audit
- Building knowledge base in Transmission Sector through Capacity Building programs



New Business Opportunities

- Distribution, Energy Efficiency, Smart Grid & Smart City
- Grid Scale Battery Storage
- Pilot projects (eV charging infrastructure)

Transmission



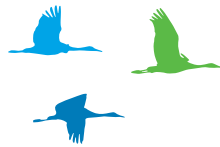
As on March 31st, 2019, POWERGRID owns and operates 1,58,298 Ckm network of transmission lines, 3,71,912 MVA transformation capacity and 245 EHVAC & HVDC substations

84,090 MW cumulative Inter-regional power transfer capacity

During 2017-18, POWERGRID commissioned **9,072** Ckm of EHV transmission lines and **41,620** MVA transformation capacity with 15 new substations



During 2018-19, POWERGRID commissioned **8,468** Ckm of EHV transmission lines and **40,119** MVA transformation capacity with 10 new substations



POWERGRID's business model revolves around its Transmission business segment. Its technological initiatives in the field of transmission have received global recognition at various forums.

Being the Central Transmission Utility (CTU) of the country, POWERGRID is associated with planning short and long-term availability of transmission systems as well as with the demand management, planning, implementation, coordination, control and supervision of the Inter-State Transmission System. It ensures that there is an efficient, economic and well-coordinated system for the development of inter-state transmission lines while ensuring a 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.

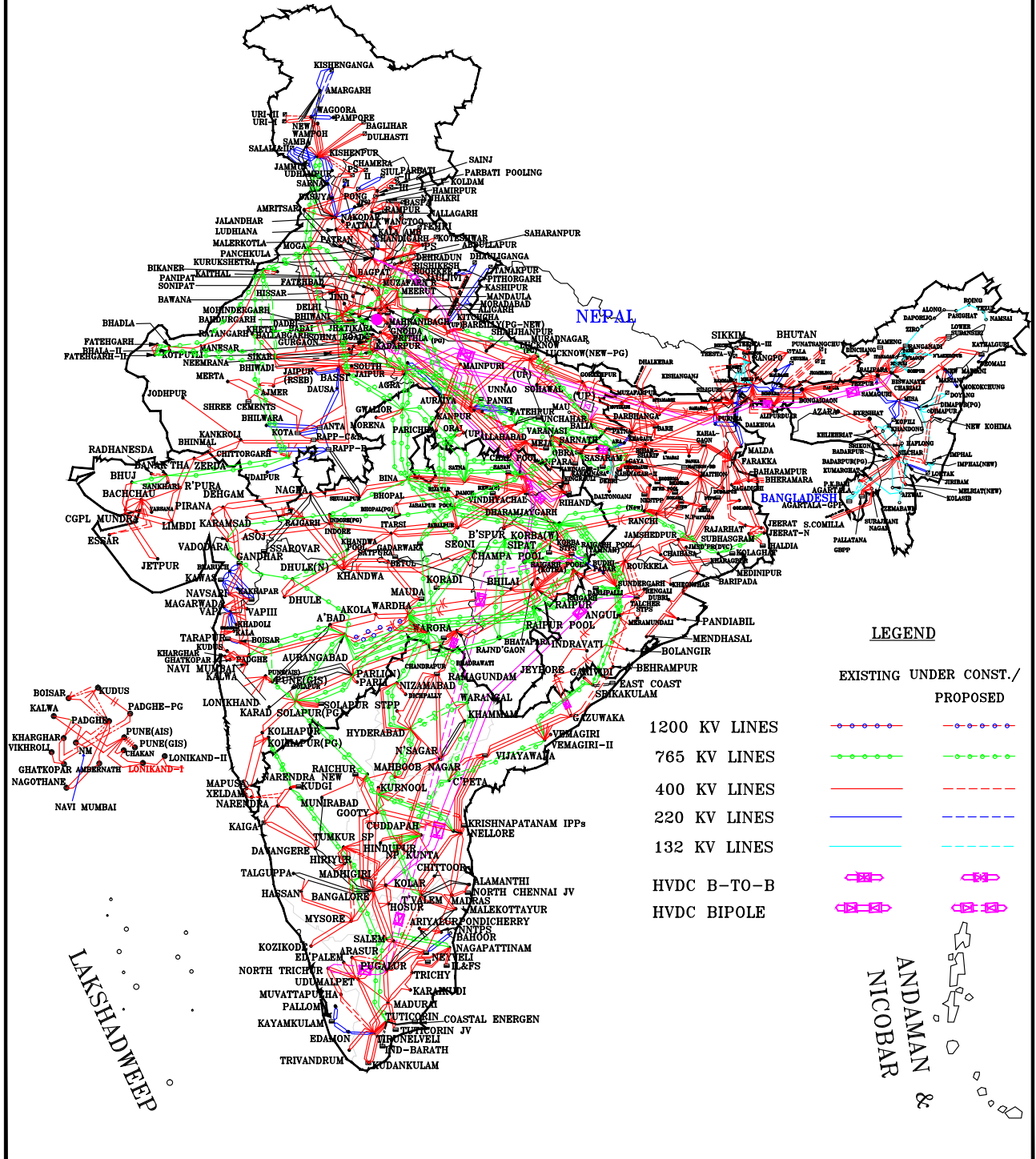
Being a power infrastructure company, its growth is directly linked to the efficient implementation of transmission projects. Having implemented many challenging transmission projects traversing hundreds of kilometres across difficult terrains and mitigating various socio-economic issues, POWERGRID has managed to uphold its effort for transmission of electricity to every corner of the country. Efficient implementation of transmission infrastructure is ensured by administering various project management tools like Enterprise resource Planning (ERP), Integrated Project Management and Control System (IPMCS).

Development of the National Grid: To further strengthen 'One Nation-One Grid-One Frequency', a number of inter-regional transmission lines were commissioned during the reporting period. Some of the important links commissioned during the reporting period include 765 kV D/c Banaskantha-Chittorgarh, 765 kV D/c Jharsuguda-Dharamjaygarh, 765 kV D/c Jabalpur-Orai-Aligarh.

Open Access: As of March 31st 2019, POWERGRID has granted connectivity to 449 eligible applications for a quantum of about 1,86,597 MW and Long-Term Open Access (LTOA) and Long-Term Access (LTA) to 237 applications for a quantum of about 1,05,122 MW. Based on the Transmission capacity margins available, Medium Term Open Access (MTOA) has also been granted to 138 applications of quantum of about 14,517 MW.

POWER MAP OF INDIA

Inter State Lines



Not to Scale

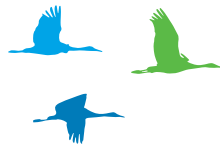


Telecom

POWERTEL provides a range of services under its Unified License as National Long Distance (NLD) and Internet Service Provider – Category ‘A’ (ISP-‘A’) Service authorizations

Owns and Operates approx. **60,900** km of Telecom Network

Telecom Network Availability **99.98%** in 2018-19 & **99.95%** in 2017-18



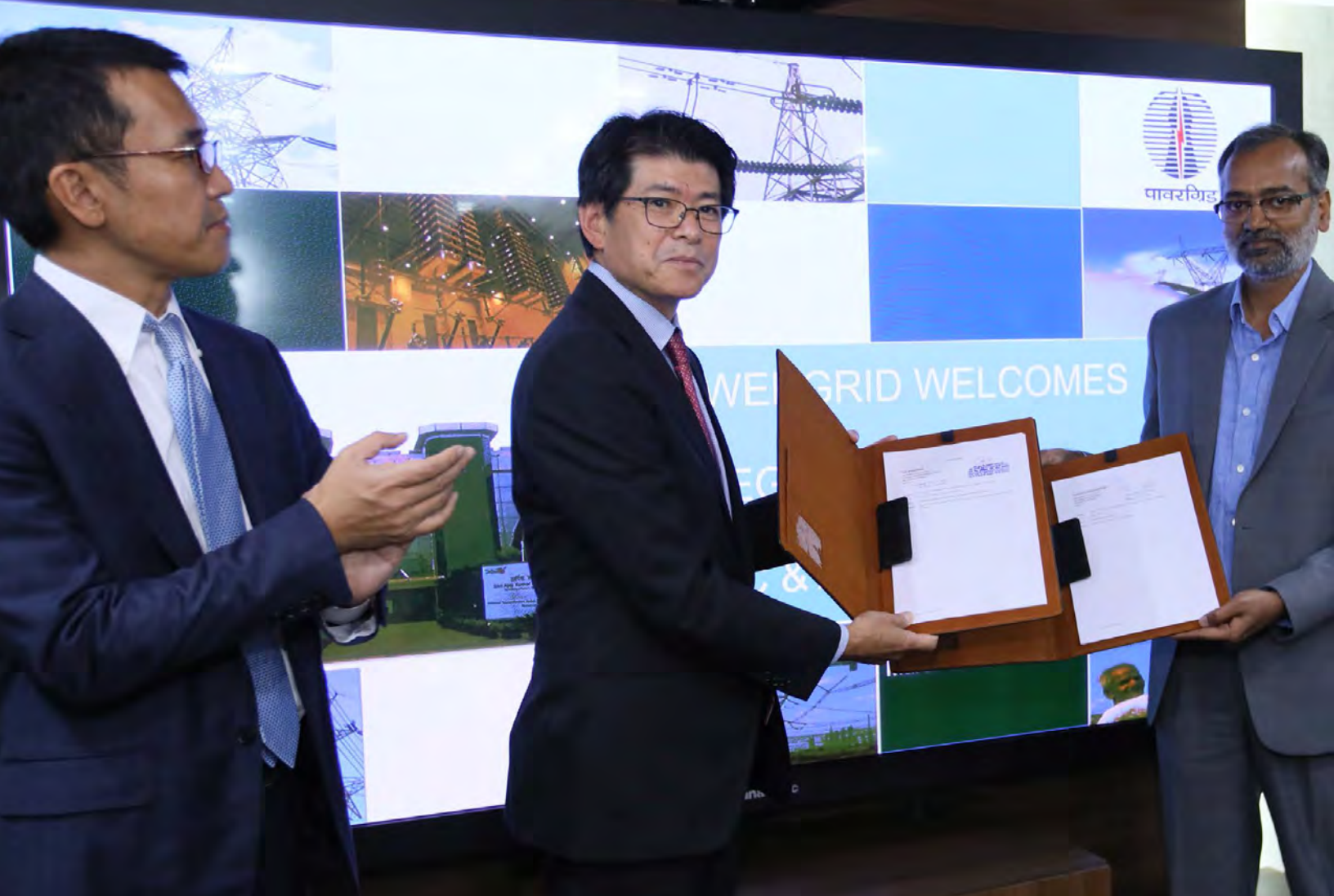
POWERGRID has leveraged its state-of-the-art transmission infrastructure to contribute to the telecommunication landscape of the country through "POWERTEL". POWERTEL is a telecom business segment which provides a range of services under its Unified License as National Long Distance (NLD) and Internet Service Provider – Category 'A' (ISP-'A') Service authorizations. POWERGRID is also partnering with last mile connectivity providers and State Electricity Boards for Right of Way (RoW), fiber leasing, etc. to increase its network reach, its presence and potential business opportunities.

POWERGRID has been displaying excellent performance in the areas of providing telecom bandwidth, Multiprotocol Label Switching (MPLS) based Virtual Private Network (VPN), internet and other communication services to Telecom Service Providers, Government departments and enterprise customers. We have a strong portfolio of diverse customers due to excellent availability and reliability. The trust on the Telecom Services rendered by POWERGRID has resulted in continuous growth of revenue from Telecom business in spite of consistently falling tariffs.

Gol has a vision of connecting 2,50,000 Gram Panchayats (GPs) under 'Bharat Net' towards Digital India. Under Phase-I of the project, POWERGRID was allotted 10,436 GPs, against which 9,793 GPs are connected successfully. Work on remaining GPs along with 8,700 GPs allotted in Phase-II is under progress.

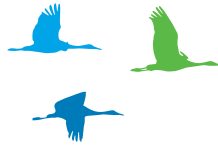
To provide a green and clean solution, POWERGRID is exploring the use of its existing transmission towers to provide power to the associated telecom equipments placed on the towers. After successful implementation of a pilot project, POWERGRID has now been granted approval by CERC to go ahead with the use of transmission line towers for Telecom application with suitable revenue sharing with the beneficiaries. This initiative will eliminate the location disadvantage of small towns towards accessibility and affordability of high speed internet.

Consultancy



Signing of loan agreement for 22 Billion JPY with Sumitomo Mitsui Banking Corporation, Singapore

On the International front, POWERGRID has been providing services to customers in over 20 countries across the globe and also maintaining its leadership in the proposed cross-country grid involving SAARC nations. It has strengthened its ties with the neighbouring nations of Bangladesh, Bhutan and Nepal establishing inter-connections with facilitating exchange of power.



Consultancy
Assignments in
20 Countries

Domestic
75 Projects

International
18 Projects

POWERGRID offers techno-managerial consultancy services in the fields of transmission, sub-transmission, distribution management, load dispatch and communications, Smart Grid etc. The quality of our services is reflected in the increasing number and nature of projects being bagged by the company.


POWERGRID is also carrying out many prestigious projects of the Government of India based in difficult geographical terrains such as North Eastern Region Power System Improvement Project (NERPSIP), Comprehensive Scheme for Strengthening of Transmission & Distribution System for Arunachal Pradesh & Sikkim.

We are associated with the implementation of various projects for the Indian Railways. Some of these are the track electrification for four different zonal railways, techno-managerial services for implementation of 220 kV & 132 kV transmission systems, services for transmission lines and substations for providing up-stream transmission connectivity for their traction substations.

On the International front, the company has been providing services to customers in over 20 countries across the globe. POWERGRID is also maintaining its leadership in the proposed cross-country grid involving SAARC nations. It has strengthened its ties with the neighbouring nations of Bangladesh, Bhutan and Nepal establishing inter-connections and mutual exchange of power. This can be seen in the projects being undertaken in order to increase the connectivity between these countries. The company has also signed a Memorandum of Understanding (MoU) with Korea Electric Power Corporation (KEPCO) for a period of two years to promote bilateral cooperation.

During the reporting period, POWERGRID completed many prestigious projects both on International and National fronts which include the 220 kV Srinagar-Alusteng-Drass-Kargil-Leh project (connecting the Ladakh Region of J&K to the National Grid), 'CASA 1000 Project' planned for export of surplus power to Afghanistan & Pakistan from hydroelectric projects of Kyrgyzstan & Tajikistan and the 2nd block of the 500 kV HVDC back to back station at Bheramara (Bangladesh) to facilitate enhancement of interconnection capacity between India and Bangladesh etc.

Operational Excellence



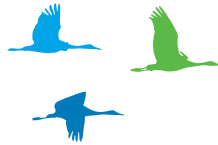
Availability of transmission system is attained through state-of-the-art maintenance activities and technologies such as Annual Maintenance Plan, Frequency Response Analysis for Transformers and Reactors, Dynamic Contact Resistance Measurement for Circuit Breakers, Third Harmonic Resistive Current measurement for Surge Arrestors, Thermo-vision scanning of substation equipments etc.

Transmission System Availability

2017-18
99.81%



2018-19
99.71%



Our operational excellence lies in management and maintenance of vast transmission network through meticulous planning and strict adherence to norms/processes. Our Systems, processes and procedures aligned with Integrated Management System comprising ISO 9001:2015 for Quality Management System, ISO 14001:2015 for Environmental Management System and OHSAS 18001:2007 for Occupational Health and Safety Management System. We are also accredited with Social Accountability Management Systems as per SA: 8000, Energy Management Systems as per ISO:50001 and Information Security Management Systems as per ISO:27001.

Availability of transmission system is attained through state-of-the-art maintenance activities and technologies such as Annual Maintenance Plan, Frequency Response Analysis for Transformers and Reactors, Dynamic Contact Resistance Measurement for Circuit Breakers, Third Harmonic Resistive Current measurement for Surge Arrestors, Thermo-vision scanning of substation equipments etc. Furthermore, various air-borne techniques like aerial patrolling of transmission lines by helicopters and Unmanned Aerial Drones are also deployed to maintain proper functioning of lines even in the remotest of areas/ difficult terrains.

POWERGRID anticipates that its growth is associated with automation of the transmission sector. With this vision, the National Transmission Asset Management Centre (NTAMC) was established for managing the assets and monitoring various parameters remotely on real time basis. As on March 2019, more than 85% of our substations are now integrated under NTAMC for remote operation from the control centers. Moreover, 10 nos. of Regional Transmission Asset Management Centre (RTAMC) have also been established for regional monitoring.

In an event of Natural disasters, our state-of-the-art 'Emergency Restoration System' is deployed for immediate restoration of the collapsed transmission lines. This was evident in the prompt support that was extended during devastating floods in Kerala (Aug'2018) in which POWERGRID provided assistance in restoration of system by setting up Site testing facility and repair workshops for distribution transformer at Kochi, Trichur and Pathanamthitta, as well as restoration of 110 kV Neriamangalam-Kuthungal line.



Renewable Energy Integration

In line with Paris Agreement 2015 and Gol's ambitious targets of 175 GW installed capacity of renewable energy by 2022 (100 GW from solar and 60 GW from wind) with Nationally Determined Target (NDC) of 40% non-fossil-based power capacity, POWERGRID is implementing Green Energy Corridors (GEC) - Inter-State Transmission System (ISTS) at 765 kV and 400 kV level in renewable resource rich states for integration of renewable power into the National Grid. Such initiative not only reduced the dependency on thermal generation but also provided boost to renewable generation by providing reliable grid connectivity which was earlier thought to be a major impediment for renewable energy development. POWERGRID is also implementing inter-state transmission system for eight solar parks of about 7,200 MW in five States. Moreover, POWERGRID has evolved a comprehensive transmission plan for grid integration of various Renewable Energy Zones (66.5 GW) in the country.

To enable forecasting of renewable resources and efficient management of intermittent renewable generation, POWERGRID is establishing Renewable Energy Management Centres (REMCs) at 11 (eleven) locations in various SLDCs/ RLDCs/ NLDC.

New Business Oppurtuinites

In line with Gol E-Mobility mission towards lowering vehicular pollution and to ensure energy sustainability, POWERGRID has been using e-vehicles for some of its day to day official transportation. During reporting period we have also planned to develop Electric Vehicle (EV) Charging Stations across India to facilitate E-mobility in road transport covering 2-Wheelers, E-Rickshaws, Autos, Taxis, Cars, Buses etc. and have already established first such station at Miyapur Metro Station in Hyderabad. Installation of 15 more such stations are targeted for 2019-21.

POWERGRID continues to take pioneering steps in SMART Transmission through establishment of Smart Grid Knowledge Center in association with Ministry of Power, implementation of WAMS based Unified Real Time Dynamic State Measurement (URTDSM) project. At the end of reporting period, cumulative PMUs and PDCs commissioned stood at 1,319 nos. (329 stations) and 29 nos. (for all RLDCs and 24 SLDCs) respectively.





Technology Development

POWERGRID's strive to create environment-friendly transmission systems to improve the efficiency in power transmission has encouraged it to adopt state-of-the-art technologies to overcome the challenges associated with establishment of high capacity power transmission corridors.

POWERGRID being a responsible corporate entity addresses any residual environmental or social impacts associated with its business following the principles of Avoidance, Minimization and Mitigation as outlined in its Environmental and Social Policy & Procedures (ESPP). We leverage the role of technology by not only adopting the existing modern technological tools and technologies developed in different parts of the world but also emphasize on in-house technology development meeting the national requirement.

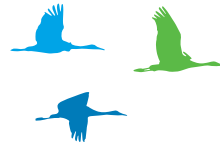
We work towards creating value sustainably for the economy, environment as well as for the society by accepting and applying the various advancement in technologies and finding solutions to meet future challenges. This drive is focussed at reducing transmission losses and optimising Right of Way requirements for establishing transmission corridors as well as reducing land requirements for construction of substation.

In this direction, major projects undertaken/ under implementation are POWERGRID Advanced Research & Technology Centre, Software system for fault detection of Transformer, mobile capacitor bank at 33 kV level, Geographic Information System Tools, Process Bus Technology, Pollution mapping, etc. POWERGRID invested ₹ 8.71 Crore and ₹ 22.19 Crore in Research & Development activities during 2017-18 and 2018-19 respectively.



Inauguration of Knowledge Centre by Hon'ble MoS (IC) at PAL, Manesar

CORPORATE GOVERNANCE



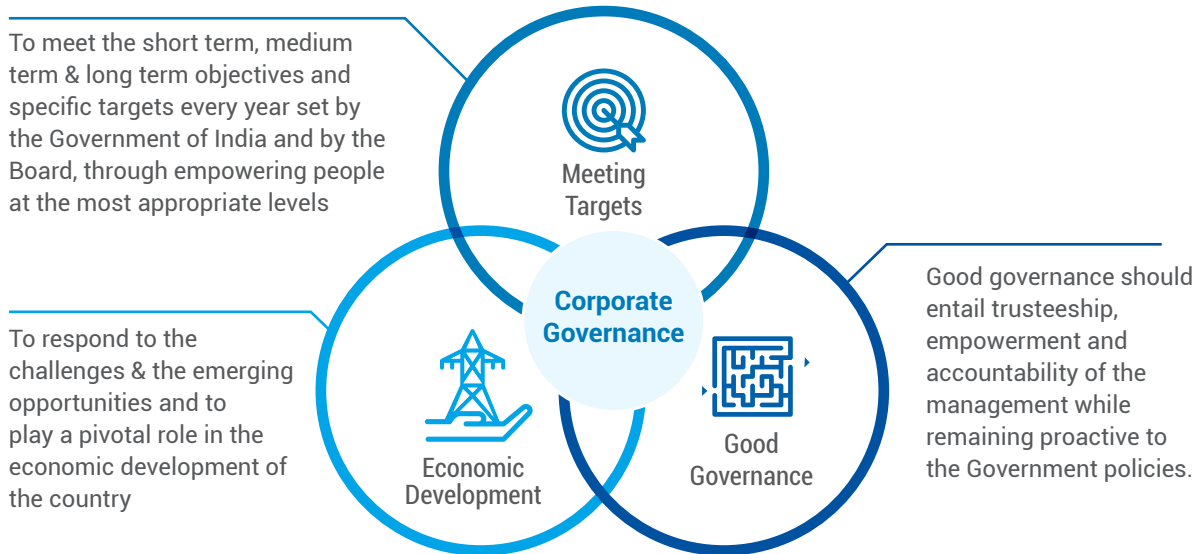
Strategic Performance and Consistent Growth Award at the 6th PSU Awards by Governance Now

Best Risk Management Framework & Systems Award in 'Power' and 'PSU' Categories at the 4th India Risk Management Awards



Golden Peacock awards for excellence in Corporate Governance for the year 2017

Best CEO Award for Power and PSU (except BFST) categories to CMD, POWERGRID at the Business Today Best CEO Awards



POWERGRID's commitment to transparency and accountability is derived from its vision of "World Class, Integrated, Global Transmission Company with Dominant Leadership in Emerging Power Markets Ensuring Reliability, Safety and Economy". POWERGRID follows the Guidelines on Corporate Governance issued by Department of Public Enterprises, Government of India, besides adhering to SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015.

The corporate governance structure specifies the distribution of rights, responsibilities and powers among different participants in the company. All strategic decisions regarding investment, diversification, major decisions regarding procurement, commercial and finance are implemented after approval by the Board.

POWERGRID is a "NAVRATNA PSE" since May 2008. Such status allows POWERGRID more flexibility and autonomy in terms of making investments and taking operational decisions. The Board of Directors of POWERGRID has been delegated powers by the Government of India to approve capital schemes, incur capital expenditure on purchase of new items of assets 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 a single 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.

Board of Directors

Strategic Direction



9 Directors in FY 2018 including 1 Government Nominee and 3 Independent Directors increased to 11 Directors in FY 2019 including 2 Government Nominee and 5 Independent Directors

25 meetings were held during the FY 2018 & FY 2019

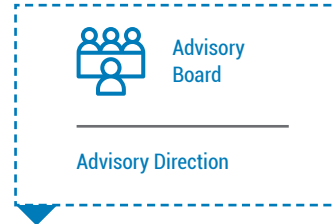
Details regarding number of meetings, role of committee, members etc., are available in our Annual Report at the following links:

https://www.powergridindia.com/sites/default/files/NSE_AR_dt29072019.pdf (page 111-132)

https://www.powergridindia.com/sites/default/files/Annual_Report_2017_18.pdf (page 120-144)



- Audit
- Stakeholders' Relationship
- Nominations & Remuneration
- Risk Management
- CSR
- Investment on Projects
- Bonds
- Award of Contracts related to Rural Electrification (RE) and other deposit works
- Transfer/ Split/ Rematerialisation of Shares
- New Business
- Award of Contracts



- Environmental and Social Policy & Procedures
- Research & Development
- Telecom



Member of Board of Directors

(Board of Directors as in AGM in September'2017)



Shri Jagdish I. Patel

Shri K. Sreekant

Ms. Bharati

Shri Prabhakar Singh

Shri Tse Ten Dorji

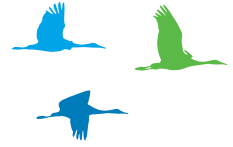
Shri Ravi P. Singh

Shri I. S. Jha

Shri R.P. Sasmal

Shri Manoj Kumar Mittal

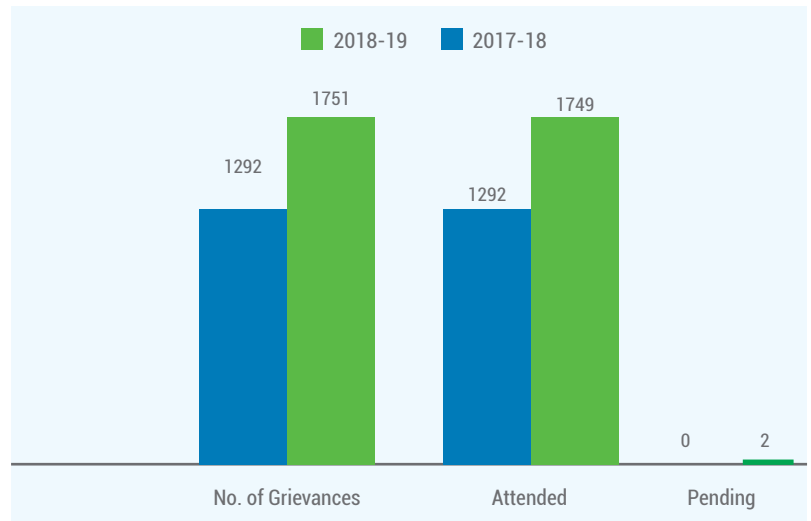
All directors on the Board of POWERGRID are appointed by the Government of India. The services of the Directors cease as per direction of the President of India or on the completion of the tenure or upon superannuation, whichever is earlier. The ratio of Basic Salary of the Board of Directors to the Executive Director to the Engineer/ Officer is 4:3:1.



POWERGRID has a Board Level Stakeholders' Relationship Committee to consider and resolve the grievances of shareholders, debenture-holders and other security holders of the company including the complaints related to transfer of shares, non-receipt of balance sheet, non-receipt of declared dividends, etc. As on March '19, the committee comprised of 3 Independent Directors and 2 Functional Directors as its members. The Committee is headed by an Independent Director.

Details on external initiatives can be accessed through the above links of Annual Report 2018-19 at page 76-77.

Investors' Grievance (No.)



Transparency in Governance

POWERGRID advocates the principles of Good Governance, Transparency, Probity and Ethics in its management functioning. Our Board follows a completely transparent approach in discussing all project matters from inception to completion of projects and also provides necessary direction and assistance.

Through efficient means of disclosures and communication, all our stakeholders are well informed and kept involved through a positive and open relationship. Such mediums of disclosures/communication include Annual Reports, General

Meeting, Analysts & Investor Meets, Sustainability Report, Quarterly results, website (www.powergridindia.com), etc. As part of the 'Green Initiative in the Corporate Governance', a lot of these reports are communicated in electronic form.

We have a well-established process to respond to our stakeholders' 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. 1,568 and 1501 nos. of RTI applications were received in the Company and processed as per the Act during 2017-18 & 2018-19 respectively.



Ethics and Code of Conduct

POWERGRID has two separate 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.

POWERGRID's CDA Rules 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 down procedures for actions in cases of non-compliance of the defined terms as well as for any misconduct.

Whistle Blower and Fraud Prevention Policy provides a system for disclosures made by employees or complaint of any fraud or suspected fraud involving employees of POWERGRID as well as representative of vendors, suppliers, contractors, service providers or any outside agencies doing any business in POWERGRID. In order to further strengthen integrity, transparency and fairness, a number of business practices have been put in place such as well defined "Delegation of



CMD administering Oath for Code of Business Ethics and Conduct

Powers", implementation of Works & Procurement Policy and Procedure (WPPP) for Pre-award and Post-award Stages, Integrity Pact Program, Monitoring of Contracts above ₹ 100 Crore by a panel of Independent External Monitors (IEMs), e-procurement mechanism, e-Reverse auction mechanism, Enterprise Resource Planning (ERP) etc.

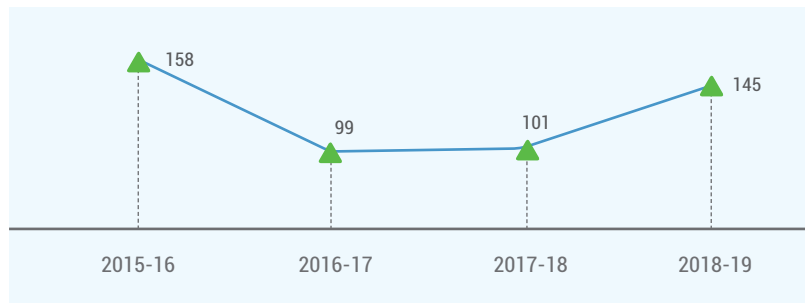
POWERGRID has a dedicated Vigilance Department with emphasis on preventive and proactive vigilance. Vigilance Team mainly conducts 3 types of inspections – Process (online), CTE and Surprise inspections to prevent any unscrupulous activity in the allotment or implementation of projects. On the basis of inspections, system improvement initiatives have been recommended in the area of construction, contract performance guarantee, SOP for testing of compressive strength of casted concrete, crop and tree compensation etc.

In order to increase the awareness and enhance capacity, POWERGRID conducted various workshops/training programmes on Preventive Vigilance, Ethics and RTI Act, across the country. During the reporting period, 38 employees in 2017 and 22 employees in 2018 were disciplined for corruption.

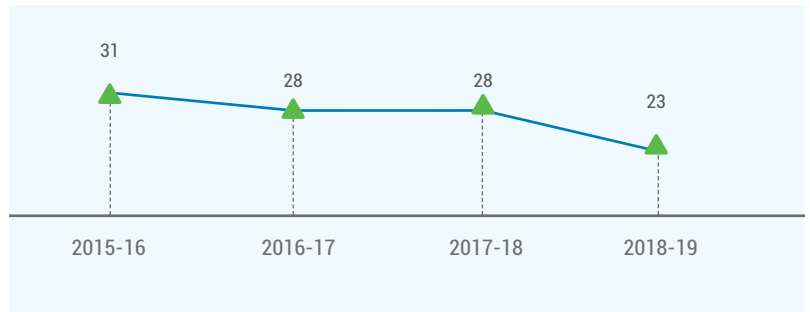
Vigilance Awareness Week was organized during the reporting period. Activities such as essay competitions, quiz competitions, debates, panel discussions etc. were held in the company & also in various colleges and schools. For spreading awareness amongst general public, media tools such as roadshows, nukkad natak, walkathon, wall painting, FM Radio channel were also utilized.

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

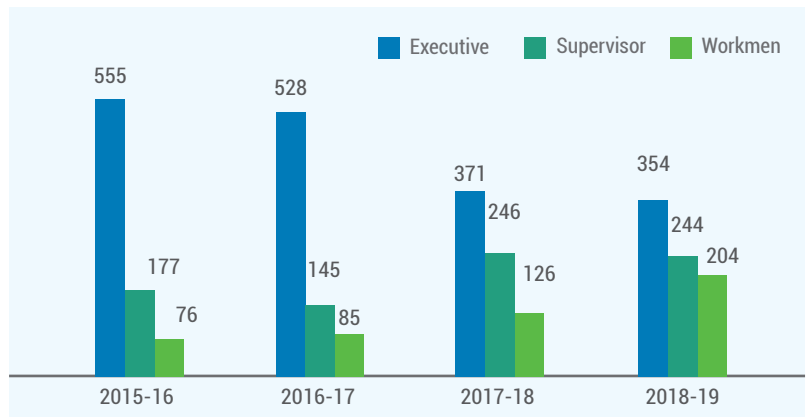
Vigilance Inspections (No.)



Vigilance Training Programs (No.)



Anti-Corruption Training (No. of Employees)



CMD receiving award from NSE for Best transparent bidding platform

Managing Risks

POWERGRID constantly innovates and develops technologies to mitigate risks and challenges involved with providing reliable and uninterrupted power to all. Enterprise Risk Management framework has

been implemented at POWERGRID as a structured, consistent and continuous process for identification, assessment, monitoring and management of risks. The significant business processes/risks are monitored and controlled through various Key Performance Indicators (KPIs).

POWERGRID has a dedicated Board level Risk Management Committee headed by Director (Personnel) with Director (Finance) and Director (Projects) as members. The Committee meets at regular intervals and reviews KPIs on regular basis and provides updates to the Audit Committee/ Board. During the reporting period, seven meetings of Risk Management Committee were held and Senior General Manager (Corporate Planning) was appointed as Chief Risk Officer of the Company.

A comprehensive mapping of Risks & Challenges and Mitigation strategies is presented herewith:

Risks

Financial Risks

- Revenue Realization

Operational Risks

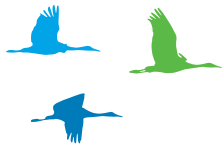
- Synchronization Risks with generation projects
- Grid Failure

Health & Safety Risks

- Safety of Employees/workers in construction activities

Compliance & Statutory Risks

- Right of Way
- Forest Clearance
- Land for substation



Mitigation

- Graded Rebate Scheme, Opening of Letter of Credit, Tri-Partite Agreements (TPA), Regulation notices and Timely payment rebate to clients

- Signing of Agreements with power generating companies to share the transmission charges
- Improved Grid Standards/Strict Compliance

- Issue of Personal Protective Equipment, mandatory safety trainings to all employees engaged in construction activities

- Avoidance, Minimization, Mitigation
- Route alignment & detailed survey using modern techniques
- Development of High Voltage Transmission Systems for bulk power transfer
- Use of High Performance Conductors in Existing & New lines
- Land management practice to reduce land requirement
- Securing land through private purchase on "willing buyer - willing seller" basis
- Increased Public consultation & community development
- Compliance of provisions of MoP Guidelines for payment of compensation towards damages in regard to Right of Way for transmission lines

- Collaboration with national/ international research institutions and manufacturers for designing state-of-the-art transmission systems
- Pollution mapping, SMART Grid, Digital Substation, use of GIS/ GPS during surveys, High Temperature Low Sag Conductor configuration
- ERS/Hotline maintenance, live line insulator washing, Aerial Patrolling & preventive maintenance

- Training to enhance availability of skilled manpower for construction
- Campus recruitment from reputed institutions

- Improved costing standards

Challenges

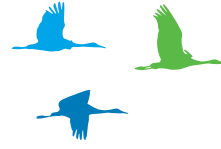
- Environmental & Social Pressures
- Way leave/RoW

- Enhancing operational efficiency
- Maintaining 99% system Availability
- Development of Long distance High capacity transmission corridors
- Strengthening of National Grid and Communication network

- Attracting Skilled Manpower

- Tariff-based competitive bidding

SUSTAINABILITY MANAGEMENT



Successfully demonstrating implementation of agreed Action Plan under Country Safeguard System (CSS) of ADB, after acceptance of POWERGRID's ESPP under CSS for 1st time in Asia

Alignment of POWERGRID's business activities with the United Nation's Sustainable Development Goals (SDGs) Agenda 2030 in partnership with Global Reporting Initiative (GRI) South Asia





Sustainable development requires implementation of modern technology, financial resources, and management skills as well as a strong commitment towards Sustainability. Sustainability is a strategic & integrated part of our business management, growth and development with a view to create long-term value for POWERGRID and for all its stakeholders.

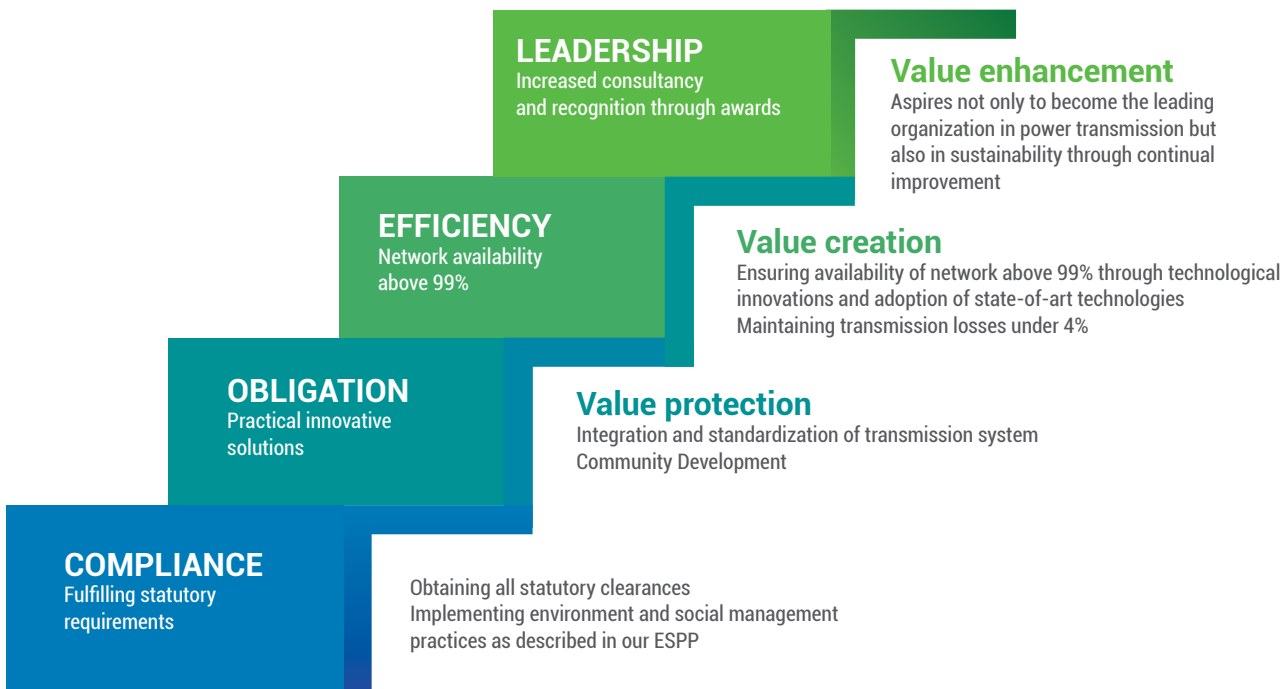
POWERGRID's commitment towards practicing Environmental and Social prudence stems from the realization that the ultimate goal of any business activity is not limited to financial profitability but includes wider and much desired societal welfare. POWERGRID, as part of its corporate philosophy is committed at all levels to internalize the negative externalities associated with its business processes

including Environmental impacts, Social concerns and safety issues.

POWERGRID has committed its resources to ensure that its operations contribute to the sustainable development due to which our initiatives have been appreciated both at the national and international level.

The Sustainability Framework was developed as a means to understand the concept of Sustainable business and its inclusion in all aspects of our business planning and operations. As per this framework, sustainability steps were structured and presented under three pillars: Value Protection, Value Creation and Value Enhancement. These were further divided into 4 focus areas : Leadership, Efficiency, Obligation and Compliance.

Sustainable Development Framework



Sustainability Statement

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



Sustainability is one of the foundations of development of our business strategy that guides us in providing uninterrupted power transmission services to the country in an efficient and sustainable manner. We have always been at the forefront of development of better and efficient techniques & technologies to meet the needs of the present as well as the future generation. It is also echoed in our investment in social causes and our close associations & engagement with the stakeholders.



Environmental and Social Policy & Procedures

Environment and Social issues are of the utmost importance due to our areas of activities. We are the pioneers in developing a comprehensive and exhaustive environment and social policy document viz. "Environmental and Social Policy & Procedures (ESPP)" in the year 1998, making us the first company in Asia to develop such comprehensive document focussing on addressing environmental and social issues of transmission projects. This comprehensive Board approved document was further revised in year

2005 and 2009 to keep it updated in line with the changing regulatory regime and expectations of Multi-lateral funding agencies.

Certifying the detailed and comprehensive coverage of POWERGRID's ESPP, two leading Multi-lateral agencies of the world i.e. The World Bank and the Asian Development Bank have recognized it under their policy of Use of Country System (UCS) and Country Safeguard System (CSS) respectively, which is not only a unique distinction, but also has no parallel in the world.

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





Alignment with SDGs

The announcement of the United Nation's Sustainability Development Goals (SDGs) in September 2015 set the foundation for the alignment of our core business priorities to the Global Goals and targets. Though Sustainable Development Goals came into force from January 2016 after being adopted by the member countries at the United Nations Sustainable Development Summit (September 25-27, 2015), it is a matter of great pride that POWERGRID has already aligned its business activities in line with the applicable listed SDGs. POWERGRID had long before developed its ESPP in 1998 and upgraded it from time to time, in line with the international best practices. The alignment with the SDGs also perfectly falls in line with the principles of Avoidance, Minimization and Mitigation as mandated by our ESPP that has been a guiding force in adoption of a proactive approach towards achieving Environmental Excellence and Social Welfare. Our Sustainability strategy is focused on taking up activities/ projects focused under four aspects-Economic Performance, Our People, Our Environment and Our community.










Highlights of alignment with UN Sustainable Development Goals

POWERGRID has aligned its activities with 11 SDGs. A mapping with respect to applicable SDGs is given below:

	<ul style="list-style-type: none"> ➤ Till March 2019, Electricity service connections provided to about 49.49 Lakhs BPL households under Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY). ➤ CSR activities worth ₹ 350 Crore undertaken.
	<ul style="list-style-type: none"> ➤ 'POWERGRID Vishram Sadan' operational since January 2018 at AIIMS, New Delhi. ➤ More than 1 Lakh villagers benefitted through Health checkup camps at more than 70 locations across the country. ➤ High-end artificial limbs to 25 persons with disabilities in Mumbai, Maharashtra. ➤ Support for Medical Infrastructure, Aids and Equipment to Hospitals, PHC, CHC and Differently Abled Persons in 20 locations in 13 states.
	<ul style="list-style-type: none"> ➤ Policy is in place to ensure no discrimination on the basis of gender. ➤ Implementation of Sexual Harassment of Women at Workplace (Prevention, Prohibitions and Redressal) Act, 2013 through Internal Complaint Committees (ICC). ➤ Training on Tailoring and Sewing machines provided to 250 Women in Haryana, Uttarakhand, Madhya Pradesh, Rajasthan and Jammu & Kashmir. ➤ The O&M of Thrissur Substation handled completely by women employees.

<p>7 AFFORDABLE AND CLEAN ENERGY</p> 	<ul style="list-style-type: none"> ➤ Development of Green Energy Corridors and Transmission Systems for evacuation of power from Solar Power Parks. ➤ Infrastructure created for electrification of 87,838 partially/ un-electrified villages. 	
<p>8 DECENT WORK AND ECONOMIC GROWTH</p> 	<ul style="list-style-type: none"> ➤ Supporting and encouraging procurement from MSEs through various initiatives in line with Govt. of India Public Procurement Policy (PPP) for Micro and Small Enterprises (MSEs). ➤ 35% increase in PAT in 2017-19 w.r.t. 2015-17. ➤ More than 5,500 youths trained in various fields such as tower erection & stringing, CNC lathe, milling, advanced welding technology etc. 	
<p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p> 	<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> 	<ul style="list-style-type: none"> ➤ Estimated Savings in major material consumption during 2017-19 was 26,02,340 MT. ➤ Transmission network availability maintained above 99.5%. ➤ Telecom network availability above 99.98%. ➤ Use of inductive power in earth wire installed on transmission towers for powering of telecom antennas.
<p>11 SUSTAINABLE CITIES AND COMMUNITIES</p> 	<ul style="list-style-type: none"> ➤ Development of GIS substations which requires 1/4th of the land required for traditional AIS Substation. ➤ Development/Adoption of latest technologies to enable power transmission at higher voltage levels (765 kV HVAC/ 800 kV HVDC) saved 49894.8 ha of Right of Way (RoW). ➤ Implementation of Smart Grid Projects. ➤ Usage of innovatively designed tall/ multi-circuit towers in urban/ city area. 	

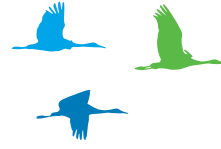




<p>13 CLIMATE ACTION</p>	<p>15 LIFE ON LAND</p>	<ul style="list-style-type: none"> ➤ Massive plantations with suitable species at all our sub-stations. ➤ Undertaking a Study on "Assessment of Impacts of power lines on Avifauna in the Arid planes of Western Gujarat" which will help all Transmission and distribution utilities in formulating and implementing better safeguard measures for Avifauna protection. ➤ More than 3.3 Lakhs equivalent tons of tCO2 reduction during the reporting period as GHG reduction measure. ➤ Reduction in involvement of forest land progressively from 6 % in 1998 to less than 2.5 % in 2018-19 as a result of adoption of various technological and managerial innovations.
<p>17 PARTNERSHIPS FOR THE GOALS</p>		<ul style="list-style-type: none"> ➤ Successful Development of 1200 kV HVAC System is collaboration with 35 Indian equipment manufacturers. ➤ Various CSR projects taken up in collaboration with reputed agencies/institutions. ➤ Vendor Development for 765 kV GIS in India. ➤ Development of Mobile Capacitor Banks. ➤ Association with reputed organizations like GRI, TERI, The World Bank, ADB in various forms with an objective to achieve the sustainable path of development and growth through knowledge sharing, capacity building, exchange of ideas & best practices and sustainable finance.



BUILDING TRUST



One of the Top **25** Most Innovative Companies in India at the 5th CII Industrial Innovation Awards 2018 - only power sector CPSE in the list

2018 EEI Asia-Oceania Index Award at EEI (Edison Electric Institute) Global Electrification Forum, for Highest Total Shareholder Returns in Gold Large Capitalization category

BML Munjal Award for Business Excellence through Leadership & Development for 2018 in PSU Services Category

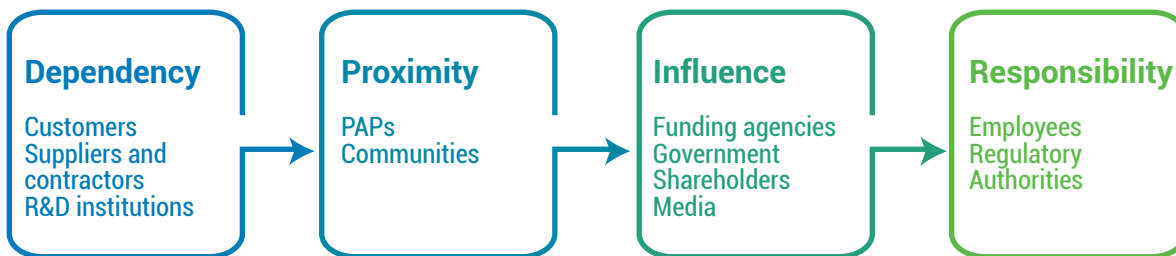




Stakeholders relationship is very important for conducting business ethically and profitably. At POWERGRID, we believe in persistently working towards building a long-term sustainable relationship with our stakeholders and have always believed that reliable and timely communication is the hallmark of stakeholder engagement. We have mapped our internal and external stakeholders &

engage with them on a regular basis through various communication mediums/ channels. We have a well-structured Stakeholder Engagement Matrix which details specific engagement mechanisms, including mode & frequency of engagement, for each stakeholder category. The matrix guides us in delivering our commitments to our stakeholders and ensures sustainability of our business.

Identification of stakeholders



— Prioritization of Stakeholders ————— Dialogue with Stakeholders —

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
Customers SEBs	Signing of Transmission Service Agreement (TSA)	With every project
Telecom -Private firms Consultancy (National & International)	Billing Collection & Disbursement Meetings	Quarterly
	Meetings with customers	As and when required
Funding Agencies (World Bank, ADB, IFC, KfW, etc.)	Pre-loan finalization, discussions/ negotiations	With each Loan
	Review Missions	Half-yearly
	Progress Reports	Quarterly and Half-yearly
	Discussions w.r.t. changes in regulatory framework, funding agencies safeguard policies etc. and their implications for transmission sector/POWERGRID	As and when required

Employees	Employee Engagement Survey	As per HRD plan
	Open House	Quarterly
	Performance Review	Once in year
	Magazines	
	Que	Quarterly
	Regional Magazines (10)	Quarterly
	Communique	Weekly
	Grid Darpan (Rajbhasha)	Half-yearly
	Candour (Vigilance)	Yearly
	Department specific meets	
	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 (In consultation with communities)
Government	Compliance to Laws	On a continuous basis
	Comments/observations on proposed legislations	As & when a new enactment is proposed
	RPC (Regional Power Committee)	22 during reporting period
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	Press Briefing/Invitations to events	Over 1000 Media coverage/ Press briefings 20 Domestic exhibitions 8 International exhibition



Communication Management

POWERGRID maintains full transparency and accountability with its stakeholders by communicating on various aspects such as achievements, growth, recent developments and future plans through various mediums such as Annual Reports, General Meetings, Analyst meets, investor meets, press communiqué, web portal, advertisements, sponsorships, exhibitions etc. Interviews as well as interaction of CMD and Directors are organized with leading business newspapers, magazines and channels to communicate the Company's strengths, achievements and future strategy to the investors.

Ensuring such timely and precise disclosure of information has earned widespread appreciation and applause at Domestic and International fronts, which has also have been instrumental in bringing transparent work culture in the organization. Such positive perception of the company has helped us to implement projects and operations in extremely challenging conditions of North Eastern Region, J&K etc.

During the reporting period, POWERGRID has showcased its state-of-the-art technological interventions and achievements in various Domestic and International Exhibitions and conferences held at Russia, Mynamar, Nigeria, Abu Dhabi, Bangladesh etc.

POWERGRID is also ensuring dissemination of latest updates and information through digital media platforms such as facebook, twitter etc. for reaching out to the media savvy stakeholders.



Transmission System Availability maintained well above **99%**, achieving **99.81%** and **99.71%** during 2017-18 and 2018-19 respectively. The number of tripping per line was restricted to **0.60** and **0.46** in 2017-18 and 2018-19 respectively.

Building Trust in Customers

The Inter-State transmission has seen considerable growth in the past decade, which led to the creation of a synchronous National Grid, 'One Nation-One Grid-One Frequency' and has been an enabler of power markets in the country. The transmission requirements are sensitive to load growth and generation additions & therefore the overall emerging power sector scenario in India augurs well for transmission sector, which is a vital link in the power supply value chain.

Providing uninterrupted power supply to our customers is the primary responsibility of POWERGRID.

We have constantly maintained our transmission system availability well above

99%, achieving 99.81% and 99.71% availability during 2017-18 and 2018-19 respectively. The number of tripping per line was restricted to 0.60 and 0.46 in 2017-18 and 2018-19 respectively.

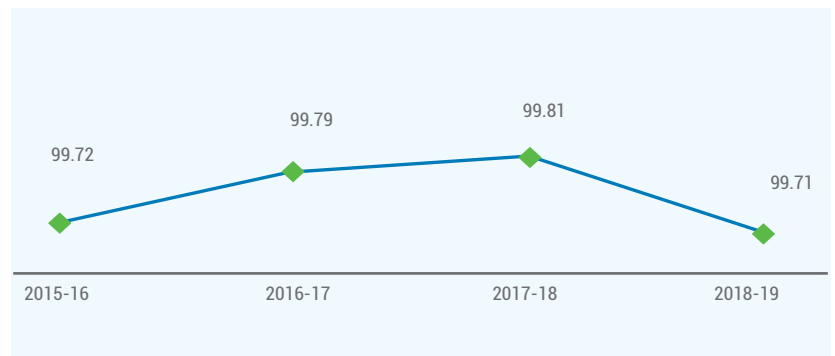
With the state-of-the-art maintenance practices, POWERGRID has continuously maintained transmission losses to international benchmark of less than 4% level making POWERGRID the most trust-worthy power transmission entity in the country.

Continuing without thrust on Grid Stability, no incidence of major grid disturbance has occurred in the current reporting period. We are also pleased to inform that no incident of customer privacy breach or loss of customer data was reported during the reporting period.





Transmission System Availability (%)



The enormous transmission infrastructure of the company is maintained at such high system availability through deployment of state-of-the-art operation and maintenance techniques at par with international standards. Some of the techniques being deployed for management of assets across the Company include on-line condition monitoring for substation equipments, on-line transient monitoring system, aerial patrolling of transmission lines, GIS mapping, hot line maintenance upto 765 kV, application based patrolling, travelling wave fault locator etc.

POWERGRID has adopted various monitoring techniques for detection of defects at incipient stages such as Frequency Response Analysis & Frequency Domain Spectroscopy for Transformers and Reactors, Dynamic Contact Resistance Measurement for Circuit Breakers, Third Harmonic Resistive Current measurement for Surge Arrestors, Thermo-vision scanning etc. These techniques have proved to be very useful in detection of defects at an early

stage & lead to Preventive/ corrective actions in advance to avert major failures. In addition, periodic oil parameter checks of Transformers/ Reactors and its bushing, particle counts, inhibitor content test are very useful for diagnosis of the problem and life enhancement of the Transformers.

Such preventive maintenance techniques are applied through residual life assessment/ condition assessment techniques. Maintenance activities are planned well in advance and an "Annual Maintenance Plan" is chalked out for every asset through live line or shutdown.

In order to improve further, POWERGRID O&M practices are regularly being benchmarked internationally through "International Transmission Operation and Maintenance Study" (ITOMS) carried out by UMS, USA. In ITOMS studies/ benchmarking, about 28 Power Transmission Utilities across the Globe participate and their performances are evaluated and benchmarked. As per ITOMS benchmarking report,

POWERGRID performance is one of the best among other peer groups.

The loss of electricity infrastructure or a significant curtailment of service may have an immediate and in some cases, long term adverse effect on a region. As such, regardless of the cause of an emergency, the prompt restoration of generation, transmission and distribution system is vital to the well-being of the individual citizens and the economy of the country. Therefore, restoration activities need to be taken up immediately upon service disruption. Being a CTU, POWERGRID's priority is to restore the power supply to the EHV transmission network affected by disastrous incidents to enable restoration of electrical supply to the largest number of customers as quickly as possible.

We have developed and maintained a well laid down Disaster Management Plan in order to ensure prompt restoration of power supply to disaster-affected Extra High Voltage (EHV) transmission network. We also play a role in Emergency

POWERGRID's Technology Development Department is taking up many technological interventions primarily focused mainly on reduction of transmission losses and optimizing the right-of-way (RoW) requirement while establishing transmission corridors as well as reducing the land requirement for establishment of substations.

restoration of power transmission system as part of the National Disaster Relief System.

POWERGRID's Emergency Restoration System (ERS) have been placed at strategic locations for rapid restoration of transmission lines damaged during natural/ manmade disasters. These systems have been developed as lightweight & modular which makes their deployment possible even in inaccessible locations and also reduces the restoration time considerably. In recent years, ERS has been used for restoration of lines of Delhi Transco (DTL), APTRANSCO (A.P) and JKPDD (J&K) besides POWERGRID transmission lines during natural disasters. A specialized team of experts have been trained and deployed in various regions for restoration of damaged transmission lines. Depending upon the extent of damages, resources from other regions

are also pooled to expedite the restoration work. Necessary support facilities like communication equipments, portable generators, tools and plants etc. are also available to enable the ERS team to be self-contained and work effectively without local assistance which is normally not available during such natural calamities.

POWERGRID has always put special emphasis on integration of new technological products/ services for enhancing performance of transmission system as well as improving the safety, security, quality and reliability of power supply infrastructure while optimizing the cost of transmission and minimizing environment impact. The company gives priority to activities with potential for societal, environmental and national benefits by application of advance technologies and finding solutions to gear up for future challenges.





Establishment of 1200 kV Test Station, Bina

To meet long term power transfer requirements in the country, 1200 kV UHVAC system has been developed as the next level of transmission voltage in India in view of the challenges like reduced right of way (ROW) availability, need for environmental conservation, requirement of reduction of transmission losses etc. The 1200 kV National Test Station was established at Bina, MP under public private partnership model in collaboration with 35 Indian equipment manufacturers and Central Power Research Institute (CPRI). 1200 kV National Test Station was successfully commissioned by synchronizing with Grid and commencement of power flow in May 2016.

Application of Geographic Information System tools and space technologies for asset mapping and new transmission line routing

POWERGRID is utilizing geographic information systems tools like Bhuvan for mapping its transmission assets, for route alignment during planning of new transmission lines and for disaster management studies. This will help POWERGRID to classify its assets based on vulnerability, quick decision making in disaster situation, and optimize Manpower and other resources for operation and maintenance of Transmission line.

Validation of Electric and Magnetic Field on 800 kV lines

With the use of in-house Electric and Magnetic field meters, measurement of electric field and magnetic

field on few EHV lines were carried out. All such measurements have indicated that Electric and Magnetic fields associated with our transmission lines are well within the limits prescribed by International guidelines of International Commission on Non-Ionizing Radiation Protection.

In-house development of software for automatic fault detection of Transformer based on online Dissolved Gas Analysis

POWERGRID has developed in-house software tool for real time monitoring of transformer and reactors by integrating the sensors installed for dissolved gas analysis in the transformers and reactors across the country. Online monitoring of transformers/reactors is aimed at detecting early stages of faults initiation and hence, reducing sudden failures. The software tool is operational at National Transmission Asset Management Centre and Regional Transmission Asset Management Centres.

Development of the first 33 kV Mobile Capacitor Bank and evaluation of its effect on distribution system

In order to address the issue of low voltage persisting in the power distribution level in various areas of country, Mobile Capacitor Bank of 20 MVAR capacity has been developed by POWERGRID. Mobile capacitor bank has been chosen for development as it can be moved based on the requirement to a particular location. This bank has been successfully field tested in Haryana Vidyut Prasharan Nigam Limited (HVPNL) system. Noticeable improvement in voltage level of 33 kV system has been observed.

Rural Electrification (RE) work in Odisha, J&K, Uttar Pradesh (UP) are under process and cumulatively, infrastructure of more than **4500** villages have been completed and more than **4.2** Lakhs service connections have been provided in the above 3 states.

Development and Introduction of RIP bushings for 800 kV Transformer and Reactors - Type testing

POWERGRID has introduced Resin Impregnated Paper (RIP) bushings having superior characteristics over Oil Impregnated Paper (OIP) bushings for 800 kV Transformers and Reactors to ensure their increased availability. The chances of fire breaking out on RIP bushings are minimal and catastrophic effects of its failure on nearby equipment in switchyard are very little. This would reduce failure of high value transformers and reactors & other nearby equipment thus resulting in significant savings besides losses due to non-availability.

Building Trust in Community and Rural Areas

POWERGRID's developmental activities have always been associated with active involvement of all our stakeholders and respecting the rights of the community often going beyond the applicable Laws and Regulations. Accordingly, Public consultation & information dissemination has been made an indispensable part of our project planning and implementation. Our commitment towards Social Responsibility is amply reflected in our policies such as ESPP and CSR Policy and vivid through the certifications like OHSAS 18001 and Social Accountability SA 8000.

A number of policy and reform based initiatives like SAUBHAGYA, Affordable 24x7 Power for All, IPDS, UDAY, UJALA, Energy Efficiency etc. have been taken by the Government with

an objective to ensure enhanced access to electricity and sustainable growth of the sector. In line with said policies, during the reporting period, POWERGRID has achieved its assigned targets of releasing service connections in the States of Odisha, Uttar Pradesh, Jammu and Kashmir, under the Govt. of India mission of connecting each and every household.

Till Mar'19, total infrastructure has been created for electrification of 87,838 nos. villages (including partially electrified & un-electrified villages) and service connections have been provided to about 49.49 Lakhs BPL households.

POWERGRID has completed the task of underground cabling under Integrated Power Development Scheme (IPDS) work in Old Kashi area of Varanasi Town assigned by Purvanchal Vidyut Vitaran Nigam Limited (PuVVNL), which involved conversion of overhead distribution network to underground and connecting to existing customers. Under this project, a total of 1510 kms HT and LT power cabling work has been completed and 50,000 customers have been connected to the new underground system. This has resulted in major improvements such as reduction of losses, augmentation in power transformation capacity, increase in revenue collection due to increase in number of metered consumers, availability of quality power to the consumers, enhanced safety and aesthetics of the area.

We ensure safety of the community by complying with General Safety Provisions and Standards as prescribed in our policies. Improved mechanisms of emergency rescue and user-side safety checks ensure that there are no major accidents during the construction and maintenance activities. We also spread awareness on safe and proper usage of electricity via newspaper advertisements. Both in-house and independent studies have confirmed that Electro Magnetic Field (EMF)

levels are well within the prescribed international limits/norms. There were no public fatalities during the reporting period.

Building Trust in Employees

We have maintained a work culture that ensures personal and professional development of our employees. The employee attrition rates (including FTBs) for 2017-18 and 2018-19 were 2.06% and 3.16%. Employees are kept updated about the latest developments and policies of the company via newsletters, house journals, wall magazines, lounge and regular media updates. For better communication between the management and the employees, regular interactions are organised through open sessions.

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.



Glimpse of Employee Open Session



Vendor Development Meet

Building Trust in Supply Chain

POWERGRID believes that a strong and reliable supply chain is integral to its growth and our open, transparent and non-discriminatory processes ensure that our vendors are selected on the basis of innovation quotient, supply assurance, capability/capacity to manufacture, environment concerns, labour practices, social accountability aspects, product quality, cost competitiveness etc. In order to enhance transparency, a structured e-tendering/award process is followed for award of any contract.

POWERGRID has a very big supply chain which caters to requirement of projects and O&M activities. Our suppliers include both domestic and international suppliers, and in order to ensure transparency, a Compendium of Vendors is disclosed on our website for approved vendors/ suppliers. During the reporting period, we empanelled 261 new suppliers. All new suppliers/ vendors were screened for qualifying requirements and also on compliance related to Environment and various Social aspects such as child labour, discrimination, availability of valid Consent to Operate from respective State Pollution Control Board/committee, etc. Process audits/inspections continued in the manufacturing units of various vendors, sub-vendors and across the supply chain to achieve the target of optimization of product. Smart Inspections have been taken up on a wide scale. Quality Inspections and assessment of vendors covers various technical aspects and performance of vendors on labour issues, human rights, social issues etc.

Year	Total Contracts Awarded ¹		Domestic Bidding		International Bidding	
	Numbers	Amount (In Crore)	Numbers	Amount (In Crore)	Numbers	Amount (In Crore)
2017-18	195	9257	115	5482	80	3775
2018-19	82	5533	54	3714	28	1819

POWERGRID encourages local sourcing/ indigenous participation and encourages technical cooperation with suppliers, thereby promoting localization and domestic production. Over the decade, we have been successful in developing indigenous technologies through well-established supply chain.

In line with the Government's 'Make in India' initiative, POWERGRID has taken many measures to promote indigenization and encourage participation of MSEs and local suppliers. The latest developments in Public Procurement as per orders of Govt. of India have already been implemented in POWERGRID. Moreover, in line with Govt. of India notifications of 2018, for packages with cost estimate less than 50 Lakhs, only local suppliers are eligible and in case of more than 50 Lakhs, preference is given to local suppliers. Further, Micro and Small Enterprises (MSE) are given certain relaxations such as exemption from submission of bid security etc. POWERGRID has achieved the target

of mandatory procurement of 25% out of total annual purchases of products and services rendered by Micro and Small Enterprises in line with Public Procurement Policy (Order 2012) read in conjunction with its amendment in November 2018. Total eligible value of annual procurement of goods produced and services rendered by MSEs (including MSEs owned by SC/ST and women entrepreneurs) for FY 2019-20 is projected to be in the range of ₹1,000 Crore.

A provision has been included in many of the packages under global bidding provisions regarding establishment of manufacturing facility in India by foreign manufacturers. Few Indian suppliers have also been promoted by providing some relaxation in qualifying parameters without compromising on quality, with a provision of extended warranty of their equipment. In many packages, Indian manufacturers are also given an opportunity to bid in technical support with a foreign supplier as a partner/ collaborator.

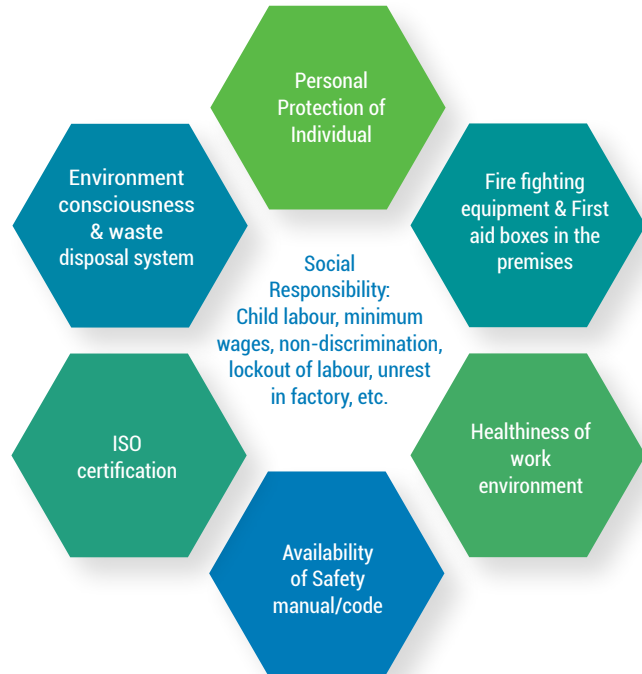


Foundation laying ceremony of Chandauti S/s in Bihar

¹Corporate office



Safety plan is an 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.



Building Trust in Shareholders

POWERGRID has been consistent in its efforts to fulfil all the targets outlined by the Government of India through MoU and has been expanding its business, thereby creating wealth for its shareholders. The CMD addresses the shareholders in the presence of board at least once a year at the Annual General Meeting and at several other analyst meets.

Building Trust in Government

POWERGRID, as the Central Transmission Utility (CTU) of our country, plays a very important role in the Indian Power Sector. We regularly coordinate and interact with various state and national level government departments such as Ministry of Power (MoP), Ministry of Environment, Forests and Climate Change (MoEFCC), Central Electricity Regulatory Commission (CERC), Central Electricity Authority (CEA) etc. on a regular basis. These Interactions cover the following issues:



The continuation of CTU responsibility with POWERGRID is a clear testimony of Government of India's faith in our capability. POWERGRID as CTU is mandated to discharge all the functions of planning and co-ordination related to Inter State Transmission System with State Transmission Utilities, Central Government, State Governments, generating companies, Regional Power Committees, Authority and licensees. In addition, it has to ensure development of an efficient and co-ordinated system of Inter State Transmission lines for smooth flow of electricity from generating stations to load centres and to provide non-discriminatory open access to its transmission system.

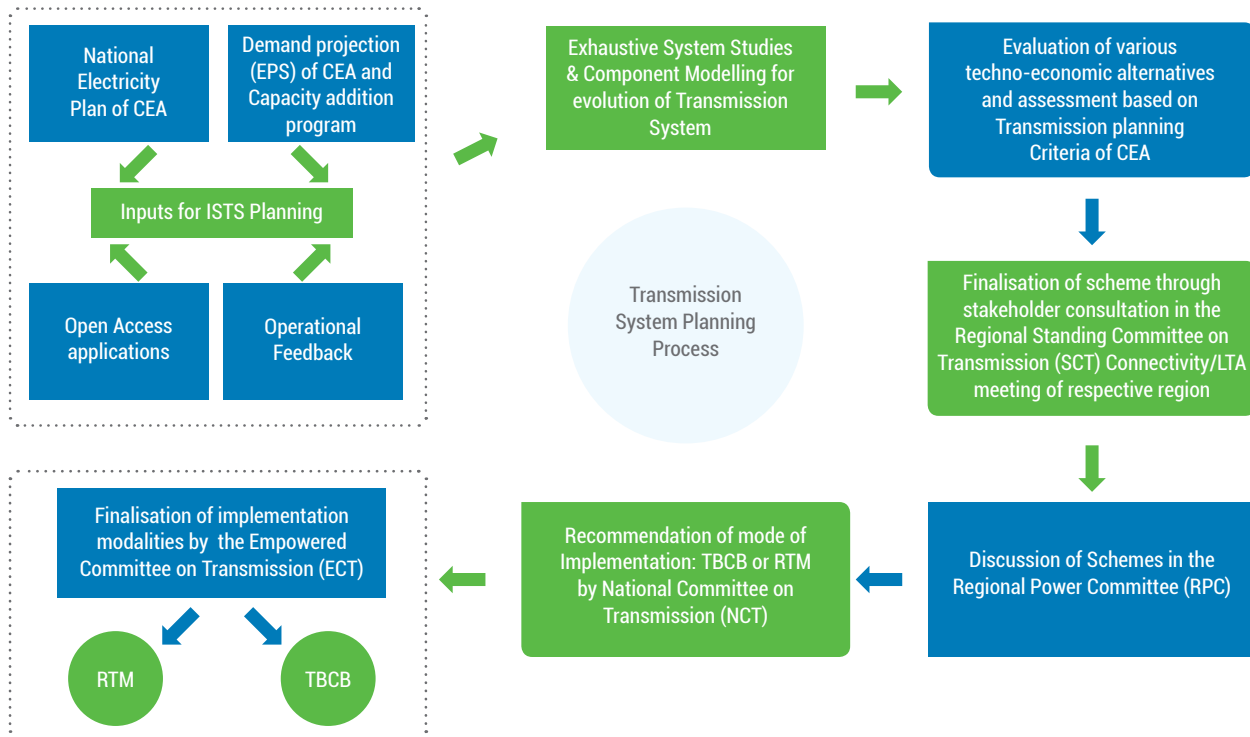
Our annual targets are set in consultation with the Government of India through a formal Memorandum of Understanding (MoU). Year on year we achieve bigger targets, strengthen our policies to operate efficiently and minimize & mitigate the impacts on communities affected by our business. While implementing 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 the World Bank, the Asian Development Bank and KfW. As a listed Public Sector entity, POWERGRID is regulated by the guidelines of Ministry of Corporate Affairs and SEBI. For issues related to revenue generation from our transmission business, various technical/commercial discussions are held with Central Electricity Regulatory Commission (CERC).

The basic responsibility of planning of transmission system lies with the CEA based on the projection of energy demand and supply. The details of transmission system are discussed and planned in consultation with CTU, POSOCO and other State Utilities. POWERGRID being the CTU of the country acts as a coordinator of all stakeholders including CEA, RPCs, STUs, Generating Companies, etc. A Schematic diagram for Transmission planning process is given in figure below.

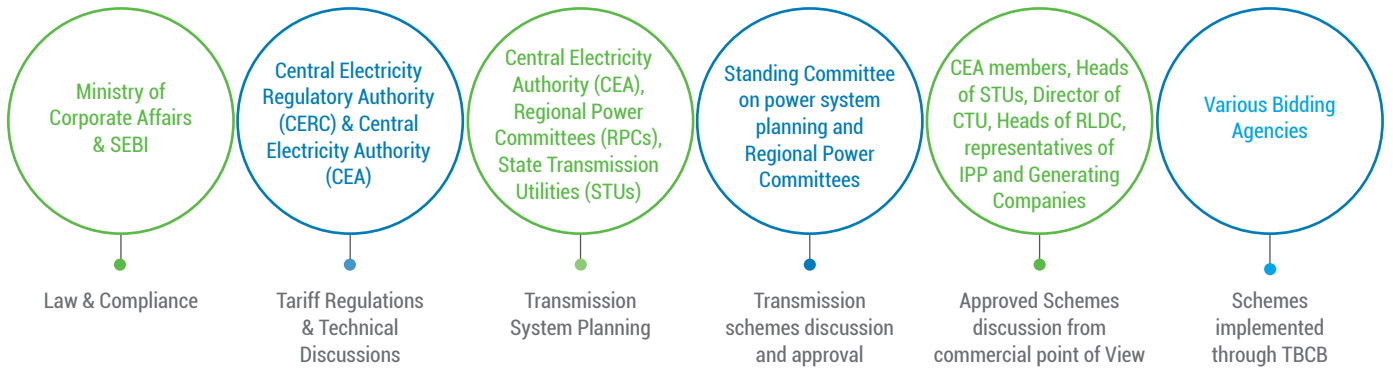


Transmission System Planning Process

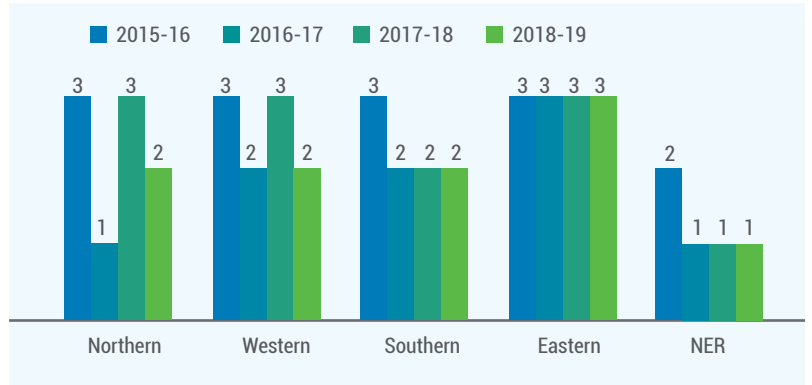


For Forest and Wildlife approvals, we regularly interact with the Ministry of Environment, Forests and Climate Change and State Forest Department.

Stakeholders



No. of Regional Power Committee Meetings

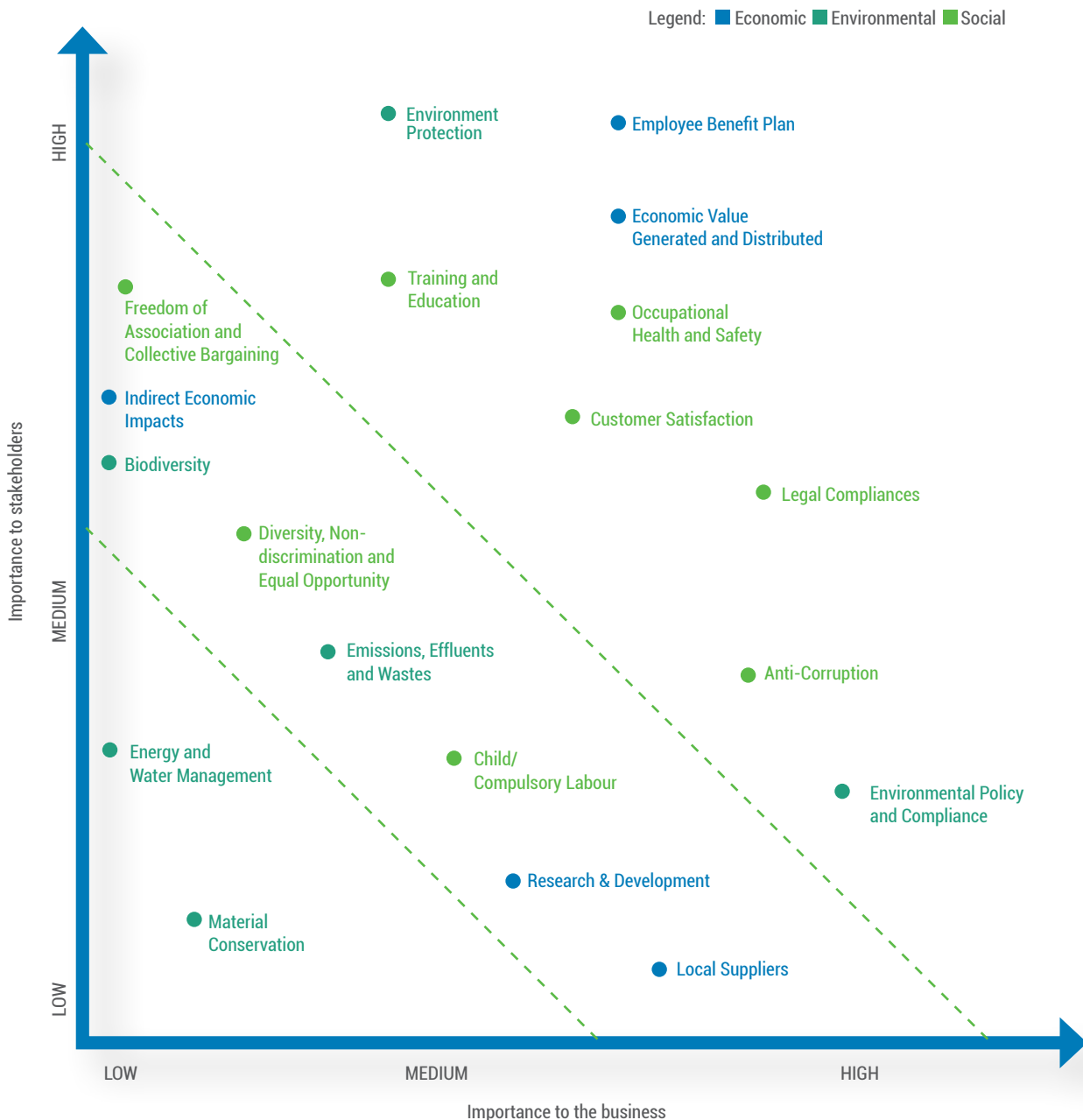


Raising Day opening ceremony-Lighting of lamp

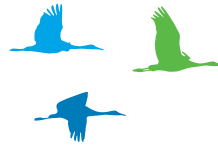


Materiality Analysis and Mapping

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



One of the Top **25** Most Innovative Companies in India at the 5th CII Industrial Innovation Awards 2018 - only power sector CPSE in the list

Best Issuer on Electronic Debt Bidding Platform- PSU awarded by National Stock Exchange of India Ltd. (NSE)



Disbursement of interim dividend for 2018-19 to MoP, GoI

The annual average GDP growth (%) data of 2014-18, as per World Economic Outlook (April 2019 database) of International Monetary Fund, exhibits that India has emerged as the fastest growing major economy in the world. India has now become the 6th largest economy in the World. The share of electricity, one of the most critical components of infrastructure for economic growth, in energy mix in 2014 was only 17% as against 23% in OECD countries. The development of adequate electricity infrastructure is essential for sustained growth of economy as well as for energy security. The Government of India has identified power sector as

one of the key sectors of focus, so as to promote sustained industrial growth.

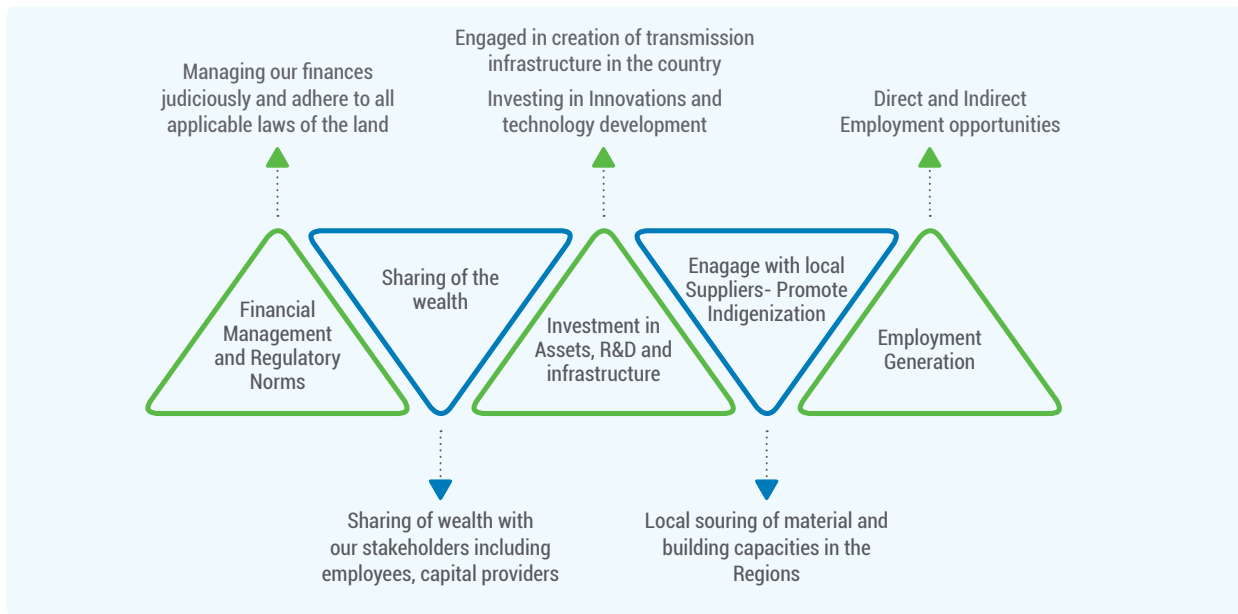
NITI Aayog's '**Strategy for New India@75**' study considers harnessing of RE sources, which are a strategic national resource, to be a part of India's vision to achieve social equity and energy transition with energy security, a stronger economy, and climate change mitigation. In this direction, the Govt. of India is following a focused approach to increase the RE capacity in the country to 175 GW by 2022 and in the longer time horizon, it is also committed to achieve about 40% cumulative electric power installed capacity from non-fossil



fuel based energy resources by 2030, in line with its Intended Nationally Determined Contribution as submitted to the UNFCCC.

POWERGRID's strategy is designed to closely align with strategic government initiatives so that we contribute to achieving the country's vision and goals for a sustainable economy. POWERGRID aims to maximize its direct economic contribution through sound management of its core business and its investments. Our indirect contribution is a consequence of our procurement, infrastructure investments and the involvement of local people and businesses in our supply chain.

POWERGRID accounts for nearly 50% of the total transmission network capacity in the country, making it the largest Power transmission utilities in the country.



MoU signing with MoP for 2018-19

Performance Highlights

We have reported a stellar performance with a total profit of ₹18,183.2 Crore in the current reporting period, an increase of 35% over the net profit gained in 2015-17. POWERGRID's stock has shown consistent performance over the years. Earnings per share (EPS) increased to ₹ 19 in FY 2019 from ₹ 14.37 in FY 2017.

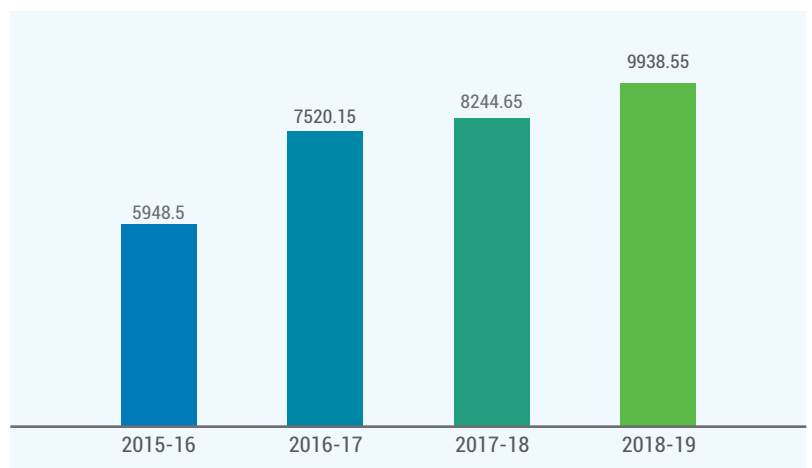
During the reporting period, POWERGRID achieved capital investment of ₹ 51,598 Crore and assets capitalization of ₹ 55,253 Crore. Funds for the projects/ schemes were mobilized through private placement of bonds, term loans, external commercial borrowings/ suppliers' credit, internal resources, power system development fund, central financial assistance from Ministry of New and Renewable Energy and loans from multilateral funding agencies. During the reporting period, investment approvals for more than ₹ 7,000 Crore were accorded by POWERGRID's Board for implementation of projects/ schemes.

POWERGRID continues to maintain its rating of 'AAA'(Stable) at Domestic Level by CRISIL, ICRA and CARE ratings & 'Baa2/BBB(-)'(Stable) at International Level by Moody's, S&P and Finch.

The main focus of POWERGRID continues to be Transmission business which is the largest contributor to our overall revenue. However, we are expanding our outreach through consultancy and telecom projects. During 2017-19, there have been major leaps in consultancy assignments and telecom revenue cumulatively contributing more than ₹ 2542 Crore to our revenue.

POWERGRID received ₹ 421.39 Crore and ₹ 3684.53 Crore as financial benefits from the Government of India in 2017-18 & 2018-19 respectively. Safeguarding the interest of the shareholders, POWERGRID has been consistently paying dividends to its shareholders throughout the reporting period.

Net Profit
(₹ Crore)

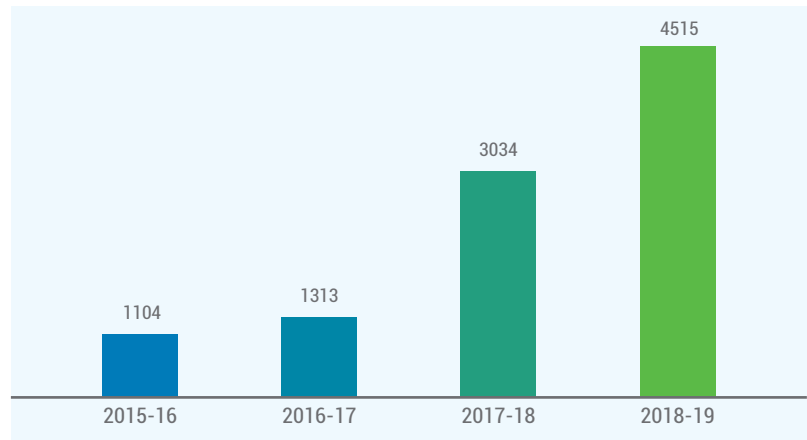




Earnings Per Share (₹)

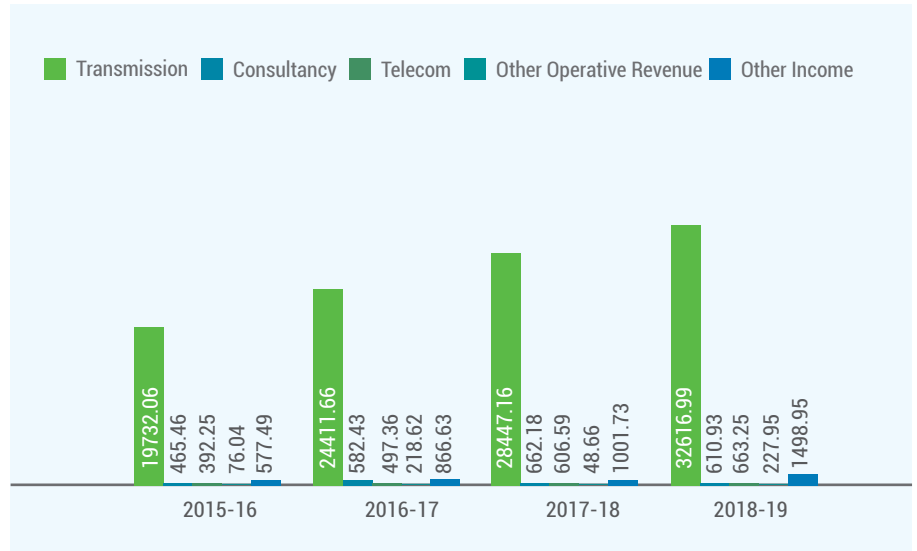


Dividend (₹ Crore)

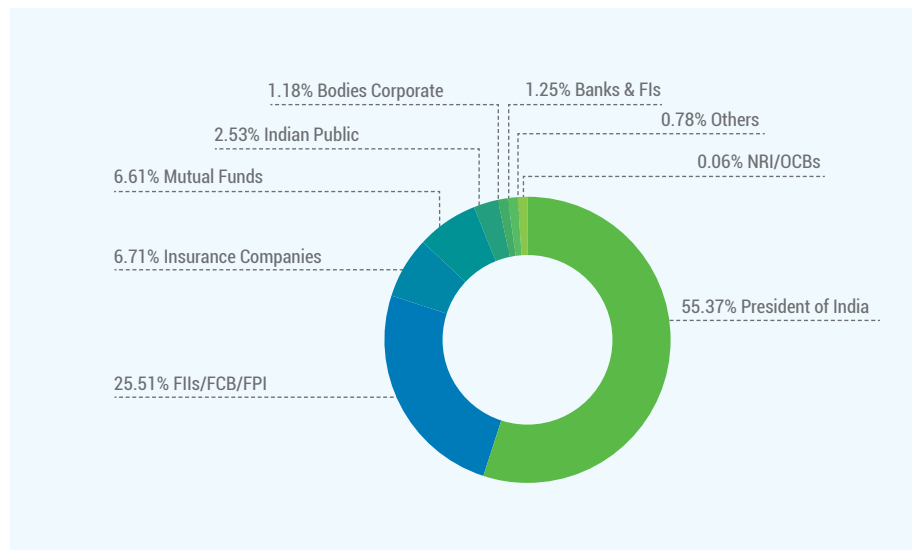


Disbursement of dividend for 2017-18 to MoP, GoI

Direct Economic Value Generated (₹ Crore)

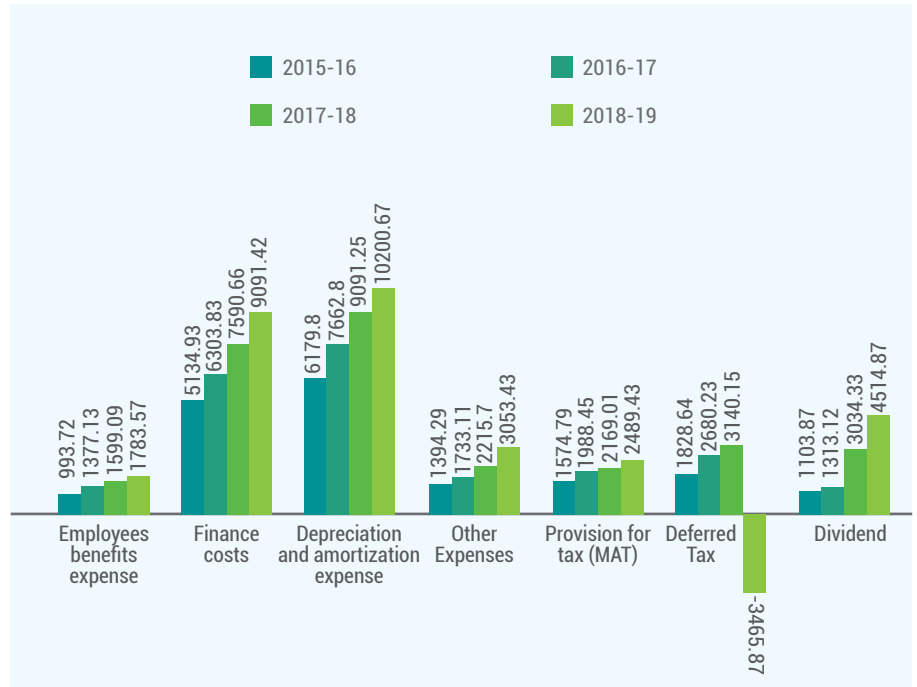


Shareholding Pattern (%)



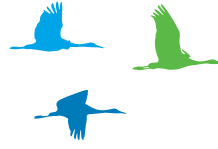


Direct Economic Value Distributed (₹ Crore)



Signing of Term Loan agreement for ₹10,000 Cr. with State Bank of India

SOCIAL ENRICHMENT



Gold Certificate for Best CSR Practices at the Haryana CSR Summit 2018 by Govt. of Haryana

Gold Medal for CSR presented by the Hon'ble Governor of Telangana & AP & President of Indian Red Cross Society

ET2GOOD rating at the second edition of ET2GOOD 4GOOD Ratings conferral ceremony for All-Round Excellence in CSR for 2016-17 & 2017-18

Golden Peacock Award 2017 for CSR in Power Sector, by the Institute of Directors



CMD, POWERGRID conferred with 'Swachh Bharat Award 2019' by his excellency President of India



POWERGRID has always addressed the externalities within its business processes in its drive to be a responsible corporate entity. It is our sincere belief that business sustainability is not only dependent on financial stability and that its reach is far wider and broader. It includes minimization and mitigation of environmental impacts, addressing social issues arising from business practices and undertaking appropriate & inclusive CSR initiatives which are designed to catalyse development & prosperity of community.

Securing Land

Acquiring land for the developmental projects is a cumbersome process and may have social, economic and environmental implications on the affected population. This can be on the account of the possibility of loss or depletion of productive assets, habitats, community assets etc. These impacts are, however, not applicable to land requirement for transmission projects.

Transmission projects involve transmission lines and substations. As per applicable law, land for transmission line i.e. for tower and corridor are not acquired and ownership of land remains with the owner and is allowed to continue cultivation after construction, as POWERGRID has been vested with the powers of Telegraph Authority under Sec. 164 of the Indian Electricity Act, 2003. Even for substation land, POWERGRID keeps the land requirement to the barest minimum.

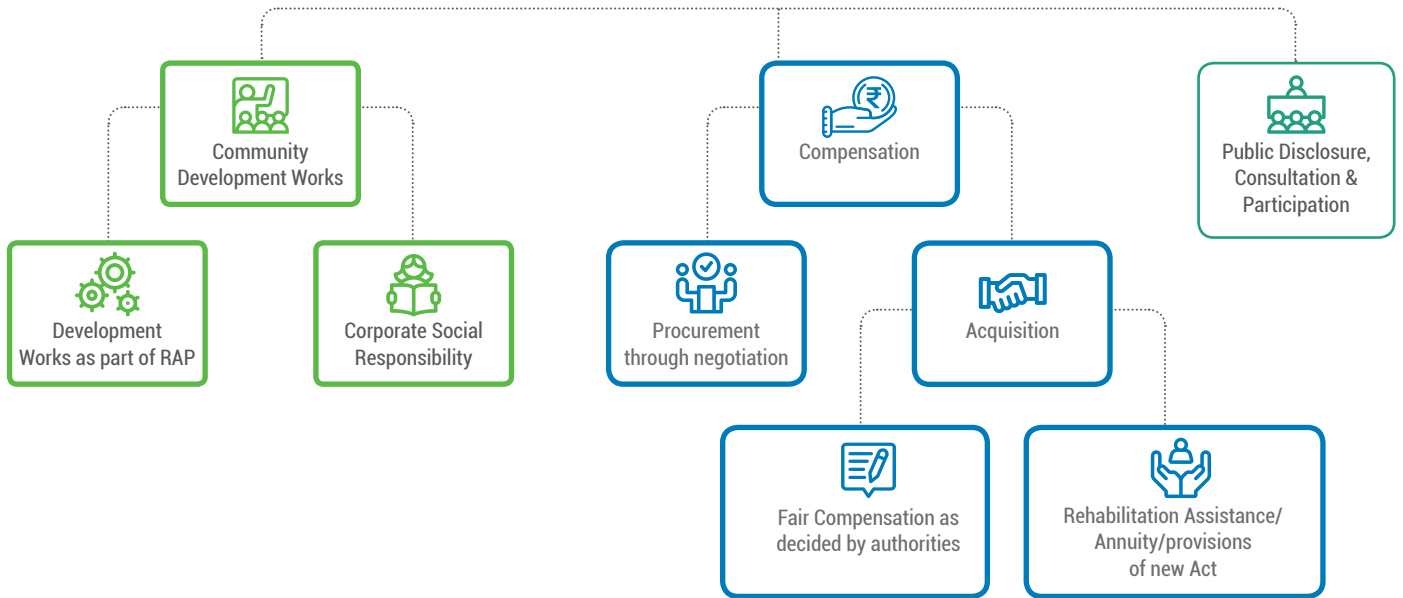
POWERGRID, a firm believer in addressing the pressing social needs of the society, always endeavors to locate substations on encroachment free government land first. Only in absence of availability of Government land, private land is secured. In order to further reduce land requirement, we have upgraded and adopted new and better technologies such as Gas Insulated Switchyard (GIS) which requires lesser area compared to the traditional Air Insulated Switchyard (AIS).

Our ESPP has a well-defined "Social Entitlement Framework" that was developed to address issues of Rehabilitation and Resettlement. The framework was based on the national policy and other progressive directives emanating from the government or the multilateral funding agencies.

The New Land Acquisition Act "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013" came into effect from 1st January, 2014. Since then, POWERGRID has acquired land for only one substation through the provisions of the new land acquisition Act, while land for all other substations were secured either through private purchase on "Willing Buyer Willing Seller" basis on market/negotiated rate or by utilizing the progressive policies of state governments. This helped not only to avoid public resistance and reduce legal liabilities but has also resulted in better organizational image and enhanced transparency.



Social Obligation for securing land for substation



Public Disclosure

POWERGRID initiates all development activities with active involvement of the all stakeholders. Public consultation & information dissemination is an indispensable part of our project planning and implementation. Our ESPP focuses on forging better living standards for affected population in a sustainable way, minimize information asymmetry between POWERGRID and affected people/community and ensures a long-term symbiotic relationship.

During transmission line & substation construction, public consultation and information dissemination is an integral part of project cycle right from planning to commissioning stage. We have devised different ways to ascertain views of public and affected persons which are applied appropriately during consultation process. The feasible views/suggestion obtained during such consultations are given due weightage in the design and route alignment activities.



Transmission line Construction



Public Consultation for Screening, Assessment and Route/ Site finalization

Consultation at Individual and community level

Resolution of issues raised during initial screening and walkover surveys

Affected person(s) compensated as per provisions/ Issues Resolved

Substation Construction



Public Consultation as per the Land Acquisition Act

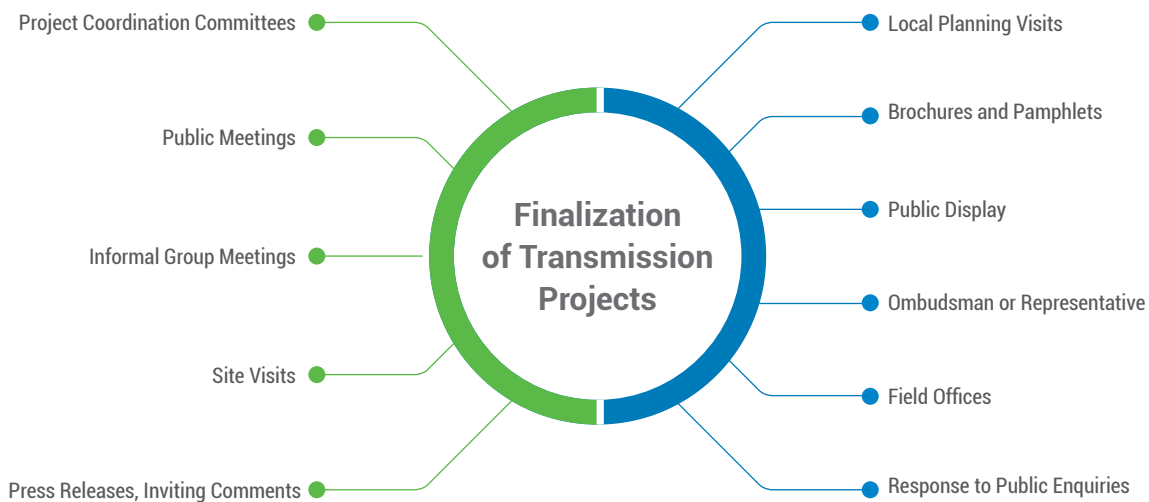
Social Impact assessment of Land acquisition activity based on socio-economic survey

Compensation designing in consultation with people

Meetings with PAPs to develop RAP

Compensation to PAP

Modes & Techniques of Public Consultation



Corporate Social Responsibility



Vision

To be a Corporate that sets a long term strategy for Social & Economic Development of communities through initiatives in rural development, education, skill development, health and other areas of national importance and adhere to sustainable environmental practices.

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 endeavours to incorporate its CSR and Sustainability policies in line with its business policies in order to conduct its business in a sustainable manner. We constantly work towards improving our social practices in order to have a meaningful impact on the society. The company carries out various CSR activities with emphasis on Rural Development/ Infrastructural Development, Skill Development, Health, Education and Environment.

POWERGRID first enacted its CSR policy in 2009, long before the CSR guidelines were issued by the Department of Public Enterprises in 2010. For complying with the revised DPE guidelines and Companies Act 2013, our CSR policy was revised in 2013 and 2014.





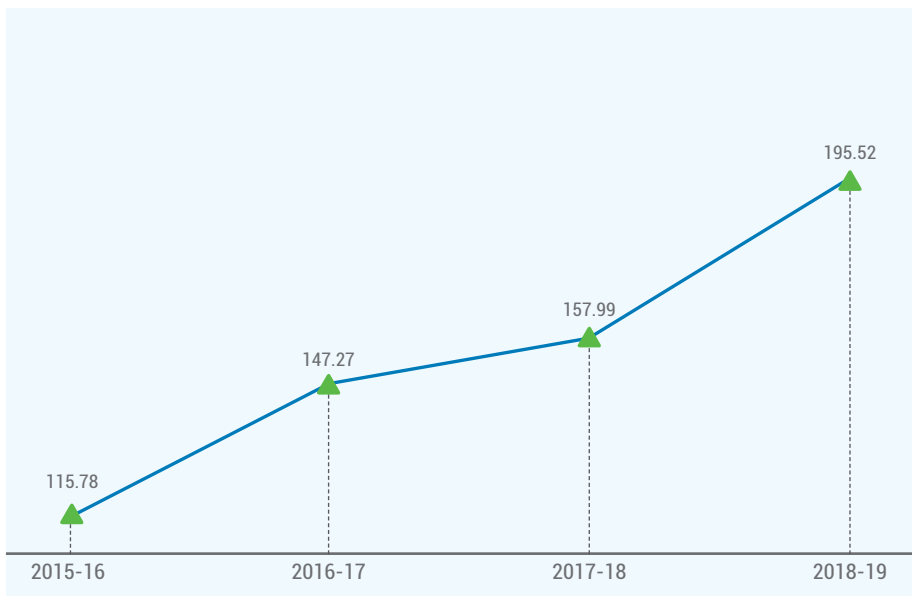
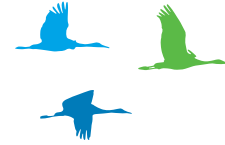
CSR Governance

As per the requirements of the Companies Act, 2013 and the Department of Public Enterprise Guidelines on Corporate Social Responsibility and Sustainability for Central Public Sector Enterprises, POWERGRID has a dedicated Board level CSR Committee which looks after the CSR aspects of the company. As of 31.03.19, the committee headed by the Director (Personnel) & CMD, comprised of 8 other members including 3 full time directors, 4 Independent Directors and 1 Government Nominee director. The CSR Committee is serviced by the CSR department in all matters relating to the CSR activities of the company. A Nodal Officer at the rank of Executive Director heading the CSR Department of POWERGRID is responsible for coordinating the overall CSR activities in POWERGRID.

Implementation of CSR Projects

CSR activities shall preferably be implemented in a project mode. Implementation of various activities will normally be done through placement of award by the Corporation as per Works & Procurement Policy of the Corporation. Services of various departments of Central, State Governments, Panchayati Raj Institutions, etc. may also be availed for implementation of CSR activities on deposit work basis.

CSR activities/projects/programmes, may also be taken up in association with a registered trust or a registered society or a company established by the Corporation or its holding or subsidiary or associate company, submitted to fulfilling requirements, as mentioned in the Companies Act.



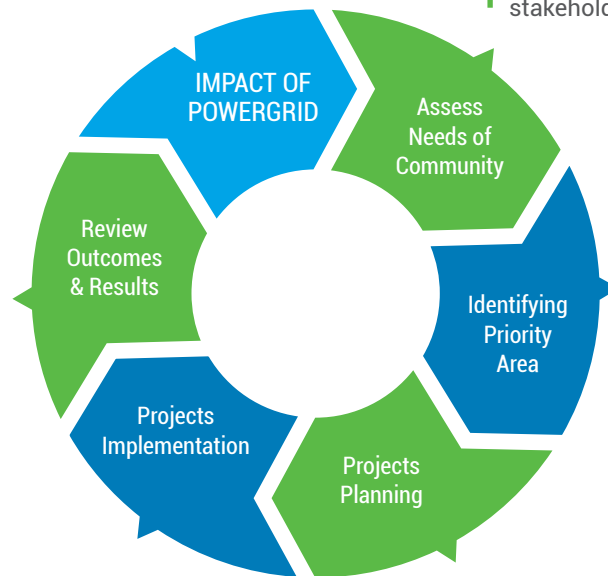
CSR Expenditure (₹ Crore)

Understanding the Impact of Organisation 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.

Site level assessment through meetings and impact assessments with the benefitted communities and people are carried out. During the reporting period we have carried out CSR activities in our identified thrust areas.



Adhering to Schedule VII of the Companies Act, 2013 and DPE guidelines and taking clues from United Nations Global Compact & UN Millennium Development Goals following have been identified as the thrust areas of CSR & Sustainability activities of POWERGRID – Education, Health Care & Sanitation, Rural Development, Capacity Building & Livelihood Generation, Ecological and Environmental Sustainability and Relief Rehabilitation/Restoration work at the times of National Calamities/Disasters.

The implementation of various activities is normally done through placement of award. Services of various departments of central/ state government, Panchayat Raj Institutions etc. are also availed for implementation of CSR activities as deposit works. The financial commitment is made for the entire expenditure till the completion of the project.

Monitoring of the project is done by site level and regional level offices who send the reports to Corporate Centre. Monitoring also includes review through site visits/ video conferencing, running account payments and other incident activities necessary for further implementation of the project.

Upon identifying the requirement of the community, a project plan is prepared indicating the need for community development activity, time-frame of implementation, action plan and budget requirement. Long-term projects are broken into short/medium term plans and annual plans. The communities intended to be benefitted are consulted and closely involved in the process of planning of the CSR activities. Wherever possible, the local authorities and specialized agencies are also similarly consulted and involved.



Healthcare

Objective: To create an enabling infrastructure in public healthcare institutions



Health Camps in 73 locations across the country benefitting more than 1 Lakh people.

300-bedded 'POWERGRID Vishram Sadan' operational since January 2018 at AIIMS, New Delhi.

Providing Ambulances to Primary/Community Healthcare centre/ District Administration in 25 locations.

Providing support for Medical Infrastructure, Aids and Equipment to Hospitals, PHC, CHC and Differently Aabled Persons in 20 locations in 13 states.

Construction/renovation of Health Care Centres in 6 locations in Rajasthan, Madhya Pradesh, Kerala and Chhattisgarh.

Provided high-end artificial limbs to 25 persons with disabilities in Mumbai, Maharashtra.

Construction of Super Speciality Oncology Healthcare Centre in Assam and Maharashtra.

Provisioning of Public Facilities in 21 locations in 10 States/UT including providing 45 open air gyms in Jaipur and 90 units of basic furniture to health care centres in Nagaland and Odisha.



Education

Objective: To create a conducive learning environment



Providing school furniture in 67 Schools across 11 states.

Providing Computers, Laptops and Projectors -200 projectors and 8 computers in Madhya Pradesh, Rajasthan, Haryana, Jammu and Kashmir and Chhattisgarh.

Construction/renovation of 33 classrooms in 13 schools across 9 states.



Carrying out Development Works in Government Schools like construction of Toilets, Boundary Wall, etc. at 20 locations in 10 states.

Construction of Skill Development Centre Building at Assam Engineering institute, Assam.

Contribution of ₹ 2 Crore to National Sports Development Fund for infrastructure development in rural areas in Jaipur, Rajasthan.



Skill Development

Objective: To enhance income and well-being of under-privileged youth in India



Training on Tailoring and Sewing machines provided to 250 Women in Haryana, Uttarakhand, Madhya Pradesh, Rajasthan and Jammu and Kashmir.

Capacity Building Activities on Power Transmission Line Tower Erection completed in West Bengal, Assam and Haryana.



Skill Development Training for Youth provided to almost 5,500 youths across nine states.

Income Generating Skill development Programme implemented for poor households in Rajarhat, West Bengal.

Sanitation and Drinking Water

Objective: To intensify the focus on cleanliness and to create an enabling environment for sanitation and hygiene



More than 2500 hand pumps installed in 15 districts in Uttar Pradesh.

Contribution to Swachh Bharat Kosh and Clean Ganga fund of the Government of India.

13,000 dustbins provided in 4 districts in Himachal Pradesh mostly across tourist spots.

202 Toilets constructed in public spaces in Uttar Pradesh, Bihar, Telangana, and Jammu and Kashmir.

Awareness campaign in 7 locations in Bihar, Jharkhand, west Bengal, Sikkim, Uttarakhand, Haryana and Assam.

441 public toilets constructed in 116 Schools of Uttar Pradesh, West Bengal, Maharashtra, Gujarat.



Drinking water through RO Plant/ Water ATMS provided in 24 locations in 5 district of Karnataka, Bihar and Andhra Pradesh.

Drinking Water Supply Scheme constructed in 6 villages in 3 districts in Andhra Pradesh, Uttar Pradesh and Chhattisgarh.

Water Filters and Coolers installed in 5 locations in the states of Haryana, Maharashtra, Uttar Pradesh, Jharkhand and Odisha.

533 toilets constructed/renovated in Government schools in Sikkim, Chhattisgarh, Andhra Pradesh, Uttar Pradesh, Rajasthan, Punjab, west Bengal and Haryana.

11 Vehicles/Mechanized Cleaning Equipment provided to 15 locations in Haryana, Gujarat, Uttar Pradesh and Odisha.



Rural Development

Objective: To provide basic amenities in rural areas



Construction/ Renovation of 54 community centres in villages across 13 states.

159 Solar/ LED Street lighting in 5 different locations in Bihar, Haryana, West Bengal and Andhra Pradesh.

10.14 kms of road construction with drains and culverts in 44 locations in 12 states.

Support to school, hostel for poor children in 5 locations in Maharashtra, Odisha, Assam and Uttar Pradesh.

Community development works including integrated rural development works across 28 locations in 12 states.

Seven Ponds renovated/ desilted in 2 locations in Odisha and Chhattisgarh.

12,430 Solar Lights/High mast lights installed in 102 villages.

7 Water ATMs installed at Wardha Substation.

4,486 km road constructed in West Bengal and Uttar Pradesh.

15 Community Centres built in Jharkhand, Uttar Pradesh, Andhra Pradesh, Odisha and Karnataka.

827 handpumps installed in Uttar Pradesh, Andhra Pradesh, Karnataka and Chhattisgarh.

Environmental Sustainability

Objective: To provide environmentally sustainable solutions to community



More than 9000 Solar Lights Installed in multiple locations in eight states of the country.

Solar Mast Lights and Solar Power Plants supported in 3 locations in Haryana, Uttar Pradesh and Andhra Pradesh.

Construction/ Renovation/ Desilting of 12 water bodies in 5 locations in the states of Madhya Pradesh, Sikkim, Bihar and Gujarat.

Construction of Drains and Nallah Deepening works completed in 3 locations in Uttar Pradesh and Maharashtra.



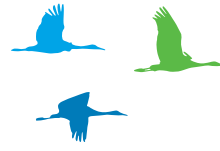
Capacity Development, Awareness Campaigns and Cleanliness Drives undertaken in multiple locations across 13 States/ Union Territories.

Two Bio-diversity Assessment studies conducted in Gujarat and Mizoram.

Green Belt Maintenance and Tree Plantations undertaken in 3 locations in Haryana and Uttar Pradesh.

Supply & installation of two Green Reprocesser unit for Organic Manure at Baidyanath Dham, Deogarh, Jharkhand.

HUMAN CAPITAL



India Concord
Summit (ICS) 2018
PSU Award for Best
HR Practices by a
PSU-Navratna

CBIP Special
Jury Award
for Innovation
Excellence
in Power
Transmission

Good Corporate
Citizen Award
category at PHD
Annual Awards for
Excellence 2018



POWERGRID has been continuously recognised as one of the India's Best Companies to Work by the Great Place to Work Institute, out of

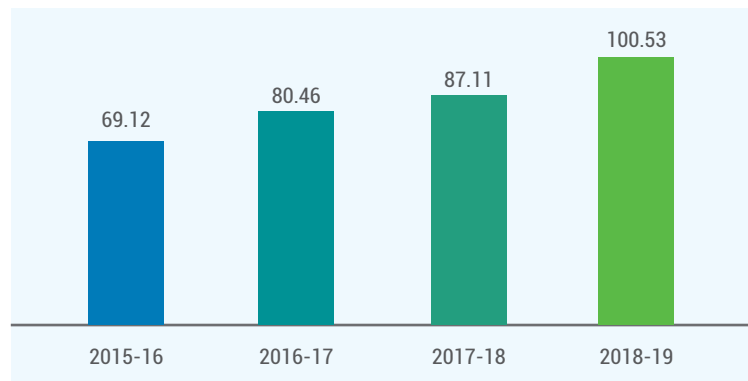
700+ companies



POWERGRID has prioritised their employee's well-being one of the biggest factors to ensure a happy, efficient and productive workplace. Our policies are targeted at development of human potential through continuous efforts by providing skill upgradation, career development and job rotation, to help the employees achieve personal and organisational goals.

Our employee focused culture and a constant endeavour to enhance our employee's competencies, has helped us retain highly competent employees as well as attract new talent that increasingly contributes to our growth. Our policies have been developed at par with international best HR policies and practices, which has encouraged our workforce to stay abreast of global skills and technologies.

Profit After Tax per employee (₹ Lakh)



Learning and Development

Excellence is a way of life in POWERGRID. Sustaining the level of excellence is our biggest challenge. With our learning initiatives, POWERGRID is able to respond to challenges and to adapt to an ever-changing & increasingly competitive global market. The continuous learning ensures smart people, smart attitude and smart services resulting in better business.

The Power Sector is going to move through uncertain and competitive environment in future with rapid changes in technologies and regulatory framework which shall require a pool of dynamic manpower always ready to adapt to any uncertain environment equipped with right knowledge, multiple skillset and abilities. To navigate in such a volatile and competitive landscape, the online training management system needs to be constantly upgraded and the processes which can offer employees meaningful learning options and avenues vis-a-vis their competency & skill gaps are regularly analyzed, updated & re-engineered if needed. POWERGRID has been pioneer in several smart learning and development initiatives & its practices like online HRD Management Systems have been recognised across the industry (e.g.: e-India PSE award 2014).

Our Learning & Development practices have always been valiant aligning with the latest technological changes, shifting market forces and political changes. As a probable result, POWERGRID has been bestowed with various awards in learning and development, continually.

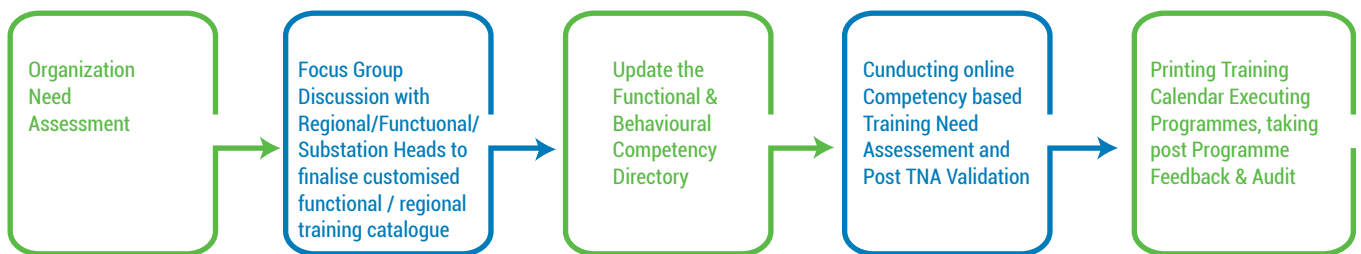
Our Human Resource Development (HRD) wing, has played a key role through various initiatives and interventions to create a future-ready workforce. Organizational Need Assessment (ONA) and competency-based Individual Training Need Analysis (TNA) are regularly conducted throughout the organization. These assessments help to determine individual competency enhancement requirements, on the basis of which the training programmes are designed and planned.

An HRD Action Planner, finalized through multi-disciplinary interaction, is a strategic instrument to encounter performance challenges and develop training programmes for operational excellence and strategic value addition. Employees are trained in the respective areas based on their individual training needs and Training Plan Matrix.



Competency Based Training Need Assessment Process

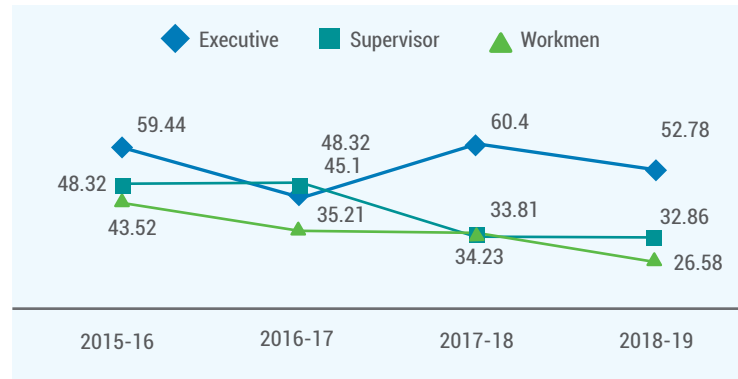
POWERGRID's 5 Step training alignment process





In 2017-18 and 2018-19, the average training man days per employee were 6.10 and 5.48 respectively. The training expenditure (excluding Travelling Expenses) was ₹ 23.85 Crore and ₹ 22.38 Crore in 2017-18 and 2018-19 respectively.

Training Hours per Employee



In order to enhance and strengthen the leadership qualities/ technical capacity of our employees, several training programmes are taken up in collaboration with various leading institutes across the country through MoUs like IIT (Delhi), BIMTECH (Noida), IIM (Lucknow), IIM (Bangalore), CPRI (Bangalore), IIT (Chennai), IIFT (New Delhi), ISB (Hyderabad), ASCI (Hyderabad), IIT (Roorkee), ITM University (Gurgaon), Fore School of Management (New Delhi), Asia Pacific (New Delhi), Jaipuria (Noida), IMI (New Delhi), O P Jindal Global University (Sonipat).

POWERGRID has also carried out a current state assessment of its HR processes and practices against the globally acclaimed People Capability Maturity Model (PCMM) framework. The company was one of the few organisations in Public Sector assessed to be at Maturity level 3. The existing HR processes and practices in the company are being further strengthened and upgraded in line with PCMM. PCMM's emphasis on commitment, measurement and improvement will lead to a strong foundation for continual business excellence through workforce and process capability improvement.

POWERGRID Academy of Leadership (PAL), a state-of-the-art, world class Institute has been commissioned by POWERGRID at Manesar, which is providing a wide range of trainings including induction, hands-on, managerial and behavioural programs to the employees in POWERGRID, and various power utilities at national and international levels. Such initiatives of POWERGRID have also helped

in development of customers both at Domestic and International level in the field of training and development.

Along with these functional and behavioural workshops for our employees, POWERGRID also conducts workshops on Women Empowerment and Empowerment of employees by self-growth (for reserve category employees) and special programme for differently abled employees.

POWERGRID also conducts the Transformational Leadership Programme (TLP) and Transformation Management Programmes (TMP) for its senior executives for empowering them in their career advancements. These programmes are conducted at various reputable institutions.



Career Development

POWERGRID has incorporated an appraisal system as an instrument to manage performance and accomplish Organizational targets/ MoUs. The focus is on the developmental and not subjective aspects & 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
- Improving communication and performance counselling
- Improving levels of motivation through goal clarity

The determination of excellence, productivity, capacity and suitability of Executives and Managers for positions of higher responsibility is done through the performance management system guided by our 'HR Policy'. Departmental succession planning is also executed in POWERGRID based on the job-rotation and retirement pattern of employees 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 by mid-year and year-end review.

During initial years in the company, employees undergo an exhaustive programme 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 also in place to encourage employees to have learning orientation.

Diversity and Inclusion

POWERGRID ensures diversity at all levels. This is also reflected in the composition of our Board. The details for our Board and its members can be assessed on the website of POWERGRID and also at REPORT ON CORPORATE GOVERNANCE in Annual Report 2018-19.

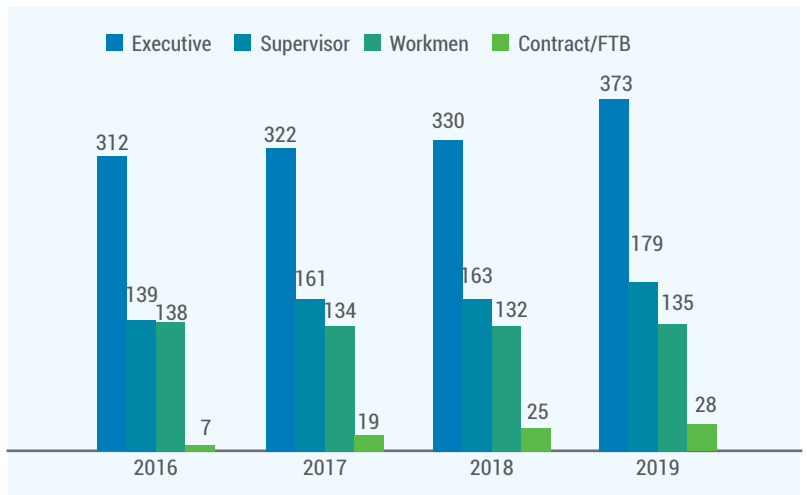
POWERGRID provides equal employment opportunities to all based on skills sets and strictly adheres to payment norms/ guidelines of Government of India. All our employees are compensated equally based on the level or grade of their employment, irrespective of gender. Due to locational constraints, our 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 6.8% in FY 2017 to 7.23% in FY 2019. One reason that can be assigned for lower proportion of women employees is lower rate of applications for the entry level positions such as Executives Trainees.





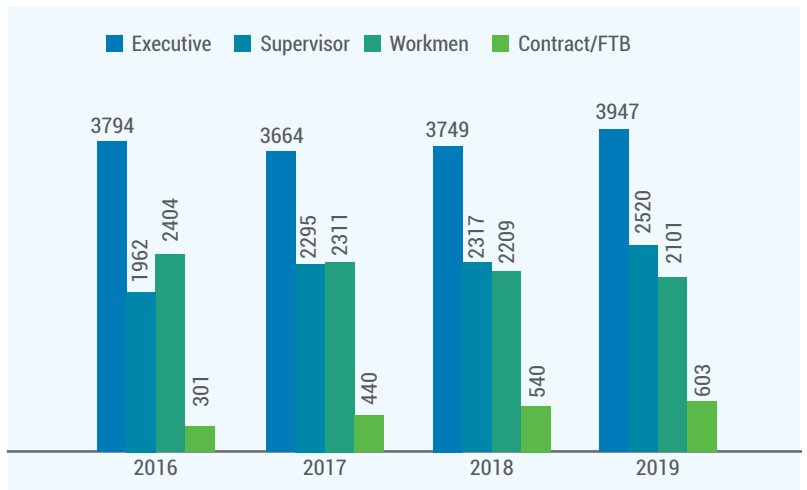
Employee Distribution by Gender (No.)

Female



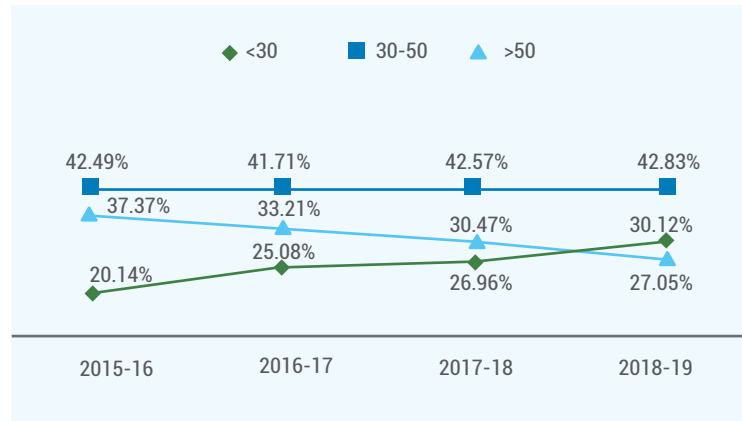
Employee Distribution by Gender (No.)

Male



As on 31.03.19, the average age of our employees is 39.38 years.

Employee distribution by Age (%)



Our transmission projects are spread across many locations and generally take 2 to 5 years to complete. However, we are also implementing transmission schemes under Regulated Time Mechanism with a timeframe ranging from 18 to 24 months. Due to the nature of activity and distribution of manpower at different locations, it is very difficult to record the exact number of man-days spent. All the core activities of POWERGRID's are carried out by permanent employees. However, only the activities such as Horticulture, Security, etc. are carried out by contract workers.

As on 31.03.19, POWERGRID is operating through 12 regions/ specific projects HQs, for better implementation of our policies, projects and efficient management:

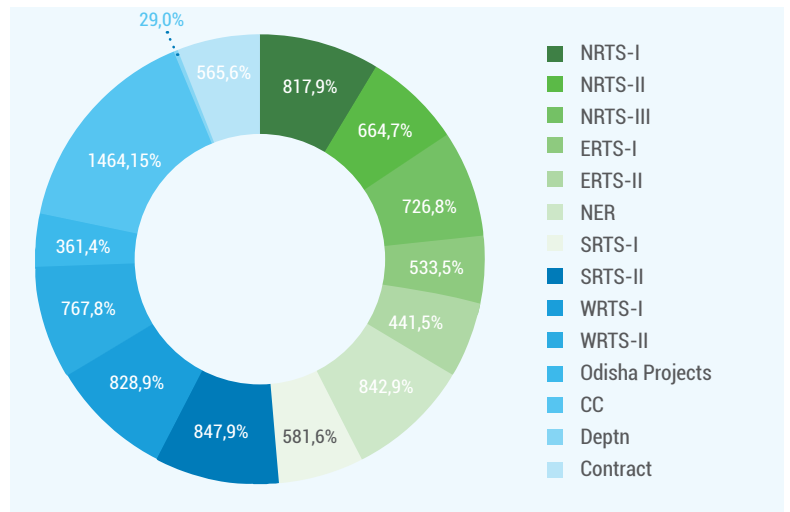
- Corporate Centre: Located at Gurgaon
- Northern Region Transmission System I: RHQ: New Delhi
- Northern Region Transmission System II: RHQ: Jammu
- Northern Region Transmission System III: RHQ: Lucknow

- Eastern Region Transmission System I: RHQ: Patna
- Eastern Region Transmission System II: RHQ: Kolkata
- Odisha Project HQ: Bhubaneswar
- Southern Region Transmission System I: RHQ: Hyderabad
- Southern Region Transmission System II: RHQ: Bangalore
- Western Region Transmission System I: RHQ: Nagpur
- Western Region Transmission System II: RHQ: Vadodara
- North Eastern Region Transmission System: RHQ: Shillong

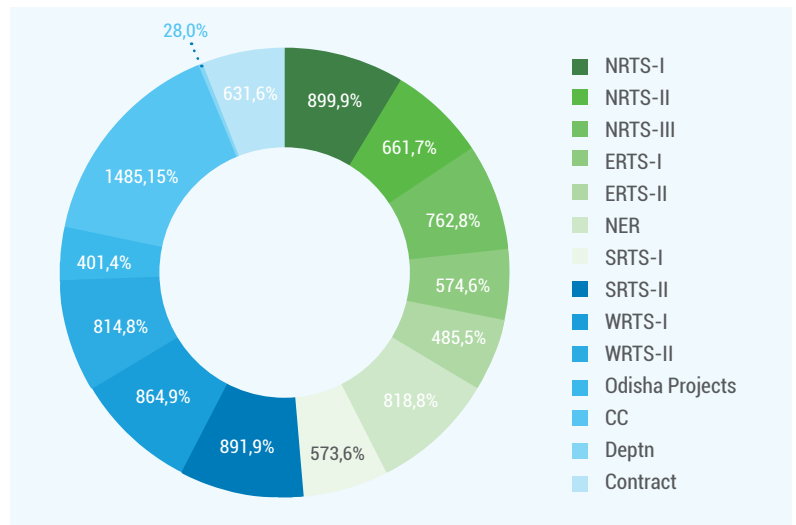
POWERGRID incorporates job rotation as a effective method to ensure availability of skilled workforce across all of its locations. However, in states such as J&K, NE etc., involving difficult terrains and states in which local language is dominant, employees belonging to the same state are preferably posted at locations, to ensure smooth functioning in coordination with locals.



Regionwise Workforce Distribution (FY 2018) (No., %)



Regionwise Workforce Distribution (FY 2019) (No., %)

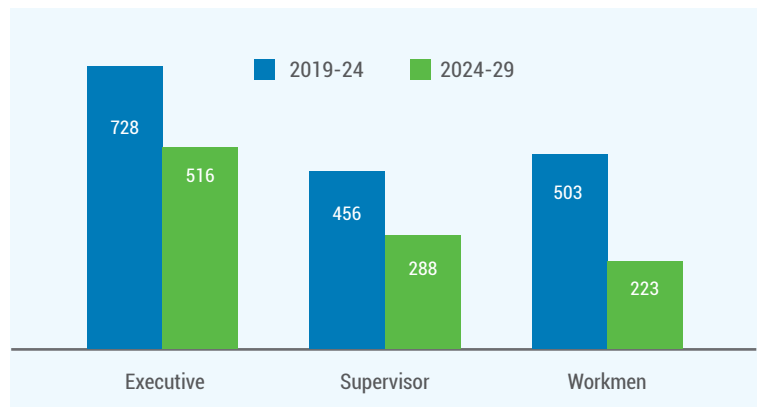


Recruitment and Turnover

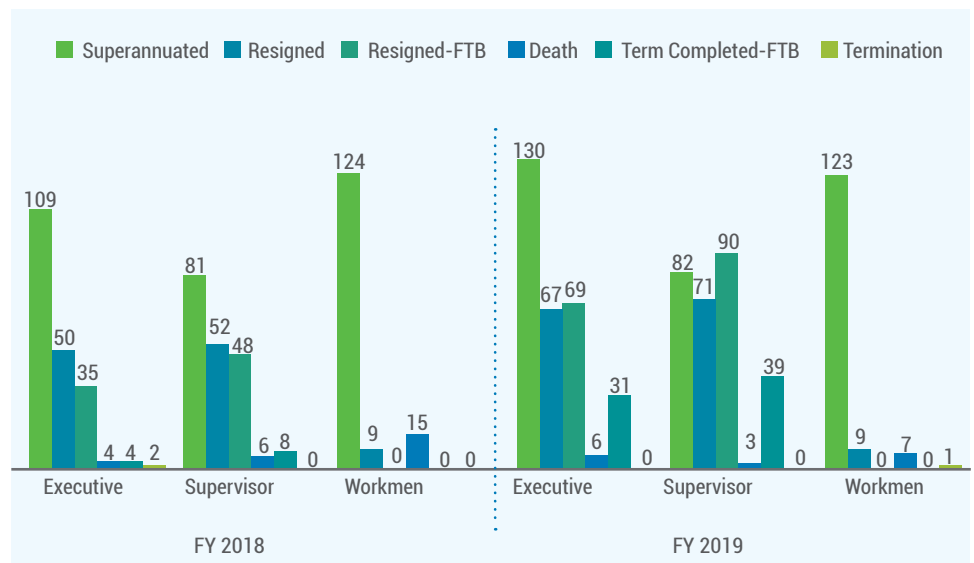
For maintaining quality, efficiency and fairness, the recruitment process of executives is centralized at Corporate Office and for non-executives recruitment is being done on regional basis to fulfil regional requirements. However, for specialized projects which requires engagement of local talent, we carry out campus recruitment drive in and around the region of operation such as in J&K etc. During FY 2018 & FY 2019, 690 & 1098 new employees (including FTB) joined the company.

Our policies, best practices and the growth opportunities make us an attractive employer which is highlighted in our low attrition rate of 2.06% and 3.16% during FY 2018 and FY 2019 (including FTB), respectively. The increased resignation of employees may be attributed to increased intake, locational advantages and other benefits during initial stage.

Employees due for Retirement (No.)

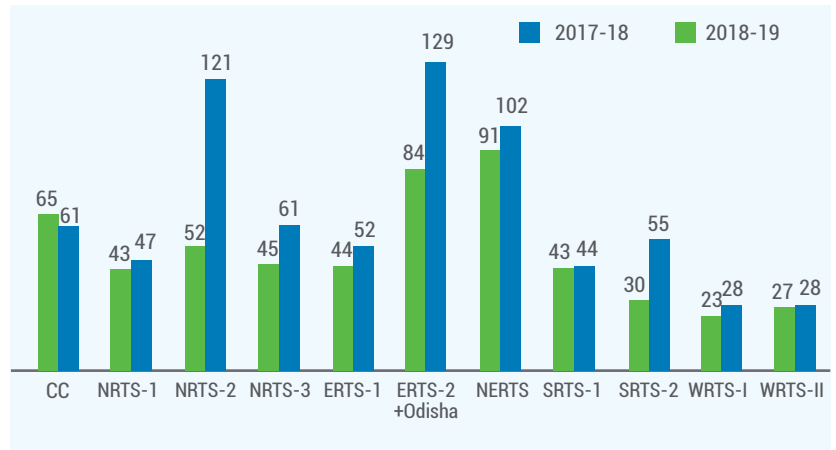


Employee Separation Trend (No.)





Regionwise Seperation (No.)



Workplace Policies

We understand that our employees also have responsibilities outside of work, hence, we provide progressive leave options giving our employees the ability to have paid time off to fulfil their personal obligations.

POWERGRID adheres to all 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 ₹ 2548.4 Crore and ₹ 2864.07 Crore at the end of FY 2018 and FY 2019 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 31st March 2019, total assets of the Trust were ₹ 1113.1 Crore.

Gratuity: Gratuity is paid upto a maximum of ₹ 20 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 31st March 2019, total assets of the Trust were of ₹ 628.12 Crore. During the reporting period, ₹ 132.32 Crore was paid to employees as gratuity.

Post-Retirement Medical Benefit (PRMB) under which retired employees and their spouse & dependent parents staying with the concerned employee are provided medical facilities on making a one-time contribution. The total liability of the company on 31st March 2019 was ₹ 441.24 Crore.

POWERGRID provides many other benefits such as Medical coverage (Self, Spouse, dependent children and dependent parents), Group Personal Accident Insurance Scheme, Death Relief Scheme, House Building Advance (HBA), Conveyance Advance, Children Higher Education Advance etc. In case of death of employee, spouse and the minor children of the deceased employee are provided with medical facility and loan is written off after receipt of the outstanding amount from the Insurance Company. Dependent Children can avail medical facilities till the deemed date of retirement of deceased employee or till they reach 25 (male)/ 30 (female) years of age, whichever is earlier. However, spouse can avail medical facility lifelong.

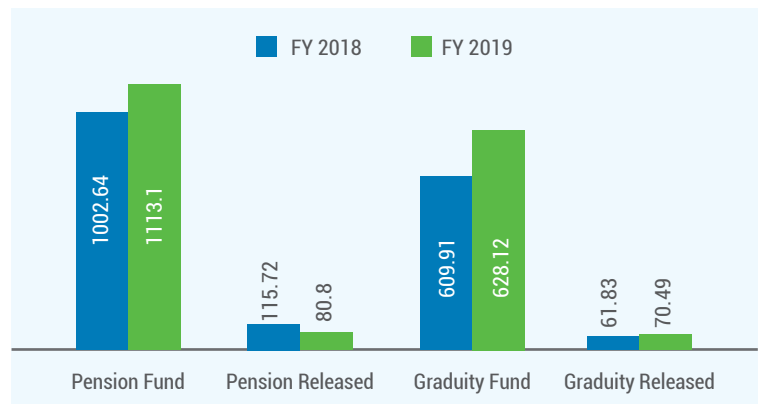
Full time employees are provided all above facilities. However, Contract/ FTB employees are not eligible for Pension (Defined Contribution), Gratuity, Post-Retirement Medical Benefit (PRMB), Death Relief Scheme, HBA, Conveyance Advance, Children Higher Education Advance.

POWERGRID Employees Family Economic Scheme: This scheme has been introduced in POWERGRID to provide monetary assistance to the beneficiary of the deceased employee in the event of death and to an employee in

case of permanent total disability while in service of the Company. As per the extant scheme, the beneficiary/ employee would be entitled to monthly payment equivalent to 50% of monthly salary (Basic Pay + DA + Special Pay/ stagnation increment) last drawn by the employee till the notional date of retirement subject to certain conditions stated in the said scheme.

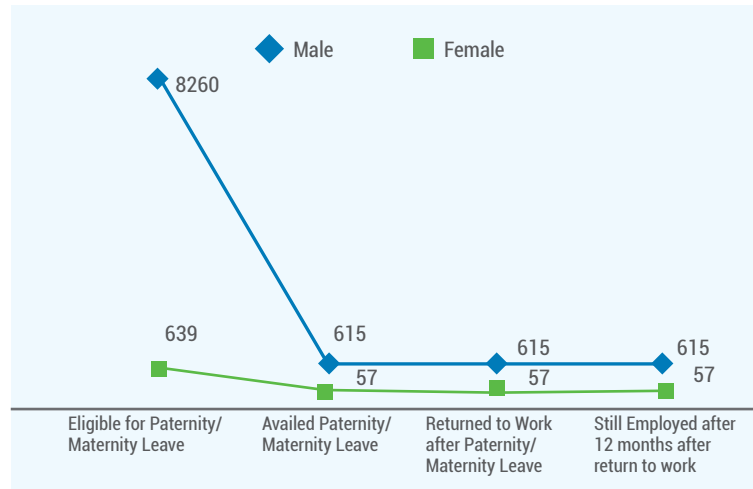


Benefits (₹ Crore)





Maternity/ Paternity leave in 2018-19 (No.)



We understand that some locations of POWERGRID are remote and involve tough terrains & require tremendous hardships. We have implemented many provisions to take special care of the employees who are posted at tough locations with benefits such as 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 and special allowance 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. Woollen uniforms are also provided to employees working in extreme cold and harsh weather conditions.

Human Rights

Human Rights issues are incorporated under related policies & practices of POWERGRID which extend to all of our permanent and contractual employees & relative aspects pertaining to Vendors/ Suppliers/ Contractors through contract provisions/ conditions. The Conduct and Discipline Appeal rules ("CDARules") define the desirable and non-desirable acts and conduct for the employees. 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 behaviour. To promote fair and equitable employment relationship, a scheme for Grievance Redressal of employees is in place which ensures a time bound mechanism for the redressal of grievances. An Internal Complaints Committees (ICC) as per the requirement of The Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressal) Act, 2013 and Rules have been constituted to investigate all complaints of discrimination and harassment, ensuring fairness and independence in the investigation process, and respecting for the confidentiality of the parties involved. During the reporting period, no complaints related to such issues were received.

POWERGRID promotes awareness of the importance of respecting Human Rights within its value chain and discourages instances of abuse. Besides conducting technical and behavioural 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 has also been certified with Social Accountability standard SA 8000 for its human resource and labour 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 POWERGRID suppliers 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. We are pleased to

report that no incidence of violation of any of the human rights has been reported. Moreover, in line with SA 8000, child labour is completely prohibited in all establishments of POWERGRID, irrespective of the nature of work.

Grievance Redressal

Grievance redressal is always taken-up on priority in POWERGRID. Both employee grievance and public grievance are given utmost importance and efforts are made to resolve them promptly. A dedicated team monitors and ensures grievances are redressed timely and impartially under strict & unbiased framework after thoroughly analysing the facts and data. The employee grievance is accorded top priority and the Company has a 3-tier structure for expeditious resolution of grievance within the broad framework of policy guidelines. Such transparent and timely resolution of grievances has led to increase in employee satisfaction and lower attrition rate.

Complaints raised by the workmen are also resolved through the National and Regional bipartite Committee (PNBC/PRBC).

Issues related to harassment of women are resolved through Internal Complaints Committee as explained above.





POWERGRID has constituted a separate Reservation cell at Corporate and Regional levels to look after and safeguard the statutory provisions for SC/ ST/ OBC & Persons with Disabilities (PwD) categories of employees. The reservation cell assists the Liaison Officer who looks after the welfare & safeguard of SC/ ST/ OBC & PwD employees. Liaison Officer also ensures that there is no discrimination on the basis of caste, religion & disabilities amongst the employees. POWERGRID implements all directives and guidelines with regard to reservation policy issued by Government of India. An Annual inspection is also conducted to ensure implementation of directives issued by Government of India. Periodic meeting is also held

with representative of the association of SC/ ST and OBC to resolve issues, if any. During the reporting period, no grievances were received related to environment issues, labour practices, indigenous people, human rights and discriminatory employment.

Employee Engagement

In order to meet the changing needs of the employees, POWERGRID is continuously working on framing new welfare strategies and upgrading the existing ones. We consider health as one of the key issues for employees and have empanelled nearby hospitals and establishments for healthcare of employees and their dependents.



The company has managed to establish an efficient work culture through empowerment, transparency, decentralization and practice of participative management. Cultural programmes celebrating various occasions like Diwali, Holi, New Year etc. are organised in all establishments of the company periodically to promote healthy community living. Sports are also promoted and employees are encouraged to participate in various sports competitions to enhance their interest in physical activities via various intra and inter-regional level events for Kabaddi, Cricket, Volleyball and Badminton etc. POWERGRID regularly participates in Inter-PSU Sports meet and our players have performed consistently throughout in events like Table Tennis, Cricket, Carrom, badminton and Kabaddi and have bagged several awards.

Collective Bargaining

POWERGRID activities have been classified as Public Utility Service under the Industrial Disputes Act, 1948. Since the inception of the company, POWERGRID's 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). 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. All the workmen are covered under collective bargaining agreements (26.30% in 2017-18 and 24.15% in 2018-19 out of the total employees during corresponding years). The forum has also been instrumental in communicating company's vision, business plans, core values and important business developments upto the grass root level. National Level issues are discussed in the POWERGRID National Bipartite Committee (PNBC); any changes applicable to workmen are done after detailed deliberations in the PNBC. During the reporting period, the IR scenario in the corporation has been cordial and no man-days have been lost due to strike. Moreover, POWERGRID's operations do not involve any such issues in which the right to exercise freedom of association and collective bargaining may be at significant risk.

Health and Safety is one of the key aspects in POWERGRID and the same is a part of Wage Agreement with Unions. All the statutory compliances on Health and Safety during construction activities and operations are taken care by specialized Safety Officers in the organization. POWERGRID is SA 8000 certified organization which encompasses the Health and Safety related compliances. Also, compulsory training in respect of Health and Safety by certified and recognized authorities are carried out in the organization involving the Union Representatives and their respective members.

	Promoting Right to Exercise Freedom of Association and Collective Bargaining
Initiatives	Regular PNBC, PRBC & S/s Level Joint Meetings
	Training of Union Leaders
	Behavioral / soft skills training programs for workmen



Safety

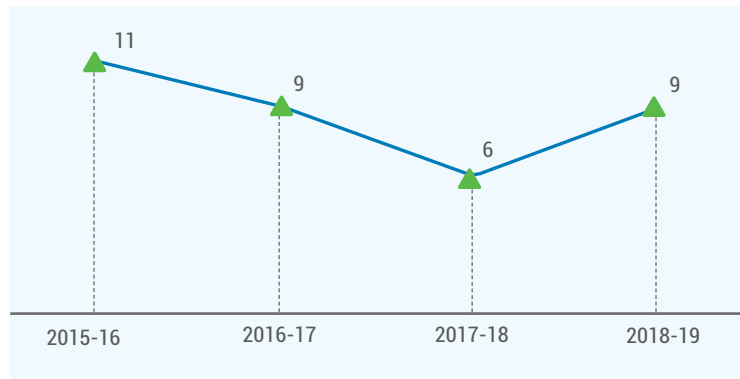
In line with our mission statement, we have carefully defined our Safety Policy that dedicates our safety performance and strives towards zero accidents. POWERGRID is accredited with a Publicly Available Specification, PAS 99:2012 based Integrated Management System (IMS) that includes ISO 9001:2015 (Quality Management System), ISO 14001:2015 (Environment Management System) and OHSAS 18001:2007 (Occupational Health & Safety Management System). In line with OHSAS 18001:2007, we are 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 successful implementation of the safety policy.

POWERGRID has a dedicated APEX SAFETY BOARD, with CMD as Chairman and the functional Directors as members, at the Corporate level that periodically reviews the safety performance of all regions. Accidents are reviewed in details by the Apex Safety Board and corrective actions/ additional measures are advised to prevent their recurrence. The senior officials of construction agencies are also called to present the reasons for accident and the corrective actions taken/ action plan proposed to prevent recurrence of such incidents. Review Meetings/ Safety/ Vendor Meets are 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, safety issues, if any, are also discussed in PRBC at Regional level and PNBC at Corporate level.



Apex Safety Meetings (No.)



A detailed procedure for Reporting of accidents, Investigation and Analysis has been established and made part of the POWERGRID systems and operations. Standing Committees have been identified in all Regions to enquire into the Accidents. A member from Corporate Safety cell associates with the Enquiry process in case of fatal accidents. The standing safety committee suggests preventive/ remedial measures to avoid reoccurrence of such incident in future. All incidents/ accidents are reported by the Construction Agencies to POWERGRID, which are put up to the Senior Management at Director level. A summary/ recommendations of accident enquiry committee report are circulated to all Regions to create awareness to all employees and to avoid the reoccurrences.

Major decisions like change in technical specifications i.e. stopping use of tractor in tower erection and stringing, use of power operated winch machines in place of tractors, use of sagging bridge/platform for final sagging etc. has been taken to reduce the safety related accidents. Compensation and penalty on contracting agencies in case of accidents has been imposed as deterrent measures.

A Safety Cell under Corporate Asset Management Department has been established to coordinate all safety promotions and accident prevention related activities of transmission lines and substations under construction as well as under O&M. It seeks to provide technical support to the sites for ensuring proper implementation of the Safety Policy & Procedure of the Company and the relevant safety requirement during various activities. Audits are carried out by deputing safety officers at the sites depending upon activities undertaken in the Regions. The Regional Safety officer carries out site surveillance Audit / Inspections at the Construction sites and O&M sites to identify the hazardous conditions/ activities and the concerned site/ 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. Contract clause have provisions

for penalties to be imposed on the Vendors/ suppliers/ contractors in the event of breach of the said provisions.

To convey the importance of safety practices during work, the Safety Officer/ Site Supervisor carry out daily safety briefing before start of work to warn against imminent dangers and precautions to be taken. Periodic Mock drills are conducted in O&M/construction sites to educate the workers/employees about emergency preparedness under various circumstances.

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 and safety, 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. Safety training to POWERGRID employees and contractor's employees are imparted by safety officers and other external faculties to familiarise employees with safety aspects. Safety demo is also organised at construction sites and transmission system under O&M. Video films on "Safety" and "Health & Hygiene" have been made in English, Hindi and other Regional languages such as Bengali etc., and circulated to all sites for promoting general awareness of the workers. More than 1325 training programs on health and safety were organized during the reporting period which involved participation of more than 17000-man days.

Major decisions like change in technical specifications have been taken to reduce accidents. Further, the provisions of Safety pact as a part of the bidding documents, Workmen Compensation policy and other contract provisions related to health and safety of workers are being implemented in true spirit.

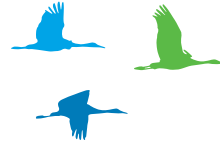
100% of our employees and contractors' employees working on our site undergo job related safety training. During the reporting period, there were 18 fatalities and a total of 133 mandays were lost. Due to the various measures adopted, the fatalities have been reduced by more than 45% over the previous reporting period.



Year	No. of fatal accidents	No. of non-fatal accidents	Total persons affected	
			No. of Fatalities	No. of injuries
2017-18	04	05	5	6
2018-19	11	08	13	17



ENVIRONMENTAL STEWARDSHIP



Reduction in involvement of forest progressively from 6% in 1998 to 2% in the reporting period



Dr. R K Srivastava, CGM (I/c), ESMD felicitated by Chairman and CEO of the Global Reporting Initiative (GRI), Netherlands, for his remarkable contribution in promoting Sustainability Journey of POWERGRID



POWERGRID's business activities have minimal environmental impact as they do not involve disposal of any pollutant in land, air or water nor do they involve any large scale excavation, which may result in soil erosion. In spite of this, POWERGRID, which is committed to achieve the goal of Sustainable Development has realized that given the scale of its operations, it is inevitable that there may be some impact on natural environment. POWERGRID as a responsible corporate entity has always remained ahead of the curve in ensuring compliance with not only the applicable regulations but actually going beyond them. Way back in year 1998, POWERGRID disclosed its first Environmental and Social Policy & Procedures (ESPP), which

outlines the Company's approach to deal with environment & social issues and lays out management procedures and protocols to address the same. This comprehensive Board approved document was further revised in year 2005 and 2009 to keep it updated in line with the changing regulatory regime and expectations of Multi-lateral funding agencies. Certifying the detailed and comprehensive coverage of POWERGRID's ESPP, two leading Multi-lateral agencies of the world i.e. The World Bank and the ADB have accepted it under their policy of Use of Country System (UCS) and Country Safeguard System (CSS) respectively, which is not only a unique distinction, but also has no parallel in the world.

Our commitment towards environment protection is evident from the fact that we incurred an expenditure of more than ₹ 550.8 Crore as compensatory levies, implementation of EMP, plantation etc. during the reporting period and we are pleased to report that no major issues were reported relating to non-compliance with environmental laws and regulations.

We have a dedicated Environment and Social Management Deptt. (ESMD) at the Corporate Level headed by a Chief General Manager (I/c) and supported by professionals with Technical, Social and Environment expertise. Dedicated Environment and Social Management Cells (ESMC) at all regional headquarters and Environment and Social Management Teams (ESMT) at site level manage all environment and social activities under the supervision of Corporate ESMD.

Conservation of Right of Way

Transmission projects are considered by and large environmentally benign that don't involve disposal of any pollutants/ waste in various environmental matrices, i.e. air, water or soil. Nevertheless, the Company, being a responsible corporate entity, addresses any residual environmental or social impacts associated with its business following the cardinal principles of Avoidance, Minimization and Mitigation as outlined in its Environmental and Social Policy & Procedures (ESPP).

POWERGRID is fully conscious of the need to conserve natural resources and avoid ecological sensitive area, eco-sensitive zones, forest, sanctuaries, national parks, tiger/biosphere reserves and CRZ areas as far as possible through optimization of route alignment. During the project inception stage and finalization of route alignment stage itself, ecologically sensitive areas such as Forest and Protected areas are avoided/minimized, even if it involves increase in the length of the line and consequently increase in the cost of the project. This was evident in many cases in which protected areas have been completely avoided such as avoidance of Kalesar National Park in Dehradun-Abdullapur Transmission Line. Similarly, following the basic principle of avoidance & minimization, involvement of forest has been reduced progressively from 6% in 1998 to 2% in the reporting period.

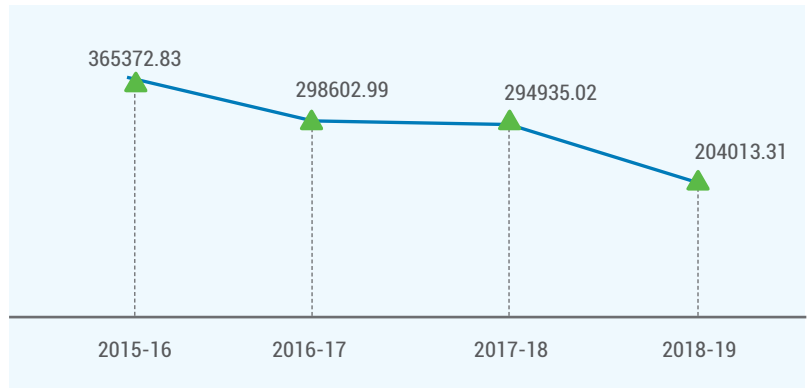


However, it is quite understandable that in spite of best efforts, complete avoidance of Forest/ Protected Area could not be possible in few cases due to peculiarity of terrain and geographical constraints. In all such cases, the mandated approvals/clearances as per the provisions of the Forest (Conservation) Act, 1980 and the Wildlife (Protection) Act, 1972 is obtained before the start of work in such areas.

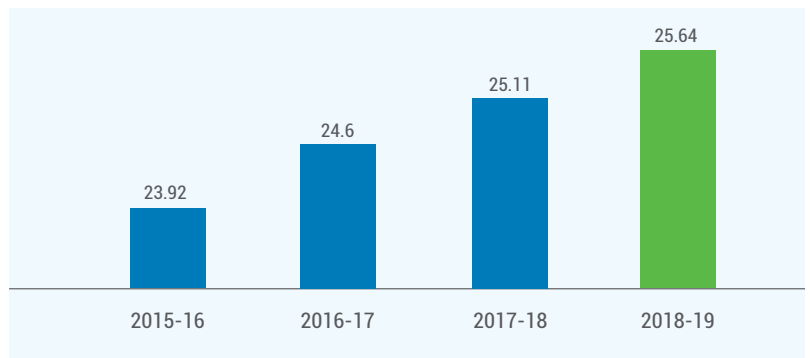
In a country like India, which caters to 18% of the world population, while having 2.4% of world's land mass, conflicts related to land resources are not uncommon due to presence of different competing user groups. POWERGRID, as a firm believer in addressing the land requirements, has always been forthcoming in up-gradation and adoption of new and better technologies such as Gas Insulated Switchyard (GIS) which requires lesser area compared to the traditional Air Insulated Switchyard (AIS).

One of the major initiatives taken by POWERGRID is in reduction of land requirement of Right of Way (RoW) through development and adoption of innovative tower designs such as special compact tower, pole type tower and Multi-circuit towers. These technological interventions not only reduced the requirement of precious land resources and social risks to projects but also helped in preservation of environment by minimizing forest and vegetation involvement. Further, construction of High Capacity Power Transmission Corridors (HCPTCs) for transmitting power at higher voltage levels (765 kV HVAC, +/-800 kV HVDC) not only reduced transmission losses but also ensured transmission of more power per unit of RoW (MW/meter of RoW).

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



Cumulative transmission capacity (MW) per metre width of RoW within forest areas (Base Year 2004-05)



Another key initiative to reduce environment footprint includes up gradation of existing lines by reconductoring them with advanced conductors to enhance the carrying capacity of such lines. This has helped in saving of significant forest and tree cover which might have been affected, if new lines were to be constructed for such enhanced transmission of power.





POWERGRID's major initiatives towards addressing environmental externalities associated with its business processes are:

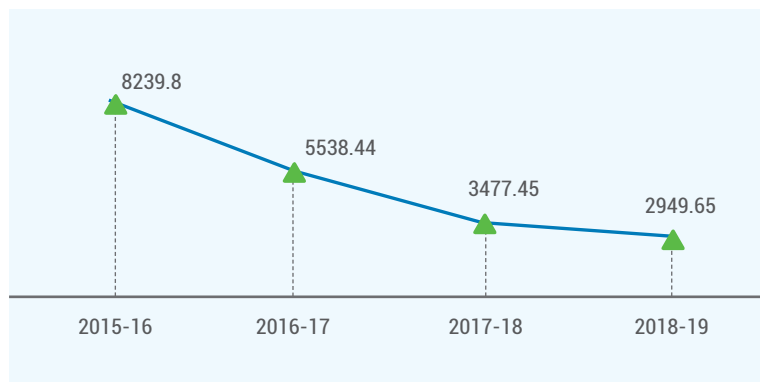
- Adoption of modern techniques viz. GIS/ GPS, satellite imaging etc. in selection of most optimum line route avoiding ecological and social sensitive areas as far as possible, thus, resulting in minimum ecological and social footprint.
- Technological initiatives such as use of innovative towers (pole, multi circuit) and adoption of high voltage levels transmission system (1200 kV, ± 800 kV HVDC, 765 kV etc.) not only conserved the precious Right of Way (RoW) but also substantially reduced felling of trees as well as conservation of wildlife in ecologically sensitive areas.
- Integration of renewable energy resources by establishing high capacity "Green Energy Corridors" dedicated for renewable energy including solar parks across the country. Such initiative not only reduced the dependency on thermal generation but also provided boost to renewable generation by providing reliable grid connectivity which was earlier thought to be a major impediment for renewable energy development.
- Massive plantation undertaken in and around Substation Area and also under various CSR initiatives.

- Mandatory Provision of Rain Water Harvesting facility in all substation design.
- Recognizing the importance of solar power in combating Climate change and in line with GOI's commitment towards Paris Agreement, POWERGRID is in the process of installing 5 MWp Rooftop Solar PV Systems covering more than 50 locations in its premises. This initiative will result in saving of 7-8 million units (MUs) of Grid connected energy per annum, thereby, reducing atmospheric emission of 35916 MT of CO₂ per year.
- Use of inductive power in earth wire for powering of telecom antennas. This inductive power which otherwise goes waste will eliminate the use of DG sets, a constant source of pollution and GHGs emission.

Energy Efficiency

Our approach towards energy conservation is focused on reducing our overall energy consumption through various energy conservation/ management measures and increasing our dependency on renewable resources. We have implemented the use of lesser energy intensive appliances' such as LED bulbs, fuel catalyst devices for DG sets, solar photovoltaic in office building etc. to reduce our overall energy consumption.

Direct Energy Consumption (GJ)

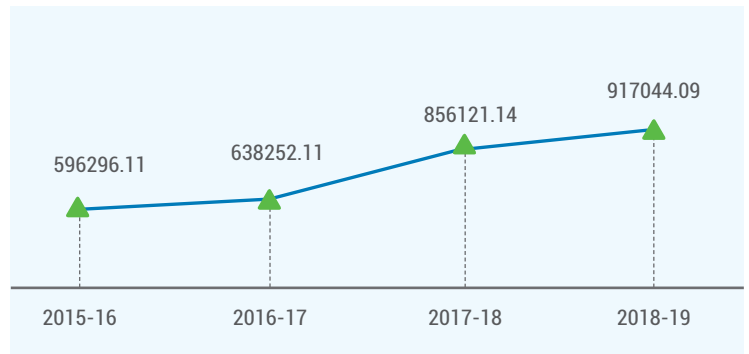


We have been installing solar street lighting and solar PV systems in our substation premises and office establishment. Furthermore, in line with GoI E-Mobility mission towards lowering vehicular pollution and to ensure energy sustainability, POWERGRID has been using e-vehicles for its day to day official transportation. POWERGRID is also developing Electric Vehicle (EV) Charging Stations across India to facilitate E-mobility solutions in road transport covering 2-Wheelers, Rickshaws/Autos, Taxis, Cars, Buses etc.

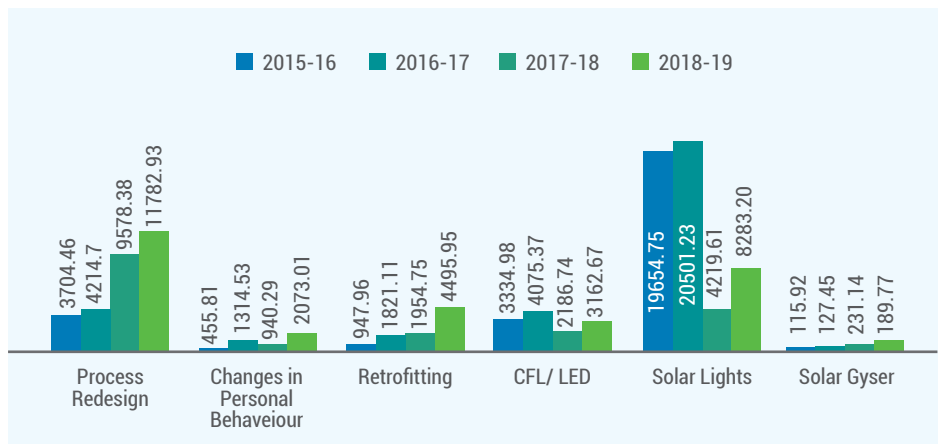
POWERGRID has also established a dedicated Energy

Efficiency Cell to make inroads into the conservation of energy and reduction of carbon emission in industrial and commercial sectors. Energy audits are regularly carried out to identify opportunities for energy saving and few implementations have also been undertaken successfully to reduce energy consumption in industries and agriculture sector. POWERGRID is a BEE Grade-I Energy Service Company (ESCO) for undertaking energy efficiency projects and has a large pool of certified energy auditors/energy managers who are well qualified to offer energy efficiency solutions.

Indirect Energy Consumption (GJ)



Energy Savings (GJ)





Integration Of Renewable Energy (RE)

Large scale renewable penetration in the grid leads to challenges towards evacuation and its integration. POWERGRID has been working towards implementation of Green Energy Corridors (GEC) - Inter-State Transmission System (ISTS) at 765 kV and 400 kV level in renewable resource rich states in the country. POWERGRID has also evolved a comprehensive transmission plan for grid integration of various Renewable Energy Zones (66.5 GW) in the country. To enable forecasting of renewable resources and efficient management of intermittent renewable generation, POWERGRID, on behalf of Govt. of India, is establishing Renewable Energy Management Centres (REMCs) at 11 (eleven) locations in various SLDCs/ RLDCs/ NLDC.

Smart Grid

Over the past few years, POWERGRID has been involved in the implementation of Smart Grid applications in various cities across India and is providing consultancy for projects covering distribution infrastructure, advanced metering infrastructure, intelligent outage management, electric vehicle charging stations, power quality management, distributed generation and net metering. The Smart Grid activities are focused on improving reliability, security and efficiency of the grid through implementation of intelligent smart grid technologies.

POWERGRID has established Smart Grid Knowledge Center in association with Ministry of Power, Govt. of India at Manesar. The Centre is equipped with various working models and functionalities pertaining to Smart Grid and aims to bring awareness about the applications of Smart Grid technologies and its demonstration in a holistic manner. The Centre is providing learning environment and capacity building on all major smart grid attributes viz. Advanced Metering Infrastructure, SCADA, Outage Management System, Renewable Integration, Microgrid, Smart Home, EV with Renewable Charging Infrastructure and Cyber Security etc. to the stakeholders.

Towards Smart Transmission, POWERGRID is implementing WAMS based Unified Real Time Dynamic State Measurement (URTDSM) project. This involves placement of PMUs at all 400 kV and above substations, generation switchyards of 220 kV and above, HVDC terminals and Phasor Data Concentrator (PDC) at SLDCs, RLDCs & NLDC control centres along with OPGW based backbone communication infrastructure. This shall result in enabling synchronous measurement of real time grid parameters across the widely spread grid with low latency in data transfer to control centres, which would be very effective in reliable, secure and economical grid operation.

Such Smart Grid Technologies shall lead to development and implementation of energy efficient technologies both at the micro and macro level.

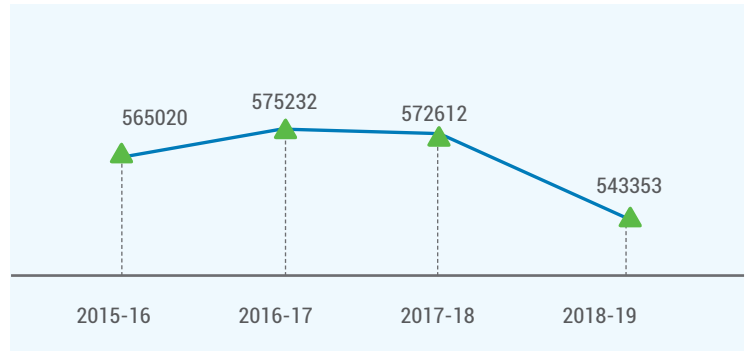
Water Management

POWERGRID does not have any significant impact on water resources since water is not required for any of its operations & processes and is only used for domestic consumption for offices, colonies and horticulture.

Various initiatives have been taken for improving water use efficiency and achieving zero discharge. All substations have implemented an integrated water management approach focused on rain water harvesting system, which is an integral part of every new substation design.

No industrial effluents are generated from our establishments (substations) as there are no underlying chemical processes. However, a small quantity of domestic sewage is generated from office buildings and few residential quarters attached with our substations. Provision of soak pits is always made in substations for the treatment of the domestic sewage. For comparatively large establishments such as residential colonies in cities like Gurgaon and Bangalore, Sewage Treatment Plants (STP) have been established for proper treatment of domestic waste and treated effluent is used for activities like Gardening and washing within the campus only.

Volume of Water Recharged (cu.m.)



Emission Control

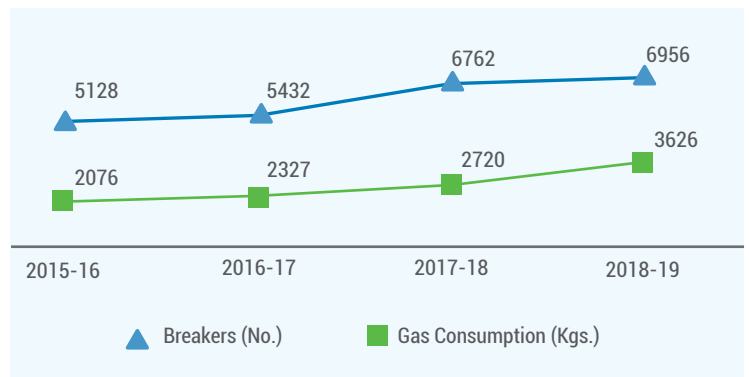
Power transmission project activities don't involve any direct emission/waste to environment. The only emission that can be attribute to our activity is from operation of DG sets used intermittently for power backup. However, regular maintenance of DG sets ensured containment of emission levels well within the permissible limits prescribed by Pollution Control Boards.

SF₆ is a potent GHG which is used in our circuit breakers. Its leakage is controlled through systematic & regular monitoring and any drop in pressure is acted upon immediately. We have

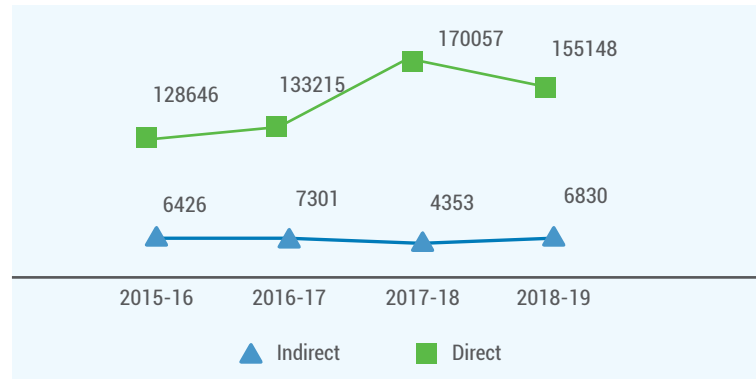
introduced very sensitive SF₆ leakage detectors in all the relevant equipment's to test for leakage points which are attended to immediately to arrest any gas discharge into the atmosphere. Considering the potential impact of SF₆ gas, efforts are being made to find its replacement as well as to make the leakage norms stringent.

For instance, permissible limit of SF₆ leakage for GIS has been restricted to 0.5% instead of 1%. Procurement of equipment using ODS like CFC, Halon, has been banned in line with the Montreal protocol signed by India.

SF₆ Gas Consumption



Reductions in Green House Gases (tCO₂e)



Considering 2008-09 as base year (SF₆ gas leakage/ filling: 1.45 kgs./ breaker)

Waste Management

Our Waste Management approach is focused on the 3R waste hierarchy – Reduce, Reuse & Recycle. Although there is no major solid or liquid waste generation in our nature of business, we follow all applicable guidelines and norms of Central/ State Governments to ensure their proper disposal.

The waste generated from our projects are metal scraps, used batteries, transformer oil and electronic waste. We dispose of our used batteries according to the 'Batteries (Management and Handling) Amendment Rules, 2010' which requires bulk consumers like POWERGRID to dispose all used batteries to dealers, manufacturers, registered recyclers, reconditioners or at the designated collection centres only. Accordingly, used batteries are either sold to registered recyclers/dealers/refurbishers or are returned to the manufacturers and half yearly return is submitted to concerned State Pollution Control Board/Committee. Used transformer oil has been categorized as hazardous as per the applicable Hazardous Waste (Management, Handling & Trans-boundary movement) Rules 2016, which requires its proper handling and disposal. In our establishments, transformer oil is changed only after a gap of around 10-15 years and as required by the applicable regulation, it is disposed by selling it to registered recyclers and annual return is submitted to concerned State Pollution Control Board/Committee. Used transformer oil is never stored at our establishment and transferred directly from equipments to the vehicles of the recyclers. Drums emptied of Transformer oil are disposed of through online auction on the website of M/s Metal Scrap Trading Corporation Ltd (MSTCL), a Miniratna PSU.

Metals scraps are generated mainly during construction activities such as tower erection and stringing of conductors. These scraps are sold through auctions to scrap vendors, thus, ensuring their reuse for various useful purposes in



society and economy, considering the fact that India is net importer of scrap metals.

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 as per the terms of Basel Convention.

Electronic Wastes such as Computers, Laptops, Printers, cartridges etc. are typical to any office setup. In India, e-waste is regulated by E-waste (Management & Handling) Rules, 2011, which mandates that it is the responsibility of the bulk consumer (such as POWERGRID) to ensure that e-waste generated is channelized to authorized collection center(s) or registered dismantler(s) or recycler(s) or is returned to the pick-up of take back services provided by the producer. POWERGRID, being a bulk consumer of electrical and electronic goods always ensures the disposal of the e-wastes generated from its office complexes in environment friendly manner following the provisions of the said regulation and maintains the records for scrutiny by State Pollution Control Board/Committee.

The introduction of e-office has resulted in significant reduction in use of paper.

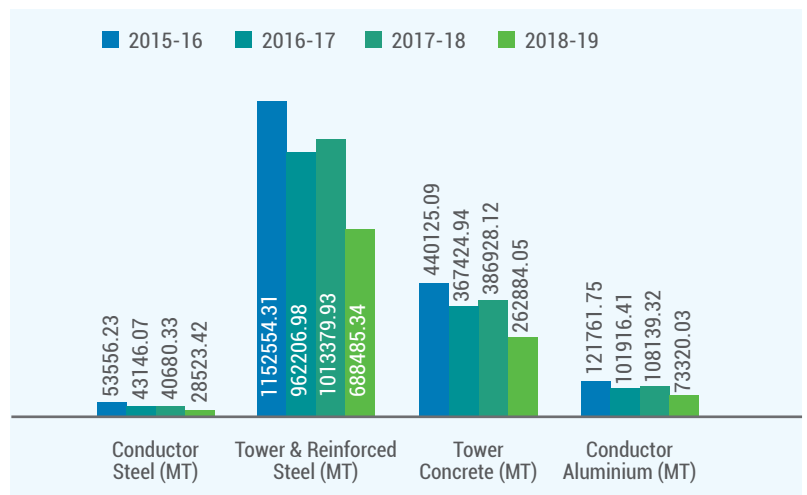
Material Management

In terms of our nature of activities, our major raw materials involve metals such as Steel, Aluminium etc. POWERGRID has taken many technological initiatives to reduce their consumption by implementing efficient designs. This can be seen in the case of our high capacity transmission lines 765 kV, ±800 kV HVDC for transmitting bulk power.

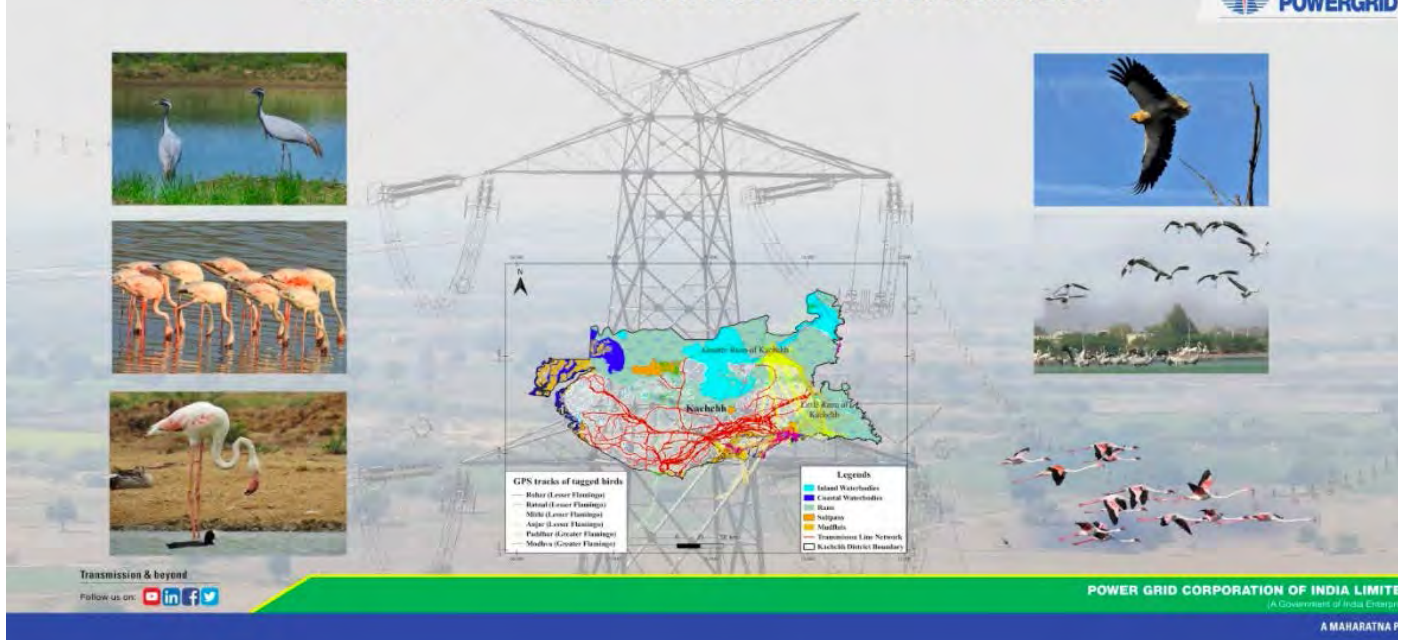
The scrap is recycled again to reproduce finished products which may be reused in our tower parts/equipment.

Savings in Raw Material Consumption due to shifting from

400 kV to 765 kV lines (765 kV D/c: 5000 MW, 400 kV D/c: 1000 MW)



EFFECTIVE MEASURES FOR PROTECTION OF AVIFAUNA




GPS tracks of tagged birds

- Bharat (Lesser Flamingo)
- Bharat (Lesser Flamingo)
- Bharat (Lesser Flamingo)
- Bharat (Lesser Flamingo)
- Bharat (Lesser Flamingo)
- Bharat (Lesser Flamingo)
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Legends

- Island Waterbodies
- Canal Waterbodies
- Sea
- Saltpan
- Marshes
- Transmission Line Network
- Kutch District Boundaries

Transmission & beyond
Follow us on: 

POWER GRID CORPORATION OF INDIA LIMITED
A Government of India Enterprise
A MAHARATNA



Materials used by weight or volume

S.No.	Raw materials Used/ Consumed	Material Used	
		2017-18	2018-19
1	Steel (Tower Parts & Reinforcement) (MT)	908498	502095
2	Steel (Conductor)(MT)	22505	19539
3	Aluminium (Conductor)(MT)	62162	56381
4	Concrete (MT)	1391734	1352200
5	Transformer Oil (KL)	258510	98997
6	Insulators(No.)	3502446	1342033

Total weight of waste by type & disposal method

S.No.	Type of waste	2017-18	2018-19
Non Hazardous			
1	Steel (Scrap) (MT)	3746	27173
2	Aluminium (Conductor) (MT)	368	801
3	Insulator (No.)	477182	675114
Hazardous			
1	Used Batteries (No.)	3639	12588

Total environmental protection expenditures and investments by type

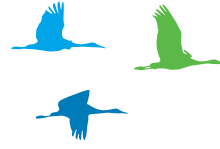
S.No.	Description of Protection measures	Cost Incurred (₹ Crore)	
		2017-18	2018-19
1	Plantation activity undertaken at Substation	1.19	2.48
2	Cost of Compensatory afforestation (CA), Net Present Value (NPV), Wildlife Management Plan, supervisory charges, tree cutting cost, Medicinal plantation and any types of expenditure as per forest clearance	238.57	272.05
3	Installation of Rain water harvesting system	0.56	27.58
4	Implementation of EMP/ Certification	5.26	3.11
	Total	245.58	305.22

Percentage of products sold and their packaging materials that are reclaimed by category

S.No.	Name of Packaging Material	Quantity Sold/ Disposed off (Kg)	
		2017-18	2018-19
1	Wood such as Wooden Boxes, Cable drums etc.	1245945	1683408
2	Oil Drums	116831	414921
3	Steel	544891	260417



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Customer Health and Safety		
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GRI 103-1	Explanation of the material topic and its Boundary	39-53
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416-1	Assessment of the health and safety impacts of product and service categories	46-47, 88-90

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GRI 103-1	Explanation of the material topic and its Boundary	39-53
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GRI 103-1	Explanation of the material topic and its Boundary	39-53, 60-66, 92-100
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ASSURANCE CERTIFICATE



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Independent Assurance Statement

Introduction

Intertek India Private Limited ('Intertek') has carried out an independent assurance on 6th Sustainability Report 2017-19 ('the Report') of Power Grid Corporation of India Limited (POWERGRID, 'the Company') a Government of India Enterprise. The Report is prepared by the Company based on the principles of AccountAbility Principles Standard AA1000AP (2018), AccountAbility Stakeholder Engagement Standard AA1000SES (2015) and the Global Reporting Initiative Sustainability Reporting Standards (GRI SRS) "In Accordance-Core".

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 July 2020.

Scope, Boundary and Limitations of Assurance

The scope of the assurance includes the verification of the content of the Report, prepared based on GRI Standards "In Accordance-Core". In particular the assurance covers following:

- Verification of the application of the Report content, principles set out in GRI Standards and quality of information presented in the Report covering reporting period from 1st April, 2017 to 31st March, 2019;
- 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 AA1000AS (2008);
- Verification of the reliability of GRI Standards general disclosures and topic specific disclosures 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, Responsiveness and Impact as per AA1000AP (2018) as well as Reliability of specified sustainability performance information as per of GRI Standards "In Accordance-Core".

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:

- 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/demanded;
- 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



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information meets the requirement of Type-1, Moderate Assurance according to the AA1000AS (2008) and GRI Standards "In Accordance-Core".

Inclusivity: POWERGRID's business operations demonstrate engagement with a wide range of stakeholders, through various established communication channels. The report allows stakeholders to form an understanding of POWERGRID's response to the existing most material issues.

Materiality: POWERGRID has further updated their materiality matrix in 2017-19, in line with SDG through various internal benchmarks, reviews and stakeholder dialogue. We also note that POWERGRID has identified the most significant Sustainable Development Goals for the company in the reporting period.

Responsiveness: POWERGRID has included appropriate information in the report on its responses to stakeholder issues. We are not aware of any matters that would lead us to conclude that POWERGRID has not reported information on its responses to stakeholder concerns of material significance.

Impact: POWERGRID has monitored, measured impacts of their actions on broader ecosystems.

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

- Further strengthened 'One Nation'-'One Grid'-'One Frequency' and commissioned a number of Inter-regional transmission lines.
- Telecom Network Availability maintained as 99.9%.
- In line with Govt's ambitious targets of 175 GW installed capacity of renewable energy by 2022 with Nationally Determined Target (NDC) of 40% non-fossil-based power capacity, POWERGRID is implementing Green Energy Corridors (GEC) - Inter-State Transmission System (ISTS).
- POWERGRID is also developing Electric Vehicle (EV) Charging Stations across India to facilitate E-mobility solutions in road transport.

Opportunities for Further Improvement

- Bench marking and data comparability needs further attention.
- POWERGRID may move from GRI Standards core option to comprehensive option to include more indicators.
- Sustainability Governance and risk management can be enhanced.

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,

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Dr. Manish
Lead Verifier
New Delhi, July 16, 2020

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Sandeep Vig
Director



ABBREVIATIONS

ADB	Asian Development Bank	FY	Financial Year
AIS	Air Insulated Switchyard	GHG	Green House Gases
AP	AccountAbility Principles	GIS	Gas Insulated Switchyard
BEE	Bureau of Energy Efficiency	GJ	Giga Joule
BPL	Below Poverty Line	GoI	Government of India
CDA	Conduct Discipline and Appeal	GRI	Global Reporting Initiative
CEA	Central Electricity Authority	GW	Gigawatt
CFC	Chloro Flouro Carbon	HR	Human Resource
Ckm	Circuit kilometre	HRD	Human Resource Development
CPRI	Central Power Research Institute	HVDC	High Voltage Direct Current
CRZ	Coastal Regulation Zone	IFC	International Finance Corporation
CSR	Corporate Social Responsibility	IPP	Independent Power Producers
CTE	Chief Technical Examiner	ISP	Internet Service Provider
CTU	Central Transmission Utility	ISTS	Inter-state Transmission System
D/c	Double Circuit	kV	kilo Volt
DA	Dearness Allowance	kWh	kilo Watt-hour
DDUGJY	Deen Dayal Upadhyaya Gram Jyoti Yojana	LED	Light Emitting Diode
DG	Diesel Generator	MoP	Ministry of Power
DPE	Department of Public Enterprises	MoU	Memorandum of Understanding
EHV	Extra High Voltage	MPR	Monthly Progress Report
EHVAC	Extra High Voltage Alternating Current	MT	Metric Ton
ERS	Emergency Restoration System	MTOA	Medium Term Open Access



MVA	Mega Volt Ampere	R&D	Research & Development
MW	Megawatt	RLDC	Regional Load Dispatch Centre
MWp	Megawatt peak	RoW	Right of Way
NER	North Eastern Region	RTI	Right to Information
NLD	National Long Distance	S/c	Single Circuit
NLDC	National Load Dispatch Centre	S/s	Substation
O&M	Operation & Maintenance	SA	Social Accountability
ODS	Ozone Depleting Substance	SAARC	South Asian Association for Regional Cooperation
OHSAS	Occupational Health and Safety Assessment Series	SCADA	Supervisory control and data acquisition
OPGW	Optical Ground Wire	SDGs	Sustainable Development Goals
PAPs	Project Affected Persons	SEB	State Electricity Board
PAS	Publicly Available Specification	SEBI	Securities and Exchange Board of India
PAT	Profit After Tax	SES	Stakeholder Engagement Standard
PMU	Phasor Measurement Unit	SF ₆	Sulphur Hexafluoride
PNBC	POWERGRID National Bipartite Committee	SLDC	State Load Dispatch Centre
POSOCO	Power System Operation Corporation Limited	STUs	State Transmission Utilities
PRBC	POWERGRID Regional Bipartite Committee	TBCB	Tariff Based Competitive Bidding
PRMB	Post-Retirement Medical Benefit	WAMS	Wide Area Management System
PSU	Public Sector Undertaking	WB	The World Bank



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