



अध्यक्षीय संबोधन CHAIRMAN'S ADDRESS

29वीं वार्षिक आम बैठक,
नई दिल्ली, 18 सितम्बर, 2018

**29th Annual General Meeting,
New Delhi, September 18, 2018**





POWERGRID

WORLD CLASS, INTEGRATED,
GLOBAL TRANSMISSION COMPANY



CHAIRMAN'S ADDRESS



Wish you a very good morning Dear Shareholders,

It gives me immense pleasure to welcome you all to the 29th Annual General Meeting of your Company. On behalf of the POWERGRID Board of Directors, I thank you for your support, patronage and confidence reposed in the Company and thank you for your presence here.

The Company's Accounts for FY 2017-18, along with the Auditors' Report, Directors' Report, my letter to the Shareholders and Management Discussion & Analysis have been circulated to you. I take them as read, with your permission.

It is a privilege for me to present once again the outstanding performance of your Company. It's a great honour for me to have served you and I sincerely thank you for your continued support & goodwill.

My 37 years in Power Sector, of which 27 years with POWERGRID, have given me a ring side seat to witness the evolution of National Grid and your Company's ability to emerge stronger over the years, thus attaining a position to play larger role in global arena. It is indeed very satisfying to look back at the contributions made by the Company, as an enabler and catalyst towards development of a vibrant electricity market in the country.

ECONOMIC AND BUSINESS ENVIRONMENT

Dear Shareholders, as you know we are living in a global village and ought to align our business with international economic-political and environmental considerations.

As per the IMF's World Economic Outlook Update, July 2018, Global growth rate of 3.9 percent is projected in 2018. Among emerging markets and developing economies, growth prospects are becoming more uneven amid rising oil prices and market pressures; India's economy is expected to grow @7.3% in 2018 and @7.5% in 2019.

India has become the 6th largest economy in the World and the present US\$ 2.5 trillion economy is expected to double in next few years thus opening up a spectrum of opportunities.

Country is expanding industrially & economically and so are its energy needs. Today, the per capita consumption is about 1150 units, which is likely to increase to about 3,000 units by 2040. As per 19th Electric Power Survey (EPS) report of CEA, the peak power requirement of the Country which was around 177 Giga Watt (GW) in FY 17-18, is expected to become 226 GW by 2022, and ramp up to 300 GW by 2027.

India, a signatory of Paris Climate Treaty-2015 has set a target to reduce 35-40% of its green house gas emission by 2030. In this direction government has laid out plans to increase renewable power generation capacity to 175 GW by 2022 and initiated various projects to develop and build more transmission network and other control infrastructure in the Country.

PERFORMANCE HIGHLIGHTS

"Excellence is never an accident. It is always the result of setting goals, sincere efforts and intelligent execution, it represents the wise selection of right choice of alternatives – CHOICE, not chance determines your destiny"–Aristotle

Dear Friends, in POWERGRID, we believe that performance is always the result of commitment,



पावरग्रिड

advance planning and focused efforts. With immense gratification, I place before you a synopsis of accomplishments during FY18, as hereunder;

- ❖ Achieved CAPEX of Rs. 25,791 crore and Capitalization of Rs. 27,928 crore (incl. TBCB Projects).

This is the third consecutive year where in capitalisation exceeded the CAPEX.

- ❖ Total Annual Income rose to Rs. 30,766 crore with year-on-year growth of about 16% and Profit After Tax rose to Rs.8,239 crore, with year-on-year growth of about 10%.
- ❖ Consultancy revenue rose to Rs. 662 crore, with year-on-year growth of about 14%; while Telecom revenue rose to Rs. 607 crore, with 22% growth over previous year.
- ❖ 9000 circuit kilometre (ckm.) of Extra High Voltage (EHV) transmission lines, 41,620 Mega Volt Ampere (MVA) of transformation capacity with 15 new sub-stations have been added.
- ❖ 11,400 MW Inter-regional (IR) power transfer capacity has been added, and with this cumulative capacity of the National Grid stood at 86,450 MW.
- ❖ In Varanasi, under Integrated Power Development Scheme (IPDS) of GoI, we have successfully completed 1510 km underground cabling work in busy and densely populated areas of Old Kashi.
- ❖ Bagged two new transmission projects, namely ERSS-XXI and WR-NR Power Transmission under



Acquisition of WR-NR POWER TRANSMISSION LIMITED under TBCB

Tariff Based Competitive Bidding (TBCB). Further, three of the subsidiaries, viz. POWERGRID Vizag Transmission Limited, POWERGRID Unchahar Transmission Limited and POWERGRID Warora Transmission Limited have declared dividend, for the FY18.

PROJECT IMPLEMENTATION

Your Company has distinction of implementing transmission projects under challenging conditions and stringent timelines.

This year, a number of transmission projects have been commissioned, which include:

- ❖ Nizamabad – Hyderabad, 765 kV double circuit (D/c) link commissioned in Jul.'17, 10 months ahead of schedule.
- ❖ Kameng-Balipara 400 kV double circuit line in North-east Region (NER).



POWERGRID pays Interim Dividend to GoI

- ❖ Kishenganga-Amargarh 220 kV double circuit line in Jammu & Kashmir (J&K).

Also, a number of long pending projects, which were stuck due to right-of-way (RoW) issues, have been completed through our persistent efforts, with the help of Hon'ble PM's institutional project monitoring platform - PRAGATI (Pro-Active Governance & Timely Implementation) and constant support from Ministry of Power, MoSPI & CEA, such as;

- ❖ Aurangabad-Padghe 765 kV double circuit line;
- ❖ Aurangabad-Boisar 400 kV double circuit line;
- ❖ Kudus-Kala 400 kV double circuit line;
- ❖ Sasaram-Daltonganj 400 kV double circuit line;
- ❖ Dehradun-Abdullapur 400 kV double circuit line;
- ❖ Kishenpur-New Wanpoh line 400 kV double circuit line;
- ❖ Kameng-Balipara 400 kV double circuit line; and
- ❖ Pasighat-Roing-Tezu 132 kV single circuit line.

Friends, as you are aware, we had initiated novel work for grid integration of large scale renewable generation through implementation of high capacity Green Energy Corridors, transmission scheme for ultra mega solar power parks as well as establishment of Renewable Energy Management Centre (REMC) at 11 locations in RE resource rich States.

You will be happy to note that this Financial Year we have commissioned a part of Green Energy Corridor-ISTS scheme, i.e. 765 kV Chittorgarh - Ajmer as well as 400 kV Tirunelveli-Tuticorin lines along with substations at Ajmer, Chittorgarh & Tirunelveli with 7000 MVA transformation capacity.

In addition, Transmission system associated with 7 nos. solar parks in 5 States is also under various stages of implementation. Out of this, transmission system for Rewa Mega Solar Park in Madhya Pradesh, Pavagada Solar Park (Part Phase-I) in Karnataka and Ananthapuram (NP Kunta) Solar park (Ph-III/II) in Andhra Pradesh is already completed.

For Bhadla, Banaskantha and Pavagada (Phase-II) Solar Parks, transmission scheme is under implementation matching with the generation projects.



Aerial view of Transmission line patrolling through Drone

OPERATIONAL EXCELLENCE

As on August 31, 2018, Company owns and operates, about 149,000 ckm of Extra High Voltage (EHV) transmission lines and 237 nos. sub-stations with about 345,000 MVA transformation capacity.

Operational Excellence has been your Company's attribute and availability of the transmission network was maintained at 99.81%, which is comparable to international standards.

The Company adopts the best technological tools like App based patrolling, Live-line Aerial Patrolling using Drones & Helicopters, Hotline maintenance up to 765 kV voltage level, besides On-line equipment condition monitoring, thermo-vision scanning of lines & switchyard, frequency response analysis of the transformers & reactors, etc.

To excel its operations, Company is undertaking external and internal benchmarking processes, such as ITOMS (International Transmission Operations and Maintenance Study).

Foreseeing the importance of automation in the transmission sector, our state-of-the-art 'National Transmission Asset Management Centre' (NTAMC) at Manesar, Haryana is managing 185 sub-stations remotely and the balance sub-stations are also being added progressively.

Dear Shareholders, your Company could successfully restore 54 lines, which got damaged in severe windstorms of speed upto 130 km/hr that hit several parts of North India around Agra during the months of May – June 2018, in the shortest possible time, on war footing.



पावरग्रिड

Recently, in the flood affected areas in Kerala; all help and resources have been extended to restore power, besides providing financial and other relief aid to the State.

LEADING EDGE TECHNOLOGY

"Times and Conditions change so rapidly that we must keep our aim constantly focused on the future." - Walt Disney

Company has undertaken a number of Research & Development projects in the field of Power Transmission. To mention, some of the activities are:

- ❖ Developed Process Bus Architecture to avoid complex cabling for protection, control & measurements, by connecting Circuit Breakers, Isolators and CT/PTs through optical fibers Ethernet using IEC 61850 protocol, paving way towards digital substations.
- ❖ Measurement of electric and magnetic fields emanated by transmission lines was carried on multiple number of 765 kV AC lines. This was done for design validation and conformance to the safety guidelines of 'International Commission on Non-Ionizing Radiation Protection (ICNIRP)'. It was found that electric and magnetic field values were within safe limits.

In order to provide thrust on R&D projects, a facility 'POWERGRID Advanced Research and Technology

Centre (PARTEC)' has been set up at Manesar, Gurgaon. 'PARTEC' has Real Time Simulator (RTS) and various labs for Power System Design, Protection Automation & Control, WAMS & PMU, Diagnostic & Calibration, Material Science, etc. including Super Conductivity Laboratory.

Your Company has been a leader in adopting HVDC technologies and a couple of important high capacity HVDC bipole links commissioned this year are;

- ❖ 6000 MW multi-terminal HVDC project from Biswanath Chariyali / Alipurduar to Agra, first of its kind in the World, facilitating power transfer from North-eastern States including Sikkim and from Hydro Electric Projects in Bhutan to other parts of the Country.
- ❖ 3000 MW HVDC Bi-pole connecting Champa (Chhattisgarh) to Kurukshetra (Haryana) facilitating economic dispatch of power from IPP projects in Chhattisgarh to demand centers of Northern Region. It is being further upgraded with addition of 2nd HVDC Bipole of ± 800 kV, 3000 MW, HVDC Terminals.

In addition, 6000 MW, HVDC Bipole Link from Raigarh in Chhattisgarh to Pugalur in Tamil Nadu, further extending to Thrissur in Kerala involving state-of-the-art 2000 MW, ± 320 kV voltage source converter (VSC) technology is under implementation.



220 kV SC Leh - Khalsti Line section of 220 kV SC Alusteng (Srinagar) - Leh TL

OUTLOOK

"The secret of change is to focus all of your energy, not on fighting the old, but on building the new".
- Socrates

Dear Shareholders, as mentioned in my speech last year having achieved 'One Nation, One Grid, One Frequency and One Price', POWERGRID as 'Central Transmission Utility' is working for continuous development of Inter-State transmission system in the Country.

We have witnessed tremendous growth in the past few years with a CAGR of over 19% in its assets over the last decade. Your Company shall continue to do its bit and has plans of CAPEX of about Rs. 25,000 Crore per year for the next couple of years.

I believe, we have a lot more to do in the power sector considering various growth drivers, viz.:

- ❖ Increase in Per Capita Consumption to 3000 units by 2040;
- ❖ Govt's ambitious plan to install 175 GW of Renewable Energy in the Grid by 2022;
- ❖ Govt's plans of more than 30% Electric Vehicles (EV) penetration by 2030;
- ❖ Massive investments envisaged in Intra-state Power Transmission System;
- ❖ Govt efforts in targeting 24x7 affordable power along with reduction of AT&C losses complemented with *SAUBHAGYA* and *Ujwal DISCOM Assurance Yojana* (UDAY), making distribution utilities financially stronger; and thereby creating more demand for electricity.
- ❖ 100% electrification target of Indian Railways;
- ❖ Govt's impetus on Energy Conservation and Efficiency;
- ❖ Expansion of Indian Grid through international connectivity in South Asia and BIMSTEC;
- ❖ Emerging opportunities in power transmission in developing nations particularly in Central Asia, Africa and South – America.

These would result in growth of power sector creating possibilities to extend our reach in new areas, such as Battery based Energy Storage Systems, Electric Vehicle (EV) Charging Infrastructure, Smart Grid Solutions, Railway Electrification, Rural Electrification, Underground cabling based distribution systems, Energy Management projects, etc.

Besides, Govt's vision of 'Digital India' is an important driver for your Company's Telecom business vertical.

Dear Shareholders, I would take this opportunity to share with you our capabilities and initiatives to harvest these opportunities.

Renewable Energy (RE) Integration

Considering the Govt's ambitious plan of establishing 175 GW Renewable Generation by 2022, there is a considerable business potential in transmission sector. In this direction, your company has identified transmission schemes for more than 72 GW Renewable Generation capacity. This comprises of high capacity 765/400/220 kV Pooling Stations along with various Transmission Corridors including 400 kV high capacity multi-circuit integrated with ISTS network, in renewable resource rich States.

Also, recognizing the criticality of RE integration such as weather uncertainty, grid stability, etc., your Company is developing smart transmission solutions, like Wide Area Measurement System (WAMS) comprising of Phasor Measurement Units (PMUs) and Big Data Analytics. Further, enhancement of balancing area through GEC, installation of SVC/STATCOMs for dynamic compensation and establishment of REMCs for forecasting & scheduling of power would help the grid to sustain the challenges posed by large scale RE Integration.

Also, Energy Storage is expected to play a vital role in grid balancing and Renewable Energy Scheduling. Towards this, your Company has gained expertise in Battery Energy Storage Systems through successful pilots in Grid connected Battery Energy Storage system at Puducherry.

Further, introduction of electric vehicles in a big way is expected to help the grid to absorb large scale RE integration. Your Company has plans of introducing electric vehicle charging Infrastructure to complement Govt's push in Electric Vehicles. In line with this;

- ❖ POWERGRID has been working with Delhi, Hyderabad and Chennai Metro Rail companies to develop public charging stations.
- ❖ Also, an MoU has been signed with Indian Oil Corporation Ltd (IOCL) for developing EV charging infrastructure at its retail outlets.

Railway Electrification

Dear Shareholders, you are aware that recently the cabinet has approved 100% electrification target of

Indian Railways by 2022. GoI's plan to electrify about 31,000 route kilometers of railway tracks in the next four years offers new vistas of investments in the sector.



First EPC agreement with Indian Railways

Your Company has proved its mettle through implementation of electrification of the first section of Mansi-Saharsa-Madhepura Railway track in a record 10 months ahead of schedule. The competencies thus developed make your company suitably placed in gaining from this new opportunity.

Intra-State Transmission

Friends, in my earlier addresses also, I have been emphasizing on the need of matching intra-State transmission system for efficient dispersal of power within States so as to avoid any bottling up of power. Further, low gestation period of solar and wind power

plants also poses a formidable challenge to develop intra-State transmission projects on fast track basis.

Your company is exploring partnerships with States in implementing intra-State transmission system through JVs, consultancy assignments or on ownership basis as a developer.

- ❖ We are trying to replicate the success we had with State of Bihar, wherein the JV was able to implement projects in an efficient and time bound manner, with other States as well.
- ❖ Your Company has undertaken a few important projects such as 'North Eastern Region Power System Improvement Project (NERPSIP)', 'Comprehensive Scheme for Strengthening of Transmission and Distribution in Arunachal Pradesh and Sikkim', Srinagar-Kargil-Leh Transmission System, etc. through consultancy route and would explore similar opportunities in future also.
- ❖ We have recently signed an agreement with Govt. of J&K to develop part of transmission and rural electrification under Prime Minister's Development Program (PMDP) to strengthen Intra-State transmission and distribution infrastructure.

Cross-Border Interconnections

With an objective to achieve international cooperation in the SAARC & BIMSTEC Region, Company is playing a



Hon' ble PMs of India and Bangladesh inaugurating Bheramara HVDC Back to Back interconnection second block of 500MW

pivotal role in planning of interconnections for effective utilization of regional energy resources.

Few significant interconnections include:

- ❖ With Bangladesh, Bheramara HVDC Back to Back interconnection upgraded to 1000 MW with the commissioning of second block of 500 MW capacity. The system has been inaugurated this month by the Hon'ble Prime Ministers' of both the Countries.

In addition, Katihar (Bihar) – Parbotipur (Bangladesh) - Bornagar (Assam) line with HVDC back to back terminal at Parbotipur is under planning stage.

- ❖ With Nepal, Muzaffarpur (India) - Dhalkebar (Nepal) line, charged at 220 kV, is proposed to be operated at 400 kV by Dec'19 to enhance power transfer capacity.

In addition, Gorakhpur (India) - Butwal (Nepal) line is in planning stage.

- ❖ With Bhutan, transmission lines from Punatsangchu & Jigmeling (Bhutan) to Alipurduar (India) are under implementation.

The existing cross-border interconnections facilitate power transfer of about 3050 MW with the neighboring Countries. With the commissioning of under-construction cross-border interconnections which are expected in the next 2-3 years, the power transfer would enhance by about 3700 MW resulting in total of about 6750 MW.

Further, in addition to ongoing International Consultancy assignments, your Company shall actively participate in Global Transmission tenders in consultancy / developer mode.

Telecom Business

Dear Shareholders, your company has seen robust growth in its diversified business in Telecom domain. We expect to sustain the same growth rate with impetus coming from GoI's 'Digital India' focus.

Further, we have signed an MoU with Railtel for Signalling works of Railways through a JV. The modalities are under finalization at GoI. There is also a plan of leveraging our telecom infrastructure for entering into Data Centre space.

SUSTAINABLE DEVELOPMENT

Sustainability is a strategic & integrated part of business management with a view to create long-term value for all stakeholders. Your Company has notably:

- aligned its business actions with 11 Sustainable Development Goals;
- published 5th biennial Sustainability Report in accordance with GRI-G4 guidelines.

POWERGRID's proactive approach towards conservation of natural resources with specific emphasis on avoidance of forest has resulted in saving of substantial forest area thereby absorption of approx. 1.25 million tons / year of CO₂ by saved forest.

ENERGY EFFICIENCY

Energy Efficiency is the fifth fuel after wood, oil, nuclear and green source.

...Dr. A.P.J Abdul Kalam.

India has identified energy saving potential of about 23%. Your Company, registered with BEE as Energy Service Company (ESCO) and having Pan-India presence is taking up energy efficiency projects.

A generic MoU is signed with UPPTCL to take up projects in the area of Agriculture Demand Side Management (AgDSM). Further, we are in discussions with various agencies such as Distribution Companies (DISCOMs), State Designated Agencies (SDAs), Municipalities, Heavy industries, etc. to take up projects on ESCO model.

CORPORATE SOCIAL RESPONSIBILITY – Transmitting Smiles

Dear Shareholders, your Company has extended its philanthropic arms through its CSR initiatives and touched millions of lives.

Focus areas of the CSR activities involve infrastructure development in rural areas, like Installation of solar street lights, drinking water facility, construction of community centres, internal roads, construction of class rooms, toilets, infrastructure support in government hospitals and primary health centres, etc.

Company has sanctioned 147 nos. of CSR Projects costing Rs. 237.60 crore to be executed in next 2-3 years.



Excellence in CSR

Major CSR initiatives undertaken by the Company include:

- 'POWERGRID Vishram Sadan', 300 bedded facility at J.P. Apex Trauma Center, AIIMS, New Delhi, dedicated to the Nation by the Hon'ble PM. Four more such Vishram Sadans are being constructed at Lucknow, Patna, Guwahati and Ranchi.
- The Company has participated in the 'Swachh Bharat Abhiyaan'. Company's employees and their family members, voluntarily undertook *Shram Daan*. As part of Swachhta initiative, besides construction of toilet blocks in Government Schools, more than 30,000 twin-bin dustbins are in various stages of installation, across the Country.
- 'Farmer-centric Integrated Watershed Management' project is being implemented on 10,000 hectares

of land in Kurnool (Andhra Pradesh) & Kudgi (Karnataka) through ICRISAT (The International Crops Research Institute for the Semi-Arid Tropics). The various initiatives under this project has resulted in improvement of Crop productivity.

- 5000 youths in 33 locations trained under skill development in collaboration with National Skill Development Fund and National Skill Development Corporation.

HUMAN CAPITAL

We believe learning and change are interlinked. With continuous learning, organizations respond to changes and adapt to an increasingly ever-changing market in a better way. In POWERGRID, focus is given on development of human potential by providing adequate skill up-gradation, career enhancement and job rotation.

POWERGRID Academy of Leadership (PAL) at Manesar has been imparting training in transmission technologies and managerial areas.

Also, a 'Smart Grid Knowledge Center' along with World class training facility has been established at Manesar, showcasing various attributes of a Smart Grid like Advanced Metering infrastructure, Peak load Management, Outage Management System, AC/DC Micro Grid, Solar PV, renewable integration, Smart Home, etc. under one roof.



Inauguration of POWERGRID Vishram Sadan by Hon'ble Prime Minister of India

CORPORATE GOVERNANCE

Your Company is committed to compliance of corporate governance guidelines. Our resolve towards transparency and accountability is unwavering and is based on the principles of Good Governance, Probity and Ethics in management functioning. Through efficient means of disclosures and communication, our stakeholders are well informed and kept involved through a positive and open relationship.

RECOGNITIONS AND ACCOLADES

Your Company has been bestowed with a number of National and International awards and accolades as recognition of excellence. To mention a few:

- 'Fastest Growing Electric Utility in Asia' by 'Platts Top 250 Global Energy Company Rankings' for four successive years (from 2014 to 2017).
- 'Best Navratna Overall', 'Best Navratna: Services' Awards at Dun & Bradstreet PSU Awards 2018.
- 'Best Quality System Excellence Award' by FICCI.
- 'SCOPE Award for Excellence and Outstanding contribution to the Public Sector Management – in 'Individual Leadership Category-I (Maharatna/Navratna CPSE).
- 'Best CEO Award' in 'PSU' & 'Power' Categories to CMD, POWERGRID at Business Today Best CEO Awards.



Best CEO Award

- 'EEI 2018 Asia-Oceania Index Award' by Edison Electric Institute, USA, in recognition of highest shareholder returns.

- 'Best Risk Management Practice' Award in 'Power' and 'PSU' categories by CNBC TV18.

ACKNOWLEDGEMENT



Best Risk Management Practice Award by CNBC TV18

On behalf of the Board of Directors, I take this opportunity to express deep gratitude and appreciation for our stakeholders.

I am thankful to our customers, the State power utilities and international utilities, our vendors partnering in our progress, funding agencies both national and multilateral, domestic and global investors, credit rating agencies, bankers, Govt. of India authorities including MoP, MNRE, MoF, MoEF, MoSPI, MEA, MoCA, DPE, CERC, CEA, NITI Aayog, RBI, other Central & State Governments/agencies including international partners.

I specially thank employees of our company and their families for the way they have gone about taking POWERGRID to greater heights year after year.

I once again thank you for your continued support and assure you that we shall continue to create more value for all of our stakeholders.

Thank you,



(I. S. Jha)

Chairman & Managing Director

New Delhi,
September 18, 2018



पावरग्रिड

पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड (भारत सरकार का उद्यम)

केन्द्रीय कार्यालय : "सौदामिनी", प्लॉट नं.-2, सेक्टर-29, गुरुग्राम-122 001 (हरियाणा)
पंजीकृत कार्यालय : बी-9, कुतब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110 016
सीआईएन : L4010DL1989GOI038121 वेबसाइट : www.powergridindia.com

POWER GRID CORPORATION OF INDIA LIMITED (A Government of India Enterprise)

Corporate Office : "Saudamini", Plot No.-2, Sector-29, Gurugram, Haryana -122 001
Registered Office : B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016
CIN: L4010DL1989GOI038121 Website : www.powergridindia.com