

11th Annual Conference on

Power Transmission in India

New Initiatives, Emerging Challenges, Promising Technologies

July 18-19, 2018, The Leela Ambience, Gurugram

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POWER TRANSMISSION IN INDIA

Mission

- Over 21,000 ckt. km of line length and over 80,000 MVA of transformer capacity have been added to the country's transmission network in the past 12 months. The line length and transformer capacity have grown at an average annual growth rate of 6.5 per cent and 9.6 per cent, respectively, over the past five years.
- This pace of expansion in the transmission sector must continue in order to ensure that the government's renewable energy and 24x7 Power for All goals are met. Both the generation and distribution sectors are undergoing significant reforms owing to enabling policy and regulatory measures put in place by policymakers and planners. The development of the transmission sector must also move forward to ensure that a strong and reliable backbone grid is ready to support the shift in generation mix and distribution loads.
- Large-scale capacity addition and connection of millions of new consumers to the grid requires major grid planning, and empowerment of system operators and regulators to ensure effective implementation of relevant policies and regulations.
- An estimated Rs 2.6 trillion investment is required in the transmission sector to meet the future peak load, which is expected to reach 234 GW by 2021-22. While the majority of the future investments will be spent on the expansion of the physical grid infrastructure, utilities are also expected to invest significant sums in new technologies to make the grid more reliable, resilient, secure and smart.
- The increasing share of renewable energy in the generation mix is expected to have a considerable impact on the grid. Significant investment is under way not only for the creation of integration and evacuation infrastructure, but also for the establishment of management centres to undertake forecasting and real-time monitoring of renewable energy generation. Ancillary services, which were introduced in May 2016, have already led to an improvement in the frequency profile and in congestion management.
- Over the next four years (by 2021-22), more than 85,000 ckt. km of transmission lines and 230,000 MVA of transformer capacity are expected to be added to the grid. The private sector could play an important role in achieving these targets. The competitive bidding process for interstate projects has resulted in the discovery of low tariffs and faster project execution. Despite its success at the interstate level, only a handful of states (Uttar Pradesh and Jharkhand) have adopted this model. Also, the project pipeline for interstate TCBC projects has been shrinking in recent years, with a current investment outlook of only around Rs 112 billion at both the interstate and intra-state levels.
- New technologies and designs are being used to address right-of-way issues. These include narrow-based and multi-circuit towers, GIS and EHV XLPE cables. Digital substations are helping improve system efficiency, safety and visibility. Utilities are also adopting various technology and analytics solutions to better manage their transmission assets.
- Reactive compensation devices are being installed to reduce transmission losses and prevent voltage collapses. For dynamic monitoring of the grid on a real-time basis, PMUs and WAMS are being deployed. With the increasing adoption of smart technologies, the need for cybersecurity has become paramount. To combat the growing instances of cyberattacks, the central government has been taking several initiatives, especially with regard to critical infrastructure.
- The grid must also be prepared to efficiently manage new demand-supply patterns as large amounts of energy storage capacity come online. Also, the government's e-mobility programme, which aims to increase the share of electric vehicles to 30 per cent by 2030, is expected to alter the load profiles and significantly impact grid operations.
- **The mission of this conference is to discuss the trends, developments, plans and opportunities in the Indian power transmission sector. The conference will highlight some of the new and emerging challenges facing the sector, and the possible solutions and ongoing initiatives to address these. The conference will also showcase relevant technologies and noteworthy projects.**

Target Audience

The conference is targeted at officials and managers from:

- ❖ Transmission companies
- ❖ State electricity boards
- ❖ Interstate transmission operators
- ❖ Private developers
- ❖ Technology providers
- ❖ Equipment manufacturers
- ❖ Regulatory agencies
- ❖ Power generation companies (public/private)
- ❖ Distribution companies
- ❖ Private utilities
- ❖ Funding agencies
- ❖ Consulting organisations, etc.

NEW INITIATIVES, EMERGING CHALLENGES, PROMISING TECHNOLOGIES

AGENDA/STRUCTURE

KEY TRENDS AND OUTLOOK

- ❖ What are the recent trends and developments in the power transmission sector?
- ❖ What are the grid expansion targets set till 2022?
- ❖ What are the key issues and challenges?

GOVERNMENT PERSPECTIVE

- ❖ What are the plans for the expansion of the country's transmission sector?
- ❖ What are the recent policies and initiatives introduced to fast-track expansion of the sector?
- ❖ What are some of the issues and challenges?

POWERGRID PERSPECTIVE

- ❖ What are Powergrid's investment plans and targets for the next few years?
- ❖ What are its plans for the development of the interstate transmission network?
- ❖ What are the priority areas for the next few years?

GRID OPERATOR PERSPECTIVE

- ❖ What steps are being taken to meet the changing needs of the grid (renewable energy, energy storage, e-mobility, etc.)?
- ❖ How has been the experience with ancillary services so far?
- ❖ What new products are likely to be introduced to strengthen the sector?

STATE UTILITIES' PERSPECTIVE

- ❖ What are the investment plans of various state utilities for the next few years?
- ❖ What are the key initiatives being taken by various state utilities?
- ❖ What are the key issues faced with the intra-state transmission system?

PRIVATE PLAYERS' VIEWPOINT

- ❖ What has been the experience with competitive bidding?
- ❖ What are the issues and challenges faced by private players in the sector?
- ❖ What steps need to be taken to enhance private participation in the sector?

REGULATORY PERSPECTIVE

- ❖ What are the key recent regulatory developments (transmission planning, general network access, communication systems, etc.)?
- ❖ How will these developments impact different stakeholders?
- ❖ What are the key unaddressed regulatory issues and concerns?

DESIGN AND AUTOMATION OF SUBSTATIONS

- ❖ What are the latest technological developments in substation design?
- ❖ What are the substation automation solutions being offered by the industry?
- ❖ How are utilities expected to benefit from these technologies and solutions?

FOCUS ON TECHNOLOGY: TOWERS, CONDUCTORS, TRANSFORMERS, SWITCHGEAR

- ❖ What are the latest technological developments in transmission towers, conductors, transformers and switchgear?
- ❖ How can utilities benefit from these technologies?
- ❖ What are the challenges in the adoption of these technologies?

IMPROVING GRID STABILITY AND RELIABILITY: REACTIVE POWER COMPENSATION

- ❖ What are the plans for the implementation of reactive power equipment over the next few years?
- ❖ What are the expected benefits from the use of this equipment?
- ❖ What are the challenges in the adoption of these technologies?

GRID INTEGRATION OF RENEWABLE ENERGY

- ❖ What are the key challenges in grid integration of renewable energy?
- ❖ What are the best solutions for generation forecasting, optimisation and balancing?
- ❖ What is the update on the Green Energy Corridors?

EMERGING CHALLENGE OF CYBERSECURITY

- ❖ What are the various initiatives being taken to enhance cybersecurity of the electricity grid?
- ❖ What lessons can be learnt from global experiences?
- ❖ What are the issues and challenges?

ELECTRIC VEHICLES: IMPACT ON GRID OPERATIONS

- ❖ What are the implications of EV penetration for grid reliability and stability?
- ❖ What are the plans of utilities with regard to upgrading and enhancing the grid?
- ❖ What are the issues and challenges?

ENERGY STORAGE

- ❖ What are the implications of energy storage for grid reliability and stability?
- ❖ What are the plans of utilities for upgrading and enhancing the grid?
- ❖ What are the issues and challenges?

ASSET MAINTENANCE AND MONITORING

- ❖ What are the technology and analytics solutions available to help utilities better manage their transmission assets?
- ❖ What are the best practices in the management and monitoring of transmission assets?
- ❖ What benefits can utilities expect from these to improve asset utilisation?

POWER TRANSMISSION IN INDIA

Previous speakers:



I.S. Jha,
Chairman and Managing Director,
Power Grid Corporation of India



S.K. Soonee,
Adviser,
Power System Operation Corporation



Subir Sen,
COO, CTU-Planning and Smart Grids,
Power Grid Corporation of India



R.P. Sasmal,
then Director (Operations),
Power Grid Corporation of India



B.B. Chauhan,
Managing Director,
Gujarat Energy Transmission Corporation



Alok K. Roy,
Chief Executive Officer,
Reliance Power Transmission



T. Amarendranath Reddy
Vice-President, Corporate Affairs and BD,
Sterlite Power



Sanjay Teotia,
Senior Vice-President and Head,
Essel Infra Projects



S. Sumanth,
Director, Transmission,
Karnataka Power Transmission Corporation



P. Dinesh,
Director, Finance,
Transmission Corporation of Andhra Pradesh



Nirmain Chanran Swain,
Senior General Manager,
Odisha Power Transmission Corporation



Harish Agarwal,
Chief Executive Officer,
Supreme & Company



Nihar S. Raj,
Hub Manager, Asia,
Power Consulting ABB India



Sanjay Bhambani,
Commercial Head, GIS,
GE T&D India



Wolfgang Eyrich,
Managing Director,
Entegra GmbH



Joseph Baptiste,
Operational Marketing Manager,
Airbus Helicopters



Venkata Bhanu Praveen R.,
R&D Operations Manager,
MMC UAV India



Rajendra K. Shrivastav,
Deputy General Manager,
SAIL

Previous Participating Utilities:

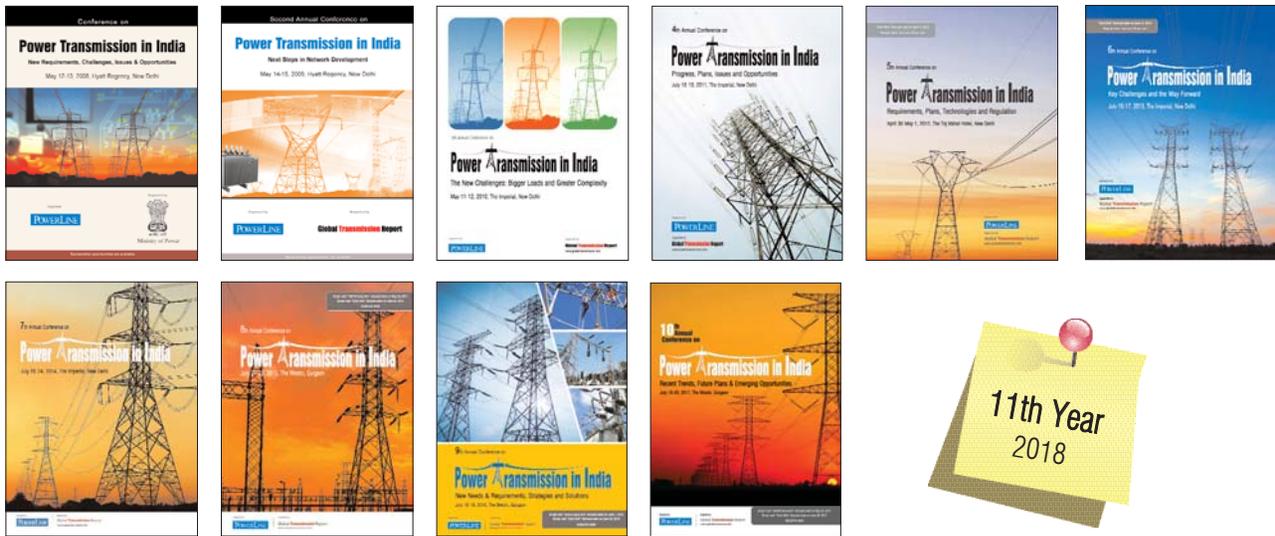


Other major organisations included:

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July 18-19, 2018, The Leela Ambience, Gurugram

SNAPSHOTS FROM PREVIOUS YEARS



Organisers

The conference is being organised by **India Infrastructure Publishing**, the leading provider of information on the infrastructure sectors through magazines, newsletters, reports and conferences. It publishes **Power Line** (the premier magazine for the Indian power sector), **Indian Infrastructure** and **Renewable Watch** magazines. It also publishes a series of reports on the energy sector including **Power Transmission in India**, and **T&D Equipment Market in India**. The company also publishes **Power News** (a weekly newsletter) and the **Power Line Directory and Yearbook**.

Global Transmission is a leading provider of information and analysis on the global electricity transmission industry. It publishes the **Global Transmission Report** (a monthly newsletter), **Global Transmission Weekly** (a weekly update), and a report on **Global Electricity Transmission**, and operates www.global-transmission.info.

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Registration Fee

Delegates	20 per cent discount (before June 29, 2018)		Fee without discount			
	Total INR (incl. tax)	Total USD	INR	GST @ 18%	Total INR	Total USD
One delegate	23,600	393	25,000	4,500	29,500	492
Two delegates	37,760	629	40,000	7,200	47,200	787
Three delegates	51,920	865	55,000	9,900	64,900	1,082
Four delegates	66,080	1,101	70,000	12,600	82,600	1,377

- There is a 20 per cent "Early Bird" discount for those registering before June 29, 2018.
- There is a special low fee of Rs 6,000 per participant for state-owned transmission utilities, regulatory authorities, academic institutions and government agencies (not public sector corporates).
- Registration will be confirmed on receipt of the payment. To register online, please log on to <http://indiainfrastructure.com/conf.html>

Payment Policy:

- Full payment must be received prior to the conference.
- Payments for "early bird" registrations should come in before the last date of discount.
- Conference fees cannot be substituted for any other product or service being extended by India Infrastructure Publishing Pvt. Ltd.
- Conference fee includes lunch, tea/coffee and conference material.

Contact: Richa Jhamnani, Conference Cell

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