9th Edition

TRANSMISSION LINES AND TOWERS

A VIRTUAL CONFERENCE

September 7, 2021

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2nd Edition

MODERN SUBSTATIONS

A VIRTUAL CONFERENCE

September 8, 2021

Organisers:

PowerLine Indian Infrastructure

TRANSMISSION LINES AND TOWERS SEPTEMBER 7, 2021

Mission

- The Indian transmission sector is poised to enter an accelerated growth phase. The National Infrastructure Pipeline estimates a capital investment of Rs 3,040 billion in transmission till 2025. This growth will be mainly driven by the country's shift away from conventional energy to green energy sources and cross-border integration initiatives. In addition to building greenfield transmission lines and towers, the future focus will be on the augmentation and strengthening of transmission infrastructure to seamlessly and reliably transmit green power to any corner of the country.
- These initiatives will lead to a significant uptick in demand for towers, cables and conductors, as well as provide opportunities to developers, equipment manufacturers and EPC players in this space. Transcos across the central, state and private sectors are expected to deploy advanced conductor technologies such as HTLS conductors, superconductors and HVDC cables, as well as adopt modern tower designs such as monopoles, multi-circuit, narrow-based and ERS towers to transmit a greater quantum of power and tide over RoW issues.
- Technologies such as LiDAR and use of drones that help fast-track surveying and monitoring of transmission lines and towers will become more ubiquitous in the coming years as they offer unparalleled accuracy, speed and reliability. In addition, the increase in the incidence of extreme weather events such as cyclones and floods would necessitate the setting up of climate resilient transmission infrastructure and adoption of emergency restoration systems for the grid.
- **The mission of this one-day virtual conference is to highlight the latest technologies and solutions for the design, erection, commissioning and O&M of transmission lines and towers. It will also provide a platform for showcasing successful projects and best practices in the segment.**

AGENDA/STRUCTURE

KEY TRENDS AND OUTLOOK
- How has the transmission network grown over the years?
- What are the key demand drivers for the sector going forward?
- What are the unaddressed issues and challenges?

UTILITY AND DEVELOPER EXPERIENCE
- What are the capex and transmission capacity addition plans of leading transmission utilities?
- What are some of the key issues in project implementation? How are RoW issues addressed?
- What are the main technology focus areas for the next few years?

EPC VIEWPOINT
- How have EPC practices for transmission projects evolved in recent years?
- What are the key challenges in project execution and how are they resolved?
- What are the latest designs and innovations in the EPC space for transmission projects?

TRANSMISSION LINE DESIGN, CONSTRUCTION AND STRINGING
- What have been the recent innovations and advancements in transmission line design?
- What are the new solutions and techniques for the construction and stringing of transmission lines?
- What has been the utility experience in the adoption of technologies? What are the key challenges?

EVOLUTION OF TOWER AND FOUNDATION DESIGNS
- How have tower designs evolved to optimise RoW?
- What advances have taken place in the laying of tower foundations?
- What are some of the climate resilient tower designs and emergency restoration techniques?
- What are the bottlenecks in the implementation of advanced tower structures?

ADVANCED CONDUCTOR TECHNOLOGIES
- What is the status of adoption of new conductor technologies by Indian utilities?
- What are the key technology trends in HTLS, superconductors, XLPE cables and GILs?
- How are advanced conductor technologies poised to grow in the coming years?

RECONDUCTORING AND UPRATING OF LINES
- Why are utilities focusing on reconductoring and uprating of transmission lines and what solutions are being adopted?
- What are the key techno-economic criteria for selecting optimal conductors in this regard?
- What are some of the issues and challenges faced by developers during the process?

TRANSMISSION LINE ASSET MANAGEMENT
- What are the new technologies adopted for condition-based monitoring systems?
- What are the measures adopted for extreme event mitigation?
- What are the innovative techniques and solutions for effective asset management?

APPLICATION OF NON-DESTRUCTIVE EVALUATION, ROBOTICS AND AERIAL TECHNOLOGIES
- What are the latest technologies for monitoring and surveillance of transmission lines and towers?
- What are the key advantages of these technologies vis-à-vis conventional methods?
- What are the key regulatory bottlenecks in the adoption of these technologies by utilities?

PROJECT SHOWCASE
- What are the salient features of the project (in terms of equipment, technology, design, commissioning, costs, etc.)?
- What were the issues and challenges faced and how were they overcome?
- What are the key learnings from the project?

MODERN SUBSTATIONS SEPTEMBER 8, 2021

Mission

- With the decarbonisation, decentralisation and digitalisation of the energy sector, T&D utilities are taking steps to transition and upgrade their power systems to cater to future grid requirements. These changes in the sector have led to the emergence of advanced substation technologies. Substation automation technologies have also graduated from SCADA to RTUs to IEDs.
- Digital technologies are driving the evolution of digital substations and are rapidly gaining traction among power utilities. Digital systems integrate real-time data into the system mainframe, ensuring detailed and faster fault analysis, reduced downtime, faster response time and lower O&M costs. The growing integration of renewable energy also calls for the adoption of digital technologies in substations.
- GIS substations have seen an increased deployment among utilities owing to their advantages like space-saving, better safety and low maintenance costs. The adoption of variants like hybrid substations and vertical GIS substations, and the use of environment-friendly insulation materials have seen an increase in the past few years.
- Further, new generation substations are being equipped with advanced transformers, which are often based on environment-friendly technologies and have the ability to seamlessly adapt to the smart grid. Smart transformers, for instance, can independently regulate voltage while allowing remote operation by maintaining contact with the smart grid. Other emerging transformer technologies include phase-shifting transformers, HVDC convertor transformers, and energy efficient transformers.
- Substation operations and maintenance (O&M) practices are also evolving as utilities now focus on condition-based monitoring, which helps minimise the occurrence of serious faults through continuous monitoring of key performance parameters. Another emerging O&M technique is reliability-centred maintenance, which focuses on optimising maintenance investment by limiting unnecessary tasks. The augmented reality (AR) and digital twin technologies are also coming up in a big way to improve asset performance and availability.
- In addition, FACTS and reactive power compensation systems are being deployed to ensure grid stability and reliability as more renewable energy is being integrated with the grid and consumers demand quality power.
- **The mission of this one-day virtual conference is to highlight the latest technologies and solutions for the design, installation and O&M of high voltage transformers, switchgear and substations. It will also provide a platform for showcasing the successful projects and best practices in the segment.**

AGENDA/STRUCTURE

KEY TRENDS AND OUTLOOK
- How has the country's substation capacity grown over the years?
- What are the latest technology trends and developments in substations?
- What are the issues and challenges?

UTILITY AND DEVELOPER EXPERIENCE
- What are the investment and substation capacity addition plans of leading transmission utilities?
- How has been the utility experience with advanced substation technologies?
- What are the most pressing concerns of utilities in substation project execution?

EPC PLAYERS' VIEWPOINT
- How have EPC practices for substations projects evolved in recent years?
- What are the latest designs and innovations in the EPC space for substation projects?
- What are the issues and challenges? How can they be addressed?

MODERN SUBSTATION TECHNOLOGIES
- What are some of the promising substation technologies (digital, smart, energy efficient, remote monitoring, etc.)?
- How have modern substation technologies benefitted utilities?
- What has been the utility experience in the adoption of technologies? What are the key challenges?

SUBSTATION AUTOMATION
- What has been utility experience with the adoption of substation automation technologies?
- What has been the impact of new-age protection & control systems on utility operations?
- What steps are being taken to address interoperability issues associated with substation automation?

FOCUS ON DIGITAL SUBSTATIONS
- What are the key features and growth drivers of digital substations?
- What are the potential benefits of digital substations vis-à-vis conventional ones?
- What is the update on standards and regulations for digital substations in the Indian context?

ADVANCED TRANSFORMERS AND SWICTHGEAR TECHNOLOGIES
- What are some of the upcoming transformer and switchgear technologies?
- What are the key features and benefits of new generation transformers?
- How has been the experience of utilities in adopting these advanced technologies?

ASSET MANAGEMENT STRATEGIES
- What are the integrated asset management strategies for substations?
- What have been the recent advancements in O&M practices for modern substations?
- What are some of the advantages of AR/VR and digital twin technologies in substation maintenance?

ADDRESSING POWER QUALITY ISSUES
- What are the common power quality issues faced by transmission utilities/grid operators?
- How can grid operators ensure superior power quality especially with the increase in renewable energy?
- What are the best strategies for reactive power compensation?

PROJECT SHOWCASE
- What are the key features of the substation project (in terms of equipment, technology, design, etc.)?
- What were the issues and challenges faced and how were they addressed?
- What are the key lessons learnt from the project?

Target Audience

- The conference is targeted at:

- Transmission companies
- Interstate transmission operators
- Technology providers
- Transmission structure manufacturers (towers and substations)
- Conductor manufacturers
- Transmission line manufacturers
- State electricity boards
- Private developers
- Foundation and piling companies
- Private utilities
- Design and consulting organisations
- Steel companies, etc.

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General Manager, Power Grid Corporation of India

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R.K. Tyagi
Chief General Manager (AM),
Power Grid Corporation of India

C. Taneja
Chief General Manager,
Power Grid Corporation of India

Previous Participants

Some of the participants in our previous transmission conferences were **AMAT; Accenture; ACME; Adani Transmission;Adani Electricity; Adhunik Power; Aditya Birla Insulators; AES; AIC Steel; Airbus Group; Altair; Altec Worldwide; Amara Raja; Angelique International; Apar Industries; Apto Services;Arcturus Business Solutions LLP; Arresto Solutions; Assam Electricity Grid Corporation; Asbesco;Associated Power Structures; Asteria Aerospace; AVEVA Information Technology; Bain & Company; Bajaj Electricals; Barclays; Bechtel; Bekaert; Bentley Systems; BGR Energy; Bhakra Beas Management Board; Bharat Heavy Electricals; Bhardwaj Services; Bihar State Power Transmission; Bihar State Power Transmission Company; BNC Power Projects; Bothe Windfarm Development; Brugg Cables; Burns McDonnell; Cabcon; Cargill; CESC; Chloride Power Systems; CLP; Connectwell Industries; CRISIL; Crompton Greaves; CTC Global; Customized Energy Soultions; Damodar Valley Corp; Delhi Transco; DNV-GL; Easun -MR Tap Changers; EDAC Engineering; Electrotherm; Elegrow Technology; Elite Powertech; EMC; Entegra; EPCO; ERA T&D; ERDA; Eros Group; Essar Power; Exide Industries; FLIR; Fluke Technologies; Focal Energy; Fugro; Galaxy Transmission; Garware -Wall Ropes; GE T&D; GIZ; Godrej & Boyce Mfg. Co.; Good Luck Steel; Gujarat Energy Transmission Corporation; Gupta Power; Haldia Energy Limited; Himalayan Heli Services; Hind Aluminium; Hitachi ABB; HPERC; HVPNL; Hyosung Heavy Industries Co; Hyosung T&D; iEngineering; IFC; IL&FS Energy Development; Inabensa; India Power; Indian Railways; Indo-German Energy Forum; International Energy Resources; Isolux Corsan; IVRCL TLT; Jagdamba International; Jaigad Power Transco; JBS Enterprises;Jindal Steel & Power; J-Power Systems; JSK Industries; JSW Power Trading; Jyoti Structures; Kalpataru Power Transmission; Karamtara; Karnataka Power Transmission; KEC International; KEI Industries; Kloeckner DESMA Machinery; KSEB; Kudgi Transmission Limited; L&T (Kudgi Transmission); L&T Infrastructure Development Projects; L&T Sargent & Lundy; Lara Global; Larsen & Toubro Limited; M&I Materials; M.P. Power Transmission; MacLean Power; Madhav Engineers; Madhya Pradesh Power Transmission Co.; Maha Transco; Maharashtra Eastern Grid Power Transmission Company; MAN Structurals; MAP Power LLP; Mitsui & India; MMC UAV; Modern Insulators; Monnet Ispat & Energy MP Power Transmission; Motilal Oswal Financial Services Limited; MP Power Transmission Co.; MTEK PRO; Nandan Steels & Power; NLC; NTPC; Odisha Power Transmission Corporation; Orange Renewable Power; Paras Aerospace Solutions .; Parbati Koldam Transmission; PFC; POSOCO; Power Grid; Power Transmission Corporation of Uttarakhand; Powerlinks; Pradman Engineering Services; Primtech; PTC India Financial Services; Punj Lloyd; Punjab State Transmission Corporation; Purulia & Kharagpur Transmission; PwC; Quality Austria Central Asia; R.S. Infraprojects; Ramboll; Ramelex; REC Transmission; Reliance Infrastructure; Rites; RRVPNL; SAIL; Sanjvijay Infrastructure; Satpura Transco; SBI; SBI Capital Markets; Shenzhen Micromulticopter Aero Technology; Shyam Indus Power; Sicame; Siddhartha Engineering; Siemens; SJVNL; Skipper; Sleepwalkers-Creatives & Consultants; SMEC; State Grid Corporation Of china; Sterling and Wilson; Sterlite Power Grid; Supreme & Co; Suzlon EnergyTag Corporation; Tamil Nadu Transmission Corporation; Tata Power; Tata Projects; Taurus Powertronics; TBEA; TESMEC; The Motwane Manufacturing Company; The Tata Power Company; Tokyo Rope International Inc.; Torrent Power; Transmission Corporation of Andhra Pradesh; Transrail Lighting; Trimble; TS Transco; TSE International; UbiFrance; UP Power Transmission Corporation; Utkarsh Tubes & Pipes; Valmont Structures; Vikram Engineering & Exim; Voltamp Transformers; Virtuous Energy; West Bengal State Transmission Corporation; Wipro; Yes Bank; ZTT Cable,** *etc.*

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**.

REGISTRATION FORM

☐ I would like to register for the **"TRANSMISSION LINES AND TOWERS"** conference **(September 7, 2021)**

☐ I would like to register for the **"MODERN SUBSTATIONS"** conference **(September 8, 2021)**

☐ I would like to register for **both the conferences**

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Registration Fee

Both conferences

	INR	GST@18%	Total INR	Total USD
1 Login	9,000	1,620	10,620	150
2 - 3 Logins	15,000	2,700	17,700	250
4 - 5 Logins	21,000	3,780	24,780	350
6 - 9 Logins	27,000	4,860	31,860	450
10 - 20 Logins	33,000	5,940	38,940	550

Any one conference

	INR	GST@18%	Total INR	Total USD
1 Login	6,000	1,080	7,080	100
2 - 3 Logins	10,000	1,800	11,800	169
4 - 5 Logins	14,000	2,520	16,520	236
6 - 9 Logins	18,000	3,240	21,240	304
10 - 20 Logins	22,000	5,400	25,960	370

- GST @18 per cent is applicable on the registration fee.
- Registration will be confirmed on receipt of the payment.

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. Discount offers cannot be combined with any other offer.
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