



4th Annual Conference on

RAILWAY ELECTRIFICATION: ACHIEVING 100 PER CENT

Plans, Projects, Issues and Opportunities

April 10-11, 2019, Le Meridien, New Delhi

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Indian
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POWERLINE

RAILWAY ELECTRIFICATION: ACHIEVING 100 PER CENT

Mission

- Indian Railways (IR) has made 100 per cent electrification a key priority with the aim of saving costs and achieving a lower carbon footprint.
- IR plans to electrify around 38,000 route km (rkm) between 2017-18 and 2021-22 to ensure 100 per cent electrification of its broad gauge rail network. The year 2017-18 recorded an all-time high level of electric traction commissioning of 4,087 rkm. Currently, electrification of around 20,000 rkm is in progress. In September 2018, the electrification of the balance 13,675 rkm of broad gauge routes was approved at an estimated cost of Rs 121.34 billion.
- In order to achieve 100 per cent electrification as per schedule, the ministry has taken a number of initiatives. These include adopting the engineering, procurement and construction (EPC) mode for awarding electrification works, increasing the number of executing agencies, focusing on improved contract management, conversion of all surplus diesel engines to electric ones and expansion of its transmission network.
- A number of mechanised technologies are being deployed to expedite electrification works. Besides, measures such as ramping up the production of three-phase locomotives with regenerative features and head-on generation trains and deploying new energy efficient rolling stock are also being taken.
- Going forward, IR's electrification plans are expected to create huge opportunities for technology providers, manufacturers of rolling stock, renewable energy developers, and transmission and distribution equipment providers.
- The mission of this conference is to highlight opportunities in the development, design and construction of rail electrification projects. It will provide a platform to learn and share the experience of industry experts and leaders. The conference will also discuss upcoming electrification projects and opportunities and key challenges, as well as showcase the latest technologies, equipment and noteworthy projects.

Target Audience

The conference is targeted at:

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|-------------------------------|----------------------------------|---|-------------------------------|
| - Indian Railways | - Wind power developers | - Contractors | - Financial Institutions |
| - IR-related organisations | - Renewable energy EPC companies | - Energy-efficient technology providers | - Cable manufacturers |
| - Independent power producers | - Solar energy service providers | - Energy management consultants | - HVAC and lighting providers |
| - Government agencies | - Equipment manufacturers | - Fuel suppliers | - Steel companies |
| - Rooftop solar developers | - Technology providers | - DG manufacturers | - Consultants, etc. |

Previous Participants

Some of the companies that participated in our previous conference include: ABB, Adani Power, Aditya Birla Insulators, Arihant Electricals, Austrade, Azure Power, BASF, Bhartiya Rail Bijlee Co., Canadian Solar, Central Electronics, Central Railway, Centre for Railway Information Systems, Climate Policy Initiative, CLP Power, CLW, Consul Neowatt, Continuum Wind Energy, Coslight, CSIR - Indian Institute of Petroleum, Customized Energy Solutions, Deloitte, Delta Power Solutions, DFCCIL, Diesel Locomotive Works, Eastern Railway, Econrols, EDS Global, Elara Capital, Emergent Ventures India, Encito Advisors, Energy Efficiency Services, ERDA, Essar Oil, Essel Infra, Exide Industries, Fichtner Consulting, Fortum India, GAIL, GE Transportation, Gemscab, Genus Power, Global Power Source, Good Luck Steel, GP Tronics, Greenmint Power, Grundfos Pumps, HBL Power Systems, Hero Future Energies, Hind Rectifiers, Hind Aluminium, Hindalco Industries, Hitachi India, HT Systems, India Infrastructure Finance Company, India Power Corporation, Indian Energy Exchange, Indian Railway Organisation for Alternate Fuels, Indian Railways, Inox Wind, IREDA, IROAF, JIC, JSK Industries, Kanohar Electricals, KEC, KEI Industries, Kirloskar Electric, Kolkata Metro Railway, KPMG Advisory Services, Krypton Lighting, L&T, Landis+Gyr, Lara Global, LPS Bossard, Lumino Industries, M&I Materials, Maharishi Solar, Mahindra Susten, MAN Structural, Mars Entrepreneurs, Metro Railway, Kolkata, National High Speed Rail Corporation, NF Railway, NHPC, North Central Railway, North Western Railway, Northern Railway, NTPC, Okaya Power, Panasonic India, Phillips Lighting, Powerica, Premier Solar Systems, PTC India Financial Services, R S Infra Projects, Rail Coach Factory, Rail Vikas Nigam, Railway Energy Management Company, Rajasthan Electronics & Instruments, Ratnagiri Gas & Power, Recons India, Reliance Industries, ReNew Power, Research Design & Standards Organisation, RITES, Royal Energies, SAS, Secure Meters, Siemens, South Central Railway, Southern Railway, Sterling & Wilson, Sterlite Power, Sun Clean Renewable Power, Sun Group Enterprises, Tata Power, TERI, Tvastar Engineering, UNDP, USAID PACE-D D Technical Assistance Program, Nexant, Waaree Energies, Welspun Energy, YES Bank, 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 **Indian Infrastructure**, **Power Line**, **Renewable Watch** and **tele.net** magazines and a series of reports on the infrastructure sectors, including **Railways in India**, **Urban Rail**, **Solar Power in India** and **Wind Power in India**. It also publishes the **PowerLine Directory and Yearbook**, **Solar Power Directory and Yearbook** and the **Wind Power Directory and Yearbook**.

AGENDA/STRUCTURE

KEYNOTE SESSION: IR PERSPECTIVE

- ❖ What are IR's electrification targets? What are the existing strategies to meet them?
- ❖ What are the recent initiatives taken by IR to expedite electrification work? What are the key outcomes achieved under Mission Electrification?
- ❖ What are the new targets and timelines pertaining to rail electrification? What are the investment requirements?

ELECTRICITY REQUIREMENTS: CURRENT SOURCING OPTIONS AND FUTURE STRATEGIES

- ❖ What is IR's current energy mix? What are the existing and emerging sources of energy?
- ❖ What are the electrical infrastructure requirements in light of these sources?
- ❖ What will be the role of renewable energy in meeting IR's future energy requirements?

CONTRACTORS' PERSPECTIVE AND EXPECTATIONS

- ❖ What has been the contractors' experience so far? What has been the impact of recent initiatives taken by IR to promote electrification?
- ❖ What are the biggest concerns? What are the lessons learnt?
- ❖ What are their expectations from the ministry?

FOCUS ON TECHNOLOGY: MECHANISED METHODS FOR RAILWAY ELECTRIFICATION

- ❖ What are the new and innovative methods/techniques available for railway electrification (cylindrical foundation augering and casting, mast installation and wiring, etc.)?
- ❖ What has been the experience so far in the adoption of these solutions? What has been the impact on cost and efficiency?
- ❖ What are the global best practices? What are the key issues and challenges?

ELECTRIC LOCOMOTIVE PRODUCTION TARGETS AND FUTURE REQUIREMENTS

- ❖ What have been the key trends in the production and acquisition of electric locomotives? How has the production capacity expanded in the past years?
- ❖ What are the recent innovations in design?
- ❖ What are IR's initiatives and future plans? What are the upcoming opportunities for technology and equipment suppliers?

CONVERSION OF DIESEL LOCOMOTIVES TO ELECTRIC LOCOMOTIVES: CURRENT STATUS, EXPERIENCE AND FUTURE PLANS

- ❖ What are IR's plans and targets for converting diesel locomotives to electric locomotives?
- ❖ What has been the progress so far? What are the future requirements?
- ❖ What are the associated costs?
- ❖ What are the specific technology and equipment requirements?

ADVANCEMENTS IN ROLLING STOCK: EMERGING TECHNOLOGIES AND NEW OPPORTUNITIES

- ❖ What are IR's plans for deploying energy efficient rolling stock (such as 9000 HP locomotives, fuel cell-hybrid trains and e-loco push-pull trains)?
- ❖ What are the recent developments in this regard? What is the cost economics?
- ❖ What are the investment requirements? What are the opportunities for technology and equipment suppliers?

ELECTRIFICATION OF HIGH SPEED RAIL CORRIDORS: UPCOMING PROJECTS AND OPPORTUNITIES

- ❖ What are the electrification requirements and specifications for high-speed rail systems?
- ❖ What are the technology options and enhancements offered by vendors?
- ❖ What are the upcoming projects and opportunities?

IR'S TRANSMISSION NETWORK: EXISTING INFRASTRUCTURE AND UPCOMING PROJECTS

- ❖ What are IR's plans for developing its own transmission network?
- ❖ What has been the progress so far? What are the targets and timelines?
- ❖ What are the upcoming opportunities and investment requirements?

ROLE OF ENERGY STORAGE: EMERGING SOLUTIONS AND OPPORTUNITIES

- ❖ What are the available energy storage technologies and solutions for IR's application?
- ❖ What has been the experience so far in the adoption of these solutions?
- ❖ What are the cost savings that can be achieved? What are the new trends & advances?

ROLE OF INFORMATION TECHNOLOGY, CONTROL AND COMMUNICATION SYSTEMS

- ❖ What are the key applications of IT, control and monitoring tools in rail electrification?
- ❖ How has been the uptake of such solutions so far? What are the new trends & advances?
- ❖ What are the global best practices and enabling technologies?

EMERGING EQUIPMENT REQUIREMENTS

- ❖ What are the various equipment requirements for rail electrification?
- ❖ What are the new trends and advancements (such as V-connected traction transformers, light weight modular cantilevers, etc.)?
- ❖ How is the industry gearing up to meet the emerging requirements of the railways sector?
- ❖ What are the key issues and challenges?

PROJECT SHOWCASE

- ❖ What are some of the noteworthy projects? Which are the new technologies and solutions deployed?
- ❖ What lessons can be learnt from the experience of these projects?
- ❖ What are the key issues and challenges?

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	INR	GST @ 18%	Total INR	Total USD	INR	GST @ 18%	Total INR	Total USD
One delegate	18,000	3,240	21,240	335	22,500	4,050	26,550	418
Two delegates	30,000	5,400	35,400	585	37,500	6,750	44,250	732
Three delegates	42,000	7,560	49,560	835	52,500	9,450	61,950	1,046
Four delegates	54,000	9,720	63,720	1,085	67,500	12,150	79,650	1,360

- There is a 20 per cent "early bird" discount for those registering before March 14, 2019.
- 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.
- Conference fee includes lunch, tea/coffee and conference materials.
- Conference fees cannot be substituted for any other product or service being extended by India Infrastructure Publishing Pvt. Ltd.

For delegate registrations and sponsorship opportunities, contact:

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