



15th Annual Conference on

# HYDRO POWER IN INDIA

Policy Initiatives, Cross-border Plans, Best Practices in O&M

January 22-23, 2018, Shangri-La's - Eros Hotel, New Delhi

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# HYDRO POWER IN INDIA

## Mission

- India's ambitious renewable energy targets have renewed focus on one of the long-standing and promising power generation options - hydro power.
- Aside from being a clean source of energy with low operating costs (almost half that of thermal power plants), hydro power projects offer other multiple benefits such as overload capacity, fast ramping, peaking support, storage capabilities and black-start capability, making them a perfect instrument for serving peak demand and achieving grid stability.
- That said, to ensure that hydro power plays a facilitative role, a number of issues need to be dealt with. Capacity additions in the sector have been abysmally low. The year-on-year capacity addition performance has improved in the past two years with 1.5-1.6 GW being added in the last two fiscals; however, it still remains significantly low in comparison to thermal or renewables.
- Almost all the under-construction projects, aggregating over 11 GW, are facing time and cost overruns. While environmental concerns, R&R issues, land acquisition problems, geological risks, etc. have led to time and cost overruns in upcoming projects, there have been generation performance issues with the existing ones (projects producing power at much lower levels than the design capacity).
- Further, much of the hydro potential in hydro-rich states remains unexploited due to an unfavourable policy environment. Hydro's contribution to the country's generation mix has thus declined sharply and in 2016-17, was just around 10.5 per cent.
- The government does recognise these challenges and is working on a number of measures to reinvigorate the sector. The amendments to the tariff policy have exempted hydro projects from competitive bidding and introduced a robust framework for ancillary services.
- More recently, a bail-out proposal has been announced, which includes interest subvention for projects and the creation of a hydro power development fund. Further, a new hydro power policy is on the anvil, which aims to classify all hydro projects as renewable sources, irrespective of size, and introduce a hydro power purchase obligation for the states. The finalisation of the policy is expected to lift investor sentiment in the domestic market.
- Meanwhile, as new investment opportunities in the domestic market are drying up, developers are showing a keen interest in alternative investment destinations, especially cross-border markets like Nepal and Bhutan. The issuance of cross-border trade guidelines have helped in this regard.
- The industry, on its part, is also making considerable efforts to upgrade existing technologies, improve performance and reliability through O&M best practices, use advanced monitoring tools, controls and automation techniques, deploy more efficient turbine and generator designs, consider advanced methods for dam and tunnel construction, etc. These are helping the industry to cut down construction time and extend the life of existing projects.
- **The mission of this conference is to analyse the key issues, challenges, opportunities and outlook for the hydro power segment in India. The conference will also provide a platform to showcase new technologies, construction methods and noteworthy projects.**

## Target Audience

The event is expected to draw participation from executives, managers and decision-makers from:

- Central public sector units
- Hydro developers in SAARC Region
- Private power producers
- Regulatory institutions
- Civil work contractors
- Interstate hydro projects
- Financial institutions
- Technology providers
- Geotechnical Experts
- Consultancy organisations
- State electricity boards
- State/Central government agencies
- Equipment manufacturers
- Legal and investment firms
- Etc.

## Previous participants

The companies that participated in our previous conferences on "Hydro Power in India" included: ABB, Adani Power, AECOM, Afcons, Allain Duhangan HEP, Alps Energy, Amberg Engineering, Ambuja Cement, Andritz Hydro, Anandsheel Hydraulics, Aon Global Insurance Brokers, APGENCO, ATB Riva, Atlas Copco, Axis Bank, Bauer, BBMB, BC Technomation, BHEL, Bhilwara Energy, BHPC, Bhutan Electricity Authority, Bhutan Hydropower Services, Birla Corporation, Blue Energy, BMD Group, Bosch Rexroth, Carpi, CEA, GESC, CH2M Hill, Chenab Valley Power Projects, CLP Power, Crompton Greaves, Dans Energy, DCM Shriram, Dextra, Druk Green Power, DSD Noell GmbH, Dynavec, Eaton Fluid Power, Elmco Water Technologies, EKI Energy Services, Elcome Technologies, Elgi Sauer Compressors, Elkem, Emco Energy, Essar Projects, Exide, Federal Mogul, Flovel Energy Private Limited, Fortum, Gammon, Gates, Gati Infrastructure, GE Power, Giertsen Tunnels, GMR, GMW, GRDICO, GSECL, Haryana Power Generation Company, HCC, Hilti, Himachal Pradesh Power Corporation, Hydro Tasmania, Hydroelectricity Investment and Development Company, Hyosung, ICICI Bank, ICRA, IDBI, IDFC, IFC, IFCL, IIFCL, Indus Renewable Energy, Indus Law, Industrial Processors & Metallizers, IRCON, ISRM, ITD Cementation, IVRCL, J.B. Boda Insurance Brokers, J&K State Power Development Corporation, Jacob Ballas Capital, Jaiprakash Power Ventures Limited, Jindal Power, JSW Energy, JSE PTC, JVM Marketing, Kalpataru Power Transmission, Keeezharkuthu Power, KEI Industries, KfW, Kirloskar, KSK, L&T, Lanco, Lombardi, MahaGenco, Malana Power, Marsh, Matcos Consulting Services, McNally Bharat Engineering, Mecon, Meggitt, Mitsui, MPGENCO, Murasit Bauchemie, Nagarjuna Construction, Nagarjuna Hydro Energy, NEEPCO, Nepal Electricity Authority, NHDC, NHEL, NHPC, Normet, NPTI Nangal, NTPC, Odisha hydropower Corporation, Om Energy Generation, Om Metals, Patel Engineering, PES Engineers, PFC, Phelps Dodge, Power Grid Corporation of India, Powergas Energy, Poyry Energy, Pratibha Group, Precision Infratech, PSPCL, PTC, PTCUL, Punatsangchhu Hydropower Project-II, Punatsangchhu Hydroelectric Project Authority-I, Punj Lloyd, REC, Reliance Energy, Robbins, RPG, Safire, Sai Disha Engineers & Consultants, Salzgitter, Sandvik, SBI Capital Markets, Schwing Stetter, Sell Hydro Electric Power, SEW Energy, Sharika Enterprises, Shri Saravana Industries, Siemens, Sika, Simplex, SJVN Limited, SMEC, SN Power, Statkraft, Tanahu Hydropower, Tata Power, TCE, Telangana State Power Generation Corporation (TSGENCO), Teesta Urja, THDC, TPSC, Tractebel Engineering, Tranter, UJVNL, Ultratech Cement, Uttar Pradesh Jal Vidyut Nigam, VA Tech Hydro, Velcan Energy, Vishnugad-Pipalkoti Hydro Electric Project, Voith Hydro, Wapcos, WBSSEDCL, etc.

## AGENDA/STRUCTURE

### KEY TRENDS AND OUTLOOK

- ❖ What are the key trends in the hydro power segment?
- ❖ What have been the recent developments?
- ❖ What are the capacity addition projections? What are the key issues and challenges?

### GOVERNMENT PERSPECTIVE

- ❖ What is the government's perspective on the hydro power segment?
- ❖ What is the update on the proposed new hydro policy?
- ❖ What are the other policy initiatives planned by the government to revive the segment?
- ❖ What are the key issues and concerns?

### CPSU PERSPECTIVE

- ❖ What is the central public sector's outlook for the hydro power segment?
- ❖ What are the key issues and concerns?
- ❖ What are the capacity addition plans? What are the key upcoming projects?

### PRIVATE PERSPECTIVE

- ❖ What is the viewpoint of private hydro power developers regarding the sector?
- ❖ What are the biggest issues and concerns?
- ❖ What is the future outlook? What are the policy expectations?

### FOCUS ON STATE INITIATIVES

- ❖ What has been the trend in hydro power development in hydro-rich states?
- ❖ What are the various policy and regulatory incentives offered to developers?
- ❖ What are the key issues and concerns? What is the upcoming capacity?

### COST AND TARIFF ECONOMICS

- ❖ What has been the trend in the capex of hydro power projects?
- ❖ What has been the trend in fixed and energy charges of hydro plants?
- ❖ What is the RoE for hydro projects? What are the regulatory incentives available to hydro developers?

### ROLE IN LOAD BALANCING

- ❖ What are the issues and concerns associated with integrating renewables into the grid?
- ❖ What role can hydro power projects play in balancing renewable power in the grid?
- ❖ What are the key steps required (technical, regulatory) to make hydro suitable for peaking and storage requirements?

### FOCUS ON PUMPED STORAGE PROJECTS

- ❖ What is the potential of pumped storage hydro capacity in India?
- ❖ What is the current and upcoming pumped storage hydro capacity in India?
- ❖ What are the key issues and challenges? What is the outlook for this segment?

### RISK AND INSURANCE

- ❖ What are the biggest investor issues and concerns regarding hydro power projects?
- ❖ What are the insurance options available for hydro projects?
- ❖ What are the risks covered under these options?

### CONSTRUCTION CHALLENGES

- ❖ What are the key risks and challenges in hydro project construction?
- ❖ What are some of the industry best practices and methods to reduce these?
- ❖ What are the promising technologies and solutions available in this regard?

### CROSS-BORDER INITIATIVES AND HYDRO DEVELOPMENT IN THE SAARC REGION

- ❖ What is the hydro power potential in the SAARC region?
- ❖ What are the investment opportunities in the hydro power segment in Bhutan and Nepal?
- ❖ What is the status of cross-border hydro power projects? What has been the experience so far?
- ❖ What is the future project pipeline in neighbouring countries?
- ❖ What are the key issues and concerns?

### WATER INTAKE AND CONDUIT SYSTEMS

- ❖ What are the new trends in the design and development of water intake and conduit systems?
- ❖ What are the best practices related to O&M?
- ❖ What are the key issues and challenges?

### FOCUS ON TURBINES AND GENERATORS

- ❖ What are the key developments and advancements in areas related to turbines and generators?
- ❖ What are the best practices related to O&M?
- ❖ What are the key issues and challenges?

### FOCUS ON TUNELLING

- ❖ What are the key tunnelling issues and challenges?
- ❖ What are the industry best practices?
- ❖ What are the noteworthy projects in this regard?

### CONTROL AND AUTOMATION SYSTEMS

- ❖ What are the electrical and automation requirements of hydro power plants?
- ❖ What are the new and promising technologies and solutions?
- ❖ What are the benefits for developers?
- ❖ What are the key challenges?

### TRANSFORMERS AND SWITCHYARDS

- ❖ What are the hydro power plant requirements related to transformers and switchyards?
- ❖ What are the best practices related to O&M?
- ❖ What are the key issues and challenges?

### BEST PRACTICES IN O&M

- ❖ What are the key drivers for O&M of hydro power plants?
- ❖ What are some of the industry best practices?
- ❖ What are the new and promising technologies available for O&M?

### GEO-TECHNICAL RISK MANAGEMENT

- ❖ What are the key geo-technical risks in hydro power plant construction?
- ❖ What are the strategies available to mitigate these?
- ❖ What are the key technologies and solutions available in this regard?

### PROJECT SHOWCASE

- ❖ What are some of the noteworthy hydro power projects?
- ❖ What are the key features, construction experience and success factors?
- ❖ What were the key issues in execution?

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### Organisers

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