

*First Information Bulletin &  
Call for Papers*

# **8<sup>th</sup> International R&D Conference on Global Trends in Water Resources, Power & RE Sectors**

**08-09 February 2024, IIT Roorkee, India**



## **Highlights :**

- Opportunity to interact with National & International experts on latest Innovations.
- An Exhibition displaying latest state of the Art Technological development and innovations.

***Jointly Organised by***



**Central Board of Irrigation & Power  
New Delhi**



**Indian Institute of Technology  
Roorkee**



## VENUE AND DATE

The conference will be held at IIT Roorkee, Uttarakhand during 8-9 February 2024.

## CONFERENCE TOPICS

### WATER RESOURCES

#### W1. Assessment of Water Resources and their use

- Assessment of Water Resources Potential
- Assessment of Water use in various Sectors
- Assessment of Irrigation Potential
- Water and Energy Security
- Impact of Climate Changes and its mitigation

#### W2. Water Resources Development and Management

- Investigations & Planning (Geological, Geophysical, Geotechnical, Seismological Investigations, etc.)
- River Behavior & their Management (River Hydraulics, Aquatic release, Morphology, River Flows, River Training, Inland Waterways, Sedimentation, Riparian etc.)
- Groundwater Resources & their Management (Investigations, Hydrology, Aquifer Characteristics, Structures, Development, Modelling, Pollution, Artificial Recharge, etc.)
- Domestic & Industrial Water Supply (Urban, Rural and Industrial Water Needs & Supplies, Recycling & Reuse etc.)
- Soil-Crop-Water-Atmospheric interactions, Irrigation Scheduling, Benchmarking, Canal Automation etc.
- Waterlogging, Land Degradation and Reclamation
- Watershed Development and Its Sustained Impacts
- Roof Water Harvesting
- Sustainability Issues of Water Resource Management
- Stake Holder Participation in Water Resources Management
- Use of Artificial Intelligence in Water Resource Management
- Research Needs and Capacity Building

#### W3. Infrastructure and Water Management

- Hydraulic Structures (Dams, Spillways, etc.)
- Irrigation Systems Design (Structural & Operational Designs)
- Extension, Renovation and Modernization (ERM) of Irrigation Systems (Major/Medium Projects)
- Renovation of Minor Irrigation Structures and Minor Storages

- Design and Layout of Pressurized Irrigation Systems
- Effective utilization of Irrigation Potential

#### W4. Water Quality, Environment and Social Issues

- Environmental Impact Assessment (EIA) of Water Resource Projects
- Water Quality Management
- Water Governance, Legislation & Institutional Mechanism
- Water Purification and Recycling
- Effect of Arsenic and Mitigation

#### W5. Application of Frontier Technologies in Water & Energy Sectors

- Space Technologies
- Information Technologies
- Operational Research Tools
- Nano Technology
- Automation and e- Governance and Use of Smart Cards etc.

#### Special Session on “Extreme Events & their Management”

- Glacial lake outburst flow and deluge
- Floods and Droughts, their Forecasting and Management
- Cyclones, Tidal Waves
- Earthquakes and Landslides
- Disaster Management
- Risk Assessment
- Research Needs and Capacity Building
  1. Impact of Climate Change in Water Availability Across Different River Basins.
  2. River Sedimentation: Advanced Techniques for Estimation and Monitoring.
  3. Using Remote Sensing Technology for Rivers Morphological Behaviour/ Siltation Pattern.



## POWER

### P1. Thermal Generation

- (a) Status and Future Plans, Policies
- (b) O&M – Issues, Challenges and Solutions
- (c) Smart Technologies and Innovative Research
  - Low Cost Fire Resistance Fluid for Turbine Control Valves with Oxide Resistance Property
  - Low Cost Ash Erosion Resistance paint for Application on Economizer & Low Temp Superheater Tubes.
  - Coal Burners for light up of Boiler (Directly from Coal Instead of Oil)
  - New Coal Nozzle Design with Proper Coal Regulation for flame Stabilization during Low Load Operation.
  - Technical Challenges of Thermal Units to adopt for Flexible Operation to Enable Integration with Renewable Energy Sources with the Grid.
  - Technical Challenges of Thermal Units to Adopt Biomass Utilization through Co-firing in Coal based Thermal Power Plants.
  - Co-firing of Thermal Plants with Ammonia.
  - Ammonia as Fuel for Gas Power Plants.
  - Hydrogen as Fuel for Gas Power Plants.
  - Innovations in R&M Practices.
  - Research for new Metals for Thermal Power Plants for Faster Ramp Up/down and Reduction in Technical Minimum Loading limit.
  - Efficiency Improvement Measures for Thermal Power Plants.
  - Automation and Control in Thermal Power Plants.

### P2. Hydro Generation

- (a) Status and Future Plan, Policies
- (b) O&M - Issues and Challenges
- (c) Smart Technologies and Innovative Research
  - Need of Modern Technologies to reduce installation and civil works.

- Modular Hydropower Systems for the dams used for irrigation and water needs.
- Pumped-storage hydropower as Energy Storage.
- Hybrid Power Plants.
- Untapped Kinetic Energy at the Outlet of Impulse Turbine.

### P3. Transmission

- (a) Status and Future Plan, Policies
- (b) O&M - Issues and Challenges
- (c) Smart technologies and Innovative Research
  - Prototyping for V2G (Vehicle to Grid).
  - Study for Manufacturing of EHV Transformers with VPI winding to avoid Influence of Moisture.
  - Use of Fiber Reinforced Plastics in Transmission Tower Design: Research Area: Explore utilization of FRP as structural Material in Design & Development of Transmission Lines.
  - Maloperation/false Operation of Protective Relays under Renewable Power Integration, Especially the distance element of long transmission line subjected to Heavy Injection of Converter Fed Power Source.
  - Wide-Area Power Swing Damping Control using PMU (synchro phasor) measurements and Grid-Connected Converter Systems (including HVDC, FACTS, Solar PV and Battery Systems).
  - Material Science Research to Develop Substitutes for XLPE Compounds (Bio-degradable Substitute) and Substitutes for SF<sub>6</sub>.
  - Cable Jointing Kits.
  - Drone Applications.
  - Online Transformer Oil Drying Out System (TODOS).
  - Wireless transmission of Power.





#### P4. Distribution

- (a) Status and Future Plan, Policies
- (b) O&M - Issues and Challenges
- (c) Smart technologies and Innovative Research
  - Impact on Distribution Transformer due to High Capacity / Fast Electric Vehicles Chargers.
  - Applications of AI for Managing the growing complexity in the Distributions Systems, Economizing the System Operation.
  - Applications of Big Data and IOT in the Power System and Distribution Sector.
  - Demand Side Response.
  - Effective Means for GIS Mapping.
  - Concept of Distribution System Operator (DSO) and its Realization.
  - Social impact of Power Supply Reliability.
  - Study on Consumer behavior.
  - Behavioral traits of EV Owners.
  - Power Quality and Reliability Issues.
- (b) Role of Circular Economy in Power Sector
- (c) Safety in Construction Works of Power House/ Substation
- (d) Training and Requirement for Skilled Man Power
- (e) Augmentation of Manufacturing Capabilities of various Equipment
  - Journey to Energy Transition
  - Hydrogen Economy.
  - Use of Bio Mass, Bagasse and Agri Residue for Power Generation.
  - Mitigating the Impacts of DSM (Deviation Settlement Issues).
  - Development of metals for High Pressure Hydrogen Storage Cylinders.
  - Development of Universal Connector at Electric Vehicle end.
  - Development of Task Specific Ionic Liquids as Electrolyte Additive/electrode Protective for Lithium Ion Batteries.
  - Electrodes made of Restacked Layered Materials differ substantially from the Conventional Crystalline Layered Solids.
  - Development of Redox Flow Batteries.
  - Optimal Sizing and Location of Energy Storage Systems (ESS).
  - Cyber Security.
  - Waste Disposal and Circular Economy.
  - Li- Ion Battery- Raw Material Reclamation after end of Life of Battery.
  - Tools in Data Analytics.
  - Penetration of Information and Communications Technology ICT Application in Power Sector.
  - Impact of Operating Temperature of Battery and Energy Storage Devices on their Performance & Overall Safety.
  - Energy Conservations and Energy Efficiency – in various Sectors like Lighting, Industry and Domestic use.

#### RENEWABLE ENERGY

- (a) Advances in Power Generation from RE Resources
  - New efficient RE Technologies.
  - Integration Technologies.
- (b) Status and future Plan, Policies
- (c) O&M - Issues and Challenges
- (d) Smart Technologies and Innovative Research
  - Battery Energy Storage System.
  - Distributed Energy Resource Management System (DERM).
  - Smart Grid.
  - Waste to Energy Technologies.
  - Energy Storage Solutions and Management.

#### Miscellaneous (Power Sector)

- (a) Energy Sector Transformation through Block Chain Technology



## POWER TRADING, REFORMS AND REGULATION

- (a) Power Pool Arrangements
- (b) Power markets, Regulatory Processes
- (c) Availability Based Tariff
  - Market Mechanism and Design- Payment Mechanism.
  - Green Financing Models and Business Models.

## CALL FOR PAPERS

### Abstracts Layout

- The length of abstract should not be more than 250 words, plain text
- Title: Make the title of the abstract brief clearly indicating the subjects
- Name(s) and affiliation(s) of the author(s) with email address

### Abstract submission date

- Authors are invited to submit their abstracts on any of the above topics.
- All accepted papers will be published electronically in the conference.
- The deadline for submission for abstract is 31 December 2023.

### Method of Submission

- **For submitting abstract please visit [www. cbip. org](http://www.cbip.org) → Events → forthcoming events → 8th R&D Conference must be submitted only via online.**

## REGISTRATION

Registration fee for the delegates is as follows:

- (a) Rs. 12,000/- per participant
- (b) Rs. 10,000/- per participant for members of CBIP
- (c) Special Discounted fee for students is Rs. 4,000/- per student

**GST @18% shall be charged extra. (GST No. 07AAAJC0237F1ZU)**

The Registration fee covers the registration kit, tea/coffee/lunch during the Conference. The Conference is non-residential. Participants will have to make their own arrangement for travel, boarding and lodging, etc. All payments be made through DD / cheque at par in favour of 'Central Board of Irrigation & Power', payable at Delhi or amount deposited / transferred to CBIP A/c no. 00031110004411, MICR Code. 110240001, HDFC Bank, Swift Code: HDFCINBBDEL, IFSC: HDFC 0000003, Address: 209-214, Kailash Building, 26 Kasturba Gandhi Marg, New Delhi 110001.

**Please arrange to furnish the details like UTR, Organization name, etc. to CBIP Sectt. after making the online payment at the earliest possible**

## SPONSORSHIP OPPORTUNITIES

Sponsors are assured of full visibility with printing of their names on proceedings and banners of the Conference and will have the privilege of distribution of their product's pamphlets/catalogues during the Conference. Sponsors will also have the privilege of sending delegates exempted from payment of registration fee as indicated hereunder:

- Authors will be notified about the delivery of their abstract by e-mail immediately. In case, you do not receive confirmation within 24 hrs, please check your spam folder and in case of no confirmation please contact [cbip@cbip.org](mailto:cbip@cbip.org); [arvind@cbip.org](mailto:arvind@cbip.org); [meenakshi@cbip.org](mailto:meenakshi@cbip.org)

### Abstracts Submission Instruction

- Abstracts can be submitted in English on the topics listed above
- Submitted abstract must be original. Abstracts previously published are presented on any forum should not be submitted.
- Fill in the submitting authors name and email address and mobile number properly- these contacts details will serve for further correspondence with the authors.

### Contacts

For any query regarding abstract /paper submission, please mailed to [cbip@cbip.org](mailto:cbip@cbip.org); [arvind@cbip.org](mailto:arvind@cbip.org); [priyanka@cbip.org](mailto:priyanka@cbip.org)

### DATES TO REMEMBER

- Deadline for submission of abstracts : 31 December 2023
- Notification of the acceptance of abstracts: 10 January 2024
- Submission of full texts of the accepted papers: 20 January 2024 (For Guide lines refer to [www.cbip. org](http://www.cbip.org))
- Submission of PPT : 2 February 2024 (For Guide lines refer to [www.cbip.org](http://www.cbip.org))



Platinum Sponsor : Rs. 3,00,000/-	Gold Sponsor : Rs. 2,00,000/-	Silver sponsor : Rs. 1,00,000/-
<ul style="list-style-type: none"> <li>• 10 delegate passes for participation in the Conference</li> <li>• Company logo on main backdrop and other banners</li> <li>• Company logo on Cover page of Proceedings Volume/ Base Paper</li> <li>• Advertisement (Prominent Position) in the Proceedings Volume</li> <li>• Circulation of Company Literature during the event</li> <li>• Announcement -Thanking sponsor</li> <li>• Speaking Opportunity</li> <li>• Invitation to the key person of the organization as special invitee during Inaugural session</li> <li>• Complimentary Advertisement in the Key Journal Published immediately after the event covering report of the event.</li> </ul>	<ul style="list-style-type: none"> <li>• 05 delegate passes for participation in the Conference</li> <li>• Company logo on main backdrop and other banners</li> <li>• Company logo on Cover page of Proceedings Volume/ Base Paper</li> <li>• Advertisement in the Proceedings Volume</li> <li>• Circulation of Company Literature during the event</li> <li>• Announcement - Thanking sponsor</li> <li>• Complimentary Advertisement in the Key Journal Published immediately after the event covering report of the event.</li> </ul>	<ul style="list-style-type: none"> <li>• 03 delegate passes for participation in the Conference</li> <li>• Company logo on main Backdrop</li> <li>• Company logo on Cover page of Proceedings Volume/ Base Paper</li> <li>• Announcement – Thanking sponsor</li> </ul>

## CALL FOR ADVERTISEMENTS

For further details, please contact the Conference Secretariat.

A limited space for insertion of colour advertisements in the souvenir is available at the following rates:

Back cover page Rs. 75,000/-

Second or Third cover page Rs. 50,000/- Full page (inside) Rs. 25,000/-

The last date for receipt of advertisements is 30th December 2023

**Note** : Material required in format of : Coraldraw, Pdf or JPEG file.

## EXHIBITION

An exhibition is planned as a technology showcase to meet the challenges of 21st century for the development and management of Water and Energy Resources. The strategic location of this event in India which is the largest democracy and the fifth largest economy in the World will be a key factor for the exhibitors who are looking for a gateway to this potential region.

Apart from the extensive international exposure to prospective exhibitor's products and services under one roof, exhibitors have a unique opportunity to spread their network in this region, find new joint ventures and profit from the growing business in this emerging and technologically important area.

The tariff for the exhibition stall of 3 x 3 m size is as under:

Exhibitors from India Rs. 75,000/-,

## FACILITIES

- Chair 2
- Table 1
- Spotlight 3
- 15 Amp. Socket 1
- Waste Basket 1

One free nomination will be allowed to the exhibitor for participation in the conference. For additional nominations, registration fee shall be payable.

The exhibition stalls will be made available on 8.2.2024 at 0800 Hrs. In case an exhibitor does not take over the allotted stall latest by 1100 Hrs. on 8.2.2024, the organizers shall have the right to re-allot the stall without any indemnity.

The exhibition may be postponed, shortened or cancelled due to any cause whatsoever beyond the control of the organizers. The organizers shall not be responsible for any loss sustained by the exhibitors directly or indirectly attributable to the elements of nature, events of force majeure, such as war, panic, mob action, strikes, civil disorders, fire, floods, etc., including orders or directives imposed by any government authorities. In such an event money will be refunded after consideration of expenses to commitments. In all matters, not specially provided for, the decision of the organizers shall be final and binding.

For further details please contact the Conference Secretariat.

## CONFERENCE SECRETARIAT

**Mr. A.K. Dinkar**, Secretary

**Mr. Sanjeev Singh**, Director (E); **Mr. K.K. Singh**, Director (WR)

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## TECHNOLOGY PARTNER

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## LIST OF HOTELS IN ROORKEE

Sl. No.	Name of Hotel	No. of Rooms	Contact No.	Address
1	Ambrosia Sarovar Portico	70	01334-398400, 9720107172	12th Milestone, Badehri Rajputana Fax: 01334-241260 Roorkee — Hardwar Road sph@sarovarhotels.com Dist: Hardwar; Uttarakhand
2	Hometel	90	01332 - 300300, 8307377501	(A Sarovar Hotel) Toll free number:- 1800111222 NH 73, Dehradun/ Saharanpur sales@roorkeehometel.com National Highway, Karondi, Roorkee
3	Hotel Centrum	50	01332 - 274422, 274411, 242422,	Delhi Hardwar Road 9756207191 Roorkee
4	Hotel Godawari	20	01332 - 278855, 278844	Delhi Hardwar Road
5	Hotel Center Point	15	01332 - 273040, 274050	Near Century Gate IIT Roorkee

## UTTARAKHAND – The Host State

Uttarakhand was formed on the 9th November 2000 as the 27th State of India, when it was carved out of northern Uttar Pradesh. Located at the foothills of the Himalayan mountain ranges, it is largely a hilly State, having international boundaries with China (Tibet) in the north and Nepal in the east. On its north-west lies Himachal Pradesh, while on the south is Uttar Pradesh. It is rich in natural resources especially water and forests with many glaciers, rivers, dense forests and snow-clad mountain peaks. Char-dhams, the four most sacred and revered Hindu temples of Badrinath, Kedarnath, Gangotri and Yamunotri are nestled in the mighty mountains. It's truly God's Land (Dev Bhoomi). Dehradun is the Capital of Uttarakhand. It is one of the most beautiful resort in the submountain tracts of India, known for its scenic surroundings. The town lies in the Dun Valley, on the watershed of the Ganga and Yamuna rivers.



The Tehri Dam is situated in the Tehri Garhwal district in Uttarakhand, India. This multi-purpose rock and earth-fill embankment dam is the tallest dam in the country. The dam was built in 2006 for providing water to generate electricity, irrigation as well as municipal water supply. The sediment trap efficiency of the dam is 95%. It was designed in a manner to make it capable of offsetting 150 years of sedimentation. Tehri dam river is the Bhagirathi River of Uttarakhand. This dam is a primary part of the Tehri Hydro Development Corporation Ltd. and Tehri hydroelectric complex. Standing tall as one of the highest dams in Asia, the Tehri Dam is a multi-purpose dam with a reservoir that generates around 1,000 MW of hydroelectricity.

**08-09 February 2024, IIT Roorkee, Uttarakhand**

(To be filled in block letters preferably)

(Surname)

Dated \_\_\_\_\_ Signature \_\_\_\_\_

- Photocopies of the registration form can be used for additional requirements, if any.
- Spot registration facilities will also be available, provided the prior information is received.