

# Webinar Series on

## Challenges and way Forward for Reliable Operation of Power System with High Penetration of Variable Renewable Energy in the Indian Grid

(Under the aegis of CIGRE-NSC C2 on Power System Operation and Control)

01<sup>st</sup>, 09<sup>th</sup> & 11<sup>th</sup> December 2023



Organised by



## Announcement

The Central Board of Irrigation & Power jointly with Grid-India under the aegis of CIGRE-India is organising webinar series on “Challenges and way forward for reliable operation of power system with high penetration of Variable Renewable Energy in the Grid” on 1st & 9th December 2023 in virtual mode and 11th December 2023 in hybrid mode.

## Background

The installed capacity of Variable Renewable Energy Sources (Solar and Wind) in India as on 31st March 2023 is 109413 MW. Out of this capacity, 22,177 MW of is connected at inter-state level and the remaining 87,236 MW VRE is connected at intra-state level. Several challenges are being experienced during connectivity, integration, and operation of renewable capacity in the grid. A total of 31 grid events involving generation loss in the range of 1000-7000 MW in individual events have occurred during the period January 2022 to May 2023 in ISTS connected RE pockets. Analysis of these events reveal that the undesirable response of RE plants to transmission system faults was a major contributing factor. The experience highlights the need for enhancing understanding of the characteristics of inverter-based resources under steady state and transient conditions. Taking the necessary mitigation measures would be the key to enhancing the renewable penetration further.

## Objectives

On the basis of a report to share the analysis of major grid events observed in the renewable energy complex in the last two years, a webinar series is being organized with the following objectives:

1. Create awareness and enhance the understanding of prevailing technical standards, regulations and procedures related with connectivity and integration of solar and wind power plants at the transmission level.
2. Disseminate the finding of the detailed analysis of grid events and facilitate implementation of the corrective measures.
3. Stimulate discussion on possible interventions at technical, regulatory, and institutional level.
4. Facilitate consensus among stakeholders on way forward for accelerated capacity addition of renewable while ensuring grid security and reliability in all time frames.

## Mode of participation

Stakeholders can participate in the webinar in virtual mode. Meeting link shall be shared with the registered participants on email. The sessions on Day-3 would be in hybrid mode.

## Who Should Attend

1. Renewable Energy Implementation Agencies.
2. RE developers, Engineering, Procurement and Construction (EPC) companies for RE plants.
3. Equipment manufacturers of Inverters/WTGs/Power Plant Controller.
4. Certification Bodies/Testing Agencies/Modeling and simulation studies agencies.
5. Transmission licensees, Distribution licensees, Generating companies.
6. Autonomous bodies/Industry Associations in Power Sector.
7. Faulty/Researchers/students from University / engineering Institutes.
8. Faculty from Research & Development, Training Institutes.
9. Professionals from Statutory bodies.
10. Officials from government departments/regulatory commissions.
11. Professionals from energy sector.

## Programme Schedule

Session	Time	Session Name	Speakers
<b>Webinar 1 : 01<sup>st</sup> December 2023, Friday, MODE: VIRTUAL</b>			
Inaugural Session	0930 to 1000	Welcome address Program Background Keynote address	Shri A.K. Dinkar, Secretary, CBIP & CIGRE-India Shri Sanjeev Singh, Director (Energy), CBIP & CIGRE-India Shri S.R. Narasimhan, CMD-Grid India and Chairman, CIGRE-India National Committee C2
1	1000 to 1145	Technical Standards and regulatory requirements for connectivity of transmission grid connected Renewable Energy in India	Experts from GRID-India
2	1200 to 1400	Procedure for connectivity, first time energization and integration of RE in transmission network	
<b>Webinar 2 : 09<sup>th</sup> December 2023, Saturday, MODE: VIRTUAL</b>			
3	0930 to 1130	Analysis of grid events in RE complex at interstate level (Session-A)	Experts from GRID-India
4	1130 to 1400	Analysis of grid events in RE complex at interstate level (Session-B)	Experts from GRID-India
<b>Webinar 3 : 11<sup>th</sup> December 2023, Monday, MODE: HYBRID</b>			
<b>Venue for physical participation CBIP Conference room, Malcha Marg, Chankyapuri (Limited seats are available)</b>			
5	1500 to 1630	Grid India Report on events in transmission grid connected Solar and Wind Power Plants	Experts from GRID-India
6	1630 to 1725	Panel Discussion: "Way forward for reliable operation of RE-rich grid"	Eminent speakers from CEA, GRID-India, CERC, CTUIL, SRPC, NSEFI, WIPPA
7	1725-1730	Vote of thanks	By GRID-India and CBIP

**Event organizers :** Grid Controller of India & Central Board of Irrigation and Power

**Coordinators :** Shri Vivek Pandey, Grid - India and Shri Mukul Nakra, CBIP

## About CIGRE NSC C2

The scope of the SC C2 covers the technical, human resource and institutional aspects and conditions for a secure and economic system operation of power systems in a way that is in compliance with requirements for network security, against system disintegration, equipment damages and human injuries, and security of electricity supply.

## About GRID-INDIA

GRID-INDIA is entrusted to operate the Power System of the country through National Load Despatch Centre (NLDC) and Five (5) Regional Load Despatch Centre (RLDCs). GRID-INDIA is playing a pivotal role in ensuring the grid security, reliability and the integrated operation of Indian Power System. The NLDC & RLDCs discharge their function in a fair and non-discriminatory manner as per statutory provisions. GRID-INDIA has continued to play a leading role in facilitating Sectoral reforms and driving a successful energy transition, fostering the realization of a dependable, secure, sustainable, and cost-effective energy system. Grid-India is committed to secure, reliable, economic and efficient Power System and market operation in India. Regular awareness sessions, capacity building programmes, workshops and seminars are being organized on various topics associated with Power System and market operation in India.

## About CBIP

The Central Board of Irrigation and Power (CBIP), a premier institution, was constituted in 1927 by the Gol. It is serving the Nation in the disciplines of Water Resources, Power and RE Sectors for more than 95 years.

The main objective of CBIP is dissemination of technical knowledge through various modes, such as:

- Organizing National and Intl. Conferences, Symposiums, Conf. and Workshops, training programme etc.
- Publication of technical documents e.g., manuals, technical reports, guidelines and journals etc.
- To provide info. about technological developments to the engineers/professionals and other stake holders.

## For Registration (Free)

All those who wish to participate in the webinar can register **free of cost** through the link as indicated under:

<https://docs.google.com/forms/d/1MqzR3yP1xKRtLShMUGgaiBwC1vOnsEnkug2MIG9GMcQ/edit>

Physical mode of participation on Day 3 will be restricted to 50 participants.

The webinar is non-residential. Participants will have to make their own arrangements for travel, boarding and lodging etc.

## Address for Correspondence

**Shri A.K. Dinkar, Secretary, CBIP**  
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**Shri Sanjeev Singh, Director, CBIP**

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COMMUNITY**

Web Link: [CIGRE INDIA](#)