



National Workshop on RE Integration Challenges: Key Learnings and Way Forward for Indian Power Sector

Date: 7th & 8th Jan. 2025

Venue: IIT Bombay

Draft Schedule:

[Day-1 \(Page 2\)](#) and [Day-2 \(Page 3\)](#)

Background

Indian power sector is undergoing a major transition with the increasing integration of renewable energy (RE) sources such as solar PV, wind, and biomass into the national grid. The Government of India has set ambitious targets to achieve 500 GW of non-fossil fuel-based capacity by 2030 and reach net zero by 2070, underscoring the urgent need for robust grid management and integration strategies. Solar and wind energy, in particular, are becoming integral to India's energy mix, enabling transition towards clean and sustainable power sector in India. However, integrating large-scale renewable energy into the existing power grid leads to several technical challenges, including grid stability, grid management, resource adequacy and the need for new infrastructure and regulatory frameworks.

For state and central-level electrical utilities, these challenges are further compounded by the diversity of India's energy landscape, with each region having distinct climatic, geographic, and technical conditions. While some of the States have already reached to high level of RE penetration, majority of the other states are also adding renewables to their generation mix despite various technical, regulatory and financial challenges. Therefore, there is a tremendous scope of learning from the experience of different stakeholders and need for addressing the challenges in RE integration in a collaborative and cooperative manner.

To constructively deliberate on RE integration challenges in India and find a way forward, this two-day “**National Workshop on RE Integration Challenges: Key Learnings and Way Forward for Indian Power Sector**” will bring together key stakeholders from the Indian Power Sector, including Policymakers, Regulators, Utilities, RE OEMs, RE Developers, Independent Power Plant Operators, Electricity Market and Academic Experts to discuss the challenges with renewable energy integration in India, both at the central and state level, and way forward for seamless integration of renewables in Indian grid.



भारतीय प्रौद्योगिकी संस्थान मुंबई
पवई, मुंबई – ४०००७६, भारत

Indian Institute of Technology Bombay
Powai, Mumbai-400 076, India

ग्रीड एकीकृत प्रयोगशाला
ऊर्जा विज्ञान एवं अभियांत्रिकी विभाग

Grid Integration Lab
Department of Energy Science and Engineering
<https://www.es.e.iitb.ac.in/~gil>



Schedule

| Day 1: 7 th Jan. 2025 | | | |
|----------------------------------|---|---------------|--|
| Session Name | | Time | Session Details |
| Session 1 9:00-11:00 | Registration & Inaugural Session | 09:00 - 09:30 | Registration |
| | | 09:30 - 11:00 | Inaugural Session (Guest invited from MNRE, Ministry of Power, GRID-INDIA, State Additional Chief Secretary, MERC, MahaTransco, IIT Bombay) |
| | | 11:00 - 11:30 | Networking High Tea |
| Session 2 11:30-1:00 | RE Integration Outlook: Global Perspective and National Experience | 11:30 - 11:50 | Global RE Perspective, trends, and case studies |
| | | 11:50 - 12:10 | Future Grid Planning |
| | | 12:10 - 12:30 | RE Integration in Indian Grid |
| | | 12:30 - 01:00 | Role of Electricity Market in RE Integration |
| | | 01:00 - 02:00 | Networking Lunch |
| Session 3 02:00-02:30 | Keynote Address: RE Integration Experiences of State Transmission Utility | | |
| Session 4 2:30-5:00 | RE Integration Experience from State Load Dispatch Centres | 02:30 - 02:50 | Experience of SLDC 1 |
| | | 02:50 - 03:10 | Experience of SLDC 2 |
| | | 03:10 - 03:30 | Experience of SLDC 3 |
| | | 03:30 - 04:00 | Networking Tea Break |
| | | 04:00 - 05:00 | Panel Discussion on “Role of State entities (SLDCs/ SERCs/ DISCOMs/ STUs) in secure and stable integration of large scale RE in India” |



भारतीय प्रौद्योगिकी संस्थान मुंबई
पवई, मुंबई – ४०००७६, भारत

Indian Institute of Technology Bombay
Powai, Mumbai-400 076, India

ग्रीड एकीकृत प्रयोगशाला
ऊर्जा विज्ञान एवं अभियांत्रिकी विभाग

Grid Integration Lab
Department of Energy Science and Engineering
<https://www.es.e.iitb.ac.in/~gil>



Day 2: 8th Jan. 2025

| Session Name | | Time | Session Details |
|-------------------------|--|---------------|---|
| Session 1 9:00-11:00 | Generation Utilities: Challenges and Opportunities in RE Integration | 09:00 - 09:20 | Talk by Wind OEM |
| | | 09:20 - 09:40 | Talk by Solar OEM |
| | | 09:40 – 10:00 | Talk by RE Developer |
| | | 10:00 - 10:20 | RE integration driven challenges experienced by conventional generation |
| | | 10:20 - 10:40 | Talk by Grid Operator |
| | | 10:40 - 11:30 | Panel Discussion on “ <i>Role of Generation Utility stakeholders in achieving 2030 RE targets</i> ” |
| | | 11:30 - 12:00 | Networking High Tea |
| Session 2 12:00-1:30 | Renewable Energy Integration in distribution systems: DISCOM perspective | 12:00 - 12:15 | Experiences of DISCOM 1 |
| | | 12:15 - 12:30 | Experiences of DISCOM 2 |
| | | 12:30 - 12:45 | Experiences of DISCOM 3 |
| | | 12:45 - 01:30 | Panel Discussion on “ <i>Challenges and Opportunities for DISCOMs in the journey of RE integration in Indian Grid</i> ” |
| | | 01:30 - 02:30 | Networking Lunch |
| Session 3 2:30-4:30 | Regulatory Pathways for RE Connectivity | 02:30 - 02:45 | Talk by Central Regulatory Authority |
| | | 02:45 - 03:00 | Talk by State Regulatory Authority |
| | | 03:00 - 03:15 | Regulatory Pathways for RE Connectivity: Electricity Market Perspective |
| | | 03:15 - 03:30 | Grid Evolution in Action: Stories That Shape Renewable Integration |
| | | 03:30 - 04:30 | Panel Discussion on “ <i>Facilitation of smooth RE integration through robust regulations</i> ” |
| | | 04:30 - 05:00 | Networking Tea Break |
| Session 4 5:00-5:20 | Emerging RE Technologies | 05:00 - 05:20 | Emerging new grid elements (BESS, Electrolysers, Fuel Cells, V2G, etc.) |
| Session 5 5:20-5:30 | Closing Session | 05:20 - 05:30 | Vote of Thanks and Closing |