

**Azadi ka Amrit Mahotsav**  
to commemorate 75 years of progressive Independent India

**REPORT OF THE TENTH EVENT**

**“Webinar on Grid Integration of Renewable Energy”**

NIWE with the support of MNRE has scheduled sixteen events to commemorate 75 years of progressive Independent India (Azadi Ka Amrit Mahotsav).

The tenth event, “**Webinar on Grid Integration of Renewable Energy**” was successfully conducted on 12<sup>th</sup> April 2023.

The announcement about the event carrying the instructions was hosted in NIWE website and circulated through Social Media pages along with the Flyer given below.

**Azadi Ka Amrit Mahotsav**  
to commemorate the 75 years of progressive Independent India

**G20**  
MNRE 2023 INDIA

As part of the Azadi ka Amrit Mahotsav, NIWE has scheduled sixteen (16) Events with the support of Ministry of New and Renewable Energy (MNRE)

**10<sup>th</sup>**  
EVENT

**Webinar on  
GRID INTEGRATION OF  
RENEWABLE ENERGY**

**Speaker**  
**Smt. DEEPA KURUP**  
Additional Director &  
Division Head (RE-Grid Integration) &  
Division Head (In-charge) (R&D, NIWE)

**12<sup>th</sup> April 2023**  
**4.00 - 5.00 pm**

Registration Link : <https://forms.gle/LSZQnec54ett5Kk26>

For more information, please contact **Dr. P. KANAGAVEL**  
Director and Head, Skill Development and Training & Infrastructure Management Division  
Mobile : +91 9445798007 Ph. : +91-44-22463982 / 83 / 84 E-mail : pkanagavel@niwe.res.in

**NATIONAL INSTITUTE OF WIND ENERGY**  
An autonomous Research & Development Institution  
Ministry of New and Renewable Energy, Government of India  
CHENNAI

The event was conducted online, enabling large number of participants to take part in the Webinar.

### **REGISTRATION**

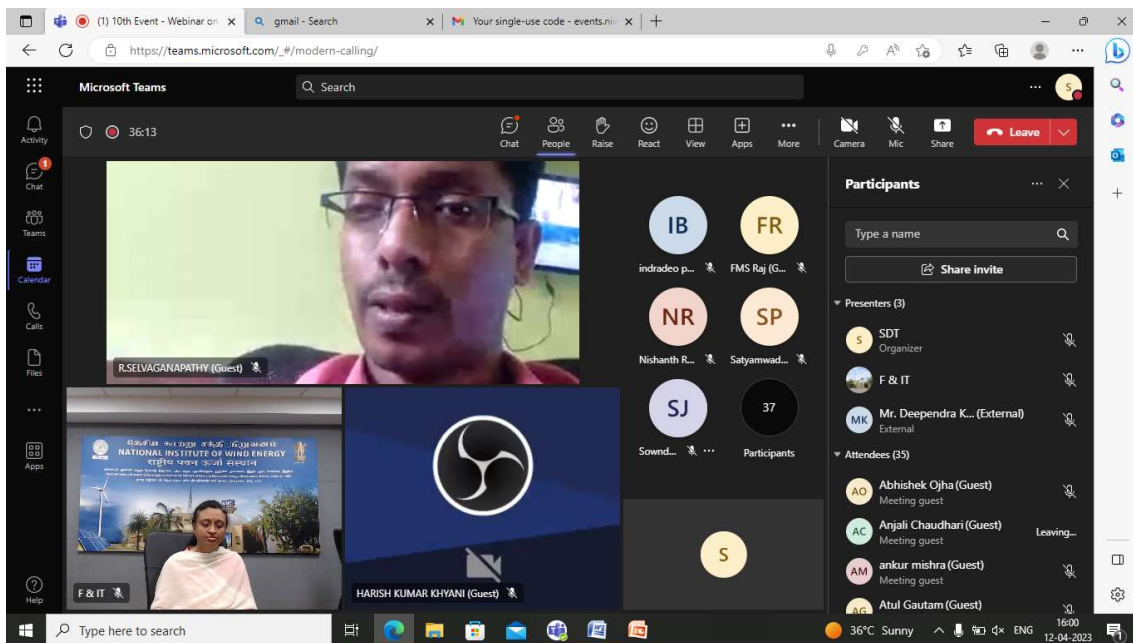
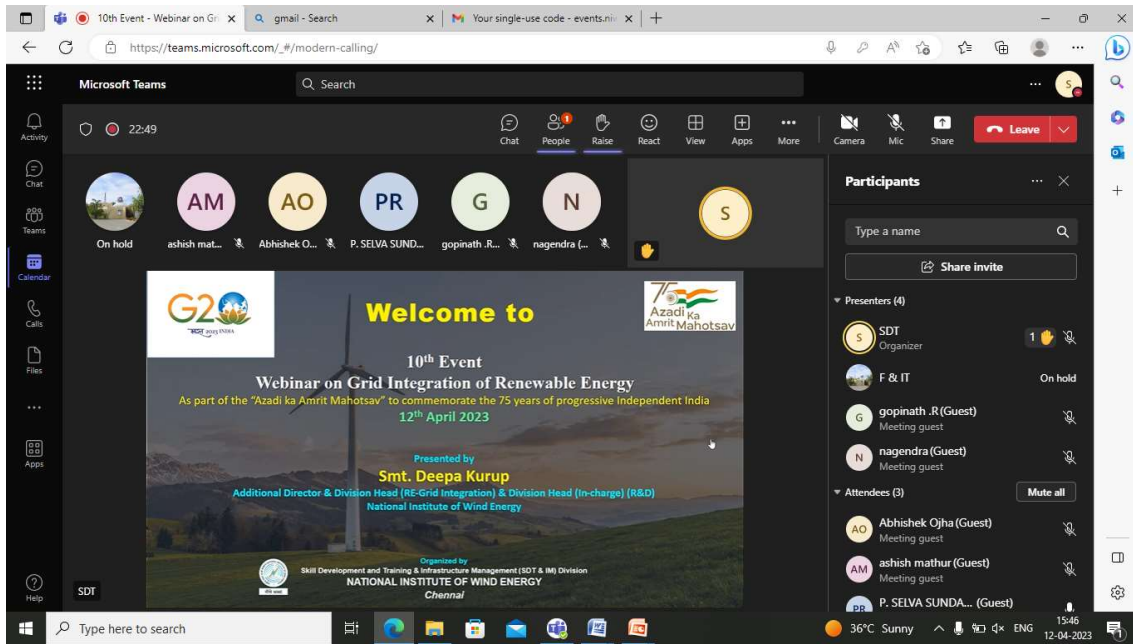
After the announcement, 211 candidates registered and 75 participants have attended the event.

### **PROGRAMME SCHEDULE**

<b>Date</b>	<b>Time</b>	<b>Webinar Topic</b>	<b>Speaker</b>
<b>12<sup>th</sup> April 2023</b>	<b>4.00 - 5.00 pm IST</b>	<b>Grid Integration of Renewable Energy</b>	<b>Smt. DEEPA KURUP,</b> Additional Director & Division Head (RE-Grid Integration) & Division Head (In-charge) (R&D), NIWE

The speaker gave a detailed presentation on Grid Integration of Renewable Energy and it was followed by a Q&A session, which was open for the participants to interact with the speaker. The participants asked many doubts and queries enthusiastically. All the doubts and queries raised by the participants were clearly explained and clarified by the speaker. The participants were very much satisfied with the presentation and had reciprocated the same by appreciating and thanking the speaker. In addition, they expressed their thanks to NIWE / MNRE for hosting this webinar under the event of Azadi ka Amrit Mahotsav, which is very useful for the students and also for the industrial professionals.

# Gallery of the 10<sup>th</sup> Event



10th Event - Webinar on Gr | gmail - Search | Your single-use code - events.ni | +

https://teams.microsoft.com/\_#/modern-calling/

Microsoft Teams Search

45:54

You're muted. Press Ctrl+Shift+M to unmute your mic, or press and hold the Ctrl+Spacebar.

F & IT Abhishek O... Participants

### Frequency Management

- Inertial response**  
Automatic injection of energy to slow RoCoF
- Primary Frequency Control**  
Active power injection proportional to measured changes in local frequency and arrest deviations  
Synchronous generator governor response, batteries
- Secondary Frequency Control**  
Automatic generation controls and manual dispatch commands to restore frequency to 50 Hz and relieve providers of primary frequency response
- Tertiary Frequency Control**  
Start-up of new units act to replace depleted secondary frequency control resources

Power System Response after a Frequency Disturbance

Participants

Type a name

Share invite

Presenters (2)

- SDT Organizer
- F & IT

Attendees (55)

- Abhishek Ojha (Guest) Meeting guest
- anishkumar (Guest) Meeting guest
- Anjali Chaudhari (Guest) Meeting guest
- ankur mishra (Guest) Meeting guest
- ASHUTOSH KU... (Guest)

35°C Sunny 16:10 12-04-2023

10th Event - Webinar on Gr | gmail - Search | Your single-use code - events.ni | +

https://teams.microsoft.com/\_#/modern-calling/

Microsoft Teams Search

55:51

F & IT Abhishek O... Participants

### Electrical system in wind turbines

#### Variable speed wind turbine

$$T_{opt} = k_{opt} \omega_1^2$$

Source: Atlas power integration case studies & System operational aspects

Participants

Type a name

Share invite

Attendees (56)

- Abhishek Ojha (Guest) Meeting guest
- anishkumar (Guest) Meeting guest
- Anjali Chaudhari (Guest) Meeting guest
- ankur mishra (Guest) Meeting guest
- ASHUTOSH KU... (Guest) Meeting guest
- Atul Gautam (Guest) Meeting guest
- Ayushi Chaudhan (Guest) Meeting guest
- bhosheswar (Guest)

35°C Sunny 16:20 12-04-2023

10th Event - Webinar on Grid | gmail - Search | Your single-use code - events.ni | +

https://teams.microsoft.com/\_/#/modern-calling/

Microsoft Teams

01:02:51

Chat People Raise React View Apps More

Camera Mic Share Leave

Some people in this chat are outside your org. It's possible they have message-related policies that will apply to the chat. [Learn more](#)

Patel Harshal (Guest) please check your network

BireswarPaul 4:21 PM Voice interruption

KK Kartik Krishna (Guest) 4:23 PM Mam can you please activate laser

Last read

KK Kartik Krishna (Guest) 4:24 PM or pointer

Type a new message

### Ramp Control

CEA requirement for generating stations-10 MW, connected at  $\geq 33$  kV  
 • Facility for controlling the rate of change of power output at a rate not more than  $\pm 10\%$  per minute.

Source: Regulation and Frequency response service, VERTS R&D

35°C Sunny 16:27 12-04-2023

10th Event - Webinar on Grid | +

https://teams.microsoft.com/\_/#/modern-calling/

Microsoft Teams

01:31:53

Chat People Raise React View Apps More

Camera Mic Share Leave

Participants

Type a name

Share invite

Presenters (3) Mute all

- SDT Organizer
- F & IT
- Kanagavel (Guest) Meeting guest

Attendees (54) Mute all

- Abhishek Ojha (Guest) Meeting guest
- Almas Vhora (Guest) Meeting guest
- anishkumar (Guest) Meeting guest
- Anjali Chaudhari (Guest)

Recording has started. By continuing this meeting, you consent to being recorded. Privacy policy

Turn camera off (30-seconds) your video will be muted for 30 seconds. This will not apply to this chat.

Meeting chat

grid can handle penetration

Kartik Krishna (Guest) 16:07 Thank you Harsh

Sandeep Nishu (External) 16:10 Thank you very much, Harsh.

HARSHIL KUMAR SHARMA (Guest) 16:11 HARSHIL KUMAR SHARMA (Guest) 16:11 16:11:2023 we are saving 50% from RE, can our grid handle?

Type a new message

34°C Sunny 16:56 12-04-2023