



Resilient Renewable Energy Microgrids

IEEE MVSR PES chapter has conducted a webinar on Resilient Renewable Energy Microgrids. This webinar was conducted for the eve of PES Day 2021 with the help of the PES Ambassador on the topic of Clean Energy Technologies. This webinar was a mere help from the IEEE MVSR PES chapter to help students gain knowledge of various renewable energy sources and how complementary renewable energy sources can be used to fulfil huge power requirements.

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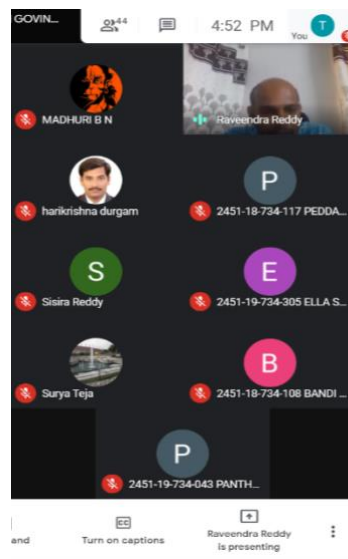
Session details:

Date: 5th April 2021

Time: 4:30pm – 6:30pm

No. of participants: 44

Speaker for the session: Mr M. Raveendra Reddy is working as an Assistant Professor in the Department of Electrical and Electronics Engineering (EEE) Department in MVSR Engineering College, Hyderabad. He has his graduation degree in Electrical and Electronics Engineering (B.TECH). And his Post Graduation Degree in Power Electronics and Industrial Drives (M.TECH) from JNTU, Hyderabad. He is currently pursuing a PhD. And he has 12 years of experience in teaching. He is a resource person for NIRD & PR International Training programs on Renewable Energy Resources and current scenario topics in India. His areas of interest are Renewable Energy Technology, Microgrid, Blockchain Technology in energy applications, Energy Trading.



Attendees for the event

The webinar was delivered by Mr Raveendra Reddy Medam, Mtech(PhD), Assistant Professor in Electrical and Electronics Department In MVSREC.

Maturi Venkata Subba Rao Engineering College
Affiliated to Osmania University
Nadergul, Hyderabad

IEEE MVSRSB Student Branch

IEEE PES
Power & Energy Society*

IEEE PES
Clean Energy Revolution

IEEE MVSRSB PES STUDENT CHAPTER
Presents a
Webinar on
Resilient Renewable Energy Microgrids
Date : 5th April 2021 | 4:30 PM- 6:30 PM IST

Faculty Co-ordinators
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Speaker :
Raveendra Reddy Medam
M. Tech, (Ph.D)
Assistant Professor
EEE Department
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<https://tinyurl.com/xj4vysjc>

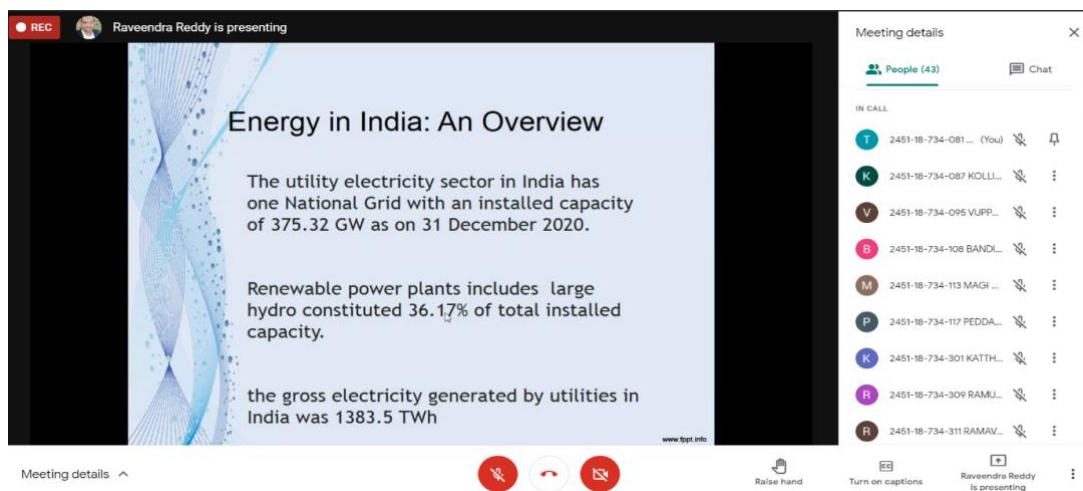
Event Poster

Ms Snigdha Tallada, Women In Power, IEEE MVSR PES has initiated the session by saying that she has got selected as PES Ambassador for PES Day 2021 and for the eve of PES Day they are organising this webinar on Clean energy technology topic. Then she firstly thanked the speaker of the event Mr M. Raveendra Reddy for readily accepting the request to deliver the webinar. Later , she welcomed the speaker, faculty of MVSR Engineering College and all the attendees who have attended the webinar.

She then requested Dr. D. Hari Krishna, PES Student Chapter Advisor, IEEE MVSR SB Counsellor to address the meeting. He has shared about various events that have organized and also about the various awards bagged by IEEE MVSR SB. He thanked the speaker Mr M. Raveendra reddy for accepting to speak at the webinar.

She then requested Ms B. Nikita Reddy, Chair of IEEE PES Student Chapter to give a brief introduction about the speaker of the webinar. She thanked Ms Nikita for giving the introduction. Later, she requested the speaker M. Raveendra Reddy to take over the session.

The speaker has begun the session by thanking IEEE MVSR SB for providing this opportunity. The speaker started the webinar by saying “time is running out soon, there will be nothing left to burn on the earth by itself”. He shared the Overview of India in terms of Renewable Energy.



Speaker giving an overview of energy in India

And later, he explained about the electricity production by country as a percentage of the world. China produces 33% of the electricity and America produces 18% and India produces 8% of the electricity. He specified that the Industrial sector consumes 44% of the electricity and the Residential sector uses 26%, the Agricultural sector 19%, Commercial sector 9%, Traction sector 2% respectively.

He mentioned that we are in need of renewable energy due to the increase in the level of carbon dioxide emissions and using of microgrids is a solution. He said that Renewable energy is needed in India because of power shortage, rising prices of oil & gases, ecological hazards, abundant sunshine, Government incentive, increased financing options, ample resources and sites available.

He explained about the benefits of the renewable energy as another option to use for the benefit of the people. He gave some important points about its benefits. He said that the sources of renewable energy are solar, wind, hydro, biomass, tidal, geothermal.

The screenshot shows a Zoom meeting interface. The main window displays a slide titled "Benefits of Renewable Energy" with the following bullet points:

- Avoid the high costs involved in transmission capex.
- Avoid distribution losses - Technical & otherwise
- Avoid recurring fuel cost
- Boost the rural economy
- Encourage self help groups & self dependence
- Enable village co-operatives to supply and / or monitor distribution
- Make available much needed energy for basic needs at the doorstep at affordable prices.

The slide footer includes the URL "www.bppt.info". The meeting controls at the bottom show "Raveendra Reddy is presenting" and various icons for mute, video, and chat.

Speaker illustrating benefits of renewable energy

Further, he showed a video on renewable energy sources in India. This video gave a lot of insight about the available sources that are available to use and about the government policies.

Then he explained the word 'microgrid system', which says that it is a small scale power grid that can operate independently or collaboratively with other small power grids.

The screenshot shows a Zoom meeting interface. The main window displays a diagram titled "What are Microgrids?" from MathWorks. The diagram illustrates the components and connections of a microgrid system:

- Utility Grid:** Represented by a power line tower, connected to the Microgrid via a switch.
- Microgrid:** A central hub containing:
 - Supervisory Controls:** Represented by a brain icon, connected to Commercial & Industrial and Residential buildings.
 - Generators (G):** Represented by a power plant icon, connected to the Microgrid.
 - Renewables:** Represented by solar panels and a wind turbine, connected to the Microgrid.
 - Energy Storage:** Represented by a battery icon, connected to the Microgrid.
 - Low-level Controls:** Represented by a gear icon, connected to the Microgrid.
 - Electric Vehicles:** Represented by a car icon, connected to the Microgrid.

The meeting controls at the bottom show "Raveendra Reddy is presenting" and various icons for mute, video, and chat.

Speaker explaining about microgrids

He gave a clear idea about the components of the micro-grids like locally produced energy, a storage system, a Smart Management System. He said that the benefits of the micro-grid are cost-competitive and efficient, enables smart grid technology integration, locally controlled power quality, enhances the integration of distributed and renewable energy sources.

He clearly explained Grid-connected operation and the disadvantages of micro-grids. And later told about, The Ministry of New and Renewable Energy (MNRE).

Later, the speaker cleared the doubts raised by the attendees along with Mr B. Koti Reddy, Dy. Maintenance Manager(E-P), Government of India, Dept. of Atomic Energy. Mr Koti Reddy has been working with Electrical softwares like ETAP and PV systems. And then speaker concluded his webinar by thanking all the members present in the meeting.

The session came to an end after a vote of thanks was given by IEEE MVSR PES Chair Ms B. Nikita Reddy.

REPORTED BY –

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