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A Report on

Expert Talk on "Local Renewable Energy Systems: A Sustainable Pathway"

Organized by

Department of Electrical & Electronics Engineering (EEE) in association with NASSCOM FutureSkills Prime and IEEE Student Chapter, MITS Madanapalle

22.10.2024



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE

(UGC-AUTONOMOUS INSTITUTION)

Madanapalle - 517325, Annamayya Dist., Andhra Pradesh, India



Expert Talk on

"Local Renewable Energy Systems: A Sustainable Pathway "

Organized by

Department of Electrical & Electronics Engineering

in association with

NASSCOM FutureSkills Prime and IEEE Student chapter at MITS.

Date 22.10.2024

Time: 4:00 PM

Venue: Seminar Hall



Resource Person

Dr. Prashant Malik

Post - doctoral Fellow

IIT Bombay

Chief Patron Dr. N. Vijaya Bhaskar Choudary Secretary & Correspondent	Patron Mrs. Keerthi Nadella Executive Director	Program chair Dr. C. Yuvaraj Principal	Chief Convener Dr. A.V Pavan Kumar Professor & Head /EEE	Convener - 1 Dr. Vineet Kumar Assistant Professor/EEE	Convener - 2 Dr. Nehru K Professor/ECE
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Chief Convener: Dr. AV Pavan Kumar, Professor and Head, Department of EEE, MITS.

Convener (s): 1. Dr. Vineet Kumar, Assistant Professor, EEE
2. Dr. Nehru Kandasamy, Professor, ECE

Resource Person/Speaker: Dr. Prashant Malik, Post-doctoral Fellow, IIT Bombay.

Attendees: 57 members

Venue: Seminar Hall

Time: 4:00 PM

Background

On 22nd October 2024, the Department of Electrical and Electronics Engineering at MITS, in collaboration with NASSCOM FutureSkills Prime and the IEEE Student Chapter, successfully conducted an expert talk on “Local Renewable Energy Systems: A Sustainable Pathway.” The event aimed to raise awareness and provide insights into local renewable energy solutions that support sustainability goals in India and globally.

The speaker, Dr. Prashant Malik, is a Post-doctoral Fellow at IIT Bombay and an expert in renewable energy systems. His talk emphasized the importance of local energy systems in the context of sustainable development, considering India's evolving energy landscape.

The screenshot displays a Zoom meeting interface. At the top, a notification bar indicates that the meeting is being recorded. The main content is a presentation slide titled "Introduction" with a green header. The slide features a central diagram with three interconnected circles: "Energy demand increases" (orange), "RENEWABLE ENERGY GENERATION SYSTEMS" (grey), and "Higher GIG markets" (green). To the right, a blue oval lists the benefits of "Hybrid energy systems":

- Low generation cost
- High reliability
- Less battery bank
- Overall system efficiency improvement

Below the slide, the meeting interface shows the name "Dr. Malik (Unverified)" and a list of participants including "Dr Vineet Kumar" and "Dr. Malik (Unve...". The bottom of the screen contains standard Zoom controls: mute, video off, speaker, chat, and end call.



Speaker details

Name: Dr. Prashant Malik

Designation: Post-doctoral Fellow, Department of Energy Science and Engineering, IIT Bombay

Key Qualifications: Ph.D. from NIT Hamirpur (2022)

Extensive involvement in smart grid deployments and modern grid standards development

Expertise: Renewable Energy Systems, Microgrids, Local Energy Systems, Hybrid Renewable Energy Solutions.

Dr. Prashant Malik is an emerging expert in the field of renewable energy, focusing on integrating local renewable energy systems with national grids to create sustainable, scalable, and efficient energy solutions.



Detailed Summary of the Event

The event began with a welcome address by Dr. Vineet Kumar, Assistant Professor, EEE. He welcomed the audience and introduced the distinguished speaker, Dr. Prashant Malik, highlighting his expertise in renewable energy and his significant research contributions.

Dr. Prashant Malik started his lecture by providing an overview of the energy challenges India faces, such as the increasing energy demand, higher greenhouse gas emissions, and limited fossil fuel reserves (final). He discussed India's achievements in renewable energy, noting that the country ranks 4th globally in wind power capacity and 5th in solar power capacity, with an ambitious target of 500 GW of non-fossil fuel-based energy by 2030.

Dr. Malik then introduced the concept of local renewable energy systems, which provide energy to small communities using decentralized, renewable sources. He emphasized the benefits of local systems, such as reducing transmission losses, increasing energy awareness, and ensuring stable electricity supply in areas vulnerable to power outages. He also discussed the potential of microgrids and their role in supporting India's electrification and renewable energy goals.



Through case studies and data on solar-wind hybrid systems, Dr. Malik presented examples of successful implementation of localized energy systems in different regions of India. He explained how microgrids, supported by renewable energy sources like solar and wind, can meet local electricity needs while ensuring cost-effectiveness and resilience (final).

Dr. Malik also touched on the Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) and the Saubhagya scheme, which have been instrumental in enhancing rural electrification through local renewable sources. He concluded the talk by discussing opportunities for future research, such as developing cost-effective hybrid energy solutions, and designing advanced controllers for optimal power flow in local systems.

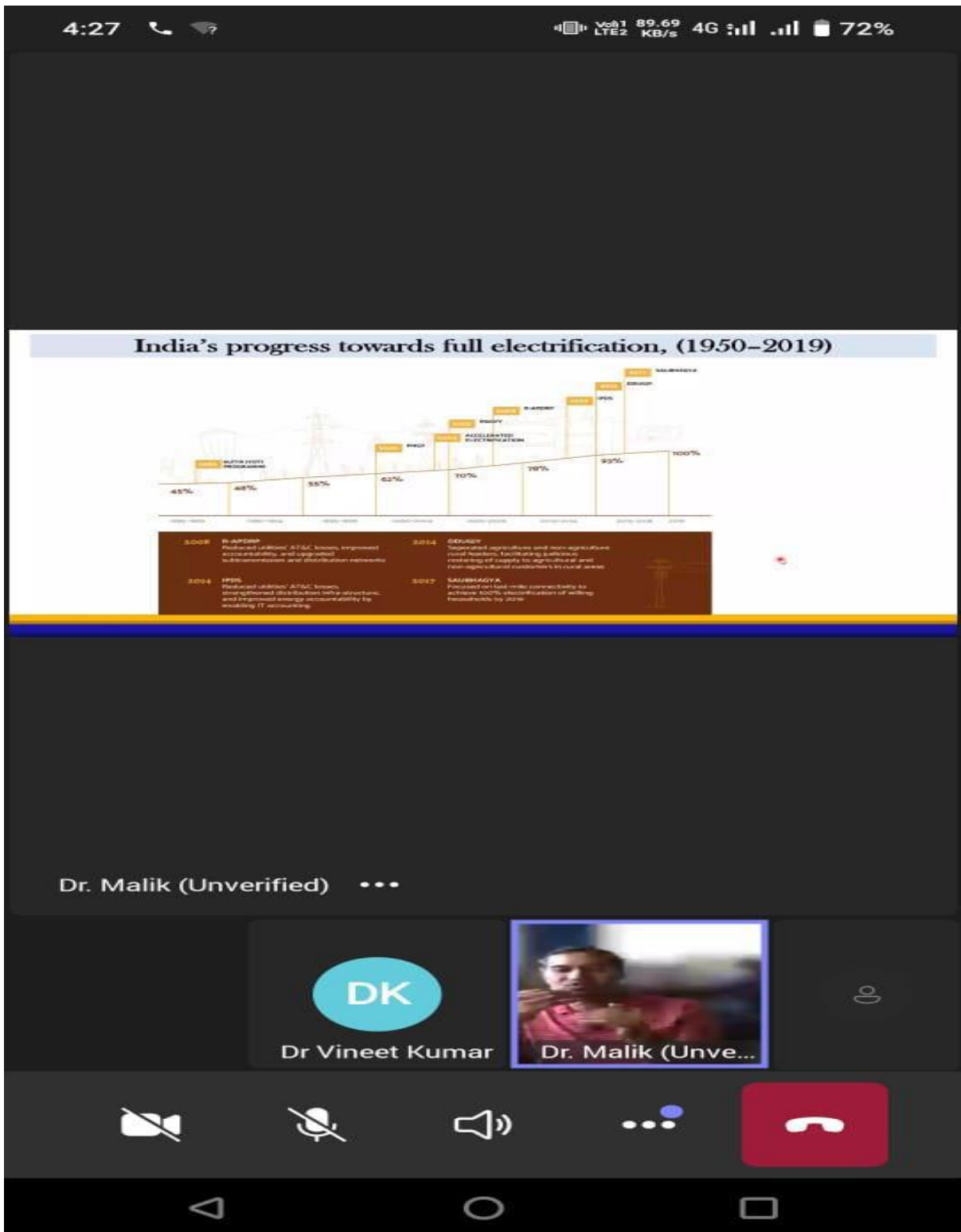


The session ended with an interactive Q&A session, where students and faculty engaged with Dr. Malik, asking questions about the challenges in local renewable energy integration and the role of new technologies in promoting sustainability.

The event concluded with a vote of thanks by Dr. Nehru Kandasamy, Professor, ECE who expressed his gratitude to Dr. Prashant Malik for delivering an insightful lecture, and all faculty members and students for their participation and enthusiasm, which contributed to the event's success.

Dr. Nehru expressed gratitude to the *Head of the Electrical and Electronics Engineering Department, Dr. A.V. Pavan Kumar*, for his continuous guidance and support in organizing such academic events. Furthermore, appreciation was extended to *Dr. Sandhya E, MITS NASSCOM coordinator*, and *Dr. Kumar C, the MITS IEEE coordinator*, for his efforts in coordinating the event under the banner of the IEEE student chapter. Special thanks were extended to the *Principal Sir, Dr. C. Yuvaraj* and the MITS management for their unwavering support and encouragement in organizing this event, which made it possible to enrich the academic experience of our students.

Finally, thanks were given to all the faculty members, students, and participants for their active involvement and enthusiasm, which contributed to making the event a great success.



Outcome of the Event

The expert talk was highly informative and provided a comprehensive understanding of local renewable energy systems and their role in building a sustainable future. Key outcomes include:

Increased Awareness of Local Energy Solutions: The audience gained a deeper understanding of how localized renewable energy systems can help meet energy demands while promoting sustainability.

Insights into Renewable Energy Integration: Dr. Malik’s discussion on solar-wind hybrid systems and microgrids provided valuable insights into how these technologies can be effectively integrated into India’s energy infrastructure.

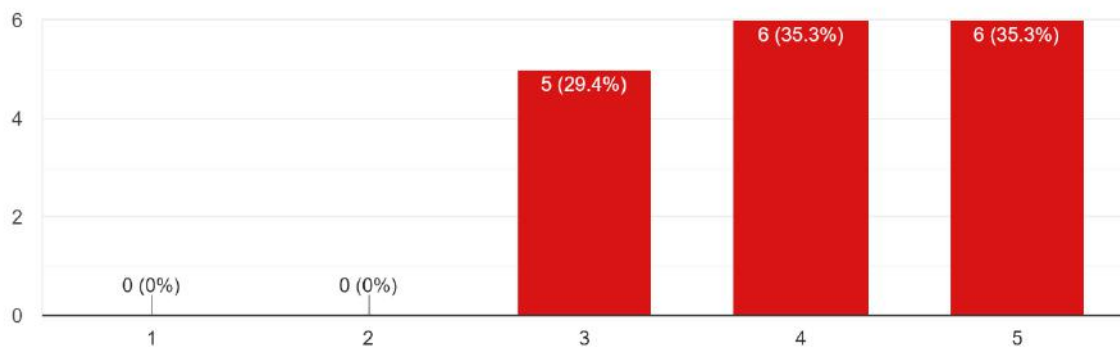
Knowledge of Rural Electrification Initiatives: The talk shed light on government schemes such as DDUGJY and Saubhagya, emphasizing how local energy systems are playing a critical role in rural electrification.

Opportunities for Future Research: The session inspired participants to explore areas like hybrid energy system optimization, renewable energy storage, and advanced grid controllers.

Feedback

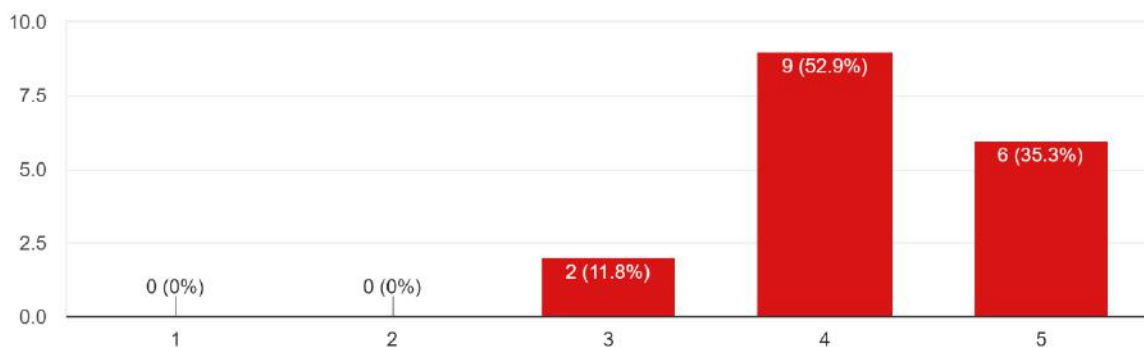
1. The interactive session was scheduled at a suitable time

17 responses



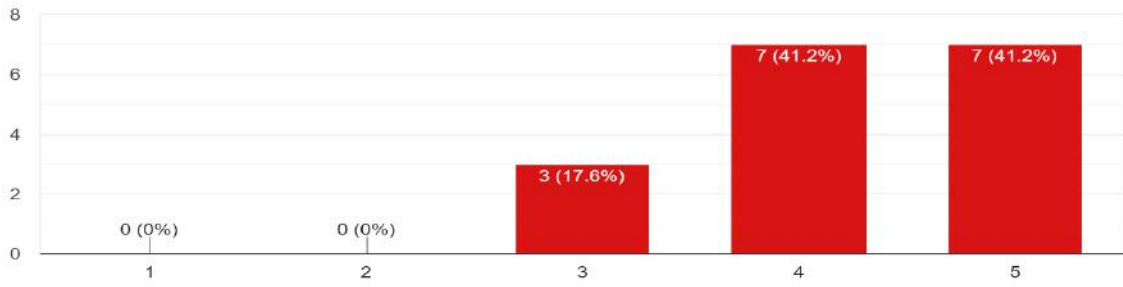
2. The interaction was useful and resource person explanation.

17 responses



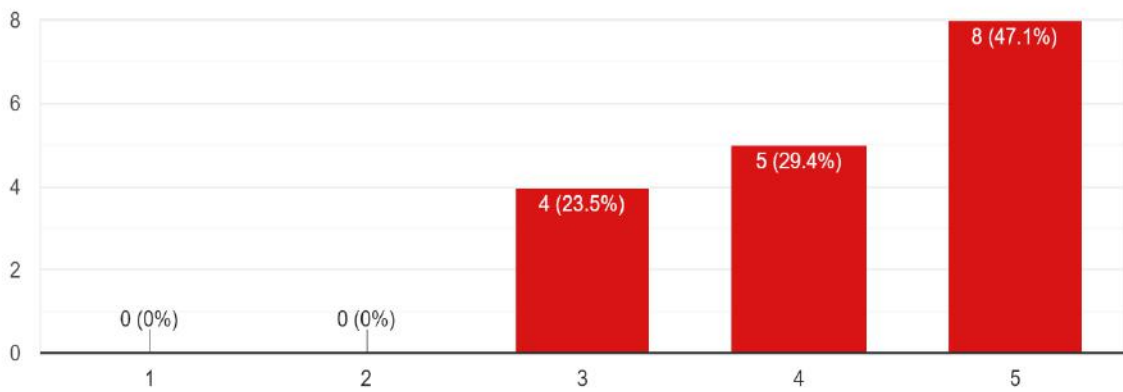
3. The information in the interaction was presented in a clear and organized manner.

17 responses



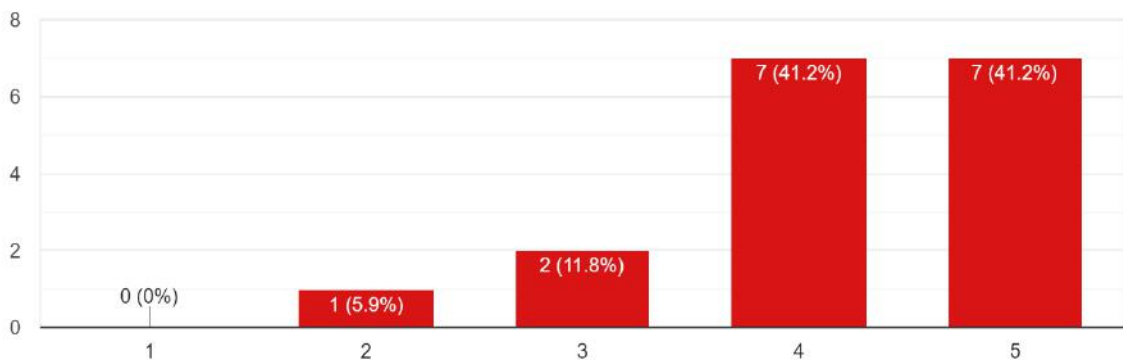
4. The presenter responded to questions in an informative, appropriate and satisfactory manner.

17 responses



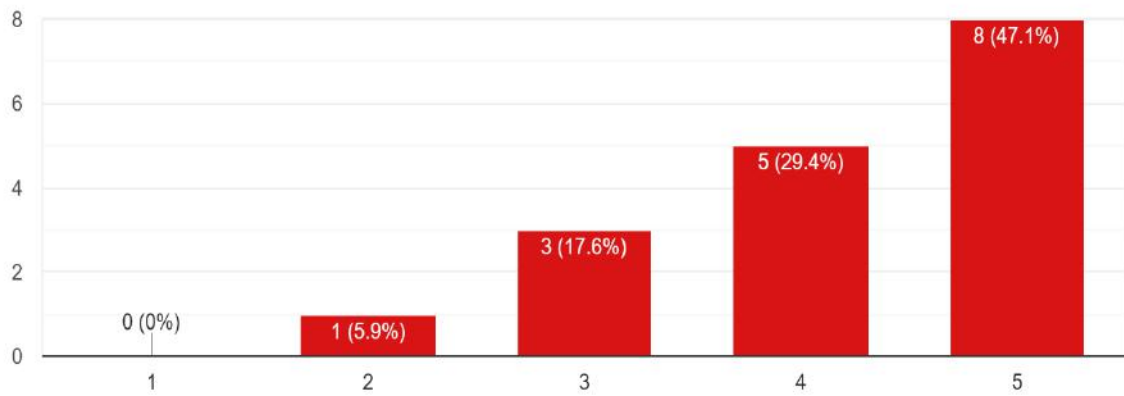
5. your impression of facilities provided by the institute for interaction.

17 responses



6. Overall, the session was informative and valuable.

17 responses



With regards,

Dr. Vineet Kumar

Assistant Professor, Department of EEE & Department IEEE/ISTE coordinator,
MITS, Madanapalle.