



## SPECIAL SESSION XXIV

### Electrical Challenges in Energy Communities

ORGANIZED AND CHAIRED BY

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Efficient management of electricity within energy communities is a critical focus area, particularly concerning electrical challenges. This involves developing strategies and solutions to optimize electricity generation, distribution, and consumption patterns within community-based energy systems. Addressing various electrical challenges such as grid stability, voltage regulation, and load balancing is essential for integrating diverse energy sources and ensuring reliable electricity supply within communities. Researchers explore factors influencing electrical management in energy communities, including distributed generation dynamics, energy storage capabilities, demand-response mechanisms, and grid infrastructure constraints. Improving our understanding and management of these electrical challenges enables more efficient utilization of energy resources, enhances grid resilience, and advances sustainability in community energy initiatives. The objectives for this session include examining innovative approaches to address electrical challenges, sharing insights and experiences on electrical management in energy communities, identifying barriers and opportunities specific to electrical aspects of community energy projects, fostering collaboration among researchers and community stakeholders, and identifying future research directions to enhance electrical management practices in energy communities.

Topics of interest of this special session include, but are not limited to:

- **Electrical grid integration and management in energy communities.**
- **Distributed energy resources.**
- **Voltage regulation and stability in community-based energy networks.**
- **Load balancing strategies.**
- **Load profile analysis.**
- **Energy storage solutions.**
- **Demand-side management techniques.**
- **Socio-economic aspects and benefits of community-based electricity initiatives.**
- **Energy community optimization.**

All the instructions for paper submission are included in the conference website [www.eeeic.net](http://www.eeeic.net)