



## SPECIAL SESSION XVI

# Integration of Renewable Energy Sources and Electric Mobility Systems: Advances in Modelling, Planning and Operational Management

ORGANIZED AND CHAIRED BY

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Electric mobility systems play a crucial role in the transition towards a sustainable and low-carbon future. In order to mitigate the environmental impact and to enhance the energy efficiency, it is necessary to strategically integrate electric mobility infrastructures and Renewable Energy Sources (RESs). This integration presents both challenges and opportunities, shaping the trajectory of sustainable transportation systems. In order to fully exploit the advantages of RES-coupled electric mobility, it is essential to explore optimisation and simulation tools in detail. These tools are crucial in order to guarantee the efficient planning and operational management of the energy infrastructures.

Due to the inherent unpredictability of RESs, the role of electric vehicles will become even more relevant: Vehicle-to-X technologies represent a frontier where electric mobility converges with a multitude of applications, including grid support, energy markets and communication between vehicles. Besides, energy management is crucial in coordinating the various components of these systems.

A special section in the 24th International Conference on Environment and Electrical Engineering is here proposed to cover many different important topics in the areas of optimization and simulation for RES-coupled electric mobility systems. The special section topic is deeply inserted in the two main areas of the conference: the environment and the electric engineering and could represent a source of important scientific contributions able to strongly improve the existing literature.

The special session accepts papers based on (but not limited to) the following topics:

- **Electric Vehicles and Sustainable Charging Hubs**
- **Vehicle-to-X technologies**
- **Energy Management Systems and Smart Charging**
- **Active and Reactive Power Control in Electric Mobility Systems**
- **Smart Warehouses and Prosumer Buildings**