

The article presents an overview of knowledge in the field of energy microgrids as smart structures enabling energy self-sufficiency, with particular emphasis on decarbonisation.

This study presents systematic literature review (SLR) of research on architectures and energy management techniques for microgrids, providing an aggregated up-to-date catalogue of ...

As an alternative to a central electricity grid, our microgrids can produce electricity and heat, mainly using renewable energy (solar, wind, biomass, etc.), but can also store this energy, in batteries for ...

With 800 million people living without electricity worldwide and many more facing energy insecurity due to climate change, smart microgrids are a powerful technology to revolutionize the way we produce, ...

This study shows how integrating technical and socioeconomic dimensions in the design of microgrids can enhance the resilience and equity of energy systems and promote well-being.

Multi-microgrids are a network of microgrids that can function with or without assistance from the main grid. To satisfy load demand, most microgrids use solar, wind, tidal, and biomass as ...

Microgrids have already become an integral part of the electricity landscape by providing reliable autonomy and clean energy. But they also need to become truly smart so that more people and ...

This paper presents a novel smart greenhouse integrated into a microgrid (SGIM) designed to optimize energy and microclimate management for sustainable agriculture.

Each microgrid component is dynamically optimized to maximize efficiency and flexibility by mixed integer linear programming optimization algorithm. Electric vehicles engage in energy trading ...

Using a structured methodology, the review synthesizes evidence from various studies to provide insights into the multifaceted implications of microgrid adoption.

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