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The Artificial Intelligence, Embedded Systems and Renewable Energy Conference (AIESRE'2025) is the first international conference to be held at the University Mouloud Mammeri of Tizi Ouzou in Algeria. AIESRE'2025 aims to bridge the gap between academic research and industry practices by highlighting the latest trends and innovations in renewable energy and green computing with machine learning, embedded systems, and sustainable development, particularly in Algeria. It is designed to foster a collaborative environment where experts can exchange ideas, address practical challenges, and propose solutions for advancing renewable energy technologies. The conference will delve into key renewable energy sources, discuss the integration of advanced technologies, and promote strategies for building resilient and sustainable energy systems.

Embedded systems in the renewable energy sector combine machine learning, Internet of Things, and technologies such as smart sensors and reconfigurable devices to perform monitoring, fault diagnosis, optimization, and control.

In addition to showcasing innovations, the conference will tackle practical challenges such as energy intermittency, exploring solutions like advanced analytics, real-time monitoring, and energy storage systems. The goal is to promote sustainability through the integration of cutting-edge technologies and stakeholder collaboration, ultimately enhancing environmental stewardship, operational efficiency, and economic benefits.

The renewable energy topics will cover a wide range of areas, such as:

**Theme 1: Harnessing Renewable Energy: Advances and Innovations.**

- Solar Energy Systems; including PV, FPV, and Solar Thermal Energy
- Wind Energy Systems
- Hydro Energy Systems; including hydropower and hydrokinetic energy
- Biomass Systems
- Hydrothermal Energy

**Theme 2: Innovations in Embedded Systems for Renewable Energy Management.**

- Embedded Systems
- Sustainable Power Systems
- Microgrids and Smart grids

**Theme 3: Green Computing (ML/AI) for Renewable Energy Integration**

- Machine Learning (ML) and Artificial Intelligence (AI)
- Explainable and Sustainable Artificial Intelligence

**Theme 4: Advancing Hybrid Energy Systems for Sustainable Infrastructure**

- Hybrid Energy Systems
- Biodiesel Energy Systems
- Electric Vehicles
- Heating/Cooling Systems
- Hydrogen Integration
- Biofuel Generation

**Theme 5: Energy Management and Storage**

- New Materials for Energy Storage
- Optimisation of Energy Storage (or Energy Storage Innovations)
- AI and Smart Connected Battery Management Systems (BMS).
- Hybrid Energy Storage Technologies
- Smart Charging for Electric Vehicles
- Energy Transport and Distribution
- Hydrogen Storage and Transport
- Charging and Discharging Strategies

**Theme 6: Innovations in Smart Agriculture and Sustainable Water Management**

- Smart Agriculture
- Water Prospecting and Sustainable Management

**Panel Discussion: Renewable Energy Policy and Regulation, Education and Training, and Stakeholder Collaboration**

- Policy and Regulation
- Energy Education and Training
- Economic and Social Advantages
- Energy Transition and Decarbonization

By bringing together seasoned researchers and practitioners, the conference seeks to encourage innovative solutions and sustainable practices for a greener future. This collaborative effort will serve as motivation for young and emerging researchers to create sustainable and environmentally friendly solutions in the development of future energy systems in Algeria and beyond.

## Topics

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## Dates

- **Full paper submission deadline: June 01, 2025**
- **Notification of paper decision: September 01, 2025**
- **Final versions paper Submission: September 11, 2025**
- **Author registration deadline: September 18, 2025**
- **Camera ready: October 16, 2025**
- **Conference dates: December 15, 16 & 17, 2025**