DOI: doi.org/10.47363/JGWCC/ICRSEE 2026/2026(2)7

International Conference on Renewable & Sustainable Energy Engineering (ICRSEE 2026)

Conference Proceedings February 23, 2026 - UAE

The Power of Renewable Energy: Driving a Sustainable Future

Priya Gunjan

ESG consultant, ISO14064 Lead Validator, Dubai, United Arab Emirates

Abstract

Renewable energy is central to the global effort to combat climate change and promote sustainable development. By replacing fossil fuels with clean alternatives, we can significantly cut greenhouse gas emissions and create a healthier planet. Studies shows that doubling the global share of renewables could reduce emissions by about 8.6 gigatonnes of CO_2 annually by 2030, especially when combined with energy efficiency measures.

Technological innovation is making renewable energy more affordable, reliable, and accessible. Solar, wind, hydro, biomass, and geothermal power are transforming energy systems worldwide, supported by policies such as carbon pricing and renewable energy standards. Breakthroughs like perovskite solar cells, floating solar farms, and advanced wind turbines are boosting efficiency and capacity. Energy storage technologies—such as solid-state and flow batteries—are improving reliability, while green hydrogen and smart grids powered by AI are enabling cleaner, smarter energy systems.

The United Arab Emirates is a leading example of renewable progress. Dubai's worldscale solar park and Abu Dhabi's 2-GW mega solar project are among the largest globally, generating vast amounts of clean power. Masdar City stands as a model for sustainable urban living, while green hydrogen production, Hatta hydro energy storage, and a 24/7 solar-plus-battery project highlight the nation's commitment to innovation and sustainability.

With continued investment, strong policies, and global cooperation, renewable energy can drive a low-carbon, climate-resilient future that supports both economic growth and environmental well-being.