

Renewable Energy and Climate Change

June 15-16, 2026 | Paris, France

Volume: 17

Clean Energy Innovation and Climate Resilience: Advancing Sustainable Technologies for Global Development

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The global expansion of renewable energy technologies presents unprecedented opportunities to reduce greenhouse gas emissions while improving energy access, economic development, and climate resilience. This presentation explores advances in solar photovoltaics, wind power, battery energy storage, green hydrogen, microgrids, and distributed energy systems that support sustainable development across both developed and developing countries. Improvements in digital technologies, artificial intelligence, and smart infrastructure are enhancing the efficiency, flexibility, and resilience of renewable energy networks.

The session also examines clean cooking technologies, rural electrification, sustainable transportation, and climate adaptation strategies that improve energy equity and reduce environmental impacts. Recent innovations in energy storage, power electronics, and decentralized electricity generation have accelerated the deployment of affordable renewable energy solutions. Future perspectives include climate-smart infrastructure, resilient power systems, carbon-neutral technologies, and international scientific collaboration to support the global clean energy transition and achieve long-term sustainability goals.

Biography

Daniel M. Kammen is Professor of Energy at the University of California, Berkeley, USA. His research focuses on renewable energy, climate change, energy access, sustainable development, and environmental policy. He is internationally recognized for advancing clean energy innovation and global energy sustainability.