AI Applications for Clean Energy and Sustainability

Part of the Practice, Progress, and Proficiency in Sustainability Book Series

Budi Agus Riswandi (Universitas Islam Indonesia, Indonesia), Bhupinder Singh (Sharda University, India, India), Christian Kaunert (University of South Wales, United Kingdom & Dublin City University, Ireland, UK) and Komal Vig (Sharda University, India, India)

Description:

The global demand for clean energy solutions the urgency of addressing climate change continue to intensify, and as such, the need for innovative approaches becomes increasingly paramount. However, navigating the complex landscape of clean energy production and sustainability presents significant challenges. Traditional methods often fall short in efficiently optimizing renewable energy systems and mitigating environmental impacts. Moreover, the integration of artificial intelligence (AI) into the energy sector remains underexplored, despite its potential to revolutionize operations and drive sustainable development.

AI Applications for Clean Energy and Sustainability emerges, working to tackle these pressing issues. This comprehensive volume delves into the transformative power of AI in revolutionizing clean energy production, distribution, and management. By harnessing machine learning algorithms, data analytics, and optimization techniques, the book offers innovative solutions to enhance the efficiency, reliability, and scalability of renewable energy systems. Through real-world case studies and practical examples, it illustrates AI's potential to optimize energy infrastructure, monitor marine ecosystems, and predict climate change impacts, thereby paving the way for a more sustainable future.

Designed for researchers, policymakers, industry professionals, and students alike, this book serves as a roadmap towards a greener and more resilient world. By providing insights into cutting-edge AI technologies and their applications in the energy sector, the book empowers stakeholders to address the challenges of climate change and advance sustainability goals. With its interdisciplinary approach and emphasis on practical solutions, this book inspires collaboration and innovation, driving meaningful progress towards a cleaner and more sustainable energy future.
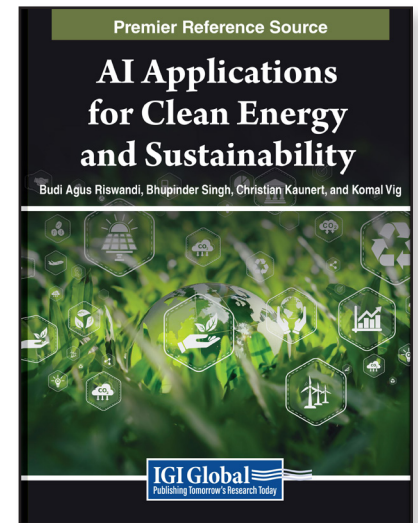
ISBN: 9798369365670 **Pages:** 330 **Copyright:** 2025 **Release Date:** October, 2024

Hardcover: **$255.00** **E-Book:** **$255.00** **Hardcover + E-Book: $305.00**

Topics Covered:

- Artificial Intelligence Applications
- Clean Energy Solutions
- Climate Change Mitigation
- Data Analytics in Energy
- Environmental Sustainability
- Machine Learning in Energy
- Marine Ecosystem Monitoring
- Optimization Techniques
- Renewable Energy Systems
- Sustainable Development Goals

Subject: Environment & Agriculture

Classification: Edited Reference

Readership Level: Advanced-Academic Level (Research Recommended)

Research Suitable for: Advanced Undergraduate Students; Graduate Students; Researchers; Academicians; Professionals; Practitioners