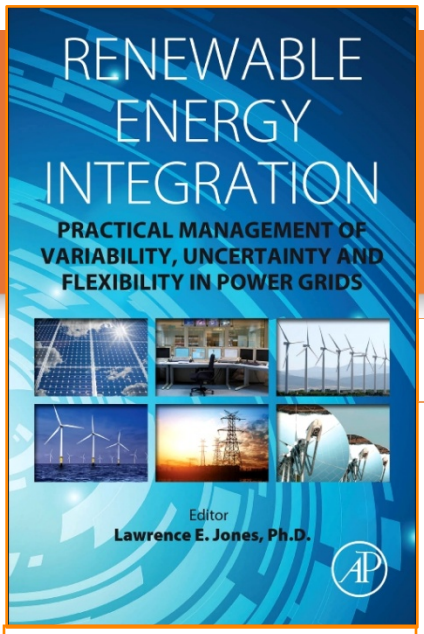

ISBN: 9780124079106
eISBN: 9780124095953
LIST PRICE: $99.95, £60.99, €71.95
FORMAT: Hardcover
http://store.elsevier.com/

Renewable Energy Integration

Practical Management of Variability, Uncertainty, and Flexibility in Power Grids

Editor: Lawrence E. Jones, Ph.D.

Discover how electricity markets and the physics and operations of power grids are evolving to meet the diverse needs of centralized and distributed variable energy resources.

Read what industry leaders are saying about *Renewable Energy Integration*:

"In order to double the share of renewable energy in the global energy mix – one of the three goals of the UN Sustainable Energy for All initiative - there will need to be tools and methods for integrating high levels of variable renewable electricity into power systems and markets worldwide. This book makes an important contribution to the regulatory, operations, economic and technical aspects of that challenge. By bringing together cutting edge approaches, Dr. Jones has done much of the hard work for us. It is an extraordinary snapshot of the state-of-the-art, and I am very glad to recommend it to decision-makers in both industrialized and emerging economies alike." - **Dr. Kandeh Yumkella,** *Under Secretary of the United Nations, Special Representative to the United Nations Secretary General, and CEO for UN Sustainable Energy for All (SE4All) Initiative General of the United Nations, Special Representative of the United Nations Secretary Sustainable Energy for All (SE4All)*

"With the demand for water, food and energy growing beyond all measure and with the supply of these inextricably linked 'resource spheres' under increasing threat, we are facing what many experts predict will be a 'perfect storm'. The threat to human life, as well as to whole sectors of the economy, is very real. Renewable energy can be a vital part of the solution and if this comprehensive and authoritative set of essays can help to accelerate both the generation and integration of renewable energy supplies then it will have served an invaluable purpose." - ***Paul Polman,*** *Chief Executive Officer of Unilever, and Chairman, World Business Council for Sustainable Development.*

"An outstanding resource for policy leaders, utility executives and their senior staff, who are carefully addressing the complex and exciting challenges of integrating renewable technologies into the electricity grid. This timely publication deals with real-world cases, and offers insightful guidance from experts to assist the increasingly transformation of the electric utility sector through the use of advanced technologies to modernize the grid as a platform for the growing dependence on variable power supply. This superb work clearly discusses some of the complex operational, regulatory, and policy issues that must be carefully addressed for reliability, affordability, and to protect the environment." - ***David K. Owens****, Executive Vice President, Edison Electric Institute*

"The world's electricity system is entering new territory. We are losing control of supply with the growth of variable wind and solar power; we are gaining control of demand through smart grid technologies. Lawrence Jones's book charts this new landscape. It brings together an important collection of insights into the future of energy." - ***Michael Liebreich****, Founder and Chairman of the Advisory Board, Bloomberg New Energy Finance*

"The efficient integration of renewable energy is one of the most important challenges posed by the move towards sustainable energy systems. Renewable energy challenges the norms and traditions accumulated over the last century, and it requires new dynamic approaches that match the needs and requirements of a modern, sustainable power system. Many of these issues are considered in this publication, which gives new insights into how power systems can move forward and provide society with clean, reliable and affordable electricity." - ***Christian Pilgaard Zinglersen****, Deputy Permanent Secretary, Danish Ministry of Climate, Energy and Building*

"Dr. Lawrence Jones has assembled an exceptional team of experts to provide deep insights into the challenges of fully leveraging renewable generation across the globe. This book will serve as a great reference source for interested readers from all levels of knowledge regardless of their area of interest. From policy to engineering to operations, it has insights for all. Innovation in the electric energy sector offers great promise for clean, reliable, resilient and affordable power across the globe,however this same innovation is increasing the complexity of an already complex system. This book gives the reader an introduction into this promise as well as into the complexity that it will bring." - ***Becky Harrison****, CEO GridWise Alliance*

"Transitioning our power system to clean, renewable energy is one of the most important challenges of our lifetime. In many ways the task is familiar, as since the days of Edison and Westinghouse grid operators have accommodated fluctuating electricity demand and abrupt power plant failures to keep electricity supply and demand in balance. From remote Pacific islands to mainland Europe, Jones insightfully spans the globe to distill the success stories of grid operators who now reliably obtain more than a quarter of their electricity from wind and solar energy. The path forward for integrating even higher levels of renewable energy is clear, and we have the technology to do it today. " - ***Rob Gramlich, Senior Vice President,*** *American Wind Energy Association*

"Renewable Energy Integration is a critically needed and wonderfully comprehensive book that highlights the next frontier; not how much renewable energy potential exists, but how to most effectively and seamlessly merge this new power system with the old one." - ***Daniel Kammen,*** *Class of 1935 Distinguished Professor of Energy, University of California, Berkeley*

"All signs point to a future with significant amounts of variable renewable generation on the grid, introducing new challenges for grid operators. This book should be an invaluable resource as *the industry works collectively to develop solutions to these challenges."* - ***Julia Hamm****, President and CEO, Solar Electric Power Association*