



Innovation and Disruption at the Grid's Edge

How distributed energy resources are disrupting the utility business model

Edited by: *Fereidoon P. Sioshansi* President, Menlo Energy Economics, San Francisco, CA, USA



This insightful book examines how the utility sector is responding to growing numbers of consumers self-generating, storing and potentially trading energy.

KEY FEATURES

The electric power sector is undergoing fundamental transformation at an unprecedented pace driven by technological innovation and disruptions taking place primarily at the intersection of the distribution network and customer's premises – at the *grid's edge*. The most important drivers of change include:

- Rapid uptake of **distributed energy resources** (DERs), notably **rooftop solar PVs** and **energy efficiency**;
- Advances in **energy storage** and **management** that allows more active participation by consumers in how, how much, and when energy is generated, consumed, stored or possibly shared or traded; and
- Promising developments in open platforms that allow variable generation and loads to be **aggregated** while allowing **peer-to-peer trading** among participants.

This book examines the implications of DERs and the rise of **prosumers** on the incumbents' **business models** and challenges facing regulators who must allow innovation to take place while managing a level playing field for the newcomers and existing players.

"The chapters in this book compile a wide range of expertise and perspectives to promote the sharing of knowledge, ideas and experience in how some of these challenges might be addressed. I trust you will find it an insightful read."

Paula Conboy, Chair, Australian Energy Regulator

"The authors speaking here are providing cutting-edge thinking to help us recognize that DERs, advanced distribution management systems, price signals, market structures, and utility business models may coalesce to realize a decentralized, reliable, clean and customer driven future."

Michael Picker, President, California Public Utilities Commission

"This book is notable for addressing issues that are central to the future governance and functionality of the distribution network while encouraging technological innovation and disruption at the grid's edge."

Audrey Zibelman, CEO of AEMO and former Chair, New York Public Service Commission

"This volume is a timely contribution to the topic of the innovation and disruption, which is more and more dominating the discussion within the energy industry and is coming to the fore at academia."

Johannes Mayer, Head of Competition & Regulation, E-Control Austria

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Fereidoon P. Sioshansi, Editor

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