

1. Record Nr.	UNINA9910437783503321
Titolo	Energy Policy Modeling in the 21st Century [[electronic resource] /] / edited by Hassan Qudrat-Ullah
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2013
ISBN	1-4614-8606-8
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (XIII, 273 p. 107 illus., 77 illus. in color.)
Collana	Understanding Complex Systems, , 1860-0832
Disciplina	333.79 338.926
Soggetti	Energy policy Energy and state Sociophysics Econophysics Economic theory Computational complexity Energy Policy, Economics and Management Data-driven Science, Modeling and Theory Building Economic Theory/Quantitative Economics/Mathematical Methods Complexity
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Springer : complexity."--Cover.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part I - Energy Policy Modeling in 21st Century: An Introduction -- Chapter 1 - Energy Policy Modeling in the 21st Century: An Introduction -- Part II - Modeling Approaches and Energy Policy Decisions -- Chapter 2 - Thinking about the Future: System Dynamics and the process of electricity deregulation -- Chapter 3 - Fuzzy System Dynamics: A Framework for Modeling Renewable Energy Policies -- Chapter 4 - The Diffusion of Eco-Technologies: A Model-Based Theory -- Chapter 5 - Managing the Energy Basket in the Face of Limits: A search for operational means to sustain energy supply and contain its environmental impact -- Chapter 6 - Power Plant Relocation Policy versus Investments in Transmission Network Infrastructure: A Study on the Italian Energy Market -- Chapter 7 - Simulation of Greenhouse Gas

Cap-and-Trade Systems with ENERGY 2020 -- Part III - System Dynamics and Agent-Based Models in Action -- Chapter 8 - Energy Policy Planning for Climate-Resilient Low-Carbon Development -- Chapter 9 - Understanding the Dynamics of Electricity Supply and Demand in Canada -- Chapter 10 - Adoption of Renewable Energy Technologies: A Fuzzy System Dynamics Perspective -- Chapter 11 - Resurrecting a Forgotten Model: Updating Mashayekhi's Model of Iranian Economic Development -- Chapter 12 - Making Progress Towards Emissions Mitigation: Modeling Low-carbon Power Generation Policy -- Chapter 13 - Exploring Energy and Economic Futures using Agent-based Modeling and Scenario Discovery.

Sommario/riassunto

The roles and applications of various modeling approaches, aimed at improving the usefulness of energy policy models in public decision making, are covered by this book. The development, validation, and applications of system dynamics and agent-based models in service of energy policy design and assessment in the 21st century is a key focus. A number of modeling approaches and models for energy policy, with a particular focus on low-carbon economic development of regions and states are covered. Chapters on system dynamics methodology, model-based theory, fuzzy system dynamics frame-work, and optimization modeling approach are presented, along with several chapters on future research opportunities for the energy policy modeling community. The use of model-based analysis and scenarios in energy policy design and assessment has seen phenomenal growth during the past several decades. In recent years, renewed concerns about climate change and energy security have posed unique modeling challenges. By utilizing the validation techniques and procedures which are effectively demonstrated in these contributions, researchers and practitioners in energy systems domain can increase the appeal and acceptance of their policy models.
