

Preface

Sustainable Future Energy Technology and Supply Chains (Springer)

This book is structured into three sections with a total of seven chapters altogether. Part 1 deals with energy investment management and decisions; Part 2 deals with socioeconomic models for energy security for space and society with a territorial perspective; Part 3 deals with resource efficiency to ensure energy availability.

Part 1: Chapters 1, 2, 3

The first three chapters deal with problems of *investment management* under three different perspectives. “[A Robust Model to Enhance Organisation Boardrooms’ Decision-Making Process Towards a Low Carbon Economy](#)” presents a decision support model which seeks to provide stakeholders with a better understanding of how to effectively conduct energy savings investment to promote energy conservation and sustainability within organisation. “[An Intelligent Prediction of Self-Produced Energy](#)” gives a support to decision of cogenerated and self-produced energy, a solution which allows the reuse of heat produced, decreases transmission investments, reduces carbon emissions, and decreases dependency on energy resource owners. “[An Analysis of Supply Chains in Renewable Energy Industries: a Survey in Italy](#)” is focused on incentives of public sector. Incentive schemes have driven the deployment of energy produced from renewable energy sources; however, when a country decides to reduce these incentives, a shock knock on effect ensues. The aim of this chapter is to evaluate the evolution of the supply chain in a mature market and to analyze the issues in-depth by focusing on the Italian renewable energy industry.

Part 2: Chapters 4, 5

The chapters in Part 2 analyze the renewable topic under a more *territorial perspective*. “[Renewable Energy Sources in Minor Historical Centers. New Scenarios of Sustainable Development of The Territory](#)” takes a frame of reference in a more limited manner, and it is focused on the historical centers. The attention placed on the historic villages stems from the desire to achieve an ambitious goal, namely the revival and revitalization of the territory in order to increase the overall level of quality and technological innovation, to avert the risk of depopulation and abandonment of human settlements. Moreover, the promotion of the reuse of existing buildings or structures could avoid the construction of new building complexes that would cause, inevitably, a further use of the land. Finally, the promotion of the use of energy from renewable sources would allow a significant reduction in consumption levels. “[Regional Energy Portfolio Construction: Case Studies in Turkey](#)” is based on a territorial perspective with a wider focus on a Turkey region. It has the aim of designing hybrid energy portfolio model with minimum environmental costs and minimum emissions, while the rate of energy investment to the regional revenue is increased. The portfolio is constructed based on five resources: solar energy, wind energy, geothermal energy, biomass energy, and hydropower besides natural gas.

Part 3: Chapters 6, 7

The last section analyzes how to program *energy efficiency* in an optimal way and provides two approaches. The first of “[Area Based Targeting: Providing Evidence to Support Public-Private Partnership in Energy Efficiency Projects](#)” demonstrates how a Local Authority can work to identify areas most in need of energy efficiency measures, working in partnership with private sector contractors. Moreover in the chapter it is defined how Local Authorities can adopt a stakeholder approach in order to maximize the benefit for the local area, and develop efficiency and value for money supply chain operation and organization. “[Energy Demand Side Management in the Lack of Smart Grids](#)” aims to minimize the negative effects on grid instability of districts caused by high power demanding industrial users, where a unique electricity-generating center supplies power. A MINLP model is proposed. This is how the users of developing countries who have no smart electricity grids can make contributions to energy management following the developed DSM programs.

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A Multi-perspective Analysis

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