1. Record Nr. UNINA9910299376103321

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Titolo	Biofuels and Sustainability [[electronic resource]] : Holistic Perspectives for Policy-making / / edited by Kazuhiko Takeuchi, Hideaki Shiroyama, Osamu Saito, Masahiro Matsuura
Pubbl/distr/stampa	Tokyo, : Springer Nature, 2018 Tokyo : , : Springer Japan : , : Imprint : Springer, , 2018
ISBN	4-431-54895-5
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (VI, 265 p. 72 illus., 22 illus. in color.)
Collana	Science for Sustainable Societies, , 2197-7348
Disciplina	338.927
Soggetti	Sustainable development Energy policy Energy and state Ecosystems Environmental management Renewable energy resources Environmental law Environmental policy Sustainable Development Energy Policy, Economics and Management Environmental Management Renewable and Green Energy Environmental Law/Policy/Ecojustice
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preface.-Introduction.-Part 1: Biofuels and Sustainability Conceptual Framework -- Chapter 1. Sustainability Science Perspective for Biofuels [Takeuchi, Matsuda] -- Chapter 2. Stakeholder perspectives and Multilevel Governance [Shiroyama, Matsuura] -- Chapter 3. Applying stakeholder perspectives to sustainable biofuel strategy: a summary of our analyses [Shiroyama, Matsuura].-Part 2: Impacts on land use and ecosystem services -- Chapter 4. Global Economic and Environmental Impacts - Economic Impacts of biofuels and related policy [Suzuki and

Takahashi] -- Chapter 5. Global Economic and Environmental Impacts - Environmental impacts of biofuel production on the GHG emission reduction [Hanaki] -- Chapter 6. Impacts at the National & Regional Scales - Land use change impacts [Hayashi] -- Chapter 7. Impacts at the National & Regional Scales - Socioeconomic impacts in East Asia [Elder, Kozima, Sano and Hayashi] -- Chapter 8. Social, Economic and Political Impacts - Socio-Political impacts to the roles of stakeholders [Shiroyama and Matsuura] -- Chapter 9. Social, Economic and Political Impacts - Impacts on ecosystem services [Alexandros and Stromberg] -- Part 3: Sustainable biofuels strategy options -- Chapter 10. Roadmap for building sustainable strategy options - Developing sustainable strategy options [Shiroyama and Matsuura] -- Chapter 11. Roadmap for building sustainable strategy options - Application of Ontology for developing strategy options [Kozaki, Mizoguchi and Saito] -- Chapter 12. Key strategies for policy makers - Global Strategies options [Arai, Matsuda and Suzuki] -- Chapter 13. Key strategies for policy makers - Regional Strategy options for East Asia [Elder, Kozima, Sano and Hayashi] -- Chapter 14. Key strategies for policy makers - National strategy options for Japan [Shiroyama, Matsuura and Saito].

Sommario/riassunto

This open access book presents a comprehensive analysis of biofuel use strategies from an interdisciplinary perspective using sustainability science. This interdisciplinary perspective (social science-natural science) means that the strategies and policy options proposed will have significant impacts on the economy and society alike. Biofuels are expected to contribute to reducing greenhouse gas emissions, revitalizing economies in agricultural communities and alleviating poverty. However, despite these anticipated benefits, international organizations such as the FAO, OECD and UN have published reports expressing concerns that biofuel promotion may lead to deforestation, water pollution and water shortages. The impacts of biofuel use are extensive, cross-sectoral and complex, and as such, comprehensive analyses are required in order to assess the extent to which biofuels can contribute to sustainable societies. Applying interdisciplinary sustainability science concepts and methodologies, the book helps to enhance the establishment of a sustainable society as well as the development of appropriate responses to a global need for urgent action on current issues related to biofuels.