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# Advanced Biofuels and Circular Economy

Technoeconomic,  
Socioeconomic, and  
Environmental  
Implications

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*Edited by*  
Rahil Akhtar Usmani  
Mudasir A. Dar  
Akram Ahmad Khan

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# CONTENTS

- 1 A Perspective on the Circular Economy of Advanced Biofuels** 1  
Rahil Akhtar Usmani, Akram Ahmad Khan, Asim Hasan, and Mudasir A. Dar
- 2 Circular Economy Transitions for Advanced Biofuel Supply Chains** 21  
Tesfaye Kassaw Bedru, Yohannes Assefa Degaga, Jayakaran Pachiyappan, Selvakumar Periyasamy, and Mani Jayakumar
- 3 Assessing Risks in the Circular Economy of the Advanced Biofuel Industry** 49  
Suhail Ahmad Khan and Mohd. Abdul Muqet Maaz
- 4 Circular Economy Advantages Through Derivatives and Value-Added Products in Advanced Biofuel Production** 77  
Renan Carriço Payer, Osvaldo Luiz Gonçalves Quelhas, Níssia Carvalho Rosa Bergiante, and João Henrique Paulino Pires Eustachio

<b>5</b>	<b>Exploration of Recent Advancements in Advanced Biofuel Production Technologies</b>	<b>103</b>
	Mahdi Monazzah, Elaheh Kowsari, and Mohammad Sadegh Salmani Kiasari	
<b>6</b>	<b>A Comparative Evaluation of Technoeconomic Feasibility of Advanced Biofuel Production Processes</b>	<b>135</b>
	Akram Avami	
<b>7</b>	<b>Socioeconomic Implications of Advanced Biofuels Production</b>	<b>161</b>
	Mudasir A. Dar, Rongrong Xie, Shehbaz Ali, Rahil Akhtar Usmani, Akram Ahmad Khan, Niknik Nurhayati, Radityo Pangestu, Md Muzammel Hossain, and Jianzhong Sun	
<b>8</b>	<b>Examining Social Dimensions in the Circular Economy of Advanced Biofuel Production</b>	<b>187</b>
	Diego Alexis Ramos Huarachi, Cleiton Hluszko, Micaela Inés Castillo Ulloa, Fabio Neves Puglieri, and Antonio Carlos de Francisco	
<b>9</b>	<b>Sustainable Development and Circular Economy Perspectives on Advanced Biofuels</b>	<b>213</b>
	Muhammad Uzair Javed, Hamid Mukhtar, and Umer Rashid	
<b>10</b>	<b>Advanced Biofuel and Climate Change Mitigation</b>	<b>243</b>
	Mohammad Hasanain, Mehraj Ud Din Sofi, Tarun Tomar, Gaurav Verma, Sandeep Kumar, Vijay Singh Meena, Raghavendra Singh, and Vinod Kumar Singh	
<b>11</b>	<b>Recent Developments in Mapping Environmental Sustainability of Advanced Biofuel</b>	<b>267</b>
	Mudasir A. Dar, Rongrong Xie, Atif Khurshid Wani, I Made Sudiana, Farhan Ahmad, Babbiker Mohammed Taher Gorish, Daochen Zhu, Maryam Gheibipour, Reena Singh, Rahil Akhtar Usmani, Akram Ahmad Khan, and Jianzhong Sun	

<b>12</b>	<b>Overview of Policies for Increasing Advanced Biofuel Utilization in Major Producing Countries</b>	<b>299</b>
	Daniel Balsalobre-Lorente and Syed Ale Raza Shah	
<b>13</b>	<b>Policy and Regulatory Frameworks for Sustainable Production of Advanced Biofuels</b>	<b>333</b>
	Ali Hashemizadeh and Mudasir A. Dar	
<b>14</b>	<b>Prospects and Challenges in Implementing Circular Economy Practices for Advanced Biofuels</b>	<b>361</b>
	Yann Emmanuel Miassi and Kossivi Fabrice Dossa	
<b>15</b>	<b>Potential Routes of Bioenergy Production and Their Circular Bioeconomy</b>	<b>387</b>
	Tesfaye Kassaw Bedru, Wondifraw Abate Abera, Jayakaran Pachiyappan, Selvakumar Periyasamy, and Mani Jayakumar	
<b>16</b>	<b>Methodological Proposal for the Evaluation of the Sustainability of Solid Biofuels</b>	<b>411</b>
	Luis Bernardo López Sosa, Mario Morales-Máximo, Arturo Aguilera Mandujano, Bernardina Alejo Justo, Ricardo González Cárabes, and Netzahualcóyotl Flores Lázaro	
	<b>Index</b>	<b>433</b>



## CHAPTER 1

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# A Perspective on the Circular Economy of Advanced Biofuels

*Rahil Akhtar Usmani, Akram Ahmad Khan,  
Asim Hasan, and Mudasir A. Dar*

### 1.1 INTRODUCTION

The massive consumption of energy and its associated emissions are the most practical problems of today's world. The current lifestyle is highly energy-intensive, relying mainly on fossil fuels, significantly contributing to environmental damage (Asif & Muneer, 2007). The transport sector is considered as the backbone of modern economic system and facilitates the rapid movement of goods, which is necessary to hold current social and economic structures (Taylor, 2021). The current transport infrastructure hugely depends on oil, emitting massive amounts of “carbon dioxide” (CO<sub>2</sub>) in the environment. In this context, transport emissions pose the

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