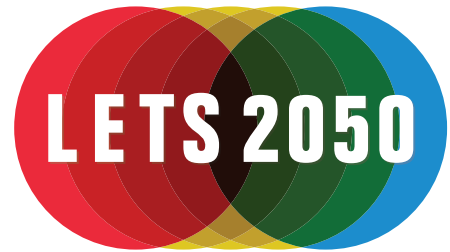


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Abstract

Governing the Transition to Low-Carbon Futures: A Critical Survey of Energy Scenarios for 2050

There is a growing scientific consensus that limiting the increase in global average temperature to around 2 °C above pre-industrial levels is necessary to avoid unacceptable impact on the climate system. This requires that the developed countries' emissions are radically reduced during the next 40 years. Energy scenario studies provide insights on the societal transitions that might be implied by such low-carbon futures, and in this paper we discuss how a greater attention to different governance and institutional issues can complement future scenario exercises. The analysis is based on a critical review of 20 quantitative and qualitative scenario studies, all of relevance for meeting long-term climate policy objectives. The paper: (a) analyzes some key differences in energy technology mixes and primary energy use patterns across these studies; (b) briefly explores the extent and the nature of the societal challenges and policy responses implied; and (c) discusses a number of important implications for the design and scope of future scenario studies. Our review shows that in previous scenario studies the main attention is typically paid to analyzing the impact of well-defined and uniform policy instruments, while fewer studies factor in the role of institutional change in achieving different energy futures. We therefore point towards a number of strategies of integrating issues of transition governance into future scenario analyses, and argue for a closer synthesis of qualitative and quantitative scenario building.

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