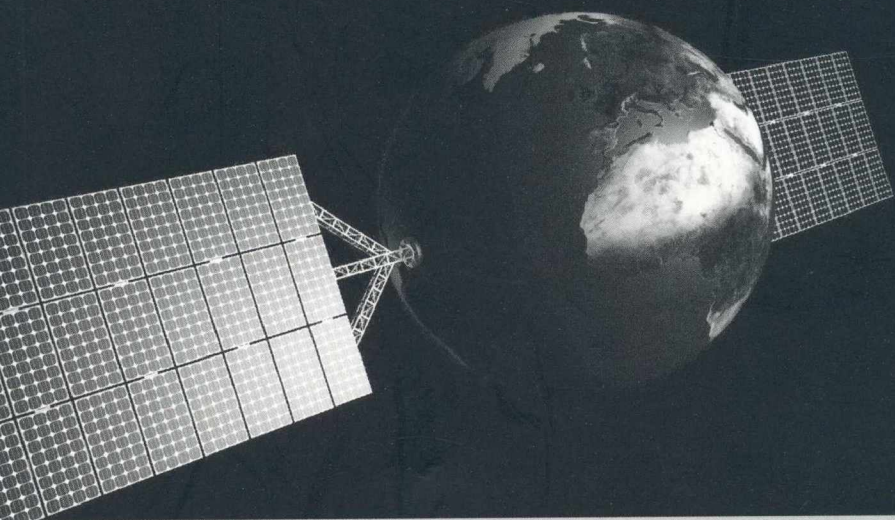


KEY IDEAS

ROUTLEDGE


RENEWABLE ENERGIES



**Matthias Gross
and Rüdiger Mautz**



‘The ongoing transition to renewable energy sources is much more than a substitution of fossil fuels by alternative energy carriers. The great merits of this book are that it sheds light on the interdependency of new forms of energy provision with profound changes in our societies and that it shows that social sciences are essential for understanding this challenge.’

*Harald Rohrer,
Professor of Technology and Social Change,
Linköping University*

KEY IDEAS

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Matthias Gross and Rüdiger Mautz

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1

INTRODUCTION

THE NEXT GREAT EXPERIMENT

Research and theory in sociology often focus on unexpected and sometimes paradoxical phenomena. As such, they are concerned with the way in which alternative societal structures and fundamentally new social processes come about. This has led some scholars to argue that the Western world is subject to epochal breaks that periodically mark its entry into a new kind of society (the information society, the knowledge society, the risk society, for example), one that departs fundamentally from previous political, ecological, technical, or cultural orders. Meanwhile, other scholars point to long-term evolutionary processes, situating the emergence of novel aspects of society within longer term processes associated with modernity. This tension between focusing either on radical shifts or on long-term accounts can be observed in particular in the context of debates around alternative energy sources and energy transitions in twenty-first-century societies. On the one hand, it seems to be generally accepted that energy transitions are inherently gradual, incremental processes that cannot be driven forward by the formulaic style of thinking reflected in targets, such as 20 percent of total electricity

produced from renewable energy sources by 2020 and 50 percent by 2050 (see Podobnik 2006, Smil 2010). On the other hand, a number of prominent figures are now speaking of peak oil, peak coal, indeed peak everything, thereby heralding an epochal break that is argued to be either coming soon or already upon us – whether by political will or by necessity (see Heinberg 2007, Scheer 2012, Urry 2013). In order to understand these shifts (however they may be conceptualized), sociological analysis needs to focus its attention on both the regional and local levels of decentralized energy initiatives, as well as on nationally and globally anchored processes of energy utilization.

Whereas sociologists, anthropologists, economists, political science scholars, and historians (among many others) have taken an innovation-oriented approach to technology and to different socio-political systems and their modes of production, what they have at times overlooked is the fact that it was non-renewable fossil fuels that made possible in the first place what has often been referred to as “industrial civilization,” or what Mark Blumler (2008) has called “the great experiment.” Given that the non-renewable resources on which this experiment was based are becoming more and more difficult and costly to extract, it is surely safe to say that the next great experiment will be one in which the transition to renewable resources is the crucial task; after all, our civilization cannot continue to exist in its current form without an uninterrupted supply of energy.

In his well-known reconstruction of the early stages of human history, Leslie White (1949) noted that people originally utilized their muscles as a source of energy, eventually supplementing this through the domestication and use of animals (methods still widely in use around the world even today). With the agricultural revolution and the end of nomadic ways of life, the first human settlements were founded on the use of energy from plants and food crops. In the next stage described by White, human communities learned to extract and use natural resources, such as coal and oil. Writing in the 1940s, White saw nuclear energy as the next important step (like many others at that time, he adopted an uncritical stance towards this energy source). Whether or not White was correct in his historical reconstruction of human history as a history of energy expansion (from human muscles to nuclear power), it appears to be inevitable that the