

Economics of Renewable Energy

Yoram Krozer

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An Assessment of Innovations with Statistical
Data

 Springer

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Preface

This book, *Economics of Renewable Energy* is about socio-economic mechanisms of change that can generate accessible, clean energy production and consumption. While the present avalanche of publications on renewable energy focuses on the future of energy and climate, this book reflects on changes in the past, mainly with statistical data used for nearly 60 graphs, tables, and figures in the main text. The mechanisms that enhance or impede changes toward renewable energy are identified, which is instrumental for decision makers, policymakers, entrepreneurs, scholars, and students that are interested in energy. Experts and laymen that read the draft manuscript found it information dense, while well readable and interesting. For basic data, please contact the author by mail (krozer@xs4all.nl).

The idea for writing a book focused on the mechanisms of change emerged a few years ago, after my involvement in business start-ups, citizens' initiatives, and policies on local, regional, and national scales. Along with enthusiasm about renewable energy, the sluggish introduction is observed. Why renewable energy is adhered, but changes move slowly? Why do many innovators pursue renewable energy, but only a few have gained from their efforts? Why do firms reluctantly change their course of action despite growing markets in renewable energy? Why do policies aim to foster renewable energy but support interests vested in the past? Above all, what mechanisms can generate changes in energy production and consumption for broad welfare in communities and countries? Answers are based on my interpretation of the statistical data using theories and experiences. Theories are found in literature while experiences are gained by co-operation with other people.

It has been my good fortune to get help from many wonderful people. The joint national plan of trade unions and environmental groups for energy and environment in the mid-1980s was a great experience in societal breakthroughs, thanks to Hans Becht, Jacqueline Cramer, Ferd Crone, Cor Inja, Andries Nentjes, Johan Stekelenburg, and Lucas Reijnders. Kornelis Blok ICARUS model in the early 1990s was an eye-opener to the economic modelling of renewable energy, which is used in the DESC model for Unilever, thanks to Jeroen Bordewijk, Rob Donia,

and Cees van Leeuwen of Unilever, and was subsequently applied for the energy issues at Statoil, thanks to Fredde Cappelen and Lars Sund; at Shell, thanks to Henk Groeneveld; and in other energy companies during the early 1990s. I gained hands-on experience in the first ‘energy-neutral’ building in the Netherlands – Pelgromhof in Zevenaar in the mid-1990s – thanks to Frans van de Werff, Han Brezet, and Pascale van Duijsse. During the 2000s, the Cartesius Institute enabled to experience innovators in the Frisian Solar Challenge, thanks to Wubbo Ockels, Bouwe de Boer, and Andries van Weperen; incumbent interests in Energy Valley, thanks to Hans Alders and Gerrit van Werven; local energy projects, thanks to Stephan Jansen and Harm-Jan Bouwers; as well as local energy policies, thanks to Nienk Hoepman and Simon Tjisma. Pauline Westendorp, Frank Boon, and Aukje van Bezeij were excellent guides in cooperative engagement. It was my honour to be involved in the Arab Renewable Energy Commission (AREC) by His Royal Highness Asem bin Nayef, Her Royal Highness Sana Asem, and Mohammed Al-Taani in Jordan, as well as by Yelena Shevchenko in the Kazakhstan R&D policy on climate change, and by Boglarka Vajda in the Romanian Green Energy Business Cluster. I started to grasp the evolutionary economics due to Maarten Arentsen of CSTM and the perspective of chemical engineers thanks to Michael Narodoslawsky of TU Graz. All those experiences were instrumental for assessing the mechanisms of change in renewable energy.

I am grateful for the cooperation of international trailblazers in the communities’ renewable energy: Relinde Baeten and Dirk Vansintjan of Ecopower in Belgium, Søren Hermansen of Samsø Energy Academy in Denmark, and Begoña Urien Angulo from the province of Navarra in Spain. Comments by Mohammed Al-Taani, Maarten Arentsen, and Lian Staal are highly appreciated.

Last but not least, I am thankful to Shonali Chenzira from India for editing this book. I also highly appreciate the cooperation with Springer Nature, in particular Margaret Deignan, Deepthi Vasudevan, and Vigneshwaran Balachandran. Obviously, I bear all responsibilities for shortcomings.

This book is dedicated to a bright future for my daughter, Mira Krozer.

Amsterdam, The Netherlands

Yoram Krozer

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