

# Preface

This book collates a range of methodological approaches and case study applications of good modeling practice at national and international scales from the IEA Energy Technology Systems Analysis Program (IEA-ETSAP), a collaborative network of energy modeling teams from around 70 countries that has operated for over 40 years. A key objective of IEA-ETSAP is to assist decision makers in robustly developing, implementing, and assessing the impact of energy and climate mitigation policies with the bottom-up technoeconomic models of the MARKAL/TIMES family.

The methodologies and cases studies presented in the book provide a critical understanding of the richness and width of application of energy systems models, demonstrating the underlying methods as well as the policy questions they can address. Energy engineers and technology specialists will find in the book the rationale for innovation in the field of energy technologies and insights into their evolving costs and benefits. Energy economists will gain deep insights into the key future role of energy technologies. Energy and climate policy makers as well as environmental scientists will learn about how energy systems modeling can provide unique perspectives and insights into national energy and environment challenges like climate change. Students and researchers in energy system analysis, sustainable energy, and climate change mitigation will reinforce their knowledge of energy system modeling and may find new ideas of research and applications.

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