Preface

In this introductory textbook on energy economics and policy, we present economic frameworks for understanding the major energy and climate challenges faced by industrialised and developing countries, and the energy and climate policy approaches that can be adopted to address these challenges. We give a similar weight to concepts in energy economics, as we do to policy design and implementation through an economic lens. In this book, we integrate insights from behavioural economics and thus provide a fresh perspective on issues that have traditionally been examined using a neoclassical economic approach. In the book, we also shortly address some issues in energy economics and policy in developing countries.

The book uses basic concepts of microeconomics concepts to flesh out the discussions and analyses. It presents insights that draw on both current energy and climate-related debates as well as the scientific literature and provides students the economic tools to analyse issues in the energy and climate sectors, as well as to critique policy. Although the book is centred on energy economics and policy, the fact that energy and climate policy share one goal, namely the switch to sustainable energy systems through the energy transition, it is important to include some aspects of climate policy into discussions on energy policy.

In the first part of this textbook, we consider the main problems with our energy systems and discuss the role that market failures (including behavioural anomalies) play in contributing to these problems. Then, we provide an analysis on energy demand and highlight how to use tools from investment analysis to make economic decisions in the energy sector. This leads to an analysis of the economic aspects of energy efficiency and on different market forms in the energy sector. In the second part of this book, we discuss the role of energy and climate policy instruments in addressing some of the problems that we highlight in the first part of the book. We conclude by illustrating criteria for policy choice, discussing different types of economic models in the energy sector, and elaborating on common policy evaluation methods.

In our textbook, we discuss the role of both traditional market-based instruments (such as taxes, subsidies, and permit trading systems) and non-market-based instruments (such as standards and direct control measures). We also present relatively newer policy instruments available at the disposal of governments (including nudges, once again drawing on the behavioural economics literature, energy labels, etc.). This perspective is relatively new to the field. All these measures can address the challenges that arise in energy sectors due to both traditional market failures and behavioural

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anomalies. We also provide some discussion on the role of climate policy, which is crucial given the current state of climate change and distinguish between the objectives of energy and climate policy.

Some potentially interesting aspects of this book are that (a) it includes a detailed discussion of both the traditional market failures and behavioural anomalies in the context of energy and climate policy, (b) a large section of the book involves a detailed discussion of energy and climate policy measures as well as their evaluation, and (c) the importance that is given to understanding the nature of problems in developing countries that are more likely to bear the brunt of global warming and climate change.

We provide some online exercises for each chapter to enable students to apply and verify their knowledge on each topic covered in the book. We also draw on several empirical studies from the literature, which are presented in boxes throughout the text, to enable students to better understand the real-world issues.

This textbook is suitable for undergraduate economics students, as well as students in other social sciences, engineering and environmental science. Moreover, this textbook could be used in introductory graduate courses in policy and business schools. A basic background in microeconomics is recommended; however, the material is broad enough for both economics students and non-economists.

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