Preface

Concerned about a range of environmental problems and health risks from burning fossil fuels and steeply rising oil imports, and facing great pressure both inside and outside international climate negotiations to be more ambitious in combating global climate change, China, from its own perspective cannot afford to and, from an international perspective, is not meant to continue on the conventional path of encouraging economic growth at the expense of the environment. Clearly, balancing China's energy needs to fuel its economic growth with the resulting potential impacts of climate change presents an enormous climate policy dilemma, not simply for China but for the entire world. This is the major reason why the role of China is an issue of perennial concern at international climate change negotiations. Given that China is already the world's largest energy consumer and carbon emitter and that its energy use and carbon emissions continue to rise rapidly as it has overtaken Japan as the world's second largest economy, and is rapidly approaching to be the largest economy in the next one to two decades, there is an ever increasing interest in what policies and measures China has put in place to save energy and limit emissions, how effective these policies and measures are, to what extent China can go beyond its current efforts, and what new policies and measures are needed to be enacted to get there, just to mention a few. A comprehensive discussion and rigorous analysis of these issues will not only help policymakers to understand how effective the policies and measures are and thus make informed decisions, but is also of significant interest to academics and both undergraduate and graduate students in the areas of economics, environmental studies, Asian studies, regional and urban studies, law, political science and sociology, given that China is gaining increasing importance in the world and researchers and students are accordingly becoming more interested in energy, climate and environmental issues that the country is facing.

I am an economist by training and was in the faculty of economics at the University of Groningen and Wageningen, the Netherlands for a decade before working in a think tank in the US. This combination of academic footing, professional background and working under diversifying institution settings has enabled me to read a broad literature dealing with energy,

climate and environmental issues than colleagues who solely have a career either in academia or think tanks. I found that the literature on energy and environmental issues in China often falls into two categories. One category is based on a quantitative and model-based analysis. It puts ample efforts into a specific issue, in particular its technical aspects. While such an analysis is academically sound and the results derived may be of persuasion, it is narrowly focused so that readers often cannot see the forest for the trees. The other category focuses on policies and aims for the bigger picture, but the analysis is not as in-depth as it should be and the coverage of issues examined is not that comprehensive. It is often based on outdated information, and focuses on discussions on existing problems and/or criticisms on environmental practice and policies, but does not pay sufficient attention to concrete, constructive and realistic solutions. All these limit the value of this category of literature to policymakers and students.

The demand for a book that overcomes the shortcomings of these two categories in the literature on energy and environmental issues in China motivated me to write this book, therefore filling this literature gap. This book attempts to cover broad energy, climate and environmental issues in China and at the same time, provides a comprehensive and vigorous, in-depth analysis of these issues and is focused on concrete, constructive and realistic solutions. This makes the book very unique from the aforementioned two categories of literature. In recognition that we need a much higher standard of public debate on these issues, the discussion in the book tries to be thought-provoking and broad in context and proceeds from an international perspective.

The book has grown out of a number of invited presentations. Chapter 2 is based on an invited presentation at the Seventeenth Annual Lincoln Conference on 'Urban Development and the Environment in China', Cambridge, MA, 17 May 2010.

Chapter 3 is an outgrowth of the plenary address on 'Greening China: Can Hu and Wen Turn a Test of their Leadership into a Legacy?' at the first-ever Harvard College China-India Development and Relations Symposium, New York City, 30 March 2007; the invited presentation on 'Engaging the Developing World' at the World Affairs Council Conference on Climate Change and Global Politics, San Francisco, California, 13 September 2007; the keynote address on 'Energy and Environmental Policy in Mainland China' at the Cross-Straits Conference on Energy Economics and Policy, Taipei, 7 November 2007; the invited presentation at the Conference on China's Environment: What Do We Know and How Do We Know It?, University of California at Berkeley, 7 December 2007; and the plenary address on 'Climate Change and Post-

Kyoto' at the Thirty-first International Association for Energy Economics International Conference, Istanbul, 18 June 2008.

Chapter 4 is built on the invited luncheon speech on 'Climate Change Policies in the Developing World' and the panel discussion on 'From Architectures to Climate Change Governance' at the International Workshop on Climate Change Policies, Presidency of Complutense University, Madrid, 18–19 February 2010; and the invited presentations at China Update 2010: The Next 20 Years of Reform and Development, Australian National University, Canberra, 14 July 2010; and the Third International Colloquium on Sustainable Growth, Resource Productivity and Sustainable Industrial Policy, Brussels, 4–6 September 2010.

Chapter 5 is built on the invited presentations at the Second International Colloquium on Sustainable Growth, Resource Productivity and Sustainable Industrial Policy, Wuppertal, Germany, 10–12 September 2009; the International Workshop on Reconciling Domestic Energy Needs and Global Climate Policy: Challenges and Opportunities for China and India, Fondazione Eni Enrico Mattei, Venice, 15 March 2010; the International Symposium on Climate Change and National Security: Securing Better Forecasts, University of California at San Diego, 21–23 June 2010; and the International Workshop on Adaptation to Climate Change in the Coastal Zones of the Mediterranean Region and China, organized by the Italian Ministry for the Environment, Land and Sea, in partnership with China National Development and Reform Commission, Italian Pavilion, Shanghai World EXPO, 16 September 2010.

Chapter 6 is built on the keynote address on 'Encouraging Developing Country Involvement in a Post-2012 Climate Change Regime: Carrots, Sticks or Both?' at the Conference on Designing International Climate Change Mitigation Policies through RD&D Strategic Cooperation, Catholic University Leuven, Belgium, 12 October 2009; the invited presentation on 'Multilateral Trade Measures in a Post-2012 Climate Change Regime?: What Can Be Taken from the Montreal Protocol and the WTO?' both at the International Workshop on Post-2012 Climate and Trade Policies, the United Nations Environment Programme, Geneva, 8–9 September 2008 and at Shanghai Forum 2009: Crisis, Cooperation and Development, Shanghai, 11–12 May 2009; the invited presentation on 'Climate Change Meets Trade in Promoting Green Growth: Potential Conflicts and Synergies' at the East–West Center/Korea Development Institute International Conference on Climate Change and Green Growth: Korea's National Growth Strategy, Honolulu, 23–24 July 2009; the invited presentation at the International Workshop on Envisaging a New Climate Change Agreement in Copenhagen, Seoul, 13 November 2009; and the invited panel discussion on 'Green Growth, Climate

Change and WTO' at the Korea International Trade Association/Peterson Institute for International Economics International Conference on the New Global Trading System in the Post-Crisis Era, Seoul, 7 December 2009.

All these chapters have benefitted from useful discussions with the participants in these meetings. Also the earlier versions of all these chapters have been included in Fondazione Eni Enrico Mattei working paper sustainable development series, one of the world's finest working paper series in environmental and resource economics. That said, the views expressed here are mine. I bear sole responsibility for any errors and omissions that may remain.

For the completion of the book, I am most indebted to Australian National University, Chinese Association for Energy Economics, Complutense University, Fondazione Eni Enrico Mattei, Free University Amsterdam, Harvard College, International Association for Energy Economics, Italian Ministry for the Environment, Land and Sea, Korea Development Institute, Korea Energy Economics Institute, Korea International Trade Association, Lincoln Institute of Land Policy, Peterson Institute for International Economics, Shanghai Forum, Swiss Federal Institute of Technology, United Nations Environment Programme, University of California at Berkeley, University of California at San Diego, World Affairs Council of Northern California, and Wuppertal Institute for Climate, Environment and Energy. It is the invitations from the organizers of the aforementioned conferences and their sponsorships for my speeches at these meetings that motivated me to write down each chapter in the first place. My thanks also go to my employer East-West Center for allowing flexibility and freedom in undertaking this research.

I would like to express my special thanks to my wife Guoxin Li, who has shouldered a great deal, in taking care of our daughter Richelle and our son Eric. Finally, I wish to thank Edward Elgar and Felicity Plester for their decision to publish this book and to Alex Pettifer and the editorial staff members in charge of its production.

The year 2011 marks the twentieth anniversary of the death of my father, Zhang Shouyong. I would like to dedicate the book to him for bringing up my two brothers, three sisters and me in such a difficult period of time in China and supporting all of us to enable us to graduate from university, and showing by example how to contribute to the community and society.

ZhongXiang Zhang
Honolulu, Hawaii
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