
Contents

| | |
|---|-------|
| <i>List of editors</i> | viii |
| <i>List of contributors</i> | ix |
| <i>Preface</i> | xxiii |
| <i>Acknowledgements</i> | xxv |
| | |
| 1 Introduction: energy and the geographical traditions <i>Barry D. Solomon and Kirby E. Calvert</i> | 1 |
| | |
| PART I FUELS | |
| | |
| 2 Energy for the world's kitchens: biomass for survival in the past, present and future <i>Matthew J. Taylor</i> | 11 |
| 3 Bedrock of modernity: coal and its uses past and present <i>Max D. Woodworth</i> | 23 |
| 4 The politics of oil in the Anthropocene <i>Philippe Le Billon and Gavin Bridge</i> | 38 |
| 5 A horse that has left the barn: expanding geographies of natural gas <i>Julia H. Haggerty</i> | 57 |
| 6 Exploring nuclear geographies: from uranium mine to waste facility <i>Philip Johnstone</i> | 72 |
| 7 The changing geographies of biorefining <i>Kirby E. Calvert, Jamie D. Stephen, M. Jean Blair, Laura Cabral, Ryan E. Baxter and Warren E. Mabee</i> | 88 |
| 8 Alternative transportation fuels: pathways to new geographies <i>Ethan B. Davis and Kirby E. Calvert</i> | 104 |
| | |
| PART II ENERGIES | |
| | |
| 9 Hydropower's fluid geographies <i>Mary Finley-Brook</i> | 119 |
| 10 Geographical dimensions of wind power <i>Martin J. Pasqualetti and Barry D. Solomon</i> | 134 |
| 11 Geographies of solar power <i>Dustin Mulvaney</i> | 148 |

vi *Handbook on the geographies of energy*

12 Geography of geothermal energy technologies 163
Edward P. Louie and Barry D. Solomon

13 Geography of marine renewable energy technologies 177
Peter M. Connor and Helen C.M. Smith

PART III ENERGY CONSUMPTION: SECTORS AND END USE

14 Residential energy consumption from a time-geographic perspective 195
Jenny Palm and Kajsa Ellegård

15 Energy efficiency programs in China 211
Kevin Lo

16 Energy and transportation: the need for an energy transition 220
Christophe Enaux, Philippe Gerber and Helene Haniotou

17 Changing human geographies of the electricity grid: shifts of power and control in the renewable energy transition 232
Stephen M. McCauley and Jennie C. Stephens

PART IV CHANGING LANDSCAPES OF ENERGY PRODUCTION, DISTRIBUTION AND USE

18 Energy landscapes of less than two degrees global warming 251
Dan van der Horst

19 Europe's energy geographies 265
Harriet Thomson and Stefan Bouzarovski

20 Nodes, networks and inefficiency: understanding Russia's energy landscapes 280
Jessica K. Graybill

21 Changing geographies of energy in North America 296
Warren E. Mabee, Laura Cabral and Emma Webb

22 Brazil's energy outlook 313
Mauricio T. Tolmasquim and Angela Livino

23 Energy disparities and (under)development in sub-Saharan Africa 325
Robert Stock

24 Oil worlds: life and death in Nigeria's petro-state 341
Michael J. Watts

25 India's energy geographies: a critical introduction 355
Deepti Chatti

26 Co-designing energy landscapes: application of participatory mapping and Geographic Information Systems in the exploration of low carbon futures 368
Sven Stremke and Paolo Picchi

| | | |
|---|--|-----|
| 27 | Urban energy transitions: spatial organization, political contestations and urban governance | 380 |
| | <i>Ping Huang and Vanesa Castán Broto</i> | |
| 28 | Global energy transitions: a long-term socioeconomic metabolism perspective | 393 |
| | <i>Helmut Haberl, Karl-Heinz Erb, Fridolin Krausmann and Maria Niedertscheider</i> | |
| PART V ENERGY AT THE NEXUS | | |
| 29 | Energy, water and food: towards a critical nexus approach | 411 |
| | <i>Hayley Leck, Daniel Fitzpatrick and Kevin Burchell</i> | |
| 30 | Energy poverty and vulnerability: a geographic perspective | 425 |
| | <i>Neil Simcock and Saska Petrova</i> | |
| 31 | Geographies of energy justice: concepts, challenges and an emerging agenda | 438 |
| | <i>Karen Bickerstaff</i> | |
| 32 | Governance at the intersection of health and energy | 450 |
| | <i>Arielle Hesse</i> | |
| PART VI LOOKING FORWARD: CONCEPTUAL APPROACHES IN ENERGY GEOGRAPHIES | | |
| 33 | The political and social ecologies of energy | 465 |
| | <i>Karl S. Zimmerer</i> | |
| 34 | Political-industrial ecologies of energy | 477 |
| | <i>Jennifer E. Baka</i> | |
| 35 | Critical energy geographies | 490 |
| | <i>Conor Harrison and E. Jeffrey Popke</i> | |
| 36 | Community energy: diverse, dynamic, political | 502 |
| | <i>Nichole Dusyk</i> | |
| 37 | Energy geography: adopting and adapting resource management perspectives | 515 |
| | <i>Bruce Mitchell and Paul Parker</i> | |
| | <i>Index</i> | 527 |