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Institutions; Introduction; Ownership issues, late 1940s to mid-1990s; Managing and regulating the flow of electricity; Managing and regulating the flow of gas; New issues in energy policy; UK climate and energy policy development; UK policies for CO2 emissions reduction, 2000-2010; Policies for energy security; Conclusion; 4 Energy Futures: The Challenges of Decarbonization and Security of Supply Introduction Energy systems, decarbonization and resilience; The scenario framework; Scenario analysis and modelling tools; Key assumptions in the core scenarios; Reference scenario results; The gap between the Reference scenario and policy aspirations; 5 Pathways to a Low Carbon Economy; Introduction; Scenario design; Scenario results; Insights and conclusions; Annex 5.1: Data for calculation of carbon tax implied by UK Climate Change Levy (CCL); 6 A Resilient Energy System; Introduction; What can go wrong: shocks to the energy system; Indicators of resilience Quantifying resilience at the macro level Resilience: implications for energy markets and technologies; Reliability in the network industries; Hypothetical system shocks; Mitigating the shocks; Adding up the costs of resilience; Policy implications; 7 Accelerating the Development of Energy Supply Technologies: The Role of Research and Innovation; Introduction; Technological innovation and energy system change; The accelerated technology development scenarios; Scenarios, system modelling and the real world; Accelerated development scenarios and UK decarbonization pathways Implications and challenges Summary and conclusions; 8 A Change of Scale? Prospects for Distributed Energy Resources; Introduction; Challenges in the residential sector; Technology characteristics, performance and suitability; The human dimension: installers and householders; Policy challenges for distributed energy resources; Conclusions; 9 The Way We Live From Now On: Lifestyle and Energy Consumption; Introduction; Quantifying lifestyle; Lifestyle change at home; Lifestyle change in mobility and transport; Lifestyle change for a low carbon world; Public policy implications; Conclusions 10 Not Just Climate Change: Other Social and Environmental Perspectives

Sommario/riassunto

The United Kingdom is committed to reducing its greenhouse gas emissions by at least 80% by 2050, a target that will only be achieved by transforming the way that energy is supplied and used. At the same time there are anxieties about the security of energy provision in terms of European dependency on natural gas and the reliability of electricity supply. This book explores in detail those factors which could help or hinder the attainment of the UK's climate change targets, and how these factors interact with the parallel objective of maintaining a robust and secure energy system. The book is
