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EMILIE CANTRELL

Sustainable Energy Bloomsbury Publishing
 Energy Democracies for Sustainable Futures explores how our dominant carbon and nuclear energy assemblages shape conceptions of participation, risk, and in/securities, and how they might be reengineered to deliver justice and democratic participation in transitioning energy systems. Chapters assess the economies, geographies and politics of current and future energy landscapes, exposing how dominant assemblages (composed of technologies, strategies, knowledge and authorities) change our understanding of security and risk, and how they these shared understandings are often enacted uncritically in policy. Contributors address integral relationships across the production and government of material and human energies and the opportunities for sustainable and democratic governance. In addition, the book explores how interest groups advance idealized energy futures and energy imaginaries. The work delves into the role that states, market organizations and civil society play in envisioned energy change. It assesses how risks and security are formulated in relation to economics, politics, ecology, and human health. It concludes by integrating the relationships between alternative energies and governance strategies, including issues of centralization and decentralization, suggesting approaches to engineer democracy into decision-making about energy assemblages. Explores descriptive and normative relationships between energy and democracy Reviews how changing

energy demand and governance threaten democracies and democratic institutions Identifies what participative energy transformations look like when paired with energy security Reviews what happens to social, economic and political infrastructures in the process of achieving sustainable and democratic transitions

Sustainable Energy, SI Edition
Cambridge University Press

C. S. Lewis rightly instructed, "The task of the modern educator is not to cut down jungles, but to irrigate deserts." This book aims to achieve this task by pushing the frontiers of scholarship for securing a sustainable future through green energy and infrastructure. This encompasses the notion that what we create is in harmony and integration with both the spatial and temporal domains. Through numerous practical examples and illustrations, this book examines a comprehensive review of the latest science on indoor environmental health, energy requirements for buildings, and the "greening" of infrastructure. Also, it provides a discussion on the underlying properties of biomass and its influence on furthering energy conversion technologies. Energy storage is essential for driving the integration of renewable energy, and different storage approaches are discussed in terms of power balancing, grid stability, and reliability. Features: Focuses on the importance of coupling green energy with green infrastructure Provides an unbiased update of the state-of-the-art of sustainability science Discusses utilizing sustainable building materials for simultaneous improvement in energy, economic, and environmental bottom lines for industry Illuminates practical steps that need to be

undertaken to achieve a greener infrastructure Green Energy and Infrastructure: Securing a Sustainable Future is appropriate for researchers, students, and decision-makers seeking the latest, practical information on environmental sustainability.

Energy Security and Sustainability
Springer

Activists, scientists and policymakers around the world have long argued that we need to find sustainable and secure solutions to the world's energy demands. At issue for citizens worldwide is whether we are scientifically literate enough to understand the potential policy choices before us. *Understanding Energy and Energy Policy* is a one-stop resource for understanding the complexities of energy policy and the science behind the utilization of energy sources. The multidisciplinary perspective presented in this book is necessary for readers to be able to weigh the advantages and disadvantages of potential energy policies. The book draws on case studies from the global North and South, from countries that are resource poor and resource rich, while providing explanations of the science and politics behind burning fossil fuels, and power created through nuclear energy, solar energy, geothermal energy, wind energy, biofuels and water.

Sustainability Performance

Evaluation of Renewable Energy

Sources: The Case of Brazil CRC Press

The world's reliance on existing sources of energy and their associated detrimental impacts on the environment—whether related to poor air or water quality or scarcity, impacts on sensitive ecosystems and forests and land use—have been well documented and articulated over the last three decades. What is needed by the world is a set of

credible energy solutions that would lead us to a balance between economic growth and a sustainable environment. This book provides an open platform to establish and share knowledge developed by scholars, scientists and engineers from all over the world about various viable paths to a future of sustainable energy. It has collected a number of intellectually stimulating articles that address issues ranging from public policy formulation to technological innovations for enhancing the development of sustainable energy systems. It will appeal to stakeholders seeking guidance to pursue the paths to sustainable energy.

Alternate Energy Springer Nature

With nearly all of the world's energy consumption dependent on non-renewable resources, *Powering Our Future* challenges consumers to support changes that will create sustainable energy in the future. The four biggest energy sources—oil, natural gas, coal, and uranium—currently power our earth. What would happen to our society if we experienced severe shortages of one or more of these resources? Such a glimpse into the future may become reality sooner than we think. Oil production is soon expected to begin a rapid descent, with natural gas in close pursuit. *Powering Our Future* is an educational tool that opens the door to a future fueled by sustainable, renewable energy. Consumers will learn: - How our world has become dependent on four nonrenewable resources. - How each resource impacts us politically, economically, and environmentally. - How renewable resources such as hydrogen, fuel cells, wind power, solar energy, hydropower, and more are waiting in the wings. - How the transition to renewable resources will take place,

offering economically stable and environmentally safe choices. Powering Our Future is a solution-oriented guide that will empower you to make more informed choices as a voter, a contributor to a global economy, and a citizen of the earth.

Sustainable Energy - without the hot air UNSW Press

This book presents a unique analysis of the sustainability performance of various renewable energy sources, based on Brazilian case studies. The evaluation also covers the potential held by regions with diverse socioeconomic and environmental characteristics and how they affect the development of each source. Considering that energy is essential to sustaining and improving modern society, the answer to the current energy dilemma lies in the development of a system that comprises multiple renewable, reliable, and sustainable energy sources. Brazil, which has a predominantly renewable electricity grid, has the privilege of being home to a range of different sustainable sources, although most of its electricity comes from hydroelectric power plants. With that in mind, this book has the primary objective of developing a performance evaluation system for important renewable sources in Brazil (solar, wind, and hydro), taking into account different scenarios and investor profiles. The analysis is based on the study of sustainability indicators related to the technical, economic, social and environmental aspects of the evaluated energy systems. As the availability of renewable sources is very location-specific, the scope of this book covers two Brazilian States with distinct characteristics. It makes it possible to determine which renewable energy source is most adequate from a

sustainability perspective, and in light of the analyzed scope and investor profile.

Sustainable Energy CRC Press

Almost every individual, organisational, and societal activity is linked to, and dependent on, the use of one or more forms of energy. The development of a nation and the quality of life of its population are closely related to the amount and types of energy consumption. In the face of an increasing world population, improving the standard of living in developing countries, and maintaining the levels that have been reached in advanced industrialised countries, will require a considerable increase in the world's use of energy. The challenge is to make this use compatible with sustainability.

Renewable Edward Elgar Publishing

PRINCIPLES OF SUSTAINABLE ENERGY SYSTEMS, Third Edition, surveys the range of sustainable energy sources and the tools that engineers, scientists, managers, and policy makers use to analyze energy generation, usage, and future trends. The text provides complete and up-to-date coverage of all renewable technologies, including solar and wind power, biofuels, hydroelectric, nuclear, ocean power, and geothermal energy. The economics of energy are introduced, with the SAM software package integrated so students can explore the dynamics of energy usage and prediction. Climate and environmental factors in energy use are integrated to give a complete picture of sustainable energy analysis and planning.

Understanding Energy and Energy Policy

BoD - Books on Demand

This volume contains special contributions presented at the 5th International Conference on Energy and Sustainability, held by the Wessex

Institute of Technology. It is a companion to the Volume containing most of the contributions (Vol. 186 of WIT Transactions on Ecology and the Environment) and comprises papers presented orally during the Conference. The modern world is highly dependent on the exploitation of fossil fuels. More recently, resources depletion and severe environmental effects deriving from the continuous use of these fuels has resulted in an increasing amount of interest in renewable energy resources and the search for sustainable energy policies. The changes required to progress from an economy mainly based on hydrocarbons to one taking advantage of sustainable energy resources are massive and require considerable scientific research as well as engineering systems. The effect also involves collaboration between different disciplines in order to arrive at optimum solutions, including buildings, energy networks, convenience systems, new energy storage solutions, waste to energy technologies, and many others. This book, along with its companion volume, covers topics related to sustainability in energy and power production, storage, distribution and management. These include: Energy Policies; Renewable Energy Resources; Sustainable Energy Production; Environmental Risk Management; Green Buildings; Energy Storage; Biofuels; Processing of Oil and Gas; Drilling and Well Design; CO₂ Capture and Management; Pipelines; Energy Efficiency; Energy from Waste; Energy and Transportation.

Sustainable Energy Springer

Offering an in-depth examination into sustainable energy sources, applications, technologies and policies, this book provides real-world examples of ways to

achieve important sustainability goals. Themes include program assessment, energy efficiency, renewables, clean energy and approaches to carbon reduction. Included are a compiled set of chapters discussing the various international strategies and policies being planned and implemented to reduce energy use, impact carbon emissions and shift towards alternative energy sources. Taking an international perspective, contributors from the U.S., Canada, Trinidad and Tobago, Peru, Hungary, Spain, Iran, Ukraine, Jordan, the UAE, Nigeria, South Africa, India, China and Korea, offer their views of energy issues and provide detailed solutions. These can be broadly applied by engineers, scientists, energy managers, policy experts and decision makers to today's critical energy problems.

Powering Our Future CRC Press

Evaluates trade-offs and uncertainties inherent in achieving sustainable energy, analyzes the major energy technologies, and provides a framework for assessing policy options.

Renewable Energy Cengage Learning

This textbook introduces the key concepts that underpin sustainable energy transitions. Starting with the basic biophysical principles, current sources and environmental consequences of existing energy resource use, the book takes readers through the key questions and topics needed to understand, prescribe, and advocate just and sustainable energy solutions. The interdisciplinary nature of the book aims to build bridges across the social and natural sciences and humanities, bringing together perspectives, ideas and concepts from engineering, economics, and life cycle assessment to sociology, political

science, anthropology, policy studies, the humanities, arts, and some interdisciplinary thinkers that defy categories. This accessible approach fills the gap for a textbook that integrates sustainability science and engineering studies with strong empirical social science and it will be a useful tool to anyone interested in the socio-ecological dimensions of energy system transitions.

The Violent Technologies of Extraction

MIT Press

One of the most important issues facing humanity today is the prospect of global climate change, brought about primarily by our prolific energy use and heavy dependence on fossil fuels. *Fueling Our Future: An Introduction to Sustainable Energy* provides a concise overview of current energy demand and supply patterns. It presents a balanced view of how our reliance on fossil fuels can be changed over time so that we have a much more sustainable energy system in the near future. Written in a non-technical and accessible style, the book will appeal to a wide range of readers without scientific backgrounds.

Sustainable Energy iUniverse

SUSTAINABLE ENERGY focuses directly on energy related issues and includes a thorough treatment of all potentially viable energy sources. In most cases, individual chapters are devoted to each alternative energy approach. Although author Richard Dunlap covers past and current energy production methods, the text deals largely with future alternative energy strategies and follows the guidelines of ABET, the major engineering accreditation body. The book approaches these topics on a rigorous level -- familiarity with the basic concepts of freshman Physics and Chemistry is needed. The book contains enough material for a typical one

semester course. The end-of-chapter problems are predominantly quantitative in nature. However, most are not straight forward calculations based on substituting values from the chapter in to the appropriate formula. The problems are designed to require the students to analyze information, to make use of material from previous chapters, to correlate data from various sources (not only from the textbook itself but from library, internet or other sources) and in many cases to estimate quantities based on interpretation of graphical data, interpolation of values and sometime just plain common sense. While maintaining a quantitative approach to the study of energy in our society, the text and accompanying problems show that this is a complex and very interdisciplinary topic. This approach is intended to provide students with an appreciation for the real problems that are encountered in the understanding of how we produce and use energy, and the realization that, while exact calculations are important and necessary, a broadly based analysis is often most appropriate. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Renewable Energy Cengage Learning

Where does the energy we use come from? It's absolutely vital to every single thing we do every day, but for most people, it is utterly invisible. Flick a switch and the lights go on. It might as well be magic. Science writer Jeremy Shere shows us in *Renewable: The World-Changing Power of Alternative Energy* that energy is anything but magical. Producing it in fossil fuel form is a dirty, expensive—but also hugely profitable—enterprise, with enormous

but largely hidden costs to the entire planet. The cold, hard fact is that at some point we will have wrung the planet dry of easily accessible sources of fossil fuel. And when that time comes, humankind will have no choice but to turn—or, more accurately, return—to other, cleaner, renewable energy sources. What will those sources be? How far have we come to realizing the technologies that will make these sources available? To find the answers, Shere began his journey with a tour of a traditional coal-fueled power plant in his home state of Indiana. He then continued on, traveling from coast to coast as he spoke to scientists, scholars and innovators. He immersed himself in the green energy world: visiting a solar farm at Denver's airport, attending the Wind Power Expo and a wind farm tour in Texas, investigating turbines deep in New York City's East River, and much more. Arranged in five parts—Green Gas, Sun, Wind, Earth, and Water—Renewable tells the stories of the most interesting and promising types of renewable energy: namely, biofuel, solar, wind, geothermal, and hydropower. But unlike many books about alternative energy, Renewable is not obsessed with megawatts and tips for building home solar panels. Instead, Shere digs into the rich, surprisingly long histories of these technologies, bringing to life the pioneering scientists, inventors, and visionaries who blazed the way for solar, wind, hydro, and other forms of renewable power, and unearthing the curious involvement of great thinkers like Henry Ford, Thomas Edison, and Nicola Tesla. We are at an important crossroads in the history of renewable technologies. The possibilities are endless and enticing, and it has become increasingly clear that renewable energy

is the way of the future. In *Renewable*, Jeremy Shere's natural curiosity and serious research come together in an entertaining and informative guide to where renewable energy has been, where it is today, and where it's heading. *Green Energy* Witpress

Here's your opportunity to look into the future of energy technologies, with emphasis on alternative, or non-conventional technologies, their potential impacts, and the technical, economic and policy issues that will affect their successful integration into global energy markets. Over the past several years, industry and government have turned to a strategic planning technique called "roadmapping" to help assess future energy management practices and technologies. This book considers energy management and technology development over the next several decades by exploring data from these energy technology roadmaps. International in scope, the book examines both the technical and non-technical aspects of emerging technologies. Detailed technology assessments for specific alternative energy resources are presented. An overview of the problems associated with conventional energy consumption is included, as well as an insightful discussion of technology implementation issues from the author's own well-informed and cautiously optimistic perspective

Sustainable Energy UIT Cambridge Readers explore present and future energy needs as well as options for continued use of fossil fuels and alternative energy sources with Dunlap's *SUSTAINABLE ENERGY*, 2nd Edition. Individual chapters thoroughly investigate each energy approach as the book covers both current energy

production and future strategies. The author assumes reader familiarity with the basic concepts of freshman-level physics and chemistry. The text emphasizes the complexity of energy issues and the need for a multidisciplinary approach to solving energy problems. Quantitative end-of-chapter problems emphasize analyzing information, correlating data from various sources, and interpreting graphical data and interpolate values. Readers see real problems in producing and using energy as they realize that while exact calculations are important, a broad-based analysis is often most appropriate. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Fueling Our Future: An Introduction to Sustainable Energy CRC Press

Offering a thought provoking theoretical conversation around ecological crisis and natural resource extraction, this book suggests that we are on a trajectory geared towards total extractivism guided by the mythological Worldeater. The authors discuss why and how we have come to live in this catastrophic predicament, rooting the present in an

original perspective that animates the forces of global techno-capitalist development. They argue that the Worldeater helps us make sense of the insatiable forces that transform, convert and consume the world. The book combines this unique approach with detailed academic review of critical agrarian studies and political ecology, the militarization of nature and the conventional and 'green' extraction nexus. It seeks radical reflection on the role people play in the construction and perpetuation of these crises, and concludes with some suggestions on how to tackle them.

Sustainable Energy, 2nd WIT Press

The best-selling book on understanding sustainable energy and how we can make energy plans that add up.

Paths to Sustainable Energy

Academic Press

In this timely book, leading authors explore the technologies that might help us to develop a sustainable energy future, emphasising renewable energy and the political and economic context needed for them to prosper. This collection makes hard-headed assessments of what is possible and what is not.