Energy And Climate In The Urban Built Environment

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CLARK BRAIDEN

The Nexus: Energy, Environment and Climate Change Oxford University Press, USA The purpose of this textbook is to provide a well-rounded working knowledge of both climate change and environmental sustainability for a

wide range of students. Students will learn core concepts and methods to analyze energy and environmental impacts; will understand what is changing the earth's climate, and what that means for life on earth now and in the future. They will also have a firm understanding of what energy is and how it can be used. This text intends to develop working knowledge of these topics, with both technical and social implications. Students will find in one volume the integration and careful treatment of climate, energy, and sustainability.

Renewable Energy Transformation or Fossil Fuel Backlash CRC Press

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The Water, Food, Energy and Climate Nexus Cambridge University Press

This essential provides an overview of the changes in our climate, their causes and their consequences. Today, humanity's energy needs are largely met in ways that are harmful to the climate. The alternative to this, solar energy, would satisfy our needs thousands of times over. But this option is far too little used for mainly economic reasons. This essential discusses the energy converters that can be used to make solar energy available. Some other modern energy sources, such as nuclear power, are either inadequate, still utopian, or otherwise environmentally harmful. An outlook shows that our energy

problem could easily be solved with economic reason by global use of solar energy. The climate could be stabilized in time This book is a translation of the original German 1st edition Unser Klima und das Energieproblem by Klaus Stierstadt, published by Springer Fachmedien Wiesbaden GmbH, part of Springer Nature in 2020. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). The content The climate - The energy demand - The sun - Solar energy converters -Non-solar energy sources The target groups Students of natural science, teachers of natural science subjects, people interested in climate and environment The author Prof. Dr. Dr. h.c.. Klaus Stierstadt is professor emeritus of physics at the Ludwig-Maximilians-University of Munich and author of several physics textbooks. He was a member of the board of the German Physical Society as well as vice president of the University of Munich and is honorary senator of the European Academy of Sciences and Arts. His fields of work are radioactivity of the atmosphere, magnetism, phase transitions, neutron scattering and magnetohydrodynamics.

The Changing Flow of Energy Through the Climate System

Leya

Meteorological and climate data are indeed essential both in day-to-day energy management and for the definition of production and distribution infrastructures. For instance, the supply of electricity to users can be disturbed by extreme meteorological events such as thunderstorms with unusually strong winds, severe icing, severe cold spells, sea level elevation associated with storm surges, floods ... To be protected against such events, it is not sufficient to act after they have taken place. It is necessary to identify their potential impacts precisely and assess the probability of their occurrence. This book shows that this can only be done through an enhanced dialogue between the energy community and the climate and meteorology community. This implies an in-depth dialogue between actors to define precisely what kind of data is needed and how it should be used. Météo-France has been in long-term cooperation with the energy sector, including the fields of electricity production and distribution. Drawing on this experience, it should be noted in this respect the importance of lo- term partnership between actors as exemplified here by the message of EDF.

Energy and Climate

Cambridge University Press

This open access book showcases the

burgeoning area of applied research at the intersection between weather and climate science and the energy industry. It illustrates how better communication between science and industry can help both sides. By opening a dialogue, scientists can understand the broader context for their work and the energy industry is able to keep track of and implement the latest scientific advances for more efficient and sustainable energy systems. Weather & Climate Services for the Energy Industry considers the lessons learned in establishing an ongoing discussion between the energy industry and the meteorological community and how its principles and practises can be applied elsewhere. This book will be a useful guiding resource for research and early career practitioners concerned with the energy industry and the new field of research known as energy meteorology.

Climate Impacts on Energy Systems

Knopf

First Published in 2001. Routledge is an imprint of Taylor & Francis, an informa company.

Energy, the Environment and Climate Change

World Scientific

This book is a comprehensive account of all significant energy sources, evaluated according to their capacity, reliability, cost, safety and effects on the environment. Non-renewable sources

(for example, coal, oil, gas and nuclear fuel) together with renewable sources like wood, hydro, biomass, wind, solar, geothermal, ocean thermal, and tidal; are considered. Also, nuclear radiations and the disposal of nuclear waste and the future of nuclear power are assessed, as well as pollution and acid rain, the greenhouse effects and climate change. Its social, political and moral problems are discussed, with a special mention of the opposition to nuclear power.

Energy, Environment, and Climate Routledge

How does one tell the story of energy production, use, or conservation in a manner sufficiently convincing to influence policy, behavior, and design? Energy Accounts explores potential answers to this question through compelling images, data visualizations, narratives, and other examples of accounting for energy. Organized into a collection containing both examples of best practices and critiques, this impressive array of projects and contributors combines text and graphic material to explore different representations of energy data. Including work from Kieran Timberlake, SHoP, AMO, Lateral Office, WOHA, and many more, the book boasts a unique graphic design which supports and enhances its role as a valuable resource for professionals and students in

architecture, engineering, and urban design.

Energy and Climate Change CRC Press

This dazzling introductory textbook encompasses the full range of today's important renewable energy technologies. Solar thermal, photovoltaic, wind, hydro, biomass and geothermal energy receive balanced treatment with one exciting and informative chapter devoted to each. As well as a complete overview of these state-of-the-art technologies, the chapters provide: clear analysis on their development potentials; an evaluation of the economic aspects involved; concrete guidance for practical implementation; how to reduce your own energy waste. If we do not act now to stop climate change, the consequences will be catastrophic. The current world situation is demonstrated here with the aid of full-colour figures and photographs, data diagrams and simple calculations and results. A multiplicity of impressive examples from countries across the globe show international 'alternative' energy in action. With its easy-to-read approach, this is an essential textbook for students on renewable energy courses, also environment and sustainability courses. Planners, operators, financers and consultants will find this an excellent

manual for planning and realizing climate protection. Furthermore, this book makes great background reading for energy workers, designers, politicians and journalists, and anyone who is interested in the topic of climate change. Looking for further study? Visit the complimentary website; it hosts many useful related internet sites: www.wiley.com/go/quaschning_renewable

Impact Assessment of Energy and Climate Policies Springer

This book presents a comprehensive overview of the global climate change impacts caused by the continued use of fossil fuels, which results in enormous damage to the global environment, biodiversity, and human health. It argues that the key to a transition to a low carbon future is the rapid and large-scale deployment of renewable energy technologies in power generation, transport and industry, coupled with super energy-efficient building design and construction. However, the author also reveals how major oil companies and petrochemical conglomerates have systematically attempted to manufacture doubt and uncertainty about global warming and climate change, continue to block the commercialization of solar energy and wind power, and impede the electrification of the

transport sector. Martin Bush's solution is a theory-of-change approach to substantially reduce greenhouse-gas emissions by 2050, which sets out realistic steps that people can take now to help make a difference.

New Challenges in Energy Security

Cambridge University Press

Leading scholars assess the transformations in energy security policy that flow from recognition of global climate change. They explore through case studies the key policy responses formulated in the Asia-Pacific and identify potential synergies between energy policy and climate mitigation efforts.

Our Climate and the Energy Problem

Springer Nature

Currently, most of the energy is supplied by burning fossil fuels such as oil, coal or gas. While there are clear benefits to the use of these sources, there are disadvantages: they are finite, they are unevenly distributed causing geopolitical tensions, contribute to climate change, and cause air pollution. One way to solve these problems is the use of renewable energy. Renewable energy sources are generally available everywhere, cause less air pollution, emit no or fewer greenhouse gas emissions, and improve the security of energy supply. The aim of this thesis is to contribute to a better description of renewable energy in

long-term energy and climate scenarios. Specifically, we focus on three main themes: 1) the potential of renewable energy, 2) the application and 3) the influence of climate change. First the global potential of offshore wind energy, rooftop solar energy, and hydropower is calculated. These potentials are then used to explore long-term future scenarios. And, finally, climate impacts on the renewable energy supply are researched. An important finding of this thesis is, for example, that there is more hydropower potential than previously assumed. Although hydropower is the oldest renewable energy source, it was not yet known how much is available worldwide. Other findings concern the significant contribution of households and the impact of climate change on renewable energy supply that have not been investigated at this detail level before

Short Circuiting Policy Best (Buildings Energy and Sol

A comprehensive and up-to-date analysis of the climate-energy-water nexus for advanced students, researchers and policymakers in environmental policy and science.

Climate, Energy and Water Oxford University Press

The climate of our planet is changing at a rate unprecedented in recent human history. The energy absorbed from the sun exceeds what is returned to

space. The planet as a whole is gaining energy. The heat content of the ocean is increasing; the surface and atmosphere are warming; mid-latitude glaciers are melting; sea level is rising. The Arctic Ocean is losing its ice cover. None of these assertions are based on theory but on hard scientific fact. Given the science-heavy nature of climate change, debates and discussions have not played as big a role in the public sphere as they should, and instead are relegated to often misinformed political discussions and inaccessible scientific conferences. Michael B. McElroy, an eminent Harvard scholar of environmental studies, combines both his research chops and pedagogical expertise to present a book that will appeal to the lay reader but still be grounded in scientific fact. In Energy and Climate: Vision for the Future, McElroy provides a broad and comprehensive introduction to the issue of energy and climate change intended to be accessible for the general reader. The book includes chapters on energy basics, a discussion of the contemporary energy systems of the US and China, and two chapters that engage the debate regarding climate change. The perspective is global but with a specific focus on the US and China recognizing the critical role these countries must play in

addressing the challenge of global climate change. The book concludes with a discussion of initiatives now underway to at least reduce the rate of increase of greenhouse gas emissions, together with a vision for a low carbon energy future that could in principle minimize the long-term impact of energy systems on global climate.

Energy and Climate Policies in China and India Bloomsbury Publishing USA

A Wall Street Journal besteller and a USA Today Best Book of 2020 Named Energy Writer of the Year for The New Map by the American Energy Society “A master class on how the world works.” —NPR Pulitzer Prize-winning author and global energy expert, Daniel Yergin offers a revelatory new account of how energy revolutions, climate battles, and geopolitics are mapping our future The world is being shaken by the collision of energy, climate change, and the clashing power of nations in a time of global crisis. Out of this tumult is emerging a new map of energy and geopolitics. The “shale revolution” in oil and gas has transformed the American economy, ending the “era of shortage” but introducing a turbulent new era. Almost overnight, the United States has become the world's number one energy powerhouse. Yet concern about energy's role in climate change is challenging

the global economy and way of life, accelerating a second energy revolution in the search for a low-carbon future. All of this has been made starker and more urgent by the coronavirus pandemic and the economic dark age that it has wrought. World politics is being upended, as a new cold war develops between the United States and China, and the rivalry grows more dangerous with Russia, which is pivoting east toward Beijing. Vladimir Putin and China's Xi Jinping are converging both on energy and on challenging American leadership, as China projects its power and influence in all directions. The South China Sea, claimed by China and the world's most critical trade route, could become the arena where the United States and China directly collide. The map of the Middle East, which was laid down after World War I, is being challenged by jihadists, revolutionary Iran, ethnic and religious clashes, and restive populations. But the region has also been shocked by the two recent oil price collapses--and by the very question of oil's future in the rest of this century. A master storyteller and global energy expert, Daniel Yergin takes the reader on an utterly riveting and timely journey across the world's new map. He illuminates the great energy and geopolitical questions in an era of rising political turbulence and

points to the profound challenges that lie ahead.

Survival Governance

Springer

With the general reader in mind, Clean Energy, Climate and Carbon outlines the global challenge of decreasing greenhouse gas emissions. It covers the changing concentration of atmospheric carbon dioxide through time and its causes, before considering the promise and the limitations of a wide range of energy technologies for decreasing carbon dioxide emissions. Despite the need to decrease carbon dioxide, the fact is that the global use of fossil fuels is increasing and is likely to continue to do so for some decades to come. With this in mind, the book considers in detail, what for many people is the unfamiliar clean energy technology of carbon capture and storage (CCS). How can we capture carbon dioxide from flue gases? How do we transport it? How do we store it in suitable rocks? What are suitable rocks and where do we find them? How do we know the carbon dioxide will remain trapped once it is injected underground? What does CCS cost and how do those costs compare with other technology options? The book also explores the political environment in which the discussion on clean energy technology options is occurring. What will a price on carbon do for

technology uptake and what are the prospects of cutting our emissions by 2020 and of making even deeper cuts by 2050? What will the technology mix look like by that time? For people who are concerned about climate change, or who want to learn more about clean energy technologies, including CCS, this is the definitive view of the opportunities and the challenges we face in decreasing emissions despite a seemingly inexorable global increase in energy demand.

Clean Energy, Climate and Carbon W. W. Norton & Company

'Energy and Climate Change' provides an introduction to the subject examining the relationship between energy and our global environment. The book covers the fundamentals of the subject, discussing what energy is, why it is important, as well as the detrimental effect on the environment following our use of energy.

The Role of Renewable Energy in Long-term Energy and Climate Scenarios Springer

Explores the shaping of China and India's energy and climate policies by two-level pressures characterized as wealth, status and asymmetrical interdependence.

Energy and Climate in the Urban Built Environment Springer

Renewable energy is rising within an energy system dominated by powerful vested energy interests in fossil fuels,

nuclear and electric utilities. Analyzing renewables in six very different countries, the author argues that it is the extent to which states have controlled these vested interests that determines the success or failure of renewables.

Renewable Energy and Climate Change
Penguin
Elegant, novel explanation of climate change, emphasizing physical understanding and concepts, while avoiding complex mathematics, supported by excellent color illustrations.