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**Handbook of Clean Energy Systems, 6 Volume Set** Wiley The Handbook of Clean Energy Systems brings together an international team of experts to present a comprehensive overview of the latest research, developments and practical applications throughout all areas of clean energy systems. Consolidating information which is currently scattered across a wide variety of literature sources, the handbook covers a broad range of topics in this interdisciplinary research field including both fossil and renewable energy systems. The development of intelligent energy systems for efficient energy processes and mitigation technologies for the reduction of environmental pollutants is explored in depth, and environmental, social and economic impacts are also addressed. Topics covered include: Volume 1 - Renewable Energy: Biomass resources and biofuel production; Bioenergy Utilization; Solar Energy; Wind Energy; Geothermal Energy; Tidal Energy. Volume 2 - Clean Energy Conversion Technologies: Steam/Vapor Power Generation; Gas Turbines Power Generation; Reciprocating Engines; Fuel Cells; Cogeneration and Polygeneration. Volume 3 - Mitigation Technologies: Carbon Capture; Negative Emissions System; Carbon Transportation; Carbon Storage; Emission Mitigation Technologies; Efficiency Improvements and Waste Management; Waste to Energy. Volume 4 - Intelligent Energy Systems: Future Electricity Markets; Diagnostic and Control of Energy Systems; New Electric Transmission Systems; Smart Grid and Modern Electrical Systems; Energy Efficiency of Municipal Energy Systems; Energy Efficiency of Industrial Energy Systems; Consumer Behaviors; Load Control and Management; Electric Car and Hybrid Car; Energy Efficiency Improvement. Volume 5 - Energy Storage: Thermal Energy Storage; Chemical Storage; Mechanical Storage; Electrochemical Storage; Integrated Storage Systems. Volume 6 - Sustainability of Energy Systems: Sustainability Indicators, Evaluation Criteria, and Reporting; Regulation and Policy; Finance and Investment; Emission Trading; Modeling and Analysis of Energy Systems; Energy vs. Development; Low Carbon Economy; Energy Efficiencies and Emission Reduction. Key features: Comprising over 3,500 pages in 6 volumes, HCES presents a comprehensive overview of the latest research, developments and practical applications throughout all areas of clean energy systems, consolidating a wealth of information which is currently scattered across a wide variety of literature sources. In addition to renewable energy systems, HCES also covers processes for the efficient and clean conversion of traditional fuels such as coal, oil and gas, energy storage systems, mitigation technologies for the reduction of environmental pollutants, and the development of intelligent energy systems. Environmental, social and economic impacts of energy systems are also addressed in depth. Published in full colour throughout. Fully indexed with cross referencing within and between all six volumes. Edited by leading researchers from academia and industry who are internationally renowned and active in their respective fields. Published in print and online. The online version is a single publication (i.e. no updates), available for one-time purchase or through annual subscription. Handbook of Clean Energy Systems, 6 Volume Set Wiley The Handbook of Clean Energy Systems brings together an international team of experts to present a comprehensive overview of the latest research, developments and practical applications throughout all areas of clean energy systems. 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Transportation; Carbon Storage; Emission Mitigation Technologies; Efficiency Improvements and Waste Management; Waste to Energy. Volume 4 - Intelligent Energy Systems: Future Electricity Markets; Diagnostic and Control of Energy Systems; New Electric Transmission Systems; Smart Grid and Modern Electrical Systems; Energy Efficiency of Municipal Energy Systems; Energy Efficiency of Industrial Energy Systems; Consumer Behaviors; Load Control and Management; Electric Car and Hybrid Car; Energy Efficiency Improvement. Volume 5 - Energy Storage: Thermal Energy Storage; Chemical Storage; Mechanical Storage; Electrochemical Storage; Integrated Storage Systems. Volume 6 - Sustainability of Energy Systems: Sustainability Indicators, Evaluation Criteria, and Reporting; Regulation and Policy; Finance and Investment; Emission Trading; Modeling and Analysis of Energy Systems; Energy vs. Development; Low Carbon Economy; Energy Efficiencies and Emission Reduction. Key features: Comprising over 3,500 pages in 6 volumes, HCES presents a comprehensive overview of the latest research, developments and practical applications throughout all areas of clean energy systems, consolidating a wealth of information which is currently scattered across a wide variety of literature sources. In addition to renewable energy systems, HCES also covers processes for the efficient and clean conversion of traditional fuels such as coal, oil and gas, energy storage systems, mitigation technologies for the reduction of environmental pollutants, and the development of intelligent energy systems. Environmental, social and economic impacts of energy systems are also addressed in depth. Published in full colour throughout. Fully indexed with cross referencing within and between all six volumes. Edited by leading researchers from academia and industry who are internationally renowned and active in their respective fields. Published in print and online. The online version is a single publication (i.e. no updates), available for one-time purchase or through annual subscription.

**Symmetry in Renewable Energy and Power Systems** [MDPI](#) This book includes original research papers related to renewable energy and power systems in which theoretical or practical issues of symmetry are considered. The book includes contributions on voltage stability analysis in DC networks, optimal dispatch of islanded microgrid systems, reactive power compensation, direct power compensation, optimal location and sizing of photovoltaic sources in DC networks, layout of parabolic trough solar collectors, topologic analysis of high-voltage transmission grids, geometric algebra and power systems, filter design for harmonic current compensation. The contributions included in this book describe the state of the art in this field and shed light on the possibilities that the study of symmetry has in power grids and renewable energy systems. **Understanding Risks and Uncertainties in Energy and Climate Policy** [Multidisciplinary Methods and Tools for a Low Carbon Society Springer](#) This open access book analyzes and seeks to consolidate the use of robust quantitative tools and qualitative methods for the design and assessment of energy and climate policies. In particular, it examines energy and climate policy performance and associated risks, as well as public acceptance and portfolio analysis in climate policy, and presents methods for evaluating the costs and benefits of flexible policy implementation as well as new framings for business and market actors. In turn, it discusses the development of alternative policy pathways and the identification of optimal switching points, drawing on concrete examples to do so. Lastly, it discusses climate change mitigation policies' implications for the agricultural, food, building, transportation, service and manufacturing sectors. **Materials and Processes for CO<sub>2</sub> Capture, Conversion, and Sequestration** [John Wiley & Sons](#) Addresses materials, technology, and products that could help solve the global environmental crisis once commercialized. This multidisciplinary book encompasses state-of-the-art research on the topics of Carbon Capture and Storage (CCS), and complements existing CCS technique publications with the newest research and reviews. It discusses key challenges involved in the CCS materials design, processing, and modeling and provides in-depth coverage of solvent-based carbon capture, sorbent-based carbon capture, membrane-based carbon capture, novel carbon capture methods, computational modeling, carbon capture materials including metal organic frameworks (MOF), electrochemical capture and conversion, membranes and solvents, and geological sequestration. **Materials and Processes for CO<sub>2</sub> Capture, Conversion and Sequestration** offers chapters on: Carbon Capture in Metal-Organic Frameworks; Metal Organic Frameworks Materials for Post-Combustion CO<sub>2</sub> Capture; New Progress of Microporous Metal-Organic Frameworks in CO<sub>2</sub> Capture and Separation; In Situ Diffraction Studies of Selected Metal-Organic Framework (MOF) Materials for Guest Capture Applications; Electrochemical CO<sub>2</sub> Capture and Conversion; Electrochemical Valorization of Carbon Dioxide in Molten Salts; Microstructural and Structural Characterization of Materials for CO<sub>2</sub> Storage using Multi-Scale X-Ray Scattering Methods; Contribution of Density Functional Theory to Microporous Materials for Carbon Capture; and Computational Modeling Study of MnO<sub>2</sub> Octahedral Molecular Sieves for Carbon Dioxide Capture Applications. Addresses one of the most pressing concerns of society—that of environmental damage caused by the greenhouse gases emitted as we use fossil fuels. Covers cutting-edge capture technology with a focus on materials and technology rather than regulation and cost. Highlights the common and novel CCS materials that are of greatest interest to industrial researchers. Provides insight into CCS materials design, processing characterization, and computer modeling. **Materials and Processes for CO<sub>2</sub> Capture, Conversion and Sequestration** is ideal for materials scientists and engineers, energy scientists and engineers, inorganic chemists, environmental scientists, pollution control scientists, and carbon chemists. **Transition to Renewable Energy Systems** [John Wiley & Sons](#) In this ready reference, top academic researchers, industry players and government officers join forces to develop commercial concepts for the transition from current nuclear or fossil fuel-based energy to renewable energy systems within a limited time span. They take into account the latest science and technology, including an analysis of the feasibility and impact on the environment, economy and society. In so doing, they discuss such complex topics as electrical and gas grids, fossil power plants and energy storage technologies. The contributions also include robust, conceivable and breakthrough technologies that will be viable and implementable by 2020. **RENEWABLE ENERGY SYSTEMS AND DESALINATION - Volume I** **Renewable Energy Systems and Desalination** is a component of *Encyclopedia of Water Sciences, Engineering and Technology Resources in the global Encyclopedia of Life Support Systems (EOLSS)*, which is an integrated compendium of twenty one Encyclopedias. The two volumes present state-of-the art subject matter of various aspects of Renewable Energy Systems and Desalination such as: A Short Historical Review Of Renewable Energy; Renewable Energy Resources; Desalination With Renewable Energy - A Review; Renewable Energy And Desalination Systems; Why Use Renewable Energy For Desalination; Thermal Energy Storage; Electrical Energy Storage; Tidal Energy; Desalination Using Tidal Energy; Wave Energy; Availability Of Wind Energy And Its Estimation; The Use Of Geothermal Energy In Desalination; Solar Radiation Energy (Fundamentals); High Temperature Solar Concentrators; Medium Temperature Solar Concentrators (Parabolic-Troughs Collectors); Low Temperature Solar Collectors; Solar Photovoltaic Energy Conversion; Photovoltaics; Flat-Plate Collectors; Large Active Solar Systems: Load; Integration Of Solar Pond With Water Desalination; Large Active Solar Systems: Typical Economic Analysis; Evacuated Tube Collectors; Parabolic Trough Collectors; Central Receivers; Configuration, Theoretical Analysis And Performance Of Simple Solar Stills; Development In Simple Solar Stills; Multi-Effect Solar Stills; Materials For Construction Of Solar Stills; Reverse Osmosis By Solar Energy; Solar Distillation; Solar Photochemistry; Photochemical Conversion Of Solar Energy; Availability Of Solar Radiation And Its Estimation; Economics Of Small Solar-Assisted Multipleeffect Seawater Distillation Plants; A Solar-Assisted Sea Water Multiple Effect Distillation Plant 15 Years Of Operating Performance (1985-1999); Mathematical Simulation Of A Solar Desalination Plant; Mathematical Models Of Solar Energy Conversion Systems; Multiple Effect Distillation Of Seawater Using Solar Energy - The Case Of Abu Dhabi Solar Desalination Plant; Solar Irradiation Fundamentals; Water Desalination By Humidification And Dehumidification Of Air, Seawater Greenhouse Process. These volumes are aimed at the following five major target audiences: University and College Students Educators, Professional Practitioners, Research Personnel and Policy and Decision Makers. **Electric Renewable Energy Systems** [Academic Press](#) This derivative volume stemming from content included in our seminal *Power Electronics Handbook* takes its chapters related to renewables and establishes them at the core of a new volume dedicated to the increasingly pivotal and as yet under-published intersection of Power Electronics and Alternative Energy. While this re-versioning provides a corollary revenue stream to better leverage our core handbook asset, it does more than simply re-package existing content. Each chapter will be significantly updated and expanded by more than 50%, and all new introductory and summary chapters will be added to contextualize and tie the volume together. Therefore, unlike traditional derivative volumes, we will be able to offer new and updated material to the market and include this largely original content in our ScienceDirect Energy collection. Due to the inherently multi-disciplinary nature of renewables, many engineers come from backgrounds in Physics, Materials, or Chemical Engineering, and therefore do not have experience working in-depth with electronics. As more and more alternative and distributed energy systems require grid hook-ups and on-site storage, a working knowledge of batteries, inverters and other power electronics components becomes requisite. Further, as renewables enjoy broadening commercial implementation, power electronics professionals are interested to learn of the challenges and strategies particular to applications in alternative energy. This book will bring each group up-to-speed with the primary issues of importance at this technological node. This content clarifies the juncture of two key coverage areas for our Energy portfolio: alternative sources and power systems. It serves to bridge the information in our power engineering and renewable energy lists, supporting the growing grid cluster in the former and adding key information on practical implementation to the latter. Provides a thorough overview of the key technologies, methods and challenges for implementing power electronics in alternative energy systems for optimal power generation. Includes hard-to-find information on how to apply converters, inverters, batteries, controllers and more for stand-alone and grid-connected systems. Covers wind and solar applications, as well as ocean and geothermal energy, hybrid systems and fuel cells. **Green Energy Materials Handbook** [CRC Press](#) *Green Energy Materials Handbook* gives a systematic review of the development of reliable, low-cost, and high-performance green energy materials, covering mainstream computational and experimental studies as well as comprehensive literature on green energy materials, computational methods, experimental fabrication and characterization techniques, and recent progress in the field. This work presents complete experimental measurements and computational results as well as potential applications. Among green technologies, electrochemical and energy storage technologies are considered as the most practicable, environmentally friendly, and workable to make full use of renewable energy sources. This text includes 11 chapters on the field, devoted to 4 important topical areas: computational material design, energy conversion, ion transport, and electrode materials. This handbook is aimed at engineers, researchers, and those who work in the fields of materials science, chemistry, and physics. The systematic studies proposed in this book can greatly promote the basic and applied sciences. **Handbook of Research on Solar Energy Systems and Technologies** [IGI Global](#) The last ten years have seen rapid advances in nanoscience and nanotechnology, allowing unprecedented manipulation of the nanoscale structures controlling solar capture, conversion, and storage. Filled with cutting-edge solar energy research and reference materials, the *Handbook of Research on Solar Energy Systems and Technologies* serves as a one-stop resource for the latest information regarding different topical areas within solar energy. This handbook will emphasize the application of nanotechnology innovations to solar energy technologies, explore current and future developments in third generation solar cells, and provide a detailed economic analysis of solar energy applications. **Handbook of Energy Efficiency in Buildings A Life Cycle Approach** [Butterworth-Heinemann](#) *Handbook of Energy Efficiency in Buildings: A Life Cycle Approach* offers a comprehensive and in-depth coverage of the subject with a further focus on the Life Cycle. The editors, renowned academics, invited a diverse group of researchers to develop original chapters for the book and managed to well integrate all contributions in a consistent volume. Sections cover the role of the building sector on energy consumption and greenhouse gas emissions, international technical standards, laws and regulations, building energy efficiency and zero energy consumption buildings, the life cycle assessment of buildings, from construction to decommissioning, and other timely topics. The multidisciplinary approach to the subject makes it valuable for researchers and industry based Civil, Construction, and Architectural Engineers. Researchers in related fields as built environment, energy and sustainability at an urban scale will also benefit from the books integrated perspective. Presents a complete and thorough coverage of energy efficiency in buildings. Provides an integrated approach to all the different elements that impact energy efficiency. Contains coverage of worldwide regulation. **SOLAR ENERGY CONVERSION AND PHOTOENERGY SYSTEMS: Thermal Systems and Desalination Plants-Volume III** [EOLSS Publications](#) *Solar Energy Conversion and Photoenergy Systems: Thermal Systems and Desalination Plants* theme in five volumes is a component of *Encyclopedia of Energy Sciences, Engineering and Technology Resources in the global Encyclopedia of Life Support Systems (EOLSS)*, which is an integrated compendium of twenty one Encyclopedias. The Theme on Solar Energy Conversion and Photoenergy Systems: Thermal Systems and Desalination Plants with contributions from distinguished experts in the field, discusses solar energy, renewable energy, thermal systems, and desalination systems, some of which are already in commercial and practical applications and others are under research and testing level. The volumes provide an analysis and discussion about the reasons behind the current efforts of our society, considering both developed and developing countries, to accelerate the exploitation of the huge solar energy potential in our normal daily lives. The five volumes also provide some basic information about the solar energy potential, history and the amazing trip of a photon from its creation

in the Sun until its arrival to the Earth. These five volumes are aimed at the following five major target audiences: University and College Students Educators, Professional Practitioners, Research Personnel and Policy Analysts, Managers, and Decision Makers, NGOs and GOs. Energy Research Abstracts Power Electronics in Renewable Energy Systems and Smart Grid Technology and Applications [John Wiley & Sons](#) This book is an advanced approach to power electronics specifically in terms of renewable energy systems and smart grid. The fourteen chapters are updated and extended versions of the invited papers in the Proc. IEEE special issue of November 2017, contributed by a group of invited authors who are international authorities in their field. The application-oriented chapters are tutorial oriented, with technology status review. The book also includes examples of applications and discussions of future perspectives. RENEWABLE ENERGY SYSTEMS AND DESALINATION - Volume III [EOLSS Publications](#) Renewable Energy Systems and Desalination is a component of Encyclopedia of Water Sciences, Engineering and Technology Resources in the global Encyclopedia of Life Support Systems (EOLSS), which is an integrated compendium of twenty one Encyclopedias. 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These volumes are aimed at the following five major target audiences: University and College Students Educators, Professional Practitioners, Research Personnel and Policy and Decision Makers Smart Grid Handbook, 3 Volume Set [John Wiley & Sons](#) Comprehensive, cross-disciplinary coverage of Smart Grid issues from global expert researchers and practitioners. This definitive reference meets the need for a large scale, high quality work reference in Smart Grid engineering which is pivotal in the development of a low-carbon energy infrastructure. Including a total of 83 articles across 3 volumes The Smart Grid Handbook is organized in to 6 sections: Vision and Drivers, Transmission, Distribution, Smart Meters and Customers, Information and Communications Technology, and Socio-Economic Issues. Key features: Written by a team representing smart grid R&D, technology deployment, standards, industry practice, and socio-economic aspects. Vision and Drivers covers the vision, definitions, evolution, and global development of the smart grid as well as new technologies and standards. The Transmission section discusses industry practice, operational experience, standards, cyber security, and grid codes. The Distribution section introduces distribution systems and the system configurations in different countries and different load areas served by the grid. The Smart Meters and Customers section assesses how smart meters enable the customers to interact with the power grid. Socio-economic issues and information and communications technology requirements are covered in dedicated articles.The Smart Grid Handbook will meet the need for a high quality reference work to support advanced study and research in the field of electrical power generation, transmission and distribution. It will be an essential reference for regulators and government officials, testing laboratories and certification organizations, and engineers and researchers in Smart Grid-related industries. Handbook of Research on Renewable Energy and Electric Resources for Sustainable Rural Development [IGI Global](#) To maintain a healthy ecosystem for contemporary society and for future generations, policies must be implemented to protect the environment. This can be achieved by consistent evaluation of new initiatives and strategies. The Handbook of Research on Renewable Energy and Electric Resources for Sustainable Rural Development is a critical scholarly resource that examines efficient use of electric resources and renewable energy sources which have a positive impact on sustainable development. Featuring coverage on cogeneration thermal modules, photovoltaic (pv) solar, and renewable energy systems (RES) application practices, this publication is geared towards academics, practitioners, professionals, and upper-level students interested in the latest research on renewable energy and electric resources for sustainable rural development. Power Conversion of Renewable Energy Systems [Springer Science & Business Media](#) Power Conversion of Renewable Energy Systems presents an introduction to conventional energy conversion components and systems, as well as those related to renewable energy. This volume introduces systems first, and then in subsequent chapters describes the components of energy systems in detail. Readers will find examples of renewable and conventional energy and power systems, including energy conversion, variable-speed drives and power electronics, in addition to magnetic devices such as transformers and rotating machines. Applications of PSpice, MATLAB, and Mathematica are also included, along with solutions to over 100 application examples. Power Conversion of Renewable Energy Systems aims to instruct readers how to actively apply the theories discussed within. It would be an ideal volume for researchers, students and engineers working with energy systems and renewable energy. Scientific and Technical Aerospace Reports 100% Clean, Renewable Energy and Storage for Everything [Cambridge University Press](#) Textbook on the science and methods behind a global transition to 100% clean, renewable energy for science, engineering, and social science students. Advances in Building Energy Research [Earthscan](#) 'Several high quality scientific journals are published in the area of building energy and indoor/outdoor environment; however, one has been missing. Advances in Building Energy Research fills the gap. I recommend ABER to all technical libraries, research institutes and universities. It should also be used by construction companies and those manufacturing building materials and building products.'Professor Olli Seppänen, President of REHVA (Federation of Heating and Air-conditioning Associations)'Advances in Building Energy Research is a unique index. It will be an inexhaustible resource for energy related sciences and a continuous inspiration for architects around the world.'N. Fintikakis, Architect and Director of UIA-ARES WP (Architecture and Renewable Energy Sources)'The collection of articles provides an encyclopaedic overview of the state of the art of the subject; and they are written clearly and concisely. This volume is a must for researchers and advanced students.'Professor Edward Ng, Department of Architecture, The Chinese University of Hong Kong'This is a very valuable first volume of a new series with each section written by leaders in their respective fields. Contributions cover a range of related topics and present evaluations of contemporary issues in building energy research that give the reader an immediate and clear insight.' Dr Adrian Pitts, Senior Lecturer in Energy, Environment and Sustainability, University of SheffieldAdvances in Building Energy Research (ABER) offers state-of-the-art information on the environmental science and performance of buildings, linking new technologies and methodologies with the latest research on systems, simulations and standards. As stringently reviewed as a journal but with the breadth of a book, this annual volume brings together invited contributions from the foremost international experts on energy efficiency and environmental quality of buildings. Spanning a broad range of technical subjects, this is a 'must have' reference on global developments in the field, suitable for architects and building engineers, environmental engineers, industry professionals, students, teachers and researchers in building science, technical libraries and laboratories.This first volume covers double skin facades; artificial intelligence in buildings; indoor thermal comfort and the progress of the adaptive approach; heat island research and the effect of urban microclimate; the use of techniques such as high dynamic range imaging and satellite remote sensing; and vital management and monitoring approaches such as post-occupancy evaluation. Handbook Of Renewable Energy Technology [World Scientific](#) Effects of environmental, economic, social, political and technical factors have led to the rapid deployment of various sources of renewable energy-based power generation. The incorporation of these generation technologies have led to the development of a broad array of new methods and tools to integrate this new form of generation into the power system network. This book, arranged into six sections, highlights various renewable energy based generation technologies, and consists a series of papers written by experts in their respective fields of specialization.The Handbook of Renewable Energy Technology will be of great practical benefit to professionals, scientists and researchers in the relevant industries, and will be of interest to those of the general public wanting to know more about renewable energy technologies. Optimum Utilization of Renewable Energy for Electrification of Small Islands in Developing Countries [kassel university press GmbH](#) Handbook on Battery Energy Storage System [Asian Development Bank](#) This handbook serves as a guide to deploying battery energy storage technologies, specifically for distributed energy resources and flexibility resources. Battery energy storage technology is the most promising, rapidly developed technology as it provides higher efficiency and ease of control. With energy transition through decarbonization and decentralization, energy storage plays a significant role to enhance grid efficiency by alleviating volatility from demand and supply. Energy storage also contributes to the grid integration of renewable energy and promotion of microgrid. Energy: a Continuing Bibliography with Indexes Future of solar photovoltaic [International Renewable Energy Agency \(IRENA\)](#) This study presents options to fully unlock the world's vast solar PV potential over the period until 2050. It builds on IRENA's global roadmap to scale up renewables and meet climate goals. Solar Energy Update Carbon Dioxide Capture and Storage Special Report of the Intergovernmental Panel on Climate Change [Cambridge University Press](#) IPCC Report on sources, capture, transport, and storage of CO<sub>2</sub>, for researchers, policy-makers and engineers. Area Studies (Regional Sustainable Development Review): Canada and USA - Volume II [EOLSS Publications](#) Area Studies - Regional Sustainable Development Review: Canada and USA theme is a component of Encyclopedia of Area Studies - Regional Sustainable Development Review in the global Encyclopedia of Life Support Systems (EOLSS), which is an integrated compendium of twenty one Encyclopedias. This theme on Area Studies - Regional Sustainable Development Review: Canada and USA reviews, in two volumes, initiatives and activities towards sustainable development in Canada and USA such as: International Cooperation in Sustainable Development; Canada and USA: Demographic Dynamics and Sustainability; Promotion and Protection of Human Health in the Context of Sustainable Development; Integration of Environment and Development in Decision Making; Protection of the Atmosphere, with Particular Reference to North America; Deforestation in North America; Protection of Fresh Water Resources - Canada and the United States of America; Hazardous Waste Management; Safe and Environmentally Sound Management of Radioactive Wastes in Canada and the USA; Global Action for Women Towards Sustainable and Equitable Development: A Canada-US Perspective; Children, Youth and Sustainable Development; Strengthening the Role of Indigenous People and Their Communities in the Context of Sustainable Development; Strengthening the Role of NGOs; Local Authorities Initiatives in Support of Agenda 21 - Canada and USA; Strengthening the Role of Workers and Their Trade Unions; Technology Transfer and Sustainable Development; Collaboration for Sustainable Innovation; Information for Decision Making in Sustainable Development; Climate Change and Sustainable Development Canada. Although these presentations are with specific reference to Canada and USA, they provide potentially useful lessons for other regions as well. These two volumes are aimed at the following five major target audiences: University and College Students Educators, Professional Practitioners, Research Personnel and Policy Analysts, Managers, and Decision Makers, NGOs and GOs. Energy Abstracts for Policy Analysis Research Anthology on Clean Energy Management and Solutions [Engineering Science Reference](#) Energy usage and consumption continue to rise globally each year, with the most efficient and cost-effective energy sources causing huge impacts to the environment. In an effort to mitigate harmful effects to the environment, implementing clean energy resources and utilizing green energy management strategies have become worldwide initiatives, with many countries from all regions quickly becoming leaders in renewable energy usage. Still, not every energy resource is without flaws. Researchers must develop effective and low-cost strategies for clean energy in order to find the balance between production and consumption. The Research Anthology on Clean Energy Management and Solutions provides in-depth research that explores strategies and techniques used in the energy production field to optimize energy efficiency in order to maintain clean and safe use while delivering ample energy coverage. The anthology also seeks solutions to energy that have not yet been optimized or are still produced in a way that is harmful to the environment. Covering topics such as hydrogen fuel cells, renewable energy, solar power, solar systems, cost savings, and climate protection, this text is essential for electrical engineers, nuclear engineers, environmentalists, managers, policymakers, government officials, professionals in the energy industry, researchers, academicians, and students looking for the latest research on clean energy management. Recycling of Lithium-Ion Batteries The LithoRec Way [Springer](#) This book addresses recycling technologies for many of the valuable and scarce materials

from spent lithium-ion batteries. A successful transition to electric mobility will result in large volumes of these. The book discusses engineering issues in the entire process chain from disassembly over mechanical conditioning to chemical treatment. A framework for environmental and economic evaluation is presented and recommendations for researchers as well as for potential operators are derived. **Integrated Gasification Combined Cycle (IGCC) Technologies** [Woodhead Publishing](#) Integrated Gasification Combined Cycle (IGCC) Technologies discusses this innovative power generation technology that combines modern coal gasification technology with both gas turbine and steam turbine power generation, an important emerging technology which has the potential to significantly improve the efficiencies and emissions of coal power plants. The advantages of this technology over conventional pulverized coal power plants include fuel flexibility, greater efficiencies, and very low pollutant emissions. The book reviews the current status and future developments of key technologies involved in IGCC plants and how they can be integrated to maximize efficiency and reduce the cost of electricity generation in a carbon-constrained world. The first part of this book introduces the principles of IGCC systems and the fuel types for use in IGCC systems. The second part covers syngas production within IGCC systems. The third part looks at syngas cleaning, the separation of CO<sub>2</sub> and hydrogen enrichment, with final sections describing the gas turbine combined cycle and presenting several case studies of existing IGCC plants. Provides an in-depth, multi-contributor overview of integrated gasification combined cycle technologies **Reviews the current status and future developments of key technologies involved in IGCC plants** Provides several case studies of existing IGCC plants around the world **Transforming Energy Systems Economics, Policies and Change** [Edward Elgar Publishing](#) Recognizing the urgent need to transform energy systems to low-carbon alternatives, this timely book offers evidenced and credible ways to accelerate actions towards meeting the Paris Agreement goals and achieving net zero emissions. Steven Fries analyses through the lens of government, business and household actions their policies and investments the systemic changes needed to eliminate net carbon dioxide emissions from energy. **ASHRAE Handbook** [Routledge](#) Handbook of Energy Democracy [Routledge](#) This handbook offers a comprehensive transdisciplinary examination of the research and practices that constitute the emerging research agenda in energy democracy. With protests over fossil fuels and controversies over nuclear and renewable energy technologies, democratic ideals have contributed to an emerging social movement. Energy democracy captures this movement and addresses the issues of energy access, ownership, and participation at a time when there are expanding social, political, environmental, and economic demands on energy systems. This volume defines energy democracy as both a social movement and an academic area of study and examines it through a social science and humanities lens, explaining key concepts and reflecting state-of-the-art research. The collection is comprised of six parts: 1 Scalar Dimensions of Power and Governance in Energy Democracy 2 Discourses of Energy Democracy 3 Grassroots and Critical Modes of Action 4 Democratic and Participatory Principles 5 Energy Resource Tensions 6 Energy Democracies in Practice The vision of this handbook is explicitly transdisciplinary and global, including contributions from interdisciplinary international scholars and practitioners. The **Routledge Handbook of Energy Democracy** will be the premier source for all students and researchers interested in the field of energy, including policy, politics, transitions, access, justice, and public participation. **Cases on Green Energy and Sustainable Development** [IGI Global](#) Despite the urgent need for action, there is a widespread lack of understanding of the benefits of using green energy sources for not only reducing carbon emissions and climate change, but also for growing a sustainable economy and society. Future citizens of the world face increasing sustainability issues and need to be better prepared for energy transformation and sustainable future economic development. **Cases on Green Energy and Sustainable Development** is a critical research book that focuses on the important role renewable energy and energy efficiency play in energy transition and sustainable development and covers economic and promotion policies of major renewable energy and energy-efficiency technologies. Highlighting a wide range of topics such as economics, energy storage, and transportation technologies, this book is ideal for environmentalists, academicians, researchers, engineers, policymakers, and students.