Solar Energy Asset Management

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Engineering Asset Management and Infrastructure Sustainability
Promoting Sustainable Practices through Energy Engineering and Asset Management
Life-Cycle of Engineering Systems: Emphasis on Sustainable Civil Infrastructure
Electric Grid Modernization
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Fundamentals of Grid-Tied Solar Park
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Renewable Energy Finance
Effective Cybersecurity Operations for Enterprise-Wide Systems
The Economics of Microgrids
Sustainable Energy Investment
The Real Estate Solar Investment Handbook
Energy Production and Management in the 21st century IV
Digitalization of Power Markets and Systems Using Energy Informatics
Advanced Maintenance Modelling for Asset Management
Hydrogen Energy
Clean Energy for Sustainable Development
Integrated Reservoir Asset Management
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Pioneers, Hidden Champions, Changemakers, and Underdogs
Solar Asset Management Software
Grid Parity
Transition Towards 100% Renewable Energy

KARSYN CAROLYN

Knowledge Management and Drivers of Innovation in Services Industries Gulf Professional Publishing
This report presents the financial perspective, or rsquo;dollar view', of the current state of play in sustainable energy development. The analysis in this report consists of actual data on the different types of capital fl ows and their movement over time, combined with analysis of regional and sectoral trends. This information is intended to be a strategic tool for understanding the status of the clean energy sector's development and for weighing future public and private commitments to the sector.
Internet of Things & Internet of Energy UNEP/Earthprint

Cybersecurity, or information technology security (I/T security), is the protection of computer systems and networks from information disclosure; theft of or damage to their hardware, software, or electronic data; as well as from the disruption or misdirection of the services they provide. The field is becoming increasingly critical due to the continuously expanding reliance on computer systems, the internet, wireless network standards such as Bluetooth and Wi-Fi, and the growth of "smart" devices, which constitute the internet of things (IoT). Cybersecurity is also one of the significant challenges in the contemporary world, due to its complexity, both in terms of political usage and technology. Its primary goal is to ensure the dependability, integrity, and data privacy of enterprise-wide systems in an era of increasing cyberattacks from around the world. Effective Cybersecurity Operations for Enterprise-Wide Systems examines current risks involved in the cybersecurity of various systems today from an enterprise-wide perspective. While there are multiple sources available on cybersecurity, many publications do not include an enterprise-wide perspective of the research. The book provides such a perspective from multiple sources that include investigation into critical business systems such as supply chain management, logistics, ERP, CRM, knowledge management, and others. Covering topics including cybersecurity in international business, risk management, artificial intelligence, social engineering, spyware, decision support systems, encryption, cyber-attacks and breaches, ethical hacking, transaction support systems, phishing, and data privacy, it is designed for educators, IT developers, education professionals, education

administrators, researchers, security analysts, systems engineers, software security engineers, security professionals, policymakers, and students.

Decision Science and Operations Management of Solar Energy Systems Springer

This regional market analysis examines the challenges of economic and population growth, the need to boost energy supply, and growing environmental and energy security concerns.

Engineering Asset Management - Systems, Professional Practices and Certification Springer Nature

Access to power and electricity is a vital resource for businesses and for sustaining the livelihood of consumers. However, producing reliable and renewable energy and distributing it in rural areas can be challenging. Such activities require special technical support measures for organizing a highly efficient and cost-effective production process. Renewable Energy and Power Supply Challenges for Rural Regions provides innovative insights into energy production, consumption, and distribution in rural regions and examines sustainable and renewable power sources. The content within this publication explores such topics as renewable energy, electrical network, and thermal energy storage. It is designed for electricians, policymakers, state officials, professionals, researchers, and academicians.

Servitization and Physical Asset Management IGI Global

What is project finance? What makes project or structured finance so relevant for large renewable energy infrastructure? Which vocabulary do I need to know in order to speak the same language during meetings with lawyers, investors, bankers and engineers? These questions and many more are answered throughout this book, offering real world examples to bridge the gap between theory and practice. The book details the role of each stakeholder in the development of renewable energy projects, the interconnection between all the agreements, the financial process from fundraising to financial close, the processes of due diligence, risk analysis, project investment valuation and much more. It also provides with an introduction to Portfolio Management using renewable energy assets and an explanation of the role of Climate Finance in green energy investments. The commented glossary enables readers to unpick the jargon used in project finance for renewable energy, and the numerous creative figures and comprehensive tables aid with understanding. Offering a complete picture of the discipline, Introduction to Project Finance in Renewable Energy Infrastructure will be of value to professionals, engineers and academics alike interested in understanding the process and components of project finance in renewable energy infrastructures, in both private and public-private contexts.

Infrastructure Asset Management with Power System Applications CRC Press

Ra Power Management (RPM) has developed a cloud based software platform that manages the financial and operational functions of third party financed solar projects throughout their lifecycle. RPM's software streamlines and automates the sales, financing, and management of a portfolio of solar assets. The software helps solar developers automate the most difficult aspects of asset management, leading to increased transparency, efficiency, and reduction in human error. More importantly, our platform will help developers save money by improving their operating margins.

Plunkett's Renewable, Alternative and Hydrogen Energy Industry Almanac 2009 IGI Global

An up to date account of renewable sources of electricity generation and their integration into power systems With the growth in installed capacity of renewable energy (RE) generation, many countries such as the UK are relying on higher levels of RE generation to meet targets for reduced greenhouse gas emissions. In the face of this, the integration issue is now of increasing concern, in particular to system operators. This updated text describes the individual renewable technologies and their power generation characteristics alongside an expanded introduction to power systems and the challenges posed by high levels of penetrations from such technologies, together with an account of technologies and changes to system operation that can ease RE integration. Features of this edition: Covers power conditioning, the characteristics of RE generators, with emphasis on their time varying nature, and the use of power electronics in interfacing RE sources to grids Outlines up to date RE integration issues such as power flow in networks supplied from a combination of conventional and renewable energy sources Updated coverage of the economics of power generation and the role of markets in delivering investment in sustainable solutions Considers the challenge of maintaining power balance in a system with increasing RE input, including recent moves toward power system frequency support from RE sources Offers an insightful perspective on the shape of future power systems including offshore networks and demand side management Includes worked examples that enhance this edition’s suitability as a textbook for introductory courses in RE systems technology Firmly established as an essential reference, the Second Edition of Renewable Energy in Power Systems will prove a real asset to engineers and others involved in both the traditional power and fast growing renewables sector. This text should also be of particular benefit to students of electrical power engineering and will additionally appeal to non-specialists through the inclusion of background material covering the basics of electricity generation.

Value Based and Intelligent Asset Management CRC Press

Electrical grids worldwide are experiencing major changes in terms of energy generation, transmission, delivery, and distribution in order to enhance the entire system’s control, reliability, efficiency, and safety. Advanced energy systems and technologies such as renewable sources of energy, energy storage systems, and electric vehicles (EVs) as well as equipment such as sensors, smart meters, and communication devices along with innovations in computing technologies, machine learning, and data analytics are used to modernize the electric grid and the way it is planned, operated, and managed. This book provides an overview of several aspects of grid modernization including micro-grids, smart grids, energy storage, and communication systems.

Renewable Energy and Power Supply Challenges for Rural Regions Academic Press

Organizations in both the commercial and governmental sectors may better manage their assets, enhance their performance, and experiment with new business models thanks to the Intern et of Things. The Internet of Energy has significant potential to aid an ageing population, enhance energy efficiency, and maximise all forms of transportation since it is a critical tool for connecting gadgets and serving as a general facilitator of the hyperconnected society. Cyber-physical systems, cloud computing, big data, and next-generation wireless networks like 5G all interact well with one another. Issues of identity, trust, privacy, security, are key to the establishment of a successful Internet of Energy ecosystem, which in turn depends on an acceptable legislative framework and a climate of trust. This book provides an authoritative and complete introduction to the Internet of Things (IoT) and the Internet of Everything (IoE) for IT networking experts. Target audience consists of readers with some familiarity

with networking who want to learn the fundamentals of IoT and IoE technologies and their practical applications. Therefore, it is expected that readers will be conversant with fundamental networking ideas and terms. Readers could be networking students or professionals in related industries. These professionals may include network operators, administrators, managers, architects, engineers, analysts, consultants, and others

Investing in Solar Stocks: What You Need to Know to Make Money in the Global Renewable Energy Market Solar Asset Management SoftwareRa Power Management (RPM) has developed a cloud based software platform that manages the financial and operational functions of third party financed solar projects throughout their lifecycle. RPM's software streamlines and automates the sales, financing, and management of a portfolio of solar assets. The software helps solar developers automate the most difficult aspects of asset management, leading to increased transparency, efficiency, and reduction in human error. More importantly, our platform will help developers save money by improving their operating margins.Grid Parity

Renewable Energy Finance: Theory and Practice integrates the special characteristics of renewable energy with key elements of project finance. Through a mixture of fundamental analysis and real-life examples, readers learn how renewable energy project finance works in actual deals that mix finance, public policy, legal, engineering and environmental issues. The skills developed in analyzing non-recourse cash flow-based finance are applicable not only to green energy, but also apply more widely in project finance and infrastructure investing. The book's comparisons of developed and developing countries make it valuable to readers worldwide. Presents real world cases in each chapter Includes a companion website that contains renewable energy project finance models and other resources Supports efforts to achieve environmental sustainability through renewable financing projects and cleaner production techniques

Sustainability, Eco-efficiency, and Conservation in Transportation Infrastructure Asset Management Academic Press

This volume contains the papers presented at IALCCE2016, the fifth International Symposium on Life-Cycle Civil Engineering (IALCCE2016), to be held in Delft, The Netherlands, October 16-19, 2016. It consists of a book of extended abstracts and a DVD with full papers including the Fazlur R. Khan lecture, keynote lectures, and technical papers from all over the world. All major aspects of life-cycle engineering are addressed, with special focus on structural damage processes, life-cycle design, inspection, monitoring, assessment, maintenance and rehabilitation, life-cycle cost of structures and infrastructures, life-cycle performance of special structures, and life-cycle oriented computational tools. The aim of the editors is to provide a valuable source for anyone interested in life-cycle of civil infrastructure systems, including students, researchers and practitioners from all areas of engineering and industry.

Optimum Decision Making in Asset Management Routledge

The fundamental motivation of this book is to contribute to the future advancement of Asset Management in the context of industrial plants and infrastructures. The book aims to foster a future perspective that takes advantage of value-based and intelligent asset management in order to make a step forward with respect to the evolution observed nowadays. Indeed, the current understanding of asset management is primarily supported by well-known standards. Nonetheless, asset management is still a young discipline and the knowledge developed by industry and academia is not set in stone yet. Furthermore, current trends in new organizational concepts and technologies lead to an evolutionary path in the field. Therefore, this book aims to discuss this evolutionary path, starting first of all from the consolidated theory, then moving forward to discuss: • The strategic understanding of value-based asset management in a company; • An operational definition of value, as a concept on the background of value-based asset management; • The identification of intelligent asset management, with the aim to frame a set of “tools” recommended to support the asset-related decision-making process over the asset lifecycle; • The emergence of new technologies such as cyber physical systems and digital twins, and the implications of this on asset management.

Public Infrastructure Asset Management, Second Edition Plunkett Research, Ltd.

THE ECONOMICS OF MICROGRIDS An incisive and practical exploration of the engineering economics of microgrids In The Economics of Microgrids, a pair of distinguished researchers delivers an expert discussion of the microeconomic perspectives on microgrids in the context of low-carbon, sustainable energy delivery. In the book, readers will explore an engineering economics framework on the investment decisions and capital expenditure analyses required for an assessment of microgrid projects. The authors also examine economic concepts and models for minimizing microgrid operation costs, including the cost of local generation resources and energy purchases from main grids to supply local loads. The book presents economic models for the expansion of microgrids under load and market price uncertainties, as well as discussions of the economics of resilience in microgrids for optimal operation during outages and power disturbances. Readers will also find: A thorough introduction to the engineering and economics of microgrids Comprehensive explorations of microgrid planning under uncertainty Practical discussions of microgrid expansion planning, operations management, and renewable energy integration Fulsome treatments of asset management and resilience economics in microgrids Perfect for senior undergraduate and graduate students as well as researchers studying power system design, The Economics of Microgrids will also benefit professionals working in the power system industry and government regulators and policymakers with an interest in microgrid technologies and infrastructure.

Renewable Energy in Power Systems McGraw Hill Professional

This book examines the technical, market, and policy innovations for unlocking sustainable investment in the energy sector. While finalizing this book, the COVID-19 pandemic is cutting a devastating swath through the global economy, causing the biggest fall in energy sector investment, exacerbating the global trade finance gap, worsening signs of growing income inequality, and devastating the health and livelihoods of millions. What is the parallel between the COVID-19 pandemic and the climate change crisis? The impacts of the global pandemic are expected to last for a few years, whereas those associated with the climate crisis will play out over several decades with potentially irreversible consequences. However, both show that the cost of inaction or delay in addressing the risks can lead to devastating outcomes or a greater probability of irreversible, catastrophic damages. In the context of sustainable energy investment and the transition to a low-carbon, climate-resilient economy, what ways can financial markets and institutions support net-zero-emission activities and the shift to a sustainable economy, including investment in energy efficiency, low-carbon and renewable

energy technologies? This book provides students, policymakers, and energy investment professionals with the knowledge and theoretical tools necessary to address related questions in sustainable energy investment, risk management, and energy innovation agendas.

Final Report Ra Power Management 1255 10-15-16 FINAL_Public CRC Press

Grid Parity provides an in-depth examination of the knowledge, insights, and techniques that are essential to success in financing renewable energy projects. An energy project finance expert with 35 years of experience in capital asset financing, the author provides a comprehensive overview of how to finance renewable energy projects in America today. He explores all components of "the deal" including tax, accounting, legal, regulatory, documentation, asset management and legislative drivers to this dynamic growth sector. Filled with case studies, the book provides a thorough examination of what it takes to compete in the green-energy marketplace.

Engineering Asset Management and Infrastructure Sustainability Prasun Barua

Infrastructure Asset Management with Power System Applications is about infrastructure asset management, which can be expressed as the combination of management, financial, economic, and engineering, applied to physical assets with the objective of providing the required level of service in the most cost-effective manner. It includes management of the whole lifecycle of a physical asset from design, construction, commission, operation, maintenance, modification, decommissioning, and disposal. It covers budget issues and focuses on asset management of an infrastructure for energy—i.e., the electric power system. Features Offers a comprehensive reference book providing definitions, terminology, and basic theories as well as a comprehensive set of examples from a wide range of applications for the electric power system and its components. Spans a wide range of applications for the electric power system area, including real data and pictures. Contains results from recently published research and application studies. Includes a wide range of application examples for the electric power systems area from hydro, nuclear, and wind, plus shows future trends. Contributes to the overall goals of developing a sustainable energy system by providing methods and tools for a resource efficient use of physical assets in the electric power system area.

Promoting Sustainable Practices through Energy Engineering and Asset Management Academic Press

The future of energy production, operation and management in a changing world is a major global topic. The papers contained in this volume were presented at the 4th International Conference on Energy Production and Management - The Quest for Sustainable Energy and focus on the comparison of conventional energy sources, particularly hydrocarbons, with a number of other ways of producing energy, such as new technological developments based on renewable resources such as solar, hydro, wind and geothermal. A key issue is the conversion of new sustainable sources of energy into useful forms (electricity, heat, fuel), while finding efficient ways of storage and distribution. In many cases the challenges lie as much with production of such renewable energy at an acceptable cost, including damage to the environment, as with integration of those resources into the existing infrastructure. This book features research on the ways in which more efficient use can be made of both conventional and new energy sources. This relates to savings in energy consumption, reduction of energy losses, as well as the implementation of smart devices and the design of intelligent distribution networks. Various topics are covered including: Energy and the city; Energy security; Energy distribution; Energy networks; Processing of oil and gas emissions; Pipelines; Renewable energies; Energy use in building; Tight energy fields; Energy and climate change; Biomass and biofuels; Environmental sustainability; Energy business; LNG.

Life-Cycle of Engineering Systems: Emphasis on Sustainable Civil Infrastructure IGI Global

This book offers a broad overview of asset management processes for different utilities, with a special emphasis on energy and water. It provides readers with important practical considerations concerning the development of new competitive structures and procedures for guaranteeing a sufficient supply of energy and water in a regulated environment, using clearly defined technical and economic cornerstones. On the one hand, asset owners expect suitable interests from their investment and business growth; on the other hand, regulators focus more on a reliable and cost-effective customer supply. This book shows how to take into consideration these different perspectives in the process of designing new structures, and how to guarantee organizational transparency. It describes essential principles and boundary conditions for ensuring the optimal use of resources in a network, covering issues relating to equipment service life, IT landscape and computer programs, operational costs management, and investment and maintenance strategies, highlighting their impact on the organization of the company. This thoroughly revised and updated second edition, includes extensive information about IEC standard (IEC/TS 63060), and cover operation research methods focusing on the optimization of the maintenance tasks. Furthermore, a discussion on the political environment has been included, with a special emphasis on the European situation and the “Green Deal”: specifically, some measures to cope with the topic of energy transition are presented. Last, but not least, a brand-new chapter on condition assessment has been included.

Electric Grid Modernization Springer

The objective of this textbook is to introduce students and professionals to fundamental principles and techniques and emerging technologies in energy informatics and the digitalization of power markets and systems. The book covers such areas as smart grids and artificial intelligence (AI) and distributed ledger technology (DLT), with a focus on information and communication technologies (ICT) deployed to modernize the electric energy infrastructure. It also provides an overview of the smart grid and its main components: smart grid applications at transmission, distribution, and customer level, network requirements with communications technologies, and standards and protocols. In addition, the book addresses emerging technologies and trends in next-generation power systems, i.e., energy informatics, such as digital green shift, energy cyber-physical-social systems (E-CPSS), energy IoT, energy blockchain, and advanced optimization. Future aspects of digitalized power markets and systems will be discussed with real-world energy informatics projects. The book is designed to be a core text in upper-undergraduate and graduate courses such as Introduction to Smart Grids, Digitalization of Power Systems, and Advanced Power System Topics in Energy Informatics.

Asset Management for Infrastructure Systems Elsevier

This book contains selected papers presented during technical and plenary sessions at the World Renewable Energy Congress, the world’s premier conference on renewable energy and sustainable development. All papers were rigorously peer reviewed.The Congress, held at Murdoch University in Perth, Western

Australia from February 5 -9, 2017, with the theme of “Transition Towards 100% Renewable Energy”, featured keynote speakers and parallel technical sessions highlighting technical, policy, and investment progress towards achieving 100% renewable energy ranging in scale from households to cities to large regions, with a focus on the challenges and opportunities transforming the global energy systems. The book highlights contributions from thought leaders involved in the supply, distribution, consumption, and development of sustainable energy sources.