A Smarter Greener Grid Forging Environmental Progress Through Smart Energy Policies And Technologies Energy Resources Technology And Policy

This landmark work lauds the benefits of decreased energy consumption, investigating its relationship to public policy and analyzing its potential billion-dollar benefits to the U.S. economy. • Addresses broad questions concerning electricity systems and the economy • Documents innovative, energy-efficiency technologies, practices, and policies • Estimates the achievable cost-effectiveness and economic impact of energy efficiency in the United States • Illustrates a range of promising strategies for expanding green savings • Argues for more market intelligence, monitoring, and evaluation so that energy, economic, and climate goals are met • Showcases the policy environments that have enabled energy efficiency to thrive in leading cities, states, and countries around the world

Inclusive Green Growth: The Pathway to Sustainable Development makes the case that greening growth is necessary, efficient, and affordable. Yet spurring growth without ensuring equity will thwart efforts to reduce poverty and improve access to health, education, and infrastructure services.

This detailed analysis of the global food system looks at the way food is produced, distributed, and consumed in an effort to create a more equitable and healthful system worldwide. • Introduces political, economic, and cultural themes relevant to understanding the global food system • Offers various strategies for overcoming problems in the food system • Provides a multidisciplinary approach through the contributions of major scholars and activists in the fields of religion, ethics, agriculture, and human ecology • Includes the latest research initiatives and interviews from the United Food and Commercial Workers International Union • Features tables and charts covering implementation strategies for various food justice movements

This volume bridges the gap between the global promotion of the Green Economy and the manifestation of this new development strategy at the urban level. Green cities are an imperative solution, not only in meeting global environmental challenges but also in helping to ensure socio-economic prosperity at the local level.

Law and Policy for a New Economy

Memory Man

Ten Strategies of a World-Class Cybersecurity Operations Center

Interior, Environment, and Related Agencies Appropriations for 2012

Team-based Learning

Alternative Worlds

How Fracturing Shale for Gas Affects Us and Our World

The pressing need for a smarter and greener grid is obvious, but how this goal should be achieved is much less clear. This book clearly defines the environmental promise of the smart grid and describes the policies necessary for fully achieving the environmental benefits of the digital energy revolution. • Deciphers the muddled "information" from industry leaders and policymakers about 21st-century energy technology, enabling readers to understand how a smart grid can be a cost-effective tool to benefit the climate • Provides detailed information from case studies of six early smart grid leaders to showcase the strengths and weaknesses of these programs • Identifies the legal and regulatory challenges that could prevent the successful implementation of a smart electric grid, making it clear that the issues are not purely technological • Serves ideally as a primary text for courses on smart grid technology and policy as well as a resource for graduate-level research for energy policy or climate change policy courses

The remarkable teaching strategy of team learning is explained in this book, taking the teaching of small groups to a whole new level. Team learning's distinctive feature is its ability to transform "groups" into "teams" and use the energy from team dynamics to generate significant learning, offering teachers advantages that are not available in any other form of teaching.

Presenting critical insights on how economic activity is constrained by the environment’s ability to provide material and energy resources, this timely Research Agenda explores how humanity shapes, and is shaped by, environmental change and sustainability challenges. Chapters highlight how, under these constraints, people may seek to improve their lives and standards of living without undermining the abilities of others to do so now or in the future.

This book analyses the trilemma between growth, energy security and climate change mitigation and, breaking from scholarly orthodoxy, challenges the imperative that growth must always come first. It sets forth the argument that a steady-state approach is a more appropriate conceptual mindset to enable energy transition, sets out a steady-state energy policy, and assesses the projected outcomes of its implementation in the realms of energy security, geopolitics and development. By exploring in depth the implications of such a shift, the book aims to demonstrate its positive effects on sustainability, supply security and affordability; to showcase the more favorable geopolitics of renewable energy; and to unpack new pathways towards development. By bringing together ecological economics and mainstream energy politics, fresh insight to energy and climate policy is provided, alongside their broader geopolitical and developmental ramifications.

Energy Policy and Security under Climate Change

The Economy of Green Cities

Logistics Transportation Systems

Rethinking Power Sector Reform in the Developing World

A World Compendium on the Green Urban Economy

Smart Grid and Internet of Things

How Technological Innovations in Distributed Energy Resources Will Reshape the Electric Power Sector

One man struggles to save his family and his small North Carolina town after America loses a war in one second, a war based upon an Electro Magnetic Pulse (EMP) weapon that will send America back to the Dark Ages.

This book offers an interdisciplinary discussion of the fundamental issues concerning policies for sustainable transition to renewable energies from the perspectives of sociologists, physicists, engineers, economists, anthropologists, biologists, ecologists and policy analysts. Adopting a combined approach, these are analysed taking both complex systems and social practice theories into consideration to provide deeper insights into the evolution of energy systems. The book then draws a series of important conclusions and makes recommendations for the research community and policy makers involved in the design and implementation of policies for sustainable energy transitions.

Discover BIM: A better way to build better buildings Building Information Modeling (BIM) offers a novel approach to design, construction, and facility management in which a digital representation of the building product and process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and built. The BIM Handbook, Third Edition provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can provide to all members of a project team. Updates to this edition include: Information on the ways in which professionals should use BIM to gain maximum value New topics such as collaborative working, national and major construction clients, BIM standards and guides A discussion on how various professional roles have expanded through the widespread use and the new avenues of BIM practices and services A wealth of new case studies that clearly illustrate exactly how BIM is applied in a wide variety of conditions Painting a colorful and thorough picture of the state of the art in building information modeling, the BIM Handbook, Third Edition guides readers to successful implementations, helping them to avoid needless frustration and costs and take full advantage of this paradigm-shifting approach to construct better buildings that consume fewer materials and require less time, labor, and capital resources.

The term 'smart grid' has become a catch-all phrase to represent the potential benefits of a revamped and more sophisticated electricity system that can fulfil several societal expectations related to enhanced energy efficiency and sustainability. Smart grid promises to enable improved energy management by utilities and by consumers, to provide the ability to integrate higher levels of variable renewable energy into the electric grid, to support the development of microgrids, and to engage citizens in energy management. However, it also comes with potential pitfalls, such as increased cybersecurity vulnerabilities and privacy risks. Although discussions about smart grid have been dominated by technical and economic dimensions, this book takes a sociotechnical systems perspective to explore critical questions shaping energy system transitions. It will be invaluable for advanced students, academic researchers, and energy professionals in a wide range of disciplines, including energy studies, energy policy, environmental science, sustainability science and environmental engineering.

Forging Environmental Progress Through Smart Policies and Technologies

The Microgrid Revolution: Business Strategies for Next-Generation Electricity

Global Trends 2030

Smart About Cities

Building Smart Cities

The Human and Environmental Impact of Fracking: How Fracturing Shale for Gas Affects Us and Our World

Analytics, ICT, and Design Thinking

Capitalist Nigger is an explosive and jarring indictment of the black race. The book asserts that the Negroid race, as naturally endowed as any other, is culpably a non-productive race, a consumer race that depends on other communities for its culture, its language, its feeding and its clothing. Despite enormous natural resources, blacks are economic slaves because they lack the “devil-may-care” attitude and the “killer instinct” of the Caucasian, as well as the spider web mentality of the Asian. A Capitalist Nigger must embody ruthlessness in pursuit of excellence in his drive towards achieving the goal of becoming an economic warrior. In putting forward the idea of the Capitalist Nigger, Chika Onyeani charts a road to success whereby black economic warriors employ the “Spider Web Doctrine” – discipline, self-reliance, ruthlessness – to escape from their victim mentality. Born in Nigeria, Chika Onyeani is a journalist, editor and former diplomat.

The term "smart city" defines the new urban environment, one that is designed for performance through information and communication technologies. Given that the majority of people across the world will live in urban environments within the next few decades, it's not surprising that massive effort and investment is being placed into efforts to devel

Fracking for gas trapped in shale could be a game changer in the quest to find alternatives to dirty fossil fuels, but it also has potential for harm. This book provides "one-stop shopping" for everyone who wants to know more about the issues. • Offers a comprehensive, impartial understanding of unconventional natural gas development from many different perspectives by experts in the field • Draws from the findings of the most up-to-date research and discusses areas where scientific findings are yet unclear • Addresses fracking's potential effects on humans, animals, and environmental factors including air quality, water quality, and climate change • Explains the economic, legal, regulatory, and ethical issues surrounding fracking • Examines social and community issues and the industry perspective

THE MILLION COPY INTERNATIONAL BESTSELLER Drawn from 3,000 years of the history of power, this is the definitive guide to help readers achieve for themselves what Queen Elizabeth I, Henry Kissinger, Louis XIV and Machiavelli learnt the hard way. Law 1: Never outshine the master Law 2: Never put too much trust in friends; learn how to use enemies Law 3: Conceal your intentions Law 4: Always say less than necessary. The text is bold and elegant, laid out in black and red throughout and replete with fables and unique word sculptures. The 48 laws are illustrated through the tactics, triumphs and failures of great figures from the past who have wielded - or been victimised by - power. _____ (From the Playboy interview with Jay-Z, April 2003) PLAYBOY: Rap careers are usually over fast: one or two hits, then styles change and a new guy comes along. Why have you endured while other rappers haven't? JAY-Z: I would say that it's from still being able to relate to people. It's natural to lose yourself when you have success, to start surrounding yourself with fake people. In The 48 Laws of Power, it says the worst thing you can do is build a fortress around yourself. I still got the people who grew up with me, my cousin and my childhood friends. This guy right here (gestures to the studio manager), he's my friend, and he told me that one of my records, Volume Three, was wack. People set higher standards for me, and I love it.

How Naive Politicians, Green Ideologues, and Media Elites are Undermining the Truth about Energy and Climate

A Research Agenda for Environmental Economics

Energy and Climate Wars

BIM Handbook

A Guide to Building Information Modeling for Owners, Designers, Engineers, Contractors, and Facility Managers

Second EAI International Conference, SGIoT 2018, Niagara Falls, ON, Canada, July 11, 2018, Proceedings

The Political Economy of Electricity: Progressive Capitalism and the Struggle to Build a Sustainable Power Sector

During the 1990s, a new paradigm for power sector reform was put forward emphasizing the restructuring of utilities, the creation of regulators, the participation of the private sector, and the establishment of competitive power markets. Twenty-five years later, only a handful of developing countries have fully implemented these Washington Consensus policies. Across the developing world, reforms were adopted rather selectively, resulting in a hybrid model, in which elements of market orientation coexist with continued state dominance of the sector. This book aims to revisit and refresh thinking on power sector reform approaches for developing countries. The approach relies heavily on evidence from the past, drawing both on broad global trends and deep case material from 15 developing countries. It is also forward looking, considering the implications of new social and environmental policy goals, as well as the emerging technological disruptions. A nuanced picture emerges. Although regulation has been widely adopted, practice often falls well short of theory, and cost recovery remains an elusive goal. The private sector has financed a substantial expansion of generation capacity; yet, its contribution to power distribution has been much more limited, with efficiency levels that can sometimes be matched by well-governed public utilities. Restructuring and liberalization have been beneficial in a handful of larger middle-income nations but have proved too complex for most countries to implement. Based on these findings, the report points to three major policy implications. First, reform efforts need to be shaped by the political and economic context of the country. The 1990s reform model was most successful in countries that had reached certain minimum conditions of power sector development and offered a supportive political environment. Second, countries found alternative institutional pathways to achieving good power sector outcomes, making a case for greater pluralism. Among the top performers, some pursued the full set of market-oriented reforms, while others retained a more important role for the state. Third, reform efforts should be driven and tailored to desired policy outcomes and less preoccupied with following a predetermined process, particularly since the twenty-first-century century agenda has added decarbonization and universal access to power sector outcomes. The Washington Consensus reforms, while supportive of the twenty-first-century century agenda, will not be able to deliver on them alone and will require complementary policy measures

The thawing Antarctic continent offers living space and marine and mineral resources that were previously inaccessible. This book discusses how revisiting the Antarctic Treaty System and dividing up the continent preemptively could spare the world serious conflict. • Argues that the Antarctic Treaty, which was opened for signature in 1959, needs to be reconsidered since pressure continues to build for the occupation of the continent and the exploitation of its living and non-living resources • Suggests that international conflict over Antarctica is likely in the coming decades, particularly because the ban on mineral resources is up for revision in 2048 • Argues that policymakers need to draw lessons from the economic competition the world is now witnessing in the thawing Arctic Ocean

The United States' electrical grid is an antique. It was built to serve a 20th-century economy and designed in an era when the negative environmental impacts of electricity production were poorly understood. It must be upgraded and modernized. The proposed solution is a "smart grid"--a network of new digital technologies, equipment, and controls that can respond quickly to the public's changing energy needs by facilitating two-way communication between the utility and consumers. This book explains the environmental benefit of a smart grid, examines case studies of existing smart grids, and identifies the legal and regulatory policy hurdles that must be overcome to fully realize the smart grid's benefits. Based on six diverse organizations' experience as "early adopters" in the digital energy revolution, the authors explore how a smart electric grid offers real promise for supercharging energy efficiency, democratizing demand response, electrifying transportation, preparing for ubiquitous distributed clean energy technologies, and automating the distribution system. Against the backdrop of climate change and continuing economic uncertainty, setting a path for environmental improvement and upgrading our electric grid with new digital technologies and associated smart policies is more critical than ever before.

PROC SQL: Beyond the Basics Using SAS®, Third Edition, is a step-by-step, example-driven guide that helps readers master the language of PROC SQL. Packed with analysis and examples illustrating an assortment of PROC SQL options, statements, and clauses, this book not only covers all the basics, but it also offers extensive guidance on complex topics such as set operators and correlated subqueries. Programmers at all levels will appreciate Kirk Lafler’s easy-to-follow examples, clear explanations, and handy tips to extend their knowledge of PROC SQL. This third edition explores new and powerful features in SAS® 9.4, including topics such as: IFC and IFN functions nearest neighbor processing the HAVING clause indexes It also features two completely new chapters on fuzzy matching and data-driven programming. Delving into the workings of PROC SQL with greater analysis and discussion, PROC SQL: Beyond the Basics Using SAS®, Third Edition, explores this powerful database language using discussion and numerous real-world examples.

The Global Food System: Issues and Solutions

Popular Science

Green Savings: How Policies and Markets Drive Energy Efficiency

A Smarter, Greener Grid: Forging Environmental Progress through Smart Energy Policies and Technologies

The race against time for smarter development

Promoting Digital Innovations to Advance Clean Energy Systems

One Second After

Based on ongoing research from Australia, American, Korea and Taiwan, this work discusses the applied value and theory of play.

Providing critical insights that will interest readers ranging from economists to environmentalists, policymakers, and politicians, this book analyzes the economics and technology trends involved in the dilemma of decarbonization and addresses why aggressive policy is required in a capitalist political economy to create a sea change away from fossil fuels. • Presents comprehensive and understandable reviews of more than 200 recent empirical studies of market imperfections in the energy efficiency and climate change literature, providing a basis for targeting policies at the most important causes of poor market performance • Argues that aggressive action to induce change and overcome resistance, using targeted policies rather than broad-based taxes, is the strategy that will create movement towards a decarbonized economy and world • Provides a logical decision-making framework and portfolio analysis that enables policymakers and regulators to choose, explain, and defend their decisions, objectively and transparently

Innovation and Disruption at the Grid’s Edge examines the viable developments in peer-to-peer transactions enabled by open platforms on the grid’s edge. With consumers and prosumers using more electronic platforms to trade surplus electricity from rooftop solar panels, share a storage battery, or use smart gadgets that manage load and self-generation, the grid's edge is becoming crowded. The book examines the growing number of consumers engaging in self-generation and storage, and analyzes the underlying causes and drivers of change, as well as the implications of how the utility sector—particularly the distribution network—should/could be regulated. The book also explores how tariffs are set and revenues are collected to cover both fixed and variable costs in a sustainable way. This reference is useful for anyone interested in the areas of energy generation and regulation, especially stakeholders engaged in the generation, transmission, and distribution of power. Examines the new players that will disrupt the energy grid markets Offers unique coverage of an emerging and unpublished topic Helps the reader understand up-to-date energy regulations and pricing innovations

Ten Strategies of a World-Class Cyber Security Operations Center conveys MITRE's accumulated expertise on enterprise-grade computer network defense. It covers ten key qualities of leading Cyber Security Operations Centers (CSOCs), ranging from their structure and organization, to processes that best enable smooth operations, to approaches that extract maximum value from key CSOC technology investments. This book offers perspective and context for key decision points in structuring a CSOC, such as what capabilities to offer, how to architect large-scale data collection and analysis, and how to prepare the CSOC team for agile, threat-based response. If you manage, work in, or are standing up a CSOC, this book is for you. It is also available on MITRE's website, www.mitre.org.

The Road To Success – A Spider Web Doctrine

How distributed energy resources are disrupting the utility business model

Inclusive Green Growth
Digital Decarbonization
The Fourth Industrial Revolution
Sustainable, Just, and Democratic
Hearings Before a Subcommittee of the Committee on Appropriations, House of Representatives, One Hundred Twelfth Congress, First Session

What kinds (according to U.S. News & World Report) of clean electricity initiatives—ones that make sense on public policy and business strategy levels—could overcome the hurdles in shifting away from the entrenched electricity and petroleum-based transport industries in the United States? This book explores the tremendous opportunities of the new electricity revolution that looks to threaten the century-old business models of our existing power production infrastructure. • Synthesizes seemingly disparate concepts from the telecom and electricity industries with business strategy and policy and regulatory issues, allowing readers to see the tremendous opportunity at hand in clean electricity technologies • Describes a novel network topology for a next-generation electricity grid • Provides unique insights from the perspective of a chemical engineer who is also a faculty member of a business school and has served as a corporate strategy executive in the telecom industry

His family was murdered. The hunt for the killer begins.

Between the 18th and 19th centuries, Britain experienced massive leaps in technological, scientific, and economical advancement

As energy industries produce ever more data, firms are harnessing greater computing power, advances in data science, and increased digital connectivity to exploit that data. These trends have the potential to transform the way energy is produced, transported, and consumed.

Play and Educational Theory and Practice
The 48 Laws Of Power
Smart Grid Handbook, 3 Volume Set
How Policies and Markets Drive Energy Efficiency
Framing Energy Sustainability in the Time of Renewables
Complex Systems and Social Practices in Energy Transitions
Future of Utilities - Utilities of the Future

Logistics Transportation Systems compiles multiple topics on transportation logistics systems from both qualitative and quantitative perspectives, providing detailed examples of real-world logistics workflows. It explores the key concepts and problem-solving techniques required by researchers and logistics professionals to effectively manage the continued expansion of logistics transportation systems, which is expected to reach an estimated 25 billion tons in the United States alone by 2045. This book provides an ample understanding of logistics transportation systems, including basic concepts, in-depth modeling analysis, and network analysis for researchers and practitioners. In addition, it covers policy issues related to transportation logistics, such as security, rules and regulations, and emerging issues including reshoring. This book is an ideal guide for academic researchers and both undergraduate and graduate students in transportation modeling, supply chains, planning, and systems. It is also useful to transportation practitioners involved in planning, feasibility studies, consultation and policy for transportation systems, logistics, and infrastructure. Provides real-world examples of logistics systems solutions for multiple transportation modes, including seaports, rail, barge, road, pipelines, and airports Covers a wide range of business aspects, including customer service, cost, and decision analysis Features key-term definitions, concept overviews, discussions, and analytical problem-solving

This book makes the case for a New Environmentalism, and using a systems change approach, takes the reader through ideas for reorienting the economy. It addresses the laws and policies needed to support the emergence of a new economy across a variety of major areas – from energy to food, across common pool resources, and shifting investments to capitalize locally-connected and mission-driven businesses. The authors take the approach that the challenges are much broader than setting parameters around pollution, and go to the heart of the dominant global political economy. It explores the values needed to transform our current economic system into a new economy supportive of ecological integrity, social justice, and vibrant democracy.

This book explores smart grid from a social perspective, for advanced students, academic researchers, and energy professionals.

Future of Utilities - Utilities of the Future: How technological innovations in distributed generation will reshape the electric power sector relates the latest information on the electric power sector its rapid transformation, particularly on the distribution network and customer side. Trends like the rapid rise of self-generation and distributed generation, microgrids, demand response, the dissemination of electric vehicles and zero-net energy buildings that promise to turn many consumers into prosumers are discussed. The book brings together authors from industry and academic backgrounds to present their original, cutting-edge and thought-provoking ideas on the challenges currently faced by electric utilities around the globe, the opportunities they present, and what the future might hold for both traditional players and new entrants to the sector. The book's first part lays out the present scenario, with concepts such as an integrated grid, microgrids, self-generation, customer-centric service, and pricing, while the second part focuses on how innovation, policy, regulation, and pricing models may come together to form a new electrical sector, exploring the reconfiguring of the current institutions, new rates design in light of changes to retail electricity markets and energy efficiency, and the cost and benefits of integration of distributed or intermittent generation, including coupling local renewable energy generation with electric vehicle fleets. The final section projects the future function and role of existing electrical utilities and newcomers to this sector, looking at new pathways for business and pricing models, consumer relations, technology, and innovation. Contains discussions that help readers understand the underlying causes and drivers of change in the electrical sector, and what these changes mean in financial, operational, and regulatory terms Provides thought-provoking ideas on the challenges currently faced by electric utilities around the globe, the opportunities they present, and what the future might hold for both traditional players and new entrants to the sector Helps readers anticipate what developments are likely to define the function and role of the utility of the future

Innovation and Disruption at the Grid's Edge
Antarctica: The Battle for the Seventh Continent
Capitalist Nigger
Forging Environmental Progress through Smart Energy Policies and Technologies
PROC SQL
Electric Power Struggles
Beyond the Basics Using SAS, Third Edition

Popular Science gives our readers the information and tools to improve their technology and their world. The core belief that Popular Science and our readers share: The future is going to be better, and science and technology are the driving forces that will help make it better.

By depoliticizing the energy-climate debate the authors succeed in exposing corrupt political thinking and 'green' myth-making about issues that affect every one of us. Today, energy is the most important commodity in the world. Yet our basic energy security is threatened by an ideological social agenda driven more by myth than reality. "Energy and Climate Wars" exposes the energy and climate myths that are driving today's public debate, from the West's war on carbon to the concept of peak oil and renewable energy. Using facts and empirical science, Peter Glover and Michael Economides show how most of the battle over energy and climate issues are the works of political and 'green' ideologues bent on social engineering programs. They present facts that are often obscured by media hype and speculative science to demolish popular myths, including the belief that energy politics are carried out in the best interest of all and that renewable energy can replace hydrocarbon economy. A thought-provoking, meticulously researched book, "Energy and Climate Wars" will help readers grasp the issues at stake and understand how energy and climate policy directly affect their lives with higher energy prices and security threats.

This publication covers global megatrends for the next 20 years and how they will affect the United States. This is the fifth installment in the National Intelligence Council's series aimed at providing a framework for thinking about possible futures and their implications. The report is intended to stimulate strategic thinking about the rapid and vast geopolitical changes characterizing the world today and possible global trajectories during the next 15-20 years by identifying critical trends and potential discontinuities. The authors distinguish between megatrends, those factors that will likely occur under any scenario, and game-changers, critical variables whose trajectories are far less certain. NIC 2012-001. Several innovations are included in Global Trends 2030, including: a review of the four previous Global Trends reports, input from academic and other experts around the world, coverage of disruptive technologies, and a chapter on the potential trajectories for the US role in the international system and the possible the impact on future international relations. Table of Contents: Introduction 1 Megatrends 6 Individual Empowerment 8 Poverty Reduction 8 An Expanding Global Middle Class 8 Education and the Gender Gap 10 Role of Communications Technologies 11 Improving Health 11 A MORE CONFLICTED IDEOLOGICAL LANDSCAPE 12 Diffusion of Power 15 THE RISE AND FALL OF COUNTRIES: NOT THE SAME OLD STORY 17 THE LIMITS OF HARD POWER IN THE WORLD OF 2030 18 Demographic Patterns 20 Widespread Aging 20 Shrinking Number of Youthful Countries 22 A New Age of Migration 23 The World as Urban 26 Growing Food, Water, and Energy Nexus 30 Food, Water, and Climate 30 A Brighter Energy Outlook 34 Game-Changers 38 The Crisis-Prone Global Economy 40 The Plight of the West 40 Crunch Time Too for the Emerging Powers 43 A Multipolar Global Economy: Inherently More Fragile? 46 The Governance Gap 48 Governance Starts at Home: Risks and Opportunities 48 INCREASED FOCUS ON EQUALITY AND OPENNESS 53 NEW GOVERNMENTAL FORMS 54 A New Regional Order? 55 Global Multilateral Cooperation 55 The Potential for Increased Conflict 59 INTRASTATE CONFLICT: CONTINUED DECLINE 59 Interstate Conflict: Chances Rising 61 Wider Scope of Regional Instability 70 The Middle East: At a Tipping Point 70 South Asia: Shocks on the Horizon 75 East Asia: Multiple Strategic Futures 76 Europe: Transforming Itself 78 Sub-Saharan Africa: Turning a Corner by 2030? 79 Latin America: More Prosperous but Inherently Fragile 81 The Impact of New Technologies 83 Information Technologies 83 AUTOMATION AND MANUFACTURING TECHNOLOGIES 87 Resource Technologies 90 Health Technologies 95 The Role of the United States 98 Steady US Role 98 Multiple Potential Scenarios for the United States' Global Role 101 Alternative Worlds 107 Stalled Engines 110 FUSION 116 Gini-out-of-the-Bottle 122 Nonstate World 128 Acknowledgements 134 GT2030 Blog References 137 Audience: Appropriate for anyone, from businesses to banks, government agencies to start-ups, the technology sector to the teaching sector, and more. This publication helps anticipate where the world will be: socially, politically, technologically, and culturally over the next few decades. Keywords: Global Trends 2030 Alternative Worlds, global trends 2030, Global Trends series, National Intelligence Council, global trajectories, global megatrends, geopolitics, geopolitical changes

This book constitutes the refereed proceedings of the Second EAI International Conference on Smart Grid and Internet of Things, SGIoT 2018, held in Niagara Falls, Canada, Ontario, in July 2018. The 14 papers presented were carefully reviewed and selected from 25 submissions and present research results on how to achieve more efficient use of resources based largely on IoT-based machine-to-machine interactions in the smart grit communication networks. The smart grid also encompasses IoT technologies, which monitor transmission lines, manage substations, integrate renewable energy generation (e.g., solar or wind), and utilize hybrid vehicle batteries. Through these technologies, the authorities can smartly identify outage problems, and intelligently schedule the power generation and delivery to the customers

The Pathway to Sustainable Development
UNESCO Science Report
Forging links for the future
A Smarter, Greener Grid
Smart Grid (R)Evolution
A Transformative Use of Small Groups

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.