

Development Of Pico Hydropower Plant For Farming Village

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Pumps as Turbines - Armando Carravetta 2017-10-24

This book provides users, pump manufactures, engineers, researchers and students with extensive information about pump's behavior in reverse operation. It reports on cutting-edge methods for selecting the proper PAT and improving PAT's efficiency, discusses PAT's reliability, economic issues and environmental impact as well. The book describes in detail electromechanical equipment of PAT systems, their installation and operation, and gives important practical insight into the use of PAT in water transmission and distribution systems, as part of thermal power plants and cooling systems, in oil distribution systems and other systems as well. It reports on different types on PAT control modes as well as on numerical methods useful for PAT analysis and implementation. All in all, the book represents a comprehensive practice-oriented reference-guide to design engineers, as well as PAT general users and manufactures. It also provides researchers with extensive technical information on the use of PAT thus fostering new discussions and ideas to improve current methods and cope with future challenges.

The International Journal on Hydropower & Dams - 2008

Biofuels and Sustainability - Kazuhiko Takeuchi 2018-07-13

This open access book presents a comprehensive analysis of biofuel use strategies from an interdisciplinary perspective using sustainability science. This interdisciplinary perspective (social science-natural science) means that the strategies and policy options proposed will have significant impacts on the economy and society alike. Biofuels are expected to contribute to reducing greenhouse gas emissions, revitalizing economies in agricultural communities and alleviating poverty. However, despite these anticipated benefits, international organizations such as the FAO, OECD and UN have published reports expressing concerns that biofuel promotion may lead to deforestation, water pollution and water shortages. The impacts of biofuel use are extensive, cross-sectoral and complex, and as such, comprehensive analyses are required in order to assess the extent to which biofuels can contribute to sustainable societies. Applying interdisciplinary sustainability science concepts and methodologies, the book helps to enhance the establishment of a sustainable society as well as the development of appropriate responses to a global need for urgent action on current issues related to biofuels.

Microelectronics, Electromagnetics and Telecommunications - Ganapati Panda 2018-11-02

The book discusses the latest developments and outlines future trends in the fields of microelectronics, electromagnetics and telecommunication. It contains original research works presented at the International Conference on Microelectronics, Electromagnetics and Telecommunication (ICMEET 2018), organised by GVP College of Engineering (A), Andhra Pradesh, India. The respective papers were written by scientists, research scholars and practitioners from leading universities, engineering colleges and R&D institutes from all over the world, and share the latest breakthroughs in and promising solutions to the most important issues facing today's society.

Capacity Building for Sustainable Development - Valentine Udoh James 2018-04-02

This book presents over 40 cases of bamboo development across 22 major bamboo-industry countries and explores the knowledge gained from their successes and failures. It synthesises experiences and exchanges with country experts from international training courses and consultations, study tours, and seminars. Each case includes observations and summaries of discussions related to the development of bamboo-based industries in a healthy, sustainable way, and the facilitation of strategic and balanced development of bamboo in different global regions. Industrial and artisanal bamboo growing and processing is expanding worldwide and this book brings together key experiences to

help inform future developments. This book provides an analysis of bamboo plant features, including strong renewability, fast-growing, and high biomass production. It also reviews important ecological functions of bamboos, such as water and soil conservation, carbon sink and storage, and adaptation to climate change, as well as addressing the diversified culture of bamboo and key issues affecting the sector. Highly illustrated and in full colour throughout, this book is an essential resource for all those interested in bamboo, from private sector investors to governmental and development agencies, academic researchers and students.

The National Agricultural Directory 2009 - 2009

Intelligent Communication, Control and Devices - Sushabhan Choudhury 2019-08-28

The book focuses on the integration of intelligent communication systems, control systems, and devices related to all aspects of engineering and sciences. It includes high-quality research papers from the 3rd international conference, ICICCD 2018, organized by the Department of Electronics, Instrumentation and Control Engineering at the University of Petroleum and Energy Studies, Dehradun on 21-22 December 2018. Covering a range of recent advances in intelligent communication, intelligent control and intelligent devices., the book presents original research and findings as well as researchers' and industrial practitioners' practical development experiences of.

Developing Renewable Energy Mini-Grids in Myanmar - Asian Development Bank 2017-12-01

This guidebook documents the experiences and lessons learned from developing 12 pilot mini-grid systems for off-grid energy access in Myanmar. Unelectrified rural communities typically located 10 kilometers from the national grid and without prospects of being connected to the grid in the next 5 to 10 years have been chosen for the project. This guidebook shares training materials and knowledge on the major aspects of minigrid development for rural electrification. Further, it highlights the importance of community participation and discusses the main renewable energy technologies that are suitable for mini-grid development in Myanmar including solar, hydro, and biomass. This guidebook is intended to serve government officials, renewable energy developers, and potential investors in the development of mini-grid projects in Myanmar.

Micro-hydro Design Manual - Adam Harvey 1993-01

Micro-Hydro Design Manual has grown from Intermediate Technology's field experiences with micro-hydro installations and covers operation and maintenance, commissioning, electrical power, induction generators, electronic controllers, management, and energy surveys. There is an increasing need in many countries for power supplies to rural areas, partly to support industries, and partly to provide illumination at night. Government authorities are faced with the very high costs of extending electricity grids. Often micro-hydro provides an economic alternative to the grid. This is because independent micro-hydro schemes save on the cost of grid transmission lines, and because grid extension schemes often have very expensive equipment and staff costs. In contrast, micro-hydro schemes can be designed and built by local staff and smaller organizations following less strict regulations and using 'off-the-shelf' components or locally made machinery.

Expanding Access to Modern Energy Services - Stephen Gitonga 2006

This Report deals with the issue of making progress towards achieving the Millennium Development Goals by expanding access to modern energy services. It demonstrates that micro-level energy initiatives implemented through community-based approaches can successfully be scaled up, replicated and/or mainstreamed to create a sustainable solution to providing energy services. Coupled with a dynamic partnership and collaborative effort between the national and local

governments, civil society, the private sector and the community, scaling up can result in significant positive development impacts at the macro-level by influencing national policies and development priorities.

Renewable Energy in East Asia - Christopher M. Dent 2014-11-27

Energy is crucial to the functioning of any human society and central to understanding East Asia's 'economic miracle'. The region's rapid development over the last few decades has been inherently energy-intensive and the impact on global energy security, climate change and the twenty-first-century global system generally is now very significant and will become more so over foreseeable years and decades to come. The region is already the world's largest energy consumer and greenhouse gas emitter, so establishing cleaner energy systems in East Asia is both a regional and global challenge, and renewable energy has a critically important part to play in meeting it. This book presents a comprehensive study of renewable energy development in East Asia. It begins by examining renewable energy development in global and historic contexts, and situates East Asia's position in the recent worldwide expansion of renewables. This same approach is applied on sector-specific chapter studies on wind, solar, hydropower, geothermal, ocean (wave and tidal) and bioenergy, and to general trends in renewable energy policy. Governments play a critical role in promoting renewables and their contribution to tackling climate change and other environmental challenges. Christopher M. Dent argues this is particularly relevant to East Asia, where state capacity practice has been increasingly allied to ecological modernisation thinking to form what he calls 'new developmentalism', the principal foundation on which renewables have developed in the region as well as how East Asia's low carbon development is being generally promoted. Renewable Energy in East Asia will be of huge interest to students and scholars of Asian studies, economics, political economy, energy studies, business, development, international relations and environmental studies. It will also appeal to researchers working on the subject matter in government, business, international organisations, think tanks and civil society organisations.

Small-Scale Hydro-Power - Watt Committee on Energy Publications 1985-03-01

This book examines the potential for the development of small-scale hydro-power as a useful addition to the energy resources of the UK. It identifies obstacles that inhibited development in the past and makes suggestions for further study, with the objective of helping to overcome the obstacles.

The Sustainability of Renewable Energy in Europe - Simona Bigerna 2015-03-18

This book demonstrates that the much-needed global shift in energy production and use must happen at a territorial level in order to be truly successful and sustainable. This book enables regional implementation efforts by connecting broad EU environmental policies with plans for action at the territorial level, analysing efficient resource allocation and cost effectiveness to achieve national objectives. Each EU Member State is considered in depth, in order to identify the opportunities and challenges of this regional approach. The regional dimension of the authors' analysis refers to the territorial level NUTS 1 (Nomenclature of Territorial Units for Statistics) that, starting from the administrative borders of the EU countries, divides the territory into 97 regions on the basis of major socio-economic characteristics. Because the model of the EU "green economy" is characterized typically by top-down interventions that focus exclusively on the resource productivity and investment business, its practical implementation can be de-railed. This book provides the pivotal missing piece- the detailed territorial comparative analysis necessary to obtain an optimal energy mix of renewable energy sources (RES), energy conservation and energy efficiency characteristics of each specific local context.

ICASI 2019 - Rahmat Hidayat 2019-11-26

As an annual event, THE 2ND INTERNATIONAL CONFERENCE ON ADVANCE & SCIENTIFIC INNOVATION 2019 continued the agenda to bring together researcher, academics, experts and professionals in examining about Scientific Innovation in technology, education, management, accounting and many aspect area. In 2019, this event held in 18 July 2019 at Politeknik Kutaraja, Banda Aceh, Indonesia. This ICASI Proceeding 2019 are published along with article from ICASI 2018 and each contributed paper was refereed before being accepted for publication. The double-blind peer reviewed was used in the paper selection.

Water Systems towards New Future Challenges - Helena M. Ramos 2021-03-09

This book comprises components associated with smart water which aims at the exploitation and building of more sustainable and technological water networks towards the water-energy nexus and system efficiency. The implementation of modeling frameworks for measuring the performance based on a set of relevant indicators and data applications and model interfaces provides better support for decisions towards greater sustainability and more flexible and safer solutions. The hydraulic, management, and structural models represent the most effective and viable way to predict the behavior of the water networks under a wide range of conditions of demand and system failures. The knowledge of reliable parameters is crucial to develop approach models and, therefore, positive decisions in real time to be implemented in smart water systems. On the other hand, the models of operation in real-time optimization allow us to extend decisions to smart water systems in order to improve the efficiency of the water network and ensure more reliable and flexible operations, maximizing cost, environmental, and social savings associated with losses or failures. The data obtained in real time instantly update the network model towards digital water models, showing the characteristic parameters of pumps, valves, pressures, and flows, as well as hours of operation towards the lowest operating costs, in order to meet the requirement objectives for an efficient system.

Engineering for Sustainable Development and Living - Jacqueline A. Stagner 2021-05-01

What can we do to preserve a future for the next generation to cherish? A potent answer is to exercise good stewardship in realizing more sustainable living and development. This volume brings together experts from around the world to disseminate the latest knowledge and research toward this end, i.e., engineering for more sustainable development and living. Let us learn from a living cell that utilizes inherited biological intelligence to organize its resources for current needs and future existence. We also have the responsibility to ensure universal access to electricity and increase the share of renewable energies. Cost effective hybrid renewable energy systems should also be considered and furthered. Advancing energy storage is a necessary striving for managing a future "toilet paper crisis." More accurate accounting of weather is crucial in furthering energy efficiency for human thermal comfort. With cooling making up the highest energy cost in many medical structures, combining low-energy building strategies with source-efficient and low-cost manufacturing envelopes can contribute effectively to mitigating climate change. To realize calculated improvements in practice, we must assess the performance after implementation of the promising measures. Construction is definitely the right place to start incorporating sustainable development and living. Another means to promote sustainability is to improve engineering system performance. Simple means such as a rightly positioned cylindrical rod can enhance systems that involve heat exchangers. An important lesson came through dealing with COVID-19, teaching us to provide adaptation strategies through water-energy-food nexus planning, building resilient communities for tomorrow.

Energy and Environmental Outlook for South Asia - Muhammad Asif 2021-01-07

South Asia constitutes a key geography in the world today considering its large population and related daunting energy and environmental challenges. Many countries in the region are faced with a growing gap between energy demand and local resources, resulting in an increased dependence on imports. According to the International Energy Agency (IEA), the energy demand in South Asia will grow at a rate more than double that of the world average in the coming decades. This book addresses the critical subject of energy and environmental outlook for South Asia and presents the wider challenges and the responses at the national and regional level. Features: Discusses and addresses the ongoing energy and environmental challenges faced by almost a quarter of the global population Includes dedicated chapters for each country and presents analysis and recommendations by regional experts Examines how deteriorating air quality and persistent natural disasters are severe environmental challenges for the region Discusses the implications of global warming and climate change for South Asia Includes practical case studies throughout Energy and Environmental Outlook for South Asia will benefit a wide range of stakeholders from various fields including but not limited to energy, environment, economics, national security, and sustainable development. It also serves as a valuable resource for academics, researchers, analysts, policymakers, and representatives of utilities, industry, professional bodies, financial institutions, think tanks, and developmental

organizations to better plan their initiatives, activities, and policies. It will help countries in the region and also those around the world by learning from shared experience, and ideally by collaborating for energy and environmental prosperity.

Low Carbon Development - Frauke Urban 2013-07-18

Low Carbon Development: Key Issues is the first comprehensive textbook to address the interface between international development and climate change in a carbon constrained world. It discusses the key conceptual, empirical and policy-related issues of low carbon development and takes an international and interdisciplinary approach to the subject by drawing on insights from across the natural sciences and social sciences whilst embedding the discussion in a global context. The first part explores the concept of low carbon development and explains the need for low carbon development in a carbon constrained world. The book then discusses the key issues of socio-economic, political and technological nature for low carbon development, exploring topics such as the political economy, social justice, financing and carbon markets, and technologies and innovation for low carbon development. This is followed by key issues for low carbon development in policy and practice, which is presented based on cross-cutting issues such as low carbon energy, forestry, agriculture and transportation. Afterwards, practical case studies are discussed from low carbon development in low income countries in Africa, middle income countries in Asia and Latin America and high income countries in Europe and North America. Written by an international team of leading academics and practitioners in the field of low carbon development, this book is essential reading for students, academics, professionals and policy-makers interested in the fields of low carbon development, climate change mitigation, climate policy, climate change and development, global environmental change, and environment and development.

Grid Connection of Gotikhel Micro Hydropower Plant without Interrupting Isolated Load - Suman Budhathoki 2011-11-08

Master's Thesis from the year 2011 in the subject Electrotechnology, grade: 1.7, Brandenburg Technical University Cottbus, course: Electric Power Engineering - Micro Hydro-power and its grid connection, language: English, abstract: 1. Introduction Gotikhel Hydropower Plant (GHP) is one of the nearest Isolated Micro Hydropower Plant (MHP) from the main city out of 650 isolated MHPs available in Nepal which still supplies electrical power to 173 Households, one hull machine and one school. The extension of national grid has made life of MHPs insecure as consumers want the energy from more reliable source i.e. from national grid. In the context of Nepal, especially in rural areas, construction of MHPs are very costly and because of unplanned extension of national grid, some of MHPs are in closing conditions and same cases will continue more in future. So, there is a huge risk in big investments and valuable efforts of villagers. Synchronization of MHPs to the national grid will be the ultimate solution for the existence of MHPs in Nepal. So, this Master Thesis will also focus on grid connection of GHP and consequent impacts on technical as well as financial sectors before and after the grid connection of GHP. 2. Objectives Taking GHP as a private/community pilot project for grid connection in Nepal, the following objectives of grid-connected MHPs has been generalized: • To ensure optimum use of national resource and fulfill the possible new demand of energy in rural areas since grid connection and Power Exchange Agreement (PEA) allow the Rural Electrification Entity (REE) to sell their excess energy to Nepal Electricity Authority (NEA) grid and the REE can purchase the required energy from the grid when the demand of its members surpass the generation by MHP(s) under it. • To facilitate development of new MHPs by local communities, Individual Power Producers as they can profiteer by selling the excess energy to the grid. • To ensure market for spill energy of MHPs. . 3. Contents of the thesis This thesis includes following: • Introduction of GHP • Problem Analysis of GHP • Technical aspects of GHP - Turbine and turbine selection - Turbine Control System - Generator - Distribution Transformer - Switchgear Equipment - Protection system - Transmission and distribution systems - Instrumentation - Single line diagram of GHP - Synchronization • Short circuit and load flow analysis • Financial aspects of GHP • Impacts of grid connection • Conclusion

Anthropogenic Rivers - Jerome Whittington 2019-01-15

In the 2000s, Laos was treated as a model country for the efficacy of privatized, "sustainable" hydropower projects as viable options for World Bank-led development. By viewing hydropower as a process that creates ecologically uncertain environments, Jerome Whittington reveals how new forms of managerial care have emerged in the context of a privatized dam project successfully targeted by transnational activists. Based on ethnographic work inside the hydropower company, as well as with

Laotians affected by the dam, he investigates how managers, technicians and consultants grapple with unfamiliar environmental obligations through new infrastructural configurations, locally-inscribed ethical practices, and forms of flexible experimentation informed by American management theory. Far from the authoritative expertise that characterized classical modernist hydropower, sustainable development in Laos has been characterized by a shift from the risk politics of the 1990s to an ontological politics in which the institutional conditions of infrastructure investment are pervasively undermined by sophisticated 'hactivism.' Whittington demonstrates how late industrial environments are infused with uncertainty inherent in the anthropogenic ecologies themselves. Whereas 'anthropogenic' usually describes human-induced environmental change, it can also show how new capacities for being human are generated when people live in ecologies shot through with uncertainty. Implementing what Foucault called a "historical ontology of ourselves," Anthropogenic Rivers formulates a new materialist critique of the dirty ecologies of late industrialism by pinpointing the opportunistic, ambitious and speculative ontology of capitalist natures.

Poverty and Sustainable Development in Asia - Armin Bauer 2015-01-01

This joint publication from the Asian Development Bank and the Asian Development Bank Institute features selected papers from the September 2009 conference on the social and environmental impact of the global economic crisis on Asia and the Pacific, especially on the poor and vulnerable. The publication is designed with the needs of policy makers in mind, utilizing field, country, and thematic background studies to cover a large number of countries and cases. This publication suggests that the crisis is an opportunity to rethink the model of development in Asia for growth to become more inclusive and sustainable. Issues that need to be more carefully considered include: closing the gap of dualistic labor markets, building up social protection systems, rationalizing social expenditures, addressing urban poverty through slum upgrading, promoting rural development through food security programs in pro-poor growth potential areas, and concentrating climate change interventions on generating direct benefits for the environments of the poor.

Renewable Energies and European Landscapes - Marina Frolova 2015-06-09

This book provides timely, multidisciplinary cross-national comparison of the institutional and social processes through which renewable energy landscapes have emerged in Southern Europe. On the basis of case studies in these countries, it analyzes the way in which and the extent to which the development of renewable energies has affected landscape forms and whether or not it has contributed to a reformulation of landscape practices and values in these countries. Landscape is conceived broadly, as a material, social, political and historical process embedded into the local realm, going beyond aesthetic. The case studies analyze renewable energy landscapes in Southern Europe on different political and geographical scales and compare different types of renewable energy such as wind, hydro, solar and biomass power. The contributors are leading experts from Spain, France, Italy and Portugal. The book is intended for researchers, graduate students and professionals interested in geography, landscape and planning.

Micro Perspectives for Decentralized Energy Supply : Proceedings of the International Conference (2015, Bangalore) - Kebir, Noara 2015-04-13

Der Tagungsband enthält die wissenschaftlichen Beiträge der Konferenz "Mikro-Perspektiven auf dezentrale Energieversorgung" vom 23. bis 24.4.2015 in Bangalore, Indien. Die Beiträge umfassen eine große Bandbreite an Themen von technischen Herausforderungen dezentraler Energieversorgung über Konzepte für DC Micro Grids bis zu Finanzierungs- und Geschäftsmodellen für die Implementierung dieser innovativen Technologien. Weiterhin enthält der Band Beiträge zu Planungs- und Governance-Strategien, historische Analysen der Infrastrukturentwicklung und Technologie-Bewertung. Mit Fallstudien zu dezentraler Energieversorgung von Indien, Bangladesch, Ägypten, Äthiopien, Kenia, Nigeria, Tansanie und Brasilien geben die Artikel einen guten Überblick über die globale Entwicklung in diesem Sektor. The Proceedings present the scientific contributions of the Conference "Micro Perspectives for Decentralized Energy Supply" from 23rd till 24th of April in Bangalore, India. The papers cover a broad range of topics ranging from technical challenges of decentralized energy supply and concepts for solar DC micro grids till financing and business models for the implementation of those innovative technologies. The volume also contains contributions about planning and governance strategies, historical analyses of the infrastructural development and technology assessments. With case studies on decentralised energy supply from e.g. India, Bangladesh, Egypt, Ethiopia, Kenya, Nigeria, Tanzania and Brazil

the papers give a good overview of the development of this sector all over the world.

International Journal on Hydropower & Dams - 2007

Sustainable Energy Access Planning - Asian Development Bank 2018-08-01

Ensuring access to affordable, reliable, and sustainable energy is one of the Sustainable Development Goals of the United Nations. Sustainable energy access planning (SEAP) plays a vital role when it comes to ensuring energy access for poor households particularly in Nepal's Pyuthan district. SEAP identifies the needed resources and investments for sustainable energy in the district. This case study, supported by the Asian Development Bank, presents the application of a SEAP framework for developing cost-effective energy plans for Pyuthan district. It also highlights the benefits of access to cleaner energy in terms of social well-being, reduction in the emission of local pollutants and greenhouse gas, and reducing energy inequality.

Wind Energy for Power Generation - K. R. Rao 2019-10-17

This far-reaching resource covers a full spectrum of multi-faceted considerations critical for energy generation decision makers considering the adoption or expansion of wind power facilities. It contextualizes pivotal technical information within the real complexities of economic, environmental, practical and socio-economic parameters. This matrix of coverage includes case studies and analysis from developed and developing regions, including North America and Europe, Asia, Latin America, the Middle-East and Africa. Crucial issues to power generation professionals and utilities such as: capacity credits; fuel saving; intermittency; penetration limits; relative cost of electricity by generation source; growth and cost trends; incentives; and wind integration issues are addressed. Other economic issues succinctly discussed inform financial commitment to a project, including investment matrices, strategies for economic evaluations, econometrics of wind energy, cost comparisons of various investment strategies, and cost comparisons with other energy sources. Due to its encompassing scope, this reference will be of distinct interest to practicing engineers, policy and decision makers, project planners, investors and students working in the area of wind energy for power generation.

Rural Technology Development and Delivery - Sreenivas Chigullapalli 2022-06-22

This book comprises the proceedings of the 2nd international conference on Rural Technology Development and Delivery organized by Rural Technology Action group Indian Institute of Technology (IIT) Madras. The book highlights research on demand driven technologies and innovations, mostly on energy, environment, water resources, livelihood and smart technologies for the development of rural India. Spanning multi-disciplinary research aspects on rural technologies and development, this book would be useful for rural entrepreneurs, researchers, students and academic/R&D institutions for getting them involved in appropriate rural technology and development.

Micro-hydropower Sourcebook - Allen R. Inversin 1986-01

Information Technology and Systems - Álvaro Rocha 2020-01-30

This book is composed by the papers accepted for presentation and discussion at The 2019 International Conference on Information Technology & Systems (ICITS'20), held at the Universidad Distrital Francisco José de Caldas, in Bogotá, Colombia, on 5th to 7th February 2020. ICIST is a global forum for researchers and practitioners to present and discuss recent findings and innovations, current trends, professional experiences and challenges of modern information technology and systems research, together with their technological development and applications. The main topics covered are: information and knowledge management; organizational models and information systems; software and systems modelling; software systems, architectures, applications and tools; multimedia systems and applications; computer networks, mobility and pervasive systems; intelligent and decision support systems; big data analytics and applications; human-computer interaction; ethics, computers & security; health informatics; information technologies in education.

Globalization of Low-Carbon Technologies - Venkatachalam Anbumozhi 2017-10-30

This book explores the opportunities and barriers within the Intended Nationally Determined Contributions (INDC) framework of the Paris Agreement for low-carbon technology diffusion. Further, it proposes appropriate and feasible mechanisms required at local, national and regional levels to achieve the INDC targets. The book employs both meta

policy analysis and scenario building to examine, whether the diffusion of low-carbon energy future by 2030 is economically viable under the INDC framework and how international technology cooperation could accelerate investments on the scale required for achieving the INDC targets. Further, this book provides new perspectives on market and non-market mechanisms for the globalization of low-carbon technologies, within the framework conditions of the Paris Agreement, which will be of significant value to senior policy makers, multi-disciplinary academia, and investing communities.

Managing China's Energy Sector - Hongyi Lai 2017-10-02

Since China has now become the world's largest energy consumer, its energy sector has understandably huge implications for the global economy. This book examines the transformation of China's conventional and renewable energy sectors, with special attention to state-business relations. Two studies examine the development of China's energy profile, especially China's renewable energy. Two others explore governmental relations with state-owned enterprises (SOEs) and their reform. Despite drastic restructuring in the late 1990s, SOEs continue their oligopolistic control of the oil and gas sectors and even overshadow the stock market. Three studies investigate the factors that help propel the expansion of China's conventional energy firms, as well as those producing renewable energy (i.e. solar PV industry). A study of China's solar PV industry suggests that China's governmental support for it has evolved from subsidising production (a "mercantile" stage aimed at expanding the industry's global production and export share) to subsidising the demand side (aiming at expanding domestic demand and absorbing redundant manufacture capacity). Another review of this industry finds that firms tend to pay heavy attention to extra-firm institutional network relationships both inside and outside China, and that buyer-supplier networks are influenced by extra-local managerial education. The final chapter compares China's provinces and their embedded carbon-footprints per capita in urban areas from a consumption perspective, using a self-organizing feature map (SOFM) model. This book was originally published as a special issue of the Asia Pacific Business Review.

Energy - Pardeep Singh 2021-09-06

Energy Global energy demand has more than doubled since 1970. The use of energy is strongly related to almost every conceivable aspect of development: wealth, health, nutrition, water, infrastructure, education and even life expectancy itself are strongly and significantly related to the consumption of energy per capita. Many development indicators are strongly related to per-capita energy consumption. Fossil fuel is the most conventional source of energy but also increases greenhouse gas emissions. The economic development of many countries has come at the cost of the environment. However, it should not be presumed that a reconciliation of the two is not possible. The nexus concept is the interconnection between the resource energy, water, food, land, and climate. Such interconnections enable us to address trade-offs and seek synergies among them. Energy, water, food, land, and climate are essential resources of our natural environment and support our quality of life. Competition between these resources is increasing globally and is exacerbated by climate change. Improving resilience and securing resource availability would require improving resource efficiency. Many policies and programs are announced nationally and internationally for replacing the conventional mode and also emphasizing on conservation of fossil fuels and reuse of exhausted energy, so a gap in implications and outcomes can be broadly traced by comparing the data. This book aims to highlight problems and solutions related to conventional energy utilization, formation, and multitudes of ecological impacts and tools for the conservation of fossil fuels. The book also discusses modern energy services as one of the sustainable development goals and how the pressure on resource energy disturbs the natural flows. The recent advances in alternative energy sources and their possible future growth are discussed and on how conventional energy leads to greenhouse gas formation, which reduces energy use efficiency. The different policies and models operating is also addressed, and the gaps that remained between them. Climate change poses a challenge for renewable energy, and thus it is essential to identify the factors that would reduce the possibility of relying on sustainable energy sources. This book will be of interest to researchers and stakeholders, students, industries, NGOs, and governmental agencies directly or indirectly associated with energy research.

Energy, Environment, and Sustainable Development - 2002

Renewables and Energy for Rural Development in Sub-Saharan

Africa - Maxwell Mapako 2013-07-18

Energy supply is a key factor in economic and social development, but lack of modern energy in rural areas limits efforts to alleviate poverty and improve living standards. This book identifies the options for providing modern and improved renewables-based energy to low-income rural areas, with special emphasis on the productive uses. In the five countries represented - Botswana, Eritrea, Ethiopia, Zambia and Zimbabwe - the contributors focus on the advantages of a decentralized approach to energy delivery, the role of income-generating activities in attracting modern energy services to rural areas, and the barriers as well as opportunities that exist in the promotion of renewable energy technologies. The African Energy Policy Research Network (Afrepren) has built up an enviable reputation as the Continent's foremost platform for the development African energy professionals producing policy relevant work. This latest volume in their series of publications is a further contribution to addressing the practical energy needs of Sub-Saharan Africa.

Economics of Water Management in Agriculture - Thomas Bournaris 2014-08-26

This book includes a set of papers from distinguished scholars who critically examine economic issues relating to the relationship between water and agriculture, with a special focus on irrigation. Employing state of the art methodologies, they address the most relevant issues in water policy. The volume offers a wide spectrum of innovative approaches.

Energy in Africa - Manfred Hafner 2018-08-06

This open access book presents a picture of the current energy challenges on the African continent (and the Sub-Saharan region in particular) and proposes pathways to an accelerated energy transition. Starting with an analysis of the status quo and the outlook for Africa's energy demand and energy access, it provides an account of the available resources, including hydrocarbons and renewable energy resources, which are playing an increasingly crucial role. It then moves on to analyze the level of investment required to scale-up Africa's energy systems, shedding light on the key barriers and elaborating on potential solutions. It also provides a suggestion for improving the effectiveness of EU-Africa cooperation. While mainly intended for policymakers and academics, this book also speaks to a broader audience interested in gaining an overview of the challenges and opportunities of the African energy sector today and in the future.

Africa in a Changing Global Environment - Mutanga, Shingirirai Savious 2013-10-20

Africa is one continent severely affected by the ravaging effects of global environment change yet it is least responsible for this. The continent's rural and urban poor are particularly vulnerable to reduced agricultural production, worsening food security, increased incidence of both flooding and drought, spreading of disease and heightening risk of conflict over scarce land and water resources. As such this timely book consisting of chapters authored by scholars from multidisciplinary backgrounds

provides the reader a variety of contexts from which to understand the impacts of global environmental change and how affected African communities are adapting and mitigating the scourge. In addition it discusses different models for mitigation and adaptation applicable to local contexts.

Pumps as Turbines - Arthur Williams 2003

This second edition of the classic title on practical energy provision for isolated houses and remote locations has now been updated with a new chapter. Pumps as Turbine is a practical handbook for engineers and technicians involved in designing and installing small water-power schemes. It concerns the use of standard pump units as a low-cost alternative to conventional turbines to provide stand-alone electricity generation for isolated houses and remote communities. This second edition has been updated and extended to include a case study from a recent scheme installed in collaboration with ITDG Kenya. The pump selection process is described through this step-by-step example, where the site head would have been too low for a Pelton turbine. The case study demonstrates that now, possibly more than ever before, the use of pumps as turbines offers a reliable, low-cost option for rural electrification. Arthur Williams has been involved in micro-hydro research and development since 1987. While completing his PhD he worked with ITDG to set up successful pump-as-turbine demonstration schemes in the UK and Pakistan. He is now a senior lecturer at the Nottingham Trent University where he continues to work on micro- and pico-hydro power.

Regional Development Poles and the Transformation of African Economies - Benaiah Yongo-Bure 2020-02-17

This book argues that the development of capital goods manufacturing industries in four relatively large African economies will create regional development poles, from which industrialization will spread to the smaller African countries. In this book, Benaiah Yongo-Bure explains the need for capital goods industries in Africa and shows how manufacturing can transform economies. He outlines the roles of the Democratic Republic of Congo (DRC), Ethiopia, Nigeria, and South Africa as potential regional development poles, showing how the existing economies, natural resources, and populations of these countries make them ideal candidates, while also considering possible challenges to industrialization. Finally, the author assesses what major infrastructural development is needed to link the countries and regions to increase the spread effects of economic growth. This book will be of interest to scholars and policy makers in economic development and regional development in Africa.

Challenges for Agricultural Research - OECD 2011-01-04

This publication presents twenty papers delivered at an OECD conference on agricultural research. They highlight recent major progress in agricultural research outcomes and address the challenges that lie ahead.