



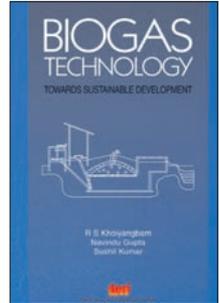
The Energy and Resources Institute

BOOKS ON ENERGY/ MECHANICAL ENGINEERING

Biogas Technology

Towards sustainable development

Authors: *R S Khoiyangbam, Navindu Gupta, and Sushil Kumar*



The global demand for energy is met mainly by fossil fuels. Their excessive and indiscriminate use, coupled with increasing demand for energy, will soon deplete their existing reserves. Therefore, it is extremely important to find alternative, environment-friendly, and ecologically sound sources of energy for meeting the present and future energy requirements. *Biogas Technology: towards sustainable development* makes an attempt to explore the potential of utilizing biodegradable biomass as fuel and manure.

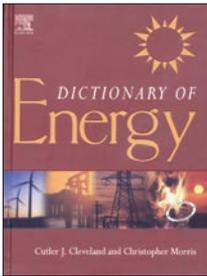
Key features

- Discusses the biomethanation process in detail
- Highlights the utility of biogas as a renewable source of energy
- Depicts popular biogas plant models
- Provides useful information on carbon credit and highlights the environmental implications of the biomethanation process
- Provides information on installing biogas plants for meeting energy and manure demands.

Table of contents

- Biogas technology
- Anaerobic digestion
- Biogas plant models
- Biogas as energy source
- Biogas spent slurry as manure
- Biogas and environment
- Biogas and global warming
- Biogas and rural development

Reprint 2015 • 218 pages • Hardback • 160mm x 240mm • 9788179934043 • ₹ 350.00



Dictionary of Energy (South Asia Edition)

Editors: *Cutler J Cleveland and Christopher Morris*

Published by Elsevier and Distributed by TERI (For sale in India and South Asia only), this authoritative resource on energy issues is made available to readers in India and South Asia exclusively by TERI Press. The impressive new *Dictionary of Energy* will not only help the world communicate better on energy matters, but also help its users understand energy issues and opportunities. In a single volume, *Dictionary of Energy* provides a comprehensive and organized body of knowledge on what is certain to become an increasingly vital area of scientific study and social importance in the 21st century.

Table of contents

- Biographies
- Biological energetics
- Biomass
- Chemistry
- Climate change
- Coal
- Communication
- Consumption and efficiency
- Conversion
- Earth science
- Ecology
- Economics and business
- Electricity
- Environment
- Geothermal
- Global issues
- Health and safety
- History
- HVAC (heating/ventilation/air conditioning)
- Hydrogen
- Hydropower
- Lighting
- Materials
- Measurement
- Mining
- Nuclear
- Oil and gas
- Organizations
- Photovoltaic
- Physics
- Policy
- Refrigeration
- Renewable/alternative forms
- Social issues
- Solar
- Storage
- Sustainable development
- Thermodynamics
- Transportation
- Wind

2006 • 518 pages • Hardback • 185mm x 240mm • 9788131205365 • ₹ 1750.00

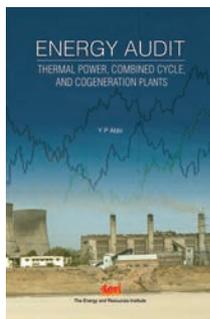
Buy online at <http://bookstore.teri.res.in>

Energy Audit

Thermal power, combined cycle, and cogeneration plants

Author: Y P Abbi

Energy Audit: thermal power, combined cycle, and cogeneration plants attempts to refresh the fundamentals of the science and engineering of thermal power plants and establishes its link with the real power plant performance data through case studies, further developing techno-economics of the energy efficiency improvement measures. It is hoped that the book will rekindle interest in energy audits and analysis of data for designing implementation measures on a continuous basis.



Key features

- Extensive coverage of basic design concepts and equipment details
- Specific details on methodology for energy audit data collection for different equipment/subsystems
- Analysis of data with the basic objective of energy efficiency improvement of different equipment/subsystems of a power plant
- Techno-economics of each energy efficiency/energy conservation measure, to enable management to take right investment decisions
- Insightful discussions on advanced technologies, such as supercritical and IGCC power generation systems

Table of contents

- Energy conservation in operation of thermal power plants
- Section A: design concepts
- Design concepts of steam cycle power plants
- Design concepts of cogeneration plants
- Design concepts of combined cycle power plants
- Section B: Energy audit of steam cycle power plants
- Introduction / getting initiated for EA
- Energy audit of boilers and their auxiliaries
- Energy audit of turbine-generator and their auxiliaries
- Establishing heat rate, specific fuel consumption, and cost of electricity generation from a steam cycle plant
- Energy audit of plant auxiliaries
- Section C: Energy audit of cogeneration and combined cycle plants
- Energy audit of steam turbine-based cogeneration plants
- Energy audit of gas turbine-based cogeneration and combined cycle plants

Reprint 2015 • 288 pages • Hardback • 160mm × 240mm • 9788179933114 • ₹ 1500.00

Energy Security and Economic Development in India

A Holistic Approach

Bala Bhaskar

Energy Security and Economic Development in India

A holistic approach

Author: Bala Bhaskar

This book elaborates on the concept of energy security, highlights its linkages, enumerates India's indigenous energy resources, examines the status of energy security in the country, and makes policy suggestions to ensure energy security in the country.

Table of contents

- Biofuels
- Bioethanol production from lignocellulosics: an overview
- Bioethanol: a status review on metabolic pathway modification of certain ethanologenic bacteria through genetic engineering
- Bioethanol production technologies: economics, environmental impact, and policy issues
- Bio-hydrogen: applications and future prospects
- Methanogenesis from agro-industrial residues: potential and prospects
- Biomass-gasifier-based decentralized energy solutions: technology, potential, problems, and research
- Industrial solid waste
- Coalbed methane
- Bioreactors for wastewater treatment
- Ceramic membrane filters from waste fly ash and their applications
- Technological options for municipal solid waste management
- Technology trends and opportunities in cogeneration
- Environmental regulations for waste management in India

Reprint 2013 • 439 pages • Hardback • 160mm × 240mm • 9788179934609 • ₹ 795.00

BESTSELLER



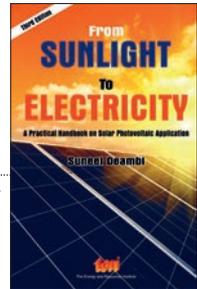
From Sunlight to Electricity

A practical handbook on solar photovoltaic applications

New

Third Edition

Author: Suneel Deambi

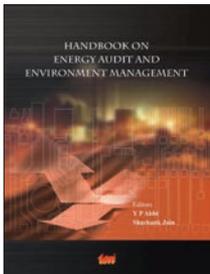


The third edition of *From Sunlight to Electricity: a practical handbook on solar photovoltaic application* brings in the latest information about photovoltaic sector in India, designs and applications of specific devices and related benefits, finance, and policies. This edition of the book gives readers an understanding of the photovoltaic technology programme in India, the issues therein, and its future directions. The information has been presented in a format that is easy to understand and apply. In this third edition, the author has included topics such as global development in PV system, installation and maintenance of PV systems, and application of PV systems for other households.

Table of contents

• Overview of solar photovoltaic programme worldwide • Components of photovoltaic systems • Applications of photovoltaic systems • Designing a solar PV system • Costing of solar photovoltaic systems • Installation and maintenance of photovoltaic systems • Overview of solar photovoltaic programme in India • International photovoltaic programme

2015 • 172 pages • Paperback • 140mm × 220mm • 9788179935736 • ₹ 250.00



Handbook on Energy Audit and Environment Management

Editors: Y P Abbi and Shashank Jain

Handbook on Energy Audit and Environment Management deals at length with the energy audits and takes a closer look at the concept of environment management. TERI endeavours to bring its experience of over two decades in the field of energy audits and provides methodology and guidelines to those involved in this field. Energy audits may be considered the first step towards understanding how energy is being used in a given facility. It indicates the ways in which different forms of energy are being used and quantifies energy use according to discrete functions. The book offers an overview on industrial energy conservation. It also enables users to understand the operation of various equipment and system, and to identify opportunities for energy savings in industries. It is a must-read for every professional interested in energy management and energy audit.

Table of contents

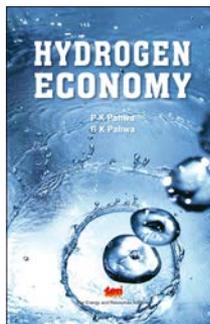
• Industrial energy conservation: an overview • Electric motors • Lighting • Electrical load management • Power quality • Energy management information system • Boilers • Compressed air network • Steam distribution systems • Refrigeration and air conditioning • Pumps and pumping system • Fans and blowers • Cooling tower • Industrial furnaces • Thermic fluid heaters • Water audit and conservation • Solar energy options for industries • Energy, climate change, and clean development mechanism • Environmental management in industries • Future cleaner energy options • Annexure: frequently asked questions

Reprint 2015 • 302 pages • Hardback • 180mm × 240mm • 9788179930922 • ₹ 1500.00

New

Hydrogen Economy

Authors: P K Pahwa and G K Pahwa



As the dependence on the depleting fossils fuels continues and global warming increases, we need to find an energy system that is renewable and sustainable, efficient and cost-effective, convenient and safe. Hydrogen has been proposed as the perfect fuel to sustain the energy system. The availability of a reliable and cost-effective supply, safe and efficient storage, and convenient end use of hydrogen will be essential for a transition to a hydrogen economy. Research is being conducted throughout the world for the development of safe, cost-effective hydrogen production, storage, and end-use technologies that support and foster this transition.

Hydrogen Economy discusses the strategies and roadmaps of introducing hydrogen as the alternate source of fuel for sustainable development. The book examines the link between development and energy, prospects of sustainable development, significance of hydrogen energy economy. It provides an authoritative and up-to-date scientific account of hydrogen generation, storage, transportation, and safety.

Key features

- Explains the significance of hydrogen economy
- Examines the feasibility of transporting, distributing and utilizing hydrogen
- Assesses the safety of using hydrogen and potential hazards

Table of contents

- Energy and development
- Significance of hydrogen economy
- Hydrogen production
- Hydrogen storage
- Transportation, distribution, and utilization of hydrogen
- Hydrogen hazards assessment and safety

2014 • 390 pages • Hardback • 160mm × 240mm • 9788179935040 • ₹ 995.00



MCQ on Oil, Gas, and Petrochemicals

Author: Saurabh Prasad

Multiple Choice Questions on Oil, Gas and Petrochemicals includes over 1500 questions covering topics such as the exploration of oil and gas, refining of oil, natural gas and petrochemical sectors. The book is useful for students pursuing their bachelor's or master's degree in petroleum exploration and for the professionals working in upstream, midstream, and downstream sectors of oil and gas. The book would also be used by various academic institutions and libraries.

FORTHCOMING

Table of contents

- Introduction
- Exploration and production
- Refining
- Natural gas
- Petrochemicals

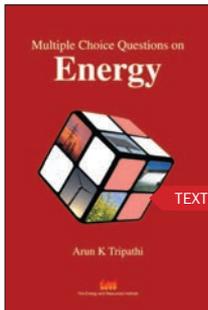
2015 • 300 pages • Paperback • 160mm × 240mm • 9788179935422 • ₹ 350.00

Multiple Choice Questions on Energy

Author: Arun K Tripathi

Multiple Choice Questions on Energy contains about 1300 multiple choice questions covering various sectors of energy, including mechanical energy, electrical energy, chemical energy, nuclear energy, thermal energy, magnetic energy, sound energy, energy from coal, petroleum oil and natural gas, renewable energy, and energy conservation. An introduction to energy has been presented in a comprehensive yet simplified form. This book is useful for academicians, students pursuing engineering or agriculture-related courses, aspirants of various competitive exams, professionals, and stakeholders in the energy sector. It can also be a tool for various quiz programmes organized in schools, universities, and engineering institutions.

The book was released in the Delhi International Renewable Energy Conference 2010, by Mr Suresh Prabhu, Chairman of the Council for Energy, Environment, and Water and former Union Power Minister, and Mr Deepak Gupta, Secretary, Ministry of New and Renewable Energy (MNRE).

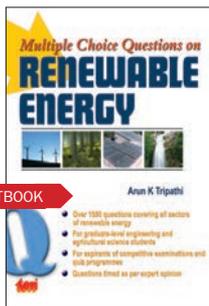


TEXTBOOK

Table of contents

- Introduction • Mechanical energy • Electrical energy • Chemical energy • Thermal energy • Nuclear energy • Magnetic energy • Sound energy • Energy from coal • Energy from petroleum and natural gas • Solar energy • Wind energy • Biomass energy • Small hydropower • Ocean wave and tidal energy • Hydrogen energy • Geothermal energy • Light energy • Energy conservation • Miscellaneous questions • Answers • Bibliography

2011 • 354 pages • Paperback • 160mm × 240mm • 9788179933053 • ₹ 295.00



TEXTBOOK

Multiple Choice Questions on Renewable Energy

Author: Arun K Tripathi

Multiple Choice Questions on Renewable Energy contains over 1500 multiple choice questions covering various sectors of renewable energy, including solar, wind, biomass, biogas, biofuels, hydro, energy from wastes, hydrogen, geothermal, ocean, tidal, and waves. The book has three levels of questions, ranging from school to graduate level. A comprehensive overview of renewable energy development in India has also been presented.

Key features

- The book presents multiple choice questions that will be useful for students who are preparing for entrance examinations. • Different levels of multiple choice questions help students self evaluate themselves. • There are exercises as well. • The book will be useful in quiz competitions also. • Questions have been framed in such a way that they cover the development of renewable energy in India.

Table of contents

- Renewable energy development in India • Quiz on renewable energy • Renewable energy exercise–level 1 • Multiple choice questions • Rapid fire questions • Renewable energy exercise–level 2 • Multiple choice questions • Rapid fire questions • Miscellaneous questions on renewable energy

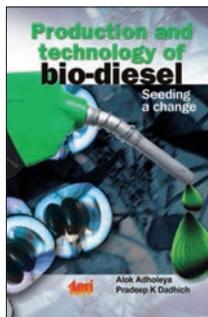
Reprint 2013 • 184 pages • Paperback • 185mm × 240mm • 9788179931288 • ₹ 395.00

Production and Technology of Bio-diesel

Seeding a change

Authors: Alok Adholeya and Pradeep Kumar Dadhich

Production and Technology of Bio-diesel is based on the work that TERI has been doing in the field of bio-diesel production from jatropha. This unique publication covers the entire value chain involved in the production of bio-diesel, right from the nursery stage involving the saplings to the production of transesterified oil (bio-diesel) for use in diesel-powered engines. The user will get in one volume valuable information pertaining to the production of bio-diesel, a process that requires inputs from various disciplines, such as environment, biotechnology, chemical engineering, finance, economics, and automotive engineering.



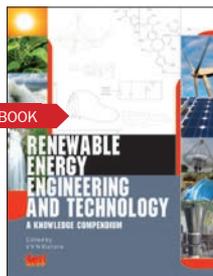
Key features

- Discusses in detail all that one wanted to know about bio-diesel
- Compilation of the work that TERI is doing in the field of bio-diesel
- Data is presented in a well structured and well-organized form
- Extensive data in the form of comprehensive tables and figures supports the text
- The language of the book is simple and pithy, which will interest even a lay reader

Table of contents

- Status of bio-diesel
- Production of raw material
- Technology for bio-diesel production
- Economic analysis of bio-diesel processes – a review
- Policy issues for production and use of bio-diesel
- Limitations and gaps
- Conclusion

2008 • 256pages • Hardback • 140mm × 215mm • 9788179931578 • ₹ 495.00



Renewable Energy Engineering and Technology

Principles and practice (revised international edition)

Editor: V V N Kishore

Renewable Energy Engineering and Technology: principles and practice is a comprehensive guide to renewable technologies and engineering, intended to cater to the rapidly growing number of present and future engineers who are keen to lead the renewable energy revolution. All the main sectors are covered—photovoltaic, solar thermal, wind, bioenergy hydro, wave/ tidal, geothermal—progressing from the fundamental physical principles, through resource assessment and site evaluation, to in-depth examination of the characteristics and deployment of the various technologies. The authors are experienced practitioners, and thus recognize the cross-cutting importance of system sizing and integration. Lucid diagrams, photographs, tables, and equations make this publication an invaluable reference tool, and thus an essential read for students and professionals.

Table of contents

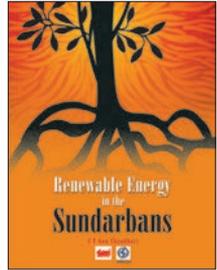
- Energy and development: concerns of the current millennium
- Renewable energy utilization: desirability, feasibility, and the niches
- Review of basic scientific and engineering principles
- The solar energy resource
- Solar photovoltaic technology
- Solar thermal engineering
- Elements of passive solar architecture
- Wind energy resources
- Introduction to wind turbine technology
- Small hydro: resource and technology
- Geothermal energy, wave energy, and ocean thermal energy
- Bio-energy resources
- Thermochemical conversion of biomass
- Biochemical methods of conversion
- Liquid fuels from biomass: fundamentals, process chemistry, and technologies

Reprint 2014 • 914 pages • Hardback • 185mm × 240mm • 9788179932216 • ₹ 2250.00

TEXTBOOK

Renewable Energy in the Sunderbans

Author: *S P Gonchaudhuri*

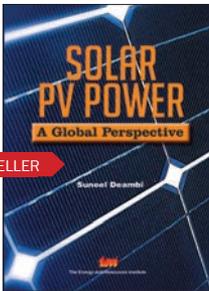


The 54 islands that comprise the Sunderbans are today highly vulnerable to the impacts of climate change. However, the success of the renewable energy programme, which was initiated in the islands in the early 1990s, has been so remarkable that the Sunderbans may be considered a rather unique hub of stand-alone renewable energy systems. Renewable energy in the Sunderbans provides a detailed insight into this programme. Beginning with the conceptual stage, the book goes on to describe the programme in its entirety, aided by interviews and visuals.

Table of contents

• Bengal's natural protection: the Sunderbans edge • Folk, flora, fauna: dramatis personae on the sandy stage • Solarized Sunderbans • Approaches to electrification of remote villages: relevance of the Sunderbans experience • Distributed generation and rural electrification • in the Sunderbans • Overview of off-grid power supply through renewable energy and its social impact • Sagar Island's wind-diesel hybrid power project: a social assessment • Wind-diesel hybrid technology • Sunderbans: an attractive destination for the students of renewable energy Konrad Blum, Indradip Mitra, and Torsten Broer • Resolving the energy crisis through tidal power: the ecological challenge • Renewable energy projects in Sunderbans: a reporter's view

Reprint 2012 • 154 pages • Paperback • 190mm × 250mm • 9788179931202 • ₹ 650.00



Solar PV Power

A global perspective

Author: *Suneel Deambi*

Solar photovoltaic (PV) technology has been successfully implemented in the remote regions of India for more than two decades now. It has various end-use applications such as lighting, pumping water, and charging battery for multiple uses. However, recently, there has been a growing bias towards the use of PV grid connected power plants. The larger issue here is that of tracing a connection between solar energy and grid connectivity. This book provides an insight into the basic understanding of PV grid power plants from various end-use considerations. It also touches

upon the policy, planning, marketing, and financing aspects vis-à-vis the performance indicators attained by different countries in the world. Various facets of solar power generation have been explored, which makes this publication an important intervention in the field of solar PV.

Table of contents

• Global energy scenario: an overview • Trends in photovoltaic technology • Current status of the international solar photovoltaic programme • Advent of megawatt-capacity photovoltaic power plants in India • Photovoltaic grid power plants: case studies • Issues, challenges, and opportunities • Way forward • Bibliography • Annexure: frequently asked questions

Reprint 2012 • 288 pages • Hardback • 160mm × 240mm • 9788179933893 • ₹ 395.00

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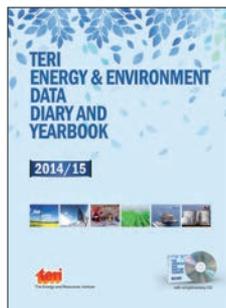
TERI Energy & Environment Data Diary and Yearbook (TEDDY) 2014/15

(with a complimentary CD)

A TERI Publication

New

TERI Energy & Environment Data Diary and Yearbook, or *TEDDY*, is an annual publication brought out by TERI since 1986. *TEDDY* is often used as a reference in other peer-reviewed books and journals for energy and environment-related data. It gives an annual overview of the developments in the energy supplying and consuming sectors as well as the environment sector. It also provides a review of the government policies that have implications for these sectors of the Indian economy.



Key features

- Exhaustive compilation of data from energy supply and demand sectors
- Recent data along with data for the past years presented in the form of structured and easy-to-understand tables
- Recent advances made in the energy sectors are represented in the book
- Self-explanatory figures showing the latest trends in various sectors are also part of each chapter
- The “in focus” section in every chapter highlights a topical issue
- The book comes with a complimentary CD that contains all the chapters and additional tables

Table of contents

- Indian Energy sector: an overview
- Organization of the energy sector
- Commercial energy balance tables and conversion factors
- Energy supply: coal and lignite, petroleum and natural gas, power, and renewable energy sources and technologies
- Energy demand: agriculture, industry, transport, and domestic
- Local and global environment: environment, climate change
- Energy and environment goals: conceptual issues for goals around energy and environment

2015 • 400 pages • Hardback • 220mm × 280mm • 9788179935743 • ₹ 1995.00

Other Books on Energy

The Coal Dilemma by S K Chand (ISBN: 9788179931158) Price: Rs.295.00

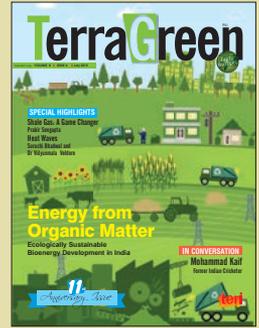
Towards Cleaner Technologies: a process story on biomass gasifiers for heat applications in small and micro enterprises by V V N Kishore (ISBN: 9788179931073) Price: Rs.300.00

TerraGreen



Forthcoming stories

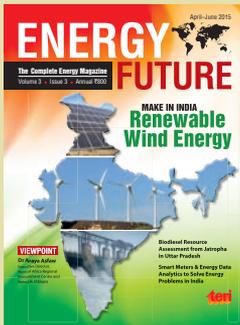
- Wildlife trade: how big is the problem?
- Wetlands: keepers of the ecological balance
- Clean energy: what options does the world have?
- Water cooperation: current trends and the way ahead
- Sustainable agriculture • Social entrepreneurship



TerraGreen is India's most respected monthly magazine dedicated to informing and enlightening its readers on issues of environment, energy, and sustainable development. Launched in 2004, TerraGreen has made an indelible impression on the minds of readers both in India and across the world. Today, it enjoys a readership of over 40,000 and a subscriber base of close to 5,000.

TerraGreen Tariff

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2	24	1200	1020	180	18
3 (online free)	36	1800	1440	360	25



ENERGY FUTURE

The Complete Energy Magazine

By looking at the technologies, policy decisions, and business ventures that have the potential to overcome energy shortage and our crippling dependence on depleting fossil fuels, *Energy Future* draws from a deep well of expertise at TERI (The Energy and Resources Institute), India's leading research institute on energy and green growth. Knowledge of energy security and development is a critical requirement in the modern global economy, and *Energy Future* aims to educate and inform you about the wide world of energy; its history, its future, how the energy industry works, how it has affected the world, and how it continues to affect you and me.

CONTENTS

- Energy news • Cover story • Features • The solar quarterly • Viewpoint • Energy insights
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Energy Future Tariff

1 year	2 years	3 years
₹ 800	₹ 1440	₹ 2040



JOURNAL OF RESOURCES ENERGY AND DEVELOPMENT

JREaD focuses on research and integration of knowledge at the interface between resources and development. It provides a forum for comprehensive investigation, analysis, and review of issues in the fields of energy, environment, and natural resource management that confront decision-makers, planners, consultants, politicians, and researchers. It deals with theoretical and methodological subjects and explores sustainability issues and transitions and facilitates dialogues between the scientific community and the society at large.

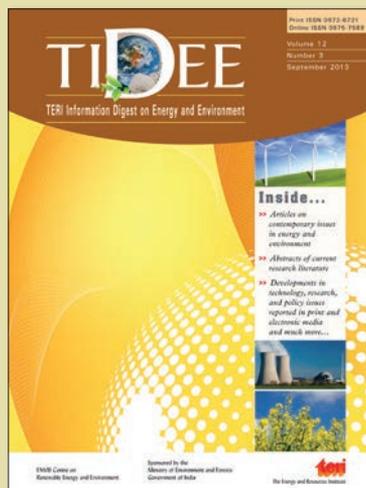
Editor: Dr Arbinda Mishra, TERI University, New Delhi

Frequency: Bi-annual (2 issues per year—March and September)

ISSN: Print ISSN: 0975-7554 • Online ISSN: 0975-7562

Subscription rate: Print – ₹1500/\$180

Print+Online – ₹2200/\$211



TERI INFORMATION DIGEST ON ENERGY AND ENVIRONMENT

TIDEE aims to keep policy-makers, scientists, and technologists abreast of the latest developments in the fields of energy, local and global environment, and sustainable development. More than 600 periodicals, several hundred other documents, indexing services and other electronic resources, such as CD-ROMs, World Wide Web, discussion groups, and mailing lists are scanned.

Editor: Dr P K Bhattacharya, TERI, New Delhi

Frequency: Quarterly

(4 issues per year—March, June, September, and December)

ISSN: Print ISSN: 0972-6721 • Online ISSN: 0975-7589

Subscription rate: Print – ₹1700/\$160

Print + Online subscription – ₹2500/\$185

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9788179934609	Energy Security and Economic Development in India: a holistic approach	2013	795.00	
9788179935736	From Sunlight to Electricity, Third Edition	2015	250.00	
9788179930922	Handbook on Energy Audit and Environment Management	2015	1500.00	
9788179935040	Hydrogen Economy	2014	995.00	
9788179935422	MCQ on Oil, Gas, and Petrochemicals	2015	350.00	
9788179933053	Multiple Choice Questions on Energy	2011	295.00	
9788179931288	Multiple Choice Questions on Renewable Energy	2013	395.00	
9788179931578	Production and Technology of Bio-diesel: seeding a change	2008	495.00	
9788179932216	Renewable Energy Engineering and Technology, Revised International Edition	2014	2250.00	
9788179931202	Renewable Energy in the Sundarbans	2012	650.00	
9788179933893	Solar PV Power: a global perspective	2012	395.00	
9788179935743	TERI Energy & Environment Data Diary and Yearbook (TEDDY) 2014/15	2015	1995.00	
9788179931158	The Coal Dilemma	2008	295.00	
9788179931073	Towards Cleaner Technologies	2007	300.00	
0974-5688	TerraGreen Monthly (Print) — One year		540.00	
2278-7186	Energy Future Quarterly (Print+Online) — One year		800.00	
0975-7562	TERI Information Digest on Energy and Environment Quarterly (Print+Online)		2500.00	
0975-7562	Journal of Resources, Energy, and Development Bi-annual (Print+Online)		2200.00	

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The Energy and Resources Institute
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