

## Subject Guide

# Energy Resources

“Energy is a physical term that describes the capacity of a physical system to perform work. Energy exists in several forms such as thermal energy (heat), radiant energy (light), mechanical energy (kinetic), electric energy, chemical energy, nuclear energy and gravitational energy.” (Urban 2020, 3)

## Background Sources

[Sustainable Urban Energy Planning: A handbook for cities and towns in developing countries](#) by United Nations Human Settlements Programme (UN-HABITAT) helps local government workers create and implement sustainable energy and climate action plans.

[Sustainable Urban Energy: A Sourcebook for Asia](#) by United Nations Human Settlements Programme created through a collaboration between the International Urban Training Centre (IUTC) and UN-HABITAT, offers basic principles, knowledge, and diverse case studies on sustainable urban energy planning and management.

[Energy](#): An encyclopedic entry from Britannica explains the overview of energy resources.

[Energy Basics](#): This segment is part of the Understand Energy course offered by Stanford University.

[Energy Encyclopedia](#): The Energy Encyclopedia (EE) is a project by Simopt offers a variety of online classes and films.

[World energy assessment. Energy and the challenge of sustainability](#) builds consensus on using energy effectively for sustainable development.

[The Global Atlas for Renewable Energy: A decade in the making](#) is a report from the International Renewable Energy Agency (April 2024).

[Energy Glossary](#) by the U.S. Energy Information Administration defines key terms in energy in the following seven fuel groups, alternative fuels, coal, electricity, natural gas, nuclear, petroleum and petroleum.

[IRENA Statistics and Data](#): International Renewable Energy Agency (IRENA) provides thorough information about renewable energy. They gather data from members using a questionnaire and research. This includes details on capacity, power generation, and energy balances.

[The state of renewable energy in India 2019: a citizen's report](#) by Priyavrat Bhati

**Call Number:** 333.7940954 BHA 012912

**ISBN:** 9788186906279

**Publication Date:** 2019

**Subjects:** Energy, Renewable energy, Green energy

**Tags:** Energy, energy policy, energy industries, renewable energy sources, green technology, energy development, energy consumption, energy conservation, power resources, infrastructure, smart cities

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## Electronic Databases

[Prayas \(Energy Group\), Renewable Energy Data Portal](#) collates public domain data on renewable energy for easy access. It is interactive, allowing users to compare data across different segments.

[India Climate and Energy Dashboard](#) by NITI Aayog provides comprehensive and real-time data on the energy sector, climate, and related economic datasets.

[Manupatra](#) provides laws, acts, and cases related to business policies and legal precedents across various industries and government departments involved in energy resources. Write to [library@iihs.ac.in](mailto:library@iihs.ac.in) to access the portal.

[EPW Research Foundation India Time Series](#): The power sector section contains information about installed capacity, generation, transmission, distribution, sales, consumption, and losses. This data is taken from Central Electricity Authority publications spanning from 1957–58 to 2007–08.

[IndiaStat](#): The datasets feature forecasts and estimates for renewable energy, budget allocations, grant requests, consumption, and energy generation across states and sectors. They are available for download and can be easily queried.

[CMIE Capex](#): Covers electricity and its transmission and distribution.

## Datasets and Maps

[Sustainable Healthy Cities](#): Datasets providing data on energy consumption in urban areas across 640 Indian districts for 2011.

[Energy.gov Resources](#):

These include applications and businesses that utilise energy information, as well as open data, a data blog, and several energy datasets.

[OpenEI](#) is emerging as a leading global platform for energy data, particularly in renewable energy and energy efficiency analyses. Like Wikipedia, users can view, edit, and add data freely. Additionally, OpenEI offers a platform for sharing datasets.

The [IEA](#) offers the most reliable and extensive global energy data. They gather, evaluate, and share information on energy supply and demand, along with other important indicators like energy prices and efficiency, including ongoing development of additional measures.

## Databases

[IEA Energy Statistics](#): Statistics on world energy markets ranging from oil to renewals, sectoral analyses of markets,

technologies and policies.

[Data.gov.in](#) provides more than 280 datasets in the energy sector in India.

[Our World in Data: Energy](#) by Hannah Ritchie, Pablo Rosado and Max Roser provides interactive visualisations and data on energy.

[International Energy Outlook Cases](#) by the U. S. Energy Information Administration. The portal provides data tables on electricity generation, capacity, delivered energy, liquid fuels production, natural gas, Kaya identity, the industrial sector, the transportation sector, coal, and crude oil prices.

[Reports and resources](#) from the Global Wind Energy Council provide reports on offshore wind energy.

[State-wise policies and incentives for US Territories, District of Columbia and Federal](#) by NC Clean Energy Technology Center, North Carolina State University provides data in the form of interactive visualisations.

[National Service Center for Environmental Publications](#) by the United States Environmental Protection Agency provides access to EPA technical, scientific and educational materials.

[Resources](#) from Renewable Energy World include news, podcasts, commentaries, and articles.

[Congressional Research Service Reports](#) by UNT Digital Library provides reports on alternative energy.

[Country Analysis Executive Summary: India](#) by the U. S. Energy Information Administration. Which provides electricity generating capacity by different types.

[Greening India's Energy Mix with Compressed Biogas \(CBG\)](#) by the Centre for Science and Environment outlines India's current CBG strategy, addresses challenges in large-scale adoption, and provides recommendations to overcome these obstacles.

[India Energy Outlook 2021](#) by the International Energy Agency is a World energy outlook special report which looks at how India can provide reliable, affordable, and sustainable energy to its growing population.

[Annual reports](#) from the National Institute of Wind Energy. The focus of NIWE's agenda was creating programs and sharing best practices through action research.

[India Energy Profile](#) by Power for all. It provides statistics on population, energy access, and people without electricity. Additionally, it features articles on the Indian energy sector.

[Nuclear Power in India](#) by World Nuclear Association outlines the electricity sector, energy policy, nuclear power industry, industry developments, research and development, and more in India.

[Energy Statistics India – 2022](#) by Down to Earth provides comprehensive statistics on India's energy resources, reflecting the country's progress towards reliable and sustainable energy systems. It includes detailed data on production, consumption, trade, and energy balance, sourced from various government ministries.

[India's energy options and the roadmap ahead](#). A podcast where industry experts discuss the challenges posed by India's reliance on fossil fuels in the transition to cleaner energy sources like hydrogen, biofuels, and electric mobility.

[Country profile of India](#) by the Energy Transitions Commission, run by The Energy and Resources Institute. It prompted the government to raise its renewable energy targets. ETC India is currently aiding in updating India's Nationally Defined Contribution and is studying the power system to integrate renewables and explore decarbonization options beyond 2030.

[India: Energy Country Profile](#) by Hannah Ritchie and Max Roser from Our World in Data. It provides data regarding access to energy, energy and electricity consumption, energy mix energy and carbon efficiency.

[Energy Statistics India 2023](#) by the Ministry of Statistics and Programme Implementation. It serves as a comprehensive collection of updated statistics on energy resources. It showcases India's dedication and the progress achieved in building reliable, sustainable, and efficient energy systems.

[India Energy: The Struggle for Power](#) by Raymond E. Vickery (Report). India's increasing global influence is well-known, yet its essential energy requirements, crucial for powering households, industries, and sustaining the economy, receive less focus. Raymond E. Vickery, a leading authority on India's energy landscape, examines these issues and proposes strategies for improving energy security in his latest publication.

### Government Sources (India)

- [Ministry of Power](#): Previously called the Ministry of Energy Sources, it is now known as the Ministry of Power. The ministry focuses on developing electrical energy in the country. It handles planning, policies, project evaluation, project monitoring, training, legislation, and management related to thermal, hydro power generation, transmission, and distribution.
- [Ministry of New and Renewable Energy \(MNRE\)](#): The Ministry of New and Renewable Energy (MNRE) in India oversees new and renewable energy issues, aiming to develop and utilise these energy sources to fulfil the country's requirements.
- [Central Electricity Authority \(CEA\)](#): The CEA assists the Ministry of Power with policymaking and sets technical standards. Additionally, it monitors projects, shares power sector information, and enhances the skills of power sector workers in the country.
- [Ministry of Petroleum and Natural Gas](#): The Ministry of Petroleum and Natural Gas handles tasks related to exploring and producing oil and natural gas, refining, distributing and marketing them, as well as

managing the import, export, and conservation of petroleum products.

- [Nuclear Power Corporation of India Limited \(NPCIL\)](#):  
The NPCIL is a government-owned company under the Department of Atomic Energy (DAE). It handles the design, construction, and operation of nuclear power plants in India.
- [Ministry of Environment, Forest and Climate Change \(MoEFCC\)](#):  
The MoEFCC oversees India's environmental and forestry policies and programmes.
- [Indian Renewable Energy Development Agency \(IREDA\)](#)  
The IREDA is an Indian public sector enterprise that offers financial aid and services for projects involving renewable energy sources and energy efficiency/conservation.
- [Bureau of Energy Efficiency \(BEE\)](#):  
The BEE aims to develop policies and strategies focusing on self-regulation and market principles to reduce India's energy intensity.

### Journals

- [Renewable and Sustainable Energy Reviews](#)
- [Energy & Environmental Science](#)
- [Energy Policy](#)
- [Nature Energy](#)
- [Journal of Cleaner Production](#)
- [Energy Sustainability and Society](#)
- [Clean Energy](#)
- [Current Sustainable/Renewable Energy Reports](#)
- [Journal of Resources, Energy and Development](#)
- [Journal of Renewable and Sustainable Energy](#)

- [Distributed Generation & Alternative Energy Journal](#)
- [Air Conditioning and Refrigeration Journal](#)
- [Energy and Buildings](#)
- [Energy Efficiency](#)
- [Energy Research & Social Science](#)
- [African Journal of Science, Technology, Innovation and Development](#)
- [Journal of Science and Technology Policy Management](#)
- [International Journal of Energy Sector Management](#)
- [Environmental Research: Energy](#)
- [Progress in Energy](#)

JSTOR includes electronic journals in its collections focused on business, economics, and social sciences. Additionally, visit the IIHS [Library Journals webpage](#) to access the journals the library has subscribed to. For a listing of [Sustainable Energy](#) journals, see Google Scholar.

### Working Papers

[India's Energy and Emissions Outlook](#): Results from India Energy Model: Working papers by the Energy, Climate Change and Overseas Engagement Division, NITI Aayog

[Green Energy Finance in India: Challenges and Solutions](#) by Gopal Krishna Sarangi (ADB Working Papers) (2018). Working Papers from MIT Center for Energy and Environmental Policy Research

[Working papers](#) from Centre for Applied Energy Economics and Policy Research, Griffith University.

[C-EENRG Working Papers](#) from Cambridge Centre for Environment, Energy and Natural Resource Governance, University of Cambridge.

[Working papers](#) from Resources for the Future.

[EPRG Working Papers](#) from Energy Policy Research Group, University of Cambridge

[Working Paper Series in Production and Energy](#) from Institute for Industrial Production, Karlsruhe Institute of Technology

[Working Paper Series](#) from Energy Institute, Haas School of Business, University of California

[Working papers](#) from Massachusetts Institute of Technology (MIT) Energy Initiative

[FCN Working Paper Series](#) from Institute for Future Energy Consumer Needs and Behavior, RWTH School of Business and Economics

[FCN Working Paper Series](#) from Institute for Future Energy Consumer Needs and Behavior, RWTH Aachen University

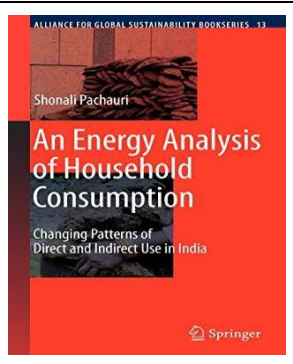
[Working papers](#) from Centre for Policy Research

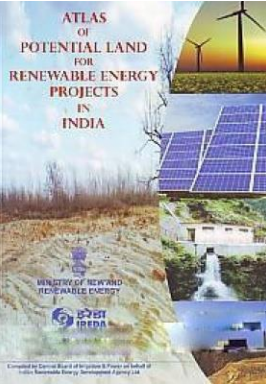
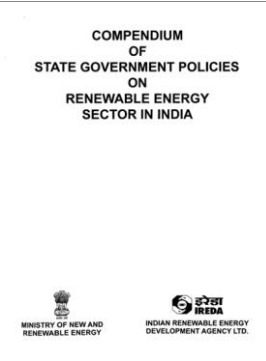
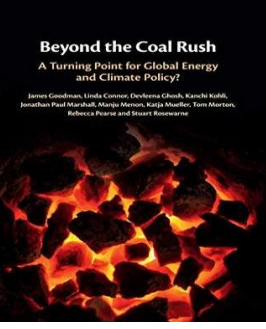
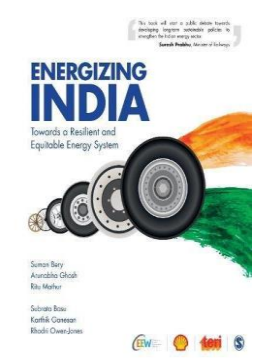
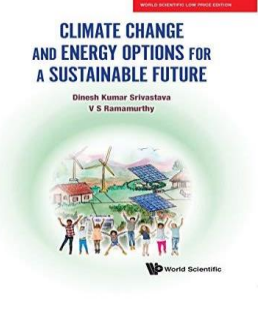
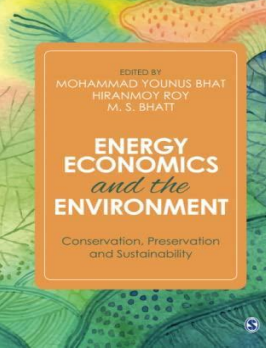
[TUED working papers and documents](#) from Trade Unions for Energy Democracy

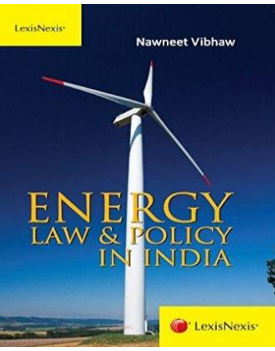
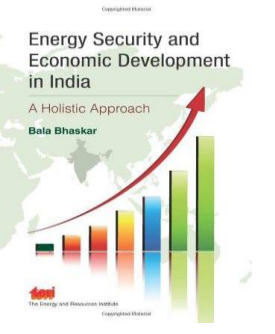
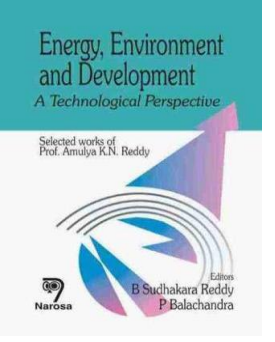
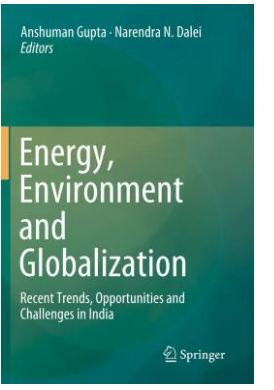
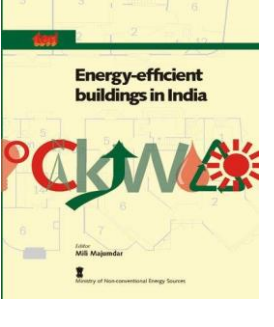
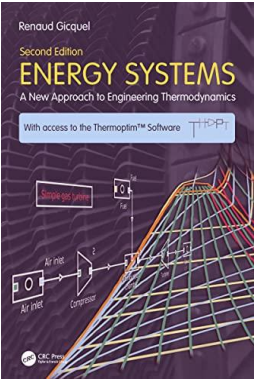
[Recharge working papers](#) from The University of Edinburgh

[Working papers](#) from Centre for Energy Policy and Economics, Eidgenössische Technische Hochschule Zürich

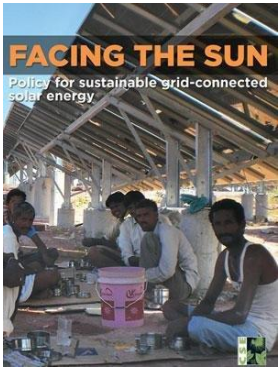
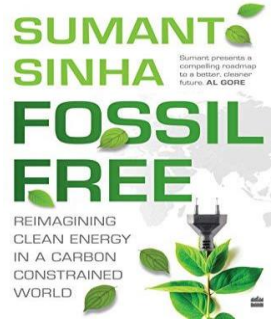
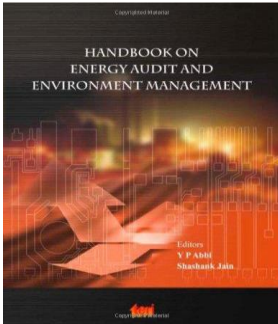
**Books and e-books**

	<p><a href="#">Achieving universal energy access in India: challenges and the way forward</a> by Maithani, P C.</p> <p><b>Call Number:</b> 333.7932 MAI 007117  <b>ISBN:</b> 9789351501374  <b>Publication Date:</b> 2015</p>
	<p><a href="#">An energy analysis of household consumption: changing patterns of direct and indirect use in India</a> by Pachauri, Shonali.</p> <p><b>Call Number:</b> 333.790954 PAC 008534  <b>ISBN:</b> 9781402043017  <b>Publication Date:</b> 2007</p>

	<p><a href="#">Atlas of potential land for renewable energy projects in India</a> by Central Board of Irrigation and Power and Indian Renewable Energy Development Agency.</p> <p><b>Call Number:</b> 621.04200223 ATL 007233  <b>ISBN:</b>  <b>Publication Date:</b> 2015</p>		<p><a href="#">Compendium of state government policies on renewable energy sector in India</a> by Central Board of Irrigation and Power.</p> <p><b>Call Number:</b> 621.0420954 COM 007873  <b>ISBN:</b>  <b>Publication Date:</b> 2014</p>
	<p><a href="#">Beyond the coal rush: a turning point for global energy and climate policy?</a> by Goodman, James.</p> <p><b>Call Number:</b> 338.2724 GOO 016241  <b>ISBN:</b> 9781108479820  <b>Publication Date:</b> 2020</p>		<p><a href="#">Energizing India: towards a resilient and equitable energy system</a> by Bery, Suman; Ghosh, Arunabha; Mathur, Ritu; Basu, Subrata; Ganesan, Karthik; Owen-Jones, Rhodri.</p> <p><b>Call Number:</b> 333.790954 BER 010021  <b>ISBN:</b> 9789385985232  <b>Publication Date:</b> 2016</p>
	<p><a href="#">Climate change and energy options for a sustainable future</a> by Srivastava, D K; Ramamurthy, V S.</p> <p><b>Call Number:</b> 363.73874 SRI 016697  <b>ISBN:</b> 9780000990068  <b>Publication Date:</b> 2021</p>		<p><a href="#">Energy economics and the environment: conservation, preservation and sustainability</a> by Bhat, Mohammad Younus; Roy, Hiranmoy; Bhatt, M S.</p> <p><b>Call Number:</b> 363.7 BHA 016374  <b>ISBN:</b> 9789353883102  <b>Publication Date:</b> 2020</p>


	<p><a href="#">Energy law and policy in India</a> by Vibhaw, Nawneet.</p> <p><b>Call Number:</b> 346.5404679 VIB 004742  <b>ISBN:</b> 9789351431855  <b>Publication Date:</b> 2014</p>
	<p><a href="#">Energy security and economic development in India: a holistic approach</a> by Bhaskar, Bala.</p> <p><b>Call Number:</b> 333.7915 BHA 003137  <b>ISBN:</b> 9788179934609  <b>Publication Date:</b> 2013</p>
	<p><a href="#">Energy, environment and development: a technological perspective</a> by Reddy, Amulya K N; edited by Reddy, B.Sudhakara; Balachandra, P.</p> <p><b>Call Number:</b> 333.790954 ENE 000081  <b>ISBN:</b> 9788173197475  <b>Publication Date:</b> 2006</p>
	<p><a href="#">Energy, Environment and Globalization : Recent trends, opportunities and challenges in India</a> by Gupta, Anshuman; Dalei, Narendra N.</p> <p><b>Call Number:</b> 338.927 ENE 019534  <b>ISBN:</b> 9789811696008  <b>Publication Date:</b> 2020</p>
	<p><a href="#">Energy-efficient buildings in India</a> by Majumdar, Mili.</p> <p><b>Call Number:</b> 720.4720954 ENE 002135  <b>ISBN:</b> 8185419825  <b>Publication Date:</b> 2001</p>
	<p><a href="#">Energy systems : a new approach to engineering thermodynamics</a> by Renaud Gicquel, École des Mines de Paris, MINES ParisTech, France.</p> <p><b>Call Number:</b> 621.042 GIC 017969  <b>ISBN:</b> 9781032007748  <b>Publication Date:</b> 2022</p>

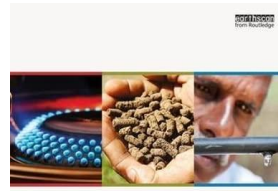


	<p><a href="#">Facing the sun: policy for sustainable grid-connected solar energy</a> by Bhushan, Chandra; Hamberg, Jonas.</p> <p><b>Call Number:</b> 333.79230954 BHU 001985  <b>ISBN:</b> 9788186906637  <b>Publication Date:</b> 2012</p>
	<p><a href="#">Fossil free : reimagining clean energy in a carbon constrained world</a> by Sinha, Sumant.</p> <p><b>Call Number:</b> 333.794 SIN 015445  <b>ISBN:</b> 9789390327003  <b>Publication Date:</b> 2020</p>
	<p><a href="#">Handbook on energy audit and environment management</a> by Abbi, Y P; Jain, Shashank.</p> <p><b>Call Number:</b> 333. 79 HAN 003115  <b>ISBN:</b> 8179930920  <b>Publication Date:</b> 2006</p>

	<p><a href="#">Handbook of renewable energy technology and systems</a> edited by Ramesh C, Bansal &amp; Ahmed F Zobaa.</p> <p><b>Call Number:</b> 621.042 HAN 017972  <b>ISBN:</b> 9781786349026  <b>Publication Date:</b> 2021</p>
	<p><a href="#">Integrated energy policy: report of the expert committee</a> by India. Expert Committee on Integrated Energy Policy.</p> <p><b>Call Number:</b> 333.790954 INT 005913  <b>ISBN:</b>  <b>Publication Date:</b> 2006</p>
	<p><a href="#">Powerless: India's energy shortage and its impact</a> by Tranum, Sam.</p> <p><b>Call Number:</b> 333.790954 TRA 007542  <b>ISBN:</b> 9788132113140  <b>Publication Date:</b> 2013</p>

	<p><a href="#">Principles of sustainable energy systems</a> edited by Frank Kreith and Susan Krumdieck.</p> <p><b>Call Number:</b> 621.042 KRE 017493 <b>ISBN:</b> 9781466556966 <b>Publication Date:</b> 2014</p>		<p><a href="#">Renewable energy systems : a smart energy systems approach to the choice and modeling of 100% renewable solutions</a> edited by Henrik Lund by Lund, Henrik.</p> <p><b>Call Number:</b> 333.794011 REN 004166 <b>ISBN:</b> 9780124104235 <b>Publication Date:</b> 2014</p>
	<p><a href="#">Principles of sustainable energy systems, Third Edition</a> by Charles F. Kutscher, Jana B. Milford and Frank Kreith.</p> <p><b>Call Number:</b> 333.794 KUT 017888 <b>ISBN:</b> 9781498788922 <b>Publication Date:</b> 2018</p>		<p><a href="#">The next stop: natural gas and India's journey to a clean energy future</a> by Mehta, Vikram Singh.</p> <p><b>Call Number:</b> 338.47665730954 MEH 016947 <b>ISBN:</b> 9789390327430 <b>Publication Date:</b> 2021</p>
	<p><a href="#">Renewable energy in India: economics and market dynamics</a> by Deo, Pramod; Chatterjee, S K; Modak, S.</p> <p><b>Call Number:</b> 333.7940954 DEO 018742 <b>ISBN:</b> 9789353887810 <b>Publication Date:</b> 2021</p>		<p><a href="#">The power of promise: examining nuclear energy in India</a> by Ramana, M V.</p> <p><b>Call Number:</b> 333.79240954 RAM 009188 <b>ISBN:</b> 9780670081707 <b>Publication Date:</b> 2012</p>

 <p><b>URBAN ENERGY SYSTEMS</b> An Integrated Approach EDITED BY JAMES KEIRSTEAD AND NILAY SHAH</p>	<p><a href="#">Urban energy systems: an integrated approach</a> edited by James Keirstead and Nilay Shah.</p> <p><b>Call Number:</b> 333.79091732 URB 002694 <b>ISBN:</b> 9780415529020 <b>Publication Date:</b> 2013</p>
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 <p><b>RESOURCE RECOVERY FROM WASTE</b> Business Models for Energy, Nutrient and Water Reuse in Low- and Middle-income Countries Edited by Miriam Otoo and Pay Drechsel</p>	<p><a href="#">Resource recovery from waste: business models for energy, nutrient and water reuse in low- and middle-income countries</a> by Otoo, Miriam; Drechsel, Pay.</p> <p><b>Call Number:</b> 628.44580684 OTO 013028 <b>ISBN:</b> 9781138016552 <b>Publication Date:</b> 2018</p>
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## Faculty Books and Reports

 <p><b>FUNDAMENTALS OF INTEGRATED DESIGN FOR SUSTAINABLE BUILDING</b> SECOND EDITION MARIAN KEELER · PRASAD VAIDYA WILEY</p>	<p><a href="#">Fundamentals of integrated design for sustainable building</a> by Keeler, Marian; Vaidya, Prasad.</p> <p><b>Call Number:</b> 720.47 KEE 015779 <b>ISBN:</b> 9781118881910 <b>Publication Date:</b> 2016</p>
 <p>iihs Urban India 2015: Evidence IUC REPORT</p>	<p><a href="#">Urban India 2015: evidence</a> by IUC author and production team, Aromar Revi [and 12 others]. (P. 137)</p> <p><b>Call Number:</b> <b>ISBN:</b> 9789387315310 <b>Publication Date:</b> 2015</p>

## Reference

Urban, Frauke. 2020. *Energy and Development. Rethinking Development*. New York: Routledge. (p. 3)