Journal of
Materials Engineering and Applications

Abstract

Energy sustainability: A key to the sustainable development

Marc A. Rosen
University of Ontario Institute of Technology, Oshawa, Ontario, Canada

Abstract:

Sustainable development is a critically important goal for human and societal activity. Energy sustainability is of great importance to any plans for overall sustainable development. This is particularly important given the pervasiveness of energy use, its importance in economic development and living standards, and the significant impacts that energy processes and systems have on the environment. Many factors that need to be considered and appropriately addressed in moving towards energy sustainability are examined in this talk. These include appropriate selection of energy resources bearing in mind sustainability criteria, facilitation of the use of sustainable energy resources, enhancement of the efficiency of energy-related processes, and a holistic adoption of environmental stewardship in energy activities. In addition, other key sustainability measures are addressed, such as economics, equity, land use, lifestyle, sociopolitical factors and population. Conclusions are provided related both on options for energy sustainability and on means to achieve sustainable development.

Biography:

Marc A. Rosen is a Professor at the University of Ontario Institute of Technology in Oshawa, Canada, where he served as founding Dean of the Faculty of Engineering and Applied Science. Dr. Rosen was President of the Engineering Institute of Canada. A registered Professional Engineer in Ontario, he serves as Editor-in-Chief of several journals and as a Director of Oshawa Power and Utilities Corporation. With over 60 research grants and contracts and 900 publications, Dr. Rosen is active in sustainable energy, environmental impact, and energy technology (including renewable energy and efficiency). Much of his research has been carried out for industry, and he has written numerous books. Dr. Rosen has worked for such organizations as Imatra Power Company in Finland, Argonne National Laboratory near Chicago,

and the Institute for Hydrogen Systems near Toronto. Dr. Rosen has received numerous awards and honors, and is a fellow of several societies and organizations.

Recent Publications:

1. Rosen, M.A. and Koohi-Fayegh, S. 2016. The Prospects for Hydrogen as an Energy Carrier: An Overview of Hydrogen Energy and Hydrogen Energy Systems. Energy, Ecology and Environment 1(1):10–29.
2. Jianu, O.A., Wang, Z., Rosen, M.A. and Naterer, G.F. 2016. Experimental Investigation of Particle Dissolution Rates in Aqueous Solutions for Hydrogen Production. Heat and Mass Transfer 52(10):2067–2073.
3. Bingham, R., Rosen, M.A. and Agelin-Chaab, M. 2016. Feasibility of a Hybrid Solar and Wind Power System for an Island Community in The Bahamas. International Journal of Renewable Energy Research 6(3):951-963.
4. Rad, F.M., Fung, A.S. and Rosen, M.A. 2017. An Integrated Model for Designing a Solar Community Heating System with Borehole Thermal Storage. Energy for Sustainable Development 36C:6-15.
5. Khalid, F., Dincer, I. and Rosen, M.A. 2016. Analysis and Assessment of an Integrated Hydrogen Energy System. International Journal of Hydrogen Energy 41(19):7960-7967.

Green Energy and Material Science| September 24, 2020| Dubai, UAE

Citation: Marc A. Rosen, Energy sustainability: A key to the sustainable development, Green Energy and Material Science, September 24, Dubai, UAE