

Advanced in biomass and biogas energy

Abdeen Omer

Energy Research Institute (ERI), UK



Abstract

People are relying upon oil for primary energy and this will continue for a few more decades. Other conventional sources may be more enduring, but are not without serious disadvantages. The renewable energy resources are particularly suited for the provision of rural power supplies and a major advantage is that equipment such as flat plate solar driers, wind machines, etc., can be constructed using local resources. Without the advantage results from the feasibility of local maintenance and the general encouragement such local manufacture gives to the build up of small-scale rural based industry. This communication comprises a comprehensive review of energy sources, the environment and sustainable development. It includes the renewable energy technologies, energy efficiency systems, energy conservation scenarios, energy savings in greenhouses environment and other mitigation measures necessary to reduce climate change. This study gives some examples of small-scale energy converters, nevertheless it should be noted that small conventional, i.e., engines are currently the major source of power in rural areas and will continue to be so for a long time to come. There is a need for some further development to suit local conditions, to minimise spares holdings, to maximise the interchangeability of the engine parts, and of the engine applications. Emphasis should be placed on full local manufacture. Biogas from biomass appears to have potential as an alternative energy source, which is potentially rich in biomass resources. This is an overview of some salient points and perspectives of biogas technology. The current literature is reviewed regarding the ecological, social, cultural and economic impacts of biogas technology. This article gives an overview of present and future use of biomass as an industrial feedstock for production of fuels, chemicals and other materials. However, to be truly competitive in an open market situation, higher value products are required. It is concluded that renewable environmentally friendly energy must be encouraged, promoted, implemented and demonstrated by a full-scale plant (device) especially for use in remote rural areas.

Biography

Dr. Abdeen Mustafa Omer (BSc, MSc, PhD) is an Associate Researcher at Energy Research Institute (ERI). He obtained his PhD degree in the Built Environment and Master of Philosophy degree in Renewable Energy Technologies from the University of Nottingham. He is qualified Mechanical Engineer with a proven track record within the water industry and renewable energy technologies. He has been graduated from University of El Menoufia, Egypt, BSc in Mechanical Engineering. His previous experience involved being a member of the research team at the National Council for Research/Energy Research Institute in Sudan and working director of research and development for National Water Equipment Manufacturing co. Ltd., Sudan. He has been listed in the book WHO'S in the World 2005, 2006, 2007 and 2010. He has published over 300 papers in peer-reviewed journals, 200 review articles, 7 books and 150 chapters in books.

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