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Review of baseline studies on energy policies and indicators in Malaysia for future sustainable energy development (Review)

 Hannan, M.A.^a , Begum, R.A.^b, Abdolrasol, M.G.^c, Hossain Lipu, M.S.^c, Mohamed, A.^c, Rashid, M.M.^d 
^aDepartment of Electrical Power Engineering, Universiti Tenaga Nasional, Kajang, Malaysia^bCenter for Water Cycle, Marine Environment and Disaster Management (CWMD), Kumamoto University, Kumamoto, Japan^cCentre for Integrated Systems Engineering and Advanced Technologies, Universiti Kebangsaan Malaysia, Bangi, Selangor, MalaysiaView additional affiliations 

Abstract

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Malaysia's framework for energy development was established in the early 1970s. Henceforth, many successive policies were introduced as potential resources for electricity generation and utilization. Currently, as a signatory to the United Nations Framework Convention on Climate Change, Malaysia is sparing no effort to comply with the policy to meet the challenges of mitigating over-dependence on fossil fuels, reducing carbon levels, and achieving sustainable national development. This paper reviews the baseline studies on electrical energy policies and the measurement indicators used in Malaysia's electric power system. This research involves a comprehensive survey of electrical energy policies in Malaysia that focus on issues pertaining to energy supply, utilization, its environmental impact and considerations, renewable energy (RE) policies, production and consumption, energy efficiency, and feed-in tariffs. Fourteen energy indicators for sustainable development in Malaysia were investigated through the identification of energy policies in significant areas, such as reliability, safety, adequacy and cost-effectiveness of energy supply; increasing energy efficiency; minimizing environmental impact; and enhancing quality of life in terms of social well-being. The policies and the indicators are classified into different sustainable dimensions and summarized in tables along with the corresponding key references. In this study, future energy planning and options, especially in nuclear and RE programs, as well as the conflict between them, are illustrated through the overall performance relative to targets and benchmarks for past and future projections up to the year 2030. This review seeks to examine the past, present, and future policies and indicators to provide a sufficient overview of Malaysian energy policies for optimizing sustainable development. The goal is for this review to lead to increased efforts to accommodate the increasing demand for the management and utilization of RE, promote energy efficiency, and improve performance in achieving sustainable national development. © 2018 Elsevier Ltd

Author keywords

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