STRATEGIES FOR REDUCTION OF ENVIRONMENTAL POLLUTION OF POWER GENERATORS IN COMMERCIAL CENTRES

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ABSTRACT

Sustainable and efficient power supply in major cities of least developed countries is seriously affected by unreliable supply. Electricity is an important input for economical advancement of any society. Hydropower is among the major source of electricity in the countries that have good potential. However, some of these countries especially those that are least developed have failed to meet their energy demand from this source due to various reasons including mismanagement of the resource and irregular rainfall patterns. As a result of this situation, business owners and service providers use small petrol or diesel engine powered electricity generators as back-up during power outages so as to keep their businesses running. Such a system is normally owned and operated on individual basis, to supply power only to the owner's premises. This paper reports on a study that examines the effects of small power generators operated by small business owners during power outages on environment, health and economy of both the business owner as well as the consumers and clients. Suggestion of three technically feasible and economically less polluting alternatives is made. The three alternatives are using a solar photovoltaic system, battery backup system and sharing the big generator for cluster or business premises. The alternatives have been studied, analysed and compared between them and also to the current practice based mainly on environmental and cost merits. An extensive literature survey was made and secondary data collected from various sources analysed. The suggestion, comparison, conclusions and recommendations are based on primary data collected through interviews with business operators in a congested commercial area of Dar es Salaam City in Tanzania.

Keywords: Power, back-up, generators, pollution, small business