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Hydropower situation in Sub-Saharan Africa and the need for small hydropower plants

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A number of resources and efforts have been devoted into many studies in relation to the small hydro potential (SHP) sites in Ghana, but still most of these potential sites are still not yet developed. The rural communities within the Region have been deprived of electricity for so many years now with even those in the urban centers experiencing a lot of power cut off resorting in the development of thermal power as supplement to the inadequate hydropower source in the countries. The importance of small hydropower in the generation for sustainable power based on its capacity to provide electricity to the rural communities as well as contributing to the National grid to alleviate the serious shortage of electricity within the sub-Saharan African Region and ensure sustainability of hydropower. This paper focuses on the situation and potentials of small-hydropower in Sub-Saharan Africa particularly the rural areas as well as areas that are still outside the main grid. An equitable complete small hydropower technology report has been presented with the situation of Electricity supply to the rural areas within the Region also presented. this paper has shown that there are many important hydropower resources in Saharan Africa Region with low installation level. Generally, the level of electricity access in the Region is very low combined with various challenges. Challenges preventing development of SHP technology in the Region have been identified and discussed, for instance those relating to technology, climate change, finance, and policy. Small hydropower technology has been discussed as one of the promising spread out power generation system for rural electricity supply in the country. Therefore, there is a need to develop an extensive small hydropower turbine that can help alleviate the current energy situation and support economic progress of the Sub-Saharan Africa Countries. The paper will draw conclusions on the significance of designing small hydro turbines for Sub-Saharan Africa, and better carrying out small hydropower in Sub-Saharan Africa.

Biography

Daniel Adu is a PhD Student at the National Research Centre of Pumps, Jiangsu University, China offering Fluid Machinery Engineering in the Research area of Small Hydropower Development in Africa. He has his expertise in evaluation and passion in improving electricity situation in Africa. He has done a lot of research into how this electricity crisis in Africa especially sub-Saharan Africa can be solved and found small hydropower as one of the best ways to solve these challenges due to its enormous potential in the continent.

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