



Design and Construction of Hybrid Solar-Wind System used for Irrigation Projects

KEYWORDS

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ABSTRACT *This work deals with the design and implementation of a solar-wind system used to irrigate the agricultural Iraqi areas in the far and desert areas. The wind and solar resource in this area was analyzed in order to establish the system's expected energy output over a year. The water balance was also considered to establish how much water can be collected, and if it will satisfy the garden's requirements. It was subsequently possible to suggest two specific pumps that can be used for the system. The results of this analysis show that the system cannot be standalone. The collectable water will not be enough to satisfy the system's requirements for 6 months of the year. It is also clear that the modules and generator are oversized for the system, and that the wind contribution is significantly smaller than that from the modules. In conclusion, other applications, such as fans for room ventilation, are suggested to make use of the excess energy therefore increasing the system's efficiency.*