

Feasibility Study and Developing Appropriate Hybrid Energy Systems in Regional Level

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Abstract : Iran has several potentials for using renewable energies, so use them could significantly contribute to energy supply. The purpose of this paper is to identify the potential of the country and select the appropriate DG technologies with consideration the potential and primary energy resources in the regions. In this context, hybrid energy systems proportionate with the potential of different regions will be determined based on technical, economic, and environmental aspect. In the following, the proposed structure will be optimized in terms of size and cost. DG technologies used in this project include the photovoltaic system, wind turbine, diesel generator, and battery bank. The HOMER software is applied for choosing the appropriate structure and the optimization of system sizing. The results have been analyzed in terms of technical and economic. The performance and the cost of each project demonstrate the appropriate structure of hybrid energy system in that region.

Keywords : feasibility, hybrid energy system, Iran, renewable energy

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