

TECHNO-ECONOMIC ANALYSIS OF A HYBRID RENEWABLE ENERGY SYSTEM TO PROVIDE ELECTRICITY

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ABSTRACT. Algeria's geographic location has several advantages for the development and use of renewable energy, namely, solar energy and wind energy. In addition, Algeria has huge deposits of natural gas, 98% of electricity comes from gas. Therefore, currently, the production of electricity from renewable energies depends primarily on their competitiveness with economic gas. The objective of this work is to study the technological feasibility and economic viability of the electrification project by a hybrid system (PV / wind) connected to the grid of a residential home located in Batna-Algeria. The HOMER model is used in this study to size the proposed system and determine the optimum configuration.

Keywords: *Renewable energy, Techno-economic, Hybrid system, Household, HOMER, Batna.*