Economic comparison for feeding Isolated load using PV-Battery or Fuel cells

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Abstract

Abstract- The required energy is increasing, but the fossil energy is limited. Thus we must look for new renewable energy sources. Solar energy is the most important one. Solar energy in Syria average rate is 4.5 KW.h/m^2. Since we have deserts near big cities, we can install many stations. Modern research is focused on Hydrogen production aided solar energy, and using the fuel cells to convert the hydrogen energy into Electricity. However this system can be used instead of the energy injected in the Batteries to supply loads.

In this paper we will investigate two modes for supplying a load by photovoltaic: PV-batteries- inverter, and PV- fuel cells- inverter.

Efficiency and cost will be compared at specific geographic position (FMEE-Damascus University). The research was performed using HOMAR software. This software application was developed by considering of the local ambient conditions of Syria.

For the abstract in Arabic see pages (137-150).

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