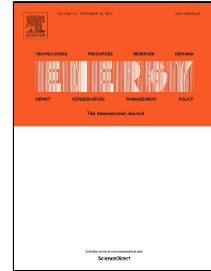


# Accepted Manuscript

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# Design, simulation and experimental evaluation of energy system for an Unmanned Surface Vehicle

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## Highlights

- Optimal energy generation system is proposed, that generates 5.8 kWh a day
- Unique design of mobile energy generator equipped with sun tracker
- The suitability of the power generation system is proved by experimental tests
- Photovoltaic array size optimized, considering every month radiation
- Hybrid vehicle, Needless Plug-in charge for doing tasks at sunny days

## Abstract

Although fossil fuels are the world's most abundant, economical, and reliable way for energy production, long-lasting usage, would cause serious issues and it is well established in scientific circles as a serious event. On the other hand, renewable energies play a key role as a substitute for energy production. The environmental issues and depletion of fossil fuels have paved opportunities to

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