

STUDY OF DEMAND AND ENERGY VIABILITY OF PHOTOVOLTAIC SYSTEM ON FISHING VESSELS

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ABSTRACT

The state of Pará have a big potential for the production of projects aimed at obtaining electricity, mainly with the use of photovoltaic systems[1]. Through the problem in the increasing increase in fuel costs and the growing CO₂ emission restrictions and nitrous oxides NO_x, where has forced some transport companies to re-examine the use of solar energy in large boats as na alternative [2], making the energy matrices of renewable sources as a promising alternative, both in preservation of the environment, costs/benefit[3]. Thus, the proposal of this work is to study the technical feasibility of implantation and energy demand (lamps and electronic devices) of a possible diesel-solar hybrid system in small fishing vessel registered in the union's or association's of the municipality of Vigia de Nazaré-PA, from generator modules made up of silicon photovoltaic cells, considering the best cost/benefit ratio for the vessel owner. However, adequate financial support wasn't obtained for the installation of the chosen vessel. Therefore, the methodology uses comparative principles between sensing the electric current generated by a low-power functional photovoltaic prototype installed on campus XX at the State University of Pará and implementing possible functional photovoltaic system consisting of polycrystalline silicon plated. Thus, the photovoltaic system engineering manual of Solar Energy Working Group (GTES) was used to size low power systems[4]. The data collection, storage and shipping were performed by a single-board Atmel AVR microcontroller[1]. In addition, for the statistical monitoring of the data collected during month's of July and August 2019, the software developed by C# was authored to investigate the behavior of the current intensity variations performed by the PFV during a period, 24 hours. Thus, the use of this statistical method allows a greater understanding of possible abnormalities by electrical intensity, verifying PFV through factors that influence solar radiation.

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