

## The Essence of Using Photovoltaic Panels in A Household To Produce Energy for Electric Vehicles\*

Karol Franciszek ABRAMEK

West Pomeranian University of Technology in Szczecin  
Faculty of Mechanical Engineering and Mechatronics, Szczecin, Poland

Tomasz OSIPOWICZ

West Pomeranian University of Technology in Szczecin  
Faculty of Mechanical Engineering and Mechatronics, Szczecin, Poland

Wojciech LEWICKI

West Pomeranian University of Technology in Szczecin  
Faculty of Economics, Szczecin, Poland

Łukasz MOZGA

West Pomeranian University of Technology in Szczecin  
Faculty of Mechanical Engineering and Mechatronics, Szczecin, Poland

Correspondence should be addressed to: Karol Franciszek ABRAMEK; Karol.Abramek@zut.edu.pl

\* Presented at the 40<sup>th</sup> IBIMA International Conference, 23-24 November 2022, Seville, Spain

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### Abstract

The literature on the subject emphasizes the key advantage of electromobility is that to a large extent the owner of an electric vehicle can decide how much fuel, i.e. electricity, will cost it. Currently, owners of electric cars can use both the public infrastructure for charging cars with electricity, they can also (which is recommended due to lower costs) charge the vehicle on their own, e.g. at home or in a garage, using renewable energy. household photovoltaic installation as an energy source for an electric vehicle. Electricity production was measured on a 3.3 kWh installation. In this article the analysis was made on the basis of the annual production. Based on the results of the measurements, it can be concluded that the home installation, to a large extent, in the spring and summer period, supports conventional sources of electricity for charging the battery in an electric car. Electricity production is very low in winter, autumn and early spring. The main factor is the mileage that the vehicle performs in each month. According to the authors, the optimal solution is to have two vehicles (internal combustion and electric) or one hybrid with a plug-in system on the farm. The presented research can find its practical application in the field of developing a synergy strategy for the popularization of electric vehicles with a simultaneous increase in the share of renewable energy sources in this process.

**Keywords:** Renewable Energy Sources, Electric Vehicle, Photovoltaic Panels, Innovation, Households, Development Strategy.