SOLAR PV MOBILE PHONES CHARGING SYSTEM

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ABSTRACT Sustainable campus is a community with a common objective of improving the effectiveness of energy usage, sustaining resources and increasing the quality of environment. This can be achieved by sustainable development of education and implementing projects that contribute to a green campus. For the realization of the government's commitment towards reducing the greenhouse effect, the Department of Polytechnic Education (JPP) has launched POLYGREEN Blueprint in 2015 with ten (10) focus areas. One of the focus areas is Energy Management which aims to maintain and improve energy efficiency and promote the use of renewable energy to reduce carbon emissions. In line with focus area 4 which involves the Energy Management, Seberang Perai Polytechnic (PSP) initiated the application of solar system to promote renewable energy (RE). Hence, it also fulfills certain curriculum requirement which was recently been introduced by Department of Polytechnic Education. The most common usage of electricity in Seberang Perai Polytechnic is charging the mobile phone. The limited numbers of socket outlets create difficulty an inconvenience among the users to charge their phones. Solution is needed to cater this problem without affecting the teaching & learning process. Solar PV Mobile Phones Charging System was designed and assembled at a strategic place in Seberang Perai Polytechnic. This system will be utilized as a charging station cum one-stop learning centre for solar system. This project involved the design, fabrication and installation of Solar PV Charging System and it is the first such project in Malaysian Polytechnics. The system includes Solar Panel (PV), Distributor Board, Solar Regulator, Battery Bank, charging ports, and DC Load. The station is equipped with suitable lighting for the night use. Survey has been conducted involving 200 samples from all departments through questionnaires. Data were analyzed using SPSS Version 20. From the findings, it proved that the awareness and understanding of renewable energy among the respondents increased. The project managed to nurture their interest and enhance their knowledge regarding solar PV application. It also fulfilled the objective of POLYGREEN Blueprint goals and satisfied Course Learning Outcome (CLO 1) of DEE5081 Project 1 course. This project also contributed indirectly towards energy saving and managed to save estimated of 294kWh energy consumption and RM3,240 electricity bill per year at Seberang Perai Polytechnic.

Keywords: Renewable Energy, Solar PV, Awareness

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Mohamad Fadzil Basir Ahmad received his B. Eng degree in Electrical Engineering from University of Technology Malaysia and M.Sc in OSH Management from Northern University of Malaysia in 1999 and 2009 respectively. Currently he is a senior lecturer at Electrical Engineering Department of Seberang Perai Polytechnic.

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CATEGORY-POSTER