

The development of IOT controlled hybrid power switching

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ABSTRACT

This paper discusses the development system of IoT Controlled Hybrid Power Switching to provide consumer a system which allows them to manage their hybrid electricity sources. The generations of electricity can be produced by various of resources such as conventional and renewable resources. The existing method of generating electricity through renewable resources for instance a small scale of stand-alone solar photovoltaic system or pico-hydropower system gives consumers the ability to generate their own electricity source. In general, generated electricity from the resources is able to store in energy storage devices such as rechargeable lead-acid batteries. The main reason for generating electricity from renewable resources is that to reduce consumer dependence on depleting conventional resources at the same time they can experience monthly electricity bills saving. Without wasting the existed conventional resources, two different electricity generation can be combined thus creating a hybrid power system. The system is developed in order for consumers to consume both resources efficiently without producing any energy waste. The objectives development of IoT Controlled Hybrid Power Switching could help the consumer to manage both their electricity generation and consumption more effectively thus able to reduce their monthly electricity bills with more savings. This system provides flexibility for consumer to choose their options on how to consume electricity consumption. The available options are Auto-Mode and Manual-Mode. Both options using different methods consuming generated electricity. The Auto-Mode implementing an IoT element that provides consumers the ability to control electricity consumption through the Blynk application on smartphones. The switching between two sources is based on the percentage level of battery voltage capacity. For the Manual-Mode, the option gives the consumer the capability to control switching between two sources based on the time set by the consumer. Both options are able to deliver advantages to consumers in order to manage their electricity consumption dynamically.

KEYWORDS

IoT, hybrid power, electric

ACKNOWLEDGEMENT

The authors would like to thank Centre for Research and Innovation Management of Universiti Teknikal Malaysia Melaka (UTeM) for sponsoring this work under the Grant PJP/2019/FTKEE (3A)/S01655