PERBANDINGAN KOS PENGGUNAAN SISTEM TENAGA SURIA UNTUK RUMAH KEDIAMAN

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ABSTRAK

Kemajuan sains dan teknologi pada hari ini telah mendorong kepada peningkatan permintaan bekalan tenaga dunia. Bagi menampung keperluan tenaga negara, pelbagai sumber tenaga diterokai baik dari sudut tenaga diperbaharui (RE) mahupun tenaga tidak boleh diperbaharui. Sebagai salah satu sumber RE, tenaga suria tidak ketinggalan apabila aplikasi sistem digunakan secara meluas seperti sistem pemanas air suria, sistem *grid-connected*, sistem *stand-alone*, sistem domestik dan sebagainya. Ini dapat dilihat melalui pelaksanaan projek MBIPV di samping penyediaan insentif oleh kerajaan bagi inisiatif terhadap sistem *grid-connected*. Selain itu, faktor kenaikan kos operasi menyebabkan ramai yang cuba mendapatkan bekalan tenaga yang lebih ekonomi. Aplikasi sistem membolehkan pengguna menikmati faedah dari aspek penjimatan kos melalui penghasilan tenaga yang murah, peningkatan nilai astetika sesebuah hartanah dan mesra alam. Bagi menilai sama ada terdapat aspek penjimatan melalui penggunaan sistem tenaga suria, analisis perbandingan kos dijalankan ke atas pengguna sistem pemanas air suria dan sistem *grid-connected* berdasarkan kaedah LCC. Penilaian berdasarkan penggunaan tenaga elektrik di rumah dijadikan asas dalam perbandingan kos. Lokasi kediaman dipilih di sekitar Kuala Lumpur dan Johor Bahru. Metodologi yang digunakan ialah kajian awal, kajian literatur, mengenalpasti data dan pengumpulan data. Data dikumpul melalui analisis dokumen yang diperolehi daripada pembekal sistem, pengendalian temuramah berstruktur bersama PTM dan temuramah tidak berstruktur bersama TNBES bagi meninjau sejauh mana penglibatan badan kerajaan di dalam pelaksanaan projek tenaga suria di Malaysia. Konklusinya, penggunaan sistem tenaga suria mampu memberikan kesan penjimatan kos bagi jangka masa panjang.

ABSTRACT

Nowadays, the advancement in science and technology has contributed to the increase of world energy supply demand. In order to accommodate national energy requirement, various type of energy sources such as renewable energy (RE) and Non-renewable energy has been explored. As one of the RE sources, solar energy are also not leave behind as their application has been widespread for domestic hot water system, grid-connected system, stand-alone system, domestic system and so on. These phenomenon shown based on the implementation of MBIPV project as the Government provide an incentive for each iniciative of grid-connected system. Besides, the increase of operational cost contribute to the findings in energy supply which is more economical. The application of the system allow consumers enjoy the benefits in terms of cost saving through the cheaper energy production while at the same time increase the aesthetic value of the property plus enviromental friendly. In order to determine the cost saving from the solar energy usage, comparison cost analysis has been carried out onto domestic hot water and grid-connected system users based on LCC method. The evaluation done based on their electricity consumption as it will be used as baseline in cost comparison. The location are in Kuala Lumpur and Johor Bahru. Methodologies used for this research is by early review, literature study, identify data needed and data collection. Data are collected using documentary analysis provided by supplier, structured interview with PTM and unstructured interview conducted with TNB Energy Services Sdn Bhd for the purpose of evaluating the Government bodies contibution in implementing solar energy project in Malaysia. As a conclusion, it is proven that the solar energy usage results in consumer cost saving in long-term run.