

Energy Optimization for Rural ICT Telecentre

Al-Khalid Othman (UNIMAS, MY), Hushairi Zen (Universiti Malaysia Sarawak, MY), Nazeri Abdul Rahman (Universiti Malaysia Sarawak, MY), Mohd Danial Ibrahim (Universiti Malaysia Sarawak), Hazrul Mohamed Basri (Universiti Malaysia Sarawak, MY), Kasumawati Lias (Universiti Malaysia Sarawak, MY).

The term ICTs stands for Information and Communication Technology. It refers to the convergence of audio visual and computer network system and used as a medium for telecommunication and audio visual system. ICTs enable users to access, store, transmit and gather information. Through funding from government and private sector, Institute of Science Informatics and Technology Innovation (ISITI), UNIMAS has been implemented five ICT telecentres namely eBario, eLamai and eBa'kalalan in Sarawak as well as eBuayan and eLarapan in rural Sarawak and Sabah respectively. From the five telecentres, four were powered by Solar Photovoltaic (PV) system while the other site, eBuayan utilize the micro hydro system. However, this research focuses only on the telecentre powered by Solar PV

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system. The size and type of energy system used in the telecentres were depends on the resources availability at the sites in order to have a cost efficient system. The objectives of this research are to carry out and to determine the optimization of standalone solar PV and hybrid energy system for the rural ICT telecentres. This research involved the electrification management based on energy requirement for rural ICT telecentre. An optimization model has been developed by considering a few parameters such as scale of the telecentre, load demand and usage of energy. Finally, the performance will be analyzed based on the parameters using HOMER software thus proposed the optimum energy design for the rural telecentre. Keywords - Power Optimization, Energy System, Rural ICT telecentre, Hybrid