

ABSTRACT

Automatic Demand-Side Management (DSM) model in the residential sector based on photovoltaic solar energy sources. DSM is basically a strategy implemented by an electricity company to manage the customer's load, and one of the ways to reduce peak load by applying DSM customer side load management, and the program used in DSM is peak clipping which serves to reduce the load at the time peak load. The current DSM method will discuss the effect of the DSM program implementation in the residential sector on changes in the main peak load, and maximize the potential of solar energy. The analysis focused on household load in the form of lighting, fans, and electronic devices that produce high loads. This research was conducted using experimental methods and then analyzed, After testing performance of the model with a system without DSM can be concluded that there is an increase in total current (PLN current) of 2,6 A increases in it amounted to 2,7 A which was caused by the active light load at 6:00 p.m. to 6:00 p.m., and after 6:00 p.m. the flow returned to normal, after testing the performance of the model using the system with DSM, the total current which would increase at 6:00 p.m. is 2,35 A, does not increase because the load of the lamp with a current of 0.05 A has been diverted and supplied by energy sourced from PLTS, and from the measurement of voltage and charged with a maximum voltage of 13.75 V with a maximum current of 0.11 A in very good sunshine conditions, and not much change.

Keywords : Demand-side management, residential expenses, photovoltaic energy, green energy