Perencanaan Sistem Pembangkit Listrik Tenaga Surya (PLTS) *Off Grid* pada Atap Bangunan Kantor Dinas Pendidikan Kabupaten Jember (*Planning for an Off Grid Solar Power Generation System (PLTS) on the Roof of the Jember Regency Education Office Building*)

Supervised by: Ahmad Fahriannur, S.T, M.T *(Supervisor Thesis)*

ABSTRACT

PLTS has various network types that determine its configuration. These include On Grid, Off Grid and Hybrid networks. The Off Grid Network is a stand-alone PLTS connection system without being connected to any network. This network is an alternative for remote areas that are not covered by the PLN network. This research aims to determine the design and planning of Off Grid PLTS, to find out the total electrical energy that can be generated by Rooftop PLTS, and to find out the total electrical power load that can be supplied by PLTS and the estimated costs required. The amount of electrical energy used by the Jember Regency Education Office is 301,552 Wh at peak conditions, 212,720 Wh at average conditions, and 17,173 Wh at low conditions. This research obtained design results for the Off Grid PLTS construction which was planned in the form of a Detailed Engineering Design with a total of 185 solar panels used. Other components used are 6 Goodwe 5000 W inverters and 47 Cyclendo 12v 500Ah batteries. The total amount of electrical energy that can be supplied by this PLTS is 301552 Wh.

Key words: *PLTS, Off Grid, Rooftop, Detail Engineering Design, RAB*