# *PLANNING ANALYSIS AND ECONOMIC FEASIBILITY OF OFF-GRID SOLAR POWER PLANTS AT THE YOGYAKARTA CLIMATOLOGY STATION*

**Suharjo**

*Electrical Engineering Study Program, Faculty of Science and Technology*
*University of Technology Yogyakarta*
*Jl. Ringroad Utara Jombor Sleman Yogyakarta*
*E-mail : suharjo1235.com@gmail.com*

*Indonesia is expected to be able to develop renewable energy like other developed countries so that it can compete in the energy sector in the future. To support these efforts, especially in the field of utilizing solar energy, the government has issued several technical policies as a basis for implementation, one of which is through Regulation of the Minister of Energy and Mineral Resources No.49 of 2018. Solar Power Plant is a power generation system whose energy is sourced from solar radiation, through the conversion of photovoltaic cells that convert sunlight into electrical energy. As for the relation, this research was conducted by analyzing the planning and economic feasibility of off-grid PLTS, namely PLTS that is not connected to the State Electricity Company network. From the results of this analysis, the daily energy requirement at the Yogyakarta Climatology Station is 330,006 Wh/day. With a power of 330,006 Wh/day using 192 500W Solar Panels, 1 unit of 200kWh Inverter, 600 2V 1000Ah Batteries, and 4 units of 100A Solar Charge Controller. For economic feasibility, the Net Present Value is Rp. 128,367,325 for 15 years of the off-grid PLTS project, the Profitability Index is 1.02 (P> 1), and the initial investment taking period Payback Period occurs in the 7th period of the project's life . From the three results obtained, it is stated that the off-grid PLTS that has been designed is feasible to apply.*

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