

Planning Studies And Techno-Economic Studies Of The Construction of Solar Power Plants (PLTS) in CV. Sumber Rejeki, Jember Regency

Mochammad Nuruddin, S.T, M.Si *as main consuelor* dan Risse Entikaria

Rachmanita, M.Si *as member consuelor*

Muhammad Amin Fajar S.
Renewable Energy Engineering Study Program
Department of Engineering

ABSTRACT

Electrical energy comes from non-renewable energy sources where the availability is limited and can affect the selling price of electrical energy. Solar energy is one alternative energy source that can be developed in Indonesia with a potential of 207 GW. In this research, the solar power plant (PLTS) planning in a rice mill which has open land and is free from shading by using 3 different types of modules, namely polycrystalline, monocrystalline, and thin film. Electrical energy produced by polycrystalline modules is 238 MWh/year, monocrystalline is 227 MWh/year, and thin film is 283 MWh/year. Based on technical and economic analysis with 4 parameters namely payback period, NPV, IRR, and BCR, the polycrystalline and monocrystalline modules are feasible to be built in the CV. Sumber Rejeki.

Kata kunci : *solar power plant, solar module, techno economy.*