

ABSTRACT

One of the fundamental problems facing currently mankind is the provision of energy. Indonesia itself has many renewable energy sources with a potential of more than 200,000 MW which has only been used by 6.8%. Understanding this, the government therefore issued a policy in the form of Presidential Regulation No. 22 of 2017 concerning the General National Energy Plan which has a target for 2050 of 31% of national energy needs created from new and renewable energy sources.

The main aspects that will be discussed in this research are analysis of techno-economic calculations and analysis of investment feasibility, namely LCC, LCOE, Revenue, PayBack Period, NPV, PI, and IRR.

The purpose of this study was to determine the estimation of electrical energy production, analyze energy costs and the feasibility of investing in the construction of a Solar Power Plant (PLTS) in Deli Building. By looking at the great potential of solar energy with an effective irradiation of 4-5 hours / day. This PLTS uses a photovoltaic (PV) module with a capacity of 30.5kWp with an on-grid system that is adapted to the electricity needs of the Deli Building.

With all the results of the analysis of techno-economic calculations and analysis of investment feasibility that have been carried out, it shows that the economic feasibility of PLTS development in Gedung Deli can provide an advantage..

Keywords : *On-Grid System, Photovoltaic, PLTS, Techno-Economics, Investment Feasibility*