

Techno-Economic Viability Analysis of Solar Power Plants as Alternative Energy Sources on SMPN 4 Tempurejo
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ABSTRACT

Schools that are located in remote areas or have limited access to the national power grid, often face the challenge of providing reliable and affordable energy sources to support their operations. This can affect the learning process and the overall quality of education, one of which is Tempurejo State High School 04 located in Jember district as an example representing schools in rural areas that may face energy accessibility problems. Therefore, implementing small-scale PLTS in these schools can be the right solution to meet their energy needs while making a positive contribution to the environment. In this study took two aspects that will be discussed as the main focus of discussion, namely the technical aspects and the economic aspects. The purpose of the small-scale PLTS techno-economic analysis at SMPN 4 Tempurejo is to evaluate the technical and economic feasibility of the application of this technology. This PLTS plan can produce power of 270 kWh/year and obtained higher energy costs than the base rate of PLN is of Rs 1.856/kWh. Based on the calculation of investment eligibility shows that the project is not eligible because it has a value of $NPV < 0$ which is Rs -843.941 and $PI < 1$ which is 0.82. The project took 12 years, 7 months, 24 days to return the investment.

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