Techno-Economic Analysis on Rooftop Off Grid PLTB Planning at PT. Indonesia Power PGU Bali Unit PLTG Gilimanuk.Dr. Bayu Rudiyanto, S.T., M.Si as a councelor

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ABSTRACT

The Gilimanuk PLTG area is an area close to the coast that has a suitable wind gust as a household scale PLTB development. The plan to build PLTB Rooftop is based on data obtained from BMKG Jembrana-Bali III in 2019 in the form of average wind speeds ranging from 2.32916m / s - 5,611317 m / s. This wind energy will be used to generate wind turbine type i-500 with 172.5 Watt power from wind power of 213.639 Watt. Other auxiliary components used include the inverter made by Tesup 12/24 Vdc into 110/220 Vac, and BCR (Battery Charge Regulated) of the VRLA Gel type with a parallel 24V series voltage and a load of 12 units of 60watt LED garden lights / unit in the PLTG area. Gilimanuk. Systematics of the financial and economic aspects of the project obtained the net present value (NPV) of 16.597 and a BCR of 1.51, the ability to produce a united investment value (PI) return of 2.12. So, from these results it is known that the internal rate of return (IRR) is 11.14% with a return on investment (ROI) of 6.6% for 20 years, because the value of cash flow assets varies, resulting in a payback period (PP) of 7 years so that this planning project proposal is said to be accepted and feasible to run.

Keywords : BCR, BMKG Jembrana-Bali, IRR, NPV, PI, PLTB *rooftop,* PP, ROI, turbin angin i-500.