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Wind Energy Cost and Feasibility of a 2 MW Wind Power Project

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Abstract

The present research work has been carried out on 2 MW installed capacity Wind Power Project, at Motha District Amaravati, Maharashtra State, India. The main objectives were to evaluate various costs involved in the energy production. The cost of energy production per kWh (electrical energy) was calculated for the first year of operation. The economics of wind energy and thereby the feasibility of the power project were examined by estimating per unit cost of energy, net present value (NPV), benefit-cost ratio (B-C), internal rate of return (IRR), and pay back period of the power system. The discounted cash flow (DCF) method was used to find out the IRR. In wind energy conversion system, three cost; installed capital cost, specific capital cost, and life cycle cost of energy, were examined for the evaluation of the production cost of energy generated. Considering the discount rate on the investment for the project as 7.5 percent, the B-C ratio comes to 3.51 and IRR comes to 21.82%.

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