

## **Risk Based methods for 10 MW of PV Project development planning**

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### **Abstract**

In recent years, renewable energy projects, especially PV projects have been established in Indonesia because of several factors including concerns about their role in greenhouse gas emissions, support for commitments and government policies, and others. The success story of PV projects in Indonesia today is still not much, this is due to the associated Project Risk in this project both in planning, construction, and operations.

This article provides an updated literature review of quantitative and semi-qualitative methods. The purpose of this article is to model risk and uncertainty in project planning and photovoltaic (PV) feasibility studies. The proposed stochastic model produces predictions of the most energy generation and minimizes peak demand. Model performance is validated against autoregressive moving averages (ARIMA) and Markov Chain models. The results are presented, the strengths and limitations of the approach are discussed, and the possibility of improvement is explained.

The method used to address risks in the PV project feasibility study largely emphasizes statistical risk. However, non-statistic risk shows a large role and is often the main trigger for failure (such policies, economic instability, land availability, etc.). As a result, various analyzes from both statistical and non-statistical data in PV risk project modeling are needed.

**note:** This document will be opened to the participants on IERE website before the Workshop and opened to the public afterward.