Risk control of photovoltaic power generation projects

Why is risk management important for offshore PV power generation projects?
Management inspiration As it can be seen from the result that the risk level of offshore PV power generation projects in China is medium high,it is necessary to take effective risk management measures to ensure the smooth implementation and reasonable profits of the risky project.

What is risk assessment on offshore PV power generation projects?
The risk assessment on offshore PV power generation projects studied in this paper is a group decision making problemin which a group of experts provide their evaluation terms for a risk factor.

Is there a regulatory framework for photovoltaic solar energy?
The absenceof a regulatory framework specific for photovoltaic solar energy introduces a new variable which,coupled with the intrinsic of major energy construction projects,requires a risks identification to which the project can expose.

How can PV offshore power generation projects avoid equipment maintenance risk?
PV offshore power generation projects can utilize this concept to realize intelligent operation and maintenanceand thus avoid equipment maintenance risk to some extent. In addition,the knowledge of maintenance management under special marine environment should also be studied.

What is the risk identification model for solar photovoltaic plants?
Conclusions. In this work, a risks identification model arise based on the work of an experts group by the main professional profiles necessary for the construction of large solar photovoltaic plants. Once identified, risks form a hierarchical risks structure of three levels.

Are solar PV projects a risk?
Generally solar PV projects are not constructed in high density urban areas so this would not typically be considered a significant project risk. Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study.

The penetration of renewable sources in the power system network in the power system has been increasing in the recent years. These sources are intermittent in nature and their generation pattern does not match the load pattern thereby creating a need for a battery storage system. In this context, energy management presents itself as inevitable challenge in operating a grid ...

The world added 18,000 MW of PV projects in 2010, up from 2,000 MW in 2003. As the technology continues to improve, PV has emerged as a mainstream solution for power generation, attracting major investors, as well ...

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Abstract In light of the increasing frequency of extreme weather events--including persistent low temperatures, rain, snow, freezing conditions, and haze--globally, the vulnerability of photovoltaic (PV) power projects to severe weather has escalated. This study presents a comprehensive analysis of the current construction practices and associated risks of PV power projects. ...

As the most promising power generation technology, photovoltaic power generation technology is developing rapidly all over the world. This paper analyzes the changing trend of the world energy structure, summarizes the development status of China"s photovoltaic power generation industry, discusses the necessity of carrying out the research on the risk management of photovoltaic ...

Photovoltaic generation projects are great part of low-carbon economy. The dispersivity and intermittency of solar energy resource has brought much more risks to investment.

Hybrid offshore wind-solar PV power plants have attracted much attention in recent years due to its advantages of saving land resources, high energy efficiency, high power generation efficiency, and stable power output. However, due to the project still being in its infancy, investors will face a series of risks. Hence, a multi-criteria group decision-making ...

Many studies have been carried out in the field of photovoltaic power generation. Agarwal et al. (2023) and Mukisa et al. (2021) have verified the feasibility of installing solar photovoltaic systems in buildings through mathematical modelling, providing a new solution for low-energy-efficient buildings. PV is extensively used, Liu et al. (2022a) proposed that an ...

Solar photovoltaic (PV) systems are becoming increasingly popular because they offer a sustainable and cost-effective solution for generating electricity. PV panels are the most critical components of PV ...

At present, China"s offshore photovoltaic (PV) industry is developing rapidly. Risk assessment on offshore PV power generation (OPVPG) projects is important. The existing risk assessment methods in OPVPG projects in China are insufficient in dealing with different types of uncertainties. In this paper, we propose a computational model based on D Numbers and ...

Solar energy is intermittent and varies with time and geographic location. There is evidence at the global level of regional inequality in the location of plants generating solar PV energy (Bódis et al., 2019; Rathore et al., 2019; Silveira et al.) om the investor"s point of view, the optimal location of solar power plants considers the cost-benefit ratio because it maximizes ...

mitigate this potential risk, the following measures are planned: (i) Project monitoring will be undertaken to ensure that financial management processes are established and followed. ...

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The absence of a regulatory framework specific for photovoltaic solar energy introduces a new variable which, coupled with the intrinsic of major energy construction projects, requires a risks ...

a, Traditional power systems under current climate conditions differ considerably from future renewable-dominated power systems operating under intensifying climate risks the bottom panel, red ...

In order to effectively mitigate the issue of frequent fluctuations in the output power of a PV system, this paper proposes a working mode for PV and energy storage battery integration. To address maximum power point tracking of PV cells, a fuzzy control-based tracking strategy is adopted. The principles and corresponding mathematical models are analyzed for ...

Purpose Under the pressure of environment degradation and energy consumption rises, solar photovoltaic power generation (SPPG) has been seen as a strategic emerging industry in China.

China-specific project-level risk factors for large-scale photovoltaic projects are not sufficiently discussed and systematized in the current body of knowledge. Given the size, speed and growth perspective [31], [38] of photovoltaic project development in China, an analysis of risk factors and their implications is a timely and important issue.

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