

Solar power generation site selection conditions

What are the criteria for solar PV site selection?

The results show that the most important criteria for solar PV site selection are solar radiation, economic performance indicators (net present value (NPV), internal rate of return (IRR), and return on investment (ROI)), carbon emission savings, and policy support.

Why is site selection important for solar PV power plants?

Site selection for the utility-scale photovoltaic (PV) solar farm is a critical issue due to its direct impact on the power performance, economic, environmental, social aspects, and existing as well as future infrastructures. In this chapter, we conduct a literature review on site selection of solar PV power plants.

Does proximity to populated areas affect solar PV power plant site selection?

Proximity to populated areas is considered widely in the literature as a determining factor for the site selection problem for solar PV power plant (Halder et al. 2021). When the solar PV power plant is near populated areas, the energy transmission cost is reduced; however, this may adversely affect the environment.

How to select a site for a solar power plant?

While developing a utility-scale solar power plant, various factors or criteria have to be taken care of in selecting the site location. Probable Site Selection of Photovoltaic Power Plant (PVPP) is a complex MCDM process, as the required site has to be climatically and geographically acceptable. It must also have the highest generation potentials.

Why is site-selection of solar photovoltaics (PV) and concentrated solar power (CSP) important?

Scientific research on the site-selection procedures of solar photovoltaics (PV) and concentrated solar power (CSP) technologies is of significant importance, contributing to environmentally sustainable, technically and economically viable, and socially acceptable solar energy projects.

How to choose a suitable location for solar PV power plants?

The installation of solar PV power plants requires vast land and huge investment. Therefore, it is necessary to select a suitable site to achieve maximum efficiency and low cost. A feasible location of photovoltaic (PV) system must consider certain criteria including land restrictions, access to roads, and transmission lines.

Evaluating the site-selection process for photovoltaic (PV) plants is essential for securing available areas for solar power plant installation in limited spaces. Although the ...

Solar energy, recognized for its potential in direct conversion into electricity and heat, offers a sustainable energy source with minimal environmental impact. Despite Iran's ...

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industrial site selection is finding the most appropriate site with desired conditions defined by the selection criteria. This work suggests how to define and classify particular criteria considered ...

The optimal sites of solar PV power plant delineated revealed that "very low" suitability of site covering 4.866% of the study area, "low" suitability of site 13.190%, "moderate ...

This study presents clustering-based assessments of solar attributes for locating potential solar photovoltaic (PV) power plant sites using k-means and density-based spatial ...

This study is a systematic review of the literature that seeks to identify the determining factors in choosing the best location for solar photovoltaic power plants, through previous research on the application of renewable ...

energies Article Optimal Site Selection for a Solar Power Plant in the Mekong Delta Region of Vietnam Chia-Nan Wang 1, *, Van Tran Hoang Viet 1, *, Thanh Phong Ho 2, *, Van Thanh ...

PV power output to site selection, as existing PV power-output estimation is only based on single or a few historical data collected from specific regions (i.e., solar farms) and does not ...

The main objective in the site selection process is finding the optimum site satisfying the desired conditions given by the selection criteria. This review suggests how to ...

Site selection for solar power plants is a critical issue for utility-size projects due to the significance of weather factors, proximity to facilities, and the presence of environmental ...

Suitable site selection for solar PV power plants directly affects both the installation and operation process and the electricity generation costs (Yolcan and Köse 2020). ...

Solar power generation is the most common way to use solar energy because of its ease of maintenance and ... support the site selection of solar power plants in California. 2. ?e CBA ...

For the generation of electricity in far flung area at reasonable price, sizing of the power supply system plays an important role. Photovoltaic systems and some other renewable ...

Site selection of solar PV projects is a critical issue for utility-sized projects due to the importance of weather factors, distance to residential areas and network connection, ...

The results show that the most important criteria for solar PV site selection are solar radiation, economic performance indicators (net present value (NPV), internal rate of ...

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