# Site selection for solar power plants

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.

How to choose a solar power plant site?
This aspect need to be considered while selecting the sites for a solar power plant. Most photovoltaic modules work best under 15 to 23 °C of average temperature (Hamou 2014). Suppose the system is desired to be installed in the region where the average temperature is below the threshold. In that case, it will further increase the cost.

How to choose a suitable location for solar photovoltaic power plants?
The selection of a geographically suitable location for efficient energy production at solar photovoltaic power plants depends on many factors. To achieve a specific result,more realistic figures can be obtained using spatial and meteorological data of the studied region in geographic information systems (GIS).

What are the criteria of site selection for solar photovoltaic installations?
Decisive criteria of site selection for the installation of solar photovoltaic stations in accordance with the analytical hierarchy process model. The proposed nine-integer scale Pij enables using criterion i to explain the evaluation of preference for criterion j to create a binary comparison matrix m = (n × n) in terms of various criteria.

Can a BIM model be used for site selection of solar PV plants?
This paper proposed an evaluation method for the site selection of photovoltaic (PV) plants,which used spatial analysis with a geographic information system (GIS) and visualized the plan view of the solar PV plant installations in a building-information model(BIM) environment for energy planning and management when constructing highway networks.

How to select a site for solar energy systems?
The site selection process of solar energy systems,especially the SPP,should be carried out by considering various ecological sensitivitiessuch as avoiding negative externalities on flora and fauna,preventing a decrease in agricultural production,and ensuring that visual comfort is not disturbed.

In the modern day, photovoltaic (PV) systems are viewed as a possible ...

This paper proposes a novel approach to define optimal sites for photovoltaic plants, connected to the medium-voltage level, using a geographic information system based multi-criteria decision making and spatial overlay with electric load.

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In this study, two different site selection models have been developed for solar power plants to determine the ideal locations where economic efficiency is the highest and ecological sensitivity is the lowest. A geographic information system-based multicriteria decision-making method was applied with combining analytical hierarchy process ...

Summary The choice of great places for installation of solar power plants has become a key issue in terms of project planning because of the increased number of investments in the photovoltaic sect... Skip to Article Content ; Skip to Article Information; Search within. Search term. Advanced Search Citation Search. Search term. Advanced Search Citation ...

Solar energy is a critical component of the energy development strategy. The site selection for solar power plants has a significant impact on the cost of energy production. A favorable situation ...

In the modern day, photovoltaic (PV) systems are viewed as a possible replacement for fossil fuels as a clean energy source. 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.

It is of utmost importance to select suitable sites for solar power plants, while ensuring low installation costs and minimizing the adverse environmental effects of such plants. This study aimed to identify the optimum sites for solar power plant installation in the Ardanuç district of Artvin Province, Turkey. For this purpose, 12 site selection parameters were ...

Optimal site selection for solar power plants requires making multi-criteria decisions. AHP is one of the most comprehensive multi-criteria decision-making tools. So to select an optimal site in the study, AHP model was applied via Expert Choice software. Selecting appropriate alternatives for optimal site selection for establishing solar power plants, the ...

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This study is concerned with optimally selecting sites for solar photovoltaic ...

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The choice of great places for installation of solar power plants has become a key issue in terms of project planning because of the increased number of investments in the photovoltaic sector. This study is a systematic review of the literature that seeks to identify the determining factors in choosing the best location for solar photovoltaic ...

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In this chapter, we conduct a literature review on site selection of solar PV power plants. More than 50 papers are studied to identify the site suitability methodologies, decision criteria, and restriction factors, use of Multicriteria decision-making techniques, Geographical information system (GIS), and dealing with uncertainty in installing ...

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.

The former cannot determine the optimal sites for power plants, while the latter depends on discrete alternatives derived from a larger-scale site selection process. The site selection process for renewable energy typically involves five main stages: criteria selection, data normalization, criteria weighting, alternative evaluation, and results validation.

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