

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.

Do criteria affect site selection of solar photovoltaic projects?

Criteria include technical, economic, environmental, and social/political aspects. The proposed model can be extended to other decision making problems. The aim of this study is to determine the degree of importance of criteria affecting site selection of solar photovoltaic (PV) projects using a decision-making model.

Can GIS be used to identify solar power plants in Saudi Arabia?

Alhammad M, Alawadhi M, Abdullah F, Al-Towailib S (2022a) Site selection of utility- scale solar photovoltaic power plants in Saudi Arabia: a GIS-based fuzzy multicriteria decision analysis. Sustainability 14 (5):2567 Alhammad A, Sun Q, Tao Y (2022b) Optimal solar plant site identification using GIS and remote sensing: framework and case study.

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 find the best site for solar PV projects?

The solar PV site selection problem is often addressed using a multi-criteria decision-making (MCDM) approach together with geographic information system (GIS) software to determine the most suitable area or alternative. A summary of studies using a hybrid MCDM and GIS approach to find the best site for solar PV projects is presented in Table 1.

Concentrated solar power (CSP) is a promising solar thermal power technology that can participate in power systems" peak shaving and frequency support [4], [5] pared with solar photovoltaics (PV), wind power, and other power technologies with strong output fluctuation, CSP can integrate a large-capacity heat storage system to ensure smooth power generation ...

A Two-Stage Multiple Criteria Decision Making for Site Selection of Solar Photovoltaic (PV) Power Plant: A Case Study in Taiwan May 2021 IEEE Access 9:75509 - 75525

Suitable site selection for solar farms is the most important step towards successful investment in this growing industry. There is a wide range of climatic, geographic, economic,

Short-term forecasting of electricity generation by HPP's of power system of Uzbekistan, 4th International Scientific Conference on Construction Mechanics, Hydraulics and Water Resources Engineering, CONMECHYDRO 2022 ... Site selection for solar photovoltaic power plants using GIS and remote sensing techniques Toxir Maxmudov;

Solar power generation is the most common way to use solar energy because of its ease of maintenance and ... put forward to meet the site selection requirements. Herein, a new site selection model ...

ElQuoliti used AHP to determine the suitable site for solar power generation in the Western Region of Saudi Arabia. Fourteen site selection criteria are determined in the study [10]. Sozen et al. presented an approach for the ...

Site selection and feasibility analysis are in principal two successional, independent tasks. The site selection process for concentrating solar power (CSP) technology should lead to the identification of a potential site, then a decision needs to be made as to the most suitable technical concept for the project.

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 ...

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 would result in significant cost savings ...

site selection (solar [14], biomass ... in order to make the comparison with the identified potential of solar power generation. ... realistic requirements related to the electric load.

Turkey's population is constantly increasing, and thus, the energy consumption is also increasing. Wind turbines, nuclear power plants, and boron and uranium resources are used for energy needs. Turkey meets its energy ...

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