Solar power station site selection study

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 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 Selectionof 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.

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 factorfor 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 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.

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.

Finally, a case study of a 10-megawatt photovoltaic power plant site selection in China is used to demonstrate the effectiveness and efficiency of the proposed method. ... The study shows that solar energy is the best investment project and environment is the most important investment factor. Moreover, the results demonstrate that the ...

Ideas for Further Study Narrow study area to a city and focus on rooftops. Focus study on to how to supply

just one city with power.

Fault lines are criteria that should be taken into account for the solar power plant site selection since the study area is located in a tectonically active area. ... Awasthi A (2017) Solar PV power plant site selection using a ...

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 vicinities of highway networks can be suitable for installing PV plants, in terms of economic feasibility, they have rarely been investigated because the impacts of various factors, including geographic or ...

Solar energy, as a major and least-cost renewable resource, has attracted extensive attention of experts and scholars. However, the establishment of the power station is time-consuming and costly. And once selected, it is difficult to change. So it is crucial to choose the appropriate site of power station.

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Although there have been a remarkable number of studies that focus on the optimal site selection of solar power plants, it was only recently that a risk-based GIS-MCDA method was used by Firozjaei et al. [32] for solar power plant site selection in Iran. It is necessary to consider the risks during the site selection process due to the decision makers risk taking ...

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 ...

In a case study of site selection in the Khuzestan province, Iran, it was concluded that even in the worst-case scenario the solar energy production potential of the province is approximately 1.75 times more than the total electricity produced in Iran in 2016. ... Al Garni, H.Z. and Awasthi, A., Solar PV power plant site selection using a GIS ...

2.1. Determination of influence criteria and requirements for site selection Studies using GIS to analyse solar power plant siting take into consideration a number of requirements. These include physical features of land, environmental factors, land-use restrictions, social concerns and electrical-infrastructure requirements [Brewer et al. 2015].

The main objectives of this study are to: 1. Make a solar energy power plant potential site selection map using a GIS program in the provincial scale by taking into account ecological risks and ...

2 Techniques Used in Solar Power Plant Site Selection Though it is well-known that considering various factors in the decision criteria can enhance site selection, using the MCDM technique can ease site selection for an optimal power Plant. The various methods used may vary in the decision maker"s

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To the best of our knowledge, no study has addressed the subject of optimal solar plant site identification for the Al-Qassim region, although developing renewable energy in Saudi Arabia has been ...

At the same, time, it is also important that the facility be established in a stable area. In this context, no criteria for the land slope best suited for solar PV power plant installation are included in relevant legislation. In this study, areas with a slope of less than 20% were the subject of study for optimal solar PV power plant site ...

In this respect, this study conducts a case study on selecting the site for PV-panel installation in the vicinity of a highway (e.g., slopes) by integrating geographic information system...

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