Solar power generation on the Yangtze River is feasible

How much electricity does the Yangtze River Delta generate?
In 2020,the total power generation of the Yangtze River Delta region is 1226.8 GW,which accounts for 80.67% of the total electricity consumption. Of the total electricity generation,only 20.38% (250.06 GW) of the electricity is generated from non-fossil sources [42].

Does the Yangtze River Delta have electricity supply security?
As the largest electricity consumer and importer,the YRD region faces the risk of electricity supply security. In 2020,the total power generation of the Yangtze River Delta region is 1226.8 GW,which accounts for 80.67% of the total electricity consumption.

Can low-carbon power plants sit in the Yangtze River Delta?
The main purpose of this study is to provide a comparative overview of the regional siting potential of various low-carbon power plants in the Yangtze River Delta of China. First, unsuitable zones for power plants are identified and excluded based on national regulations and landscape constraints.

Why is Yangtze a good place to sit a power plant?
It results from the geographic characteristic of the northeast of the YRD region,which locates in the middle and lower Yangtze natural alluvial plain. The region is low and flat,so the values of elevation and slope are low,indicating high suitability for power plant siting [25,55].

How much solar energy will China have by 2060?
According to China's 2030 energy and power development plan and 2060 outlook released by the global energy Internet development cooperation organization,the installed capacity of solar energy will reach 47.4%of China's total installed capacity by 2060 (Global Energy Interconnection Development and Cooperation Organization 2021b).

Where is the Yangtze River Delta region located?
2.1. Study Area In Figure 1,the Yangtze River Delta region (YRD) encompasses Shanghai,Jiangsu,Zhejiang,and Anhui(between 115-122° E and 27-35° N) and covers approximately 358 × 10 3 km 2 [38].

Water concerns in nuclear power generation. ... The Yangtze river water flow has a high seasonal variability: in winter, the flow can be 20 times lower than in summer; ... 60GW of hydropower, or 106GW of wind, or 161GW ...

China is rich in wind- and solar-energy resources. In recent years, under the auspices of the "double carbon target," the government has significantly increased funding for ...

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This study provides policy makers and potential investors with information on solar energy potential in the Yangtze River Delta region that would contribute to solar power generation ...

Given the above considerations, this study sought to (1) quantify the potential water-energy conflict of large-scale solar energy development in arid and semiarid regions of ...

This research performs a geographic information systems (GIS)-based assessment of the solar energy potential in the Yangtze River Delta region (YRDR) of China using high-resolu-tion ...

The water area of the continental and Yangtze River basin account for 68.99% of the total water area. Most importantly, the lake area of Qinghai Tibet Plateau in the continental basin and the ...

The case study in the Yangtze River Delta region shows that solar PV, biomass, WTE, and NG power are assigned with high siting potential (>0.8) in more spatial areas compared to other ...

Grid-connected solar photovoltaic (GCSPV) power generation is conducive to the large-scale promotion of PV power generation. The aim of this study was to analyze the feasibility of the construction of 1-MW GCSPV power stations at ...

This study provides policy makers and potential investors with information on solar energy potential in the Yangtze River Delta region that would contribute to solar power ...

Scientific Reports - Skillful statistical models to predict seasonal wind speed and solar radiation in a Yangtze River estuary case study. ... Iet Renewable Power Generation 10, ...

In 2015, Ye et al. 11 fed historical power generation, solar radiation intensity, and temperature data into a GA algorithm-optimized fuzzy radial basis function network (RBF) ...

Decarbonization of electrical power generation is an essential necessity in the reduction of carbon emissions, mitigating climate change and attaining sustainable development. Solar energy as ...

For example, the United Kingdom would need at least 30 to 40 gigawatts of new on-demand sustainable power generation to get rid of all fossil fuel power generation (according to a 2019 statement ...

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