

What is the capacity potential for large-scale solar PV in China?

4. Discussion This work reports that the total capacity potential for large-scale PV in China is 108.22 TW with 150.73 PWh annual solar PV generation (implying an average capacity factor of 15.9), which can bring 150.28 billion tones of CO<sub>2</sub> emission mitigation caused by coal-fired power generation.

How is solar PV power generation calculated in China?

Solar PV power generation was calculated according to the system parameters and assumptions shown in the Methods. In China, the cities with the highest and lowest solar PV power generation are Ngari (32.50°N, 80.11°E; around 1,976 kWh/kW p-1) and Chongqing (29.43°N, 106.91°E; around 732 kWh/kW p-1), respectively.

How much solar power will China have in 2020?

With addition of 48.2 GW in 2020, China's installed capacity of solar PV rose to 253.4 GW (12), far ahead of a target of 105 GW set for 2020 in the 13th 5-y plan (17). The large-scale installation of solar power both globally and in China has promoted improvements in PV conversion efficiencies and reductions in generation costs.

What is China's solar power capacity?

At the same time, the growth rate of its new installed capacity is significantly higher than the world average, as shown in Fig 1. By 2020, China's cumulative installed capacity of solar PV power generation has reached 203 GW, ranking first in the world.

What is the role of solar photovoltaic power generation in China?

Among alternative sources, solar photovoltaic (PV) power generation is expected to play an important role in this process in China given abundant solar resources and huge PV manufacturing capacity (7 - 10).

What will China's solar PV industry look like in 2035?

The third stage is from 2025 to 2035. According to the forecast results of the model, the overall development of China's solar PV industry will show steady growth. By 2035, China's cumulative installed solar PV capacity will reach 2833 GW.

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Email: [energystorage2000@gmail.com](mailto:energystorage2000@gmail.com)

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