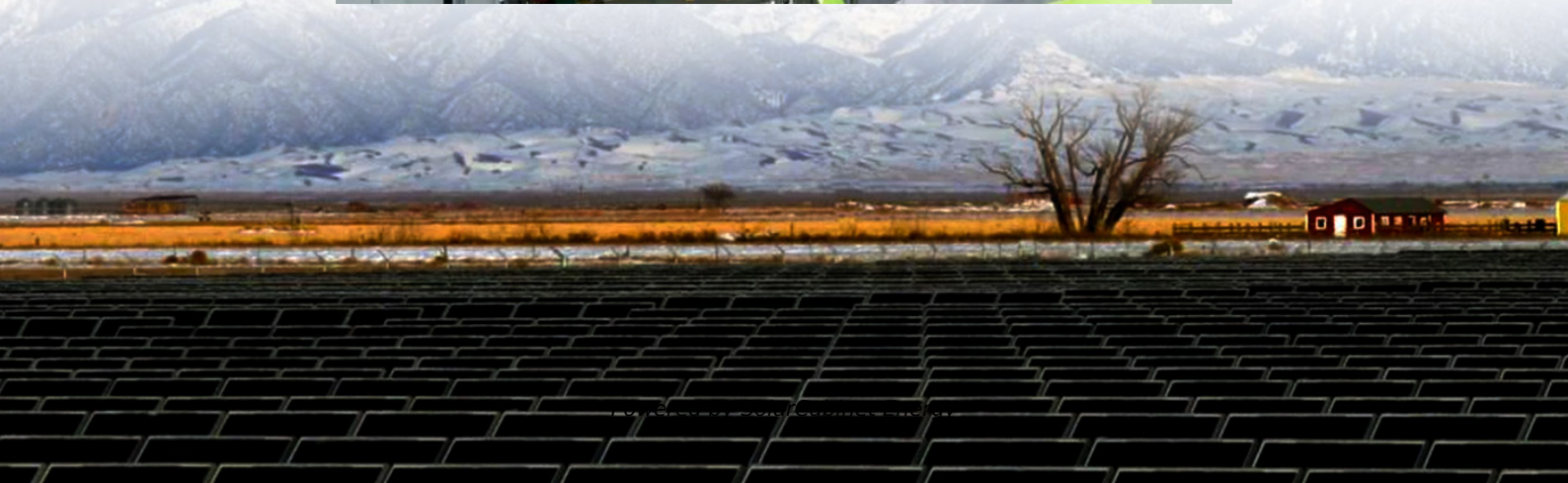


The largest hybrid energy source for communication base stations in China





Overview

How much electricity does China use per base station?

For China, based on a single base station power's energy consumption of 11.5 KWh (Huawei, 2019), we estimate that the electricity consumed by its 5G network by 2030 will be 6.04×10^5 GW for 6 million base stations, the equivalents of 8.4 % of China's national total power generation in 2019, respectively.

How many 5G base stations will we have by 2030?

Our modelled 5G base stations by 2030 range from about 1.3 to 5.0 million subjects to the two scenarios.

How many 5G base stations are there?

These predicted station numbers are considerably smaller than the business-projected 6-million stations, even for the BDDL = 100 % case under the S2 scenario that yielded the number of 5G base stations at 5.03 million, still one million smaller than the business-estimated 5G base stations. This number, however, is implausible.

How many base stations are there in 2030?

As a result, the model predicted a maximum base station number of 2.97 million in 2030 under the BDDL of 59.2 % in scenario S2 using 2021 provincial data. This number is considerably smaller than the business-projected base stations (6 million) (Fig. 4 a).

Are 5G base stations sensitivity to the bddl?

To evaluate the sensitivity of 5G base stations to the BDDL, we further estimated the evolution of 5G base stations and CO₂ emissions under the BDDL of 40 %, 80 %, and 100 %, in addition to the BDDL of 45.8 % and 59.2 % under the scenario S1 and S2.



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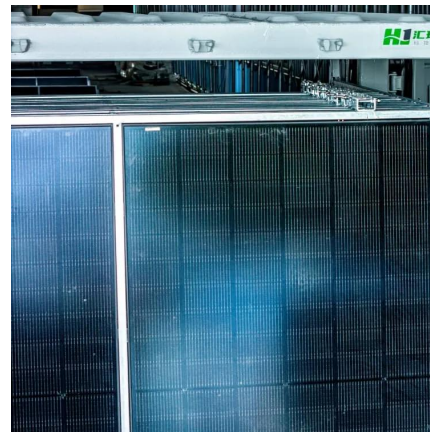


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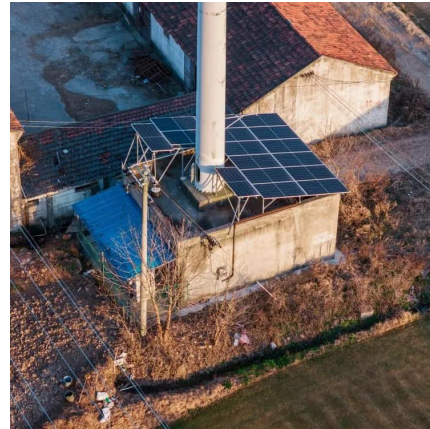
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