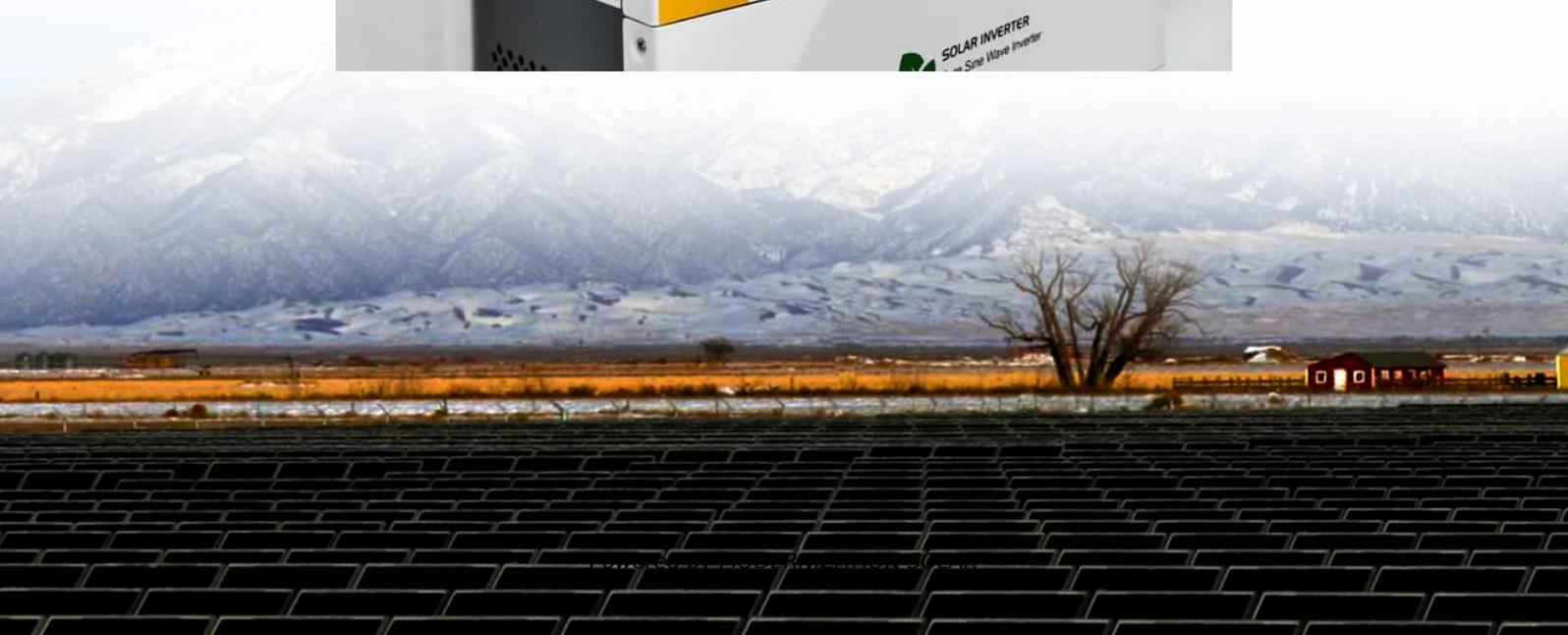


# China s 5G base station share of hybrid energy





## Overview

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We reassessed the potential climate impact of 5G mobile networks in China, which is currently building the world's largest 5G infrastructure with the largest number of 5G base stations. The results offer im.

How many 5G base stations are built in China?

As 5G serves as the foundation for the construction of new infrastructure, China, as the world leader in 5G base station construction, has already built over 1.4 million 5G base stations in 2021 alone. In the same year, 5G base stations in China produced approximately 49.2 million tons of CO<sub>2</sub> eq.

Does China have a 5G network?

Given that China currently has the largest 5G network in the world (~1.53 million base stations by the end of 2021, Table S1) and that base station number was projected by up to 6–8 million by 2030 (CCID Consulting, 2020), concerns are being expressed regarding 5G mobile networks' environmental effects and sustainability.

How much CO<sub>2</sub> will China's 5G network produce?

Under the model predicted 5G base stations, China's 5G network could yield 0.15–0.29 GtCO<sub>2</sub> /yr emissions subject to the nation's BDDL from 40 to 80 % by 2030. Both 5G base stations and CO<sub>2</sub> emissions are significantly lower than the previous estimates.

How much electricity will China's 5G network consume in 2030?

Under the scenario of business-estimated six million base stations in 2030, the share of electricity consumed by China's 5G networks in 2030 could reach 8.4 % of the national total power generation, causing 0.44 GtCO<sub>2</sub> /yr CO<sub>2</sub> emissions.



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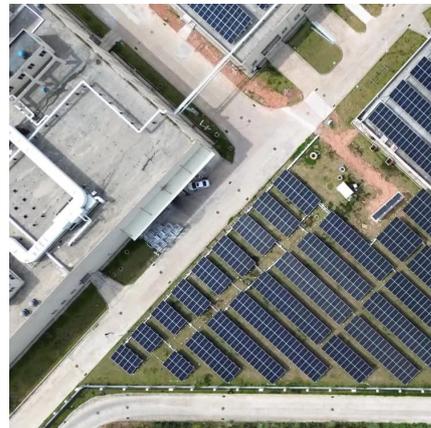


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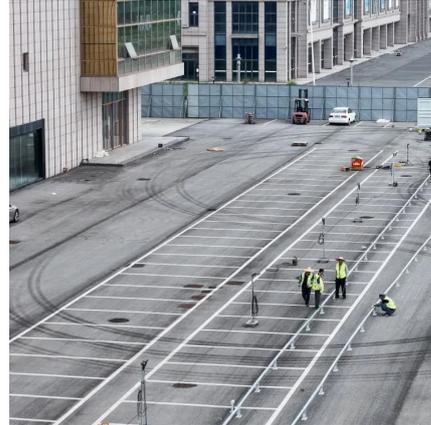
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