

# **China Hybrid Energy 5G Base Station Project**





## Overview

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How many 5G base stations will China build in 2025?

China plans to construct over 4.5 million 5G base stations in 2025 while introducing additional policy and financial incentives to support industries expected to shape the next decade, the country's Ministry of Industry and Information Technology (MIIT) announced during its annual work conference.

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.

Are 5G base stations sustainable?

However, due to their high radio frequency and limited coverage, the construction and operation of 5G base stations can lead to significant energy consumption and greenhouse gas emissions. To address this challenge, scholars have focused on developing sustainable 5G base stations.

How much carbon does a 5G base station produce?

Previous research has estimated that a single 5G base station will produce approximately 30.2 ~ 33.5 tCO<sub>2</sub> eq throughout its life cycle (Ding et al., 2022; Guo et al., 2022a). Consequently, the carbon emissions from 5G base stations in China in 2021 amounted to approximately 49.2 MtCO<sub>2</sub> eq.



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### [China to construct over 4.5 million 5G base stations in 2025](#)

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### [Low-Carbon Sustainable Development of 5G Base Stations in China](#)

May 4, 2024 · With the construction of new infrastructure is on the rise in many countries, the impact of the 5G developments on circular economy in the era of COVID-19 cannot be ...



### [The Integration of 5G Base Stations and Virtual Power Plants](#)

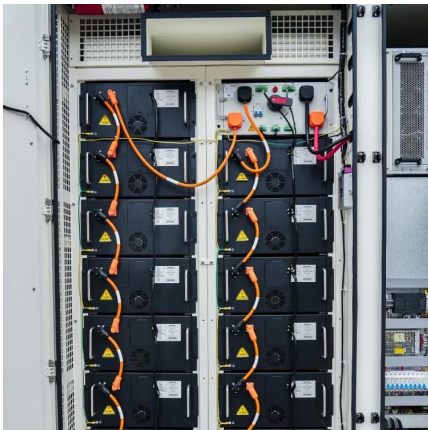
Sep 23, 2025 · With ongoing technological breakthroughs and project implementations by enterprises such as Huijue Group, 5G base station virtual power plants will accelerate from ...

### [5G Base Station Hybrid Power Supply . Huijue Group E-Site](#)

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single 5G site consumes 3x more power than 4G?  
With ...



[Ambitious 5G base station plan for 2025](#)

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## The carbon footprint response to projected base stations of China's 5G

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