

## A-Core Container

**Is there any relationship  
between 5G base stations and  
electricity**



## Overview

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How does mobile data traffic affect the energy consumption of 5G base stations?

The explosive growth of mobile data traffic has resulted in a significant increase in the energy consumption of 5G base stations (BSs).

What is 5G base station?

1. Introduction 5G base station (BS), as an important electrical load, has been growing rapidly in the number and density to cope with the exponential growth of mobile data traffic . It is predicted that by 2025, there will be about 13.1 million BSs in the world, and the BS energy consumption will reach 200 billion kWh .

What is 5G BS power consumption?

The 5G BS power consumption mainly comes from the active antenna unit (AAU) and the base band unit (BBU), which respectively constitute BS dynamic and static power consumption. The AAU power consumption changes positively with the fluctuation of communication traffic, while the BBU power consumption remains basically unchanged , , .

Can 5G reduce energy consumption?

However, the energy consumption of 5G networks is today a concern. In recent years, the design of new methods for decreasing the RAN power consumption has attracted interest from both the research community and standardization bodies, and many energy savings solutions have been proposed.

Does 5G affect embodied energy use and indirect energy use?

We find that the embodied energy use and indirect energy use effects of 5G have been largely overlooked in this literature. Insufficient attention has been paid to 5G-driven user behaviour changes and the prevention of rebound

effects.

Will 4G and 5G save energy?

This occurs in a scenario which sees traffic grow at 58% annually, energy saving features implemented to 4G between 2020 and 2025, and 5G launched in 2020. The energy saving potential in this scenario arises from 5G sleep modes as well as improved hardware and greater small cell deployment in both 4G and 5G.

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