

## SolarTech Power Solutions

# Power usage of telecommunication base stations in Argentina



## Overview

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How do base stations affect mobile cellular network power consumption?

Base stations represent the main contributor to the energy consumption of a mobile cellular network. Since traffic load in mobile networks significantly varies during a working or weekend day, it is important to quantify the influence of these variations on the base station power consumption.

What is the telephony industry like in Argentina?

Like other countries in Latin America and beyond, the telecoms industry in Argentina is characterized by rising mobile telephony revenues, estimated at nearly 1.5 billion U.S. dollars in 2023, representing almost six times the amount generated by fixed-line services in the same period.

Is there a direct relationship between base station traffic load and power consumption?

The real data in terms of the power consumption and traffic load have been obtained from continuous measurements performed on a fully operated base station site. Measurements show the existence of a direct relationship between base station traffic load and power consumption.

How to reduce the energy consumption of a base station?

So when the inter-cell distance is too large, it is necessary to increase the distance between cells, thus reducing the power consumption of the base station. In the actual network, in order to reduce the energy loss caused by frequent switching, the following two methods can usually be used: increase the distance between cells.

What is the Argentine Interconnection System?

The Argentine Interconnection System (Spanish: Sistema Argentino de Interconexión, SADI) is a wide area synchronous grid that links the regional networks of all Argentinian provinces, with the exception of Tierra del Fuego.

It is also connected to the power grids of several neighboring countries.

What is the power consumption of a base station?

For the base 1.5 m. per active user of approximately 3 Mb/s. We base station, which includes the PUE overhead. and a range of 340 m. LTE has the highest power largest range, of approximately 470 m. HSPA power consumption of LTE. users/km<sup>2</sup>. When we assume a density of 300 sumption of 27 W/Subs. The power of its larger range.

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