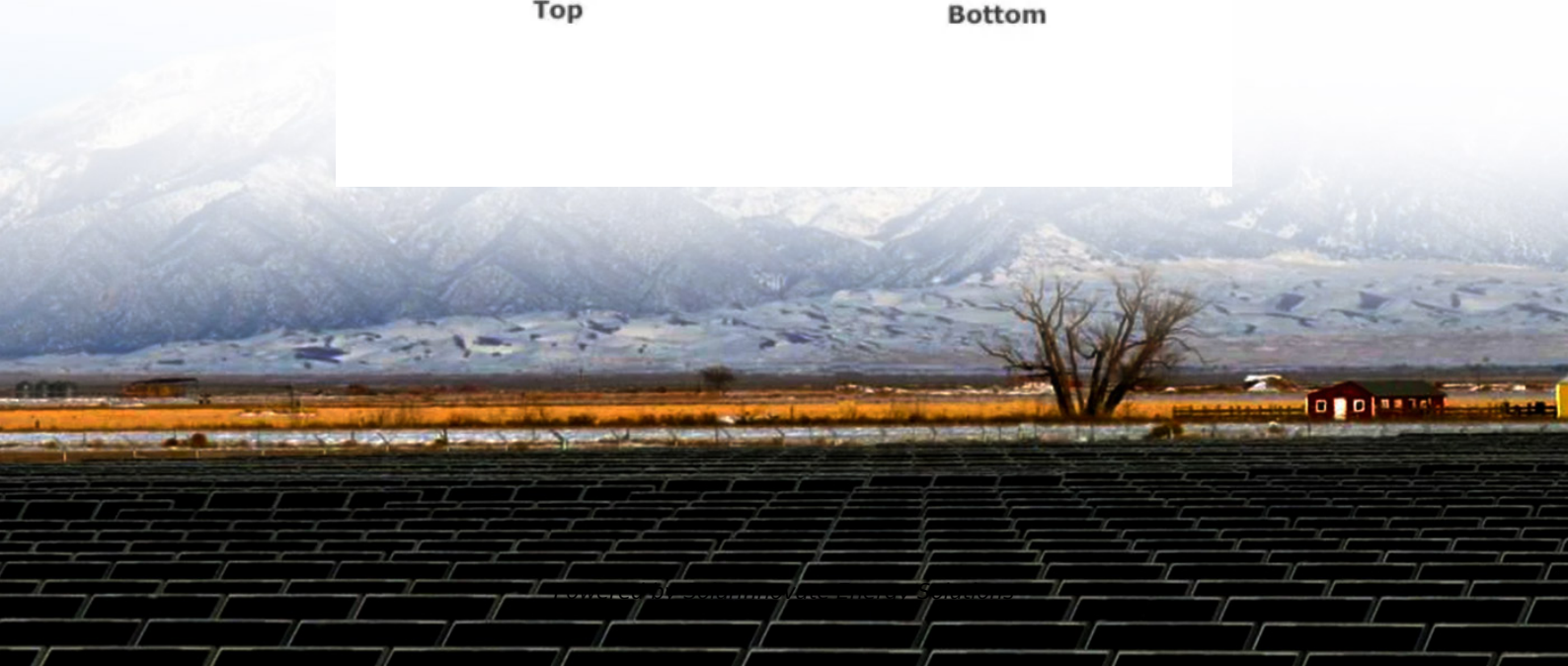


## SolarInnovate Energy Solutions

# Wind power energy-saving transformation of communication base stations



## Overview

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Due to the increasing demand of wireless communication, the number of radio base stations has been growing excessively. The wireless network is designed for maximum traffic load, but the traffic load is un.

Does a green wireless network reduce the energy consumption of base stations?

The measured results revealed that the proposed model reduces the energy consumption of base stations by up to 18.8% as compared with the traditional static BSs, which is a step forward towards the implementation of green wireless communication. 1. Introduction.

How can a base station save energy?

A significant saving of energy (from both environmental and economic point of view) can be obtained by implementing the energy efficiency measures like improving transmitter efficiency, upgrading system features and using alternative sources and energy saving during low traffic of base stations [15 ].

What is the energy consumption of 5G communication base stations?

Overall, 5G communication base stations' energy consumption comprises static and dynamic power consumption . Among them, static power consumption pertains to the reduction in energy required in 5G communication base stations that remains constant regardless of service load or output transmission power.

How can a radio network save energy?

The energy saving can be achieved by adapting the actual traffic demand by switching off unnecessary cells, modifying the radio topology and reducing the radiated power methods, such as cell micro sleep and bandwidth shrinking, but the challenge is to maintain the quality of service and the coverage area [16 ].

Why is the number of radio base stations increasing?

Due to the increasing demand of wireless communication, the number of radio base stations has been growing excessively. The wireless network is designed for maximum traffic load, but the traffic load is unevenly distributed resulting in wastage of energy consumption most of the time during low traffic.

What are the basic parameters of a base station?

The fundamental parameters of the base stations are listed in Table 1. The energy storage battery for each base station has a rated capacity of 18 kWh, a maximum charge/discharge power of 3 kW, a SOC range from 10% to 90%, and an efficiency of 0.85.

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