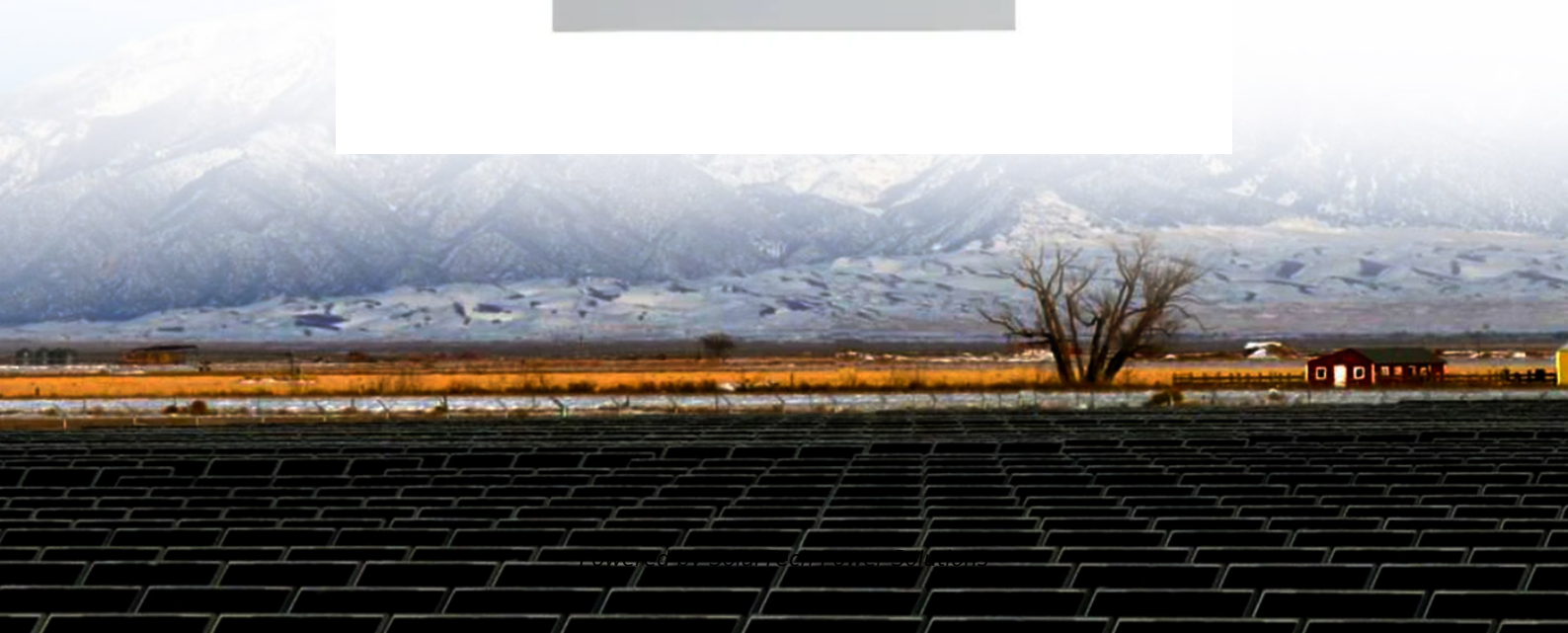


## SolarTech Power Solutions

# Central Asia Hybrid Energy and Mobile Cooperation to Build 5G Base Stations



## Overview

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Will China build a 5G base station next year?

Technicians from China Mobile check a 5G base station in Tongling, Anhui province. [Photo by Guo Shining/For China Daily] China aims to build over 4.5 million 5G base stations next year and give more policy as well as financial support to foster industries that can define the next decade, the country's top industry regulator said on Friday.

Who are China's 5G operators?

Chinese main operators are China Mobile, China Telecom and China Unicom. In addition to its expected expansion in the 5G field, China noted that it is also set to begin trials for 10-gigabit optical networks and enhance computing power infrastructure, reflecting the growing demand for artificial intelligence (AI) technologies.

Are 5G base stations more energy efficient than 4G BSS?

The energy consumption of 5G base stations (BSs) is significantly higher than that of 4G BSs, creating challenges for operators due to increased costs and carbon emissions. Existing solutions address this issue by switching off BSs during specific periods or forming cooperation coalitions where some BSs deactivate while others serve users.

Does Mappo reduce power consumption in 5G ultra-dense networks?

In this paper, we thoroughly study the base station control problem in 5G ultra-dense networks and propose an innovative MAPPO algorithm. The algorithm significantly reduces the overall power consumption of the system by optimizing inter-base station collaboration and interference management while guaranteeing user QoS.

What will China do with the 5G push?

Alongside the 5G push, China will also start trials for 10-gigabit optical

networks and optimize computing power centers amid an artificial intelligence (AI) boom brought on by ChatGPT.

Can hierarchical reinforcement learning improve energy conservation in large-scale 5G networks?

However, these approaches often rely on fixed geographic configurations, making them unsuitable for urban areas with numerous BSs and mobile users. To tackle these challenges, we propose a hierarchical reinforcement learning (RL) framework for energy conservation in large-scale 5G networks.

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