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Pakistan builds wind and solar hybrid communication base stations

Overview

Pakistani telco firm Jazz has partnered with Chinese tech giant Huawei to install solar panels at 1,000 mobile base stations across Pakistan.What is a Base Transceiver Station (BTS) in Pakistan?

In Pakistan, existing base transceiver stations (BTSs) primarily depend on diesel generators or the conventional grid for power. However, rising international fuel costs pose challenges like load shedding, power outages, and escalating expenses.

Can renewable-dominated hybrid standalone systems be implemented in BTS encapsulation telecom sector?

This study presents a thorough techno-economic optimization framework for implementing renewable-dominated hybrid standalone systems for the base transceiver station (BTS) encapsulation telecom sector in Pakistan.

Which BTS sites are optimized for PV-wind and battery with hydro energy?

PV-Wind and Battery with Hydro Energy (PV-W-B-HYD) It can be observed from Table 10 that among the 42 BTS sites, only 5 (BTS-08 Dir, BTS-09 Mardan, BTS-14 Buner, BTS-17 Kohistan, and BTS-18 Mansehra) were optimized for PV-W-B-HYD configuration.

Which energy source is used in Pakistan?

5.1.6. Wind and Hydro with Battery Storage System (W-HYD-B) Due to its low operating costs, hydel electricity is a commonly used energy source and the primary energy source in most nations, including Pakistan. Only one BTS site named BTS-11 Swat has an optimal configuration of W-HYD-B, which can be seen in Table 10.

What is the current energy mix in Pakistan?

The current energy mix in Pakistan is 5.4% from renewables (solar and wind), as depicted in Figure 1 a . In a similar vein, Pakistan’s NEPRA proposed the

IGCEP 2022–31, which aims to raise the on-grid capacity of renewable energy generation by 22% by 2030 and is presented in Figure 1 b .

Are hybrid systems viable in autonomous BTS sites?

To address this, this study assessed the viability and sustainability of hybrid systems, focusing on renewable energy, in 42 autonomous BTS sites across north, central, and south Pakistan. Optimization findings show that specific areas in the north are more suitable for solar, wind, biomass, and hydropower.

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