

New Solution for Jordan's Solar-Powered Communication System



Overview

Solar-Powered Communication Systems That Work When The Grid Fails By implementing a combination of satellite systems, radio networks, and cellular solutions.

Key Takeaways

Jordan is advancing solar-powered communication systems through off-grid solar PV solutions, integrated energy storage, and supportive regulatory frameworks, enabling resilient connectivity in remote and critical areas. Overview of Solar-Powered Communication Systems

Solar-powered communication systems provide reliable, off-grid connectivity for remote locations, emergency response, and industrial operations. These systems combine solar panels, battery storage, and communication technologies such as radio networks, satellite links, and mesh networks to maintain continuous operation even during grid failures or extreme weather events. They are particularly valuable for emergency services, remote monitoring stations, and industrial sites where conventional power and communication infrastructure may be unreliable or unavailable.

Jordan's Solar Energy Landscape



Jordan has made significant strides in solar PV deployment, reaching a total installed on-grid capacity of over 2,073 MW by the end of 2024. The government introduced the Renewable Energy and Energy Efficiency Law (12) of 2024 and Bylaw (58) of 2024, which established new grid connection mechanisms and dynamic electricity tariffs, facilitating both on-grid and off-grid solar adoption . Off-grid solar systems are increasingly popular in rural areas, farms, and tourist sites, providing a foundation for solar-powered communication networks .

Technological Solutions

Local companies like Jordan Energy and Future Sun specialize in designing, installing, and maintaining solar PV systems with advanced energy storage, which are essential for powering communication equipment continuously. These systems can be hybrid or fully off-grid, integrating high-performance batteries to ensure operation during periods of low sunlight or high demand . Key components include:

- Solar PV panels for renewable energy generation
- Battery storage systems for uninterrupted power supply
- Inverters to convert DC to AC for communication devices
- Redundant communication technologies such as satellite links and mesh networks for reliability

Applications in Jordan

Solar-powered communication systems in Jordan can support:

- Emergency response networks in areas prone to natural disasters
- Remote industrial operations, including mining and energy facilities, ensuring real-time monitoring and safety
- Rural and off-grid communities, providing internet and telecommunication access without relying on the main grid By leveraging off-grid solar PV systems, Jordan can maintain resilient communication infrastructure while promoting sustainability and energy independence .

Future Prospects

With ongoing policy reforms, declining solar PV costs, and growing private sector participation, Jordan is well-positioned to expand solar-powered communication networks. The integration of digital meters and time-of-use tariffs further enhances the efficiency and economic viability of these systems, supporting both residential and commercial applications. The upcoming Jordan Energy Strategy 2025-2035 is expected to solidify the country's leadership in renewable energy and off-grid communication solutions. In summary, Jordan's new solar-powered communication solutions combine advanced solar PV technology, energy storage, and regulatory support to provide reliable, sustainable, and resilient connectivity across the country, particularly in remote and critical areas.

Article Content

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Rural photovoltaic electrification program in Jordan

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Jordan opens massive solar energy park for refugee camp

From nearby Azraq camp in Jordan, to Dadaab in Kenya, solar power is being deployed to provide affordable and

Jordan

The telecommunications sector was partially privatized in 1995 and currently Jordan enjoys a thoroughly modern communications

Solar Energy in Jordan

The solar energy potential in Jordan is enormous as it lies within the solar belt of the world

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Seven solar power plants in Jordan

Seven solar power plants in Jordan Independent engineering services for six of the seven PV solar power plants. SHARE: Client The

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Off-grid solar systems offer a sustainable and reliable energy solution for Jordan, especially in remote and

The Progress of Solar PV Sector in Jordan in 2024

In September 2024, Jordan's Council of Ministers lifted the cap on solar PV project sizes, enabling large-scale

UNHCR powers up Jordan refugee camps with solar initiatives.

UNHCR's expansion of solar initiatives to power refugee camps in Jordan demonstrates a strong commitment to

Jordan's New Electricity Law: Boosting Solar, Wind & Hydrogen

Jordan's new electricity law prioritizes renewable energy and green hydrogen to diversify its power sources and

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As the global push for sustainable energy intensifies, Jordan emerges as a frontrunner in the Middle East, leveraging

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Solar powered communication systems represent a powerful convergence of renewable energy and communication technology.

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Azraq, the world's first refugee camp powered by renewable energy

The UN Refugee Agency, UNHCR, switched on today the newly constructed solar plant in Jordan's Azraq refugee

Innovator Profile: Orange Jordan

The solar energy potential in Jordan with average solar radiation ranging between 5 and 7 KWh/m², which implies a

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Across the hillsides and outskirts of Jordan's capital city, Amman, olive orchards and grazing lands are increasingly

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