

Why is Saudi Arabia investing in solar energy?

Leveraging its abundant sunshine and vast desert areas, Saudi Arabia is now pivoting to solar energy, aligning with its Vision 2030 plan to diversify its economy and ensure sustainable growth by reducing oil dependency and investing in renewable energy.

Which solar energy projects are completed in Saudi Arabia by 2030?

The Lunch of Saudi Solar Energy Program Sakaka, Al Shuaibah, and Sudair Solar Energy Projects have been completed. By 2030, the goal is 40GW PV solar and 2.7GW (CSP) concentrated solar power capacity.

Does Saudi Arabia need a photovoltaic energy system?

Saudi Arabia is the largest country in the Middle East with huge solar energy resources but has achieved minimal adoption of photovoltaic energy systems (PV). This study investigates the potential of PV systems to address pressing challenges, including water scarcity and agricultural unemployment.

Where in Saudi Arabia is solar power coming from?

Key locations include Sakaka in Al Jouf Province, Al Shuaibah in Makkah Province, and Sudair in Riyadh Province, among others. These projects capitalize on Saudi Arabia's geographical position and favorable weather conditions to generate solar power. Solar energy is set to expand nationwide.

Should Saudi Arabia invest in small-scale PV energy systems?

Small-scale PV energy systems of a few megawatts, distributed across the country, can provide the people of Saudi Arabia with a low-risk passive income with loans at lower interest rates and a reasonable rate of buyback energy from the government (Basu et al. 2022; Panapakidis, Koltsaklis, and Christoforidis 2021).

Is there a future for Saudi Arabia's energy sector?

KAUST's Stefaan De Wolf believes there is a great opportunity for cheap and abundant photovoltaics and other renewable sources of energy, such as wind, to electrify the country's energy sector. "There are huge opportunities for Saudi Arabia, thanks to its abundant solar irradiance," he says.

Saudi Arabia's Ministry of Investment has highlighted the need for further investment to optimize these large-scale solar projects that are part of NREP to leverage the Kingdom's abundant ...

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Between 2015 and 2023, renewable power capacity in Saudi Arabia surged at a compound annual growth rate (CAGR) of 82.4%, from 0.02GW to 3GW. Solar PV dominated the renewable power capacity landscape in 2023, accounting for 82.6%, followed by onshore wind at nearly 14.1%, and solar thermal at 3.1%.

By 2030, Saudi Arabia wants to produce 58.7 GW of renewable energy, of which 40 GW will come from solar photovoltaics (solar PV), 16 GW from wind energy, and 2.7 GW from concentrated solar power (CSP) [34].

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