

Saudi Arabia Distributed Energy Generation Market Assessment, By Technology [Diesel and Oil Gensets, Natural Gas Gensets, Mini Hydropower Grids, Gas & Steam Turbine, Fuel Cells, Solar Photovoltaic, Wind Turbine, and Biomass Generators], By End-user [Residential, Commercial and Industrial], By Region, Opportunities, and Forecast, 2016-2030F

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Abstracts

Saudi Arabia had been witnessing a significant level of development in its distributed energy generation market. The Saudi Arabia Distributed Energy Generation market is projected to reach USD 1339.82 million by 2030 from USD 418.1 million in 2022 with a CAGR of 15.67% for the country has been working towards diversifying its economy, reducing its dependency on oil, and promoting sustainable development. Hence, distributed energy systems, including renewable energy sources like solar power, wind power, etc. play a crucial role in this strategy by providing alternative sources of power thereby facilitating the market growth.

In Saudi Arabia, solar energy is the most dominant renewable energy source that is being harnessed for electricity generation. The country has abundant solar resources, making it an ideal location for solar power projects. Moreover, solar energy is particularly valuable in remote and off-grid areas of Saudi Arabia. In regions where extending the traditional grid infrastructure is not feasible, solar power provides a reliable and cost-effective solution. Numerous solar power projects are launched across the country by the Saudi Arabian government in order to increase its solar energy capacity. Sakaka PV Solar Project in Sakaka City within the AI Jouf Province of Saudi Arabia is a solar project with a capacity of 300MW that harnesses solar energy though photovoltaic panels. By being integrated into the national electricity grid, the power plant



is anticipated to provide a sufficient amount of clean energy to meet the needs of over 75,000 households in Saudi Arabia. This will result in a substantial reduction of over 430,000 tonnes of carbon dioxide (CO?) emissions annually.

A Continuous Increase in Renewable Energy Deployment

Saudi Arabia has been actively promoting the adoption of renewable energy sources for distributed energy generation. There has been a significant emphasis on solar energy, with the country aiming to install 58.7 GW of solar capacity by 2030. This push towards renewable energy has led to a rise in distributed solar installations, both on rooftops and in ground-mounted projects. According to the General Authority for Statistics of Saudi Arabia, the country has set a target to generate 15.1 terawatt-hours (TWh) of renewable energy annually by 2024. This amount of renewable energy production will be sufficient to fulfill the electricity needs of approximately 692,557 households. Furthermore, the National Renewable Energy Program of Saudi Arabia comprises a total of 13 projects, with a combined capacity of 4,870 megawatts (MW).

The Advent of Bifacial Solar Panels

Bifacial solar panels have the potential to generate more electricity compared to monofacial panels and are widely used for distributed energy generation. By capturing sunlight from both sides, they can utilize the reflected light, which increases the overall energy yield of the system. This is particularly beneficial in desert regions like Saudi Arabia, where the ground reflects a significant amount of sunlight. Hence the key players operating in this region are sheer focusing on the installation of bifacial solar panels.

LONGi Solar Technology Co., Ltd. - (LONGi) has recently reported the successful provision of 406MW worth of its Hi-MO 5 bifacial photovoltaic (PV) panels to the Solar plant created by PowerChina SEPCO III. This solar plant is part of Saudi Arabia's Red Sea Solar PV Project. At present, this undertaking stands as the largest energy storage project worldwide that is currently being constructed and holds the title of the world's largest off-grid integrated smart energy project .

Government Regulations

The government of Saudi Arabia has implemented various regulations and policies to support and regulate the distributed energy generation market in the country. These regulations aim to promote renewable energy, enhance energy efficiency, and create a



favorable environment for bidding of distributed energy projects. For example - REPDO (Renewable Energy Project Development Office), introduced in 2017, initiated the initial phase of renewable energy projects, including the Sakaka 300 MW solar PV project, which is now integrated into the national power grid, and the Dumat AI Jandal 400 MW wind project, currently in the construction phase. The development of a prosperous renewable energy sector is a fundamental aspect of Saudi Vision 2030, a comprehensive economic and social roadmap, with an initial objective of generating 9.5 GW (gigawatts) of renewable energy. The plan also envisions the involvement of public-private partnerships and gradual liberalization of the fuel market. Hence, it can be stated firmly that the implication of govt programs has facilitated market growth greatly.

Impact of COVID-19

The COVID-19 crisis highlighted the importance of resilient and decentralized energy systems. The distributed energy generation market, with its potential for energy independence and local resilience, gained further recognition as a viable solution for future energy needs. Moreover, in response to the pandemic, government of Saudi Arabia emphasized the importance of renewable energy and sustainable development for economic recovery. Saudi Arabia has continued to demonstrate its commitment to renewable energy, including distributed energy generation, by announcing initiatives and regulatory reforms to support the sector. While the COVID-19 pandemic initially posed some economic challenges to the distributed energy generation market in Saudi Arabia, the long-term impacts are likely to result in a renewed focus on renewable energy and the acceleration of the energy transition. As economies recover and adapt to new realities, distributed energy generation is expected to play a crucial role in building more resilient and sustainable energy systems.

Key Players Landscape and Outlook

The distributed energy generation market in Saudi Arabia is experiencing significant growth and is undergoing substantial expansion, where companies are prioritizing the implementation of solar photovoltaic projects. Furthermore, these companies operating in this market are allocating additional resources towards research and development, marketing initiatives, and expanding their distribution networks through collaborative efforts. However, the most recent trend in the distributed energy generation market is the installation of floating solar panel systems.

In June 2023, Alfanar has been granted a 110 MW solar photovoltaic power plant project by the Saline Water Conversion Corporation. This project will involve the



installation of a floating solar panel system. The solar plant's primary objective is to supply renewable energy to power the desalination plant, leading to a significant reduction in the consumption of 410,000 barrels of crude oil annually. By facilitating the distribution of renewable energy, this project will contribute to the broader adoption of sustainable energy sources throughout the country.



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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work



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