

North America Solar Energy Market Forecast to 2030 – Regional Analysis – by Technology (Photovoltaic Systems and Concentrated Solar Power Systems), Application (Electricity Generation, Heating, and Others), and End User (Residential, Commercial & Industrial, and Utility Scale)

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Abstracts

The North America solar energy market is expected to grow from US\$ 30,681.70 million in 2022 to US\$ 73,365.40 million by 2030. It is estimated to grow at a CAGR of 11.5% from 2022 to 2030.

Growing Greenhouse Gas Emission and Energy Uncertainties Fuels North America Solar Energy Market

The evolution of the energy system following the Paris Agreement, launched in 2015 and entered into force in 2016, has fueled the application of renewable energy sources to reduce carbon emissions. A key contributor of GHG (greenhouse gas) emissions that lead to climate change is power generation using fossil fuels. The utilization of solar energy is increasing due to rising concern towards more sustainable and green energy alternatives, growing climate change concerns, and government initiatives towards boosting the usage of renewable energy across the globe. Governments of various nations are realizing the significance of switching to renewable sources to meet the future low to zero carbon emission targets. For instance, the US government aims to reduce net GHG emissions by 50–52% compared to 2005 levels by 2030 and attain net zero emissions by 2050. The renewable industry includes power sources, primarily wind, hydroelectric, and solar. Thus, the growing concerns regarding greenhouse gas emissions and energy uncertainties are fueling the growth of the solar energy market.

North America Solar Energy Market Overview

The renewable energy industry in North America is mainly driven by supportive legislation, including the Inflation Reduction Act in the US, to allow CSIQ to capture greater value from solar and storage assets. Countries such as the US, Canada, and Mexico are heavily focusing on renewable energy sources to increase their power generation and installed capacity. Further, one of the major trends driving the solar energy market in the region is the power generation race, which is also boosting the power generation capacity across North America.

A few of the top projects that have been contributing to the growth of the solar energy market across North America are mentioned below:

- 7V Solar Ranch Solar Power Plant, with a capacity of 300 MW and a project value of US\$ 282 million, is in Texas, US. The construction of this project started during the second quarter of 2022 and is expected to be completed by the end of the fourth quarter of 2023. The main objective of this project is to generate and provide power to the residential sector in the Texas region.
- Fayette County Solar Farm in Texas, US, has an overall capacity of 240 MW and a project value of ~US\$ 280 million. The project was started in the second quarter of 2022 and is expected to be completed by the end of the fourth quarter of 2023.
- In 2022, a 120 MW solar power plant was constructed in Idaho, US. The project is known as Twin Falls Solar Power Plant and has a project value of ~US\$ 250 million. This project was expected to be completed by the end of 2022; however, the construction was completed in January 2023 by Duke Energy Sustainable Solutions.
- Another major project, valued at US\$ 27.25 million, is located at the Central de Abasto, Mexico City's massive Central Market. The project is planned in two different phases, wherein the first phase includes the installation of two Distributed Generation (DG) solar systems on the roof of storage units, which is set to start operating in 2023. The project's second phase includes 18 MW of PV installations expected to produce ~25 GWh of clean energy for the market. The second phase is expected to be completed by the end of 2023.

Furthermore, countries in North America have set their respective goals to contribute to the global aim of reducing the carbon emissions from their respective power generation

operations, which is bolstering the deployment of solar energy plants.

North America Solar Energy Market Revenue and Forecast to 2030 (US\$ Million)

North America Solar Energy Market Segmentation

The North America solar energy market is segmented into technology, application, end user, and country.

Based on technology, the North America solar energy market is segmented into photovoltaic systems and concentrated solar power systems. The photovoltaic systems segment held a larger share of the North America solar energy market in 2022. The photovoltaic systems is further sub segmented into monocrystalline, polycrystalline, and others. The concentrated solar power systems is further sub segmented into linear concentrator, dish/engine, and power tower systems.

Based on application, the North America solar energy market is segmented into electricity generation, heating, and others. The electricity generation segment held the largest share of the North America solar energy market in 2022.

Based on end user, the North America solar energy market is segmented into residential, commercial & industrial, and utility scale. The utility scale segment held the largest share of the North America solar energy market in 2022.

Based on country, the North America solar energy market is segmented into the US, Canada, and Mexico. The US dominated the North America solar energy market in 2022.

Abengoa SA, Acciona SA, ADT Solar LLC, Canadian Solar Inc, First Solar Inc, Heliogen Inc, JinkoSolar Holding Co Ltd, Kelvin Energy Inc, NextEra Energy Inc, and Trina Solar Co Ltd are some of the leading companies operating in the North America solar energy market.

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