Global Solar PV Tracker Market Research Report by Solar Power Type, by Tracking type, Drive system, By End-User, Forecast till 2023

Market Scenario

The global energy industry is witnessing a drastic change from completely depending on fossil fuel plants, such as coal and oil, to renewable energy sources, such as solar, wind, and geothermal for power generation. One of the main concerns about the renewable energy resources has always been their low power production capacity compared to the conventional sources. For instance, a coal power plant with the latest technology can operate at an efficiency of 35% at its prime operating conditions and in hydropower plants, it can be much higher at 95%. However, even with the latest development and advancement in solar technology, the maximum efficiency of a solar panel at laboratory conditions stand at 24%. In real-world operating conditions, this value drops even further and hovers around 15%-18% depending on the type of technology and operating areas. This is a significant disadvantage of a renewable energy system, especially solar energy, which has a further downside of not being able to generate power during the night.

One of the ways of increasing the solar power generation efficiency is by using a solar tracker with the PV systems. A solar tracker works with the prime objective of keeping the solar panel under best possible insolation from sun compared to fixed solar panels. This is a game changer in the solar industry, as it is proved by experiments that solar trackers can actually increase the operational efficiency by up to 15% to 30% than the traditional fixed panel setup, depending on regions of operation. There are several types of solar tracking systems available in the market.

One of the other main objectives of a solar tracker is to consume less energy and maximize the efficiency of operations. This is mainly because the solar trackers are separate energy consuming entities added to solar panels for increasing their performance. Moreover, it is essential that solar trackers offer reliability of operations under different operational conditions, as any impact on tracker system performance can have a substantial impact on solar panel or power systems performance as a whole.

Global solar PV tracker market has been segmented based on power generation type, tracking system type, tracking control systems type, end-use industries, and region. Based on power generation type, it is classified into CSP that includes parabolic through, power towers, linear Fresnel, and dish/engine type. Concentrated solar thermal systems that use solar energy for water heating and steam generation purposes use solar trackers for their operations. Based on tracking systems type, the market is segmented into fixed tilt, single axis, and dual axis tracking systems. Since the tracking systems are comparatively expensive and are an add-on to the existing systems, single axis tracking system by type is used for small-scale solar power generation technologies. However, since the utility level solar power installation systems need to be operated at full capacity and maximized operational efficiency, dual axis tracking systems are used. For easier operations of tracking systems, they are controlled by active and passive tracking systems. Active tracking systems ensure that the solar panels are perpendicular to sunlight and use sensors that determine the ideal position of the panel. Passive control systems normally operate by using compressed gas that generates a difference in pressure inside the system, based on sunlight. The passive systems are
usually preferred for power systems of low capacity as they do not need a controller; however, they are slow to respond and are quite physically vulnerable to external factors, such as gusty winds and storms.

The solar PV tracking market industry is expected to majorly benefit in the coming years due to increased solar power installations around the world. The market for solar PV trackers is expected to witness huge growth in countries such as India, China, and Latin American countries.

**Global Solar PV Tracker market is projected to grow at ~ 18% CAGR during the forecast period.**

**Market Segmentation**

**Global Solar PV Tracker Market**

The growth of the solar PV tracker is going to be mainly influenced by the rising installations of solar power systems around the world. As the panel prices having been recording historical low prices and feed-in-tariff rates achieving parity with conventional power generation sources, solar power generation is widely desired by countries for meeting their power requirements. As trackers can effectively bring additional 15% to 30% extra efficiency to operations, solar trackers are increasingly desired by the solar power plant operators. However, higher installation and maintenance costs and proneness to operational failures hinder the increased implementation of solar tracker systems.

**Key Players**

The key players of the global solar PV tracker market are Arctech Solar (India), Convert Italia (Italy), Exosun (U.S.), First Solar (U.S.), Grupo Clavijo (Spain), Ideematec (Germany), Mahindra Susten (India), NClave (Spain), NEXTracker (U.S.), PV Hardware (U.S.), Scorpius Trackers (India), Solar Steel(Spain), Soltec(U.S.), STi Norland (Spain), Sun Action Trackers (U.S.), SunLink (U.S.), and SunPower (U.S.).

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