

Solar Charge Controller Market Size, Share & Trends Analysis Report By Type (Pulse Width Modulation, Maximum Power Point Tracking), By Application, By Region, And Segment Forecasts, 2020 - 2027

<https://marketpublishers.com/r/SAEB31932D84EN.html>

Date: June 2020

Pages: 90

Price: US\$ 5,950.00 (Single User License)

ID: SAE31932D84EN

Abstracts

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Solar Charge Controller Market Growth & Trends

The global solar charge controller market size is expected to reach USD 4.15 billion by 2027, expanding at a CAGR of 15.1% from 2020 to 2027, according to a new report by Grand View Research, Inc. Implementation of climate change policies, along with provision of government subsidies for power generation through renewable energy, is likely to strengthen market growth over the forecast period.

Growing requirement for reliable power supply in harsh environmental conditions or remote locations has resulted in increasing deployment of off-grid photovoltaic systems, which, in turn, has positively influenced the solar charge controller demand across such regions. In addition, renewable energy battery storage solutions are expected to bolster the market growth over the forecast period.

Solar charge controllers increase battery lifespan by regulating the voltage and current flow from PV panels to battery during the day and preventing excessive discharging flow from battery to solar panels during the night. Innovative technology advancements including controllers integrated with auto night detection capabilities, smart sensor technology, and smart communication technologies, such as Bluetooth, are expected to enhance the functional capability of the product across the industry.

Major industry participants find lucrative market growth opportunities in the Asia Pacific region with low cost product manufacturing across the developing economies. Market players practice high degree of forward integration to enhance their foothold and market share in the solar industry. Moreover, manufacturers are massively investing in innovative technologies such as Maximum Power Point Tracking (MMPT) owing to the higher output generated when compared to the Pulse Width Modulation (PWM) technology.

Solar Charge Controller Market Report Highlights

By type, the Pulse Width Modulation (PWM) segment accounted for a significant market share in 2019 owing to PWM charge controller ability to self regulate to battery condition and provide constant voltage battery charging

Maximum Power Point Tracking (MPPT) is anticipated to expand at the fastest CAGR over the forecast period. The growth can be attributed to the higher efficiency of MMPT technology and its ability to extract maximum power available from PV module under specified conditions

The commercial application segment occupied the largest market share in 2019 and is expected to expand at the highest CAGR over the forecast period. Growing penetration of solar PV modules for power generation across commercial office spaces is expected to drive the solar charge controller demand across the segment

Asia Pacific accounted for the largest revenue share in 2019, with China being the highest revenue contributor. Presence of major manufacturers, along with significant investments in the solar industry resulting in reduced production costs, is expected to boost the market growth in China.

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