

# **Solar-Powered UAV Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 – 2034**

<https://marketpublishers.com/r/S46A53D9603DEN.html>

Date: November 2024

Pages: 220

Price: US\$ 4,850.00 (Single User License)

ID: S46A53D9603DEN

## **Abstracts**

The Global Solar-Powered UAV Market, valued at USD 356.3 million in 2024, is projected to grow at 9.2% CAGR from 2025 to 2034. Increasing environmental concerns and the global shift toward sustainability are major factors driving the demand for solar-powered UAVs. As industries focus on reducing their carbon footprint, these eco-friendly alternatives to traditional fuel-powered UAVs are gaining popularity, helping both companies and governments meet their sustainability goals.

Technological advancements in solar panels have significantly improved their efficiency, making them more suitable for UAV applications. Modern, lightweight, and high-efficiency solar panels are now capable of generating more power from a smaller surface area, allowing UAVs to stay airborne for longer periods without relying on large batteries. These developments have expanded the potential for solar-powered UAVs in various sectors, including surveillance and environmental monitoring.

However, one of the key challenges in the solar-powered UAV market is the reliance on favorable weather conditions, as varying sunlight can constrain flight durations. This has led to the development of hybrid UAVs, which combine solar power with battery or fuel systems to ensure more reliable performance. In addition, regulatory hurdles, such as airspace management and certification requirements for high-altitude UAVs, particularly for commercial applications, present challenges. As governments continue to develop UAV-friendly policies, these regulations are expected to become more supportive, enabling broader adoption of solar-powered UAV technologies.

The solar-powered UAV market is divided into two main operational modes: semi-autonomous and autonomous. In 2024, semi-autonomous UAVs dominated the market,

accounting for a 74.7% share. These UAVs operate with a combination of human oversight and autonomous systems. They can handle tasks such as navigation and energy management independently while being monitored by a human operator for strategic decisions. This hybrid approach enhances safety and allows for more complex missions, reducing the need for constant human intervention.

In terms of range, the market is segmented into UAVs with a range of less than 300 km and more than 300 km. The segment with a range exceeding 300 km is expected to be the fastest-growing, with a CAGR of 11.3% during the forecast period. Solar-powered UAVs with extended ranges can conduct long-duration missions, such as remote surveillance and environmental monitoring, without frequent recharging.

North America holds the largest share of the solar-powered UAV market, with a 32.5% share in 2024. The U.S. is a key player, driven by strong demand across sectors such as defense, agriculture, and telecommunications. Government support and investments in research and development, combined with an evolving regulatory environment, are accelerating innovation in the solar-powered UAV market.

## Contents

### Report Content

#### **CHAPTER 1 METHODOLOGY & SCOPE**

- 1.1 Market scope & definitions
- 1.2 Base estimates & calculations
- 1.3 Forecast calculations
- 1.4 Data sources
  - 1.4.1 Primary
  - 1.4.2 Secondary
    - 1.4.2.1 Paid sources
    - 1.4.2.2 Public sources

#### **CHAPTER 2 EXECUTIVE SUMMARY**

- 2.1 Industry synopsis, 2021-2034

#### **CHAPTER 3 INDUSTRY INSIGHTS**

- 3.1 Industry ecosystem analysis
  - 3.1.1 Factor affecting the value chain
  - 3.1.2 Profit margin analysis
  - 3.1.3 Disruptions
  - 3.1.4 Future outlook
  - 3.1.5 Manufacturers
  - 3.1.6 Distributors
- 3.2 Supplier landscape
- 3.3 Profit margin analysis
- 3.4 Key news & initiatives
- 3.5 Regulatory landscape
- 3.6 Impact forces
  - 3.6.1 Growth drivers
    - 3.6.1.1 Rising demand for sustainable drone technologies
    - 3.6.1.2 Technological advancements in solar panel efficiency
    - 3.6.1.3 Longer flight durations for remote monitoring tasks
    - 3.6.1.4 Growing adoption in agriculture for precision farming
    - 3.6.1.5 Increase in government support for green technologies

- 3.6.2 Industry pitfalls & challenges
  - 3.6.2.1 Weather dependency limits solar UAV effectiveness
  - 3.6.2.2 High initial costs hinder market widespread adoption
- 3.7 Growth potential analysis
- 3.8 Porter's analysis
- 3.9 PESTEL analysis

## **CHAPTER 4 COMPETITIVE LANDSCAPE, 2024**

- 4.1 Introduction
- 4.2 Company market share analysis
- 4.3 Competitive positioning matrix
- 4.4 Strategic outlook matrix

## **CHAPTER 5 MARKET ESTIMATES & FORECAST, BY MODE OF OPERATION, 2021-2034 (USD MILLION & UNITS)**

- 5.1 Key trends
- 5.2 Semi-autonomous
- 5.3 Autonomous

## **CHAPTER 6 MARKET ESTIMATES & FORECAST, BY TYPE, 2021-2034 (USD MILLION & UNITS)**

- 6.1 Key trends
- 6.2 Fixed wing drones
- 6.3 Multirotor drones
- 6.4 Hybrid

## **CHAPTER 7 MARKET ESTIMATES & FORECAST, BY RANGE, 2021-2034 (USD MILLION & UNITS)**

- 7.1 Key trends
- 7.2 Less Than 300 KM
- 7.3 More Than 300 KM

## **CHAPTER 8 MARKET ESTIMATES & FORECAST, BY END USE, 2021-2034 (USD MILLION & UNITS)**

- 8.1 Key trends
- 8.2 Government & defense
- 8.3 Commercial
- 8.4 Agricultural
- 8.5 Others

## **CHAPTER 9 MARKET ESTIMATES & FORECAST, BY REGION, 2021-2034 (USD MILLION & UNITS)**

- 9.1 Key trends
- 9.2 North America
  - 9.2.1 U.S.
  - 9.2.2 Canada
- 9.3 Europe
  - 9.3.1 UK
  - 9.3.2 Germany
  - 9.3.3 France
  - 9.3.4 Italy
  - 9.3.5 Spain
  - 9.3.6 Russia
- 9.4 Asia Pacific
  - 9.4.1 China
  - 9.4.2 India
  - 9.4.3 Japan
  - 9.4.4 South Korea
  - 9.4.5 Australia
- 9.5 Latin America
  - 9.5.1 Brazil
  - 9.5.2 Mexico
- 9.6 MEA
  - 9.6.1 South Africa
  - 9.6.2 Saudi Arabia
  - 9.6.3 UAE

## **CHAPTER 10 COMPANY PROFILES**

- 10.1 AeroVironment Inc.
- 10.2 Airbus SE
- 10.3 Atlantik Solar

- 10.4 Aurora Flight Sciences
- 10.5 Avy
- 10.6 BAE Systems
- 10.7 Chinese Academy of Aerospace Aerodynamics
- 10.8 DJI
- 10.9 Elektra
- 10.10 Eos Technologie
- 10.11 Kea Aerospace
- 10.12 Korea Aerospace Research Institute
- 10.13 QinetiQ
- 10.14 Silent Falcon UAS Technologies
- 10.15 Skydweller Aero
- 10.16 Sunbirds SAS
- 10.17 Uav-instruments
- 10.18 Xsun

## I would like to order

Product name: Solar-Powered UAV Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 – 2034

Product link: <https://marketpublishers.com/r/S46A53D9603DEN.html>

Price: US\$ 4,850.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/S46A53D9603DEN.html>