Solar Panel Recycling Market: Global Industry Analysis, Trends, Market Size, and Forecasts up to 2030

Market Report | 2023-10-20 | 255 pages | Infinium Global Research and Consulting Solutions

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Report description:

The report on the global solar panel recycling market provides qualitative and quantitative analysis for the period from 2021-2030. The global solar panel recycling market was valued at USD 172.18 million in 2023 and is expected to reach USD 516.53 million in 2030, with a CAGR of 12.77% during the forecast period 2023-2030. The study on solar panel recycling market covers the analysis of the leading geographies such as North America, Europe, Asia Pacific, and RoW for the period of 2021-2030. In the past ten years, the market for solar panels has expanded significantly. Solar panels are ending up in the trash stream due to the rising number of solar panels sold and installed each year throughout the world. The most environmentally friendly way to dispose of solar panels after their useful lives is through recycling. It is processed in terms of resource and economic efficiency as well as environmental and social effects. The solar panel recycling sector encompasses a wide range of activities such as solar panel decommissioning through solar panel collection, sorting, and recycling. Only a limited number of companies are solely dedicated to recycling solar panels. Solar panel recycling is a process of the separation of the glass and the silicon wafer through thermal, mechanical, or chemical processes. Also, it includes separation, and purification of the silicon cells and metals (e.g., silver, tin, lead, copper) through chemical and electrical techniques. The solar panel recycling market is rising owing to the surging adoption of solar energy and the need for sustainable disposal of end-of-life solar panels. The rapid growth in solar panel installations, both in residential and commercial sectors, has led to a corresponding increase in the number of solar panels, which is anticipated to surge the demand for solar panel recycling services.

The solar panel recycling market has witnessed remarkable growth in recent years. One of the key advancements is the development of efficient ways for silicon-based solar panels' recycling and recovery. These technologies enable the extraction of precious materials from the panels, such as silicon wafers, glass, aluminum, and other metals. Silicon-based solar panels have the capacity to turn sunlight into electricity, they have been widely used as a renewable energy source. There have been many advancements in the sustainable treatment of silicon-based solar panel waste in recent years such as the creation of effective recycling and recovery methods for silicon-based solar panels. According to the United States Environmental Protection Agency, in June 2023, crystalline-silicon solar technology represents most of the solar panel market share. This solar panel is made of silicon solar cells, a plastic junction box, polymer layers, copper wire, glass, and a backsheet.

The European region is projected to have a significant market share in the global solar panel recycling market. Europe is

dominating the global solar panel market, followed by North America. Many European countries implemented favourable government policies and incentives to promote renewable energy, including solar power. These policies included feed-in tariffs, tax credits, and subsidies for solar installations. These incentives made solar energy more financially affordable for individuals, businesses, and utilities. Also, Europe has a strong commitment to reducing greenhouse gas emissions such as the EU wants to have a climate-neutral economy with zero net emissions of greenhouse gases by 2050. The major goal of the European Green Deal is to reduce greenhouse gas emissions by at least 55 %, by 2030, and it is consistent with the EU's commitment to the Paris Agreement. Also, the European Union (EU) set ambitious targets for renewable energy adoption, and member countries developed comprehensive strategies to meet these targets. This commitment created a favourable environment for the growth of the solar industry.

Report Findings
1) Drivers
- Rapid growth in solar panel installations, both in residential and commercial sectors, has led to a corresponding increase in the number of solar panels, creating a demand for the solar panel recycling market.
- Stringent environmental regulations and sustainability goals is driving the market growth.
2) Restraints
- The lack of infrastructure dedicated to the recycling and recovery of materials from solar panels and the absence of a suitable commercial institution to oversee this process is restricting market growth.
3) Opportunities
- The solar panel recycling market presents a significant opportunity as the solar energy industry continues to grow worldwide.

Research Methodology
A) Primary Research
Our primary research involves extensive interviews and analysis of the opinions provided by the primary respondents. The primary research starts with identifying and approaching the primary respondents, the primary respondents are approached include
1. Key Opinion Leaders associated with Infinium Global Research
2. Internal and External subject matter experts
3. Professionals and participants from the industry

Our primary research respondents typically include
1. Executives working with leading companies in the market under review
2. Product/brand/marketing managers
3. CXO level executives
4. Regional/zonal/ country managers
5. Vice President level executives.

B) Secondary Research
Secondary research involves extensive exploring through the secondary sources of information available in both the public domain and paid sources. At Infinium Global Research, each research study is based on over 500 hours of secondary research accompanied by primary research. The information obtained through the secondary sources is validated through the crosscheck on various data sources.

The secondary sources of the data typically include
1. Company reports and publications
2. Government/institutional publications
3. Trade and associations journals
4. Databases such as WTO, OECD, World Bank, and among others.
5. Websites and publications by research agencies

Segment Covered
The global solar panel recycling market is segmented on the basis of type, process, and shelf life.

The Global Solar Panel Recycling Market by Type
- Thin Film
- Monocrystalline
- Polycrystalline
- Silicon
- Others

The Global Solar Panel Recycling Market by Process
- Mechanical
- Laser
- Thermal
- Electric

The Global Solar Panel Recycling Market by Shelf Life
- Normal Loss
- Early Loss

Company Profiles
The companies covered in the report include
- Aerisoul Metal & Energy Corporation
- Aurubis AG
- Cleanlites Recycling
- SILCONTEL LTD
- Rinovasol Global Services B. V.
- First Solar
- Reiling GmbH & Co. KG
- Canadian Solar
- Sinovoltaics Group Limited
- RECYCLE SOLAR TECHNOLOGIES LIMITED

What does this Report Deliver?
1. Comprehensive analysis of the global as well as regional markets of the solar panel recycling market.
2. Complete coverage of all the segments in the solar panel recycling market to analyze the trends, developments in the global market and forecast of market size up to 2030.
3. Comprehensive analysis of the companies operating in the global solar panel recycling market. The company profile includes analysis of product portfolio, revenue, SWOT analysis and latest developments of the company.
4. IGR- Growth Matrix presents an analysis of the product segments and geographies that market players should focus to invest, consolidate, expand and/or diversify.

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