

North America Bipv Glass Market Forecast 2024-2032

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Report description:

KEY FINDINGS

The North America BIPV glass market is anticipated to accelerate at a CAGR of 17.59% during the forecast period, 2024 and 2032. The market was valued at \$1013.75 million in 2023 and is expected to reach an estimated revenue of \$4357.72 million by 2032.

MARKET INSIGHTS

The region's market is influenced by the rising interest in building-integrated photovoltaics as sustainable solutions for energy production and efficient building design continue to gain traction. A key segment driving growth within the market is BIPV glass facades, which integrate photovoltaic technology into building structures, allowing for energy generation while maintaining architectural aesthetics.

REGIONAL ANALYSIS

The growth assessment of the North America BIPV glass market encompasses a detailed analysis of key regions, including the United States and Canada.

The building-integrated photovoltaics (BIPV) glass market in North America is growing due to its ability to combine renewable energy generation with architectural design. BIPV glass functions as a construction material while contributing to energy efficiency, making it a key element in sustainable building practices in both the United States and Canada. The adoption of BIPV is increasing in commercial and residential buildings, with applications in facades, roofs, and windows. This trend is driven by the evolving sustainability goals and regulations in the construction industry.

Several government initiatives are supporting the expansion of BIPV technologies. Policies such as California's Title 24 Building Standards Code and tax incentives under the US Inflation Reduction Act encourage the adoption of BIPV. In 2022, the United States accounted for approximately 72% of North America's installed BIPV capacity, demonstrating its significant share of the regional market. Additionally, BIPV installations in North America have a positive environmental impact, with estimates suggesting that these systems prevent the emission of over 1.5 million metric tons of CO₂ annually.

Further, the increasing emphasis on zero-energy buildings is a significant driver for market expansion in North America. This trend supports the integration of BIPV technology, as structures are designed to be more energy-efficient, utilizing materials that support both environmental and functional requirements. BIPV products offer the dual advantage of serving as both construction materials and solar power-generating modules, appealing to builders and developers aiming to meet energy-neutral goals and reduce carbon emissions.

However, despite the market's potential, challenges such as challenging installation and integration processes affect the pace of

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BIPV installations. Incorporating photovoltaic modules into existing building designs and ensuring compatibility with other building systems require careful planning and advanced technology. These factors can limit the rate at which the adoption of solar energy panels and BIPV systems is achieved, particularly in complex industrial and commercial projects. Nevertheless, with the growing demand for sustainable building materials and efforts to reduce the carbon footprint, the market outlook remains favorable.

SEGMENTATION ANALYSIS

The North America BIPV glass market segmentation includes material, glazing type, component type, and end use. The material segment is further classified into crystalline silicon, amorphous silicon, and other materials.

Crystalline silicon is a key material in the building-integrated photovoltaic (BIPV) glass market due to its exceptional efficiency, durability, and adaptability. As the most widely used photovoltaic material, crystalline silicon offers high energy conversion rates, making it ideal for integrating into architectural designs without compromising energy output. Its robust mechanical properties and long lifespan align with the structural demands of building applications, ensuring reliability under various environmental conditions.

Additionally, crystalline silicon's scalability and compatibility with diverse glass types allow for innovative designs that blend aesthetics with functionality. Its mature manufacturing ecosystem further supports cost-effective production, driving its dominance in the BIPV glass market as the industry shifts toward sustainable and energy-efficient building solutions.

COMPETITIVE INSIGHTS

Some of the leading companies operating in the North America BIPV glass market are First Solar, Tesla, Canadian Solar, etc. Canadian Solar, headquartered in Guelph, Ontario, Canada, is a leading provider of solar energy solutions. The company's primary activities include the manufacturing of solar modules and battery energy storage systems, as well as offering comprehensive system solutions. These solutions feature inverters, solar system kits, and engineering, procurement, and construction (EPC) services.

Canadian Solar's products and services are applied in various industries for clean energy project development and battery energy storage, as well as building-integrated photovoltaics (BIPV) glass. The company has a global footprint, with operations in North America, South America, Europe, Africa, the Middle East, Australia, and Asia. Its manufacturing facilities are mainly located in China, Southeast Asia, and the United States.

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