Building-Integrated Photovoltaics (BIPV): Technologies and Global Markets

Description: The global market for building-integrated photovoltaic (BIPV) technologies will grow from $2.4 billion in 2016 to $4.3 billion by 2021 with a compound annual growth rate (CAGR) of 12.2% for the period of 2016-2021.

This report provides:

- An in-depth overview of the global markets for building-integrated photovoltaics (BIPV).
- Analyses of global market trends, with data from 2015, 2016 and projections of compound annual growth rates (CAGRs) through 2021.
- Examination of the impacts of a concentration of PV production capacity in China and the emergence of c-Si and poly-Si technologies as significant components of the BIPV industry along with a-Si, CIGS, and eventually DSSC and OPV materials.
- Quantification of existing and near-future markets for BIPV capacity by PV technologies, annual capacity additions, application sector, and revenue to manufacturers.
- Profiles of emergent BIPV market sectors that are exhibiting signs of exponential growth, with minimal market potentials of billions of dollars.

This report provides a detailed review of the global market for building-integrated photovoltaic technologies. To help the audience fully understand the market opportunity for these technologies, the report is first geographically-segmented into the following regions, with multiple countries individually analyzed:

- North America.
- Europe.
- Asia-Pacific (APAC).
- Rest of the World (RoW).

The remainder of the study utilizes all gathered data to quantify the market for BIPV technologies by geographical region and market segment for the following BIPV application segments:

- Roofing shingles.
- Roofing tiles.
- Standing seam metal roofing (e.g., thin-film PV seam metal glue-down).
- Single-ply membrane roofing (e.g., thin-film PV TPO glue-down).
- Facades (also known as building cladding [i.e., the “weather skin”], this study includes “green” parking structures).
- Glazing (e.g., windows and curtain walls).
- Skylights.
- Architectural shading (e.g., sunshading, louvers, fabrics, etc.).

As a whole, this report identifies commercial and near-commercial BIPV technologies, the manufacturers, and partner building component product manufacturers. The present to mid-term markets for each type of BIPV application are characterized and quantified in terms of capacity (MW) for the installed product and revenue to the BIPV and/or PV manufacturers. Projections are made of the market value (or at least regional price) of the wholesale value of the BIPV and/or PV component of the installed products. The estimated values used are based on manufacturers’ total revenues.

Where the global market has grown sufficiently for a particular BIPV “niche,” country and regional breakdowns are provided by geographic region and country. Much of this depends on the type of building component used in a particular region or country, and whether a suitable BIPV product has been developed, tested in the field, certified for installation, and brought up to production levels that can satisfy market demand.

The various BIPV niche markets are examined in terms of type of exterior building component class, PV technology offerings, geographic region, generating capacity and revenue to the manufacturer (i.e., market value). Additional characterizations are made of the market structures, quantities and relative strengths of adjunct product manufacturers, such as metal, composite, tile and TPO roofing companies, window glass and window manufacturers, and vendors, designers and installers of architectural fabrics, and building
cladding (e.g., weather envelopes). Smaller market opportunities such as skylighting and sunshading are also investigated.

The market structure discussion includes consideration of the forces shaping the markets, and the successful strategies of the early entrants into the market. This report also investigates national and regional public financial incentive strategies and regulatory measures that help or hinder the development of each BIPV market segment. The way in which each type of PV technology fits (or does not) into a given BIPV niche is examined. The coverage extends to c-Si, mc-Si, a-Si, CdTe, DSSC and OPV products.

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