

# Research Report of China's Building Integrated Photovoltaic (BIPV) Industry, 2009

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## Abstracts

Building Integrated Photovoltaic (BIPV) refers to the installment of PV modules which can supply electric power on surface of external supporting structure. Those PV modules can not only replace part of such traditional structures as roof slab, tile, window, building elevation and rain-proof shelter, but also can be made to own various functions, such as PV/thermal system, combination with illumination and sun shade, etc.

At present, BIPV is widely applied on exposed walls, sun-shading shelters, patios, tiles, roofs, sound-proof walls, as well as in fields of private apartments, schools, hospital buildings, airports, platforms of subway stations and large workshops.

With the changing fields of PV power generation, China has made great progress in research and development of BIPV system. In 2002, 10KW integrated grid system was built in Fengxian, Shanghai, which realized automation. In 2003, an ecological demonstration project was established in Shanghai and the 5KW integrated grid system combined well with construction with international top technologies.

Shanghai Solar Energy S&T Co., Ltd (SSEC) also established integrated demonstrative office building with six first-initiated technologies of directly combining solar electrical power generation and construction. Today, the total installed capacity can reach 40KW and energy self-supply can basically realized with integrating geothermal air condition technologies.

It is said in the 40th article of "Energy Conservation Law of the People's Republic of China" which took effect on April 1st, 2008 that Chinese government encourages to adopt energy-saving materials and devices and to apply renewable energy resource system in the energy conservation reform of newly-built constructions and existing

constructions. It is also stated in the 61st article that enterprises which use energy-saving technologies and products listed in the law can enjoy favorable policies, such as tax incentives.

Although a series of laws and standards have been launched, such as “Renewable Energy Law”, “Civil Building Energy Saving” and “Energy-Saving Design Standard of Various Regions”, high cost (cost of photoelectric curtain wall jumps to over 1,000 USD/m<sup>2</sup> today) will be a big barrier for BIPV projects, apart from limited ideas and technologies. Neither enterprises themselves nor government can afford such a high cost in the long run. Therefore, BIPV captures considerably small market now in China and is mainly used in some demonstrative projects which enjoy government subsidies.

It is clearly regulated by Ministry of Construction of China that 50 percent of design standards should be applied in newly-built constructions. It is predicted that the area of energy-saving constructions will exceed 2.16 billion m<sup>2</sup> from 2006 to 2010, with newly-built area of 1.6 billion m<sup>2</sup> and rebuilt area of 560 million m<sup>2</sup>. At present, area of constructions in China reaches 40 billion m<sup>2</sup>, over 13 billion m<sup>2</sup> of which are to be rebuilt. In order to fulfill this goal, enterprises must adopt such energy-saving technologies and devices as solar illumination, integrated system of solar energy and construction (solar tiles and glass curtain wall), etc. Thus the BIPV market will see a bright prospect in future.

Readers can get more information as follows:

- Present State of China's BIPV Industry
- Main Applications of BIPV in China
- Related Policies for China's BIPV Industry
- Investment Opportunities of China's BIPV Industry
- Forecast for Development Trend of China's BIPV Industry

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