

# Global Thin Film Solar Cell Technology Trend and Market Forecast (2006~2015) - Industry Trend

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## Abstracts

Crystalline Si solar cell, which approved its performance in field and showed high efficiency accounted for more than 90% of photovoltaic market and led the market until 2007. However, since the polysilicon capacity failed to meet the rapidly growing photovoltaic market, the polysilicon faced a short supply from mid-2007. In order to resolve this issue, thin film solar cell makers adopt turnkey equipment and rapidly strengthen production facilities and technology for mass production.

Currently, 90 makers have entered polysilicon market and the polysilicon price decreased due to the global economic recession. As a result, the proportion of thin film solar cell decreased in 2010. Moreover, governments in major countries tend to change the incentive policy that gives more grants to solar plant using with building rather than large-sized solar site because of limited budget so it is predicted that the demand would decreased more.

However, in the certain regions with large territory and high insolation such as USA, the Middle East, India, China and Sunbelt of +/-35o latitude, the growth for Ground Mounted System is increased and the demand for thin film solar cell is gradually increased. Si solar cell would lead the market for a while and it is also forecast to growth constantly in the future.

Of thin film solar cells, CIGS solar cell recorded the highest efficiency in laboratory scale and its theoretical efficiency reached up to 28% which is similar with crystalline solar cell. Many studies on CIGS solar cell have been conducted due to its high efficiency and low cost but since the technology for mass production is not found, the production facilities in laboratory scale or pilot line scale have built. However, companies such as Wurth Solar(Germany), Honda Motor(Japan, Now. Honda Soltec), Showa Shell

Sekiyu(Japan, Now. Solar Frontier) has succeeded in developing technology for mass-production after years of research. They actively begin producing in large scale, followed by Solibro(Germany), Global Solar, Miasole and Solyndra(USA).

CdTe solar cell has been solely led by First Solar until 2010 but currently, few makers has announced to enter the market and equipment a large-scaled production capacity as the business value of CdTe solar cell is largely magnified and Cd's hazard issue is resolved. USA-based Abound Solar also makes a plan for extension in large-scale. In addition, GE, which acquired PrimeStar has released the expansion plan for conventional facility up to 400MW on April, 2011 and will produce in large scale from 2013. In particular, as new companies released the data for constant efficiency and approved their technology, the production facilities are expected to be established more.

70% of a-Si solar makers adopt turnkey line cell and produce a-Si solar cell in large scale. Other many companies are in progress of production and development for a-Si solar cell. USA-based United Solar Ovonic and Japan-based Sharp are the major companies; they are well distributed across the world.

Solar&Energy has published 'Global Thin Film Solar Cell Technology Trend and Market Forecast (2006~2015) - Industry Trend'report, introducing thin film solar cells which has high potential for high efficiency and cost reduction of solar module. The 'Industry Trend'part compiles the studies on commercialization and R&D activity of thin film solar cell conducted by global companies/research centers into this report.

This report contains industry trend and market forecast of global thin film solar cell including followings.

Analysis of global thin film solar cell R&D trend and prospect by technology.

Commercialization trend analysis by thin film solar cell Maker

Development trend for thin film solar cell efficiency (R&D/Commercialization)

Global thin film solar cell market trend and forecast by technology

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