

# Copper Indium Gallium Selenide (CIGS) Solar Cells Market - Global Industry Analysis, Market Size, Share, Trends, Analysis, Growth & Forecast : 2019

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CIGS (Copper indium gallium selenide) is a semiconductor with direct bandgap which is used for solar cells manufacturing. The absorber of CIGS is placed on a glass or plastic backing, together with electrodes on back and front for current collection. Since the material powerfully absorbs sunlight and has a higher absorption coefficient, comparatively as compared to other semiconductor material, a thin film is required. The devices which are prepared with CIGS fit in the PV's (photovoltaic's) thin-film category. CIGS has several advantages of being able to be deposited on flexible substrate materials which produce lightweight and highly flexible solar panels. Efficiency improvements have made copper indium gallium selenide a leader among alternative cell materials.

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Copper indium gallium selenide is one of the three conventional thin-film PV technologies, the other two being amorphous silicon and cadmium telluride. Unlike these materials, CIGS layers are quite thin to be flexible which thus allows their deposition on flexible substrates. Conversely, since all these technologies usually use deposition techniques which require high-temperature, the cells deposited on glass give the best performance. This performance is marginal in comparison with modern polysilicon based panels. Advancements in low-temperature CIGS cells deposition have erased the performance difference, even with flexible designs.

CIGS has remarkably a high absorption coefficient greater than 105/cm for 1.5 eV and high energy photons. CIGS solar cells having efficiencies of approximately 20 percent have been claimed by both the "Zentrum für Sonnenenergie und Wasserstoff Forschung" (ZSW) and "National Renewable Energy Laboratory" (NREL), which is till date record for any thin film solar cell. The thin film PV market is expected to grow rapidly over the forecast period. Hence, a strong incentive exists to improve and develop the deposition methods for such films which would allow increased throughput and low cost.

This research report analyzes this market depending on its market segments, major geographies, and current market trends.

Geographies analyzed under this research report include

- North America
- Asia Pacific
- Europe
- Rest of the World

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## Contact

Transparency Market Research  
90 State Street, Suite 700  
Albany, NY 12207  
Tel: +1-518-618-1030  
USA - Canada Toll Free: 866-552-3453  
Email: [sales@transparencymarketresearch.com](mailto:sales@transparencymarketresearch.com)  
Website: [www.transparencymarketresearch.com/](http://www.transparencymarketresearch.com/)  
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