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## INDUSTRY OVERVIEW

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### WORLD ENERGY OUTLOOK

World electricity generation is expected to grow at a moderate pace in the long-term. The U.S. Energy Information Administration, or EIA, forecasts that global net energy generation will increase from 18.8 trillion kilowatt hours in 2007 to 25.0 trillion kilowatt hours by 2020 and further to 35.2 trillion kilowatt hours by 2035, representing a CAGR of 2.3% from 2007 to 2035. According to EIA, electricity generated from renewable energy sources, or renewable generation, will outpace conventional electricity generation and grow at a CAGR of 3.0% from 2007 to 2035. The significant increases in fossil fuel prices from 2003 to 2008, together with supply constraints, energy security concerns and environmental considerations, have diminished the prospect of fossil fuels as sustainable means in meeting future energy demand, and thereby have improved long-term prospects for renewable energy. As a result, EIA predicts that the portion of world electricity generation attributable to renewable energy will increase from 18.4% in 2007 to 22.7% in 2035.

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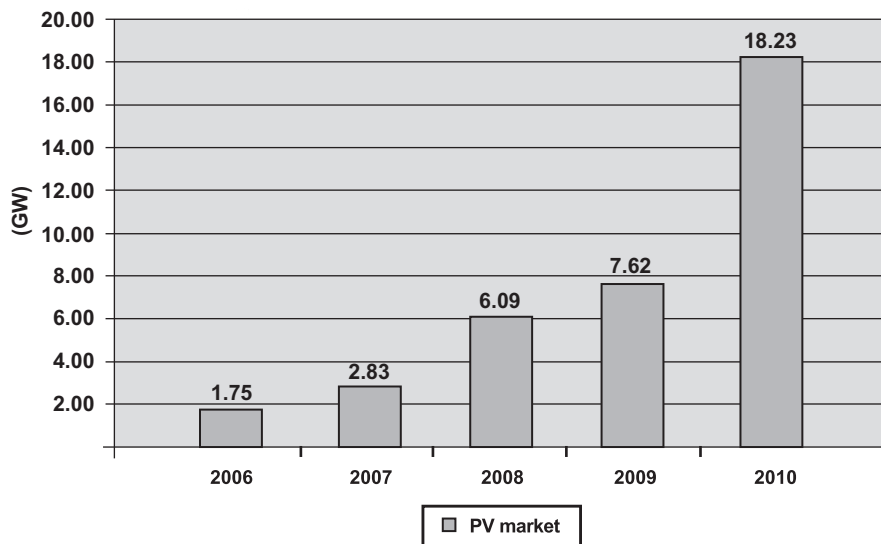
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### SOLAR POWER INDUSTRY OVERVIEW

Solar power has emerged as one of the fastest growing renewable energy sources in recent years. Solar cells harness the energy potential of sunlight by converting sunlight into electricity through a process known as the photovoltaic (PV) effect. Although PV technology has been available for several decades, the solar power industry did not grow significantly until recent years. According to Solarbuzz, an independent solar energy consulting company, the world PV market, defined as the total capacity of solar modules delivered to installation sites, grew from 1.75 GW in 2006 to 18.23 GW in 2010, representing a CAGR of 79.7% from 2006 to 2010, as illustrated by the chart below. In addition, global cumulative PV installed capacity reached 41.7 GW at the end of 2010, representing an increase of 78% from 2009.

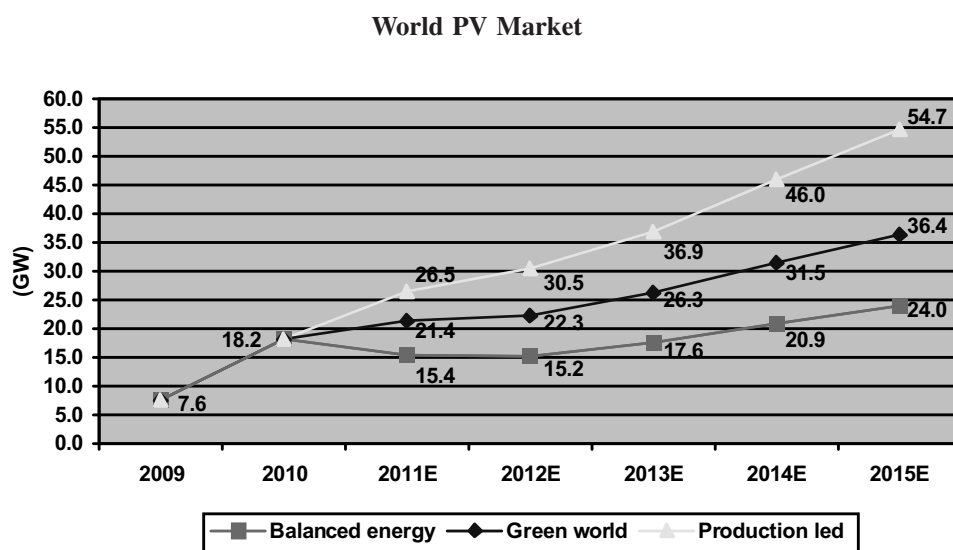
**World PV Market**



Source: Solarbuzz, Marketbuzz Report 2011.

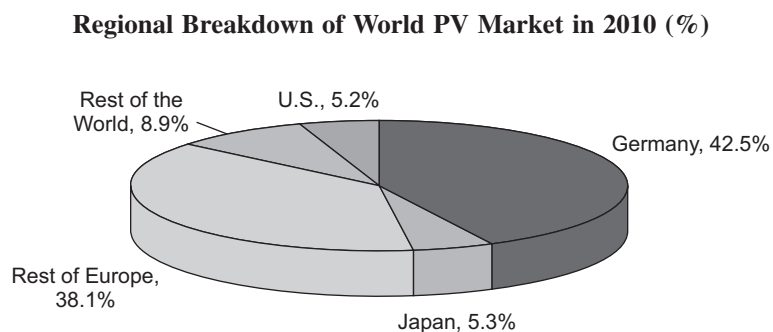
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Solarbuzz publishes forecasts for the world PV market annually based on varying assumptions about economic conditions, government policies and production capacity, among other factors. Under Solarbuzz's moderate forecast scenario, the world PV market is expected to reach 21.4 GW in 2011 and further grow to 36.4 GW in 2015, representing a CAGR of 14.2% from 2011 to 2015. Under Solarbuzz's most conservative and optimistic forecast scenarios, the world PV market will grow at a CAGR of 11.7% and 19.9%, respectively. The chart below sets forth the historical and projected growth of the world PV market under each of Solarbuzz's forecast scenarios.



Source: Solarbuzz, Marketbuzz Report 2011.

Solar product demand has historically been concentrated in Europe, which comprises the world's largest and most developed PV markets. According to Solarbuzz and as illustrated by the chart below, the German PV market, as measured by the total capacity of solar modules delivered to installation sites in Germany, accounted for 42.5% of the world PV market in 2010, compared with 38.1% for the rest of Europe.



Source: Solarbuzz, Marketbuzz Report 2011.

### Solar Power Technologies

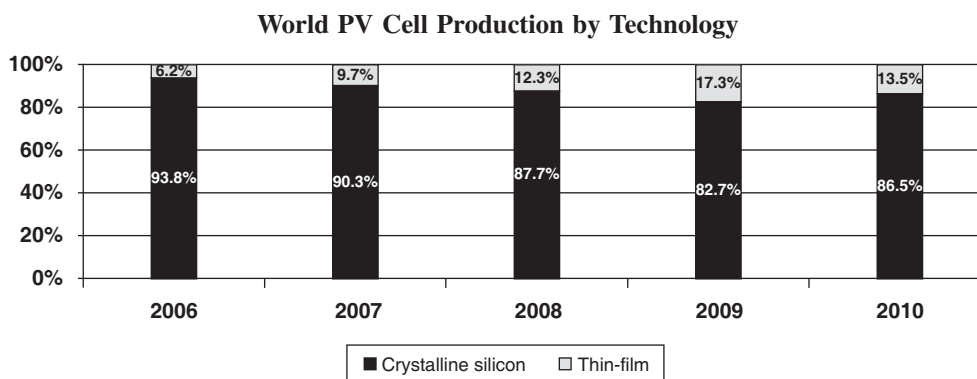
A solar power system generates electricity through its solar cells by capturing and converting sunlight into electricity. Currently, the main technology used in solar cell and module production is the crystalline silicon

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technology, which can be further categorized into monocrystalline silicon, multicrystalline silicon, and thin-film technology. The table below summarizes the production highlights and key attributes of these technologies:

Solar cell/module technology	Production highlights	Key attributes
Monocrystalline silicon	<ul style="list-style-type: none"> <li>Made from monocrystalline wafers</li> <li>Cut from an ingot produced using a single crystal seed pulled from polysilicon feedstock</li> </ul>	<ul style="list-style-type: none"> <li>Higher efficiency in converting sunlight into electricity compared with the other two technologies below</li> <li>Typically the most expensive to produce as the production process is relatively slow and energy intensive compared with the production processes used for other silicon-based solar materials</li> </ul>
Multicrystalline silicon	<ul style="list-style-type: none"> <li>Made from multicrystalline wafers</li> <li>Cut from an ingot produced through re-melting and re-crystallising silicon into blocks through a casting process</li> </ul>	<ul style="list-style-type: none"> <li>Typically less expensive than monocrystalline silicon technology</li> </ul>
Thin-film	<ul style="list-style-type: none"> <li>Alternative technology using little or no semiconductor feedstock</li> <li>Deposited on glass, stainless steel or plastic base material</li> </ul>	<ul style="list-style-type: none"> <li>Lower cost than crystalline silicon technology but also has lower conversion efficiency</li> <li>Light weight, flexible and no exposure to crystalline silicon</li> </ul>

Crystalline silicon technology is by far the most prevalently used technology in solar cell production even though solar cells produced using thin-film technology have been increasing their market share in recent years. According to Solarbuzz, crystalline silicon technology was used in 86.5% of solar cell production in 2010, compared with 13.5% for thin-film technology. In recent years, the portion represented by the production of thin-film cells in total solar cell production increased steadily until 2010. The chart below sets forth a breakdown of solar cell production by technology for the periods indicated.



Source: Solarbuzz, Marketbuzz Report 2011.

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### ***Key Growth Factors for the Solar Power Industry***

A combination of factors have contributed to the accelerated growth of the solar power in recent years. We believe the following key factors have supported and will continue to drive the adoption and growth of solar power:

#### **Long-term demand for alternative sources of energy**

Global economic development has resulted in an increase in energy demand which has forced electricity prices to rise. These factors have increased electricity costs for consumers and highlighted the need to find alternative sources for reliable and sustainable electricity generation. Solar power offers an attractive means of electricity generation without reliance on fossil fuel reserves. Similar to other renewable sources such as hydroelectric, nuclear and wind power generation, solar power has grown rapidly since 2005. Given the many advantages of solar power, including those outlined below, we believe the importance of solar power will continue to increase in the long term as the price of solar power approaches that of conventional energy in a number of solar product markets.

#### **Advantages of solar power**

Solar power has several advantages over both conventional and other forms of renewable energy:

- *Reduced dependence on finite amount of conventional energy sources.* As existing fossil fuel reserves are depleted, upward pressure is created on the prices of oil, natural gas and coal. Unlike fossil fuels, solar power does not face fuel price volatility or supply constraints nor does it present delivery risks associated with fossil or nuclear fuels. Although the availability of sunlight varies over the day, season and year, a properly sized and configured solar power system can be designed to reliably supply electricity on a long-term and fixed-cost basis.
- *Environment friendly energy source.* As one of the cleanest sources of energy, solar power can generate electricity without air or water emissions, noise or waste generation.
- *Reliability and durability.* Without moving parts and the need for regular maintenance, solar power systems are highly reliable and durable forms of electricity generation. Accelerated aging tests have shown that quality solar modules can operate for 25 to 30 years without any major maintenance.
- *Energy security.* A number of governments have recognized the need to reduce dependency on foreign sources of energy in the interest of energy security. In 2007, net import of energy accounted for over 59.5% of the primary energy supply in Germany, over 80.3% in each of Italy, Spain, and Japan, and 30.0% in the U.S. According to IEA, expanding domestic power generation capacity, particularly through renewable resources, is a key part of numerous governments' energy security plans.
- *Modularity, scalability and decentralized use.* As the size and generating capacity of a solar system depend on the number of solar modules installed, solar power systems can be deployed in many different sizes and configurations to meet customer specifications. Moreover, unlike other renewable energy sources such as hydroelectric and wind power, solar power can be installed directly where the power will be used so long there is sunlight. As a result, solar power substantially eliminates the costs and energy losses associated with transmitting and distributing electricity from central power plants.
- *Bringing electricity to remote rural areas.* Photovoltaic systems can be set up in rural areas where grid connection is unavailable, e.g., the less developed western and central regions of China. The installation

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of stand-alone solar power systems can immediately address the power shortage in such regions without requiring investment in extensive electric power infrastructure.

- *Peak energy use advantage.* Solar power is well-suited to match peak energy needs because solar generation correlates strongly with electricity consumption. For example, both energy demand and solar energy generation peak in the summer during maximum sunlight hours and decrease substantially during night time. In addition, solar power is not restricted by seasonal availability unlike hydroelectric and wind power.

### Government incentives for solar power

The use of solar power continues to grow in countries where the governments have implemented renewable energy policies and incentives to encourage the use of solar power and other renewable energy and accelerate their development. Governments have offered various forms of financial incentives including subsidies, feed-in tariffs, net metering, tax credits and other incentives to end-users, distributors, system integrators and manufacturers of solar products. A number of governments have also issued renewable energy mandates backed with penalties for non-compliance. International environmental protection initiatives, such as the Kyoto Protocol for the reduction of overall carbon dioxide and other gas emissions, have also created momentum for government incentives for renewable energy.

The following table sets forth a summary of recent changes in the key government incentive programs of selected PV markets:

Country	2010 PV market	Market growth in 2010	Incentive programs
Belgium . . . . .	225 MW	-28.1%	<ul style="list-style-type: none"> <li>• Regionally administered schemes that provide net-metering benefits as well as individual income tax deductions and corporate tax deductions from pre-tax profits derived from net-metering</li> <li>• Introduction of the National Renewable Energy Action Plan in the fourth quarter of 2010</li> <li>• Reduction in the value of green energy certificates in January 2011</li> </ul>
China . . . . .	532 MW	155.8%	<ul style="list-style-type: none"> <li>• National and regional subsidy programs consisting of rebates, tax incentives and soft loans</li> <li>• Experimentation with a limited feed-in tariff system</li> </ul>
Czech Republic . .	1,420 MW	242%	<ul style="list-style-type: none"> <li>• Feed-in tariff system with a feed-in remuneration period of 20 years</li> <li>• Green bonus scheme for PV system operators that sell directly to electricity customers or dealers</li> <li>• Introduction of amendments of laws to reduce feed-in tariff funding for certain PV systems and impose retroactive tax on the incentive tariffs paid for certain PV systems in November and December 2010</li> </ul>

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Country	2010 PV market	Market growth in 2010	Incentive programs
France . . . . .	720 MW	227.3%	<ul style="list-style-type: none"> <li>• New PV tariff scheme became effective in January 2010 with rates varying depending on the size and type of the PV system.</li> <li>• Feed-in tariff system with a feed-in remuneration period of 20 years after the connection of the system.</li> <li>• Reduction of tax credit for PV systems beginning September 2010</li> <li>• Announcement of a new framework for solar subsidies, which introduced a reduction of up to 20% for feed-in tariffs for certain PV systems and the introduction of a hard cap of 500MW for new applications for subsidies in 2011</li> </ul>
Germany . . . . .	7,742 MW	200.1%	<ul style="list-style-type: none"> <li>• Adoption of a feed-in tariff system in 2000 with feed-in tariff rates scheduled to decline annually subject to adjustments to achieve target growth rates</li> <li>• Reductions ranging from 11% to 16% to the feed-in tariff rates of various PV systems and the abolishment of funding for certain types of PV systems in July 2010</li> <li>• Introduction of an annual tariff reduction mechanism, which links such reduction to the market size of the previous year. Strong market growth in 2010 led to a 13% decrease in feed-in tariff rates in January 2011</li> </ul>
Italy . . . . .	3,740 MW	385.7%	<ul style="list-style-type: none"> <li>• New feed-in tariff rate system became effective in January 2011 with rates varying depending on the size and type of the PV system. Tariffs are capped at a cumulative installation of 3,000 MW</li> <li>• Additional quota of 500 MW in the feed-in tariff system for certain types of PV systems</li> <li>• Announcement of a framework decree in March 2011, which introduced a reduction of up to 30% in feed-in tariffs effective from June 2011</li> </ul>
Japan . . . . .	960 MW	101.3%	<ul style="list-style-type: none"> <li>• Introduction of a 10-year net feed-in tariff system in November 2009 and the maintenance of net feed-in tariff rates for 2010 at the 2009 level instead of the expected downward adjustment</li> <li>• New subsidy for residential PV system installations in April 2010</li> <li>• Incentive programs funded by METI for non-residential PV system installations in May 2010</li> </ul>
Spain . . . . .	378 MW	285.7%	<ul style="list-style-type: none"> <li>• Implementation of significant policy and regulatory changes, which consist of feed-in tariff rate reductions and installation caps, in 2008</li> <li>• Announcement that feed-in tariff rates will be reduced by 5% to 45% for various types of PV systems without specifying the relevant timeline</li> </ul>

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Country	2010 PV market	Market growth in 2010	Incentive programs
United States . . .	949 MW	95.7%	<ul style="list-style-type: none"><li>• Eight-year extension of a federal tax credit program that was set to expire at the end of 2008</li><li>• Expected expiration of the Federal Cash Grant Program in 2010</li><li>• Allocation of federal funding for states to carry out their clean energy programs</li></ul>

*Source: Solarbuzz, Marketbuzz Report 2010, Marketbuzz Report 2011 and December 2010 Report.*

Despite the general increase in solar power incentives in recent years, political change in a particular country could result in significant reductions or eliminations of subsidies or other economic incentives, and the lasting effects of the global financial crisis may impair the fiscal ability of certain governments to maintain their incentives programs. A significant reduction in the scope or discontinuation of government incentive programs, especially those in key solar product markets such as Germany, Spain and France, could negatively affect demand for solar products. For details, see “Risk Factors — Risks Relating to our Business and Industry — A significant reduction in or discontinuation of government subsidies and economic incentives for the use and development of solar products may have a material adverse effect on our results of operations and business prospects.”

### **Decreasing costs of solar power and accelerating grid parity**

Solar power has become an attractive alternative energy source because of narrowing cost differentials between solar power and conventional energy sources due to significant declines in the average prices of solar products, which have been largely driven by the declines in raw materials prices, growing production capacity and improved production technologies. Under Solarbuzz’s most conservative forecast scenario published in its annual report in March 2011, the average price of PV modules is expected to decrease from US\$1.87 per watt in 2011 to US\$1.32 per watt in 2015 which suggests that the price of solar power is expected to continue to approach that of fossil fuel power, enabling solar power to compete more effectively against conventional power on an unsubsidized basis. Moreover, the recent sharp decline in the market price of polysilicon from the second half of 2008 to the first half of 2009, a key raw material in crystalline silicon-based solar products, has increased the competitiveness of crystalline silicon technology relative to thin-film technology and other photovoltaic technologies that are less dependent on polysilicon.

### ***Key Challenges for the Solar Power Industry***

In spite of the benefits of solar power, the industry must overcome the following challenges to achieve widespread commercialization and use.

#### **High cost of solar power compared with other sources of energy**

Despite the declining costs of solar power generation in recent years, solar power is still more costly than conventional power in most parts of the world. The upfront capital costs of solar power systems may reduce their investment appeal. To increase the competitiveness of solar power, the price per watt of solar power for consumers must be lowered by further reducing production and installation costs, increasing the conversion efficiency of solar products or both. We believe that as the gap between the cost of solar power and that of conventional power narrows, solar power will become increasingly attractive.



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### **Continued reliance on government subsidies and incentives**

The current growth of the solar power industry substantially relies on the availability and size of government subsidies and economic incentives in the form of capital cost rebates, direct subsidies to end-users, reduced tariffs, low interest financing loans and tax credits, net metering and other incentives. Governments may eventually reduce or eliminate these subsidies and economic incentives. For instance, the governments of Spain and Germany significantly reduced the feed-in tariffs available to solar power projects from 2009 to 2010. The uncertainty of such government action, as well as the possible elimination of favorable policies, may increase the difficulty for solar companies to plan future projects, some of which may not be financially feasible without such incentives. Therefore, it remains a challenge for the solar power industry to reach a sufficient scale to be cost-effective in a non-subsidized marketplace.

### **Increasing vertical integration intensifying margin pressure in the industry**

As solar product manufacturers continue to rapidly expand their capacities to achieve economies of scale and pursue vertical integration to secure upstream supply or downstream demand, competition in the solar product market will become increasingly intense, therefore intensifying margin pressure in the near future. Many solar cell manufacturers have established capabilities in the upstream supply of silicon wafers or in the downstream production of solar modules, or have expanded their existing capabilities, in order to benefit from vertical integration along the solar product value chain. Under Solarbuzz's moderate forecast scenario, the world PV market is expected to grow to 36.4 GW by 2015. Rapid growth in the solar module market is expected to prompt increasing demand for the upstream supply of silicon wafers and solar cells. However, increased market participation is also expected to lead to intense competition in both the upstream and downstream solar markets. According to Solarbuzz's forecast in March 2011, gross margins for solar products across the entire solar value chain will decrease from their 2010 levels under each of its market forecast scenarios.

### **CHINA'S PV MARKET**

China's nascent PV market holds significant growth potential in the medium to long term. According to Solarbuzz, China's PV market grew approximately 155.8% to 532 MW in 2010 from 208 MW in 2009. However, until solar power in China reaches grid parity, China's PV market will continue to rely on a host of regional and national subsidy programs such as rebates, tax incentives, and soft loans as well as preferential tariffs to drive solar market development. The NDRC has set an ambitious goal for China to reach 2 GW of installed solar capacity by 2011 and 20 GW by 2020.

China's policymakers are preparing for a substantial increase in the country's renewable energy use. The PRC government amended the Renewable Energy Law, which first became effective in 2006, in December 2009 to address certain perceived obstacles that had previously limited its implementation effectiveness such as the absence of enforcement mechanisms relating to the clause referencing key mandatory purchase and connection. For example, the Renewable Energy Law requires power grid companies to purchase all power produced by renewable energy sources and also to provide grid-connection services for renewable power generation. However, in practice, some power grid companies do not meet certain connection requirements. The mandatory connection clause in the amended Renewable Energy Law requires grid companies to purchase a fixed share of their power generation from renewable energy sources and imposes penalties for any non-compliance. A renewable energy development fund will also be established to subsidize the purchase of renewable energy by power grid companies and support renewable energy projects in rural and remote areas not connected to any state electric grid.

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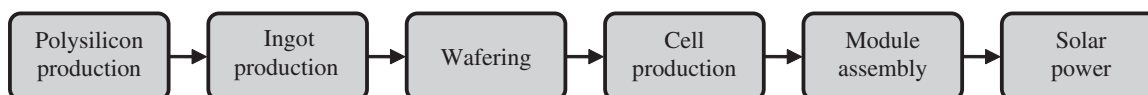
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In addition, the Ministry of Finance promulgated the *Interim Measures for Administration of Government Subsidy Fund for Application of Solar Power Technology in Building Construction* (the “Interim Measures”) in 2009, pursuant to which a subsidy of RMB20.0 per Wp for 2009 is available for qualifying entities that integrate solar products into building constructions. In March 2009, the Ministry of Finance and the Ministry of Construction announced the Solar Rooftop Program, which provides qualifying projects with an up-front capital-based subsidy, which is expected to substantially reduce system costs. In July 2009, China’s Ministry of Finance, Ministry of Science and Technology and National Energy Administration (the “NEA”) jointly published an announcement containing the guidelines for the Golden Sun Demonstration Program, which aims to industrialize and expand the use of solar power in China (the “Golden Sun Program”). Under the Golden Sun Program, the PRC government will provide up to 20 MW of PV projects in each province with a subsidy representing 50% to 70% of the total capital costs of qualifying PV systems including ancillary power transmission and distribution systems. Solarbuzz predicts that demand in the PRC solar market could reach 1 GW in 2011, driven primarily by projects under the Golden Sun Program, which represent 40% of total projects, local government programs and the PRC government’s increased interest in implementing large scale installations of PV systems. The 2010 Golden Sun Program list was released in November 2010, consisting of 120 new projects with a total capacity of 272 MW. Following a joint meeting among various government agencies in December 2010, the PRC government increased the annual installation target for PV projects in 2013 to over 1 GW. In March 2011, the PRC government announced the clean energy plans for the next five years, according to which 5 GW of solar power generation capacity will be created in China in the next five years.

### THE SOLAR POWER VALUE CHAIN

The manufacturing value chain for crystalline silicon solar products starts with processing quartz sand into metallurgical-grade silicon. The material is further purified to semiconductor-grade or solar grade polysilicon feedstock. Recoverable silicon materials acquired from semiconductor and solar power industries, such as partially-processed and broken silicon wafers, broken solar cells, pot scraps, ingot tops and tails, and other off-cuts, can also be used as feedstock. Feedstock is melted in high temperature furnaces and is then formed into silicon ingots through a crystallization process. Silicon ingots are cut into blocks and then further cut into silicon wafers using high precision techniques, such as wire sawing. Silicon wafers are manufactured into solar cells through a multiple step manufacturing process that entails etching, doping, coating and applying electrical contacts. Solar cells are then electrically interconnected and laminated in durable and weather-proof packages to form solar modules, which together with system components such as batteries and inverters, are installed as solar power systems.

The following diagram illustrates the value chain for the manufacture of crystalline silicon solar products:



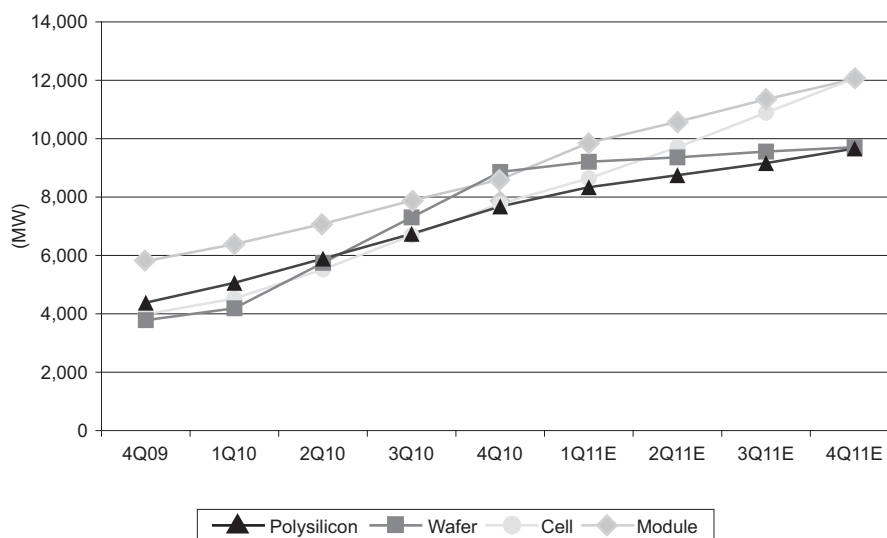
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Historically, supply imbalances throughout the solar power value chain have disrupted production and caused price fluctuations of silicon wafers, solar cells and solar modules. As illustrated in the chart below, production capacity for silicon wafers, solar cells and solar modules has increased steadily in recent quarters. Wafer capacity was the industry's manufacturing bottleneck until the third quarter of 2010, while cell capacity experienced the fastest growth during the indicated periods. As a result, several solar cell manufacturers have entered into long-term purchase contracts with silicon wafer manufacturers to secure a supply of raw materials.

**Quarterly Manufacturing Capacity Across Crystalline Solar Power Chain**



Source: Solarbuzz, March 2011 Report.

### ***Silicon Wafer Production***

There are primarily two technologies used in the silicon wafer production: monocrystalline silicon technology and multicrystalline silicon technology. Monocrystalline solar products are more expensive to produce than multicrystalline solar products of similar dimensions but have higher conversion efficiencies.

- Monocrystalline silicon wafers are produced by cutting monocrystalline silicon ingots. Due to the uniform properties associated with the use of single crystals, the conductivity of electrons in monocrystalline silicon is optimized, thus yielding higher conversion efficiencies. Compared to the production of multicrystalline silicon wafers, monocrystalline wafer production is generally more labor intensive and require higher quality silicon feedstock.
- Multicrystalline silicon wafers are produced by cutting multicrystalline silicon ingots. Multicrystalline silicon consists of numerous smaller crystals and generally contains more impurities and crystal defects that impede the flow of electrons compared to monocrystalline silicon. While this results in lower energy conversion efficiency, producing multicrystalline solar products is generally less labor intensive and requires lower quality silicon feedstock compared to the production of monocrystalline solar products of similar dimensions.

The key challenges to wafer production include increasing wafer absorption, reducing material costs and securing raw material supplies. Successful expansion of manufacturing capacity for silicon wafers depends on,

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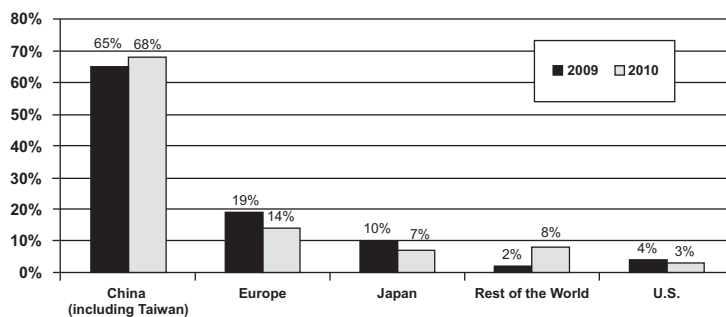
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amongst others, a manufacturer's ability to secure sufficient supply of raw materials and key silicon wafer manufacturing equipment such as wire saws.

According to Solarbuzz, global silicon wafer manufacturing capacity reached 26.1 GW in 2010, an increase of 94.2% from the prior year. As illustrated in the chart below, almost 68% of the world's wafer manufacturing capacity was located in China and Taiwan at the end of 2010, up from 65% in 2009.

**Regional Distribution of Crystalline Silicon Wafer Manufacturing Capacity**

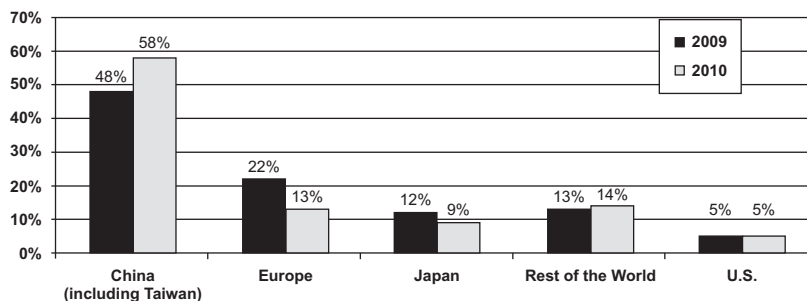


*Source: Solarbuzz, Marketbuzz Report 2011.*

### **Solar Cell Production**

According to Solarbuzz, manufacturing capacity for crystalline silicon cells grew at a CAGR of 63.2% from 2006 to 2010. In 2010, global manufacturing capacity for crystalline solar cells reached 24.5 GW, representing an increase of 74.1% from 2009. According to Solarbuzz and as illustrated by the chart below, the global center of solar cell production has shifted from Europe and Japan to China and Taiwan, with China and Taiwan becoming the largest players in world solar cell capacity in 2010.

**Regional Distribution of Solar Cell Manufacturing Capacity**

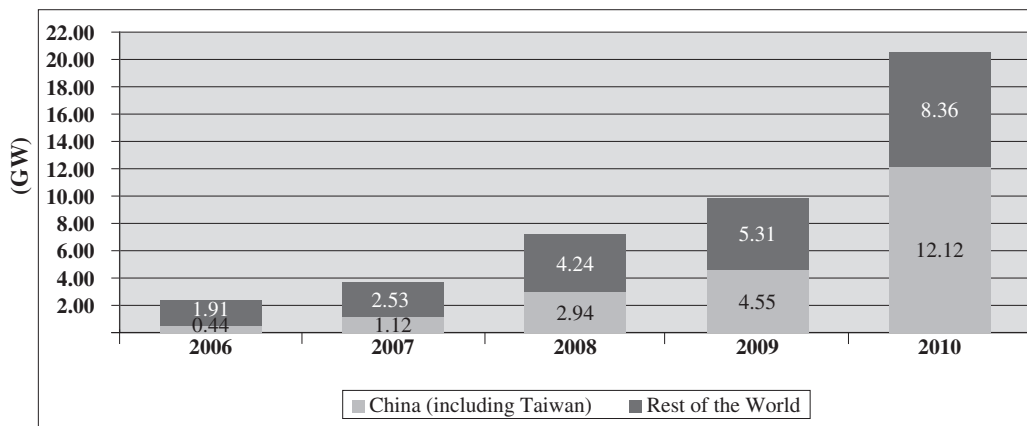


*Source: Solarbuzz, Marketbuzz Report 2011.*

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As illustrated by the chart below, production of solar cells grew at a CAGR of 71.8% from 2.35 GW in 2006 to 20.48 GW in 2010. Solar cell production in China and Taiwan increased to approximately 12.12 GW in 2010, representing 59.2% of the global cell production, from less than 440 MW in 2006.

**Solar Cell Production by Country 2006-2010**

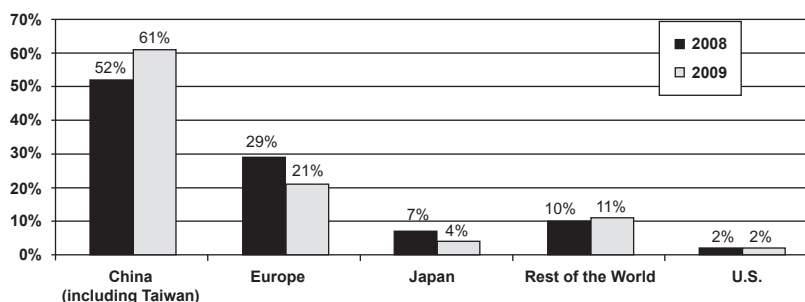


Source: Solarbuzz, Marketbuzz Report 2011.

### Solar Module Production

The shift towards increasing manufacturing dominance by China and Taiwan is equally evident in the production of solar modules. According to Solarbuzz, global crystalline silicon module manufacturing capacity increased by 79.0% from 2009 to 30.4 GW in 2010. As illustrated by the chart below, in 2009, more than half of the global crystalline module manufacturing capacity was in China and Taiwan, while Europe, Japan and the United States represented approximately 21%, 4% and 2%, respectively.

**Regional Distribution of Crystalline Module Manufacturing Capacity**



Source: Solarbuzz, Marketbuzz Report 2010.

## RECENT DEVELOPMENTS IN THE SOLAR POWER INDUSTRY AND SOLAR PRODUCTS

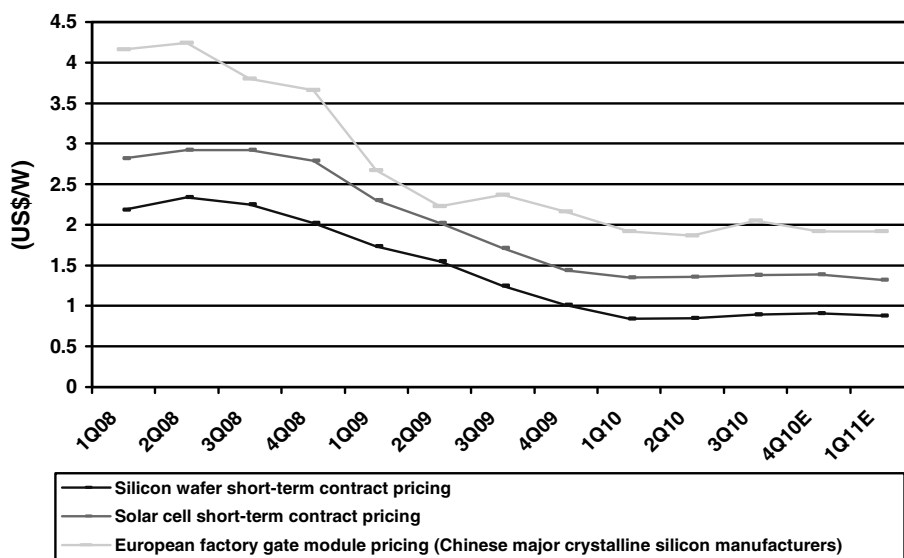
### Pricing Trends

Up to mid-2008, an industry-wide shortage of virgin polysilicon, the basic raw material for all crystalline silicon solar products and semiconductor devices, coupled with strong demand in the solar power and

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semiconductor industry, caused the escalation of virgin polysilicon prices. As a result, prices for silicon wafers, solar cells and solar modules rose significantly in response to rising polysilicon prices.

The chart below sets forth market price trends for silicon wafer, solar cells and solar modules during the Track Record Period, which indicates that the prices of silicon wafers, solar cells and solar modules tend to be highly correlated. Because the prices of solar cells and solar modules typically move in correlation with the prices of raw materials, i.e., silicon wafers, we believe we will be able to pass on a substantial portion of any increases in the price of raw materials to our downstream customers as solar market adjusts to reflect any price increase along its value chain.



Source: Solarbuzz, September 2009 Report and December 2010 Report. The European factory gate module pricing by Chinese major crystalline silicone manufacturers has been converted from Euro to U.S. dollars using the H.10 Statistical Release of the Federal Reserve Board.

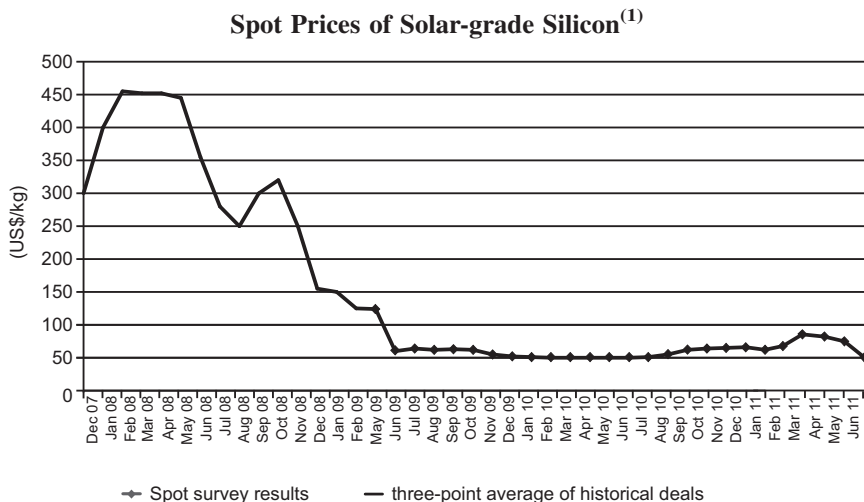
However, in the second half of 2008 and the first half of 2009, industry demand was seriously affected by the global recession and credit market contraction. At the same time, global manufacturing capacity of silicon feedstock experienced a significant expansion in 2008, which further reduced the prices of downstream solar products. According to Solarbuzz, there were a total of 71 companies manufacturing silicon feedstock in 2009. By the fourth quarter of 2008, declines in both solar and semiconductor markets led to significant reduction in the demand for silicon feedstock. As a result, the prices of virgin polysilicon and downstream solar products were further depressed, which caused prices of silicon wafers, solar cells and solar modules to fall significantly. The sharp fall in prices throughout the polysilicon-based solar power value chain caused solar power companies to seek price reductions in their inputs to manage increasing pressure on their margins. The result was widespread renegotiation of long-term supply contracts to adjust prices and volumes, or to change fixed price contracts to variable price contracts.

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The chart below sets forth the spot prices for solar-grade silicon for the indicated periods.



Source: Bloomberg New Energy Finance via Bloomberg terminal

Note: (1) Data from December 2007 to May 2009 are based on a three-point moving average of actual spot deals. Bloomberg New Energy Finance changed its method of calculating the spot price in May 2009 from using a three-point moving average of actual spot deals to consistent monthly data collection by taking the results of a spot survey.

Silicon materials represent a significant cost in the manufacture of solar products. Solar-grade virgin polysilicon is currently readily available for purchase from the spot market. The spot price of solar-grade silicon is indicative of the price of solar-grade virgin polysilicon. Historically, the pricing decisions of solar product manufacturers have been heavily influenced by their cost of materials. The historical price trends of downstream solar products ranging from silicon wafers to solar modules have substantially corresponded with movements in silicon prices.

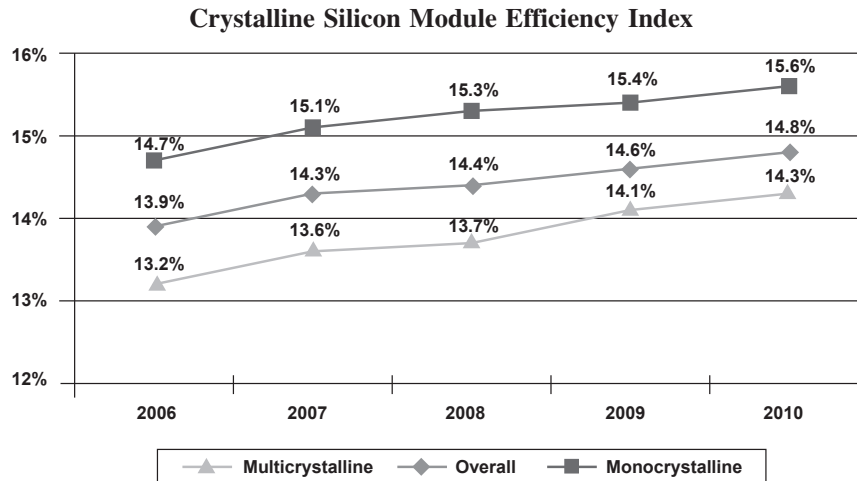
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## INDUSTRY OVERVIEW

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### *Conversion Efficiency*

Conversion efficiency is the key measure of solar product performance and one of the primary means, together with pricing, through which a solar product manufacturer distinguishes itself from market competitors. According to Solarbuzz and as illustrated by the chart below, the conversion efficiency index of crystalline silicon modules based on the highest efficiencies of module models from the most prevalent manufacturer product lines increased by an average of 1.5% per year from 2006 to 2010, with monocrystalline and multicrystalline modules reaching an average conversion efficiency index of 15.6% and 14.3%, respectively, in 2010.



Source: Solarbuzz, Marketbuzz Report 2011.



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## INDUSTRY OVERVIEW

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### COMPETITIVE LANDSCAPE

The global solar cell industry is characterized by several large scale manufacturers currently accounting for a majority of global solar cell production. As reported by Solarbuzz, companies with solar cell production output exceeding 100 MW in 2010 represented approximately 17% of the total number of solar cell manufacturers, but their aggregate production output constituted 80% of the entire global production output in terms of MW. Among leading solar cell manufacturers, a number of manufacturers based in China have experienced significant growth in production volume during 2010. In 2009 and 2010, we did not have a significant market share in the global solar cell industry. Based on Solarbuzz data for world PV cell production, our global market share in the production of solar cells was approximately 0.42% and 0.35% for the year ended 31 December 2009 and 2010, respectively. The table below sets forth the production or shipment volumes of the top ten solar cell manufacturers (inclusive of crystalline silicon and thin-film manufacturers) in 2010 and their respective production volumes 2009.

<u>Cell manufacturers<sup>(1)</sup></u>	<u>2010 production or shipment volume<sup>(2)</sup></u> (in MW)	<u>2010 market share</u> (%)	<u>2009 production or shipment volume<sup>(2)</sup></u> (in MW)	<u>2009 market share</u> (%)
JA Solar (PRC) . . . . .	1,460	7.1	509	5.2
Suntech Power (PRC) . . . . .	1,460	7.1	704	7.1
First Solar (U.S.) . . . . .	1,411	6.9	1,113	11.3
Q-Cells (Germany) . . . . .	940	4.6	551	5.6
Motech (Taiwan) . . . . .	865	4.2	600	6.1
Gintech (Taiwan) . . . . .	805	3.9	368	3.7
Sharp (Japan) . . . . .	644	3.1	595	6.0
Kyocera (Korea) . . . . .	644	3.1	280	2.8
Trina Solar (PRC) . . . . .	630	3.1	399	4.0
<u>SunPower (U.S.) . . . . .</u>	<u>540</u>	<u>2.6</u>	<u>390</u>	<u>4.0</u>

Source: Solarbuzz, Marketbuzz Report 2010 and Marketbuzz Report 2011.

Notes:

- (1) For vertically integrated solar product manufacturers, shipment volumes of solar modules are derived from shipment volumes of solar cells, taking into account the power output loss and yield loss resulting from converting solar cells to solar modules. For example, 1 MW of shipment volume of solar modules would be calculated by reverting the power output loss (i.e. approximately 3% averaged across the industry) and yield loss (i.e. approximately 4% averaged across the industry) resulting from conversion process, arriving at approximately 1.08 MW of shipment volume of solar cells.
- (2) Data includes a mixture of manufacturer submissions to Solarbuzz, published data and Solarbuzz estimates.

### INFORMATION RELATING TO SOLARBUZZ LLC

Solarbuzz LLC is a leading international solar energy research and consulting company. It provides industry reports, commissioned studies and research and consultancy services in relation to the solar photovoltaic market and industry. A significant amount of information and market data used throughout this prospectus has been obtained from Solarbuzz's Marketbuzz Report 2010 published in March 2010, Solarbuzz's Marketbuzz Report 2011 published in March 2011, and its December 2010 Report.