

## Research Report on Chinese Polysilicon Industry, 2009-2010

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Moreover, price keeps soaring. Investors and potential investors in Chinese polysilicon industry begin to focus on investment opportunities and risk aversion. This report reveals the development status, the trend and the investment opportunities of Chinese polysilicon market for investors through analyzing the demands, manufacturers and relevant industries of the international and domestic markets. Present situation of Chinese polysilicon market can be learned from this report to assist investors on investment opportunities

## Summary

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## Description

PV cells only take up a small share in the global power field, but their importance cannot be ignored. At present, polysilicon and monocrystalline silicon dominate the market. Monocrystalline silicon made from silicon ingot scraps can be used for solar cells, because solar cells do not require the ultra purity like silicon wafers for semiconductor devices. Currently, the consumption of the semiconductor industry is about 2/3 of the polysilicon output. The left 1/3 of polysilicon output belongs to the consumption of solar cells.

There are several professional manufacturers of polysilicon and monocrystalline silicon wafers in the world. Their products are supplied to the semiconductor industry and the PV cell industry. As the semiconductor industry and the PV cell industry are both value-added industries, they do not need too much transportation cost. When these companies have surplus productivities or short productivities, as well as they expand their productivities or close devices in a certain region, competitors in other regions will usually have to reconsider their decisions.

Polysilicon is used as raw materials for two industries. First, it can be used for the semiconductor industry to make monocrystalline silicon wafers. Monocrystalline silicon wafers are made as substrates for semiconductor silicon chips. Therefore, silicon materials must meet the strict requirements of purity and adulteration standard. Second, polysilicon is used for the PV industry to make solar cell panels. The industry purchases non-special materials eliminated from the semiconductor industry.

The polysilicon prices maintained rising between 2006 and 2008, among which the highest price was over 4 times the cost. A great number of investors were attracted to invest in this industry. In recent years, the polysilicon industry has been a popular investment industry among many new energy industries. Many Chinese local governments made it the important investment-attracting field to draw polysilicon enterprises, regarded as polysilicon bases. It is regarded that the main polysilicon bases include Sichuan Leshan, Chongqing, Wuhan and Luoyang in Central and West China, and Xuzhou, Yangzhou and Lianyungang in East China.

Jiangsu plans to raise the polysilicon productivity to 30,000 tons in 2011, which is 6 times the constructed productivity of China in 2008 (5,000 tons).

It is estimated that Chinese domestic polysilicon productivity will exceed 60,000 tons in 2011 and exceed 100,000 tons in 2012.

At present, the total productivity of the global Top 7 polysilicon enterprises is 120,000 tons. The conservative estimation of the global polysilicon productivity in 2012 is 240,000 tons including Chinese productivity that will be operated in 2009 (nearly 20,000 tons) and Chinese scheduled productivity (100,000 tons at present).

The global output of cell modules was 5.5 GW in 2008. It is estimated that the output in 2012 will reach 12 GW. As productivity of current cell modules at 1/6 W/g, 72,000 tons of polysilicon will be demanded by 2012. Polysilicon overcapacity still exists in the world.

In 2008, over 10 large polysilicon projects were rebuilt in China. Many declared they were the largest in China.

Polysilicon projects demand for a large amount of investment. Generally, a polysilicon project with the productivity of 1,000 tons needs about RMB 1 billion (USD 143 million). It is estimated that the accumulative investment on Chinese polysilicon projects will exceed USD 14 billion in recent years.

At present, the production cost of main Chinese polysilicon enterprises is between 40 USD/kilo and 70 USD/kilo. The production cost of those enterprises without scaled production or closed-loop production is about 100 USD/kilo. The global financial crisis has caused failures of some new projects as they had low return rates of assets. However, some strong enterprises have made full use of the opportunity to expand their production. It is estimated that the market concentration of Chinese polysilicon industry will be improved.

As the price of Chinese polysilicon was 450 USD/kilo in 2008, enterprises could achieve a sudden huge profit of over 300%. The investment return period of polysilicon projects is about 3 to 4 years. At present, the polysilicon price is between 70 USD/kilo and 80 USD/kilo. Therefore, manufacturing cost of Chinese enterprises equipped with the best technologies is also over 30 USD/kilo. The profits have been greatly reduced. However, enterprises can still gain considerable returns if they improve technologies and control costs. Those enterprises having long-term orders are not affected by the cash markets greatly. In the long run, the industry won't gain sudden huge profits.

Through this report, readers can acquire more information:

- Present situation of Chinese polysilicon industry
- Trend of Chinese polysilicon productivity
- Trend of Chinese polysilicon prices
- Main Chinese polysilicon manufacturers
- Chinese polysilicon investment projects

- Prediction on the development trend of Chinese polysilicon industry

Following persons are suggested to buy this report:

- Polysilicon manufacturers
- Polysilicon trading enterprises
- Polysilicon downstream enterprises
- Investors concerning the polysilicon industry

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