

China's Solar Power Industry

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Background

China is a country rich in solar energy resources, China's land surface radiation of solar energy resources each year is equivalent to 4.9 trillion tons of standard coal. Slowly emerging from the shadow of the global financial crisis, China's solar power industry had an unexpectedly positive time. In 2009, China launched an unprecedented stimulus package of nearly \$600bn dedicated in part to new energy development, including solar power installations. China's solar power will no doubt be the most eye-catching sunshine industry.

Main Solar Power Industries

1) Solar Energy Photovoltaic Power

China photovoltaic power generation industry started from 20 century 70years, and entered steadily developing period in the mid 90s.Solar batteries and related components increased steadily in output year after year. After 30 years of efforts, China photovoltaic power generation industry has ushered in a new stage of development. The main photovoltaic power manufacturers are Trina Solar (天合光能), Suntech Power Holdings Co., Ltd.(尚德电力), Yingli Solar(英利集团),Canadian Solar Inc(阿特斯太阳能) and JA Solar Holdings Co., Ltd. (晶澳太阳能), etc... as below are the top 10 China photovoltaic power manufacturers of 2009:

1) 尚德(Suntech Power)

2)天合光能(Trina Solar)

3)英利(Yingli Solar)

4)中电电气（南京）光伏有限公司(Zhong Dian Electrical(Nanjing) Photovoltaic Technology Co., LTD.)

5)赛维 LDK(LDK Solar)

6)晶澳太阳能(JA Solar)

7)江苏林洋(Solarfun Power)

8)宁波太阳能电源有限公司 (NBsolar)

9)上海太阳能科技有限公司 (SSEC)

10)江苏阿特斯科技有限公司(Canadian Solar Inc)

On 23 March, 2009, the China Ministry of Finance issued "***Solar Energy Photoelectricity Architecture Application Financial Subsidy Funds Management Provisional Measures***", the China Ministry of Housing and Urban-rural Development and Ministry of Finance issued "***Opinions on the Implementation of Accelerating Application of Solar Photovoltaic Construction***", in order to reduce costs, train and use talented people, encourage technical innovation and the growth of China photovoltaic power generation industry. Photovoltaic products prices dropped sharply in 2009, the shipments of several leading manufacturer in 2009 increased dramatically, market share of China's photovoltaic firms will surely keep climbing. Although China photovoltaic power generation industry still has a long way to go, it has embraced its springtime now, with the support of government.

2) Solar Cell

With respect to solar cell, though solar market in China is not big, China is the world's largest solar cell manufacturing country, most of the above photovoltaic power manufacturers are also solar cell producers. Last year, Chinese solar cell production was 4000MW, covered about 40% of the world's total production. Six of the 2009 global top ten photovoltaic cell producer are China. enterprises. According to the annual report of most Chinese main production enterprises of solar cell, the growth of the sales and profits of most enterprises is more than expected, some enterprises to exploit American market.

Meanwhile, the Chinese government is actively stimulating domestic demand. China's "solar rooftop" and "golden sunshine" construction began in March 2009, aimed to encourage domestic manufacturers and investors of photovoltaic power station to seek growth in domestic market. The potential solar cell market in China is enormous.

As below are the top 10 China solar cell manufacturers of 2009:

1)夏普(SHARP)

2)Q-Cells(a German solar battery brand)

3)尚德 (Suntech Power)

4)京瓷(KYOCERA)

5)SANYO(三洋)

6)三菱 (NITSUBISHI)

7)英利(Yingli)

8)天合光能(Trina Solar)

9)茂迪(MOTECH)

10)阿特斯 (CSI)

3) Solar Water Heater

In early 2007, China solar water heater production covered more than 70% of the world's total output, became the first major country of solar energy water heater use and production. But in the solar energy utilization, China's overall performance is not ideal. Although the use of solar energy is not only water heater, the use of solar energy is mainly water heater in China. The Chinese local companies are the main solar power companies in China, as below are the top 10 China solar power brands of 2009:

1) 皇明 (Huang Ming)

2) 桑乐 (SANGLE)

3) 天普 (TIANPU)

4) 华扬 (HUAYANG)

5) 亿家能 (YI JIA NENG)

6) 海尔(Haier)

7) 清华阳光 (TSINGHUA SOLAR)

8) 太阳雨 (Sunrain)

9) 力诺瑞特 (LINUO PARADIGMA)

10) 辉煌 (HUIHUANG)

Currently the Chinese solar energy water heater industry standards are mainly:

GB/T19141-2003 Household Solar Water Heating System Technology Conditions and ***GB/T18708-2002 Household Solar Water Heating System Thermal Performance Test Method***. Such industry standard is too low and become a big problem in China solar energy water heater industry.

Some Chinese consumers have solar energy water heater in their home. China domestic solar products series are not only solar water heater, but more widely used in the solar water heating system of hospitals, government agencies, commercial building and production hot water supplying for agriculture, industry and fishery, etc.

Foreign Investment in Solar Energy Industry

According to ***Catalogue for the Guidance of Foreign Investment Industries (Amended in 2007)***, solar related industries belong to Catalogue of Encouraged Foreign Investment Industries, the detailed information is as below:

Catalogue of Encouraged Foreign Investment Industries

III. Manufacturing Industries

20. Electric Machinery and Equipment Industries

(7) Manufacture of the equipment of New energy electricity-power (limited to equity joint ventures and cooperative joint ventures): photovoltaic power , geothermal power generation, tidal power generation, wave power generation, rubbish power generation, methane power generation, wind power generation over 1.5M;

(10) Manufacture of solar air conditioning, heating system, solar dryer;

IV. Production and Supply of Power, Gas and Water

5. Construction and management of new energy power plants (solar energy, wind energy, magnetic energy, geothermal energy, tide energy and biological mass energy, etc.)

Judging from the above provisions, we can see that China government has taken a welcoming attitude to foreign investment in solar power related industries. Foreigners can invest in a solar company 100% and do not need to set up a joint venture with a Chinese company. China is now making energetic efforts to develop new energy and new technology for energy-use, it is really an appropriate point for foreign investors to invest in China solar power related industries, foreign investors who plan to invest in these areas should embrace this good chance.

Related Laws and Regulations and Standard

- 1) "*Solar Energy Photoelectricity Architecture Application Financial Subsidy Funds Management Provisional Measures*", issued by the China Ministry of Finance on 23 March, 2009;
- 2) "*Opinions on the Implementation of Accelerating Application of Solar Photovoltaic Construction*", issued by the China Ministry of Housing and Urban-rural Development and Ministry of Finance on 23 March, 2009;
- 3) "*China Renewable Energy Law*", issued by Standing Committee of the National People's Congress on 26 December 2009.
- 4) *GB/T19141-2003 Household Solar Water Heating System Technology Conditions*;
- 5) *GB/T18708-2002 Household Solar Water Heating System Thermal Performance Test Method*;
- 6) *GB 24460-2009 Solar PV Lighting Equipment Total Technical Specifications*;
- 7) *GB 50364-2005 Civil Building Solar Water Heating System application Technical Specifications*;

Conclusion

Although China's solar energy industry has developed rapidly, it is still faced with many challenges. For example, China's solar energy industry still lacks clear photovoltaic and solar thermal industry development planning; the public sector research and testing and certification platform still needs to be established; the supply chain of solar photovoltaic power generation system equipments and applications should be further developed and improved; the photovoltaic power generation tariff approval procedures and approval procedures are not clear enough; China's solar energy industry lacks complete and effective technical, safety and management standards, especially with respect to the power quality and management issues, and it is widely known that such standards are absolutely essential for the health development of China's solar energy industry.

In summary, although China's abundant solar energy resources, solar energy industry gained rapid development, but China's solar power industry is still facing many challenges.