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Bright future for China's solar billionaire

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- **Jonathan Watts** in Wuxi
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Suntech boss Shi Zhengrong: "We believe that in 10 years, Suntech will be an energy giant like BP or Shell." Photograph: Jonathan Watts

If China is ever to produce a challenger for the title of the world's richest and most respected businessman, a leading contender is likely to be Shi Zhengrong. The world's first solar billionaire sits at the intersection of two of the most important vectors of the 21st century - China's economic rise and the global imperative to cut carbon emissions.

Since founding Suntech Power - China's largest photovoltaic manufacturer - in 2001, Shi has capitalised on a surge of

environmentally driven demand in Germany, the US and elsewhere that has turned his company into a global powerhouse and made him, by some estimates, the richest man on the mainland.

But that is just the start, according to the Australian-educated scientist, who predicts solar power will rival oil and coal before the end of the next decade.

"We believe that in 10 years, Suntech will be an energy giant like BP or Shell today," he says. "Since we were founded, we have grown by more than 100% every year, but we still can't keep up with demand. We must grow faster." In an interview with the Guardian at his headquarters in an industrial estate in Wuxi, Jiangsu province, Shi cuts a confident, amiable figure. He can afford to be. The world is moving in Suntech's direction.

Concerns about climate change have prodded many governments to subsidise solar energy, which is more expensive than almost any other form of power. The price gap is closing as carbon becomes more expensive and improved technology and increased capacity drives down the manufacturing cost of photovoltaic cells.

Few companies are better placed to take advantage. Suntech has received generous support from the Wuxi government and it benefits from cheap labour, which accounts for 2% of the total manufacturing costs compared to 5% at the factories or rival firms overseas. Last year, Shi says Suntech overtook Sharp as the world's biggest producer of solar panels. Within three, he predicts it will also be the global leader in solar cells and solar modules. By 2010, the company's factories will churn out enough photovoltaic cells per year to generate 2 gigawatts of electricity, equivalent to four new power plants.

And that is before tapping the domestic market. Currently 98% of Suntech's output is exported, but Shi expects demand to grow rapidly in China once the price of solar energy falls to "grid parity" – effectively the cost of power generated by coal. Ambitiously, he wants to achieve this by 2012.

He is advising the Chinese government on renewable energy policies. So far, they have focused on wind energy, but Shi informs the politicians change is just around the corner. "Solar is not 10 or 20 years away, it is just five years away. I tell them: 'You have to hurry

up. If you are not ready, we cannot employ solar on a massive scale." More than most Chinese executives, Shi has to convince the public.

Because solar is still considerably more expensive than other forms of energy, his business model relies on governments stumping up the difference. Germany, which has one of the world's most advanced policies to promote solar energy, is by far his biggest market. In China, sales are tiny, even though Suntech products will be highly visible next month during what Beijing calls "the Green Olympics." The biggest constraint on the industry has traditionally been a shortage of refined silicon. But new technologies and economies of scale are changing that. Solar recently overtook the microchip industry as the main source of demand for silicon. This is pushing up prices and drawing more firms into the market.

"We believe there will be a solar boom in China very soon," he says. "China is a country where once people realise, 'Gee, we have to use that,' then things will leap forward." Last year, the National Development and Reform Commission, which is steering the economy, announced solar projects in 10 provinces. The ground is yet to be broken, but Shi hopes this is the start of the government involvement he has been waiting for.

Technology is improving every year. Shi learned his trade in the University of New South Wales, one of the world's leading centres for photovoltaic research. Costs will come down, Shi says, as solar panels convert energy from the sun more efficiently. Currently, Suntech products boasts a 17.2% efficiency rate. By 2010, Shi predicts this will rise to 20% .

"Why is this happening now. Because it is all market driven. Before, there was no demand so all the research was in the laboratory. But now there is a huge demand so the equipment has improved, the process has improved and the manufacturing efficiency has improved." Suntech is also working on less-efficient, but cheaper materials that can be used to coat windows and other building exteriors. It will be put into practice at the company's new headquarters - now under construction. Once completed, it is designed to be 85% self-sufficient in energy.

For all his enthusiasm for solar, Shi does not expect China to shift away from its dependence on coal any time soon. Instead, he foresees a gradual rebalancing of the country's energy mix as people become

more aware of the impact of global warming. Part of his mission, he says is to educate the public about climate change.

"I grew up in this part of China. When I was a kid, the temperature would fall under minus five degrees and we would have snow every year, but the last time I saw snow was in January 1988 until the freak storms this January," he says. "Flights are not as tranquil as before. There is more turbulence. I think as the glaciers melt, water evaporates and there is more moisture in the air. This causes currents. Maybe one day, we won't be able to fly any more." The biggest obstacle to Shi's dream of creating a global energy giant is China's state-owned power companies – at least one of which is run by the son of a former Communist Party heavyweight.

"I have thought about that. It may be that we can only be a supply company. We'll see. What we hope for is a situation more like in the west, where there is fair competition. We are lobbying the government for that." Ultimately, though, Shi believes the elements are on his side. "If you look at the outlook of the energy structure, there is nothing to stop us growing. There will be bumps and competition and price pressure, but sunshine is unlimited."

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