

# solar solution

by Zhengrong Shi



Much has been said in recent years about China's supposed reluctance to contribute to the global effort to reduce greenhouse gases and mitigate the impacts of climate change. But, even though it was not a signatory to the Kyoto Protocol, the country has quietly undertaken a wide range of initiatives to become more energy-efficient and to increase its reliance on renewable energy. In many cases these have far exceeded efforts in the developed world. In the process, it has also turned clean technology into a significant driver for new economic development.

The progress of the last few years has mirrored my own personal passion for changing the way we produce energy. I have always been concerned about the detrimental effect of human reliance on fossil fuels. I believe that global warming is our greatest threat, requiring the commitment of governments, companies and individuals to solve it. After spending time in Australia earning my PhD and completing research in solar 'thin film' technology, I came back to Wuxi, China, in response to government incentives to encourage new technology and renewable energy companies to locate there. I have built a world-leading R&D department that focuses on pioneering the most innovative, cutting-edge technology to capture the sun's energy to generate electricity. Through my research, and with my colleagues at Suntech around the world, we are committed — and working very hard — to reduce the cost of solar systems, reach grid parity and make clean solar energy affordable to as many people as possible. Moreover, we have strong internal environmental policies and practices, and our own new factory and headquarters will be 85 per cent reliant on renewable energy.

China is facing enormous energy challenges. Everyone seems to know that we need to increase our energy supply by the equivalent of one power plant per week to support China's economic growth, which is allowing millions of people to enjoy better standards of living. Much less is known of the extent to which China has taken steps to mitigate the impact of that growing energy demand through incentives for greater efficiency and renewable energy. Policies include:

- Cutting energy intensity 20 per cent between 2005 and 2010, saving five times as much CO<sub>2</sub> as the EU's goals.
- Cutting major pollutants by 10 per cent by 2010.
- Setting one of the world's most aggressive renewable energy standards: 15 per cent of national energy from renewables by 2020.
- Setting targets of 300 megawatts of installed solar by 2010, and 1.8 gigawatts by 2020, in the 2007 National Development and Reform Commission Renewable Energy Development Plan.
- Dedicating \$180 billion for renewable energy by 2020.
- Imposing energy efficiency targets for the top 1,000 companies, a measure with greater carbon savings potential than most Western initiatives.
- Establishing building energy codes in all regions and extensive efficiency standards for appliances, which will be particularly important as China continues to grow.
- Targeting new buildings in major cities like Beijing, Shanghai and Chongqing, to achieve 65 per cent greater energy efficiency than local codes require.
- Closing thousands of older, smaller, dirtier power plants by 2010.

China understands the economic development potential in clean energy technologies. Even the noted journalist Thomas Friedman has remarked that "China is going green in a big way," using domestic demand for cleaner energy to build low-cost, scalable green technologies. Suntech Power Holdings —

now the world's largest solar photovoltaic (PV) module manufacturer, with operations around the globe — was just one of dozens of solar companies that realised the opportunity provided by China's energy challenges and the government's strong commitment to provide alternatives. Through favourable tax policies, aggressive government procurement and national targets, China is building a world-class export industry in all parts of the solar value chain, as well as encouraging increased use of the sun's energy at home. It is now the third-largest national producer of solar PV for the global market and may soon become the leader. In short, it realises that green energy is the key to both sustainable economic growth and a more pleasant environment.

Yet China can still do more, and I'm working closely with the Government to set even more aggressive standards to help drive the development of the country's renewable energy resources. The Government is developing a solar building code with Suntech's participation, and is considering a review of the solar targets in the national renewable energy law — the 1.8 gigawatt goal by 2020 is just a fraction of the country's true potential within that timeframe.

The price of electricity is a key concern both in China and around the world. Like many countries, we understand the power of low-cost electricity to drive economic development: indeed, the United States and the rest of the developed world were able to grow as quickly as they did because of inexpensive energy. But the days of cheap electricity are over — or at least they should be. Any country with highly subsidised electricity tariffs, including China, needs to bring them more in line with the real costs of power, including the costs of the necessary efforts of mitigating carbon emissions and their impacts on the environment. Fairly priced electricity sends a signal to consumers to conserve power and become more efficient in their use of it. As we drive down the cost of solar electricity, we will easily be able to compete against correctly priced electricity from carbon-based sources, unleashing a surge in its adoption both in China and elsewhere.

What is happening in China could happen all over the world. I hope to see other countries, particularly developed ones, match its policies. It is these robust, long-term policy commitments that allow manufacturers like Suntech to grow and to build the economies of scale needed to reduce prices. And visionary leaders like Germany's Hans-Josef Fell, Hermann Scheer and Juergen Trittin, or California's Governor Arnold Schwarzenegger, know they can win clean-tech jobs when they set far-reaching renewable energy goals.

As we embark on the ambitious agenda set for 2009 — and the climate negotiations in Copenhagen at the end of the year — it is critical to understand, particularly in the somewhat reluctant global business community, that pushing ahead with green initiatives, including CO<sub>2</sub> reductions in every country, is the key to long-term sustainable economic world growth. Whether through feed-in tariffs in Europe, direct investments in renewable energy in China or renewable energy standards in United States, each country can contribute towards the common goal of simultaneously turning back the tide of climate change while laying the foundation for healthy economic growth. Personally, I feel a deep responsibility for raising awareness of climate change issues and helping others understand the role that solar energy can play in reducing carbon dioxide emissions and global warming. Working together we can empower people to take up the noble yet pragmatic cause of building a green future for their families and society around the world. 