China's Grab for Green Jobs

Prepared by the Office of U.S. Senator Ron Wyden

Global demand for solar technology is rising, yet the American producers' share of the U.S. and foreign markets is on the decline. The reason? An unprecedented surge of solar goods production in China. As **FIGURE 1** illustrates, U.S. imports of solar panel components from China catapulted by over 1,500-percent between 2006 and 2010.

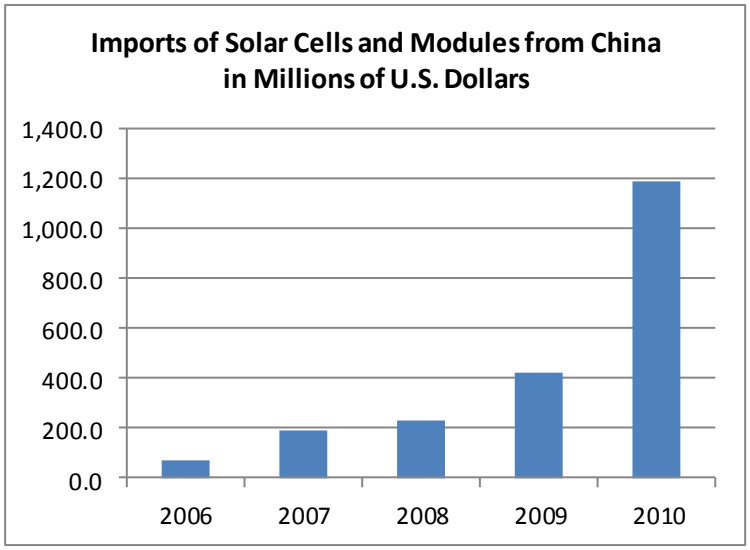

FIGURE 1. Source: International Trade Commission

This ramped-up production of renewable energy technology – particularly photovoltaic solar – is consistent with goals found in China's recent Five Year Plans. China has worked to achieve these goals by providing a myriad of subsidies to its solar technology producers. These subsidies encourage the production and export of solar cells and modules – the primary components of solar panels – and support their sale at below market prices, making it possible for Chinese companies to stay ahead of their foreign competitors.

The Office of the United States Trade Representative uncovered evidence of the Chinese government's efforts to subsidize its green energy industries and notified the World Trade Organization (WTO) on October 6, 2011. Under its WTO obligations, China is supposed to notify the body of its subsidy programs, but frequently fails to fulfill this important obligation.

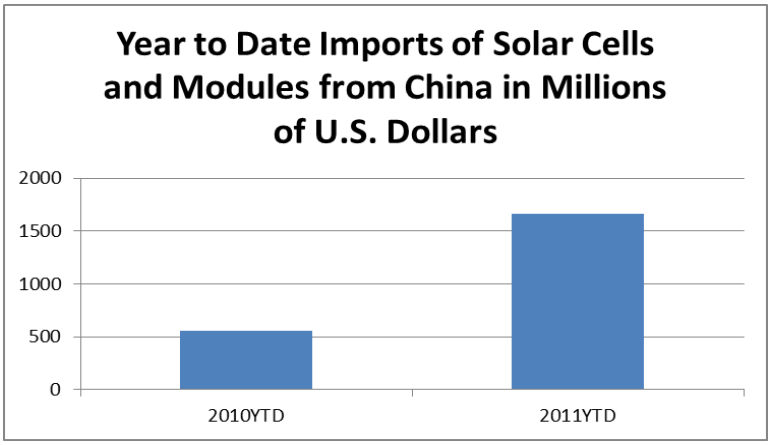

FIGURE 2. Source: International Trade Commission

FIGURE 2 reveals that U.S. solar panel component imports, in 2011, from China may far exceed the import level of 2010. Imports of solar cells and modules have rapidly increased since 2006. The spike has been even greater thus far in 2011.

Looking at the broader global measure of solar and solar-related electrical component exports reveals a striking trend that is consistent with the experience of the U.S., which had a trade deficit in these goods in 2010 that was over 500-percent greater than the 2006 deficit level. Two interesting developments in the global solar industry are shown in FIGURES 3 AND 4. (These figures include solar related electrical components in addition to photovoltaic cells and modules.)

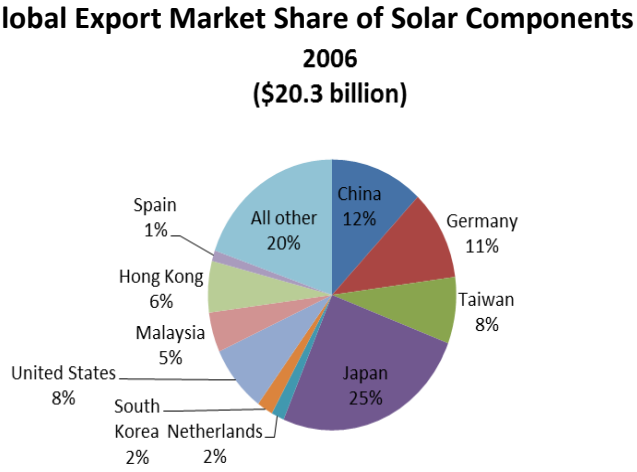

Figure 3. Source: Global Trade Atlas

First, the global export market for these solar goods nearly quadrupled from 2006 to 2010. Second, during that period of time, China's exports did not just keep up with rapidly growing global demand, it outpaced the global demand growth. Nearly every global leader of solar energy technology production lost export market share to China between 2006 and 2010.

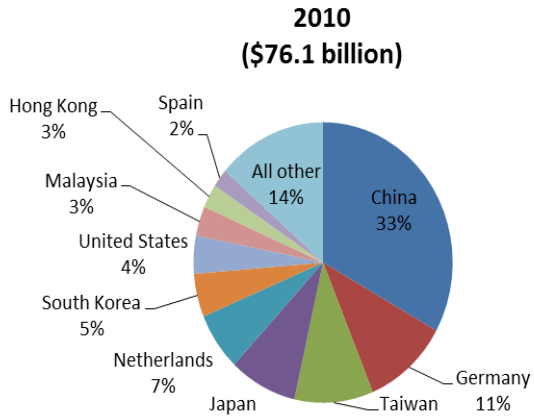

Figure 4. Source: Global Trade Atlas

These trends are consistent with earlier analysis conducted by the office of U.S. Senator Ron Wyden, which in December 2010 issued a report demonstrating that while the global demand for environmentally friendly goods is rapidly on the rise, leading producers and exporters of these goods have been on the decline. Meanwhile, China's global export market share has grown rapidly in nearly every regional market. In short, China's gains in the clean energy industry -- particularly solar -- are coming at the expense of American and other world producers of this technology, who would otherwise benefit from the increased global demand.

The data used in **FIGURE 1** and **FIGURE 2** is based on the ten-digit Harmonized Tariff Schedule (HTS), the most precise measure of solar cell and module imports available (specifically 8541.40.6020&6030). Data used in **FIGURES 3** and **4** use broader, six-digit HTS data and include electrical and other componentry that are associated with photovoltaic solar panels (8541.40). Utilization of these data enable evaluation of trade related to the portion of the photovoltaic solar supply chain that represent the central components of the technology and where there is the greatest amount of value addition.

A recent report on trends in photovoltaic solar trade was released by the Solar Energy Industry Association (SEIA), a trade group dominated by Chinese producers. That report suggested that the U.S. enjoyed a trade surplus in solar energy technology. Unfortunately, for the SEIA report to suggest such a scenario, its authors relied on an unprecedented, broad measure of U.S. exports, which included raw materials like silica and U.S. machinery. The methodology in the SEIA report has come under fire from many corners of the solar industry. For example, under the SEIA methodology, U.S. exports of fabric, steel, and automotive plants could be measured as "auto industry exports."