

BUSINESS OF GREEN

U.S.-China Solar War Intensifies

By KEITH BRADSHER

HONG KONG — The United States and China are gearing up for a trade war over solar energy.

On November 9 the United States Commerce Department opened an investigation sought by American manufacturers who accuse the Chinese of “dumping” solar panels into the United States at prices, aided by billions of dollars in government subsidies, lower than the cost of making and distributing them.

Taking the lead in the petition was SolarWorld Industries America, a unit of the German manufacturer SolarWorld. Six other companies signed on, but all have kept their identities secret.

A Chinese trade group accused the White House of turning the commercial complaint into “a political farce, which is very likely a publicity show initiated by the Obama administration for the coming election.”

But on November 21, Chinese solar panel makers announced a plan to shift some of their production to South Korea, Taiwan and the United States in hopes of defusing the case, according to industry executives. At the same time, the Chinese industry is considering filing a trade case of its own with China’s Commerce Ministry. The most likely target would be American exports to China of polysilicon — a prime ingredient in solar panels.

Solar power is a politically charged issue in Washington, in part because of the bankruptcy this summer of a solar panel maker, Solyndra, after it had received more than \$500 million in federal loan guarantees.

The use of solar energy in the United States is growing fast, but Chinese solar panel manufacturers have been growing even faster, raising their American market share to more than half now, from almost none five years ago.

By bringing together complex is-

Green policies in Beijing may doom an American sector.

issues like manufacturing policy, job creation and climate change, the solar panel dispute may be the most politically charged trade case in many years, potentially rivaling Detroit’s legal case against Japanese automakers in 1980.

Solar energy contributes only about one-tenth of 1 percent of American electricity, but the amount of new solar wattage installed in the country has grown more than 70 percent a year since 2008, according to GTM

Research, a renewable energy market analysis firm in Boston.

The manufacturers who sought the investigation are asking that tariffs of more than 100 percent be imposed on Chinese solar panels.

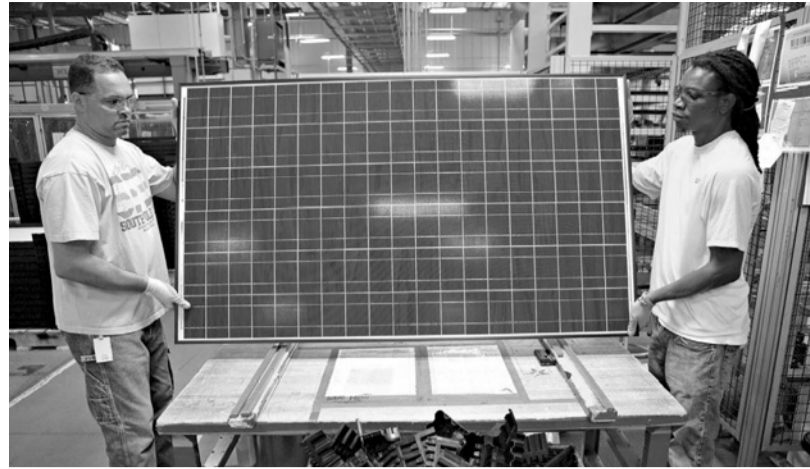
Whatever action the American government might take, it could prove too late to save the American solar panel industry. China, whose government is a big promoter of green-energy companies, already accounts for three-fifths of the world’s solar panel production.

And it exports 95 percent of its production. That has helped push wholesale solar panel prices down sharply — to \$1 to \$1.20 a watt of capacity, from \$3.30 in 2008.

Besides Solyndra, two other American companies that together represented one-sixth of American solar manufacturing capacity went bankrupt in August, while four others have laid off workers and cut output.

On November 2 President Obama cited “questionable competitive practices coming out of China” in clean energy. That prompted the “farce” statement by the government-controlled Chinese Renewable Energy Industries Association.

The Commerce Department is required to issue a preliminary decision on the antidumping claim no later than late March, and on the antisubsidy claim no later than mid-May. Many trade experts expect the decision to



MATTHEW CAVANAUGH FOR THE NEW YORK TIMES

American solar companies have accused China of unfair trade practices. Falling prices have forced some U.S. firms into bankruptcy.

include steep tariffs on imports.

Most of the big Chinese solar panel makers have subsidiaries in the United States that are the legal importers, so they — not the American installers of solar panels — would incur the initial costs of any tariffs. But those costs probably would be passed along to customers; otherwise, Chinese companies might find themselves vulnerable to more penalties.

The anonymity exercised by six of the manufacturers filing the dumping petition could help relieve them from fears of retaliation by the Chinese government, which could deny them visas or access to the Chinese market.

But the secrecy also makes it hard

for the Chinese industry’s lawyers to figure out if those companies have themselves received American government subsidies.

Li Junfeng, the president of the Chinese trade group and also a deputy director general of the National Development and Reform Commission, China’s top economic planning agency, said the United States and China should work together to reduce the cost of solar power instead of engaging in trade conflicts.

Mr. Li said Chinese companies’ subsidies had not come close to Solyndra’s. “All of them are \$10 million or less,” and these amounts, he said, were mainly in 2005 and 2006.



MANPREET ROMANA FOR THE NEW YORK TIMES, BELOW, JIM WILSON/THE NEW YORK TIMES

Stone-Washed Blue Jeans, Unwashed

By LESLIE KAUFMAN

SAN FRANCISCO — Atypical pair of blue jeans consumes 3,478 liters of water during its life cycle, Levi Strauss & Company says. That includes the water that goes into irrigating the cotton crop, stitching the jeans and washing them scores of times at home.

The company wants to reduce that number any way it can. It fears that water shortages caused by climate change may jeopardize the company’s existence by making cotton too expensive or scarce.

So Levi Strauss has helped underwrite a nonprofit program that teaches farmers in India, Pakistan, Brazil and West and Central Africa the latest irrigation and rainwater-capture techniques. It has introduced a brand featuring stone-washed denim smoothed with rocks but no water. It is sewing tags into all of its jeans urging customers to wash less and use only cold water. Levi Strauss suggests washing jeans rarely, if at all — putting them in the freezer will kill germs that cause them to smell.

Conservation worries are not limited to the clothing giants: food and beverage conglomerates, tobacco companies and metal and mining companies are starting to reckon with their dependence on water. Pepsico has adopted a method of sanitizing plastic bottles with purified air instead of water. For its Frito-Lay brands, it has identified drought-resistant potato strains that it provides to farmers along with

Sruthi Gottipati contributed reporting from Shelu, India.



Many companies see the need to conserve water. Levi Strauss is helping Kailash Mahalle, top, use less water to grow cotton.

a soil-monitoring method so crops are watered only when necessary.

The Carbon Disclosure Project, which monitors corporations’ greenhouse gas emissions, has added water security to its priorities. Of the 150 companies that responded to a questionnaire sent to the world’s largest corporations, nearly 40 percent reported that water problems had resulted in “detrimental impacts” to their businesses.

The threat of water shortages was underscored last year when floods in Pakistan and parched fields in China destroyed cotton crops and sent prices soaring. Roughly one kilogram of cotton goes into every pair of jeans.

Because cotton is grown by a diffuse network of very small farmers in more than 70 countries, encouraging water-efficient practices is a challenge. Cotton cultivation accounts for more than 3 percent of the world’s agricultural

water use and 6 percent of all pesticide purchases.

In 2005, nongovernmental and cotton industry organizations and some giant retailers, including Ikea, the Gap and Adidas, founded the international Better Cotton Initiative to promote water conservation and reduce pesticide use and child-labor practices.

Levi Strauss joined in 2009. A three-year study of Indian farms found those adopting the new techniques reduced water and pesticide use by an average of 32 percent, the initiative says. The profit was 20 percent higher than that of a control group using traditional methods. India has tens of thousands of small cotton farmers.

Kailash Himmitrao Mahalle grows cotton in Shelu, India. On one side of his six-hectare farm, which was used to compare methods, the cotton plants are about 30 centimeters taller and bear more flowers than the ones on the other side. The lush field has a drip irrigation system that was installed with advice from the Better Cotton Initiative. Mr. Mahalle said his water use is down by about 70 percent.

The resulting crop from the new methods of farming is now referred to by Levi Strauss and the initiative as “better cotton.” Levi Strauss says that about 5 percent of the cotton used in the two million pairs of jeans the company shipped to stores this fall was grown with the sustainable method. The company wants that to rise to 20 percent by 2015.

Ikea hopes to be using “better cotton” exclusively by 2015. Adidas has said it will do the same by 2018.

Clean Tech Investors Prefer Problem Solvers

By CLAIRE CAIN MILLER

SAN FRANCISCO — Shelby Clark, the founder of a start-up called RelayRides, was recently honored as a rising star in clean technology. But as he took the stage alongside companies creating new kinds of energy, he felt out of place.

RelayRides is a car-sharing start-up. Since when did encouraging people to drive carbon-spewing cars qualify as clean tech?

In Silicon Valley, many investors are shying away from the high risks and costs of creating new forms of energy. Instead, they are doing what they do best: using software to cope with problems, in this case caused by climate change.

RelayRides, which lets car owners rent their vehicles to others, takes cars off the road because people can avoid owning them and the service’s users drive less than other people, Mr. Clark said.

“You can have a major impact on an individual’s carbon footprint by re-creating business models or behaviors without inventing a new energy,” he said.

This strategy has been percolating among some in Silicon Valley for a couple of years. But for many investors, doubts about alternative energy were confirmed in September when Solyndra, which made solar panel arrays and had raised more than \$1 billion in venture capital and \$528 million in government loans, filed for bankruptcy protection.

“A lot of people see it as a symbol of what they do not like in green investments or government involvement in tech,” said Nathan E. Hultman, director of the environmental policy program at the University of Maryland.

Green tech investing had been declining even before Solyndra. Investors had grown wary of spending the money needed to pay for research and build factories to produce energy. But the Solyndra bankruptcy further spooked venture capitalists.

“Capital-intensive companies that take long cycles to create things, whether they’re solar voltaic cells or giant wind turbines, are not very scalable, so those are really tough businesses to imagine as venture-funded opportunities,” said Bill Maris, managing partner at Google Ventures.

His firm has invested in RelayRides and other start-ups that

stretch the definition of clean tech investing. They include the Climate Corporation, for extreme weather insurance; Clean Power Finance, which runs an online marketplace for financing residential solar panels; and Transphorm, which makes tools that reduce power loss when electricity is converted in data centers or industrial motors.

At first glance, companies like the Climate Corporation, which insures rural farmers, seem to have nothing to do with either technology or climate change. But David Friedberg, a Google veteran who is the company’s co-founder and chief executive, said its goal was “to help all the world’s business adapt to and understand climate change.”

For farmers, that means analyzing “crazy big data,” Mr. Friedberg said, from weather stations, government data feeds, soil moisture models and Doppler radar images. The Climate Corporation simulates the weather for the next two years and runs a Web site where farmers can

Software helps farmers with weather insurance.

enter their location and crop, buy insurance coverage and automatically receive payments for bad weather.

Some venture capitalists are still betting on big alternative energy experiments.

Khosla Ventures announced in October that it had raised a \$1.05 billion fund. About 60 percent will go into clean tech and the rest into Internet and mobile start-ups.

“We’re not changing strategy,” said Vinod Khosla, the firm’s founder. “We’re sticking to our guns.”

The firm has invested in companies that make engines and biofuels and one that is trying to turn carbon emissions and seawater into cement. Mr. Khosla said he believed that start-ups that built efficiency software did not do enough to address climate change.

“They do the 5 to 10 percent improvements here and there,” Mr. Khosla said. “What we need is the 100 percent or 400 percent improvements.”

Malaysian Farming Project Transforms Algae Into Biofuel

By SONYA KOLESNIKOV-JESSOP

SINGAPORE — Pahang State in central Malaysia is about to become home to the world’s largest commercial farm project producing microalgae for biofuel.

The farm will start to take shape in the first quarter of 2012, on a 2,020-hectare site near Rompin, in the southern part of Pahang, said Khoo Koay Hock, chief executive of Pahang BioDiesel.

Costing an estimated \$383 million, Malaysian Integrated Algae Valley, as it will be known, will step up output in three phases, reaching full production over a three-year period. Hundreds of open-air freshwater ponds will be constructed covering an area of about 1,400 hectares, with the rest of the land used for infrastructure.

When completed, the farm could produce about 500 kilotons of dry biomass a year, with an oil yield of about 30 percent, equivalent to 150 kilotons of biofuel per year, said Syed Isa Syed Alwi, chief executive of Algaetech International, which is providing the technology for the project. “It is a very small amount of biofuel compared to what the world needs, but it is a start,” Mr. Syed Alwi said.

Microalgae, or phytoplankton, are tiny plantlike organisms. They feed by direct absorption of sunlight and carbon dioxide, without roots or leaves. Hundreds of thousands of freshwater and marine species exist, forming the basis for most food chains, and many contain a significant volume of high-quality oil that can be converted into biofuel.

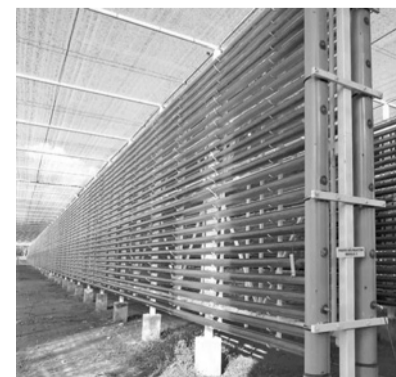
Useful byproducts include carotenes, antioxidants, proteins and starch, which can be used by the chemical and food industries as raw material for numerous products.

Dan Simon, chief executive of Heliae, an American algae technology development company, said the industry’s two challenges were to reduce capital expenditures and increase production rates, to make it attractive to investors. “The capital expenditures for ponds are attractive, but the low growth numbers and high contamination rates in these simple open systems have stalled investors from seeing enough value to invest,” he said.

Heliae has been testing a low-cost, closed-system algae facility in Arizona for the past year using solar energy,

nonpotable water and carbon dioxide to produce algae-based products ranging from jet fuel to animal feed. It has signed a memorandum of understanding with SkyNRG, a Dutch company set up in 2009 by investors including Air France-KLM group to promote the development of sustainable aviation fuels, to produce an algae-based jet fuel.

Algaetech has identified several indigenous Malaysian microalgae species that can yield about 30 percent oil, and one strain has been found that could yield 60 percent. Mr. Khoo said the algae will feed on carbon dioxide from nearby industrial facilities. The farm will integrate into its cultivation system the waste water, rich in organic effluents, from 11 palm oil mills near the site.



COURTESY OF ALGAETECH INTERNATIONAL

Processed microalgae yields high-quality oil and other useful products like starch.

“This water is very dirty and hard to clean, but for algae it’s a very good fertilizer,” Mr. Syed Alwi said. “Algae can actually help clean the environment of the palm oil plantations.”