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GREEN INC. COLUMN

Balancing Energy Needs and Material Hazards

By JAMES KANTER

BRUSSELS — First Solar should have a bright future doing business in the European Union.

Based in Tempe, Arizona, the company is among the top solar manufacturers in the world. Most of the company's annual sales of \$1.2 billion already are in Europe, where nations have committed to generating a fifth of their power from renewable sources by 2020.

The rapid growth of First Solar is the result of its focus on ultrathin photovoltaic panels that are more versatile than conventional crystalline models. The technology has helped displace the view that solar power could never become an affordable or realistic way of lowering emissions on a large scale.

But these new panels contain a compound of cadmium, an extremely toxic metal already banned from most products in Europe. The compound is made with the element tellurium to create cadmium telluride, which enables the conversion of light to electricity.

Companies like Calyxo, a unit of Q-Cells in Germany, use similar technologies. General Electric, the U.S. conglomerate, recently announced plans to market cadmium telluride panels.

But First Solar is the world's largest maker of such panels, and they are its sole product, and that makes the company more vulnerable than many of its competitors to a new effort to tighten up laws on hazardous chemicals in Europe.

Concerns for First Solar deepened when the Swedish government, which holds the rotating E.U. presidency, proposed during the summer that an updated version of the law on hazardous substances should include all electronic products.

The goal of the Swedes was to avoid loopholes as a wide variety of new products reach the market. But it is of particular concern for the makers of solar panels, which were not previously covered by the law, known as the directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

E.U. governments and the European Parliament still must agree on whether to broaden the scope of the law. But if they do, the ultrathin panels made by First Solar could be subject to heightened scrutiny. They could even face the prospect of a ban sometime in the future.

The panels raise new kinds of questions about what constitutes sustainable development and the issue highlights some of the environmental trade-offs faced by governments seeking a future based on low-carbon,

clean energy technologies.

Another prominent example is compact fluorescent light bulbs.

These bulbs sip power and hugely improve the energy efficiency of homes and offices. But they contain mercury, a metal that is dangerous in high quantities, and opponents and health campaigners stress the importance of preventing the toxic metal from leaking into the environment.

The bulbs already have a form of exemption from the E.U. law. But that precedent — because the exemption may be only temporary — is something that executives from First Solar want to avoid.

Instead, executives at First Solar would like a permanent exclusion for solar products written into the law.

The executives say that the prospect of a ban at any time in the future risks turning off buyers who invest in such systems for periods of as long as 25 years and that a ban could cost thousands of manufacturing jobs.

The European Photovoltaic Industry Association, an industry organization, has aired similar concerns. Last week, it warned that a “young, growing industry” still striving “to reach competitiveness” should not be subject to the hazardous waste rules.

Underlining the risks faced by First Solar, a committee in the European Parliament is expected in coming days to propose a way of keeping pressure on solar companies to come up with alternatives to cadmium telluride.

People familiar with the contents of the report, who requested anonymity because the details were not yet public, said it would propose that solar companies using cadmium be allowed to apply for four-year, renewable grace periods.

The legislative process still is at a preliminary stage. Countries like France and Italy with growing solar industries are likely to encourage the Parliament and other governments to give First Solar a permanent exclusion.

First Solar already employs about 700 people in Europe out of more than 4,000 globally. The company’s second-largest factory opened in Germany in 2007, and the company is planning to build another factory in France.

Executives at First Solar also pointed to a report commissioned by the French government concluding that “risks are negligible” to human health during normal operation of the panels. The executives said the company had set up a voluntary system that would be funded in advance to recycle and reuse 95 percent of the cadmium and tellurium in its modules sold worldwide.

“We see no intention by legislators to include solar panels in revised legislation on hazardous substances,” said Brandon Mitchener, a spokesman for First Solar in Europe. “We believe that our thin film panels are one of the best ways to get Europe to hit its renewable goals.”

