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In early June, the German company Q-Cells formally announced plans to invest about US$3.5 billion in a new solar-cell manufacturing plant in Mexicali, Baja California state. The facility is expected to create thousands of direct and indirect jobs in Baja California. But some local experts suggest that Baja California lacks a sufficient number of engineers and other skilled workers required for the plant. This means that Q-Cells would have to recruit skilled workers from other parts of Mexico or from foreign countries. This situation illustrates a recent trend in Mexico, whereby many workers with specialized skills are emigrating in search of more lucrative opportunities in the US and other countries.

US market to be targeted initially

The decision of Q-Cells, the world's leading manufacturer of solar panels, to invest in Mexico is significant because of the strong economic impact the plant could have on Baja California and the surrounding states. Company officials estimate that the plant, which will be constructed in the Frontera del Silicio industrial park in Mexicali, could bring about 4,500 direct jobs to the state, along with creating another 13,000 indirect jobs in the region.

The plant, the first investment for the German company in the Americas, aims to initially supply the US market, but long-term plans include sales in Mexico and elsewhere in Latin America. Demand for solar panels and other related equipment is expected to grow significantly in the US in the near term, given the emphasis on energy independence in the US electoral campaigns. Both Republican John McCain and Democrat Barack Obama have talked about promoting alternative energy sources, including solar power.

The company expects to begin constructing the plant in the second half of 2008. In the first phase of the project, scheduled for completion sometime in 2009, the company plans to manufacture thin-film cells, which employ much cheaper materials than traditional solar panels. These panels would be targeted primarily to industrial and commercial users in the US. "We can bring costs right down because of the low material input. That will allow us to be very competitive with prices consumers pay for electricity from the grid," company spokespersons said.

Company officials said foreign-exchange considerations also played a role in the company's decision to locate the plant in Mexico. "We selected Mexico because our company wants to have greater access to the growth markets in the US," said Q-Cells vice president Leo van der Holst. "But we also wanted coverage against currency fluctuations." Mexico, Latin America future markets Q-Cells expects to produce higher-powered panels by 2010, most of which would be sold in the Mexican market and in other Latin American countries. "We are convinced that Mexico will become a very important market for our products," said van der Holst.
President Felipe Calderon, in an interview with La Cronica de Baja California, also touted the potential to develop solar energy in Mexico. "According to several maps of solar radiation, Mexico has one of the highest potentials for developing this type of energy, especially for domestic consumption," Calderon told the newspaper. The government's efforts to attract Q-Cells to construct a plant in Mexicali are also part of Calderon's plan to promote more sophisticated types of investment to Mexico. Q-Cells is a highly profitable and financially successful company, with growth rates of 65% annually. In the first quarter of 2008, the company earned US$430 million, according to a recent report from the Frankfurt Stock Exchange.

In recent years, the Mexican government has placed a strong emphasis on the aviation industry, which has established operations in Queretaro state (see SourceMex, 2007-06-06). Investments in the aviation and automotive sectors reached US$6.6 billion in 2007, accounting for one-fourth of Mexico's total foreign direct investment (FDI) in 2007, government statistics indicate.

Lack of high-skilled and specialized workers a concern

Some experts worry that Baja California does not have sufficient numbers of skilled personnel to work at companies like Q-Cells. "The public and private universities [in Baja California] need to train more engineers," Marco Antonio Carrillo, deputy academic director at CETYS Universidad in Mexicali, said at a business forum.

But other academics said local universities are trying to remedy this problem by establishing special programs to train more technically oriented students. For example, the Universidad Autonoma de Baja California (UABC) has established a partnership with California-based Silicon Border Science Park to develop a special program at the university. UABC rector Gabriel Estrella Valenzuela noted that the university already has more than 7,500 students in its engineering program.

The concern about a lack of skilled workers for the Q-Cells plant illustrates a problem that Mexico has faced in recent years. In an interview earlier this year, researchers at Universidad Nacional Autonoma de Mexico (UNAM) raised concerns about the brain drain that Mexico is experiencing. The lack of specialized research programs at Mexican universities has prompted many Mexicans to enroll in science, engineering, and technical programs at US and European institutions.

Almost 80% of the Mexicans who obtain a post-graduate degree abroad, often with scholarships provided by the Consejo Nacional de Ciencia y Tecnologia (CONACYT), do not return to work in Mexico, said UNAM economic researcher Heriberta Castanos Rodriguez. The situation has had economic repercussions for the country. Mexico has lost more than 2,000 scientists since CONACYT initiated its scholarship program in 1971, at a cost if about 1.1 billion pesos (US$105.3 million).

UNAM professor emeritus Rene Drucker said the problem is related to a lack of economic opportunities in Mexico. "Our country currently devotes 0.35% of our GDP to research," said Drucker. "In the next six years, that is expected to increase to only 1%." [Note: Peso-dollar conversions in this article are based on the Interbank rate in effect on June 11, 2008, reported at 10.44 pesos per US$1.00]