SolarWorld USA

SolarWorld USA, a subsidiary of Germany’s SolarWorld AG, is the largest US-based manufacturer of solar products. In the face of intense Chinese competition, SolarWorld USA’s revenue has declined and margins are in free fall. How can it survive?

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Gordon Brinser, president of SolarWorld USA (a subsidiary of Germany’s SolarWorld AG), reviewed the quarterly financial statements from his office in Hillsboro, Oregon. It was a bright, sunny afternoon in June 2011. Although the clear sunny day was perfect for the production of electricity from the solar panels his company produced, the financial reports provided a stormy forecast. Brinser had just come back to his office from the quarterly business meeting with his top management team, and the results were troubling. The sales forecasts showed declining sales, deteriorating gross margin, and a rapid reduction in market share. He desperately needed to find a way to reverse this downward trend in sales volume and to increase sales margins in the face of serious market competition.

Particularly troubling was the pressure from Chinese solar panel makers. These low-cost suppliers came from relative obscurity and were now the dominant players globally. Thousands of US jobs, hundreds of millions of dollars, and the future of SolarWorld were at stake. As Brinser intently studied the financial documents, he recounted how rapidly the situation had changed in the solar panel industry.

Just three short years before, riding the waves of political support, recent financial success, and anticipating bright growth prospects in North America, SolarWorld had dramatically increased its US investment. The future had seemed bright due to the dramatic growth in the sales forecasts and SolarWorld’s leading market share position. With the sun setting, knowing that he had to face shareholders and reporters with the quarterly financial report tomorrow, Brinser began to write down the strategic options and plans for SolarWorld. In the back of his mind, he was wondering: “How can SolarWorld survive in a world of intense Chinese competition?”

SolarWorld History

From the austere beginnings as Solar Technology International in 1975, SolarWorld AG emerged in 1998 to enter Germany’s rapidly increasing solar market. The dramatic growth of the German solar industry was driven by the German government through wide-ranging

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1 This case was written by David Darling and Fabia Bourda (University of Texas at Dallas EMBA 2012) under the supervision of Professor Mike Peng. The purpose of the case is to serve as a basis for class discussion rather than to illustrate the effective or ineffective handling of an administrative situation. The views expressed are those of the authors (in their private capacity as EMBA students) and do not necessarily reflect those of the individuals and organizations mentioned. © David Darling and Fabia Bourda. Reprinted with permission.
regulations and initiatives like the “100,000 Roofs Initiative.” The programs included regulated wholesale and retail pricing of electricity and significant incentives for manufacturers and large-scale solar power production facility operators.

On this foundation, SolarWorld built a business whose principal activities include research, development, production, and marketing of products for solar power generation as well as the installation of complete solar power stations. The company is fully vertically integrated, combining all aspects of the solar product cycle from the raw material silicon to turnkey solar power plants, as well as the development of proprietary solar systems and power solutions. Controlling all the stages of the product design and production cycle allows the company to uphold high quality and environmental standards throughout the process.

The SolarWorld group of companies operates in Germany, Europe, Asia, the US, and other countries. It is also involved in the planning, construction, and operation of wind energy and solar energy parks as well as other power stations based on renewable energies.

In 2008, SolarWorld purchased a 480,000-square-foot production facility in Hillsboro, Oregon, and added 1,000 employees, making it the largest US-based solar manufacturer as well as one of the largest in the world. Just like the expansion in Germany a decade earlier, this US expansion was also largely driven and supported by government initiatives. These included regulations, tax incentives, low-interest loans, and multiple other federal programs. The Obama administration’s green initiatives and “Buy American” programs were consistent with the desire to expand the US demand for solar products and to create US jobs.

Corporate Financial Performance

SolarWorld is struggling with serious financial problems. Shown in Exhibit 1, revenue has decreased by 21% between 2Q2010 and 2Q2011. In addition, the declining gross margin due to sales price erosion has resulted in a 66% decrease in consolidated net income. Investors and creditors rely heavily on the quarterly performance reports in making their investment decisions. The company’s stock price, also shown in Exhibit 1, has been taking a beating based upon earnings rumors. These new financial results, to be released tomorrow, will further erode the stock price. In addition to these pressures, many of the subsidized loans and tax incentives are based upon revenue performance targets and sustained employment commitments for the US employees. Therefore, cost cutting through US production or job reductions is not an option.

Solar Technology

Solar energy is a 100% renewable form of energy that is generated by radiant sunlight. It is a secondary energy source categorized alongside wind, ocean wave power, hydroelectricity, and biomass. Only a very small amount of total electrical power in the world is generated using solar energy.

Solar technologies are broadly characterized as either passive solar or active solar depending on the way they capture, convert, and distribute the solar energy. Active solar technology includes the use of photovoltaic panels and is the primary product of SolarWorld. The core objective of solar panels is to efficiently capture the photons of sunlight and convert them into useable electrical power.

US Solar Power Utilization

The United States has multiple sources of fuel energy for the production of electricity. Coal is the predominant fuel used, and the US has large coal reserves. Coal is followed by nuclear power and then natural gas. The average retail price paid for electricity in the US in 2010 was $0.1046 per kilowatt-hour. The reasonable price for electricity in the US provides very little incentive for producers or consumers to quickly move to alternative forms of energy.

Renewable energy makes up 8% of the total power production and consumption in the US with photovoltaic generation supplying 1% of the total renewable energy. The primary reason for the small percentage of utilization is the high comparative cost of solar power and the capital investment required. Actual performance and financial data proved difficult to obtain from public sources, so as part of this case research, a quotation for a roof-mounted photovoltaic system was
sourced from a national provider of solar energy solutions. The system included 224 240-watt solar modules and a non-penetrating ballasted roof mounting structure. The DC power produced would be fed through one 50kW, 480-volt inverter and connected to the main building power. Solar performance as well as federal and state utility tax incentive information was also provided with the quotation. The results are provided...
SolarWorld Products

In addition to polysilicon and other industrial products in support of photovoltaic technology manufacturing for power generation, SolarWorld makes Sunmodule™ and Sunkits® solar products for the US consumer market.

Sunmodule™ solar panels are designed and manufactured to the highest standards of quality, guaranteed performance, and durability. Sunkits® are custom-designed complete solar electric systems. A new and innovative solar carport is also offered. These products are supported by a 25-year linear electrical output performance guarantee and 10-year product workmanship warranty. The mono-crystalline and poly-crystalline products from SolarWorld come in a variety of sizes, making them suitable for all applications—from a residential rooftop to a large-scale facility.

International Market Conditions

China is currently the largest solar energy-related trading partner with the United States. At this time, the US maintains a net positive trade balance with China. The US provides capital equipment and raw materials, and China sells back the completed solar modules. The dynamics are rapidly changing, however, as China begins to flex its economic muscle. Chinese companies have led the way toward reducing the price of solar modules by nearly 50% in 2009, and the economic battle is raging.

Much like the US government, the Chinese government sees a dramatic opportunity in the growth of solar energy products. However, China has a significant institutional advantage: It has tens of billions of dollars to invest. In 2010 alone, the Chinese Development Bank provided $30 billion in low-cost loans to the top five solar module producers. The magnitude of this capital infusion has some people in the solar industry calling it “predatory financing.”

The stage is currently being set for a charge by US solar companies against Chinese firms for the dumping of solar modules on the US and world markets. Chinese firms are often the focus of US antidumping accusations, but these accusations also occur between many countries. The typical claim is that the foreign company is using an unfair advantage or government
EXHIBIT 3  US Solar Imports and Exports

<table>
<thead>
<tr>
<th>Imports from Selected Country to the United States (in millions of dollars)</th>
<th>Exports from the United States to Selected Country (in millions of dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China: 1,431</td>
<td>China: 1,671–1,963</td>
</tr>
<tr>
<td>Mexico: 480</td>
<td>Germany: 865</td>
</tr>
<tr>
<td>Japan: 322</td>
<td>Japan: 609</td>
</tr>
<tr>
<td>Taiwan: 264</td>
<td>Norway: 258</td>
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<td>Canada: 223</td>
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<td>Italy: 126</td>
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<tr>
<td>Canada: 22</td>
<td>France: 74</td>
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<tr>
<td>Korea: 20</td>
<td>Spain: 23</td>
</tr>
<tr>
<td>Italy: 12</td>
<td>All Other: 912</td>
</tr>
<tr>
<td>All Other: 194</td>
<td>undisclosed*: 561–853</td>
</tr>
<tr>
<td>Undisclosed*: 695</td>
<td></td>
</tr>
</tbody>
</table>

*Some estimates provided as a range due to corporate confidentiality policies.

Source: GTM Research.

funding to engage in dumping in order to benefit in the foreign market and drive out the domestic competition.

**SolarWorld’s Resources and Capabilities**

SolarWorld has several significant resources that are available to help combat their sagging performance. It is a fully vertically integrated provider, which creates a long and resilient value chain. This can be demonstrated using value (V), rarity (R), imitability (I), and organization (O)—or the VRIO framework.

Multiple opportunities for additional focus and revenue generation are available. For example, new technology development and fully integrated solutions are opportunities to enhance value. Value can also be exploited through bundling of products and services, such as SolarWorld’s dual-purpose solar carport.

As solar modules are becoming commoditized, SolarWorld continues to have other strong product segments that provide advantages in the area of rarity including polysilicon production. Polysilicon is a very specialized product and requires considerable time and capital to establish a production facility.

A primary area of concern is imitability. The Chinese are close on the heels of SolarWorld, and China has demonstrated the financial capability and the staying power to keep driving the industry.

Finally, organizational structure and experienced management resources are also tremendous assets to SolarWorld due to its long history in the solar industry and the experience gained from operations through multiple business cycles.

**Institutional Considerations**

The dominant threat posed by the influx of Chinese solar modules is best evaluated from the institution-based view. Institutions played a key role in the original founding of SolarWorld and its early success in Germany, as well as the expansion and success in the US from 2008 to present.

The entire US solar power industry is largely funded and propelled by federal and state support and receives enthusiastic public support from multiple
constituencies. These provide an excellent strategic advantage for SolarWorld. The institutional framework in the US is a dominant market force. In a recent research study on the American Jobs Creation Act of 2004, government action provided companies that lobbied for these laws a return of $220 for every $1 invested in lobbying for its passage. These same forces were at work in the Economic Recovery Bill of 2009 in which $100 billion was invested in clean energy and environmental projects.

Lastly, SolarWorld has an advantage due to the US antidumping laws and the sentiment among constituents and lawmakers that favor US-produced solar products.

**Business Decision**

Over the previous three years, the US government during the Obama presidency has provided an excellent opportunity for green energy providers. With billions of tax dollars invested in green energy initiatives in the past three years, the US solar power industry received a huge upward boost. These funds were invested in research, development, and federally guaranteed low-interest business loans. They provided federal funding for procuring renewable energy sources including solar panels for use in state and federal properties.

During this same time period of dramatic federal investment, however, another dramatic change was occurring. According to SustainableBusiness.com, the US global market share of solar modules had decreased from 50% to about 6%. Even more surprising, the Chinese had captured more than 50% of the global market, and the importation of Chinese panels into the US grew by more than 300%.

In the face of the challenging market conditions and intense market competition particularly from Chinese manufacturers, SolarWorld is determined to create a strategy to adapt. As Brinser reviewed his notes, he began to formulate a strategy based upon the firm’s resources and capabilities as he wondered: “Which strategy should I pursue, and is it possible for SolarWorld to survive?”

**CASE DISCUSSION QUESTIONS**

1. How would you characterize the competition in this industry?

2. What resources and capabilities underpin SolarWorld's competitive advantage? Why is such advantage eroding?

3. From an institution-based view, why do antidumping tariffs emerge as a weapon of choice?

4. What is Brinser going to tell shareholders and reporters tomorrow?

5. Predict the likely response from Chinese rivals after SolarWorld files antidumping charges against them.