



Midterm Case

Canadian Solar

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PROBLEM STATEMENT

Canadian Solar has been successfully growing since its foundation in 2001. Its success was compromised during 2008 downturn in the economy, which led to the net loss of \$9.4 million for the company. The weakening demand and rapidly declining silicon prices have resulted in major inventory write-offs, high interest rates on short-term loan facilities and an increase in the allowance for doubtful accounts. Canadian Solar already had a few well-established international competitors in the solar photovoltaic (PV) industry; nonetheless, more competitors could easily enter the market thanks to a significant price drop of silicon. Canadian Solar's stock price was trading at a large range from \$3.00 to \$19.91 during the last year; the last recorded stock price was \$16.74 on September 25th 2009, which might indicate that it is overvalued. Canadian Solar is looking for methods to foresee changes in the market as well as to adapt strategically to these changes, so that they can maintain their status of top solar module producer in the world. Therefore, an analysis will be completed to determine the best methods to ensure that Canadian Solar remains competitive globally in the solar PV industry.

EXTERNAL ENVIRONMENT ANALYSIS

The main micro-environmental factors that influence PV solar industry are economic, political/legal and technological (refer to Appendix 1).

Segments	Trends
<i>Economic</i>	<ul style="list-style-type: none"> • Economic recession of 2008 influenced the solar power demand and the overall industry (p.277). • Shortages of silicon made the prices augment and once the industry realizes it is not a precious material, the prices of silicon dropped drastically (p.277 and p.287).
<i>Political/legal</i>	<ul style="list-style-type: none"> • Government positively influenced solar PV module installations through incentive programs, renewable support schemes, subsidies, stimulus programs or Feed-in Tariff Programs (at least 14 countries mentioned on p.289). • Spanish government has put a cap to control the growth in 2009 and 2010 (p.289). • Japan wanted solar power installed in 70% of new homes (p.289)
<i>Technological</i>	<ul style="list-style-type: none"> • Investments in thin-film technology¹ claimed to have the highest efficiency of any solar PV cell in the world (p.281). • Companies also compete based on technology (p.280). • Investments in research and development and appropriate technologies are required to develop smaller, yet more efficient poly- and monocrystalline PV cells.

The variety of favourable government assistance programs have led to a large growth in solar power projects worldwide. The industry life cycle is **growth**. There is no one among PV producers that grasps a market share larger than 10%²; hence, the industry is considerably **fragmented**. The demand for electricity will continue to increase thanks to subsidized renewable-power incentive programs, growing population and consumer's income expansion. Consequently, higher demand for electricity will result in a higher demand for solar power.

¹ Thin-film technology is called HIT for Heterojunction with Intrinsic Thin-layer.

² Exhibit 5, p.292. *Canadian Solar*. The University of Western Ontario.

According to the case (p.285), the PV industry's size is **small** with **an increasing trend** thanks to a greater public's interest in clean energy. Porter's five forces analysis has to be conducted in order to evaluate photovoltaic industry competitors and potential profits (refer to Appendix 2):

- Intensity of rivalry among competitors: ***High(and increasing)***
- Threat of substitutes: ***High***
- Threat of new entrants: ***Medium***
- Bargaining power of suppliers: ***Low to Medium***
- Bargaining power of buyers: ***High***

Main Opportunities:

- Other government incentive programs may lead to additional opportunities in the solar energy.
- Research and development in this industry may create more efficient green products (either based on silicon or on thin-film technology).
- Make strategic alliances with other companies.

Main Threats:

- The main risks of the industry include a rapid demand rebound, a minimal average sales price decline, a weakening of U.S. dollar, more favourable government policies.
- Thin-film technology might take over the market.
- Silicon producers may move downstream to capture more value.

KEY SUCCESS FACTORS

- Economies of scale: Higher capacity utilization will help achieve lower unit costs, hence, lower unit prices.
- Maintain good relationship with your customers: “The top five German customers accounted for just over half of the company’s corporate sales.” The ability to keep great relationship with your customers and to negotiate long-term contracts will definitely secure profits for the company.
- Ability to manage finances and debts: Interest rates on loans have a major impact on company’s profitability as well as management of the operating cash flows.
- Access to financing: Canadian Solar turned to venture capital funding in 2005. After the recession, the company might also need extra cash to invest in the research and development.

INTERNAL ORGANIZATION ANALYSIS

Strengths:

- Inverted Vertical integration that allows more flexibility in short-term orders.
- Represents a positively associated Canadian image.
- Low cost production combined with unique Canadian design.
- One of the first companies to recycle silicon.
- High product performance warranties (they were normally 25 years).
- Complete system package options.

Weaknesses:

- Lack of differentiation (Canadian Solar only has three products).
- Lack of investments in innovation and technology.

VALUE CHAIN ANALYSIS

Value chain is a template that firms use to analyze their cost position and to identify the multiple means that can be used to facilitate implementation of a chosen business-level strategy³. Canadian Solar's business-level strategy is cost leadership in the global market, analysis of the primary and support activities will allow us to identify the ones that create value and the ones that don't towards cost leadership strategy. Creating value through value chain activities requires efficient suppliers of raw materials with low costs, inverted vertically integrated operations and developing strong relationships with buyers (refer to Appendix 3).

Conclusion:

Canadian Solar, if it were to remain with status quo, would not be able to survive the competition, given certain conditions. To have a sustainable competitive advantage a company needs to create more diversified products and services with superior quality that are rare, valuable and difficult to imitate. There are methods to ensure that the company remains competitive and secures its brand image globally considering the strengths and opportunities of Canadian Solar. Internal analysis indicates Canadian Solar is a well-positioned PV solar producer that has a lot of growth potential in this global market if the management can readapt the business according to the market changes.

BUSINESS-LEVEL STRATEGY

Canadian Solar's management believed that they were unique because they combined elements of Western management and engineering while producing at low costs in Chinese factories. Cost leadership strategy is shared among many major players in the global PV market due to poor

³ J. Alcacer, 2006. Location choices across the value chain: How activity and capability influence co-location, *Management Science*, 52: 1457-1471.

product differentiation and easy accessible substitutes at a cheaper price. While Canadian Solar compete based on price, other companies compete on technological differentiation (i.e. First Solar was capable of creating a semi-conductor that delivers a lower price per watt), easy installations (i.e. SunPower). Some Japanese companies offer exclusive rights to large-scale clients or a completely different technology, like thin-film. These companies have implemented a differentiation strategy or an integrated one. Hybrid (integrated) business-level strategy should be implemented by Canadian Solar as well because of technological advances and growing global competition.

CORPORATE-LEVEL STRATEGY

Corporate-level strategy of Canadian Solar is poorly specified, since company competes in the same global market with the same products. Value-creating diversification can be achieved through economies of scope. Diversifying strategic alliances and synergistic alliances will permit Canadian Solar enter new markets and compete among different businesses.

ALTERNATIVES

Alternative 1: Keep cost leadership strategy. Achieve higher economies of scale in order to reduce high costs of goods sold (see financial statements). Continue to recycle silicon to save more money. Implement a different purchasing policy, so that buyers prepay 60 to 70% of the order instead of 20 to 30%, which will help to reduce allowances for doubtful accounts. Refinance short-term facility loan to decrease interest expenses.

Alternative 2: Implement integrated cost leadership/differentiation strategy. Invest in research and development, technology to create other solar products with superior quality. Maintain high quality standards and long warranty policies. Diversify your portfolio of products; therefore,

focus on economies of scope as well. Invest more capital in marketing in order to create brand awareness worldwide and to stimulate sales. Identify additional product or service needs of your largest clients, which will allow maximizing company's profits. Follow government policies closely.

Alternative 3: Implement a differentiation strategy. Focus just on quality in the global market or invest in a completely different product like thin-film technology, which can potentially win over silicon based solar energy.

Conclusion:

Based on a high level of competition, the best alternative will be the second one, even though it might entail higher risks. Canadian Solar can achieve the competitive advantage by incorporating the integrated strategy as a critical change in their international strategy. Building a well-accepted brand through diversification of high quality products at competitive prices will result in a gain of a larger market share in this industry. This option is not as expensive or as risky as completely changing to a new strategy, like differentiation.

Appendix 1. Complete external environment analysis.

Segments	Trends
<i>Economic</i>	<ul style="list-style-type: none"> • Economic recession of 2008 influenced the solar power demand and the overall industry (p.277). • Shortages of silicon made the prices augment and once the industry realizes it is not a precious material, the prices of silicon dropped drastically (p.277 and p.287).
<i>Political/legal</i>	<ul style="list-style-type: none"> • Government positively influenced solar PV module installations through incentive programs, renewable support schemes, subsidies, stimulus programs and Feed-in Tariff Programs. (in at least 14 countries mentioned in the case p.289) • An increasing number of government incentive programs are to encourage the adoption of solar PV technology (p.275). • Renewable Energy Law in Germany promise low rates from \$0.46 to \$0.60 per kWh (p.278) • Spanish government has put a cap to control the growth in 2009 and 2010 (p.289) • Japan wanted solar power installed in 70% of new homes (p.289)
<i>Socio-cultural</i>	<ul style="list-style-type: none"> • High public awareness (p.278) has been created about clean “solar” energy. • Government supports the renewable sources of energy (p.278).
<i>Technological</i>	<ul style="list-style-type: none"> • Investments in thin-film technology, called HIT for Heterojunction with Intrinsic Thin-layer, claimed to have the highest efficiency of any solar PV cell in the world (p.281). • Companies compete based on technology (p.280). • Investments in research and development and appropriate technologies are required to develop smaller, yet more efficient poly- and monocrystalline PV cells.
<i>Global</i>	<ul style="list-style-type: none"> • There are many countries involved in the development and implementation of the solar PV modules (p.289). • There are hundreds of PV cell and module manufactures (p.280). • Longer warranties of the products are the major concerns in 2008.

Appendix 2. Porter's Five Forces.

Five Forces Model	Facts
<u>Intensity of rivalry among competitors:</u> <i>High(still increasing)</i>	<ul style="list-style-type: none"> • Number of equally balanced global competitors in the industry is increasing due to a rapid decline of silicon prices in 2009, right after the recession. • Since industry is in the growth stages, there is room for more competition to enter. • Relatively low switching costs, since the competitors mainly compete on price. • Favourable government incentive programs all over the world create a more attractive environment for rivalry.
<u>Threat of substitutes:</u> <i>High</i>	<ul style="list-style-type: none"> • Easy access to cheaper non-renewable sources of energy. • Thin-film energy might be a more efficient source of clean energy.
<u>Threat of new entrants:</u> <i>Medium</i>	<ul style="list-style-type: none"> • The number of new entrants is increasing, the competition is growing. • Competitive advantage is based mainly on price; therefore, companies have to achieve economies of scale in order to succeed. [Barriers to enter were considered low (p.280); however, companies cannot achieve economies of scale without larger capital investments. Thus, barriers to enter are moderate]. • Switching costs are relatively low to medium, unless the competition will introduce new products with higher efficiency levels at competitive prices. • Threat of retaliation is low, already established companies don't have any interest of exiting a growing industry.
<u>Bargaining power of suppliers:</u> <i>Low to Medium</i>	<ul style="list-style-type: none"> • Silicon, as a main raw ingredient, is critical for PV cell and module production. On the other hand, it's not considered to be precious anymore. Hence, it should be

	<p>easily accessible.</p> <ul style="list-style-type: none"> • There is a threat of forward integration (Silicon manufactures might also start producing PV cells and modules).
<p><u>Bargaining power of buyers:</u> High</p>	<ul style="list-style-type: none"> • There is a wide variety of buyers of solar power.⁴ • Products are lacking differentiation; therefore, buyers may freely switch from one company to another. • Buyers can negotiate large-scale contracts to get discounts for large volume purchases (exclusive rights). • The top five German customers of Canadian Solar account for over half of the company's corporate sales (keeping great relationship with your buyers is critical for the business's success)

⁴ Buyers are consumer electronics, automotive and industrial product companies that integrate solar cells in their products as well as project developers, utility companies, solar installation companies, distributors, wholesalers, governments, construction companies and building owners (p.280).

Appendix 3. Value Chain Analysis.

