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Regulus Solar Power Inc.: Price Demand Elasticities

Owen Hall, Jr. and David M. Smith wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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At the Regulus Solar Power Inc. (RSP) November 2018 board meeting, the primary focus was on RSP’s revenue challenges. Headquartered in Phoenix, Arizona, RSP was a regional player in the solar panel installation market serving clients throughout the Southwest United States. RSP’s chief executive officer, Barbara Johnson, began the meeting by providing an overview on market and technological trends in solar power. Johnson stated, “We have witnessed strong growth in solar panel installations over the past five years. However, sales flattened out in 2018 due primarily to increased competition and lower solar panel prices.” Robert Smith, the board’s vice chairman, weighed in and asked for a more descriptive overview. At that point, Johnson turned to RSP’s chief financial officer (CFO), Johnny Urbane, and asked him to provide more details.

Urbane reported that revenues for 2018 were projected at US$18 million,[[1]](#footnote-1) which represented only a 2 per cent increase from 2017. Urbane went on to say that the largest U.S. solar installer had recently increased its presence in the Southwest United States and noted that the company had perfected the process for one-day installations, which put them at a competitive advantage. Urbane concluded by saying that RSP had not done enough to embrace the growing environmental movement, which was a major driver of the solar power market. Johnson thanked Urbane for his report and indicated to the board that, among other things, RSP would need to lower its prices to remain competitive in this dynamic market. She also indicated that RSP planned to adopt the one-day installation process, which would reduce costs. As the board meeting concluded, Johnson directed Urbane to develop an action plan and report back at the board’s next meeting.

the SOLAR POWER INDUSTRY

The solar power market was divided into two segments: photovoltaic units (solar panels) and concentrated solar thermal. At that time, the solar panel component was significantly larger than the thermal segment. Solar panels directly transformed sunlight into electrical power. The sun produced enough energy daily to supply 10,000 times current worldwide electrical needs. The global solar-energy industry was expected to reach revenues of $422 billion by 2022 from a baseline of $86 billion in 2015.[[2]](#footnote-2) The growth of this [market](https://www.alliedmarketresearch.com/press-release/solar-energy-market.html) was driven by increased environmental pollution concerns, government incentives, and utility power buyback schemes. The solar panel side of this market also consisted of two segments: solar panel manufacturers and solar panel installers. Some of the major players in solar panel manufacturing were located in China and Canada. The solar installation segment of the market was highly fragmented.[[3]](#footnote-3)

From 2010 to 2018, the total cost for a typical installation had decreased by nearly 70 per cent. This trend made solar power more affordable for both residential and commercial applications. Because schools were in session during daylight hours, both public and private schools offered additional solar installation opportunities. There were approximately 100,000 kindergarten to grade 12 schools throughout the United States but by 2017, only 5,000 schools had been equipped with solar power systems.[[4]](#footnote-4) A typical solar panel for a residential or school application measured 65 by 39 inches (165 by 99 centimetres) and generated, on average, approximately 250 watts.[[5]](#footnote-5)

COMPANY BACKGROUND

RSP, which was founded in 2012 and headquartered in Phoenix, Arizona, offered solar power design and installation services for residential and commercial applications throughout the greater Southwestern United States. While interest in solar power had continued to grow, by 2018 RSP’s revenues had flattened out because the largest solar panel installer in North America had entered RSP’s market area. That company offered a more attractive price point and had developed more efficient installation procedures. RSP averaged one-and-a-half days for a typical installation, while the competitors’ installations were generally completed in a single day.

The basic parameters associated with a typical solar panel installation for a residential application in 2018 included an average cost of $3,000 and an average installation size of 5 kilowatts of power (see Exhibit 1). According to a basic price demand curve, in 2018, a typical installation of 300 units would cost approximately $15,000 per complete installation, whereas 540 units would cost $12,000 per complete installation (see Exhibit 2).

Urbane believed that a 10 per cent drop in price would be more than offset by an increase in demand volume. Urbane also knew that, to remain competitive in this fast-growing market, RSP needed to improve its image with respect to environmental movement groups.

Exhibit 1: Estimated Costs and Savings Components for a Typical Solar Panel Installation (US$)

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| --- | --- |
| **Factor** | **Estimate** |
| Typical power cost from utility | $0.15 per KWh |
| Average installed cost | $3,000 per KW |
| Typical residential demand | 1,000 KWh per month |
| Annual maintenance | $200 |
| Government tax credit | 30% |
| Utility power buyback fee | $15 per month |
| Average annual peak solar day (Southwest) | 6.5 hours |
| Solar panel size | 65 inches x 39 inches |
| Solar panel yield | 0.25 KW |
| Average residential size installation | 5 KW |

Note: KWh = kilowatt-hour, KW = kilowatt; 1 inch = 2.5 centimetres

Source: Based on the author’s calculations from information in the case; “Average Peak Sun Hours by State,” Regony, 2013, accessed April 1, 2019, www.renogy.com/template/files/Average-Peak-Sun-hours-by-State.pdf.

Exhibit 2: Regulus Solar Panel Installation Demand Curve (US$)

Source: Based on the author’s calculations from information in the case.

1. All currency amounts are in U.S. dollars unless otherwise specified. [↑](#footnote-ref-1)
2. Yashwant Singh Sahu, “Solar Energy Market by Technology,” Allied Market Research, 2017, accessed April 1, 2019, www.alliedmarketresearch.com/solar-energy-market. [↑](#footnote-ref-2)
3. “Top Solar Companies,” Solar Power Authority, accessed April 1, 2019, www.solarpowerauthority.com/top-solar-companies. [↑](#footnote-ref-3)
4. “Rise in Solar Schools Unlocks More Local Funding for Education,” Solar Novus Today, November 29, 2017, accessed April 1, 2019, www.solarnovus.com/rise-in-solar-schools-unlocks-more-local-funding-for-education\_N11298.html. [↑](#footnote-ref-4)
5. “Common Sizes of Solar Panels,” Brightstar Solar, accessed April 1, 2019, [http://brightstarsolar.net/common-sizes-of-solar-panels](http://brightstarsolar.net/common-sizes-of-solar-panels/). [↑](#footnote-ref-5)