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| Scotts Miracle-Gro | September 7BUAD 6600 |
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**Objective/Scope**

The purpose of this article is to determine whether staying at the Temecula plant or outsourcing to China is the best option for Scotts Miracle-Gro. A cost analysis will be used to determine which option will give Scotts Miracle-Gro the best opportunity for long-term growth and profit.

**Recommendations**

It has been determined that staying in the United States at the Temecula plant in California will be the best decision for Scotts Miracle-Gro financially and with regards to their image and product quality. However, in order to remain competitive, costs must be lowered to keep profits up to par with where they would be had the company decided to outsource. To do this, it has been recommended that Scotts Miracle-Gro cut production costs by reducing:

1. Energy Costs,
2. Raw Materials Costs, and
3. Labor Costs.

By reducing costs, Scott’s Miracle-Gro can remain competitive while in the United States and avoid outsourcing the production line to China.

**Analysis**

*Risk and Benefits*

Upon reviewing the information regarding the production line of The Spreader, it has been concluded that there are many risks with outsourcing the production line overseas to China which include but are not limited to:

1. Loss of quality
2. Loss of production innovation
3. Forgoing in-mold label capabilities or paying to provide such technology to a contract manufacturer
4. Lead time; Defective batches will not be detected until they arrive from China
5. Slight risk of change in policies regarding duties and taxes on agricultural imports
6. Risk of labor and utility rates increasing faster than expected
7. Currency exchange rate risk; undervalued Yuan

While there are many risks, there are few benefits for outsourcing the production line which include:

1. Cheap labor, and
2. Cheap electricity.

Therefore, it has been determined that since the benefits are outweighed by the risks, staying in the United States should be the first priority.

*Cost Analysis*

An analysis of the costs between manufacturing in Temecula, CA and in China show that Scotts Miracle-Gro can save between $4.6 million and $4.8 million per year by using a contract manufacturer. See Exhibit 1 Cost Analysis. However, the Temecula plant is currently innovating more efficient strategies for obtaining energy and increasing manufacturing productivity. These ongoing improvements will reduce labor and overhead costs per unit while maintaining control of quality and processes in Temecula.

As of 2007, a goal was set in place to automate the Temecula, CA plant as much as possible. This kind of plant improvement would increase production and quality control far above that of a contract manufacturer who has little incentive to invest in such technologies. Increased quality control and productivity leads to lower costs and tighter cash flows.

Maintaining manufacturing in-house also retains the relationship that Scotts Miracle-Gro has between its manufacturing and R&D departments. This relationship allows the company to have collaboration between the two areas of expertise which leads to more cost effective methods of designing products for manufacture.

The savings on Chinese labor and electricity are great, but the additional $8 million in transportation costs and $460,000 in required yearly safety stock inventory carrying costs quickly diminish the benefits. The left over savings do not offset the risks or sacrifices mentioned above. Therefore, Scotts Miracle-Gro should stay in the United States at the Temecula plant and should strive to cut costs to stay competitive, below is a list of ways this can be achieved.

Reducing Production Costs

*Energy Costs*

Through research, it has been determined that the location of the Temecula plant in California would be an ideal location for solar panels technology for the following reasons:

* Temecula gets on average only 6 inches of rain per year (versus the US average of 37 inches per year),
* Temecula gets an average of 0 inches of snow per year (versus the US average of 25 inches per year), and
* On average, Temecula gets over 276sunny days per year.

(http://first-time-home-buyer-s.com/temecula-home-loans.htm)

This technology has the potential to offset from 100% to 1% of the annual electricity usage. A cost analysis has been performed for Scotts Miracle-Gro using the location of Temecula, CA and the estimated usage of 8,000,000 kWh’s of electricity per year.

It has been determined that by implementing solar energy panels to offset 50% of the plants annual electricity usage, this will provide the company with the following incentives (please refer to Exhibit 2 for the full cost analysis):

* An average monthly savings of $559,600,
* An average 25 year savings of $279,660,603.33,
* A ROI of 215.82%,
* Only a 14.58 breakeven point,
* 30% Annual Federal Tax Credit, and
* The peace of mind knowing that the company is helping offset their carbon emission to protect our diminishing environment, also creating a good public image.

*Raw Materials Costs*

In 2006, Scotts Miracle-Gro spent $105.8 million in raw materials, a $28.3 million increase from 2005 (Supply Chain Management, 155). Although this increase in raw material costs is partly attributed to price inflation, Scotts Miracle-Gro can implement new production processes to save in raw material costs.

The most predominant raw material used by Scotts Miracle-Gro products is plastic resin. In order to save on costs, the Temecula plant should find ways to reduce material input without changing the quality of the product. Also, excess plastic resin should be recycled back into the production process. Not only will this decrease the amount of raw materials used and wasted, but it will also help decrease the disposal cost of used plastic. Louis Leitz International GmbH & Company, a producer of office supplies in Germany, was able to save over $296,000 by implementing similar processes in their production of plastic products (Gege, 2010). Another way to save on raw material costs is to establish long-term contracts with plastic injection molding vendors. This will help offset inflation of plastic prices and eliminate unpredictable price changes in the future.

*Labor Costs*

The Temecula plant is currently employing 195 production line workers, which totals to $5,691,000 of labor costs for 2008 with an annual increase rate of 3 percent per worker (Exhibit 1). Recent and projected innovations in the products and processes are leading to a decrease in the number of production workers needed. Also, productivity of American workers is usually higher than Chinese workers. The difference in productivity would most likely require a higher number of Chinese workers needed if the company outsourced rather than staying in the US. Even with a bigger workforce of Chinese workers, the total costs of labor would be substantially smaller but it is imperative to remember that the importance of communication between the workforce and R&D department was a major source of information in the elaboration of improvements of the products and processes. Outsourcing would probably reduce this kind of information sharing. Keeping the production in the Temecula would also save on the training that would be required if the plant was moved overseas.

**Implementation** **Plan**

Reducing Production Costs

*Energy Costs*

Considering the large initial investment of $185,117,480.49, Scotts Miracle-Gro should allow approximately 5 years to save for this project. Once the initial investment has been made, it has been estimated that the breakeven point will be approximately 14.58 years, there will be a 25 year savings of $279,660,603.33, and an ROI of 215.82%.

*Raw Materials Costs*

As discussed in *Raw Materials* of the *Analysis* section, three main ways that the Temecula Plant can save on raw material costs are: 1) decrease material input; 2) recycle excess material; and 3) establish long-term contracts with suppliers. In order to implement these cost-saving solutions, the first step would be to reconfigure the plastic injection molding process so that less plastic resin is used without changing the quality of the product. For example, the Spreaders can have a slightly thinner plastic molding. The next step would be to add a recycling component to the plastic injection molding machine where excess plastic can immediately circulate back into the resin distribution system (Supply Chain Management, 159). The third step would be to contact plastic vendors and negotiate long-term contract agreements. This includes price fixations and contract timelines.

*Labor Costs*

Increasing automation will create a reduced number of workers needed. In order to keep workers morale, the reduction of the workforce will be generated by workers reduced to part-time status and attrition. The reduction, equivalent to 30 full time jobs, would save the company over 1 million dollars starting in 2009, adding up to 12 million for the next ten years.

**Appendix**

*Exhibit 1*

Cost Analysis



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| --- |
| Assumptions:* Company will use the same amount of labor hours in China as it does in Temecula.
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| * Company will use the same amount of kilowatt hours in China as it does in Temecula.
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| * General Admin Costs assumed to be $500,000 per year.
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| * Costs of closing the Temecula plant and setting up a contract manufacturer in China are unknown.
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*Exhibit 2*

Solar Power Calculator for Temecula, CA provided by: http://www.pvwatts.org/

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| --- | --- |
| **System Specifications** |  |
| System Specifications For | Temecula, CA |
| Average Monthly Usage | 8,000,000 kWh/month |
| System Size | 26,445.35 kW |
| Estimated Cost | $185,117,480.49 |
| Post Incentive Cost | $129, 582,236.34 |
| **Incentives** |  |
| Federal Tax Incentives |  |
| Tax Cut | 30% |
| State Incentives |  |
| Property Tax | Exempt |
| **Savings** |  |
| Estimated Cost | $185,117,480.49 |
| Post Incentive Cost | $129,582,236.34 |
| Average Monthly Savings | $559,600.00 |
| 25 Year Savings | $ 27,660,603.33 |
| Average Savings Per Year (25 Years) | $ 1,106,424.13 |
| 25 Year ROI | 215.82% |
| Break Even | 14.58 Years |
| **Carbon Emissions** |  |
| Current Annual Emissions | 144,000,000 Pounds Per Year |
| Offset Of Current Emissions | Plant 360,000 Trees Annually |

*Exhibit 3*

Labor Costs From Reducing Workforce After Productivity and Automation Improvements (In Thousands of $’s)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Year* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | *2016* | *2017* | ***Total*** |
| *Labor Cost For 195 workers*  | $6,591 | $6,788 | $6,992 | $7,202 | $7,418 | $7,640 | $7,869 | $8,106 | $8,349 | $8,599 | **$75,558** |
|  *Labor Cost For 165 workers*  | $5,577 | $5,744 | $5,916 | $6,094 | $6,276 | $6,465 | $6,659 | $6,859 | $7,064 | $7,276 | **$63,934** |

**Citations**

"Scotts Miracle-Gro: The Spreader Sourcing Decision." Supply Chain Management. McGraw-Hill, 2010. 149-59. Print.

"Six Typical Cost Reduction Examples : Raw Materials and Supplies; Water and Waste Water; Energy; Waste Management; Transport and Travel; and Packaging." Costkiller.net : Cost Cutting, Costs Savings, Cost Killing B2B Portal. Web. 07 Sept. 2010. <http://costkiller.net/tribune/best-six-saving-Six-typical-cost-reduction-examples-raw-materials-and-supplies-wate-and-waste-water-energy-waste-managemen-transport-and-travel-and-packaging.htm>.

*The PVWatts Solar Calculator*. N.p., n.d. Web. 7 Sept. 2010. <http://www.pvwatts.org/>.

"Temecula Home Loans ." *First Time Home Buyer*. First-Time-Home-Buyer-s, n.d. Web. 7 Sept. 2010. <http://first-time-home-buyer-s.com/temecula-home-loans.htm>.