



April 2006

## **Pricing Your Products to Survive Rising Energy Costs**

by

Wen-fei Uva, Senior Extension Associate

Dept. of Applied Economics and Management, Cornell University

It should not be a surprise to any of us by now. Due to a variety of factors, natural gas and propane prices have risen considerably over the past few years. Moreover, today's natural gas markets exhibit extreme volatility that makes it difficult for businesses to rely on conventional wisdom and past experience to try to establish an effective energy management strategy. With the high energy needs of many types of agricultural production, producers are becoming increasingly alarmed by the situation. Adding to their concerns, natural gas and electricity prices are linked more closely to one another than ever before.

What is the impact of rising energy costs? Let's look at greenhouse operations, one of the most intensive agricultural production systems, as an example. According to an informal survey of greenhouse growers around New York State, the prices they are paying for natural gas and heating oil have increased 50 percent, and the price of electricity has increased around 20 percent over the last two years. Facing the increase, many greenhouse growers have adopted or are considering adopting one or more energy saving techniques such as reducing air leaks, installing an energy-conserving blanket, double-covering greenhouse walls, increasing space utilization, updating heating and cooling systems for better efficiency, conserving electricity, improving management, and switching to less energy demanding crops. Combining these techniques, growers can sometimes realize energy savings of 20 to 40 percent.

However, faced with higher and more volatile energy prices, is conservation alone enough to maintain profitability and sustain business growth? I would dare to say no. Moreover, although these energy conservation strategies are all good practices to consider for better management, many of the technologies also require additional capital investment. Further, increased energy prices do not just affect heating and electricity costs. They also affect other input costs such as greenhouse plastics, fertilizers, and pots; and commonly, growers have to pay higher delivery surcharges for purchases. Besides, the costs of delivering products to customers are also higher due to higher gasoline prices.

How did these all add up? According to the Cornell Greenhouse Business Summary project, in 2003 the heating cost among New York greenhouse operations averaged around 7 percent of sales, the average cost for electricity was around 2 percent of sales, and the average cost for gas for delivery trucks was around 0.7 percent of sales. Moreover, the average costs for fertilizer, packaging materials and other greenhouse maintenance and repair supplies amounted to another 7 percent of sales. Assume that between 2003 and 2005 the greenhouse operation has not changed any production and management strategies, and during the same period the cost of natural gas and heating oil increased 50 percent, the price of electricity increased 20 percent, and costs for other related inputs and delivery increased 20 percent. Although it is not realistic, to simplify this analysis let's hold the percentages of all other costs stable during the same period. The greenhouse operation would have an increase of production costs of around 30 percent or 5.1 percent of sales. Assuming a greenhouse business has a profit margin of 15 percent in 2003, with these increases its profit margin would decrease 5.1 percent to 9.9 percent.

**Table 1. The Impact of Increased Energy Costs - A Greenhouse Operation Example**

|  | <i>Cost in 2003</i><br>% of sales | <i>Increase between</i><br><i>2003 &amp; 2005</i><br>(%) | <i>Cost in 2005</i><br>% of sales |
|--|-----------------------------------|--|-----------------------------------|
| Heating fuel                                 | 7.0%                              | 50.0%  | 10.5%                             |
| Gas  | 0.7%                              | 15.0%  | 0.8%                              |
| Electricity                                  | 2.0%                              | 20.0%  | 2.4%                              |
| Other affected input costs & fuel surcharges | 7.0%                              | 15.0%  | 8.1%                              |
| <b>Total</b>                                 | <b>16.7%</b>                      |  | <b>21.8%</b>                      |
| <b>Profit Margin</b>                         | <b>15.0%</b>                      |  | <b>9.9%</b>                       |

Along the same line, if a greenhouse business had energy related costs totaled around 10 percent of the sales, an increase between 20 to 50 percent would decrease the profit margin by between 2 to 5 percent. Table 2 demonstrates how increasing energy costs might affect the profit margin.

**Table 2. The Impact of Energy Cost Increases on Profit Margin**

| <i>Energy cost before increases<br/>as % of sales</i> | <i>% of energy cost<br/>increase</i> | <i>Energy cost after increases<br/>as % of sales</i> | <i>Profit margin<br/>decreases</i> |
|---|--------------------------------------|--|------------------------------------|
| 10%   | 20%                                  | 12%  | 2%                                 |
|   | 30%                                  | 13%  | 3%                                 |
|   | 40%                                  | 14%  | 4%                                 |
| 15%   | 20%                                  | 18%  | 3%                                 |
|   | 30%                                  | 20%  | 5%                                 |
|   | 40%                                  | 21%  | 6%                                 |
| 20%   | 20%                                  | 24%  | 4%                                 |
|   | 30%                                  | 26%  | 6%                                 |
|   | 40%                                  | 28%  | 8%                                 |

What do all these have to do with marketing? With the greenhouse example, the business is faced with 5 percent lower profitability, or it needs to market much better and sell 50 percent more products to maintain profitability, but then it would have to produce more products and incur more costs. Of course, growers can adopt management and technology to become more energy efficient and maybe look to government regulation to control the energy prices and volatility issues. One marketing component over which growers have control and which can definitely help the situation is smart pricing. Some growers have said to me that in order to survive, businesses have to have the “guts” to raise prices. Many greenhouse growers have decided to raise the prices of bedding plant flats 10 percent this year. Many horticultural businesses, especially wholesale growers, have to determine their prices the summer before. Therefore, growers have to take their best guesstimate on how much energy expenses might increase in the coming year and adjust their prices accordingly.

We have little control over the energy prices, at least in the short run. If you want to make change happen, it is a lot easier to start with what you have control over. To survive rising energy costs, improving energy management efficiency will be important, but it will be just as

critical to better market your business value and your products, communicate with your customers, know your costs, and raise your prices to maintain profitability.

**Smart Marketing** is a monthly marketing newsletter for extension publication in local newsletters and for placement in local media. It reviews the elements critical to successful marketing in the food and agricultural industry. Articles are written by faculty members in the Department of Applied Economics and Management at Cornell University.

**"Share the gift of communication." Please cite or acknowledge when using this material.**