The Simple Solution to the Coming Energy Crisis

Before you get excited and accuse me of loosing touch with reality, note that I said "simple solution", not "easy solution". I just finished reading the book "The End of Oil" by Paul Roberts. I have always felt that it's fairly obvious there is a finite amount of crude oil and we are using that oil at an ever increasing rate. It doesn't take a genius to conclude that someday we are going to run out of oil. Unfortunately it does take a genius to try to predict when that someday is going to arrive. This book makes a convincing argument supported by research and analysis that we are rapidly approaching the point in time where oil supply will not keep up with demand. The Association for the Study of Peak Oil and Gas (ASPO) predicts that the production peak of oil and gas will occur in 2010. There is a good summary in their November Newsletter (see page 2). Maybe they are wrong and the peak won't occur for 20 or 30 years instead of 4 years from now. But given the growth rate in energy demand from counties like China and India and given how difficult and expensive it is to find new oil reserves I expect severe escalation in the price of energy in the near future. So what is this "simple" (but not easy) solution?

The simple solution is improved energy efficiency. According to Paul Roberts in the "End of Oil," developed economies experience a "spontaneous" improvement in energy efficiency of around 1.5 percent per year. In fact, recently between 1996 and 1999 industrialized countries made even greater improvements than the historic average and almost as dramatic as those which occurred between 1979 and 1985 which were driven by higher energy costs. It appears the major driver for this recent push for improved energy efficiency was cost reduction. The costs of improving energy efficiency, when it is undertaken correctly and systematically, are nearly always less than the cost of the energy saved. Between 1975 and 2000, as the American economy grew by nearly 50 percent, our "energy intensity" – the amount of energy needed to produce a dollar of GDP – fell by 40 percent, largely through improved technology and policies. This is approximately 2 percent per year over the past 25 years which is less than the United States has achieved over the past decade. If this same 2 percent per year improvement in energy efficiency were to occur globally, world power needs in 2100 would be cut to around half of current demand. If we reduced energy intensity by 3 percent a year, we could meet world demand in 2100 with around a quarter of the energy we use today. In other words, improving efficiency only slightly faster than is already happening "spontaneously" in the United States would mean that within a century ten billion people could be enjoying a modern level of energy services for less than a fourth of the energy used today.

Unfortunately this long term approach will not solve the coming near term energy shortages. I still believe in the free market system and I still believe that escalating energy prices will quickly drive significant improvements in energy efficiency. There will be significant increases in the development of alternative energy sources, but none of the alternatives are as attractive as reducing energy demand by improving energy efficiency. Improving energy efficiency will be more cost effective from both a capital investment and operating expense viewpoint than any known alternative.

With this in mind, improving the energy efficiency of the products you develop and manufacture and reducing the energy used in your operations should be at or very near the top of your priorities. Call Innovative Thermal Solutions at (517) 424-7107 to discuss improving energy efficiency in new or existing products.

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