



Factoring in the Energy Factor

In 1971, while settling into my first job at Allied Chemical (now Allied Signal), Dr. Jim McKenzie, our research director, made the outrageous prediction that the price of gasoline would triple to hit an unbelievable USD 1/gallon. Something to think about—but mostly forget, not realizing that Jim was a rare breed, a futurist. In 1972, the book *Limits to Growth* gave long-range thinkers



something to think about when the authors predicted that *the world would run out of resources* in our lifetime. This was more than a theory because the analysis used science, a big computer, and presented real numbers. I met lead author Dr. Dennis Meadows, who was very convincing. “Yes, we would run out of natural resources, just do the math? What would we do?” Easy answer: “Mostly nothing.” Most just argued about the numbers and ignored the concept.

But, in 1973, we got a loud wakeup call when OPEC turned off the oil spigot to sponsor the Oil Embargo and produced the contrived “Energy Crisis.” Talk about a reaction—a lot happened, but we were going to fight back with high-tech and the unstop-

pable American spirit. Then, the politically controlled spigot was turned back on. But, turned off were our good plans, energy projects, and anxiety. “Hey, they were just kidding—not to worry!” The bad memories of gasoline rationing faded for most of us and the next generation didn’t want to hear about this little blip in history.

Now it’s 2008, and the three-decades-old horror movie is having a makeover, with new and scarier effects. But there is no one to turn on the oil spigot because the handle is gone, so it isn’t a wakeup call, it’s the “All Hands to General Quarters” alarm. Congress tries to fix the blame, pundits pine, opine, and whine, and oil barons snicker. So why not look at some secondary effects and explore “The Energy Factor,” from the value side. We feel the pain, so where’s the gain? Where’s the silver lining in these dark clouds of running on empty—tank and wallet?

If you’re manufacturing in North America, and even in South America, get ready to seek out the rewards of the pending *global implosion*. For sure, globalization is still happening, but there will be detours and rerouting as energy cost becomes the controlling factor with its many secondary and tertiary affects. Filling up the gas tank is painful, but filling up the tanks on that *slow boat from China* is sheer agony. Shipping costs have increased about 400 percent in the past half-decade, and it will keep on climbing; even 10x is likely. The big transport ships burn oil, lots of oil, and the savings from offshoring are getting sliced thin. Don’t forget to add the cost of personnel travel associated with offshoring—it’s flying sky high.

No surprise that many North American companies are reporting increased orders in 2008, even with the *iffy* economy. “Build locally” is making a comeback, especially for transport-challenged items: bulky, heavy, lower margin. There have always been products that must be made in the region, like a load of concrete, but the number has been declining over the years as sea, rail, and truck transportation improved and low-cost labor regions expanded. But the energy factor is

becoming more dominant and increased transportation costs will certainly continue to boost regional manufacturing.

Although some will say that the 21st century energy crisis was self-inflicted, there’s no point in looking back or fixing blame. Our tech-centric, *runs-on-energy*, flat-with-speed-bumps world is long past the point of turning backward, so the path forward is solutions. But the good news is that even our 1970s energy independence ideas are still good ones (even the older ideas have value), so the next big thing is not Big Oil, it’s Big Oil Alternatives. We’ve already seen major shifts. The semiconductor industry has jumped into photovoltaic (solar cells) with a passion, and in a few years, probably half of silicon will go into photovoltaic. But there’s a lot happening in solar tech, including thin-film and organic (add some nanotech, too). While solar photovoltaic is the sexy leader, thermo-solar, wind turbines, tidal power, bio-fuels (say no to corn), coal-based liquid/gas fuels, and much more are all vying for more attention. And let’s not forget technology for energy conservation and efficiency that ranges from solid-state lighting to software that improves manufacturing and logistics efficiency. Even IBM’s water-cooled chip technology is part of the new save energy equation. And the new Boeing 787 is yet another example of technology (lightweight composite) influenced by the energy factor. I believe that Boeing had the long-range vision to plan an energy-efficient aircraft program long before the crisis arrived; and yes, it was predictable. So while you’re experiencing pain at the pump, at the furnace, and everywhere else that the energy factor can inflict pain, stay on the lookout for the gain. The energy factor will have profound, long-term effects, so hitch a ride on the plus side—solutions. Sure, it’s harder to spot the value factors because your great idea may still be waiting to light up. Don’t wait, we need it now. ■

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