

Alternative Energy – It's Your Future We're Talking About

Session materials can be viewed and downloaded at www.ofa.org/energy

Going to the 2007 OFA Short Course? I sure hope so. When you see the program brochure, you'll be impressed. I want you to focus on one set of talks in particular. I'm asking you consider attending a particular series that you may not traditionally attend. The OFA Short Course program team has put together a cluster of topics that deal with the practical side of greenhouse energy strategies. We're not talking about sealing up your plastic hoop house; we're talking changing out your entire traditional heating system.

I'm asking you to consider these talks because their time has come. If minimum wage and immigration laws weren't enough, profit margins are being decimated by rising energy costs, and as we all know, many growers are contemplating,

or have recently initiated, going out of business. The truth is, it's not hopeless, and YES, you can take your future back into your own hands just like you did when you started that nice, little greenhouse years ago. The only thing standing in the way of increased profits and confidence in the future is preconceptions and disinterest. New plant topics are sexy, but if your energy costs wipe out your profits, it's all for naught. We've presented this series of talks in Oklahoma and Michigan and heard good things back from the growers. Give this a read and see if perhaps you might find it worth attending this series.

Will Energy Prices Return to Normal Levels?

As I write this, the price of gasoline is back in the \$2.60/gallon range and the traditional summer increase has not yet begun. Folks are complaining again, and soccer moms are getting nervous. It is amazing how fast we forget that spikes in fuel prices always lead to a relaxation followed by a return to the higher price. Gasoline, propane, natural gas, and electricity will increase faster than inflation for the next 10 to 20 years. Is the price you receive for a flat of pansies increasing that fast?

The incredible economic development in China and India are taking a toll on raw materials worldwide. Shortages in market supply increases price, and every energy company in the world predicts a reduction in energy supplies beginning around 2010. That is only three years away. Add to that the current wars, weather extremes, and upheavals in regional politics, and you have the makings of a very unstable energy market. In the OFA Short Course presentations, we will cover national and worldwide trends in energy supplies and review published reports by the major oil companies and the U.S. government. Once you've seen those figures, upgrading to an independent, alternative energy will not seem unthinkable.

BP, Shell, and Exxon are buying up alternative energy companies, patents on energy technology, and are investing heavily in solar power, biofuels, and new electric technology. Why? Because they've done worldwide geopolitical research and they want to remain in place as the leaders in the energy market.

The only costs that will not go up are the fixed loan payments for things such as solar energy and wind installations. Once the technology is installed, wind and solar energy are essentially free, renewable, and therefore are not taxed! It is only by removing yourself from the current energy inflation cycle that you will control company profits. For the first time in history, your best bet may be to shun the big energy market suppliers and become self sufficient – either that or raise your prices for that flat of pansies by 28 percent to 40 percent in the next three years.

Burning Corn in a Greenhouse? Is This True?

Yes, in fact, you'll learn that burning corn is currently the lowest cost heating fuel in the United States. The BTUs generated from corn are lower in cost than wood, biomass, and geothermal (Figure 1)! Farmers in the corn belt are cheering as corn has become the fuel of choice for conversion into biodiesel, as well as for direct burning in modified wood stoves. Not only does it generate great heat, it smells better and is easier to handle than wood. Most growers may not remember that during the

depression, folks throughout the Midwest burned corn and many a poor farm family stayed warm that way. It's not new, it's not sexy, but better technology now exists and corn will remain a cost-effective fuel source to heat greenhouses for the next 20 years. Corn prices would have to hit over \$7.00 bushel to make burning corn cost-equivalent to burning propane. When that happens, every square inch of farm land in the United States will be put into corn. Want to know more? We will cover all the alternative fuel sources with emphasis on what you need to know about burners, installation, and payback periods.

Is Solar Energy Ridiculous?

Look out your car window the next time you go down the interstate. See those solar panels along the road on top of call boxes or warning signs. The biggest buyers of solar panels are state governments. Solar panels are in use all over the United States. The biggest urban myth is that solar energy is inefficient and outrageously expensive. That's so 1980s! Back then, solar panels were only 16 percent efficient in converting sunlight to electricity. Since then, major companies such as BP and the U.S. government have worked miracles to design systems that boast 28 percent to 34 percent efficient panels. These are now available on the market. In fact, it is now cost effective to go off-grid completely, pay back your system installation expenses in short order, and sell energy to your neighbor. Solar has become so cost effective that Home Depot now offers installation and BP solar panels in western states. There's now a shortage of panels because demand is skyrocketing! Attend the program to learn just how affordable solar is, how effective it can be at holding your costs down on electricity, and how useful it can be in a greenhouse or your home (Figure 2)!

Wind Power?

True, not all growers can take advantage of wind energy as a major off-grid energy source, but hold on, haven't you seen farm windmills running water pumps all over the United States? Have we forgotten that before rural electric systems were installed throughout the country, farm folks used wind power to charge batteries, to run water pumps, and power house lights in the evening? The truth is that with the new, very efficient Bergey minigenerators, most greenhouses can use wind power to run lighting, to make the change. You'll also be surprised how few people ever apply for that funding. Dr. Forrest Stegelin will present a talk that reviews federal, state, and local funding sources. Does your state offer incentives? You'll get specifics, addresses, and web sites. Forrest will even list a few of your neighbors and similar small businesses who did get money and are now ahead of the energy curve. Imagine if your energy costs were 10 percent to 15 percent less than all your competitors, and the federal government helped you get there. Wow, what a dream come true! Miss this talk, and all the imagination in the world won't make it come true.

Will I Go Broke Paying for This Fancy Technology?

Alternative energy is no different than any other technology investment. If the upgrade it is well thought out, it will have a reasonable payback period. More importantly, energy technology investments can actually stabilize your expenses while you pay on that loan. Now for the part most greenhouse owners rarely add into the equation. What if someone helped you pay for it? What if someone gave you cash, a low interest loan, or a tax credit?

Many states and the federal government have programs to help you change over to an alternative energy source. You will learn during this program just how many opportunities exist. Find out who provides grants, low cost loans, and tax incentives flow and other cost-saving concepts, it requires you to be willing to say "OK, maybe we have some room for improvement." Management is what you make of it. If you decide it's now company policy to save energy, it will happen and it will increase your profitability. If you decide to light only the areas of a production line that people actually use, rather than the entire head house, that's a management decision that will save big dollars. Turning lights off in washrooms when not in use is a prudent policy, but are your employees actually doing that? In fact, almost every change we'll be discussing in these talks is initiated by top

management. You may not be able to set prices as high as you'd like or pay the minimum wage you'd prefer, but you sure can control how your energy dollars are spent or wasted.

Can Management Actually Save Kilowatts?

Yes, in fact, management policies and decisions can save you 20 percent to 40 percent on your energy costs collectively. The catch is that it requires you to make a commitment to adopt a new philosophy, upgrade technology, and execute a policy that begins with you! It requires you to keep an open mind. Like lean flow and other cost-saving concepts, it requires you to be willing to say "OK, maybe we have some room for improvement."

Management is what you make of it. If you decide it's now company policy to save energy, it will happen and it will increase your profitability. If you decide to light only the areas of a production line that people actually use, rather than the entire head house, that's a management decision that will save big dollars. Turning lights off in washrooms when not in use is a prudent policy, but are your employees actually doing that? In fact, almost every change we'll be discussing in these talks is initiated by top management. You may not be able to set prices as high as you'd like or pay the minimum wage you'd prefer, but you sure can control how your energy dollars are spent or wasted.

Will My Crop Quality Suffer if I Change Over?

You need only review the research put out by Michigan State University, Clemson, and University of Minnesota over the last 10 years to know that changing greenhouse temperatures and lighting levels can significantly affect crop quality. The real question is, can you manipulate temperature to save money and still keep flower quality? The answer is yes. The art is in knowing the limits and the timing. Will your choice of alternative energy technology fit your crop needs? How would you know until you've considered just what your crop's basic requirements are? Erik Runkle and several other speakers will cover what you need to be aware of to manage both energy costs and quality.

So You Want Me to Believe Little Changes Add Up?

Yes, take common incandescent light bulbs for example. Over the last three years, the light bulb industry has undertaken a major re-invention of itself. We now have Compact Fluorescent Lamps (CFLs) that save 45 percent to 60 percent of the energy of an incandescent lamp at the same wattage. One new CFL bulb can save you \$22 per year! You can buy these at any big-box store. One step better than CFLs is the new Diode Array Bulb. You see them at red light crossings and in new-generation flashlights. They can save you 80 percent to 90 percent of the energy of an incandescent bulb and generate the same light. One bulb can save you \$300 or more over its 60,000-hour life span.

They are available on the market as standard socket bulbs. Now, can you imagine the savings (increased profit) you'd see if you changed all your company's lighting over? To see real money you'd have to include the office, washrooms, shipping dock, closets, and safety lighting to these new energy-efficient bulbs. How much would it save? Don't know how to calculate that? We'll give you the spreadsheet and the handouts on CD so you'll be able to find out for yourself exactly how much you'll save at your facility and how fast the change-over will pay for itself. That's just one of many easy change-overs, fixes, and adjustments that can significantly reduce your overall energy bill.

The team of speakers will be there, and I can assure you that our CD will contain dozens of great reference papers, charts, handouts, many Excel spreadsheets, and several useful worksheets. You'll bring home more tangible benefits from this series of sessions than at any presentation set in OFA's history. Why? The team knows it's critical you have this. We know you need this information to position yourself for a better future. For that matter, we all know that your future is our future.

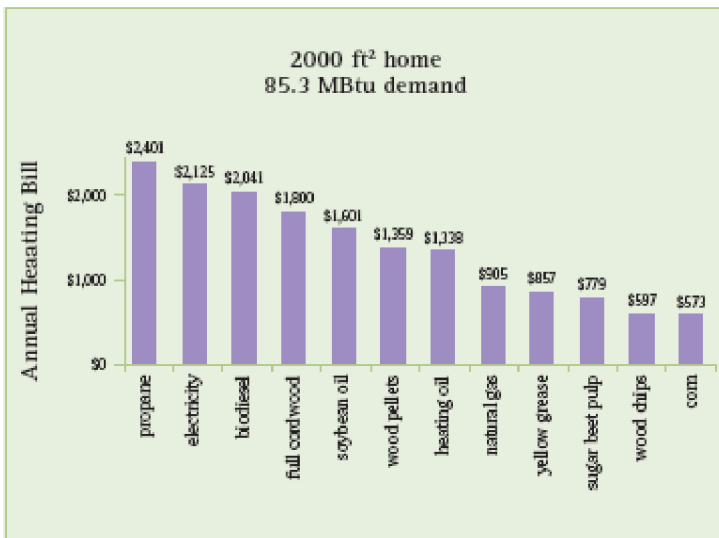


Figure 1. Per BTU, corn is currently the cheapest fuel available. Photo source: Dr. Chris Schilling, Saginaw Valley State University. July 18, 2006



Figure 2. Small solar panels can be used to power pumping stations in greenhouse operations.