



Things That Don't Save Energy

The last issue of Going Green looked at the cost-effectiveness and (seriously solid) investment value of solar electricity in light of dramatic price reductions on solar modules. The rebate drop I wrote about still hasn't happened but, as of the time of this writing (Tuesday the 2nd), there are about twice as many projects asking for that higher (\$1.55/watt) rebate level than there are rebates available at that level.

The rebate program even broke previous records for applications, which is kind of stunning considering the state of the overall economy. Or not, perhaps, when you consider that – even at the now reduced rebate level of \$1.10/watt - solar power is still a far better investment than most anything else out there and the demand is still a bit overwhelming! I'll revisit the economics again in an upcoming issue but, for now, I'd like to cover things that don't save energy.

The impetus for this week's subject is the result of an up-tick in interest I've been seeing from people asking what I think of these things. Some of these things are downright scams, while others might seem worthy energy savers on the surface but aren't, especially relative to other alternatives.

First up is one of the most offensive products, the "Power Saver", a box that alleges to save you up to 25% on your electric bill. I put the name in quotes because they're called by various names, but the common thread is this – it's billed as fixing your "power factor" and it's plugged in or hard-wired into your home's electrical system. If you come across this scam, or know someone else considering a purchase of this device, let me know.

The reason these "Power Savers" don't save you anything on your electricity bill is because you are billed for "real power" not "apparent power". One such company, Xium that makes the "Xpower energy saving device", even has a report showing the percent savings in apparent power, but not real power, on their website (I copied it just in case they delete it from their site). These products are often sold through multi-level marketing campaigns and quite a few locals have jumped on the bandwagon.

Unfortunately it would take up too much space to try and explain on this page the difference between "real" and "apparent" power but, should you come across a salesperson for such a product – or a friend that's considering buying one – please tell them you've heard it's a scam and you're not interested. And feel free to give them my email address (below) if they have any issues with this (no phone calls on this subject, please).

Another product of sometimes dubious merit is "Radiant Barrier Insulation". I say "sometimes" because the circumstances under which it's installed, and the way it's installed, will cause it to either work or not. This product comes in a variety of forms such as radiant foil "bubble pack" as well as a single sheet of foil. It's fairly common to see it marketed with insulation values (called "R-values") much greater than what it's really worth. Again, the technical explanation for when it works well and when it doesn't is beyond the scope of the space I have here, so I'll focus on just those uses of radiant

barriers I don't recommend.

I don't recommend bubble pack foil for use under slab floors. I also don't recommend it be laid out on the floor of an attic, probably the most common example of improper application of a radiant barrier I see in Nevada County. While it will work on the floor of an attic, it won't work over the long term because dust reduces its effectiveness. That said, useful applications of this product include plywood roof sheathing with the radiant barrier glued to the underside facing the attic floor and multiple wraps of bubble-pack foil on ducts or pipes.

Attic fans are another product of dubious merit, but are sometimes confused with whole house fans which are of high merit. Attic fans simply ventilate the attic whereas a whole house fan ventilates, as the name implies, the whole house! Independent third party studies have shown attic fans do little to reduce air conditioning use in the home below. This is because the radiant heat from the roof sheathing above the attic is a more powerful force than the hot attic air itself when it comes to heating up your home. One study that involved monitoring temperatures at numerous locations in the attic and attic floor found that, in the middle of the afternoon, the temperature several inches down into the insulation the temperature was higher than the attic air itself. This, the result of radiation heat transfer, illustrates the futility of venting the attic (ie, trying to remove heat via convection – air flow) when the overriding heat transfer mechanism driving heat into the home is radiation.

For more on things that don't save energy and common myths on the subject see –

<http://hes.lbl.gov/hes/myths.html>

and

www.home-energy-adviser.com/energy-saving-myths.html

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