



## **How To Survive A Down Economy** *Save More Than You Spend* *With The Right Energy Investments*

Are you like most people right now, wishing there was a way to cut your monthly expenses but you just don't have the spare cash to make it happen? It's a well-established fact that, if you're an average homeowner, you can

- 1) Drop your household energy costs by about half
- 2) Do so by selecting the energy upgrades that cost the least and save the most
- 3) Save more every year than you spend from the first year forward

All you need to do to accomplish this is to be willing - and able - to establish a home equity line or be in the process of refinancing for a lower rate. With no out of pocket expense, unless your loan requires you pay points, the right upgrade choices will begin saving you more than they cost from the first year forward. This happens when the energy savings, along with the mortgage interest deduction, can be shown to save more than the monthly loan costs. With no out-of-pocket funds you could be saving up to half the energy you're currently wasting. And in this economy, few of us have money to waste!

Examples of home energy upgrades that pencil-out in this way are many. A professional energy audit is the only way to find upgrade options that save more than they cost. If I had a dollar for every time a customer told me "gosh, I wish I'd called you first before I did these other things" I'd be vacationing in Bali right now instead of writing this article. It seems like everyone has some "miracle cure-all" energy saving product or service these days. How is a homeowner, or commercial building owner for that matter, going to know the difference? With all the "green-washing" going on these days and with so many people desperate to shave their bills, it's easy for people to fall prey to inappropriate solutions.

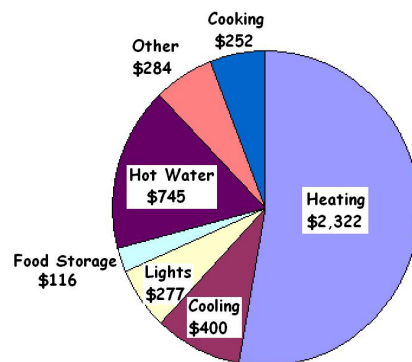
It's important to appreciate that the typical salesperson or contractor is limited by the particular product(s) they sell which they'll, naturally, characterize as the best thing since sliced bread! Few get anywhere close to seeing the "big picture" clearly enough to help you find the best solutions for your specific situation. Very few have any formal training in - or experience with - a wide range of energy solutions.

Our extensive experience in R&D, design, installation and servicing of a wide range of energy saving technologies has taken decades to accumulate. And I'll be the first to admit its not easy staying on top of the latest/greatest in heating, cooling, water heating and building construction technologies - it consumes a large percentage of our time and overhead. But we are one of a growing number of

building performance contractors offering home energy audits in Nevada County. For just \$250 we'll spend several hours diagnosing the energy solutions best suited to your home and budget, complete with a report describing the costs and benefits.

The place to start is with your utility billing history. If you're paying more than \$100 - \$150 a month for electricity and/or \$150 - \$200 a month in the winter for gas your home is a good candidate. All-electric homes and homes served by propane gas are excellent candidates too. Likewise, an old space heater, water heater or air conditioner that is at (or near the end) of its useful life is an excellent candidate as are air-sealing and insulation upgrades. In terms of solutions there are hundreds if not thousands of possibilities. The best solution in any given situation isn't always straight-forward, however, as it depends on a variety of things like the existing buildings construction, budget, available fuels, level of maintenance, etc.

Just what makes the most sense varies with every home. For example, the annual energy cost for an average size (2400 sf) home built in the 1980's using propane is shown in the pie chart. Heating, cooling and water heating are the three biggest consumers. In all three cases the equipment is likely at or near the end of its useful life. In most cases the added cost of higher efficiency equipment would save far more than it cost. I say "in most cases" because there are many possible exceptions. For example, if the furnace is seldom used because the homeowner is now using a wood stove to cut costs – and it's hard for propane to compete with a good air-tight wood stove – putting money into a new furnace wouldn't be a good idea. It might make more sense in that case to invest in insulation which would reduce both heating and cooling costs while also making the home more comfortable.



The concept of the "house as a system" is a fine point that often doesn't get accounted for. For example, if we seal air leaks and add insulation to a home, the heating and cooling systems can be a size or two smaller when they're replaced.

Water heaters are another common example. They last an average of 12-13 years. As they age they become less efficient because the ever-sacrificing "sacrificial anode" and mineral deposits begin building up inside. The cost of a more efficient replacement tank versus a standard tank is relatively small. In some cases it may even make sense to switch to a high efficiency tank heater, a tank-less (on-demand) heater, or add a solar water heating system. Because water heating is such a large operating cost it's frequently a good candidate for an energy upgrade.

Yet another way to characterize the benefits of an energy upgrade is to look at it as an investment. I

used ceiling insulation for a recent example of how savings can exceed costs from the first year forward (see my last article Home Energy Upgrade Part 2). If you haven't seen my online archive of past articles they're all here (make sure the "A" in "Articles" is capitalized) – <http://www.theenergyguy.com/Articles.html>

In the case of the attic insulation upgrade example, the rate of return was 38%! And that included borrowing the money using a home equity line. These days I wouldn't recommend a home addition or remodel as a good investment because home values are dropping. I know several contractors that can't sell their fixer uppers because they invested money in the wrong things.

Energy upgrades are a whole different story. History has shown that, as energy costs rise, the value of energy efficiency and renewable energy features are more highly valued at resale (ie, higher appraised value). Past studies of the market value of energy-efficient homes have concluded that, for every dollar saved with energy improvements, the value of the home increases by \$10-\$25. So not only will a properly done home energy upgrade save more than it costs, most will also hold their value to the point where you'll recoup the entire cost – sometimes even more – when the home is sold. See – <http://www.resnet.us/ratings/overview/resources/appraisal/default.htm>

But wait, there's more! As if all this weren't enough to get you jumping up and down yelling "no brainer!", we also have a variety of tax credits and rebates available today to further sweeten the deal. In these tough economic times it's comforting to know that investments in energy can not only save you money every month but they can be an excellent way to invest your home's equity as well!

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