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HOME IMPROVEMENT

Tax incentives give solar power some extra charge

Know why daylight savings time started earlier this year, just a week into March? So Americans could have more time to enjoy the snow after work.

OK, so maybe that's not what they had in mind, although for the second year in a row we have had very late season lowland snow and cold, which will run up our power bills and cost us in heat, whether that's done with propane, natural gas, oil, electricity or wood. Two things that can be done about this by the home owner that will save money in the short and long run are finding cheaper ways to generate heat and better ways to keep it inside the house once you've bought and paid for it.

Harvesting solar and wind energy for home use

Both work, but in this area you'll generally have better luck generating power with solar. This is because we do not have much in the way of steady winds but we do have sunlight, more a function of our latitude than our balmy climate, and what we lack in quality (sun never gets very high and we have frequent cloud cover) we make up for in duration. More northerly latitudes get enough extra sun to at least partly balance that out.

We also get a small benefit from being near, if not actually in, the Olympic rain shadow and are completely unaffected by the convergence zones that tend to keep places like Everett kind of dank and give Olympia nearly twice the rainfall as Blaine.

Southern California gets only 30 percent more sun than we do here, so especially with recent advances solar is a good bet, albeit not cheap. You must first spend money to save it in the long run, but the case is a strong one.

One argument for solar is tax breaks. A typical 4 kilowatt (kw) system's installed price is cut by roughly a third, from $31,300 to $21,910, due to a 30 percent federal income tax credit, part of the economic stimulus legislation. In addition, most systems are eligible to receive what are called production incentive payments from the state of Washington for up to $2,000 every year.

Combine that with seeing your power bill go down as much as $400 or more per year while providing for up to 75 percent on your hot water needs and it begins to look like a very good idea, indeed, to use that energy that now simply bounces off the roof. And since sunlight's free, for now, anyway, once you amortize the equipment there's nothing else to pay for except maintenance.

Jack Hardy of Western Solar in Bellingham has a cash flow analysis, in fact, that combines such factors as savings (money not spent on electricity from the power company) and energy production credits from the state of Washington that in ten year's time will net about $9,045 in savings. If you add to this the value that such an installation adds to your property you can amortize it inside seven years.

"For example," Hardy said, "a residential solar electric system in the Pacific Northwest will yield about 14 percent per year return on investment as long as the sun rises and is tax free. Over its life cycle a solar hot water system can save more than $14,000 compared to a gas hot water heater.

Initial expense is high, about $8,000 per kw, but the system is virtually maintenance free. It works on the principle (first discovered and described over 100 years ago) of silicon (ordinary sand) being capable of generating direct current (DC) when combined with some other chemicals and exposed to sunlight.

PV panels (modules) have no moving parts, are virtually maintenance-free, and some have been in service for 40 years. They are warranted for 25 years.

Wind systems are cheaper, about $4,000 per installed kw. This is about half the price of an equivalent photovoltaic system. Thus, a typical 3 to 10 kilowatt residential wind system with 80 foot tower, batteries, and inverter would cost between $12,000 and $40,000. Larger systems are generally more cost effective, but there are cautions.

The first task is to find out how much wind you actually have, and the only way to tell is to do a lengthy (year at least) survey using a recording anemometer. Western Solar offers this service for about $1,200. There's also maintenance and other concerns such as danger to wildlife, noise and visual pollution (e.g. neighborhood complaints).

For what it's worth, cash-strapped local Whatcom County governments are installing solar on a lot of public buildings but have done little with wind power.

Western Solar's website is www.westernsolarinc.com.