So, You Want to Produce Your Own Renewable Energy?

By Tom Lienhard, PE, BSME, CEM, CLEP

If rising energy prices and global climate change have you thinking about producing your own renewable energy at home, consider some of these pros and cons before you take that step.

The demand for clean, sustainable energy is transforming the energy industry to invest in low-carbon energy resources, energy efficiency and other greenhouse gas-reduction measures. Utilities across the nation are responding to new state mandates to provide a certain percentage of the power they produce through green energy -- otherwise known as renewable energy.

You can generate your own power with green technology like wind energy, photovoltaic or thermal solar energy, but it comes at a price. Large-scale renewable energy production can be performed at a much lower cost than small scale. Even though enormous strides have been made in the development of small-scale energy sources, the costs to install such green projects at a home can be expensive.

Generally these small-scale projects can cost more than 20 cents per kilowatt-hour - more without federal tax credits and incentives - versus buying power from a Pacific Northwest utility at under 10 cents a kilowatt-hour. A majority of the overall cost of renewable generation is spent on equipment for energy collection and conversion, in other words; changing wind or solar energy to electricity.

There is an option called net-metering that is available to most consumers who want to generate their own renewable energy. With net-metering, you use the power you generate with wind or solar energy. Any surplus power is fed back through your meter into your local utility's electric grid. You will receive an energy credit to use later when you are not generating energy.

Most net-metering programs reset your energy credits or balance to zero either monthly or annually – making it vitally important to size your new generation to match your consumption. The largest advantage to net-metering is using your utility as a storage system. The energy you generate has the same monetary value as what you pay your utility for energy.

There are other benefits to net-metering, including saving you an investment in costly electric storage systems and preserving your access to grid energy when

the wind isn't blowing or the sun isn't shining. In addition to any steps you may take to generate your own power, it's important to make everything in your home as energy efficient as possible.

Contact your local utility company to see what net-metering options are available to you. If you want to support green energy but don't want the added expense, check with your local utility about their renewable programs. Many utilities allow you to purchase renewable energy by paying a small premium on your bill.

Equipment Rebates and Incentives

Some electric and natural gas utilities offer rebates and incentives for customers making energy efficiency upgrades to their home or business. It could pay to find out what your energy provider offers.

Tax Credits

Find out how the new stimulus funding has affected Federal Tax Credits for Energy Efficiency at energystar.gov

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