

Golden Valley Explores Green Power



GVEA is looking into green energy technologies including fuel cells, solar and wind power.

But just what is green power?

How do utilities make it?

And how do consumers buy it?

Here's some basic information on green power technologies, why they're gaining in popularity and examples of how utilities nationwide are applying them.

What is green power?

Green power refers to electricity supplied in whole, or in part, from one or more renewable energy sources. Renewable energy created from wind, solar, geothermal, biomass, tides - to name a few - fall under this category. They're renewable because such energy is continually being rejuvenated in nature.

Historically, most of our nation's electric power generation has come from fossil fuels such as coal and oil. These types of fuel sources are commonly referred to as "non-renewable energy" because once such fuel is spent it is not quickly, if ever, regenerated by nature.

Over the past few decades, there has been growing concern about the environmental and economic effects of relying so heavily on these nonrenewable fuel sources. With increasingly efficient new technologies, more environmentally friendly power applications for the use of renewable fuel sources have sprung up and continue to gather supporters.

Perhaps the most attractive benefit to consumers is the fact that emissions such as nitrous oxides and sulfur are virtually nonexistent when power is generated using renewable resources instead of coal or oil. Another benefit of developing a greater reliance on renewable sources is improved national energy security since the renewable energy is not imported but is generated

within our borders. Investing in renewable power also diversifies a utility's energy sources, fostering long-term reliability and stability.



Generating green power

If green power is so good for the environment and so popular, why aren't all utilities generating power with renewable sources?

First, green power is still in the developmental stage. While there are advances in technology each year, the green power production costs are still greater than generating electricity using nonrenewable sources. There are difficulties as well with dispatching green power. For example, wind and solar energy can not be generated at a consistent rate because these sources may not be available consistently.

Still, many utilities are offering green power options to their consumers through voluntary "premium" programs. Some utilities are actually bringing new renewable generating capacity on-line.

On-line green power could mean constructing a "wind farm" of several wind turbines or installing an array of solar panels. Some utilities invest in renewables if customers make a strong participation commitment.



Purchasing green power

Utilities offering green power programs use a range of packages and prices to support their investment. There are three basic types of green pricing programs existing. In most, members voluntarily purchase “premiums,” which are based on the difference between the cost of traditional generation and green power.

Block Program

In addition to their regular bill, customers purchase blocks of kilowatt-hours (kWh) that are generated by renewables at a higher rate. The additional cost is the green power premium. Current prices range from \$1.80 to \$6.60 for a 100 kWh block.

Percentage Program

Customers chose a percentage of their electric usage that will come from renewables. So far, this type of program has been able to offer renewable energy at prices most competitive with traditional bulk power generation. The green power premiums currently charged in percentage programs vary from 4¢ to 20¢ per kilowatt-hour.

Contribution Program

Customers voluntarily contribute directly to a utility-managed fund for developing renewable generating capacity or purchasing green power. Contributions may support installation of photovoltaic panels, investments in landfill gas facilities, or green power purchases. Utilities that offer such a program have contribution levels that vary from \$2 to \$10 per month.

Wind power potential

For the past several years, GVEA has actively researched the potential for wind generation in Interior Alaska. In 1998, GVEA joined Alaska Wind & Solar in a wind generation demonstration project in the Healy area.

Golden Valley installed a 10-kilowatt wind turbine on one of its existing communications towers and collected data from the output. Gunfire damage to the turbine blades, concerns about the effects of vibration on the communications tower and persistent difficulties with some of the electronic components led GVEA to terminate the project in 2001.

Currently, we’re evaluating wind resources throughout Interior Alaska and are in the process of locating the best locations for wind generation. Some important factors include the distribution of wind speeds (i.e. steady winds vs. infrequent strong winds), location relative to existing power lines and access for construction and maintenance.

Determining if such a project would be economical would be the next step. A combination of favorable factors would determine if a project could pay for itself. These include (not in order of importance):

- a good wind resource close to the existing grid
- customers willing to pay a premium for wind generated power
- low interest rates
- high prices for fossil fuels
- continued availability of production incentive tax credits or renewable energy production incentive subsidies
- other grants for construction



GVEA's involvement

Green power makes good environmental sense. And at Golden Valley, we need to make sure it makes good financial sense. Additionally, we need to determine your feelings about what level of commitment you'd like to see from your co-op and how high a priority green power is to you personally.

The most important questions facing utilities that consider offering green power programs are: how many members are committed; what green power sources members are interested in; and what premium would members be willing to pay for green power options. To find the answers to these critical questions, during 2002 we'll be conducting a professional survey to hear your thoughts on green power options and pricing.

We periodically survey our members to find out how you think we're doing. It's also another opportunity for you to bring up issues that are important to you. We'd like to thank you in advance for taking the time to respond to our questions if our researcher should phone you.

We'll be keeping you posted on the survey results and on new developments in green technologies. If you'd like additional information, please call GVEA at 452-1151 or e-mail info@gvea.com.



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