KPUD customer Patrick Cramer and his Australian shepherd, Catch, show off the direct-current output from the solar cells that is stored in batteries.

Is Net Metering Right for You?

By Ron Schultz, KPUD chief engineer

With increased environmental awareness and the desire to offset electric use, many people have thought about producing their own power, only to be thwarted by the high cost of a good system.

Solar panels, wind generators and fuel cells all have advanced rapidly. As they continue to improve and grow in popularity, consumers may see the prices drop. Reduced manufacturing costs, improved production efficiency, increased demand and a number of other factors can make something that was expensive a few years ago suddenly more affordable.

With that concept in mind, we have seen an influx of safe, reliable and cost-competitive small generation products become more available to the average consumer.

If you have ever thought about installing some kind of generation to offset or reduce your utility bill, there are a few things to consider.

Klickitat PUD's net-metering policy allows customers to connect up to 25 kilowatts of generation on their premises. Eligible generation sources can be wind, solar, fuel cell, hydro or a combination of any of these. Most smaller wind or hydro generators, and all fuel cell and solar systems, are direct current. The DC output can either be directly consumed or stored in batteries. For the power to be used in your home, it must be converted from DC to alternating current. This is done by an inverter.

How does a net meter work? In the bygone days of the mechanical meters with the spinning disk, if the generation was greater than the use, the meter would spin backward and the dials or numbers also would go backward.

We now use electronic meters that have two registers. One register is for power consumed and the other is for power delivered back on the PUD system. If your consumption is greater than the generation, your consumption numbers increase accordingly. If the generation is greater than the consumption, the consumption numbers will stop increasing, and the generation register will begin to increase. These two numbers are then netted against each other.

Prior to making a financial commit-

ment and selection, all prospective net-metering customers should contact the PUD to discuss the requirements and output ratings of the proposed installation.

The main reason to contact us is so we can determine if the installation requires any upgrades to our system. Residential services may be supplied by a 5, 10 or 15 kilovolt-ampere transformer, and many times multiple homes are connected to that transformer. If your potential generation output exceeds the rating of the transformer, the transformer must be sized accordingly and replaced.

If a replacement is required, the cost for the upgrade is the responsibility of the customer. The excitement of installing your own generation could be dampened quickly when it is discovered the system must be upgraded.

Once you have contacted and discussed the proposal for the installation with the PUD, you can decide whether to proceed.

If you decide to proceed, the inverter must be compliant with IEEE and UL standards. These standards ensure if there is a loss of PUD source power, the generating system disconnects from the PUD system. If it doesn't, there is the possibility of the generation back-feeding on the PUD system. Should someone come in to contact with that line, it could seriously injure or kill them.

Prior to the PUD allowing the new generation system to be connected, we must have a signed net-metering contract with the customer. The customer will need to furnish the PUD with a manufacturer's statement that the inverter complies with the IEEE and UL standards previously mentioned, and documentation showing the customer has the required liability insurance.

The installation also must be inspected and approved for connection by a state of Washington Department of Labor and Industries electrical inspector. The PUD's engineering department then will do a final review of the installation and the documentation provided. If everything is in order, a contract will be signed.

The process is pretty easy. I recommend potential net-metering customers do their research prior to selection and consult with someone knowledgeable. A good resource is a qualified electrical contractor who has previous net-metered generation installation experience.

Contact the PUD prior to making a commitment so we can determine if you will be required to upgrade our system. We will explain the process for getting the required electrical and engineering approvals, and will review the policy and contract with you. ■

For more information, call Sharon in Energy Services at (509) 773-7622 or the engineering department at (800) 548-8357.

A solar panel installed at Patrick's home in Goldendale catches sunlight.

The inverter that converts the DC output to AC output is shown to the left. The inverter puts the power into a form that can be used in your home.