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Alternative energy: what's right for you?

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Special to the Rancher

If you're considering some form or multiple forms of Alternative Energy, I'd like to offer some insight on questions you should ask and opinions that may be helpful.

There are basically two different energy costs that can be offset partially or completely with the use of clean products. First and most common are electrical costs. The three most popular methods in order are: Solar Photovoltaic, Wind Generation, and Hydro Generation.

Solar Power is becoming very popular due to its predictability, product reliability and as of this past summer, much lower module pricing. There are many very good module brands and inverter brands available. The rated wattage size of a particular module is not critical.

Sometimes it becomes more efficient to use mid-size modules when designing the electrical output of an array. Be careful with terms like "industrial grade."

There are true industrial grade modules out there, but the average consumer will not benefit enough by using these to justify the added cost.

Make sure the module manufacturer uses robotic machines for the assembly of the soldered connections. If you look at the

Off the Grid



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odds of a module failing (which are extremely low), by using larger modules you will end up with fewer of them to reach your desired output.

This is really the only advantage worth mentioning as a reason to use larger modules. You will find the industry standard for module warranties to read as follows: The module will produce a minimum of 80 percent of its "New" capacity at 25 years. The playing field seems to be very equal for all manufacturers.

When looking at production levels of any fully installed Solar Plant always use the A.C. power rating when comparing. A very good cost comparison can be the installed cost/watt before any rebates and/or tax credits.

Now let's address Wind Generation. The most important thing I can tell you on

the subject of Wind Turbines and their "claimed production levels" is to be very clear on the yearly kWh (kilo-watt hour) production at your expected average wind speed. Not too long ago I read an ad in a very popular magazine from a certain propeller style wind turbine manufacturer that made an unbelievable claim. It read: "For a home size model with an installed cost of \$6,000 you can save 50 percent — 90 percent on your electric bill."

I do not know where to even begin with a claim such as this! They can make a vague statement like this because it is possible? Extremely unlikely, but possible? Please do not accept anyone telling you their turbine is a "whatever" kW rated size. Look at the chart and determine its annual kWh production at your expected average wind speed.

There are currently three basic types of turbines. The most popular to date is the propeller style which operates with a circular motion. Next, (my personal favorite) is a VAWT (Vertical Axis Wind Turbine). The third is a HAWT (Horizontal Axis Wind Turbine).

Some people call a "prop" style a HAWT. While it's true the shaft is on a horizontal plane, the two types are completely different. Wind production can be great, but the turbine has to be reliable and meet its production claims.

Hydro Power; this form of driving a

generator with water pressure and/or volume is very good. The vast majority of us, however, do not have access to an adequate amount of this resource. If you are one of the lucky ones to live next to a good, permanent, flowing water supply that you can access, you would do well to look into this form of electricity generation.

Thus far we have addressed electricity usage. Let's briefly discuss how to reduce or eliminate your "fuel" needs. The primary fuels used in structures such as homes, offices, and commercial operations are Natural Gas and Liquid Petroleum (L.P.). The simplest form of offsetting your gas usage is with Solar Hot Water. Water is very dense, so heating it takes high BTU's (British Thermal Units), a form of heat measurement we use in this Country. Using the sun through solar collectors to heat water is a very good way to reduce your gas consumption.

When the circumstances are correct, space heating such as Solar Thermal, Radiant Heating, and even Geo Thermal are all very good methods to heat your buildings interior and reduce usage of gas furnaces etc....

One final note: Keep an open mind. In many cases you can maximize your efficiency and see the best cost savings by using a combination of different methods of Alternative Energy.