

Power Sold To PG&E

# Windmill In Watsonville Goes 'On Line'

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Modern-day Don Quixote's they're not, but a Davenport man has teamed up with a Watsonville homeowner to establish what is believed to be the first windmill locally to have an inter-tie with PG&E.

This inter-tie went "on line" just a few days ago. Simply, the windmill converts wind power into electricity. Any excess electricity is separately metered and sold back to PG&E.

Located just outside Watsonville off San Juan Road at the home of Harvey Harris, the windmill was built by Gary Ingram of Davenport, owner of Nite and Day Wind Systems.

An obviously proud Ingram points to the ingenious "synchronous inter-tie inverter" that converts the raw power generated by the windmill into household electricity.

Under new laws by the Public Utilities Commission, utility companies are required to buy back excess power.

PG&E, for example, charges about 9 cents for each kilowatt hour of electricity over its Lifeline rate, according to Ingram. It buys back the surplus power at 7 cents per kilowatt hour. The payback is based on a PUC formula that is adjusted every three months.

"PG&E is the back-up system," said Ingram. "There will be some months Harvey will have to pay PG&E and other months PG&E will pay Harvey. It all depends on how much power is generated."

The windmill sits atop a 60-foot-high tower in Harris' yard. The Aero Power System windmill's Sitka spruce blades are 12 feet in diameter and kicks in when winds reach about 10 miles per hour. It can then continue to operate in 7½ mph

winds in generating 2 kilowatts of electricity an hour.

Ingram maintains the windmill will generate anywhere from 400 to 700 kilowatt hours each month, depending on the wind conditions. An average household uses between 500 and 1,000 kilowatt hours a month.

The climate in the county is ideal, he added, because of the abundance of ocean breezes. The Watsonville area gets an added boost with the flat, rolling hills that form a sort of tunnel of wind, he said.

Cost of Harris' windmill was around \$10,000, including the tower and installation. The system, however, can pay itself

back in five to seven years, explained Ingram, thanks to a 55 percent tax credit available from the state and federal government. Throughout the windmill's use, of course, is the PG&E payback too.

He estimated the average yearly return over 20 years at nearly 84 percent, taking into consideration the expected boost in electricity prices.

Harris, however, didn't go for his windmill because of cost savings. The retired mechanic for the city of Watsonville is simply interested in alternative modes of energy and uses it as his hobby. His home, for example, is already solar heated.

"I've been thinking about it (installing a windmill) for around 10 years now," explained Harris. "The technology has drastically improved and there's always the angle of clean-powered energy in the back of my mind."

Ingram, meanwhile, sees a bright

future in wind power. Having owned his business for six years now, he has already installed numerous windmills throughout Northern California.

One of the biggest problems he has involves governmental agencies. They are having to write ordinances to match the growing popularity of windmills. Both the city and county of Santa Cruz are presently undergoing regulations.

"This is sort of the beginning of an age," said Ingram. "Once we had windmills all over the country and then the electricity age came around and was cheaper. Well, now windmills are once again cheaper."

"As soon as we get over the hurdles of ordinances, wind power will help us become a lot less dependent on other power sources," he added.

Nite and Day Wind Systems can be reached by calling 425-7636.



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