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Area couple wins big for inventing personal wind turbine

BY RICHARD ECKE • TRIBUNE STAFF WRITER • OCTOBER 25, 2008

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Logan and Jenni Bryce of the Belt-Highwood area are big fans of alternative energy, including wind and solar power.

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The pair of inventors and wind-power developers even power their house entirely with solar and wind-produced electricity.

This month, the Bryces shared a \$50,000 third prize provided by ConocoPhillips Energy with two Washington state engineers for developing the Micro Wind Distributive Power Generation Turbine, a small turbine that harvests power from wind at speeds of no more than 12 miles per hour.

"It was a very big surprise because it was a shot in the dark for us," Logan Bryce said Friday. "We were the only non-Ph.D. people there. We're just homegrown people who are experts in small-wind energy."

The Bryces attended an awards ceremony this month held by ConocoPhillips in Houston, where they picked up their prize and met other winners. The Bryces' team included Robin and Bob Gudgel, who designed the electronics, and the Bryces, who designed the turbines. The money will be used to further develop their invention and obtain Underwriters Laboratories' approval for it.

Now in the prototype stage, the new wind turbine should be available in a "beta" stage in 2009, Logan Bryce said.

"I'll have beta units out by this time next year," he said. Bryce said the prize will help the team create the next generation of the turbines and obtain UL listings and other approvals for the electronics portions of the device. He said the electronics-related costs might be in the \$750,000 range, so the energy prize will cover only a portion of the expenses.

The team already holds a provisional patent for its invention.

Bryce said one problem with wind energy is the costs for the devices remain fairly high for the average individual or family. The wind turbines recently installed by area schools cost about \$13,000 to \$14,000, including installation, he said.

Bryce said there is a need for wind turbines in the \$2,000 range that can operate at low wind speeds, and he believes the team's invention may fit the bill.

Wind is plentiful in northcentral Montana. The Bryces moved to Cascade County from Wyoming about a dozen years ago. Jenni Bryce quickly noticed the howling winds and suggested the couple try to use the resource to their benefit. One result was Jenni Bryce's business, Pine Ridge Products, which manufactures and sells wind-power equipment. The Bryces also operate a test site for wind manufacturers, who sometimes learn that their turbines can be torn up by stiff Montana winds.

Logan Bryce said he believes the new device, which has a two-meter-long rotor, will offer a good combination of durability and the ability to create power when winds are mild.

Smaller rotors also are easier for bats and birds to dodge, he said. Huge rotors at wind farms often are criticized for killing flying creatures.

"We've never had a kill of a bird or a bat" at the test facility, Bryce said.

Judges in the contest said they were impressed that the invention's inverter system allows direct connection to power mains.

Energy firm ConocoPhillips and Penn State University co-sponsored the prizes.

First place went to David A. Gonzales II of San Antonio, who is developing the Layered MagWheel, a new technology that provides magnetic acceleration and frictionless braking for vehicles. He received a cash prize of \$125,000.

First runner-up was Corban Tillemann-Dick and his team from the greater Washington, D.C., area, for developing the Radial Expansion Engine, which increases the efficiency while decreasing the weight and cost of internal combustion engines. That team



Logan Bryce shows a wind generator blade to Kathi Montgomery of the Montana Department of Environmental Quality at his Highwood-area home at the Pine Ridge Products wind turbine test facility in the 2006 file photo. (TRIBUNE FILE PHOTO)

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received a prize of \$75,000.

Sig Cornelius, senior vice president for finance at ConocoPhillips, said developing diverse energy sources, reducing greenhouse gases and improving energy efficiency require technological advances.

Award-winning efforts such as the Bryces' will help the United States make energy advances and spur economic growth, added Dr. William Easterling, dean of Penn State's College of Earth and Mineral Sciences, in a news release.

Logan Bryce said Friday that he can foresee small wind turbines on billboards, power poles and other places where they could generate electricity and reduce the country's power appetite, as well as a landscape dotted with two-meter turbines that can run a refrigerator or power a computer.

"They can be placed everywhere," he said.

Reach Tribune Staff Writer Richard Ecke at recke@greatfalltribune.com, or at 406-791-1467 or 800-438-6600.

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eirteacher wrote:

This is great news.

I grew up in the wide open spaces of Montana and one thing we had plenty of was wind. I think every rural farm and ranch could benefit from a wind turbin generator. With a lower price range all would be happy to cut their power bills. This would be a great investment and a win/win situation with the enviornment and the economy.

10/25/2008 9:34:11 AM

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Outstanding! Hometown and grassroots engineering all because some folks sat down and decided to roll up their sleeves. Congrats!

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