

“Floating” Windmills Mount On Silos, Barns, Homes

Every silo could be turned into a wind generator and turbines could also be placed on barns and homes, turning every farm into a power plant, says Ken Johnson of Enviro Energies. He’s convinced it can happen with his company’s new Mag-Wind energy systems.

One of the main problems with conventional windmills is excessive vibration. Mag-Wind turbines use magnetic levitation to virtually eliminate vibration, making the units almost totally silent.

“We don’t have any vibration with our turbines because the sail floats above the shaft on opposing magnets,” explains Johnson.

Another advantage of the design is the placement of the coils on the power-producing alternator, says Minnesota distributor Dave O’Brien (ph 612 701-4730; www.hgwindpower.com). “Mag-Wind units use an axial flux alternator so the coils are around the perimeter,” he says. “The rotational velocity required to generate maximum power is only 50 rpm’s.”

The powder-coated aluminum sails are available in eight different sizes with sails selected for a given area’s average wind speeds and turbine size. The curved design maximizes lift as the sail turns into the wind and minimizes drag as it turns away. While

height helps, it is sail size that’s key to electricity production.

“A 2.5 kW turbine in North Dakota with high wind speeds will require one size sail,” explains O’Brien. “The same turbine in lower wind speed areas of Wisconsin will require a larger sail. As you increase sail size in the same wind, you increase power output.”

Johnson says Mag-Wind units are specifically designed to be mounted on a roof. Positioned properly Mag-Wind units take advantage of what Johnson calls “Leading Edge” compression.

“As a wind passes over the edge of a flat roof, there is about a 3-ft. area above the peak where energy is twice what that straight wind is,” he says. “On a peaked roof, it can be as much as 3 1/2 times the energy.”

This translates into capturing the equivalent of a 20 to 35 mph wind from a 10 mph straight-line wind. Larger Mag-Wind units are being designed for use on city high rises where the compression factor is even greater.

“There is a massive amount of energy there,” says Johnson. “High rises can have an 8-fold increase in energy.”

Power begins being produced at wind speeds as low as 4 mph with maximum output at 25 mph. Power production continues to a maximum rated speed of 90 mph with



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low wind sails or 120 mph with high wind sails. When speeds exceed those limits, the mag-lev design allows the control system to use resistance between the magnets to slow the sail without shutting down power production.

Current production models include the 1.5 kW turbine priced at around \$15,000, including shipping and installation. A 5 kW turbine is priced at just under \$35,000 with shipping and installation, and a 10 kW turbine is priced at just under \$65,000 with all costs. With current Federal subsidies, a buyer can reduce those costs by an estimated 30 percent. State subsidies can further reduce the cost of an installation.

Johnson says the company is working on a complementary project. “We’re developing an electrolyzer unit for those who want to store excess electricity as hydrogen gas for use in fuel cells or other purposes,” he says.

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On-The-Go System Inflates, Deflates Tires

This new on-the-go tire inflation system has an in-cab computer controller that lets truck drivers deflate tires as low as 30 psi for better traction in sand or mud, and then inflate them up to 110 psi for highway travel.

Potato and sugar beet producers are catching on fast to the benefits of TIREBOSS, says Les Hinz, co-owner of Tire Pressure Control International, the Edmonton, Canada, company that manufactures the system.

“On potato farms it has virtually eliminated the need for an assist tractor to pull out stuck trucks,” Hinz says. “It increased the digger productivity by 25 percent, because they’re never waiting for trucks.”

He expects sales of TIREBOSS to grow

quickly in the Red River Valley sugar beet region.

“In beet fields, this will expand the window of getting in and out without assistance,” he explains. “They’ll be able to haul more days of the season, even when it’s wet.”

One big benefit is that by using the proper tire pressure best suited to the road surface, tire life increases 20 to 40 percent.

Hinz notes that drivers catch on quickly where to set tire pressure. It takes about a minute to deflate and 6 to 8 minutes to inflate. Speed restrictions are programmed into the control box, which kicks into different pressure settings as needed. TIREBOSS uses the truck’s air brake system – giving priority



On-the-go tire inflation system lets truck drivers deflate tires as low as 30 psi for better traction in sand or mud, and then inflate them back up for highway travel.

to the brakes.

The TIREBOSS system kit retails for about \$7,600 and requires about 18 hours to install.

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TIREBOSS, Tire Pressure Control International Ltd., 15803 121A Ave., Edmonton, Alberta, Canada T5V 1B1 (ph 780 451-4894 or 888 338-3587 North America; www.tireboss.com).

Kids Love These PVC Sprinklers

“Kids love playing around my homemade lawn and garden sprinklers and they do a great job watering the lawn,” says Lloyd Henderson.

The Haleyville, Alabama, man sells a 4-ft. high pvc sprinkler that hooks up to a garden hose at the base and fills with water. A pair of rotating sprinklers on top, spaced about 20 in. apart, fling water out in two 45-ft. dia. circles. The sprinklers can be set to rotate in opposite directions.

“It’s tall enough that kids can run in and out of it. The two sprinkler heads aren’t synchronized which adds to the fun,” says Henderson. “I’ve been building these sprinkler units for years and selling them through regional farm co-ops. They’re quite popular. They’re made from 1 1/4-in. dia. outdoor furniture plastic so they’re durable and won’t rust. And because the base is filled with water, they’re not likely to topple over.”

The double sprinkler model sells for \$45 plus S&H.

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Pair of rotating sprinklers on top of 4-ft. high pvc frame fling water out in two 45-ft. dia. circles. The sprinklers can be set to rotate in opposite directions.

Mark Eilers used a plastic barrel to make this concrete roller. A steel rod turns freely inside a plastic pipe that runs through the center.



How To Make A Concrete Roller

Here’s a simple way to avoid the need for bearings on a do-it-yourself concrete lawn roller.

Mark Eilers, Tower Hill, Ill., stood a plastic barrel on end and placed a plastic pipe on end inside at dead center. Then he filled the barrel with concrete. Once the concrete set, he cut off the other end of the barrel and

slipped a steel rod through the plastic pipe. The ends of the rod weld solidly to a wishbone hitch. The steel rod turns freely inside the plastic pipe with little friction. Best of all, there are no bearings to worry about.

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