



The fold up E-moto bike at Hybrid Cycles - Chester Springs | Jeff Fusco

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The Two-Wheeled Hybrid: E-Bikes Hit the Road in PA

BY: REBECCA VANDERMEULEN, 9/9/2010



Imagine riding your bicycle to work on a summer day without needing to change out of sweaty clothes once you arrive at the office. Or having a bike that gives you a little push up that steep hill by your house.

Bicycles exist that provide this extra boost and power. But unlike the entirely pedal-powered cycles like the one you learned to ride as a kid, these electric bicycles have battery-powered motors to help push the rider along when pedaling isn't quite enough.

They're popular in China and Europe and somewhat common in the U.S. on the West Coast and in the South. They haven't quite caught on nationwide because few bicycle shops sell them, but that's changing ever so slowly, says Dr. Frank Jamerson, publisher of the [Electric Bikes Worldwide Reports](#). And in Pennsylvania, a growing

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number of retailers are stocking this new form of transportation.

Last summer Gary DiVincenzo opened [Hybrid Cycles](#), a West Chester business that specializes in bikes with rechargeable lithium-ion batteries.

Their motors put out between 200 and 350 watts--as a basis of comparison a horsepower is equivalent to 746 watts--and can go about 20 miles on a charge.



"It makes a huge difference on the hills," DiVincenzo says. "Most of us, our bikes sit in our garage because you don't want to deal with the hills."

Electric bikes with a pedal-assist mode give extra thrust, depending on how much pressure is on the pedals. Riding a pedal-assist cycle feels a bit like when your dad pushed you down the sidewalk on your bike the first time the training wheels came off – you're still making the bike work, just not all by yourself. Other electric bikes come with a throttle, sort of like a motorcycle, and whir when a rider turns the power on. Industry experts make a distinction between e-bikes, which work after the rider stops pedaling, and pedelecs, which only run when the rider's legs are moving.



"You can easily turn the motor off," DiVincenzo says. "You can get as much exercise as you want."

Hybrid Cycles sells about five bikes a month, mostly to people who want to ride a bike but are hesitant because of the hilly terrain so common in PA. Customers tend to be older than 55, and many have had their knees or hips replaced. A lot of people who buy bikes from Hybrid Cycles want to be able to keep up with spouses who enjoy riding traditional bikes.

Drew Herr, owner of [Green Pedals Ltd.](#) in Lancaster, says most of his customers want electric bikes to commute to work. Some of the bikes in his store fold up much like a baby stroller, which makes them extra portable. And Herr notes that getting around town on a bike is a lot less hassle than driving a car to your destination, wasting time finding a place to park and ending up at a garage or meter several blocks from where you're going.

"You can tie them anywhere you can tie a bike," he says.

"You can take them anywhere you want to be."

Except that Pennsylvania law doesn't make commuting on an electric bike as simple as taking to the road on a standard bicycle.

The federal government lets states decide how to regulate bikes with batteries and motors, and Pennsylvania law classifies them as mopeds. So for an electric bicycle to be allowed on the road, it needs to be insured and registered with the state. The Pennsylvania Department of Transportation also requires a certificate or statement of origin from the bike's manufacturer. Plus, anyone who rides an electric bike needs to have a driver's license or a motorcycle license.

DiVincenzo and Herr suspect these requirements scare potential customers away.

"This is usually where they find out about the law, when they come in," says Herr, who's been in business for about a year. "When they walk out the door and never come back, you can only surmise why."

Herr once attempted to extrapolate the state's treatment of electric bikes by trying to legally register his electric



scooter. He got a statement of origin from the scooter's manufacturer and tried to follow the proper procedures, he says, but was unsuccessful.

"I took it to an auto-tag place," Herr recalls. "She was stumped. She didn't know what to do with it."

Dover resident Steve Hayes drew attention to the issue recently when [York-area news outlets reported](#) on the difficulties he encountered trying to register and insure the mountain bike he modified by adding a motor.



State Rep. Seth Grove, a Republican who represents part of York County, says hurdles with electric bicycles are another example of technology getting ahead of legislation. He plans to introduce a bill that would define these bikes in state law so they can be treated just like standard bicycles. The definition should be as simple as possible, Grove says, but be sure to specify bikes that have motors but need human power to work. The bill might get passed next spring, he says.

Joe Stafford, executive director of the Dallastown-based Bicycle Access Council, is working with Grove on that bill. Coming up with a legal definition of an electric bike isn't as easy as it sounds because they're not all the same, he says. So far he's decided the definition should cover bicycles that have working pedals, come with motors of 750 watts or less and have fewer than four wheels--to include electric adult-sized tricycles. And Stafford hopes for state law to require e-bike operators to be at least 16.

"We want to make sure that these devices are used by people who understand the rules of the road," he explains.

But Stafford says relaxing the rules on electric bicycles would open up options for people who have health issues--seizures or legal blindness, for example--preventing them from getting a driver's license.

Jamerson says these bikes serve all sorts of customers: those with physical limitations, those who want to reduce their carbon footprint and those who want to use less gas. Still, he doesn't see electric vehicles of any type catching on large-scale unless gas hits \$10 per gallon.

But Jamerson and others in Pennsylvania see plenty of potential in bikes with batteries and motors. By the end of the year DiVincenzo hopes to partner with three other businesses that will sell them. Hybrid Cycles vacated the Chester Springs showroom of Tom Oates Chevrolet this month, but the dealership is still stocking the bikes and plans to repair them too.



Dealership owner Tom Oates says his business will leave its Chevrolet affiliation behind within three months in favor of a focus on hybrid vehicles. Bikes are transportation just like cars are, Oates says, and bikes with motors aren't going away.

Herr agrees.

"Here's a green alternative to gas-powered transportation that's ready now," he says.

Rebecca VanderMeulen is a freelance journalist based near Downingtown. She should ride her bike more. Send feedback [here](#).

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Photos:

Hybrid Cycles owner Gary DiVincenzo at his dealership.

A top of the line Hebb E-Bike is seen at Hybrid Cycles in Chester Springs

The battery pack turns an ordinary bicycle into an E-Bike

Gary DiVincenzo poses with E-Bikes at the dealership.

An E-Bike's battery indicator

Detail of the throttle on an E-Bike

All photographs by [Jeff Fusco](#)