Bike Wheel Transforms Peddling Into Power

Analysis by David Teeghman
Tue Aug 17, 2010 12:53 PM ET
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A team of students from MIT's SENSEable Cities Lab have just won the American round of the 2010 James Dyson Award for inventing the Copenhagen Wheel. This simple contraption transforms a regular peddle bicycle into a hybrid electric bike.

The wheel (PDF) employs a method used in Formula 1 race cars known has Kinetic Energy Recovery System (KERS). Normally when a car brakes, energy is created in the form of heat on the rotors and pads. In vehicles with KERS, that energy is captured and reused by the motor during acceleration.

The Copenhagen Wheel works on the same principal. Energy from the braking is captured an electric motor, which generates a current that is stored on a battery. Later, when the rider is going uphill or needs extra speed, she can tap into that stored energy.

And when you attach your smart phone, the bike can be even more helpful. It has sensors and a Bluetooth connection that links to the user's iPhone. The sensors monitor the bicycle's speed, direction and distance and provides information about traffic and pollution levels.

Here is the short video that the MIT students made about the Copenhagen Wheel:
As you're riding, you can even collect Green Miles that you can redeem later. They're basically like Frequent Flyer Miles, but you get them for riding your bike around town.

The Copenhagen Wheel is part of the James Dyson Award Competition, whose website describes the competition as "an international design award that celebrates, encourages and inspires the next generation of design engineers."

The competition is run by the James Dyson Foundation, James Dyson’s charitable trust. Dyon is the guy who found a way to get people to pay more than $500 for premium designer vacuums.

The team of MIT students, lead by Christine Outram, opted to name their creation after the very bike-friendly city of Copenhagen. That says a lot about the depressing state of affairs of bicycling in America, where less than a half percent of people get to work each day by bike, according to the 2000 U.S. Census.

The next round of the competition is on Aug. 24, when it will name the Dyson Shortlist. If the Copenhagen Wheel makes it through that round, the International finalist will be announced on Oct. 5.
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COMMENTS (11)

Lindsay Banks
Target should sponsor this bike. But I agree with an earlier post – just pedal harder and burn more calories. Maybe this could be the overweight person's accessory?
09/24/2010, 12:40:43 – Flag – Reply

Mia
Maybe using this device would help Dyson/Dyon convert power from cycles everywhere into vacuum cleaner sales. (POWER SELLING?) Hence the article’s title.

08/19/2010, 19:09:17 – Flag – Reply

np
They’ll hae to do some heavy pedaling/penddling to peddle/pedal this bike through the US market if only 0.5 percent of the people are into the principle of expending their energy to save the environment!

Why only use the braking energy? Why not also employ induction? I enjoy these lights:
http://www.youtube.com/watch?v=Bzef_xPWuTg&feature=related

08/18/2010, 11:03:48 – Flag – Reply

wgworld
Unless this wheel can be commercially sold and installed in bike stores around big cities, around the country it really won’t make any headway. It is however a great idea. I live in NYC which is no where near a bicycle friendly city, still, I ride my specialized mountain bike turned road bike about 15–20 miles per day. If I could add just a little bit of peddle power here and there for a nominal fee to my bike I would do it. But if you are talking Dyson vacuum prices for a back wheel, well, you’ve lost a customer.

08/18/2010, 09:52:45 – Flag – Reply

Chris
"Dyon is the guy who found a way to get people to..." WOW, what a coincidence, there are "two" similarly named people both peddling vacuum cleaners!

08/18/2010, 08:55:36 – Flag – Reply

mr boo
This electric bike is smart, but it’s not smart enough.

How’s about this:
All Metro-buses, trash truck, truck over 5 tons .... hook up with special-design tow-system (automatic brake...) from city (you get this tow-system, your car may have discount property-tax....)
When you want to travel from point A to point B, wait in bus station or stop–truck station .... hook up your bike to that bus ... 5 minutes. sitting in your bicycle and enjoy your free–ride (no pedal or whatever....)

08/18/2010, 08:28:22 – Flag – Reply

Joy
I get no sense of how much energy is stored, nor how that translates into assist on hills. I also can’t tell if it incorporates internal hub gearing, is compatible with "regular" gears, or if it is primarily a bit of tech indulgence for kids on a flat grid. The puff piece promo is almost entirely content-free, as far as this cyclist and hybrid owner is concerned. Too bad—I’d like to know more.

08/18/2010, 06:59:56 – Flag – Reply

Marcos
Peddling? You mean pedaling.
Principal? You mean principle.

A professional writer should not rely on spell checking alone.

08/18/2010, 06:58:01 – Flag – Reply

Rayonic
He’s talking about school principals who sell bikes to their students, obviously.

08/18/2010, 08:34:16 – Flag – Reply

Tom –
What does this actually accomplish? Increased range? Increased speed? Why not just pedal normally and burn some more calories?

08/18/2010, 00:10:27 – Flag – Reply

Saxter
Perhaps this article could be about “Pedaling” the bike instead of “Peddling” the bike – which are two VERY different things. Pedaling is what you do to make the wheels go ‘round and ‘round. Peddling it is what they hope to do if the design is successful!

08/17/2010, 15:45:04 – Flag – Reply
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