At two universities, pedaling produces electrical power

September 26 2011, By Sandy Bauers

As four women stepped onto exercise machines and began their workouts at Drexel University's recreation center, a small neon sign nearby began to glow.

They were generating energy. And as it continued to flow, the neon turned a bright orange and lit up the words "I am a Dragon."

Never mind, nukes. Cool it, coal. This is power from the people!

Say what you will about "sweat energy," people-power generation - most often from bicycles - also seems to be generating quite a bit of interest, from the Drexel gym to this week's EcoArts Festival in Manayunk, a neighborhood of Philadelphia. Pedal power has juiced computers, home appliances, cellphones, sound systems and Christmas trees.

At Philadelphia's Drexel, when the new rec center was being designed, students suggested harnessing the exercise power and putting it back into the building. The school is an engineering powerhouse, so why not?

At first, officials didn't think it was workable, said Dan Simmons, senior associate athletic director. But then they found a Florida company, ReRev, that makes machines to do just that. They're big on college campuses, and some health clubs are generating power as well.

By now, Drexel has 14 elliptical machines - cross-training devices - that are hooked to a generator and inverter. When students work out, they

generate power that goes back into the building.

A typical session of half an hour on the machine generates enough electricity to power a desktop computer for 15 minutes, a laptop for 30 minutes, or a compact fluorescent bulb for 75 minutes.

Or - parents take note - a TV for seven minutes.

Given the concerns about obesity and couch-potato kids, what if a family could hook up its TV to a human-powered generator, and the thing would work only when someone was exercising?

OK, so we won't be decommissioning any power plants. But still, power plants are abstract to most people. Human power is a vivid lesson in how much power we use and all the effort it takes to generate it.

Drexel also has stationary bicycles with plugs to charge a cellphone.

The other day, Jessica Norman, director of health, fitness,and wellness for the rec center, had to pedal away for two minutes on one of the bikes to increase the charge on her iPhone from 58 percent to 59 percent.

"I might be here all night," she joked.

But students say they love the new equipment, and Simmons is impressed. "It shows what's possible," he said.

This has been a seductive notion for a while. It captures a certain zeitgeist.

Just before the 2008 Super Bowl, a drink company, AMP Energy, brought 42 stationary bikes and generators for a pre-event that wound up generating the energy equivalent of powering 30 minutes of the pregame

show.

That same year, Wisconsin environmental and technical writer Tamara Dean published "The Human-Powered Home: Choosing Muscles Over Motors," and it's been "a solid seller," said a spokeswoman for New Society Publishers.

In 2009, before the United Nations Climate Summit in Copenhagen, Denmark, the municipality used bicycle power to run the hundreds of lights on the Christmas tree in City Hall Square.

Various inventors have also worked on pedal-powered ideas for remote villages in developing nations.

People are passionate about it. Consider San Jose, Calif.'s David Butcher, who begins each day with an hour-long power-generating session on his homemade bike.

"I've always been a mad scientist at heart," Butcher writes on his website (www.los-gatos.ca.us/davidbu/pedgen.html), where he logs his output every day. On Friday it was 110.5 watt hours (enough to power an incandescent bulb for an hour).

A few commercial models exist for home use, including the Pedal-A-Watt. But they're $400 and more.

The homemade devices are so simple a kid can make one.

A recent energy-projects book aimed at 8- to 13-year-olds, Catch the Wind, Harness the Sun, includes nine pages of instructions and equipment lists for a "personal power station" using a bicycle, a training wheel, and a 12-volt generator, sending the juice to a 12-volt battery.

"Now you're on the road to grid-free power," author Michael Caduto proclaims at the end of the lesson.

Not long ago, a group of Philadelphia's Temple University students got seized by the idea as well.

They were brainstorming new marketing ideas for their company - Verde Styles, which produces T-shirts with environmental messages and plants a tree for every one sold. They decided it would be cool to have a concert powered by people riding bicycles, said Verde CEO Nish Patel, a senior finance major.

They contacted the engineering department and wound up with a test project for Earth Day last April - a single bicycle that powered some of the sound system.

But it wasn't enough. Back to work. By August, they had a four-bike setup that powered a DJ for a green-awareness event, Power Down Philly. The bikes are funded, in part, by a $5,000 grant from Hewlett-Packard, the computer giant.

The bike power was a hit. Kids, moms and all kinds of people were pedaling away.

The four bicycles were back, powering the sound at the weekend's Manayunk EcoArts Festival, which also featured an eco car show, a clothing swap, seminars and exhibits.

Next year, the Verde folks want to do a bigger concert fueled by 50 to 60 bicycles.

It's positively empowering.