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Welland betting on green technology

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San Grewal

When asked if his alternative energy invention was the result of an engineering background, Stefanos Horianopoulos says, "No, but I used to be a second mate in the Greek merchant marine."

That hands-on education has served Horianopoulos well. He's director of KinergyPower, a Welland, Ont., alt-energy company that uses patented technology to convert the braking motion of road vehicles into electricity.

This summer, the company will launch its first full-scale test project in Welland, installing a seven-metre "KinerMat" at the bus terminal to provide electricity for the building.

The mat can be embedded in the pavement or installed above it. It has special hydraulic pistons, lined up like piano keys, that compress whenever a wheel pushes down on them.

That movement captures kinetic energy from the vehicle, which is stored in cells, converted to electricity and sent by wire to power anything from lights to outlets used for computers.

Dan Degazio, who oversees the City of Welland's economic development, says that with the closing of local factories since the recent recession – including the John Deere plant last year where Horianopoulos worked as a welder – KinergyPower is a symbol of the kind of new technology that the city is anxious to invest in.

"We want to transfer our manufacturing sector to the green industry," Degazio says, mentioning local LED light manufacturer CRS Electronics.

"We're hedging our bet (hoping) these technologies will carry our employment in the future."

The project at the bus terminal optimizes KinergyPower's green design. "We use areas where vehicles are slowing down. The mat actually helps slow down the vehicle and doesn't waste the momentum of vehicles travelling at normal speed," Horianopoulos says.

The mats can be used at toll booths, school and hospital zones, intersections, curved sections of highways or anywhere else drivers have to use their vehicle's brakes.

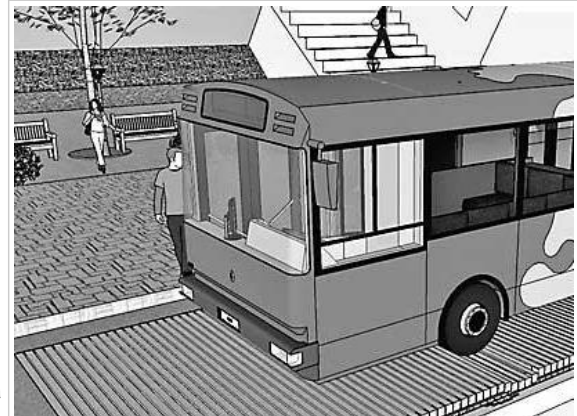
The test installation at the terminal, which has been bought by the city, should provide enough electricity to power two average-size houses, Horianopoulos says.

The potential electricity generation depends on the length of the installation mat, the total weight of vehicles travelling over it and how frequently they do so.

"We are partnering with Niagara College and Brock University to collect the data and monitor the results."

Horianopoulos is confident the Welland test site will be a launching pad. "In a city the size of Toronto, with all its traffic, the potential for the technology is huge. We've been in touch with (the GTA). We're just waiting now to hear back."

Urban Studies is a regular feature about initiatives in cities around the world.



A "KinerMat" captures the kinetic energy of a braking bus as it rolls across it, then stores it as electric power.

TORONTO STAR GRAPHIC