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Start Your Engines

Startup company hopes to help reduce global emissions

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Guy Babbitt and his business partner Chris Turner have big dreams.

The two are the founders of CZero, a startup company working with Colorado State University to develop a new engine kit aimed at helping developing countries reduce their carbon emissions.

They are developing a new hydraulic engine that they want to retrofit onto city buses and other vehicles in hopes of increasing fuel efficiency and reducing greenhouse gases.

The company just recently moved into CSU's Engine and Energy Conversion Laboratory and is working with the university's engineering department and Global Social Sustainable Enterprise Project.

The hydraulic engine kits that CZero is trying to develop work similarly to how a hybrid engine works. But instead of electricity, the hydraulic engines store collected energy, usually through the vehicle's brake system, with a system of high pressure fluid and use that energy when the vehicle accelerates, instead of gas.

"In a city bus, it's not hard to see a 20 to 30 percent reduction in fuel economy," Babbitt said. "In like a trash truck, you could see a 50 percent improvement in fuel economy."

Though the technology isn't new, the application of it is, Babbitt said.

The problem, he points out, is that in areas around the world, like southeast Asia, people drive vehicles typically 15 years older than people in the United States and that these vehicles are more often more polluting.

The hope is to introduce a kit that could be retrofitted onto vehicles that would be cheap enough to be marketable.

"Our whole model needs to be sustainable without government subsidies," Babbitt said. "We need to get people to choose to do this. If you start to make vehicles 20 or 30 percent more efficient, you really can have a significant impact, you can start to add to the reductions of CO2 gases."

Though the kit would presumably have long-term cost saving measures, Babbitt said it's hard to convince people who already have a tough time making ends meet to spend more on their transportation.

The company is less than a year old but has the backing of not only CSU but the Rocky Mountain Innovation Initiative, a regional company incubator.

Though introducing a workable product to the market is years away, Babbitt said the company hopes to see progress soon.

"Our goal is to drive a vehicle with the kit by this year," he said.

Of bringing the company to Fort Collins and Northern Colorado, Babbitt said it was the area's



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Guy Babbitt and Chris Turner are working on an engine model that could help developing countries reduce carbon emissions.

By Christopher Ortiz

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progressive thinking environment that made him decide to do it.
“Everyone is interested in seeing this technology,” It's a great environment.”

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