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Contractor envisions cars, buildings 'talking' about energy

By Kevin Litten

Standing on Sept. 29 in front of the newly LEED-certified State & City building his company renovated in Roanoke, Stan Breakell looked more like an environmental activist than a high-powered contractor.

Holding up an aluminum can and an energy-efficient light bulb, Breakell urged a crowd of onlookers to recycle and to change their buying habits. Then he directed Breakell, Inc. staff to unveil the Toyota Prius he had been driving for the last 150 miles, hailing it as a major milestone in the life of his company.

Environmentally conscious Prius drivers are nothing new, but when Glenn Skutt, the president of Blacksburg's VPT Energy Systems, popped the trunk, there actually was something new: a network of batteries that VPT Energy has developed which Breakell said is boosting the car's gas fuel efficiency to 135 mpg.

As onlookers peered into the car, inquiring about how much it would cost to install a system like Breakell's (\$10,000), a question hung in the air. Is one of Roanoke's most successful contractors getting into the car business?

"I'm not a car salesman," Breakell said after the event. And the souped-up Prius? "Just one piece of a larger solution."

A solution to reduce Roanoke's carbon footprint, Breakell explains, is still years away. But the way Breakell and Skutt plan to get there is through a partnership working to improve a very old system—the Roanoke Valley's electric grid.

Breakell wants to build and renovate structures while incorporating a technology called "smart metering," which Breakell said "can sense the (energy) loads in your building and that meter would be able to somehow automatically talk to your building."

The system would route power to places that need it, manage other sources of power from technologies like solar energy, and even sell excess energy back to the electric company, Breakell said.

So how do the cars fit in?

"You've got to think about the car as part of a sys-

tem," Breakell said. Workers drive their battery-packed cars to work, plug them in, and the building's computer charges the cars during off-peak hours when the building isn't using as much electricity—in the morning, for example, when the air conditioning isn't running as hard.

When the utility company kicks the grid into high gear later in the day as the workday gets into full swing, it can start pulling energy from places where energy is stored, like in the battery packs of cars. Breakell said his enhanced Prius can hold about five or six kilowatt-hours of energy, and "If I've got 10 of those in the parking lot, that's 55 kilowatt hours."

"The power company might want to buy those kilowatt hours, and they'd pay dearly for it," Breakell said. "That's why I'm interested in electric cars. It's already being pursued very, very heavily by utility companies in other parts of the country."

But desirability and availability of technology are two very different things, and that's where VPT Energy could make some inroads. Skutt acknowledged at the press event that the price of adding battery power to a Prius would need to drop by about half to make it cost-effective, but for now, he said it's important for his company to have

avenues for research.

"Having a builder who's very interested in how the overall building-plus-

energy-transportation footprint looks is critical," Skutt said. Breakell "wants to do things at his own facility, and he wants to build customers going forward. It's been a good collaboration."

For both Breakell and Skutt, renovating Breakell Inc.'s Patterson Avenue office building with cutting-edge technology is key to convincing potential clients for both firms that investing in smart energy technology works. Breakell said he plans to add solar paneling, install a computer that regulates energy, and add more battery-enhanced Prius models to the company fleet, all with technology VPT Energy has a hand in engineering.

Making those enhancements is expensive, Breakell acknowledged, "so you have to use every trick in the book to try to come up with a payback," he said.

"As a general contractor who's balancing advocacy with business sense, you have to look for these clever solutions," he said. "I can assure you based on what I know and what I've been able to save clients ... I'm doing you, the building owner, a great disservice if I'm not pushing you to these more energy-efficient strategies."

And besides, Breakell added, "You live in a world where people measure your company by the size of your carbon footprint. So you owe it to yourself, your stockholders and maybe your planet to think about it, be aware of it and not worry about the lowest dollar."

(Kevin Litten is a Blacksburg-based freelance writer.)

