

BUSINESS TECHNOLOGY

To Cut Fuel Bills, Try High-Tech Help

'Green Software' Is Being Deployed by Start-Ups, Big Businesses

By JIM CARLTON

Until recently, businesses seeking to cut energy costs have focused on low-technology steps such as turning down thermostats and switching off lights when they're not needed. Now more high-tech "green software" programs have popped up to help companies cut their energy consumption.

Software start-ups such as **Carbonetworks Corp.**, **Optimum Energy LLC** and **Verdiem Corp.** are making new programs to help businesses monitor their energy use and figure out when to use power at times when power rates are cheapest, among other things. Several large Fortune 500 companies are also spurring the trend of green software by designing their own applications to reduce energy use.

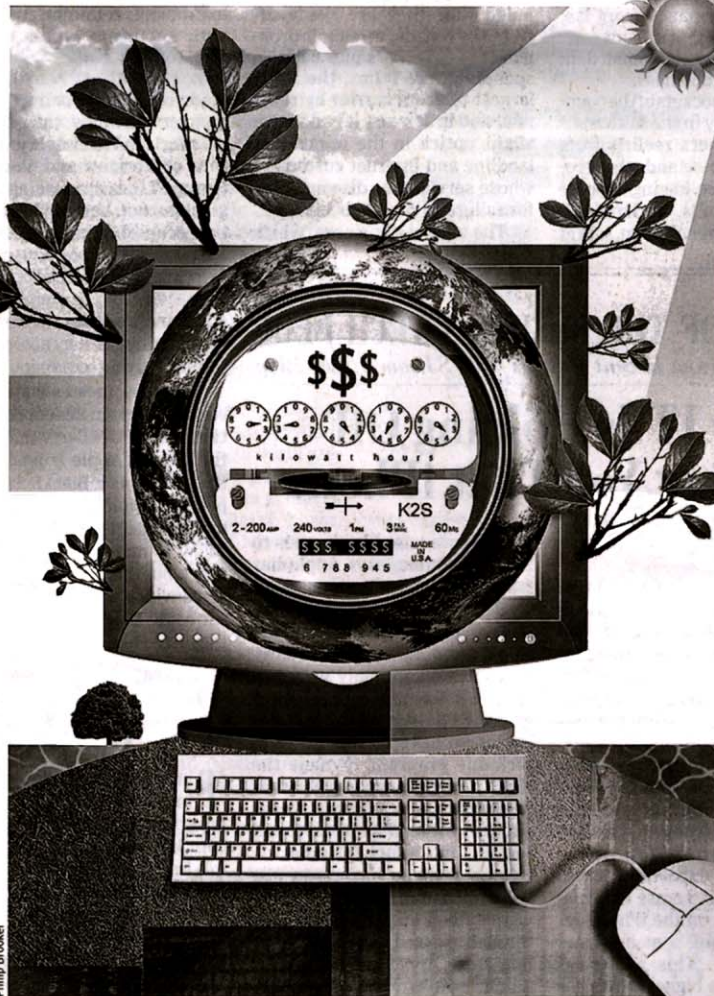
Take **United Parcel Service Inc.** The Atlanta-based delivery giant wanted to cut down on the fuel its fleet of 94,000 ground vehicles uses, so about three years ago UPS began experimenting with a software program it developed itself. The program helps optimize driving time on routes by programming, for example, right turns only on certain New York City runs. "We know how hard it is to make a left turn versus a right turn," says David Barnes, UPS's chief information officer.

Using this software, Mr. Barnes says UPS trucks drove 30 million fewer miles last year, or a reduction of almost 2% in the company's annual global mileage. The upshot: UPS is saving an average three million gallons of fuel a year, while reducing carbon emissions by 31,000 metric tons, the company says.

Such cost savings are a big incentive for companies to adopt these programs. **Glenborough LLC**, a San Mateo, Calif., property-investment and management company, says that for one building last year it paid about \$350,000 after rebates for software designed to make air-conditioning chillers use power at times of the day when power is cheapest, such as the middle of the night. The software, from Seattle-based **Optimum Energy**, was installed in the office building in La Jolla, Calif., that Glenborough oversees. The energy savings are expected to run about \$110,000 a year, Glenborough says.

"We're talking almost total payback in three years, which isn't bad," says Carlos Santamaria, director of engineering for Glenborough.

Green software isn't without its is-



issues. Some of the programs cost hundreds of thousands of dollars. The industry is also getting crowded with start-ups, some of which may not survive if the market goes through a shake-out. And like any software system, some of the programs could be vulnerable to attack by hackers or a computer virus, although most large companies have extensive security features.

But these drawbacks are often trumped by what many businesses see as bigger concerns: the double whammy of rising energy prices and mounting public pressure to rein in emissions that most scientists believe lead to global warming. "When you

look at the cost to generate electricity versus the cost to save electricity, it will almost always be cheaper to save electricity," says Ron Pernick, co-founder and principal of **Clean Edge Inc.**, a market-research and consulting firm based in San Francisco and Portland, Ore., that tracks the clean-technology industry.

This may help explain why so many businesses are turning to green software companies. At an industry conference in San Francisco last month, one of the most anticipated panels was a session called "The Next Cleantech Frontier—Software." One speaker, Robert Bernard, is chief environmental strategist for **Mi-**

crosoft Corp., which is rolling out software to help measure and track greenhouse gas emissions in 40 cities around the world as part of a collaboration with President Clinton's Climate Initiative, an effort launched by the former president in 2006 to help address climate-change issues.

Green software sales, meanwhile, are taking off. **Verdiem** says the number of electronic devices in businesses using its **Surveyor** program for remotely adjusting energy use of computers and other equipment shot up to 600,000 last year from about 85,000 in 2006. The Seattle company says its 200 customers, which include giants such as **Clear Channel Communications Inc.** of San Antonio, have saved a combined half a billion kilowatt hours of electricity, or 500,000 tons of carbon emissions, since it began offering the service about two years ago.

Roth Bros. Inc. says year-over-year sales of its energy-management software were up 19% in 2007 compared to a 7% increase in 2006. The Youngstown, Ohio, firm, which is private, wouldn't divulge exact figures. Cincinnati-based **Cadence Network Inc.**, meanwhile, says sales of its software for controlling energy use in buildings as well as to measure emissions grew 48% in 2007 from 2006, compared to yearly increases before that of about 20%. "The wave started cresting for us 12 to 18 months ago in the U.S.," says Jeff Hart, Cadence's president and chief executive.

"The companies that started thinking about that had operations in Europe, where they were already starting to cut energy use."

One Roth customer, real-estate giant **Simon Property Group**, says use of the company's green software over the past five years reduced its energy usage by 102 million kilowatt hours, or the equivalent of 70,000 tons of carbon emissions a year. Simon says the software helped keep power-bill costs to around \$270 million annually, helping avoid about \$11 million in additional energy costs from company growth.

With more than 300 malls and other properties in its portfolio, officials of the Indianapolis-based company say they can't afford not to address energy use. "It's imperative, with what we do, that we get control of the energy we use," says Andy Marsh, a senior manager of energy systems at Simon.

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