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Selling Private Building Owners Energy Retrofits Depends on the Rewards

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This story is the second in a two-part series. [Click here](#) to read the first part.

BALTIMORE -- Jim Rottenberg would make Jimmy Carter proud, since Carter is the former president who tried to popularize energy saving by wearing sweaters.

Rottenberg is the manager for a warehouse in the southern reaches of this city. Inside, forklifts are stacking garden supplies for the seasonal rush at local hardware stores. That's the main business of Commerce Corp., which owns this warehouse and several others around the country.

Working in the warehouse is not for the feeble. Each winter, outside temperatures can drop to 20 degrees Fahrenheit or even less. Only then does Rottenberg, the building's manager, crank up the heat -- to a balmy 55.

"Fifty to 55 is very comfortable. You know, there's a lot of movement. Guys aren't standing still," he said. "You wear a sweatshirt or whatever, but it really doesn't get that cold where you need. ... You know, it's a big deal."

Last fall, Commerce thought it might be a big deal to try for more energy savings in its warehouses. It hired an Elk Grove Village, Ill., company -- Lime Energy -- to survey the building's energy use. That resulted in replaced light bulbs and an automated lighting system.

On a piece of binder paper, Rottenberg tallied, month by month, how many kilowatt-hours his building used last year, compared to this year. On the bottom line, he wrote "-32.4%." Just changing the warehouse's lights, he said, cut its electricity use by a third.

The retrofit wasn't free. But it saves so much energy, Rottenberg said, that it will have paid for itself within 28 months. "Bottom line: That pays for it. I mean, that's the deal, that's great," he said.

Of course, other items were not part of the deal: neither those 55-degree heaters on the warehouse floor nor Commerce's offices in the corner of the building. Efficiency fixes might have been possible there, but nothing would have paid back as quickly as the lighting investment. For the moment, Rottenberg said, that will do.

In real estate, it's location that sells. For the growing number of companies looking to energy-retrofit the vast market of privately owned buildings, the business is all about payback, payback, payback.

As Lime Energy and others have found, there's a tidy business in nipping the simplest energy retrofits -- the ones that pay themselves off in just a couple of years. But taking a deeper bite out of energy waste is more costly and demands a new way of paying for it. That's why market observers are pondering the "golden incentive" that can entice building owners to slash energy use by half or even more.

If they find it, the potential savings could be awesome. While the building sector accounts for 40 percent of the country's CO₂ emissions, most of that comes from buildings that have already been standing for decades and will be for decades more. Studies estimate that the building stock turns over by no more than 3 percent each year, so retrofitting can be a prime climate solution.

Over the last two decades, energy service companies, or ESCOs, have succeeded with a model for retrofitting old buildings. They've targeted the ones that will be owned for a long time, by a single party, with government buildings as lead candidates. The strategy allowed them to sell their services for no up-front cost, because the cost of the efficiency upgrades could be paid back over time. In other words, the payback was taken care of.

However, the model doesn't work neatly for millions of other buildings, like apartment complexes, office towers and retail stores. Rarely are these owned by a single entity for a long period of time, and even rarer is the owner who is willing to spend extra cash up front to save in the long run. Ownership rights are usually fragmented, leaving it unclear who bears responsibility for -- or stands to gain from -- a more efficient building.

Regardless, more and more companies are finding a profit opportunity in these everyday buildings, and not all are environmentalist crusaders.

Investment banker sees energy profits in old buildings

Lime's CEO, Dave Asplund, is a former investment banker who once ran the Chicago office of Bear Stearns. After years of investing in efficiency companies, he and a colleague thought they sensed a change in the wind. With electricity prices rising, efficiency would finally become a business in its own right.

Starting in 2006, the partners began acquiring small firms with technical expertise in buildings. By 2007, they had become Lime Energy, focusing on building engineering and lighting for corporations. Business has been flush: "We basically went from virtually nothing to did \$60 million last year," he said.

An important part of Lime's business is to don the hard hats after ESCOs sign a deal to retrofit a building. But in another, growing business, Asplund said, Lime works with building owners seeking something that pays back right away.

That means understanding how they think about payback. Most of his clients can't stomach an efficiency investment that takes more than three years to pay back, and the most demanding companies want payback within a year or two.

That narrows the options for making a building more efficient. Efficiency boosters say that if you're willing to wait 10 to 20 years, engineers can go deep into a building's guts, cutting energy demand by half or more. They can change ancient heating systems, replace leaky windows, and even install solar panels to offset

power from the grid.

The savings start with no-brainers

But for most clients' schedules, only a few fixes pencil out. That's Lime's specialty, and that's why 90 percent of its work on commercial buildings is in lighting alone.

In the Commerce building, for example, Lime analyzed the warehouse's function and the kind of solutions best suited to it. Changing the outdated light bulbs was a no-brainer: Today's fluorescent lamps are much more efficient than their predecessors.

Since a worker can occupy only one aisle at a time, it wasn't necessary to keep all the warehouse's lights on. Lime installed sensor systems that light up an aisle only when a worker enters it.

It's a business model that's getting attention from some older companies that haven't historically had "green" at the center of their business plans. One example is Limbach Facility Services, a Pittsburgh-based company that works on building heating and cooling systems.

Limbach was founded in 1901 as a roofing and sheet metal company. Its 100-year career included contracts for stadiums, airports and military bases. For most of its history, energy hadn't been a premier concern.

Then, last year, CEO Charlie Bacon found himself struck by presidential candidate Barack Obama's emphasis on energy. That wasn't enough to garner Bacon's vote, he openly says, but when his son gave him a book on global warming, something clicked.

By January, he was launching an efficiency branch, with the blessing of company management. Limbach steered away from the ESCOs' main targets, opting instead for buildings in less-known areas. In May, the company began publicizing services for major markets such as Boston, Los Angeles and Philadelphia.

Even as companies like Lime and Limbach have begun to capture the easiest gains in private buildings, others think there's a bigger fish to fry.

Bigger paybacks will take more creative financing

Some observers think it would be possible to scoop much more efficiency out of buildings, if only there were a creative financial scheme that could make the money work out for all involved.

According to some, the issue isn't that efficiency costs too much -- it's that the parties are working at cross-purposes. That's why neither a landlord, nor her tenants, nor their creditors are willing to pony up for an investment that would benefit all three.

Consider Energy Savings Performance Contracts (ESPCs), the documents that are the basis of ESCO work. These contracts are so large and complex that they're impractical for an everyday commercial-building owner or homeowner.

So some groups are trying to develop an ESPC at the neighborhood level, grouping homes or businesses so they can take on the contract, and its benefits, together.

Others take a different approach. John Christmas, senior vice president at Hannon Armstrong, an investment bank in Washington, has advocated for a special loan mechanism for efficiency. Essentially, a borrower could get the up-front cash to make efficiency investments in his building, repaying the loan over a long period through an extra charge on his property tax bill.

The New York State Energy Research and Development Authority, a public agency, cuts checks to commercial buildings that make efficiency upgrades: Purchasing a 1-horsepower motor, for example, would net \$45, but a 200-horsepower motor retrieves a \$700 check.

Market penetration of less than 0.1%

These approaches may resolve an issue that state programs have faced: While many states offer rich incentives for efficiency, they're very rarely used. Of more than 150 loan programs for residential efficiency nationwide, less than 0.1 percent of their potential customer base was reached, said a May study by the California Institute for Energy and the Environment, part of the University of California Energy Institute.

Greater success may come, some say, if the real estate industry can be convinced that efficiency has value.

"I just think it's gotten more complicated, given what's going on in the financial markets," said Brenna Walraven, a managing director at USAA Real Estate Co.

In recent years, building owners have grown accustomed to selling buildings after just a couple of years. With the credit crisis, most have been forced to hold onto their buildings for longer than usual. And that is forcing some of them to take a long, hard look at something they would normally ignore: utility bills.

Tenants are exerting pressure, too, Walraven said. The depressed economy has left many commercial buildings with more vacancies than usual, and that has forced them to listen to renters who are increasingly concerned about sustainability. They might just want to save on energy bills, she said, but it could just as easily be about corporate image.

"How am I going to compete as a building? One way is location, obviously," she said. But there's another way: "I'm not just going to make it look better, but I'm going to make it perform better" through money-saving efficiency investments.

The changes in the market led Walraven, in her former capacity as chairwoman of the Building Owners and Managers Association, to start working with ESCOs on a contract model for commercial buildings. The goal is to make it more accessible to everyday owners by standardizing the paperwork and making the investments cheaper. She estimated that would help the 85 percent of building owners who currently find ESCOs too complex to deal with.

If it's successful, she said, the model could be applied in other countries, and could thereby begin to tackle the nearly 40 percent share of energy that buildings consume worldwide.

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