Cities Bring Home the Promise of Energy Savings

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by Rona Cohen

The green jobs revolution arrived in 2009 for Rich Manning's contracting business in Babylon, New York, and placed him on the front lines of an innovative trend in energy finance that proponents say could transform our relationship to home energy use.

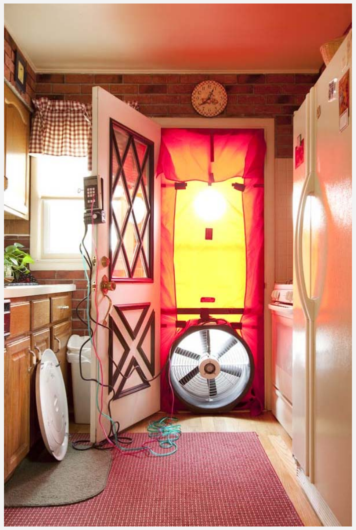

Photo by Tommy Agriodimas

Manning, who performs the types of improvements that for decades have saved homeowners energy and money—such as caulking, weather-stripping, and heating system replacement—saw business increase tenfold after town officials found a way to provide public financing for residents wishing to make retrofits.

"It's a win-win situation for us," said Manning, who has more than doubled his staff to keep up with the heavier workload since the program launched in July 2008. "We're up tremendously in terms of income and profit."

Policymakers have long known that energy efficiency yields big dividends for consumers, workers, and the environment, but they have been less clear about how to overcome some of the financial barriers hindering them from catalyzing home retrofits. In the last year, however, the success of the Babylon program and similar pilots in places like Berkeley, California, and Boulder, Colorado, suggests that energy financing districts could be the key to bringing home the enormous promise of clean energy and efficiency to wide swaths of the American public.

The potential game-changing aspect of energy financing districts, also called Property Assessed Clean Energy Programs (PACE), is that they eliminate what is typically the biggest deterrent for homeowners most in need of energy retrofits: the steep upfront cost of improvements, which can total several thousand dollars.

PACE programs enable municipalities to issue bonds or use other sources of capital to pay for energy efficiency or renewable energy upgrades. Participation among property owners is voluntary, and financing is repaid through a special tax or assessment on one's property tax bill over a set period, typically up to twenty years.

The assessment is backed by a lien on the property that stays with the property, so that if an owner chooses to move prior to the end of the repayment period, the payments—and the improvements—fall to the new owner.

Proponents say that PACE offers the benefits of home efficiency and clean energy to people who may not otherwise be able to afford financing. The programs also create jobs: auditing and contracting employment is up 24 percent in Babylon, which has been a breath of fresh air for a trade hit hard by the recession.

At the state level, the New York State Energy Research and Development Authority (NYSERDA) already operates a program that has helped thousands of New Yorkers obtain assistance to make energy upgrades to their homes, said Frank Murray, president and CEO of NYSERDA.

"Energy financing districts have the potential to make energy efficiency improvements more widely available, by offering another option for homeowners who may be experiencing challenges in obtaining capital from other sources," said Murray.

The success of Babylon's pilot led New York State lawmakers to enact legislation enabling municipalities throughout the state to implement similar programs. Fifteen other states have done the same in the last two years.

Photo by Tommy Agriodimas

Tackling the Climate Threat

Many municipalities have embraced PACE programs as a creative way to comply with stringent carbon-reduction goals and alleviate stress on the electric grid. Nationwide, buildings account for more than 70 percent of electricity use and nearly 40 percent of greenhouse gas emissions.

A 2009 report from the University of California, Berkeley estimated that retrofitting only 15 percent of U.S. homes would provide 4 percent of the carbon savings needed for the country to reach 1990 emissions levels by 2020, and that significantly more savings could be gleaned if the program expanded to commercial buildings.

Dorian Dale, Babylon's energy director, said the town in 2006 adopted aggressive energy efficiency standards for new homes and large commercial construction as a way to help meet stringent greenhouse gas reduction goals. Then officials learned that two-thirds of the town's carbon footprint was attributable to existing structures. So, it became critical to address emissions from Babylon's aging building stock. "We also knew that nothing beat energy efficiency in terms of getting the most bang for the buck," said Dale.

Babylon officials were able to tap into their solid waste reserve fund and use $2 million as a revolving pool of funds to finance home retrofits, by expanding the definition of solid waste to include carbon dioxide—in other words, energy waste. Homeowners repay the loans, which carry below-market rates, over a period of twenty years.

As of early December, 295 homes in town had been audited or retrofitted, with improvements that averaged around $8,200 and annual savings of a little more than $1,000 per home, said Dale. Program administrators have an array of tools to help ensure that the energy savings typically exceed the cost of improvements, so that the homeowner has a warmer house and money left over each month.

This detail is critical for making the programs affordable for many residents, though program administrators say they can't guarantee homeowner energy savings, given that a variety of wild-card factors can make energy use vary over time, like behavioral habits.

Assessing the Risks

That uncertainty, among other issues, raised concerns last summer at the Federal Housing and Finance Agency, which oversees the nation's secondary mortgage markets. In a June 18 letter to national mortgage regulators, bank supervisors, and state government associations, then-Director James Lockhart warned that PACE programs could create "unintended consequences for homeowners and lenders," including the potential to increase homeowner debt burden, and thus the risk of default.

In a written response last July, municipal officials in California and Colorado claimed that improvements financed through PACE programs add value to the properties, and that "in many cases, the energy savings are immediately in excess of PACE tax/assessment payments." They also pointed out that land-secured municipal financing has existed for more than a century and has been used to pay for a wide range of improvements that are in the public interest, from road paving to sewer systems.

The issues raised by regulators sparked a productive dialogue between federal agencies and municipal officials, said Cisco De Vries, president of Renewable Funding, an investment firm set up to finance the pilot in Berkeley, California.

"At the moment people are really trying to be thoughtful by incorporating the concerns of FHFA," said De Vries, who designed Berkeley's program in 2007 while working as chief of staff to Mayor Tom Bates. "The broader issue of consumer protection, of lender protection, of doing these things well and correctly has been a mantra from the beginning of all of us."

In recent months, top Obama administration officials have promoted PACE as a way to cut energy use and create jobs. Last October, Vice President Joseph Biden announced that PACE financing would be a central element of his "Recovery Through Retrofit" plan, which sets the lofty goal of making energy upgrades to every home in the country by 2030. The White House also issued a "policy framework" that announced federal support for PACE programs, along with a research effort to evaluate the financial returns and assess the risks to homeowners and lenders.

The U.S. Department of Energy is making available $454 million in stimulus money to finance PACE programs under a competitive grant process through the Energy Efficiency and Conservation Block Grant Program. The DOE said it will award up to twenty grants nationally in amounts as high as $75 million.
Babylon has teamed with seven other Long Island towns to apply for $40 million of the pie. The consortium would be required to match the grant with town funding, and leverage it with private capital at a ratio of 5 to 1. The goal is to

retrofit around 5 percent of homes within the eight towns in three years.
Congress has also stepped in to support PACE. Last year, lawmakers authorized tax credit subsidies for PACE bonds in the stimulus law. The climate and energy bill approved by the U.S. House of Representatives last June would allow the government to provide credit support for PACE programs.

Overcoming the "Energy Efficiency" Gap

Despite the buzz generated by energy financing districts, the programs are still in their infancy. Fewer than 2,000 properties nationwide have been upgraded with PACE financing. Energy experts caution that a lot of road needs to be covered before retrofitting one's home becomes as second nature as tuning up one's car.

Researchers have long known that when it comes to consumer decision making about energy efficiency, future energy savings are worth less to an individual than if they were received today. Finding ways to overcome this "energy efficiency gap" has led to a flurry of policies and incentives over the years, including scores of energy financing programs. Proponents hope that by eliminating the up-front cost of improvements, PACE will move the discussion from theory to implementation.

"We're trying to transform the way people think of energy use in their home," said De Vries of Renewable Funding. "We know people will make some use of these tools. The question is, can we get this to scale, and change the conversation?"

There have been growing pains, and limitations caused by a challenging economic climate. When Berkeley launched its Financing Initiative for Renewable and Solar Technology (FIRST) in November 2008, the novelty of the PACE model and the tight credit markets resulted in an interest rate that was higher than some other sources of funding, said Daniel Lambert, Berkeley FIRST's program manager. The pilot was the first to be funded entirely with private financing. Access to funding was limited to less than a year.

Berkeley originally offered $1 million for residential solar photovoltaic (PV) installations that came from issuing micro bonds for each individual project, which were purchased by Renewable Funding. Initial demand was brisk: funding for the program's forty program slots was reserved within ten minutes of launching the online application. But by last summer, many of the initial participants had dropped out, mainly because they were able to find cheaper financing by taking out home equity loans, said Lambert. The short period required to finish the projects meant there wasn't enough time to find new homeowners to take the funding. In the end, only thirteen of the original forty projects were completed, at an average project cost of $25,000.

In a follow-up survey, program administrators discovered a silver lining to the high dropout rate: many homeowners who had left the program had gone ahead and installed PV on their homes or were planning to do so. The fact that they pursued cheaper financing on their own was a positive, said Lambert.
"We realized the outreach and education program itself has a great deal of value, and that you can leverage the impact of public funds by motivating other owners to use private financing," said Lambert.
Plans are now underway for PACE programs to launch by the end of the year covering nearly the entire population of California.

Elsewhere, officials working to establish new programs stressed the importance of educating a wide range of local stakeholders on the benefits and potential risks. In Burlington, Vermont, a series of neighborhood assemblies are planned for the coming weeks to discuss an energy financing district proposal that will appear on the public ballot in March. State lawmakers approved legislation last year enabling municipalities to set up energy financing districts with voter approval.

"I think the real hurdle is to convince a town governing board that this is really going to be safe for the community to take on. The notion of using public money for private purposes is still at the root of the skepticism," said Tom Buckley, manager of customer and energy services at Burlington Electric Corporation and co-leader of the program design team.

An added wrinkle in Vermont's state law is language saying that in the case of a homeowner foreclosure, the lien can be dissolved, which increases the level of risk. Buckley said that officials are considering ways to alleviate that risk, such as through creation of a loan-loss reserve fund.

Energy experts were optimistic that, ultimately, PACE financing would succeed in Vermont. "One of the reasons I think this is going to work is because whether you're motivated at saving the world or saving money, it's the exact same action," said Peter Adamczyk, energy finance and development manager at the Vermont Energy Investment Corporation.

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