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ENERGIZING NEW YORK'S SMALL BUSINESSES

At a time when they could definitely use a break, too many small businesses in New York are passing up an opportunity to save hundreds if not thousands of dollars a year by implementing basic energy efficiency measures

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ENERGIZING NEW YORK'S SMALL BUSINESSES

While headlines focus on individual unemployment and the travails of big-name firms, New York City's small businesses have suffered greatly in the current recession. Even in the best of times, small firms in the city often get by with razor thin profit margins. But with their customers spending far less in this downturn while many of their fixed costs—from taxes and rent to insurance—remain as high as ever, numerous local companies have had to downsize or shut down. Countless others are just trying to hang on until business picks up again.

Nonetheless, at a time when small businesses need all the help they can get, one big opportunity to reduce costs has gone mostly ignored: becoming more energy efficient. Significant savings—up to thousands of dollars a year for even the smallest firms—have been left on the table.

Businesses across the five boroughs now pay more for electricity than firms anywhere in the U.S. outside of Hawaii. Recent surveys find small firms citing high electricity bills as one of their three greatest obstacles to doing business in New York. Taking steps to make their operations more energy efficient—from upgrading their lighting systems to retrofitting their HVAC system and adding extra insulation—quickly pay for themselves and then some.

But despite the prospect of substantially reducing their monthly expenses, only a fraction of the city's small businesses have taken steps to make their operations more energy efficient. The city and state offer a number of energy conservation programs targeted at small businesses, but as we detail in this report, shockingly few firms in the five boroughs have taken advantage of them.

Energy costs often get overshadowed by other things that make doing business in New York so expensive, such as commercial real estate prices and taxes. However, small businesses across the five boroughs increasingly put high energy bills at or near the top of their list of obstacles to succeeding here.

When the Manhattan Borough President's office surveyed small businesses in 2008, it found that utility costs, on average, were the single biggest concern of respondents—coming in ahead of all other challenges such as high taxes, finding qualified workers, lack of space and competition from chain stores. Similarly, more of the businesses surveyed by the Brooklyn Chamber of Commerce in 2006 cited energy costs as a "significant obstacle to future growth" than even real estate taxes and labor costs. The Chamber had asked company executives to rank their concerns from a list of 20 items, including real estate taxes, labor costs and traffic/transportation problems. Thirty-six percent of the businesses said that energy costs were a real problem, which was second only to the cost of general liability insurance (which was cited by 38 percent of respondents).

"Energy costs are always one of the top three concerns of our business community," says Carl Hum, president of the Chamber. "If we can cut those costs, it'd be beneficial."

Commodity prices, especially for oil, have come down since both of these surveys were taken. But because consumer rates for electricity and gas are tied to long term contracts, most utility bills have actually gone up since then.

According to the U.S. Energy Information Administration, commercial electric customers in New York City paid an average of 21.2 cents per kilowatt-hour (kWh) in 2008, the latest year for which data is available. That is roughly twice both the national average (10.4 cents per kWh) and what businesses paid in other large U.S. cities such as Chicago (10.3 cents per kWh) and Los Angeles (10.5 cents per kWh).[1]

Between 2002 and 2008, Con Edison commercial customers saw average prices rise by nearly 50 percent—from 14.3 cents per kWh to 21.2.[2] And the strong likelihood is that costs will keep going up: due to the need for infrastructure upgrades, the city's chief electricity provider announced in 2009 that it would be seeking rate increases every year through 2013. If approved by the Public Service Commission (PSC), the state regulatory agency, their announced rate plan could add an extra $97 per month or $1,166 per year to the typical small business's electric bill, which is currently $2,025 per month.[3] That's a lot of money for a small business in good times, but it could be fatal for many in the present recession.

One might think that the skyrocketing energy prices of recent years or the current economic downturn would prompt large numbers of businesses to embrace energy efficiency measures as a way to trim costs and boost their bottom line. Our research shows, however, that this has not happened. Roughly two dozen energy contractors and the leaders of chambers of commerce, local development corporations and other nonprofit business intermediaries interviewed for this report say that only a very small number of local firms across the five boroughs are participating in the many energy conservation initiatives offered by government agencies or the utilities. Most small businesses have not taken any steps to become more energy efficient.

"The overall level of interest [in energy conservation] is definitely high," says Frank Randazzo, director of the Empowerment Zone at the Bronx Overall Economic Development Corporation (BOEDC). "But the only business owners I see taking the plunge are either young and savvy or already committed to the idea of being green."

Several public and private energy efficiency programs target commercial customers in New York. The New York State Energy Research and Development Agency (NYSERDA) offers low-cost energy audits to companies interested in improving their energy efficiency, and provides targeted incentives that reduce the cost of implementing these measures. Meanwhile, the city's utility companies offer a range of efficiency programs to their customers.

Between its launch in 2000 and September 2009, NYSERDA's Audit Program—the agency's main energy efficiency program for small businesses—completed just 2,214 projects in Con Edison's service territory, which includes the five boroughs of New York City and Westchester County. That comes to barely more than 200 projects a year, and less than one percent of all small businesses in the territory.

To be sure, businesses incur up-front costs to implement energy-saving measures, and those costs can be high depending on the scope of the project. But in most cases, the payback period—the time it takes for businesses to recoup their initial investment through energy savings—is three to six years.[4] And many of the available incentives programs can reduce that time even more.

Still, our research shows that a paltry number of the city's small businesses are biting. Between its launch in 2000 and September 2009, NYSERDA's Audit Program—the agency's main energy efficiency program for small businesses—completed just 2,214 projects in Con Edison's service territory, which includes the five boroughs of New York City and Westchester County.[5] That comes to barely more than 200 projects a year, and less than one percent of all small businesses in the territory. During the same period, NYSERDA's Flex Tech program, which provides more comprehensive energy audits to industrial firms and other companies that use a significant amount of electricity, completed 190 projects in this area, while the agency's Existing Facilities program—NYSERDA's only commercial program that offers financial incentives for businesses to implement energy efficiency measures, rather than just providing an audit diagnosing where firms are wasting energy—completed 1,735 projects.[6] (A "project" usually refers to an individual business, but could also involve a building that benefits multiple firms.)

"You would think that with all the press about global warming, high oil costs, the electric supply problem, there would be greater interest in energy conservation," says Erik Neumann, co-founder of the EME Group, an engineering company that has performed energy audits for small businesses through NYSERDA. "We've seen an uptick in NYSERDA's audit program, but not a landslide by any means."

There are a number of reasons why more New York businesses aren't taking steps to conserve energy. To start with, energy efficiency programs specifically targeting small to mid-size businesses in the city are too few and offer too little. For instance, unlike some programs, NYSERDA still charges small businesses a nominal amount just to receive one of the agency's shallow energy audits[7], and the agency's single commercial incentive program—which actually helps firms reduce the cost of implementing energy saving measures—is almost entirely geared toward larger companies. (The New York City Council funded one program aimed at small- and mid-sized industrial firms that subsidized a large share of the implantation costs, but the program was tiny—it served less than 30 businesses over three years, all in North Brooklyn—and quickly ran out of funds.)[8]

New energy efficiency programs rolled out in the past year offer considerable promise for serving more small and mid-sized firms. Perhaps most notably, Con Edison has just started a program that provides small businesses with a free on-site survey of their lighting and HVAC systems coupled with incentives for upgrades covering up to 70 percent of the installation costs.

Still, even these new efforts are likely to miss tens of thousands of businesses across the five boroughs. For instance, Con Edison's new small business program, which officials at the PSC say is the largest of its kind, has enough funding for 6,000 customers per year[9]—but in a city with more than 200,000 small businesses that's still a fairly small number.

However, insufficient funding for incentives programs is not the only problem. Even when the incentives are in place, experts argue that businesses aren't taking them up as they should. For example, in addition to NYSERDA and the city's public utilities, New York businesses might apply to the IRS for tax credits, the U.S. Department of Energy for loan guarantees, or the Bronx Overall Economic Development Corporation (BOEDC) for low-interest loans.

But very few are doing so—and in a sense, it's tough to blame them. Most city businesses rent their space. Since there's no guarantee they'll be in the same space beyond the term of their lease, many businesses conclude that money spent on energy efficiency measures will benefit not them, but their landlord and/or future tenants. Some states like Massachusetts have addressed this problem in part by innovations to creatively finance efficiency upgrades: they tie zero-percent interest loans to the individual electric meter, so whoever benefits from the upgrades pays down the investment incrementally through charges added to their bill. But this proposal has not yet been brought to New York City.

Another big factor holding people back is the considerable hassle involved in simply finding the incentives in the first place and then meeting all the deadlines and requirements after enrolling. Each program has its own qualification requirements, and most of the incentives are tied to particular kinds of purchases such as light fixtures, HVACs, green roofs and high-efficiency boilers. Add to that the fact that they're administered and advertised by different agencies at different levels of government, and it's easy to see why only the most up-to-date and savvy business owners bother to apply.

Next, depending on how ambitious the program and generous the incentives, actually enrolling in one of these programs can interrupt workflow for months—and entail significant costs in its own right. One business owner we spoke to, for example, paid an outside consultant $25,000 just to keep up with all the deadlines and meetings. Over the course of the project, the business had to schedule dozens of appointments not just with program representatives but energy auditors, building contractors and loan officers. Like many smaller operations, they didn't have enough in-house staff and expertise to stay on top of it all.

In 2008, the PSC dramatically increased a surcharge on customer utility bills in order to triple funding going to the state's energy efficiency programs. And this past December, the agency completed the approval process for 80 new programs statewide—including 39 in the city—an achievement that brings two years of negotiations over a new Energy Efficiency Portfolio Standard (EEPS) to a near conclusion.[10] This is undoubtedly a signal achievement. However, it is still unclear how successful these news programs will be. Simply adding new programs to the docket won't necessarily entice significantly more businesses.

For instance, the energy conservation programs that are in place now have largely been approached—and sold—from an environmental standpoint rather than an economic development one. While reducing carbon emissions, improving the environment and reducing the demand on energy suppliers are laudable goals, it's a good bet that a focus on improving the bottom line would more effectively capture the attention of most business owners. Also, unless program administrators start to better coordinate their outreach efforts and make both applying to and participating in these programs significantly easier, it's unlikely that many more firms will participate.

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Moreover, the city's economic development agencies have not made it a priority to help local businesses cut costs through energy conservation. For instance, although firms frequently cite electricity costs as a major impediment to doing business in New York, officials at the city's Department of Small Business Services (SBS) acknowledged to us that they have not tackled the issue in any meaningful way. The New York City Economic Development Corporation (EDC), which typically works with larger businesses, recently announced 30 initiatives related to energy and the environment, but none of them were focused specifically on energy conservation.[11]

It is clearly cause for optimism that city, state and federal officials have devoted significant attention to energy efficiency and conservation over the last year or two. At the federal level, last February's American Recovery and Reinvestment Act (ARRA) included $5 billion in funds for weatherization programs nationwide, and President Barack Obama recently proposed creating a Cash for Caulkers program, modeled on the successful Cash for Clunkers program last summer, that would pay homeowners up to 50 percent of the cost of a home retrofit. Meanwhile, Governor David Paterson and Mayor Michael Bloomberg have both recently signed into law ambitious new energy conservation bills: at the state level, a bill that would allow municipalities to participate in a federal bond program that would help finance projects through the participants' property tax bill; and in the five boroughs, a bill that would revamp the city's energy conservation code and require all large property owners to undergo regular energy audits.

But like other sweeping sustainability initiatives proposed by Mayor Bloomberg in recent years—from installing tidal turbines in the East River to solar panels on city owned rooftops—most of these new initiatives were not crafted with small businesses in mind.

The current economic downturn offers an opportunity for city and state policymakers to approach energy conservation from an economic development perspective. Firms all over the city could clearly benefit from saving hundreds if not thousands of dollars off their electricity bill. But helping small firms reduce electricity costs isn't just a way to mitigate pain during this recession; it could give a long-term boost to independent businesses that have been struggling amidst an increasingly competitive economic environment. And of all the costly burdens facing businesses in New York, this is one that can be addressed with relatively minimal cost to the public treasury.

Saving Energy, Cutting Costs

Becoming more efficient could help small businesses save thousands of dollars, a potential boon in high-cost New York

Energy efficiency programs have long been celebrated because they lead to a reduction in energy use, promote sustainability and improve the environment. But their greater appeal to businesses in New York City and elsewhere might be the potential they hold to trim hundreds or thousands of dollars off electricity and gas bills, savings that might allow struggling companies to survive until business picks up.

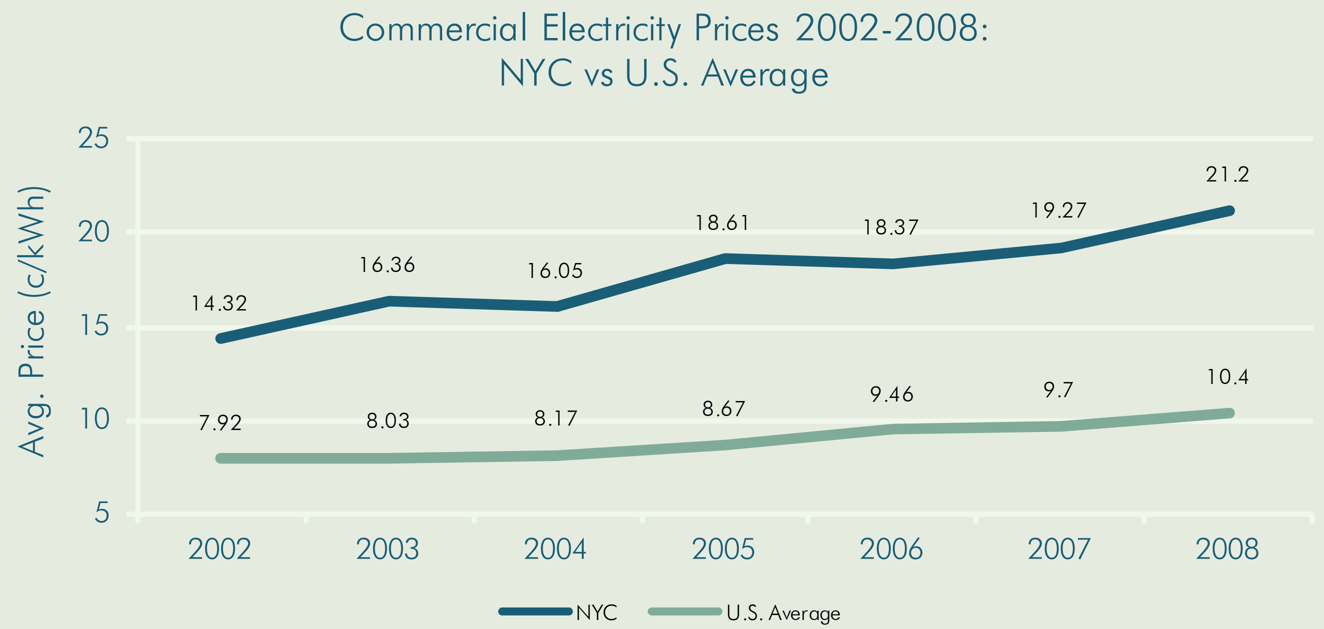
"There's a great opportunity for small and medium size businesses to have energy savings," says Bob Lesch, vice president of sales and marketing at Public Energy Solutions, a private energy contractor. "The savings could be dramatic and you don't have to be one of the large customers to take advantage. You can be a small bodega."

Lesch recalls that his firm helped an auto dealership based in Manhattan realize $39,000 a year in energy savings simply from making a lighting upgrade. According to Lesch, the entire project cost $40,000, but the dealership's out-of-pocket expenses amounted to just $10,000; incentive programs covered the balance.

The opportunity to reduce energy expenses should hold great appeal to business owners in the five boroughs. "In New Jersey, energy costs are substantially less," says Mickey Roy, the chief financial officer of a gourmet food distributor in the Bronx. "A lot of businesses like ours have abandoned the city. Our owner is a native New Yorker, so he is committed to staying here, but it definitely costs us."

In New York, buildings produce 79 percent of the city's global carbon emissions and 40 percent of its pollution.[12] A sizable portion of that output serves no purpose: according to the Environmental Protection Agency, as much as 30 percent of the energy used in city buildings is wasted, through a lack of sufficient insulation, shoddy mechanical design or bad consumer habits.[13] Whether your motivations are primarily environmental or economic, this is bad news.

Chris Benedict, an architect specializing in low-cost sustainable construction, says that it's the very simple things that most buildings get wrong. Some examples are hallway or staircase lights that aren't outfitted with



Source: Energy Information Administration. Price data for NYC reflects average electric prices for Con Edison commercial customers. Con Edison is the primary electricity provider in all five boroughs as well as Westchester County. The U.S. average reflects average electric prices for all commercial customers nationwide.

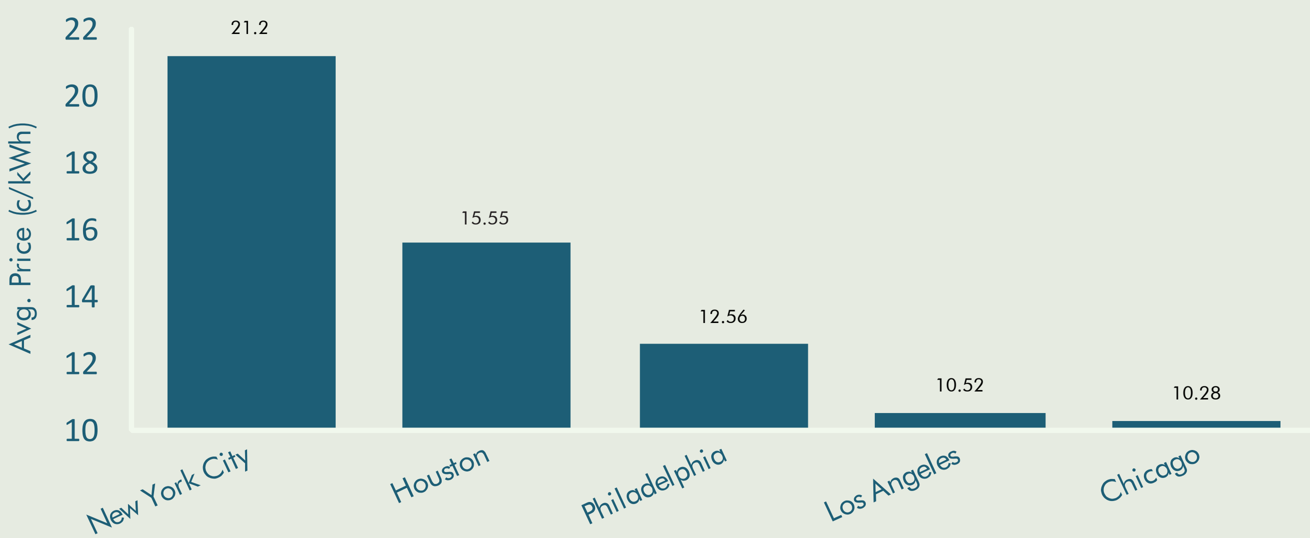
motion sensors and so burn electricity 24 hours a day, or tenants who can't control how much heat they receive and open windows in winter to let out excess heat. Other problems result from shoddy construction practices and outdated building stock, including pumps that pump water downhill and exterior walls with little or no insulation. "Oftentimes it's just bad mechanical design," says Benedict.

But in a city where most businesses rent space and few have the security of long-term lease agreements, these problems can linger as neither building owner nor tenant takes action. Businesses with five-year leases aren't likely to agree to a full-scale retrofit—at least not in the absence of a creative financing scheme—even if a grant or tax incentive covers part of the cost. But they might upgrade their lighting, switching out incandescent bulbs and older, less efficient fluorescents; they might install a ceiling fan to better circulate heat and switch to a smaller air-conditioning unit. These simple changes can yield significant gains: commercial electricity customers use as much as 50 percent of their electricity (and over 25 percent of their energy overall) on lighting,[14] so anyone willing to change out their energy-hogging incandescent light bulbs for state-of-the-art fluorescent ones can expect to save hundreds, sometimes even thousands, of dollars a year on electric costs.

One small business owner who took this step was James Robertson, who runs a 15-person woodworking shop called Daedulus Design in Williamsburg. A few years back, he enrolled in a city-funded efficiency program run by the New York Industrial Retention Network (NYIRN). In the woodworking rooms, an energy contractor replaced his older, T12 fluorescent lights—the thick, buzzing kind that flicker when they're about to expire—with a set of much smaller T5 and T8 lamps with electronic ballasts. Robertson also replaced the incandescent bulbs in his office with the latest compact fluorescents, and installed ceiling fans to help disperse the heat in his high-ceilinged studio—a small shift that freed up workers there from having to turn the heater on and off to combat the draft coming off the windows. The total cost of these changes was $7,000, most of which was covered by grants. Robertson estimates that he saves nearly $2,000 a year on his electric bill alone.

In the present economic climate, even relatively small savings like this can make a big difference to a business's bottom line. It can also dramatically reduce the city's collective energy appetite. Businesses tend to waste more energy than residents do, if only because they use significantly more. And it's partially for this reason that commercial energy efficiency programs tend to have a higher benefit/cost ratio than residential initiatives. For example, commercial programs in NYSERDA's Energy $mart portfolio, which includes all of the agency's efficiency programs since 1998, have been found to achieve 76 percent of the state's total energy savings while using only 35 percent of the funding.[15]

Commercial Electricity Prices in U.S. Cities 2008



Source: Energy Information Administration. Average commercial prices for New York, Houston, Philadelphia, Los Angeles and Chicago were taken from the primary electricity providers in those cities: Con Edison in New York, Reliant Energy in Houston, PECO in Philadelphia, Commonwealth Edison in Chicago, and The Department of Water and Power in Los Angeles.

Energy Efficiency Programs in NYC

There are numerous programs that help businesses conserve electricity, but the most comprehensive ones primarily target large firms

Although businesses in New York can pick and choose from more than a dozen different energy efficiency incentives, including tax credits and rebates tied to specific purchases, only a small handful of more comprehensive programs offer the expertise, project management structure and financial help that most businesses need to make a meaningful investment. And several of these are primarily geared toward large companies.

The state System Benefits Charge (SBC), a surcharge on customer utility bills, largely funds these more comprehensive programs, and until recently just one agency, NYSERDA, designed and administered them. In 2007, the state Public Service Commission (PSC) began to open up the programs to state regulated utilities on a trial basis, and last summer the PSC ratified that decision permanently as a part of the state's action to triple funding for energy efficiency programs.

The PSC must approve all SBC-funded program designs and funding levels. While there are several additional programs in the pipeline, only six are now open to New York City businesses. NYSERDA administers three, Con Ed two, and National Grid, the primary gas utility for Brooklyn, Staten Island and parts of Queens, one. These programs tend to break down into three general types: audit programs that offer businesses studies of their work environments and energy use patterns; rebate programs that help subsidize the purchase of pre-approved appliances such as energy efficient boilers; and implementation programs that offer businesses grants and other financing opportunities for larger custom projects.

NYSERDA manages two energy audit programs, one serving small businesses called simply the Audit Program and one designed for industrial clients and other big energy users called the Flex Tech Program. Through the Audit Program, NYSERDA contracts with engineering firms to conduct detailed studies of how individual businesses can save money through energy efficiency investments. NYSERDA subsidizes the audits so they are available for $100 to firms with electricity bills under $25,000 and $400 to those with electricity bills between $25,000 and $75,000.

According to Mark Gundrum of NYSERDA, this program is designed to make business owners aware of easy and cheap ways they can cut power usage, like fluorescent lighting, window sealants and insulation. While many small firms regard the program as helpful, it only consists of an audit; money to implement the strategies identified by the consultant is not included.

The Flex Tech Program, designed for businesses with an annual energy bill of $75,000 per year or more, goes considerably farther. It provides a 50-50 cost share for a much more in-depth feasibility study that includes recommendations and savings projections on full-scale building retrofits. Unlike businesses that participate in the Audit Program, industrial firms that receive a Flex Tech audit are then eligible to receive incentives that defray a significant amount of the cost of implementing the consultants' recommendations.

As Gundrum explains, the Flex Tech program serves as a "feeder" for NYSERDA's big two-part incentive program, the Existing Facilities Program. The first part of that program is composed of a pre-approved equipment application through which customers can receive rebates of up to $30,000 on pre-selected items. "Basically, you submit a simple application with your receipts and you get a check back," says Gundrum. The second part can be worth even more to clients: a performance payment on large-scale projects incorporating a lot of different interventions, including new lighting systems, HVACs, compressors and motors all installed together. Since the size of the incentive is determined by the amount of energy saved, payments are subject to a post project engineering evaluation.

The next comprehensive energy efficiency program aimed at commercial customers is Con Edison's new Direct Installation Program. It is also probably the largest designed specifically for small businesses, according to the PSC's Michael Townsley. After the PSC officially approved the program in January 2009, Con Ed began offering it to customers in June with a $24 million annual budget.[16] The program exclusively targets low-hanging fruit—things like new fluorescent lights and HVAC retrofits—and limits what businesses can apply based on monthly energy use, but it covers up to 70 percent of the installation costs with grants.

Another Con Ed program is the so-called Targeted Demand Side Management (DSM) Program, which seeks out commercial customers in designated high-load districts to help reduce the threat of blackouts.

Some recent areas have included lower Manhattan, Southeastern Brooklyn and the South Shore of Staten Island. Energy contractors hired by Con Ed will typically seek out businesses in those areas and ask them to undergo an audit; depending on their specific energy use patterns and needs many of those businesses may then qualify for implementation grants.

The last existing program is National Grid's commercial gas program, approved on an interim basis in 2007. It includes a mix of audits, rebates and custom cost-sharing arrangements. According to Paul Morisi, an energy contractor who works with the program, smaller businesses can get free energy audits covering gas specific variables like insulation as well as 50 percent off the cost of more in-depth studies like those in NYSERDA's Flex Tech Program. They can also get rebates that cover the extra cost of high-efficiency boilers and up to $150,000 in grants for larger custom projects. These are akin to the projects in NYSERDA's Existing Facilities Program, but they concentrate on gas rather than electricity use. With a little more than $6 million in funding per year, however, its impact is rather limited.

While some of these programs offer generous grants to help offset a portion of the cost of implementing energy saving measures, participating businesses usually still have to put up a large amount of their own money. Yet not a single one of these programs will offer businesses low-interest loans to do so, a problem since many small businesses lack the capital to make any but the most essential investments. Until recently, NYSERDA had a loan program that brought down interest rates for approved energy efficiency projects and, according to Gundrum, was suitable for small businesses. But a couple of years ago it ran out funds and a replacement still has not been approved by the PSC.[17]

Last November, Governor David Paterson signed into law a bill that would make it possible for municipalities across the state to create a so-called Property Assessed Clean Energy (PACE) loan program for their constituents. Through the PACE program, a business could access capital for retrofits and equipment purchases at favorable rates and then repay it incrementally over 15 to 20 years through its property tax bill.[18] This financing scheme has several perceived benefits, including longer repayment periods than traditional loans and a debt that is attached to the property not the owner. However, it will do nothing for those businesses that rent their space, a huge problem in New York City, where most small firms are renters.

Similarly, Mayor Bloomberg's new Greener, Greater Buildings Plan requires ongoing energy efficiency improvements in the city's existing large buildings—both residential and commercial structures with over 50,000 square feet—and includes a $16 million loan program for property owners to make retrofits. While the program is aimed at entire buildings, some qualifying landlords may make use of the program to upgrade equipment for their tenants, including small businesses. But many more will not. Experts say that a much larger loan fund is needed, and one designed specifically for small businesses that want to invest in energy conservation.

There are at least three more small business programs that don't require PSC approval, because they aren't funded through the SBC charge on customer energy bills. However, two of them recently ran out of funds. Coordinated through the New York Industrial Retention Network (NYIRN), one of those programs was originally funded by City Council to help support light industrial businesses in North Brooklyn after the area was re-zoned in 2005; it provided an energy audit for in-depth building efficiency retrofits and subsidized up to 96 percent of the installation costs, considerably more than any other program. The program had funding to cover energy efficiency upgrades for just 27 businesses. Another NYIRN program was funded through a one-time grant from the U.S. Department of Energy and offered a range of subsidies covering anywhere from 3 percent to 75 percent of the total cost of implementation. Just 12 businesses took advantage of the program before it ran out of funds.

The only non-SBC program still open to New York City businesses is administered by the Bronx Overall Economic Development Corporation (BOEDC); that program recruits Bronx-based businesses into one of NYSERDA's programs, while providing additional grants and zero-percent interest loans to cover any out-of-pocket expenses.

According to the PSC's Michael Townsley, more programs are on the way. Last summer, the PSC invited NYSERDA, Con Edison and National Grid to design a suite of programs as a part of the state's Energy Efficiency Portfolio Standard, a framework for cutting energy use in the state by 15 percent by 2015. The PSC established interim targets for reductions and more than tripled the total annual budget for energy efficiency programs, from approximately $175 million to $540 million. In December 2009, the PSC completed the approval process for nearly all these new programs. There were nearly 120 proposals statewide, says Townsley, and the PSC approved 80 of them. New York City will have 39 new commercial/industrial programs—22 for electric customers and 17 for gas users, though not all of these are as comprehensive as the ones mentioned above. Also, most of the new programs are just beginning to be implemented and probably won't be open to businesses until July of this year or even later.

Off the Grid

Only a fraction of New York City's small businesses have taken advantage of energy efficiency programs

There are a number of reasons why government-driven energy efficiency programs should specifically target small to mid-size businesses. Unlike many larger corporations, small businesses are unlikely to have the necessary in-house expertise to conduct their own energy audits or navigate the field of available tax credits and grants. Nor do they have the needed liquidity to meet the high up-front costs of a building retrofit or light installation. And yet, on the environmental side of the ledger, they still tend to use a lot more energy than most residential customers do—meaning that they waste more energy as well.

Nevertheless, compared to the sheer number of businesses in the city, efforts to reach them have barely begun to scratch the surface. According to data provided to us by NYSERDA, between January 2000 and September 2009 the agency's Audit Program for small businesses completed just 2,214 projects in Con Edison's service territory—which includes the five boroughs of New York City and Westchester County. During the same period, NYSERDA's Flex Tech program completed 190 projects (29 of which were industrial projects), while the Existing Facilities program, which targets larger businesses, completed 1,735 projects.

NRDC chief energy economist Ashok Gupta says that the state does a pretty good job of tailoring its programs to different markets, but in the absence of a lot more coordination and funding they under-serve all of those markets. "They have a lot of programs but they don't go very deep," he says.

The PSC's Michael Townsley claims that the state's efficiency programs have neglected small businesses. The Existing Facilities program, the NYSERDA initiative that provides financial incentives to companies that implement energy efficiency measures, is really designed for large firms. The agency's sole program targeted at businesses with electricity bills under $75,000 per year only provides a study of wasted energy sources, rather than grants or zero-percent interest loans to pay for the actual implementations.

"It's one thing to identify measures, but companies are looking for money for implementation," says one economic development expert who's worked with small and mid-sized industrial firms in the five boroughs on energy efficiency issues. "You may be told you need to get a new energy compressor, which will save you money. But [small businesses] can't always afford to pull that out of their cash flow. A new air compressor can cost between $30,000 and $60,000. A company is not going to move forward on that, even if they can save a lot, unless their current compressor goes down. Grant programs really help companies make the investment."

Erik Neumann of EME group, the energy auditor, says that only about 10 percent of the companies they've audited have gone on to implement the efficiency changes his firm recommended.

The city-funded program in North Brooklyn that was operated by NYIRN provided both energy audits and cash grants covering much of the cost of upgrading their facilities. But because of limited funds, it expired after serving just 27 businesses in that one neighborhood. (A similar program funded by the U.S. Depart-

NRDC chief energy economist Ashok Gupta says that the state does a pretty good job of tailoring its programs to different markets, but in the absence of a lot more coordination and funding they under-serve all of those markets. "They have a lot of programs but they don't go very deep," he says.

ment of Energy was available to industrial businesses citywide, but because of limited funds helped just 12 companies.)

In addition to the government-run initiatives, the city's private utility companies have also offered a variety of energy conservation programs for commercial customers. But these efforts also reached only a small portion of the city's small and mid-sized businesses. For instance, Con Edison provides free energy audits and some financial incentives to companies in a handful of neighborhoods across the five boroughs that are designated as high-load zones.

However, consultants who perform audits through the Targeted DSM Program acknowledge that it isn't reaching enough small businesses. One of them, Bob Lesch, says that his company performed energy audits to about 3,000 commercial properties in their targeted areas between 2005 and 2007. "Three thousand sounds like a lot, but there are tens of thousands of customers in our area," Lesch noted in a 2007 interview. "We're not reaching as many as we could. You would think we would have 90 percent penetration. But it doesn't happen. I would say the vast majority probably haven't taken advantage of it."

Some promising new commercial programs have been launched in the past year and more are expected. But it's still not clear whether they will reach enough small businesses to make a significant difference in either emissions or economic benefits.

Townsley suggests that Con Edison's new Direct Installation Program is the premier program for small businesses in New York City. The program focuses on light fixture upgrades and HVAC retrofits and includes very generous incentives: up to 70 percent of the recommended installation costs. The PSC approved the program in January 2009 with a $24 million annual budget, enough for approximately 6,000 projects per year. But 6,000 projects is a very low limit for a city with over 200,000 small businesses. In addition, the qualification requirements are fairly restrictive: there is a monthly peak demand limit of 100 kW, which may exclude numerous small businesses with substantial refrigeration and electric heating needs.

Perhaps one reason state efficiency programs have largely ignored the small business sector is the perception, not entirely unfounded, that independently owned businesses can be an unusually tough sell. Those whose job it is to reach out to businesses, explain what the benefits of energy efficiency are, and how the incentives work have been quick to note just how skeptical and reluctant some business owners can be; they don't trust the utilities or big government agencies, and tend to view the new technologies as faddish and untested.

"People will put their money into a CD at the local bank for a two percent annual return," notes Tom Sahagian, an energy engineer who has contracted with NYSERDA and NYIRN. "But for whatever reason they've been reluctant to invest $2,000 in energy efficiency upgrades that get a 20 percent annual return."

Even nonprofit organizations that have built up trust among local firms have sometimes met with a disappointing level of indifference from small businesses. "We always hear that energy costs are a top concern," says Tzipora Lubarr of NYIRN, "but when it comes time to do something about it, a lot of businesses don't want to bother."

But rising energy costs and a sour economy have begun to erode that skepticism. Almost all of the city's Chambers of Commerce, for example, now regularly hold increasingly well attended information sessions on how businesses can cut down on their energy use. Economic development agencies in every borough have added green building liaisons, who report consistently high levels of interest in energy saving measures. And many of those who provide traditional support services for businesses say they get nearly as many calls about energy saving incentives as they do about general funding.

> "We're not reaching as many [businesses] as we could. You would think we would have 90 percent penetration. But it doesn't happen. I would say the vast majority probably haven't taken advantage of it."

Making Efficiency Programs More Effective

Deeper incentives might entice more small firms to participate in energy efficiency programs, but structural barriers also need to be addressed

Business owners have been reluctant to enroll in the available energy efficiency programs for a number of reasons. Some firms simply aren't aware of the energy audits, financial incentives and tax credits that government agencies and utility companies offer, while other businesses aren't enticed by those programs because they don't offer adequate financial assistance for making energy upgrades. There are also structural disincentives like short-term leases, and transaction barriers, such as the complicated application processes.

The structural problems can't be overlooked. In New York City, a clear majority of businesses rent their spaces. According to the Mayor's Office of Industrial and Manufacturing Businesses, for example, 60 percent of New York's industrial businesses have leases rather than mortgages[19]—and, typically, the smaller the operation, the more likely it is to have a short-term lease. Businesses with short-term leases are less likely to invest in energy efficiency upgrades, even with the help of low-cost loans and grants, for the simple reason that they will not always recoup their investment. And even if the investment pays for itself in less than three years, the stress and hassle of the implementation process won't always seem worth it if they won't be around to benefit from the result.

"These spaces may have five or ten year leases and if it's much above a five year payback, they think 'I won't be here long enough to enjoy the payback,'" says Erik Neumann, whose company, EME Group, has performed hundreds of energy audits of small businesses through the NYSERDA program. "Most small businesses are strapped for cash. A couple of thousand dollars today to get it back over a couple of years is not as attractive as working capital, payroll, cost of goods and whatever else."

The state has sponsored the formation of working groups to examine solutions to this problem. One option is a financing mechanism called "on-bill financing," already in use in nearby Massachusetts and Connecticut. With on-bill financing, the utility covers the costs of an energy audit and any implemented upgrades, while the tenant pays that loan back through a surcharge on utility bills for a fixed term. This helps small businesses in part because the loan doesn't show up as debt on their books, and in part because the debt is tied to the meter as opposed to the individual customer, so businesses don't have to worry about paying it back after they move. The New York State PSC has approved a version of this program for an upstate utility and has created a pilot program in conjunction with Key Span Long Island, but as yet there are no plans to bring it to New York City.

Another structural disincentive for some businesses is a lack of so-called "direct" or "sub-meters." Experts say there are still a number of especially small businesses in the city that pay their energy bills indirectly, as an addition on their monthly rent. Since any energy they conserve will benefit the landlord, businesses in this position have little incentive to monitor their own energy use, much less spend money and time on efficiency upgrades. However, no one knows for sure how big a problem this is in New York. A spokesperson for Con Edison says that although they track end-users without direct- or sub-meters for residential buildings, they do not do so for commercial ones.

The most obvious solution to this problem is to make sure every tenant in the city is outfitted with the appropriate utility meters. One can think of any number of ways to encourage landlords to do this (e.g. adding a requirement to the building code or a small reduction to their property taxes), but it would help to know how big a problem it is and what kinds of businesses most commonly go without them.

Still, as discouraging and difficult as these structural problems are, they are not necessarily the primary reason businesses turn down the available energy efficiency incentives. Many of the businesses we interviewed said that administrative or bureaucratic problems are even more of an impediment.

A mid-size Bronx-based food distributor called Gourmet Guru, currently engaged in an extensive NYSERDA retrofit program, has had to pay an outside consultant tens of thousands of dollars just to keep up with all of the paperwork, deadlines and appointments. "When you're in the middle of it, it's a little scary," says Mickey Roy, Gourmet Guru's Chief Financial Officer. "You're moving forward without any hard numbers and there's a lot of moving parts. I'm not a dumb guy—I have an MBA from Harvard. But this was over my head."

Roy adds that Gourmet Guru currently spends $12,000 to $14,000 per month on energy bills, so the retrofit should deliver a huge payoff. Also, as a gourmet food distributor, they hoped the retrofit would pave the way for a LEED certification, which would be good for their brand. But he understands why most businesses wouldn't even consider it. "People who run their own companies are extremely busy," says Roy, "and these programs are hard to understand. We need fixed numbers and more clarity. There needs to be one point of contact, a person who can lead you through the whole process."

"There's not a lot of handholding going on," adds Carl Hum, president of the Brooklyn Chamber of Commerce. "The frustration level is pretty high."

A related problem is the confusion that ensues from having so many different approaches and voices. There are at least six comprehensive energy efficiency programs in New York City alone. Each has different administrators, targets different kinds of businesses and offers different incentives. Some of the programs will work with some kinds of businesses but not others, even if they meet their energy demand limits. Some of the programs target particular geographic regions and some target specific government-owned buildings. With so many different sources, only the truly dedicated are going to take the time to leaf through all of the different qualification requirements and proposed benefits.

"We've found small businesses don't take advantage [of our program] for a number of reasons," says Bob Lesch, an energy contractor who has worked with Con Ed and NYSERDA, "but number one is 'market confusion.'" They've been approached by a lot of different contractors selling a lot of different products, he says, so "we've noticed that when we approach them, there's always a healthy bit of skepticism that we have to overcome."

Similarly, Tzipora Lubarr at NYIRN says she has heard a lot of complaints about how hard it is to find clear information on program websites, whether it is NYSERDA's, Con Ed's or someone else's. In the absence of a one-stop-shop or a web-based clearinghouse, potential customers get confused by the sheer number of players—and because they're focused on so many other day-to-day concerns, they lack the time or patience to figure things out.

This isn't a problem for many large corporations, who have staff or consultants to conduct research about the energy efficiency options available to them, meet with government officials and fill out appropriate applications. But small business owners typically have to do all of these things themselves, on top of everything else associated with running a company.

"Even though it seems rational," says Russell Unger, executive director of the New York chapter of the U.S. Green Building Council, which administers the popular LEED green building certification process, "changing out your light fixtures and air-conditioner can still cost a lot of money, and when you combine that with all the work you have to do inform yourself and all the paperwork you have to fill out to qualify for grants, what you save on your bill isn't always going to be enough to counter the hassle and headache."

Finally, many small businesses simply don't know about the energy conservation incentives that are available to them. Few entrepreneurs are aware that even the most basic energy conservation measures—like replacing energy-burning incandescent lighting with compact fluorescent bulbs—can save hundreds if not thousands of dollars and greatly reduce overall energy use.

This might not be the case today if either the state or city had initiated a high-profile ad campaign to market the benefits of conservation to small businesses and publicize the programs that do exist. Such a campaign would make sense given the skyrocketing cost of electricity and the ongoing interest of both the city and state in reducing energy usage. But this hasn't happened.

"People who run their own companies are extremely busy, and these programs are hard to understand. We need fixed numbers and more clarity. There needs to be one point of contact, a person who can lead you through the whole process."

Ten Cost-effective Tips for Small Businesses to Reduce Energy Use

With the possible exception of switching to energy-efficient lighting, there's no universal course of action for businesses looking to reduce their energy usage. The dramatic variation among different types of enterprises traces how they use energy: manufacturers with their production machines, bakers with ovens, food processors with refrigerators, and retail stores with air-conditioning. In terms of figuring out how best to save, however, a few common, cost-effective tips apply across the board:

Apply for an energy audit
Businesses with annual electric bills less than $25,000 can get an audit from NYSERDA for only $100. The cost is $400 for firms with annual bills between $25,000 and $75,000; in both cases, firms will receive a full refund if they adopt the auditor's recommendations. For gas related interventions, National Grid, the primary gas provider in Brooklyn, Queens, and Staten Island, will offer qualifying businesses free audits.

Change out old incandescent light bulbs
Incandescent bulbs are among the most inefficient machines ever invented, as they waste 80 percent of the electricity they consume. A wide array of compact fluorescents and superior tube fluorescents are readily available at area hardware stores.

Cut down on drafts
Make sure windows, skylights and doors are sealed, and that air conditioners in windows are properly installed.

Use Energy Star office equipment
Computers, printers, copiers, fax machines and even water coolers all come in models that use up to 50 percent less energy.

Buy a smaller air-conditioning unit
Experts insist that most of the air-conditioning units purchased for businesses (and residences) are way too big for the rooms they cool. This wastes energy and can cause mold growth.

Add controls to equipment
Relatively inexpensive controls can calibrate light industrial equipment to the particular task at hand, cutting energy use dramatically. Experts say the payback for these devices is never more than three years and oftentimes less than one.

Install ceiling fans in high bayed rooms
It seems counterintuitive, but this can be an especially effective way to disperse heat in a room, ensuring that office or shop mates near windows are as warm as everyone else.

Replace your old thermostat with a programmable one
This allows users to keep room temperature down at night while nobody is there and still have the office warm when you arrive the next morning.

Use occupancy sensors
Sensors on light fixtures can cut energy use significantly. Industry experts assert thatsensors are both more affordable and more sophisticated than was the case even a few years ago.

Insulate hot water pipes
In homes and businesses both, water heaters use a lot of energy. Installing an inexpensive timer and insulating both the water heating tank and any accessible pipes can save a great deal of energy.

Recommendations

Buying a new high-efficiency boiler or installing new energy efficient lights are measures that can save businesses thousands of dollars per year all by themselves. The average payback period for most well designed efficiency upgrades is three to six years without any grants, experts say. Nevertheless, many independent business owners short on cash will deem the up-front costs too prohibitive to take the plunge. So the question is: how can government incentives programs help those businesses cover the initial costs, for the shared benefit of the business and the environment?

One solution is to pay for the whole implementation process, but that would cut down on how many businesses such programs can help. Another solution is to offer a mix of low or even zero-percent interest loans, coupled with much smaller grants to help soften the financial burden of new purchases and lure in businesses wary of any disruptions the implementation process will cause. That's what most of these programs try to do in various ways, but we believe they could be doing it much better. What follows is a list of ideas for improving those programs:

Provide more incentives targeted specifically at small businesses. Ever since NYSERDA's Loan Program ran out of funds a number of years ago, the state agency most responsible for promoting energy efficiency in New York City has been without a single small business incentives program. Con Edison's new Direct Installation Program picks up some of the slack, but at 6,000 customers per year it is not nearly enough. Small businesses are also in need of low-interest loans to help cover investments in energy efficiency. At a time when loans of any kind are hard to come by, the lack of a green energy loan program that targets small businesses specifically could be a major road-block in the months and years ahead.

Provide energy audits free of charge. Small businesses that use less than $75,000 per year of electricity and gas should not have to pay for an audit targeting low-hanging fruit like lighting upgrades. Since 2000, NYSERDA's small business Audit Program has served a little more than 200 businesses per year in the five boroughs. One reason for that low number is almost certainly the cost. Any small business in New York should have access to a free audit every five or ten years, if they are interested.

Create a one-stop shop for all incentives programs at the city, state and federal levels. The New York City Economic Development Corporation (EDC) recently published a list of efficiency programs available to New York City businesses as a PDF on their website, but that is not nearly enough. They might go further to create an easy-to-use website, where businesses can download all the materials they need to apply, or even better, devise a universal application for city and state incentives programs. The city already does this for social services through Access NYC; it would not require a huge financial outlay and could literally revolutionize the existing energy efficiency efforts if it did something similar for businesses seeking energy cost relief.

Simplify the enrollment and participation process. Alternatively, city economic development agencies might work with NYSERDA and the utilities to greatly simplify participation—perhaps by creating an office to serve as one point of contact for participating businesses and offer additional on-site and telephonic support as needed. When small businesses in particular have to coordinate paperwork and meetings with program representatives, energy engineers, building contractors and loan officers, their workflow suffers, sometimes severely.

Raise awareness on the part of businesses about how much they can expect to save through energy efficiency audits and upgrades, and how much time and money it will cost them. As things stand now, each administrating agency conducts most of its advertising and outreach independently of one another. This causes too much confusion, particularly since many of these programs have fairly restrictive qualification requirements. Also, many business owners we spoke with who had attended efficiency meetings felt that the business case—the return on investment for efficiency improvements—was still not being made clearly enough. The "sales pitch" should feature clean, clear numbers and examples of success.

Address the problem of split incentives for businesses that lease their space. New York City has more businesses that rent than any other city in the country. Until innovative financing arrangements like "on-bill financing" are available here, many businesses will remain indifferent to making efficiency investments, even if tied to generous incentives. In addition, a provision in the city's new "Greener, Greater Buildings Program," which City Council approved in December, requires that large property owners outfit every tenant with sub-meters. While this is an important step forward, it should apply to all landlords in the city.

Incorporate energy efficiency into the city's broader economic development efforts. The Department of Small Business Services (SBS) in particular needs to put energy efficiency on the agenda, emphasizing how businesses can profit financially from implementing meaningful efficiency measures. One economic development official we interviewed suggested that the city create a mobile energy clinic that could operate in Hunts Point and other high-density industrial districts, handing out materials to businesses and answering questions about available incentives and financing arrangements.

ENDNOTES

1. Energy Information Administration, Electric Price and Revenue 2008. (Data for 2009 haven't been released yet.) Average commercial prices for New York, Chicago and Los Angeles were taken from the primary electricity providers in those cities: Con Edison in New York, Commonwealth Edison in Chicago, the Department of Water and Power in Los Angeles.
2. Energy Information Administration, State Historical Tables for 2008.
3. "Con Edison Files New 3-year Electric Rate Plan for April 2010," Press Release, Con Edison Inc. Average monthly bill for small businesses is from Con Edison Customer Outreach Department for December 2009.
4. Tom Sahagian, Energy Division Director, Power Concepts, L.L.C.
5. Con Edison is the main electricity provider in all five boroughs. It is also the main gas provider in Manhattan and the Bronx
6. All program participation figures are from NYSERDA.
7. NYSERDA's shallow energy audits cost $100 for businesses with annual electric bills less than $25,000 and $400 for firms with bills between $25,000 and $75,000. The agency also offers more in-depth energy audits, but those are limited to larger energy users and cost significantly more money.
8. The program ran from 2006 to 2009.
9. 6,000 is an estimate given by the PSC and encompasses both surveys and implementation grants. According to Con Edison's own estimates, they will provide 16,920 surveys for the duration of the program (2009-2011); that comes to an average of 8,460 per year.
10. Interview with Michael Townsley, Office of Energy Efficiency and Environment, New York State Department of Public Service.
11. "Mayor Bloomberg Announces 30 Initiatives to grow New York City's Green Economy," The City of New York, Office of the Mayor, October 31, 2009
12. New York City Office of Long-term Planning and Sustainability, "Inventory of New York City Greenhouse Gas Emissions," April 2007. According to the U.S. Green Building Council, buildings account for 39 percent of carbon emissions nationwide. They consume 70 percent of the nation's electricity, which is the primary cause, they say, of the high level of carbon emissions. From "Buildings and Climate Change."
13. The Environmental Protection Agency, "Energy Star for your Business," 2007. http://nepis.epa.gov/
14. U.S. Dept. of Energy, "Buildings Energy Data Book" (August 2005), sec. 1.3.3. See also Energy Star's Small Business Guide September 2007: http://www.energystar.gov/ia/business/small_business/sb_guidebook/smallbizguide.pdf
15. New York State Public Service Commission, Energy Efficiency Portfolio Standard Proceedings, Case 07-M-0548, p.17.
16. New York State Public Service Commission, Case 08-E-1003, Appendix 1.
17. NYSERDA's application for renewal for the Loan Program was rejected by the PSC on January 4, 2010. New York State Public Service Commission, Case 08-E-1132.
18. "Governor Paterson, Congressman Israel and Legislative Leaders Announce Passage of Municipal Clean Energy Loan Legislation," November 16, 2009.
19. "Protecting and Growing New York City's Industrial Job Base," Mayor's Office of Industrial and Manufacturing Businesses, January 2005.

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