

T&E COMMITTEE #3
April 18, 2012

Discussion

MEMORANDUM

April 16, 2012

TO: Transportation, Infrastructure, Energy and Environment Committee
FROM:  Keith Levchenko, Senior Legislative Analyst
SUBJECT: **Discussion:** Commercial Building Energy Efficiency Opportunities

The following individuals are expected to participate in this discussion:

- Greg Caplan, Director of Energy and Environment, Lockheed Martin
- Stan Edwards, Chief, Environmental Policy and Compliance, Department of Environmental Protection (DEP)
- Eric Coffman, Senior Energy Planner, DEP

Background

Over the past several years, the Council has adopted a number of initiatives intended to spur both private sector and County government investment in energy efficiency initiatives.

For existing single-family homes and other individually metered properties, there are a number of Federal, State, County, and utility-based incentive programs (involving tax credits, direct rebates, and low interest loan programs) that help defray the cost of energy efficiency retrofits.

On April 22, 2009, the Council approved Bill 06-09 establishing a Home Energy Loan Program (HELP) often called property assessed clean energy (PACE). The County's program was intended to encourage property owners of single-family (attached or detached) homes and condominiums to make cost-effective energy efficiency improvements and/or install clean energy devices to their homes by providing loans that would be repaid over 15 years through property tax bill payments. Energy savings from the improvements would offset the loan payments.

A key element of the HELP program (and all PACE programs) is that the loan is to be linked to the property (through the property tax bill) rather than to the property owner directly. This approach removes the concern a current property owner may have of committing to pay back a significant investment of dollars for savings that may accrue to a future owner of the property. Under a HELP loan, a future property owner would assume the loan payments.

However, because of concerns raised by the Federal Housing Finance Agency (FHFA) regarding the mortgage implications of residential PACE programs such as HELP, the County's program has not been implemented.

On the commercial side, the County enacted Bill 17-06 in November 2006, which requires both private and County-built or funded buildings to meet Leadership in Energy and Environmental Design (LEED) Certified and LEED Silver levels respectively.

In December 2007, the County established a property tax credit (Bill 37-06) for buildings that achieve LEED Silver or greater designation. Energy efficiency is a significant component of the LEED rating system.

More recently, the Department of Environmental Protection (DEP) has coordinated and/or initiated a number of projects and programs funded with Federal Energy Efficiency and Conservation Block Grant (EECBG) dollars, totaling \$7.6 million. Within that total, DEP initiated a \$1.9 million commercial and multi-family energy efficiency rebate program. In July of last year, the T&E Committee held a panel discussion with experts from governmental and outside organizations on these and other potential energy efficiency initiatives.

Included within the EECBG grant is funding for a "Commercial and Multi-Family Building Study." DEP began this study effort with a survey that went out to stakeholders in the commercial and multi-family buildings community in March. DEP staff will be available to discuss the status of the survey and the study as a whole at the T&E Committee discussion. A "Preliminary Policy List of Issues" was forwarded to the Council on March 15 and is attached on ©1-7.

Commercial PACE Discussion

One of the policy areas being reviewed by DEP is commercial PACE programs. While the residential PACE effort has stalled, commercial PACE programs are not regulated by the FHFA and are moving forward in a number of areas throughout the country. A New York Times article from September 2011 (attached on ©8-11) mentions programs in Miami and Sacramento, CA, where private consortiums have raised capital for building retrofit projects with property tax surcharges approved by the local jurisdiction used as the loan payment vehicle.

A number of states have approved legislation enabling jurisdictions to create property tax surcharges to support commercial PACE efforts. In Maryland, House Bill 1567, enacted in 2009, enabled local jurisdictions to create residential and/or commercial PACE programs and issue bonds to generate start-up money for these loan programs. Until recently, most, if not all, of the commercial PACE programs have utilized government dollars in some form (such as bond

proceeds and grants) to initiate these programs. DEP staff have noted that additional legal authority may be needed to enable Maryland jurisdictions to use the County tax system to repay private loans (such as those described in the New York Times article). DEP staff can provide an update to the Council on the status of its research into this potential barrier and other issues associated with implementing a commercial PACE program in Montgomery County.

For a private sector perspective, the T&E Committee has invited Greg Caplan, Director for Energy & Environment in Lockheed Martin Washington Operations, to discuss his company's participation in these programs elsewhere in the country.

Attachments

KML:f:\levchenko\deplenergy issues\t&e discussion on commercial energy efficiency 4 18 2012.doc

Guthrie, Lynn

KL
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LL

From: Berliner's Office, Councilmember
Sent: Thursday, March 15, 2012 4:31 PM 067266
To: Montgomery County Council
Subject: FW: Montgomery County Commercial and Multi-Family Buildings Study - Survey
Attachments: Policy Brief Summary 03-12-12.doc

From: Hoyt, Bob
Sent: Thursday, March 15, 2012 4:29 PM
To: Berliner's Office, Councilmember; Navarro's Office, Councilmember; Leventhal's Office, Councilmember; Floreen's Office, Councilmember; Rice's Office, Councilmember; Elrich's Office, Councilmember; Riemer's Office, Councilmember; Andrews's Office, Councilmember; Ervin's Office, Councilmember
Cc: Edwards, Stan; Coffman, Eric; Levchenko, Keith; Frechette, Nancy
Subject: Montgomery County Commercial and Multi-Family Buildings Study - Survey

Dear Council Members,

In 2009, Montgomery County published the *Climate Protection Plan* which identified potential actions that should be taken to begin to address the County's greenhouse gas reduction goals. One of the recommendations included in the plan was to adopt measures that would reduce energy consumption in the commercial and multi-family building sector by 25% by 2020.

The *Commercial and Multi-Family Building Study*, funded by the County's ARRA-funded Energy Efficiency and Conservation Block Grant from the U.S. Department of Energy, will identify potential policies and programs that could be considered to achieve this target. The study will also objectively explore the technical, logistical and economic challenges and opportunities related to each policy. With the assistance of a consultant, a baseline of the community's commercial and multi-family building stock has been developed as well as a preliminary list of policies, some of which may have implications for public buildings. Briefs of potential policies are attached to this email.

The next step in the process is to develop a dialog with stakeholders in the commercial and multi-family buildings community via a survey that will go out to the public the week of March 19. The survey includes:

- Briefs on potential policies or programs
- Questions related to each policy or program
- Opportunities for any additional comments

The survey introduction will emphasize that the proposed policies and programs, if deemed desirable, would only be adopted after a more formal public discussion and legislative process. However, some organizations may raise concerns or propose alternatives. This is exactly what the survey and subsequent study is designed to foster. The process is inclusive and we would be delighted to add any organizations or individuals to the survey that you feel should be included in the process. The success of the study is dependent on robust and honest feedback from the affected community.

Please contact me or Eric Coffman, Senior Energy Planner in DEP, at 240-777-7754 or eric.coffman@montgomerycountymd.gov if you have any questions about the study or would like a more in depth briefing on our progress to date. Sincerely,

Bob Hoyt, Director
 Department of Environmental Protection

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3/16/2012

Montgomery County Commercial and Multi-Family Building Study
Preliminary Policy List
3/7/12

The following are brief summaries of potential building energy efficiency policies being studied as part of Montgomery County's Commercial and Multi-Family Building Study.

- **Policy #1: Commercial Building Energy Performance Benchmarking and Disclosure**
- **Policy #2: Commercial Building Energy Assessments/Retro-Commissioning**
- **Policy #3: Building Code Upgrades**
- **Policy #4: Prescriptive Building Retrofit Requirements**
- **Policy #5: Commercial Property-Assessed Clean Energy (PACE) Financing**
- **Policy #6: On-Bill Financing (OBF)**
- **Policy #7: Green Leasing (Sustainability and Energy-Aligned Leasing)**
- **Policy #8: Green Building Tax Credit**
- **Policy #9: Rebate and Grant Programs**
- **Policy #10: Leadership Challenge/Strategic Energy Management**

Policy #1: Commercial Building Energy Performance Benchmarking and Disclosure

Overview: Development and disclosure of energy performance information would be required for buildings in the County with floor area 10,000 square feet or larger, including public buildings. The requirement to benchmark and report performance data would be implemented on a staggered schedule based on building size. The County and many other local governments are considering this requirement as a way to make energy use information visible in the market and thereby encourage wiser energy use and efficiency investments. Washington, D.C.; New York City, NY; Seattle, WA and San Francisco, CA have all mandated energy performance benchmarking and disclosure policies.

Energy performance benchmarking employs a yardstick to measure a building's energy performance, typically by tracking a building's energy use per square foot. This number is then compared to that of similar buildings or to the building's own performance over time. The County's requirement would be based on established performance scales created by the U.S. Environmental Protection Agency (EPA), and EPA's publicly-available tracking tool, Portfolio Manager.

While regulations would include more specifics, the proposed approach may include:

- A. Mandatory annual energy performance benchmarking of all buildings above a certain size
- Buildings less than 10,000 square feet would be exempted.
 - Requirements would be phased in over several years; for example, buildings 100,000 square feet or larger would begin to benchmark April 1, 2014; 50,000 square feet or larger as of April 1, 2015; and 10,000 square feet or larger as of April 1, 2016.
 - Building owners would be required to use the Portfolio Manager software, a free tool developed by U.S. EPA for this purpose and used for thousands of buildings.

- B. Mandatory annual disclosure of energy performance benchmarking data
- Data would be posted on a publicly-viewable County website.
 - Data would not be disclosed for at least one calendar year after the policy takes effect.
 - Data would be available to real estate agents to include in listings.
 - Data would be available to prospective renters and buyers.
 - Penalties for non-compliance have not yet been established, and may depend on the level of voluntary compliance.

Policy #2: Commercial Building Energy Assessments/Retro-Commissioning

Overview: The proposed policy would require buildings with floor area 25,000 square feet or larger to conduct detailed facility energy efficiency assessments every five years, either as retro-commissioning projects (involving tuning up building systems to run optimally) or as energy assessments that identify a full range of efficiency measures and their costs and benefits. It may include alternatives such as training and certifying building operators to become more skilled in energy management.

Energy assessments (sometimes called energy audits) and retro-commissioning (RCx) projects are designed to identify energy savings opportunities across a full range of building components and systems (in the case of audits), or to diagnose and correct suboptimal performance in building energy systems (in the case of RCx). An energy assessment/audit might identify opportunities to upgrade lighting, heating, cooling, ventilation (HVAC), or control systems. An RCx project would typically test HVAC and controls systems, and make adjustments to optimize performance.

While final regulations would include more specifics, the proposed approach may include:

- Mandatory assessments or retro-commissioning of buildings above a certain size every five years
 - Buildings less than 25,000 square feet would be exempted.
 - Requirements would be phased in over several years; for example, buildings 100,000 square feet or larger would be required to undergo an audit or RCx as of April 1, 2014; 50,000 square feet or larger as of April 1, 2015; and 25,000 square feet or larger as of April 1, 2016.

Policy #3: Building Code Upgrades

Overview: The proposed policy would upgrade the County's building codes beyond the current requirements. It could increase stringency of energy efficiency requirements for basic energy components (such as roofs, walls, windows, lighting and HVAC systems) in new buildings, additions, and renovations. Codes address the fundamental builder/buyer market barrier, where one of a builder's main motives is to keep construction costs low, and buyers' long-term interest is in reducing total ownership and operating costs, including energy costs.

Many jurisdictions offer both prescriptive and performance-based compliance paths. The prescriptive path specifies energy efficiency ratings for each component—wall insulation, windows, etc. A performance-based path allows designers and builders to vary specific components as long as the total energy use of the building does not increase compared to a building that meets prescriptive requirements. Energy simulation models are typically used in compliance paths to calculate energy performance levels for various design choices.

Policy #4: Prescriptive Building Retrofit Requirements

Overview: The proposed policy would require that certain types of cost-effective energy efficiency improvements be implemented by a certain date or at defined points in the building lifecycle. This policy adds to the building codes approach by targeting specific, large efficiency opportunities that are frequently “lost” to market barriers.

Specific proposed policies include the following requirements:

- Replacement of inefficient outdoor lighting with high efficiency alternatives
- For buildings with roof areas greater than 10,000 square feet, require “cool roofs” (heat-reflective roof coatings) or “green roofs” (using soil and vegetation) to be installed at the time of roof replacement.
- Installation of energy sub-metering on individual tenant units for residential properties with more than 50 dwelling units and commercial office properties over 10,000 square feet.
- Requiring that a building be compliant with current energy code requirements at the time of sale or ownership transfer.

It is anticipated that all mandates would be phased in over time. For example, the largest buildings or energy consumers would be included first, followed by smaller buildings or organizations. Some sectors where the economic barriers are extremely high could be exempted, deadlines extended, or incentives covering part of the costs provided.

Policy #5: Commercial Property-Assessed Clean Energy (PACE) Financing

Overview: Property Assessed Clean Energy (PACE) financing allows property owners to undertake energy efficiency and renewable energy projects through long-term, secured financing. A County PACE program would help property owners finance energy efficiency projects through loans repaid through County property tax bills over 10 to 20 years. PACE can thus be an effective way to reduce the significant barriers to financing energy efficiency and clean energy investments in commercial properties.

State authority for the County to set up a PACE program, under some circumstances, already exists under Maryland HB 1567, enacted in 2009. The County would create a legal mechanism known as a special tax assessment district, and would secure loan repayment obligations to property tax obligations. Capital could come from public or private sources, although the use of private third-party funds may require additional legal authority to enable the use of the county tax system to repay private loans. The County would also establish other necessary application, approval, oversight, and quality control methods. Property owners and their contractors would develop eligible projects, gain County approval, complete loan arrangements, and repay loans

via property tax bills. Should an owner sell the property prior to the end of the loan term, the loan repayment obligation is transferred to subsequent owners until paid off.

Policy #6: On-Bill Financing (OBF)

Overview: On-bill financing (OBF) enables utility customers to repay loans for energy efficiency and renewable energy investments through their utility bills. While capital would like come from third-party lenders, utilities would integrate loan repayments with their customer billing systems. The County would help customers make use of this option through education efforts, and may also help arrange for local lenders to participate in the effort. Most OBF programs provide relatively short term financing, less than 10 years, however the concept is not necessarily restricted to this loan tenure. By making financing more convenient, OBF can help overcome the barrier of lack of access to capital that inhibits many otherwise attractive efficiency investments.

OBF would likely require state legislation and/or Public Service Commission action to become available in the County. Legislation to this effect has been introduced in the current legislative session. The County would play a supporting role in helping establish OBF with the utilities serving the County and educating consumers about program options.

Policy #7: Green Leasing (Sustainability or Energy-Aligned Leasing)

Overview: "Green leasing" (also known as sustainability or energy-aligned leasing) creates special terms in commercial and multifamily leases that pass through the cost of energy improvements as well as the associated energy savings. The goal is to structure financing and other aspects so that net lease payments are lower than they would be without the energy improvements.

Initially, the County would play a supporting role in helping establish voluntary green leasing practices. It would work with stakeholders to develop model documents and associated practices, which could then be adopted by the real estate community. The County would also make best efforts to require green lease options for public facilities.

Policy #8: Green Building Tax Credit

Overview: In 2006, the County instituted a property tax credit for commercial buildings that meet defined green building standards. While this credit is often seen as applying to new construction, it also applies to existing buildings under certain conditions. The proposed policy would identify new ways to use this approach to encourage both new and existing buildings to become more energy-efficient. The tax credit currently starts at 10% of property taxes for the minimum LEED Silver certification level, and rises as high as 75% for certain building types that meet LEED's highest, or Platinum, level. Options for modifying the tax credit program going forward are outlined below.

- **Modifying credit percentages:** offer credits based on higher percentages of tax amounts due for buildings meeting the criteria.
- **Modifying eligibility levels:** make it easier to qualify based on setting technical criteria thresholds.

- **Adding specific energy performance requirements:** LEED doesn't always require a specific level of energy performance. To meet County policy goals, specific energy performance levels could be added on to LEED criteria.

Policy #9: Rebate and Grant Programs

Overview: Utilities such as Pepco have offered commercial customer energy efficiency incentives in recent years, and based on a recent order from the state Public Service Commission (PSC), new utility programs are likely to be offered. The County is looking to help shape these programs for the maximum benefit of County building owners, and to help promote the use of these programs. In addition, the proposed policy may expand County-level incentives in concert with utility incentives to accelerate adoption of energy efficient practices. Stakeholder feedback in this area will help the County set its priorities.

Additional rebates might be targeted to:

- Increase use of technologies that are not eligible for utility incentives.
- Achieve a significantly higher efficiency level than required for the utility rebate.
- Increase incentives to hard-to-reach sectors (e.g., small business, multi-family).
- Spur development of local economic development linked to the deployment of efficient technologies.

It is important to note that any incentive program requires a funding source. Sources could include:

- Increasing the County's Energy Tax rate.
- Diverting Energy Tax Revenues from other uses.
- Finding other County revenue sources.
- Applying non-compliance or alternative compliance payments from County energy policies. For example, if a building owner failed to submit benchmarking data, they may be subject to penalties, which could be used for other energy program purposes.

Policy #10: Leadership Challenge/Strategic Energy Management

Overview: This policy would create a voluntary challenge initiative, inviting property owners and occupants to commit to long-term energy savings targets and to creating energy management programs in their organizations to support and measure progress toward reaching those targets. The Challenge would be connected to a County benchmarking policy in which building energy performance is measured and disclosed; in such a scenario, the benchmarking system could become a platform for measuring progress toward voluntary targets. The challenge may also include energy service and product providers and financing organizations to expand options for improvements to buildings, similar to the federal Better Buildings Initiative. Such efforts are underway in cities like Louisville, KY; Denver, CO and Charlotte, NC.

While details are yet to be determined, a County initiative in this area would likely include:

- A challenge issued by County leaders to building owners, to commit to a ten-year energy savings target, likely to be in the range of 25% consistent with the Climate Action Plan's goal for the commercial building sector.
- Linkage to the County's energy performance benchmarking system, so that building owners could use a common platform to report progress toward their targets.
- Technical assistance in educating building owners and managers about the program, about setting up a strategic energy management program, and about the software tools and other aspects of the program.
- Tools and resources (e.g., example campaign styles, tools, messages) to assist in behavior change campaigns in buildings.
- Peer-to-peer information exchange.
- Recognition for organizations that commit to the effort, and for those that achieve the most substantial results.
- Providing preferential incentives (e.g., rebates or subsidized builder operator training) to organizations that commit to reduction targets or achieve high levels of performance.

Tax Plan to Turn Old Buildings 'Green' Finds Favor



Peter DaSilva for The New York Times

A new type of financing will pay for a solar array at this California development.

By JUSTIN GILLIS
Published: September 19, 2011

A business consortium that includes Lockheed Martin and Barclays bank plans to invest as much as \$650 million over the next few years to slash the energy consumption of buildings in the Miami and Sacramento areas. It is the most ambitious effort yet to jump-start a national market for energy upgrades that many people believe could eventually be worth billions.

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Focusing mainly on commercial property at first, the group plans to exploit a new tax arrangement that allows property owners to upgrade their buildings at no upfront cost, typically cutting their energy use and their utility bills by a third. The building owners would pay for the upgrades over five to 20 years through surcharges on their property-tax bills, but that would be less than the savings.

The consortium is led by a company called Ygrene Energy Fund of Santa Rosa, Calif., which has already won an

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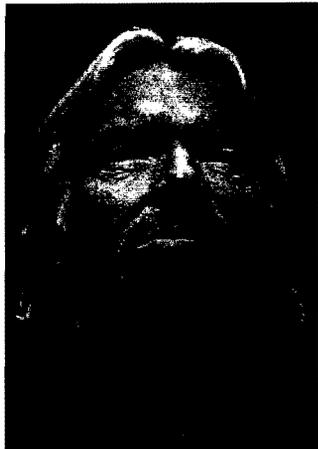
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The sustainable complex in Rohnert Park, Calif., is being built from a former manufacturing facility operated by H.P./Agilent.

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Part of the retrofitted building's interior. A large solar array will power the development.

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Richard Branson

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exclusive contract to manage a retrofit program for a half-dozen communities in the Miami area, with the city expected to join in a few weeks. It is in the late stages of completing a contract with Sacramento, and is seeking deals in other cities.

State and city officials are optimistic they may have found a way to tackle one of the nation's biggest energy problems — waste in older buildings — without new money from Washington. If enough building owners sign on, private capital would be put to work paying for retrofit projects that promise to save local businesses money while creating thousands of new construction jobs.

"We are so used to reaching our hand out and saying, 'Washington, we need this,' and 'Tallahassee, give us that,'" said Edward MacDougall, the mayor of Cutler Bay, Fla., a Miami suburb that took the lead in setting up the deal in that region. "This is really a home-grown mechanism where we don't need to do that."

The consortium was put together by the Carbon War Room, a nonprofit environmental group based in Washington set up by Richard Branson, the British entrepreneur and billionaire, to tackle the world's climate and energy problems in cost-saving ways. With the United States government nearly paralyzed on climate policy, he said, his group is seeking a way forward.

"We see this as the first of hopefully many, many, many projects, and a big step in the right direction," Mr. Branson said in an interview last weekend in New York.

In the past three years, half the states have passed legislation permitting energy retrofits financed by property-tax surcharges, and hundreds of cities and counties are considering such programs. While the situation poses some risks, and programs aimed specifically at homeowners have run into a snag, many jurisdictions are moving forward with plans to focus on commercial properties.

Environmental groups have lauded the trend as one of the most exciting developments in years regarding climate change. They point out that wide use of such programs could cut emissions of heat-trapping carbon dioxide from power plants by reducing electricity demand.

"It's a big deal," said James D. Marston, head of energy programs for the Environmental Defense Fund, a group that has worked with Carbon War Room in developing the approach. Over the long haul, he said, "we're talking about tens of billions of dollars in investments, and energy savings that are 10 times that amount. If you do this correctly, you would be able to shut down a third of the coal plants in the country."

While that may take a while, there seems to be little question that the new approach could draw substantial private capital into the market for energy upgrades, which have historically been difficult for many midsize and smaller businesses to finance.



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envisioned for Miami and Sacramento, the plans will work like this:

Ygrene and its partners will gain exclusive rights for five years to offer this type of energy upgrade to businesses in a particular community. They will market the plan aggressively, helping property owners figure out what kinds of upgrades make sense for them.

Lockheed Martin is expected to do the engineering work on many larger projects.

The retrofits might include new windows and doors, insulation, and more efficient lights and mechanical systems. In some cases, solar panels or other renewable power might be included. For factories, the retrofits might include new motors or other gear.

Short-term loans provided by Barclays Capital will be used to pay for the upgrades. Contractors will offer a warranty that the utility savings they have promised will actually materialize, and an insurance underwriter, Energi, of Peabody, Mass., will back up that warranty. Those insurance contracts, in turn, will be backed by Hannover Re, one of the world's largest reinsurance companies.

As projects are completed, the upgrade loans, typically carrying interest rates of 7 percent, will be bundled into long-term bonds resembling those routinely issued by governmental taxing districts. Barclays will market the bonds. Retirement funds have expressed interest in buying these bonds, which will be repaid by tax surcharges on each property that undergoes a retrofit.

Perhaps the most serious risk is that fly-by-night contractors will be drawn to the new pot of money, pushing energy retrofits that are too costly or work poorly.

"Contractors are cowboys," said Dennis Hunter, chairman of Ygrene. He promised close scrutiny of the ones selected for the Miami and Sacramento programs.

Ygrene is one of about a dozen start-up companies around the country pursuing such deals. The company appears to have substantial momentum, but some of its competitors have already stumbled, telling property owners they qualified for retrofits but then failing to deliver the necessary short-term financing. Still, many people are optimistic this approach will get off the ground.

"This is a game-changer," said John D. Kinney, whose company, Clean Fund of San Rafael, Calif., has raised \$250 million to invest in such projects. The company just used the technique to help finance a large solar installation at a development called Sonoma Mountain Village in Rohnert Park, Calif.

Experts point out that, with modern techniques and equipment, a retrofit can typically cut a building's energy use so much that the project pays for itself in as little as five years. The most famous recent example was the refurbishment of the Empire State Building, which cut energy use by nearly 40 percent, turning it into one of New York's greenest buildings.

The new financing approach is called Property Assessed Clean Energy, or PACE.

For decades, cities and counties have created special taxing districts to finance improvements that benefit private property, such as street lights or sewers. Bonds are issued to pay for the projects, then repaid with surcharges on tax bills. If an owner sells, the surcharge stays with the property.

Several years ago, the city of Berkeley, Calif., hit on the idea of using that approach to finance energy upgrades on private homes. The idea took off, and 25 states and the District of Columbia soon passed PACE legislation. One of the most successful programs to date has been in Sonoma County, Calif., where retrofit projects exceeding \$50 million have been financed.

(10)

While the initial focus was on homeowners, those programs slowed last year when an arm of the federal government that oversees the mortgage market took a hostile stance toward such projects on residential property, on the grounds that they add risk to mortgages. In most states, a lien associated with a retrofit project would have to be paid ahead of the mortgage if the property went into foreclosure.

A legal and political battle is under way to try to force the Federal Housing Finance Agency to reverse its stand. So far, it appears that PACE programs for commercial properties pose fewer legal complications.

A version of this article appeared in print on September 20, 2011, on page B1 of the New York edition with the headline: Tax Plan to Turn Old Buildings 'Green' Finds Favor.

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