

# U.S. DEPARTMENT OF ENERGY CLEAN ENERGY FINANCE GUIDE

## Chapter 12. Commercial Property-Assessed Clean Energy (PACE) Financing

Third Edition Update, March 2013

### Introduction

#### Summary

The property-assessed clean energy (PACE) model is an innovative mechanism for financing energy efficiency and renewable energy improvements on private property. PACE programs allow local governments, state governments, or other inter-jurisdictional authorities, when authorized by state law, to fund the up-front cost of energy improvements on commercial and residential properties, which are paid back over time by the property owners. PACE financing for clean energy projects is generally based on an existing structure known as a “land-secured financing district,” often referred to as an assessment district, a local improvement district, or other similar phrase. In a typical assessment district, the local government issues bonds to fund projects with a public purpose such as streetlights, sewer systems, or underground utility lines. The recent extension of this financing model to energy efficiency (EE) and renewable energy (RE) allows a property owner to implement improvements without a large up-front cash payment. Property owners voluntarily choose to participate in a PACE program repay their improvement costs over a set time period—typically 10 to 20 years—through property assessments, which are secured by the property itself and paid as an addition to the owners’ property tax bills. Nonpayment generally results in the same set of repercussions as the failure to pay any other portion of a property tax bill.

#### The PACE Process



*\*Depending upon program the structure, the lender may be a private capital provider or the local jurisdiction*

A PACE assessment is a *debt of property*, meaning the debt is tied to the property as opposed to the property owner(s), so the repayment obligation may transfer with property ownership depending upon state legislation. This eliminates a key disincentive to investing in energy improvements, since many property owners are hesitant to make property improvements if they think they may not stay in the property long enough for the resulting savings to cover the upfront costs.

While residential PACE programs have faced regulatory opposition from the Federal Housing Finance Administration (FHFA) that has caused many programs to suspend operations, commercial PACE programs have not been directly affected and the model continues to offer governments an innovative way to support clean energy projects in the private sector.

## Update on Commercial PACE programs

PACE programs have been launched in several regions of the U.S. and have utilized a variety of financing structures. While a few of the more established programs like Sonoma County's Energy Independence Program (SCEIP) or Boulder County's Climate Smart Loan Program have financed millions of dollars of improvements, most programs are new and have not yet financed significant volumes. At this point in the development of the commercial PACE market, there are several key policy discussions that are occurring around program design. These issues are outlined below:

**Program Standardization**— PACE programs are somewhat fragmented since they are established at the municipal, regional, or state level. While programs often draw upon best practices, PACE programs have utilized a diversity of underwriting criteria, financing structures, and program procedures. Unfortunately the lack of uniformity of commercial PACE program creates an obstacle for contractors, mortgage lenders, and project lenders that serve larger geographies. For example, the state of California is already home to ten separate commercial PACE programs.

**Lender Consent**— The vast majority of PACE programs require participating properties to secure either the consent or affirmative acknowledgement of any existing mortgage holders, because the assessment impacts the property's debt burden, and in many cases may violate existing loan covenants. While many lenders ranging from community banks to major mortgage lenders have granted consent, the process of securing it is often a significant obstacle. The difficulty and time associated with securing consent has led some PACE program administrators to forego the requirement and simply notify lenders of the PACE assessment. However, controversy remains regarding the legal ramifications of placing the assessment without lender consent.

In December 2012, PACENow published a survey of mortgage lenders<sup>1</sup> that was funded by the Urban Sustainability Directors Network. While mortgage lenders did not broadly oppose PACE assessments, they strongly supported consent requirements and indicated they are generally more likely to consent to projects that improve the net operating income or value of the property. Unsurprisingly, lenders also noted that the overall debt load of a building and the pre-existing relationship with the owner would be key factors in granting consent. More insight into the best ways to approach lenders and standardize the consent/acknowledgement process is available in the PACENow report.

**Closed vs. Open Market**— Programs have employed a variety of financing structures and have used both public and private sources of funding. Programs can generally be categorized either as 1) closed market programs that secure a line of credit from a financial institution or use public funds to provide project financing, or 2) open market programs which allow participants to choose among competing capital providers. More detailed comparison of these funding approaches can be found in Section 3 of this Chapter, Choose Capital Sourcing Approach(es).

**Demand**— Although there is significant market interest in PACE, many commercial programs have experienced slow demand. This is likely partially due to the novelty of PACE as a financing mechanism. In order to jumpstart property owner interest, programs are utilizing a variety of marketing strategies ranging from free or subsidized audits, outreach to property owner associations, and marketing directly to commercial contractors.

---

<sup>1</sup> Lender Support Study: <http://pacenow.org/wp-content/uploads/2012/12/Lender-Support-Guide-12.28.20121.pdf>.

## Is PACE the Right Choice?

A summary of the key advantages and disadvantages of PACE for property owners is presented below.

PACE Advantages	PACE Disadvantages
<ul style="list-style-type: none"><li>+ Allows for secure financing of comprehensive projects over terms up to 20 years</li><li>+ Repayment obligation passes with ownership, overcoming hesitancy to invest in longer payback measures</li><li>+ Senior lien municipal financing may lead to low interest rates</li><li>+ The interest portion of assessment repayments are tax-deductible</li><li>+ Lower transaction costs compared to private loans</li><li>+ Allows municipalities to encourage energy efficiency and renewable energy without putting their general funds at risk</li><li>+ Taps into private capital, such as the municipal bond markets</li></ul>	<ul style="list-style-type: none"><li>— Available only to property owners; renters cannot access programs directly</li><li>— Cannot finance portable items</li><li>— Requires dedicated staff time</li><li>— High legal and administrative expenses to set up</li><li>— Not appropriate for investments below \$50,000</li><li>— Some resistance by lenders whose priority in default may be reduced.</li></ul>

## Overview of Steps to Launch Commercial PACE

Local governments may follow these key steps to implement a commercial PACE program:

- 1. Review and Address Issues:** Become familiar with issues related to PACE and factor their impact into program design and implementation.
- 2. Establish Supporting Framework:** Lay a solid foundation for the program in the areas of team composition, goals, legislation, and assessment district formation.
- 3. Choose Capital Sourcing Approach(es):** Choose whether the projects will be funded using private capital and if so whether the program will employ an open or closed market approach.
- 4. Determine if and how to Deploy Credit Enhancement:** Decide how to achieve the best interest rates for the program and how best to apply and leverage any available funds to fit the program's design.
- 5. Choose Eligible Property Types:** Select the commercial property types eligible for the program.
- 6. Assemble Eligible Project Measures:** Determine what types of improvements can be financed based on enabling legislation and program goals.
- 7. Choose Energy Audit Requirements:** Decide the types of energy audits applicants will be required to undergo to assess expected project energy/cost savings.
- 8. Choose Program Eligibility Criteria:** Determine the program underwriting/eligibility criteria that applicants and their properties must meet.

9. **Leverage Existing Utility Rebate/Incentive Programs:** Investigate local utility rebate/incentive programs and how best to leverage them.
10. **Plan Quality Assurance/Quality Control:** Decide how the program will ensure that project work meets program quality standards and how to guard against fraud.
11. **Design Application Processing Procedures:** Design the process for reviewing applications and either approving or rejecting them.
12. **Specify Contractor Requirements:** Specify the requirements for energy auditors and contractors to participate in the program.
13. **Market and Launch Program:** Decide what kind of outreach will be made to property owners and contractors and launch the program.

Note that many steps will be carried out concurrently and not necessarily in this exact order. In many cases, an additional step for a procurement process will be appropriate to choose capital and/or administration entities.

The following sections correspond to and expand on each of the steps above. The DOE has also provided a template program handbook, application documents, and marketing materials to help local governments that are designing a commercial PACE program, which can be downloaded on the [DOE Solution Center](#)<sup>2</sup>.

---

<sup>2</sup> DOE Solution Center Commercial Property-Assessed Clean Energy Financing Attachments:  
[http://www4.eere.energy.gov/wip/solutioncenter/finance\\_guide/sites/default/files/docs/ch12\\_attachments.pdf](http://www4.eere.energy.gov/wip/solutioncenter/finance_guide/sites/default/files/docs/ch12_attachments.pdf).

## 1. Review and Address Issues

### 1.1 Current Regulatory Issues<sup>3</sup>

On July 6, 2010, the Federal Housing Finance Agency (FHFA) issued a statement that PACE programs with senior lien position<sup>4</sup> “present significant safety and soundness concerns that must be addressed by Fannie Mae, Freddie Mac, and the Federal Home Loan Banks.” In particular, PACE liens were deemed to “run contrary to the Fannie Mae-Freddie Mac Uniform Security Instrument....” —i.e., the standard mortgage contract.

The FHFA letter was specific to home mortgage lending and did not directly address or challenge commercial PACE programs. Regulatory hurdles for commercial PACE are distinct from those for residential PACE. In addition, commercial PACE programs generally require that the property owner obtain the consent of the mortgage lender before a PACE assessment can be placed upon the property. Such lender consent protocols address the contractual encumbrance clause issues (see Section 1.2 Lender Consent or Affirmative Acknowledgement).

On the same day the FHFA released its statement, the Office of the Comptroller of the Currency (OCC) also issued PACE guidance. The OCC regulates national banks. This statement raised additional concerns by specifically mentioning commercial properties in its statement that “safety and soundness concerns” exist.

“The Office of the Comptroller of the Currency (OCC) is issuing this guidance to alert national banks to concerns and regulatory expectations regarding certain state and local lending programs for energy retrofitting of **residential and commercial properties\***, frequently termed a Property Assessed Clean Energy (PACE) program. PACE or PACE-like programs use the municipal tax assessment process to ensure repayment. Under most of these programs, such loans acquire priority lien, thereby moving the funds advanced for energy improvements ahead of existing first and subordinate mortgage liens. This lien infringement raises significant safety and soundness concerns that mortgage lenders and investors must consider.” [\*Note: emphasis added]

Most of the OCC statement addressed residential mortgage issues, but it gave specific guidance regarding commercial PACE in one section.

“National bank lenders should take steps to mitigate exposures and protect collateral positions. For existing mortgage and home equity loans, actions may include the following in accordance with applicable law:... **In the case of commercial properties, securing additional collateral\***.” [\*Note: emphasis added]

The OCC has declined requests to clarify the comments. However, most commercial PACE programs have made the assumption that lender and owner consent provisions—both the existing lender and property owner must give their written consent and acknowledgement for the PACE financing—do not create unsafe or unsound lending practices. With consent provisions in place, lenders can protect their investment, and property owners are not subject to unwanted debt.

### 1.2 Lender Consent or Affirmative Acknowledgement

Most commercial mortgages have a *Due on Encumbrance* clause that gives the mortgage-holder the right to call the loan due if additional debt is placed on the property without the lender’s consent. Given this clause and the complexity of commercial mortgages, nearly all commercial PACE program require applicants to get the written consent of their existing mortgage-holder(s) in order to apply for financing. A template lender consent/acknowledgment form can be found in the package of sample application documents.

### 1.3 Davis-Bacon and Prevailing Wage

<sup>3</sup> Relevant files and additional information on residential PACE programs can be found at <http://www1.eere.energy.gov/wip/pace.html>.

<sup>4</sup> *Senior lien position* refers to a debt having priority over all other debt on a property in the case of foreclosure (i.e., it gets paid off first before other outstanding debt, including mortgages). Most PACE programs use a senior lien position for the PACE debt because the PACE assessments are part of the property taxes, and property taxes are already senior to other property debt. But there are some PACE programs that use a *subordinate* or *junior* position instead, which means the mortgage has priority over the PACE debt.

Section 1606 of the Recovery Act specifically requires that all laborers and mechanics performing work on any project “funded directly by or assisted in whole or part by” Recovery Act funds be paid prevailing wages as determined by the Secretary of Labor.<sup>5</sup> Consequently, commercial PACE financing programs that use ARRA funds as a credit enhancement<sup>6</sup> are subject to Davis-Bacon prevailing wage requirements. Grantees/subgrantees and contractors/subcontractors must (a) ensure that all laborers and mechanics performing work on such projects are paid prevailing wages as determined by the U.S. Department of Labor (see [www.wdol.gov/Index.aspx](http://www.wdol.gov/Index.aspx)) and (b) comply with all of the reporting requirements of the Davis-Bacon Act.

Programs that do not use ARRA funds should consult with legal counsel to determine whether the program is subject to Davis-Bacon requirements or whether it qualifies for an exemption.

#### 1.4 National Environmental Policy Act (NEPA)

Federal funds used for credit enhancement of a financing program— including a debt service reserve fund, interest rate buy-down, or third-party loan insurance—are subject to federal requirements including the National Environmental Protection Act (NEPA). Many, if not all, of the projects that are eligible for financing under a commercial PACE program should qualify for a categorical exclusion (CX) determination (PART 1021 National Environmental Policy Act Implementation Procedures Subpart D Appendix B5 [Actions to Conserve Energy]). A categorical exclusion applies to projects that DOE has determined do not normally have a significant negative environmental impact and, therefore, are not required to prepare an environmental assessment or environmental impact statement. A complete list of DOE’s CXs can be found in Appendices A and B to Subpart D of [DOE’s NEPA Regulations](#).<sup>7</sup> ARRA grantees can complete the [State Energy Program \(SEP\) and Energy Efficiency and Conservation Block Grant \(EECBG\) Program NEPA Templates](#)<sup>8</sup> if a proposed project meets the CX requirements. The Template helps grantees submit streamlined information about proposed projects that will allow DOE to review their potential impacts and expeditiously apply CXs. Program planners should seriously consider restricting eligible efficiency improvement measures to those that qualify for a categorical exclusion. If a program does not limit financing to only those project types that adhere to the Template, DOE is required to conduct a NEPA review for individual projects that would typically include an Environmental Assessment and/or an Environmental Impact Statement.<sup>9</sup> A NEPA review typically adds significant time (on the order of months) and additional cost to a project.

---

<sup>5</sup> EECBG Program Notice 10-004A “Guidance on Implementation of the Davis-Bacon Act Prevailing Wage Requirement for Energy Efficiency and Conservation Block Grant Recipients Under the American Recovery and Reinvestment Act of 2009”: [http://www1.eere.energy.gov/wip/pdfs/eecbg\\_program\\_guidance\\_dba\\_121709\\_10-004\\_revised\\_april\\_2010.pdf](http://www1.eere.energy.gov/wip/pdfs/eecbg_program_guidance_dba_121709_10-004_revised_april_2010.pdf).

<sup>6</sup> *Credit enhancement* refers to techniques used by debt issuers to raise the credit rating of their offering and thereby lower their interest costs. See Section 4.1 Credit Enhancement for details.

<sup>7</sup> DOE NEPA Documents: <http://energy.gov/nepa/nepa-documents>.

<sup>8</sup> SEP and EECBG NEPA Documents: [http://www1.eere.energy.gov/wip/nepa\\_guidance.html](http://www1.eere.energy.gov/wip/nepa_guidance.html).

<sup>9</sup> Energy Efficiency and Conservation Block Grant Program Notice 09-002B “Guidance for Energy Efficiency and Conservation Block Grant Grantees on Financing Programs”: [http://www1.eere.energy.gov/wip/pdfs/eecbg\\_financing\\_guidance2010\\_08\\_10.pdf](http://www1.eere.energy.gov/wip/pdfs/eecbg_financing_guidance2010_08_10.pdf). State Energy Program Notice (10-001) and Energy Efficiency and Conservation Block Grant Program Notice (10-003) “National Environmental Policy Act Guide for State Energy Program and Energy Efficiency and Conservation Block Grant Projects”: [http://www1.eere.energy.gov/wip/pdfs/nepa\\_program\\_guidance\\_notice\\_10-003.pdf](http://www1.eere.energy.gov/wip/pdfs/nepa_program_guidance_notice_10-003.pdf).

## 2. Establish Supporting Framework

The process of developing a commercial PACE program to the point of launch should take 6 to 12 months once there is enabling legislation (see Section 2.3 Determine Authority for PACE), but the timeframe depends on approval schedules and the level of resources a local government is able to direct toward the effort. The following sections review some of the key activities in laying a solid foundation for a program.

### 2.1 Form Program Team

Each local government should evaluate whether capacity exists in-house to set up and manage the PACE program or whether it will need to engage financial or administrative partners. Partnerships can range from a turnkey administrative and financial partner that handles the entire processing and bond sale, to the targeted use of outside expertise. The decision on how to manage the program launch and administration will be tied to the unique capacity and preferences of each local government.

#### Important team members for planning and implementation include—

- Senior managers and analysts from the mayor or city manager's office, the county administrator's office, and the department that will be administering the program
- Legal counsel representing the jurisdiction and/or bond counsel
- A finance/auditor-controller department representative and/or a financial consultant
- A climate, energy, or sustainability program staff person (if available)
- Staff from energy efficiency and renewable energy programs operated by the government, utility, or local nonprofit
- Staff from the county recorder and/or tax collector's offices.

#### Administrative functions include—

- General management, oversight, and coordination
- Marketing the program and responding to public requests for information
- Processing and approving applications
- Collecting appropriate documents and recording the tax liens
- Bond issuance and/or other financial transactions necessary to fund projects
- Property tax administration, levying special tax or assessment
- Customer service and assistance
- Program evaluation.

### 2.2 Design Program to Meet Specified Goals

Planning for the commercial PACE program should integrate the local government's goals (e.g., greenhouse gas reduction targets, economic development, and workforce development goals, if applicable). It is also important to engage local stakeholders and potential partners to assist in determining program goals, key program design elements, and criteria for eligible property improvements. Relevant stakeholders include contractors, auditors, investors, lenders, potential program participants, and financial administrators. Planners should examine and, to the extent they are combining federal funds with PACE programs, follow the relevant DOE [Guidelines for Pilot PACE Financing Programs](#)<sup>10</sup> as they design underwriting standards, choose eligible measures, and determine other program details.

### 2.3 Determine Authority for PACE

Some communities will require authorization from their state legislature to allow local governments to collect a

---

<sup>10</sup> Guidelines for Pilot PACE Programs: [http://www1.eere.energy.gov/wip/pdfs/arra\\_guidelines\\_for\\_pilot\\_pace\\_programs.pdf](http://www1.eere.energy.gov/wip/pdfs/arra_guidelines_for_pilot_pace_programs.pdf).

special tax or assessment to pay for energy efficiency or renewable energy improvements on private property. Local governments in California, for example, already have this authority under Chapter 29 of the 1911 Assessment Act through AB 811 and through Mello-Roos (for charter cities). To date, 28 states have passed enabling legislation that grants local governments the authority to establish PACE programs.

The key features that often must be added to existing state law to enable PACE financing districts include the following:

- Authority to finance improvements on private property
- Authority to finance renewable energy and energy efficiency improvements
- An opt-in feature

## **2.4 Initiate Formation of a PACE Financing District**

This step is likely to require several actions by the governing council, board of supervisors or other governing body. As this can be a somewhat a lengthy process, starting it as early as possible is a good idea. For example, New Mexico passed authorizing legislation for residential and commercial PACE programs to finance renewable energy projects. The districts in New Mexico's PACE programs are referred to as Renewable Energy Financing Districts (REFDs). Santa Fe County, established a REFD in about 6 months, with the following process:

1. Identify a champion (typically an elected official to support the program)
2. Determine staff resources
3. Coordinate the effort with bond counsel
4. Identify administrative and financial partners
5. Determine which geographical regions the REFD will include
6. Determine the composition of the REFD Board
7. Adopt a resolution of intent to form the REFD
8. Conduct a formation hearing
9. Adopt the formation ordinance



### 3. Choose Capital Sourcing Approach(es)

The ability to fund PACE programs can be the biggest hurdle for many local agencies. Some local governments with reserves or investment portfolios may choose to use them as a source of capital, thus using their PACE program as one of their investment portfolio strategies. Otherwise, despite the current lack of availability of large-scale private capital, there are a number of financing models that can provide an investment with low risk and a low-enough interest rate that will result in long-term savings (i.e., total costs less than total savings) for program participants.

Generally, local governments must decide whether they will rely upon a single source of capital (in a closed market/warehoused program) or if it will utilize an open market approach in which participants can choose among lenders. Regardless of whether a program is open or closed, program designers must also decide whether projects will be financed individually, as a portfolio, or be given the flexibility to choose between the two. While there are many potential ways to mix and match these options, programs typically opt for one of the following three financing structures:

- **Warehoused** (Closed Market, Individual Projects)
- **Pooled Bond** (Open Market, Portfolio of Projects)
- **Open Market** (Open Market, Individual)

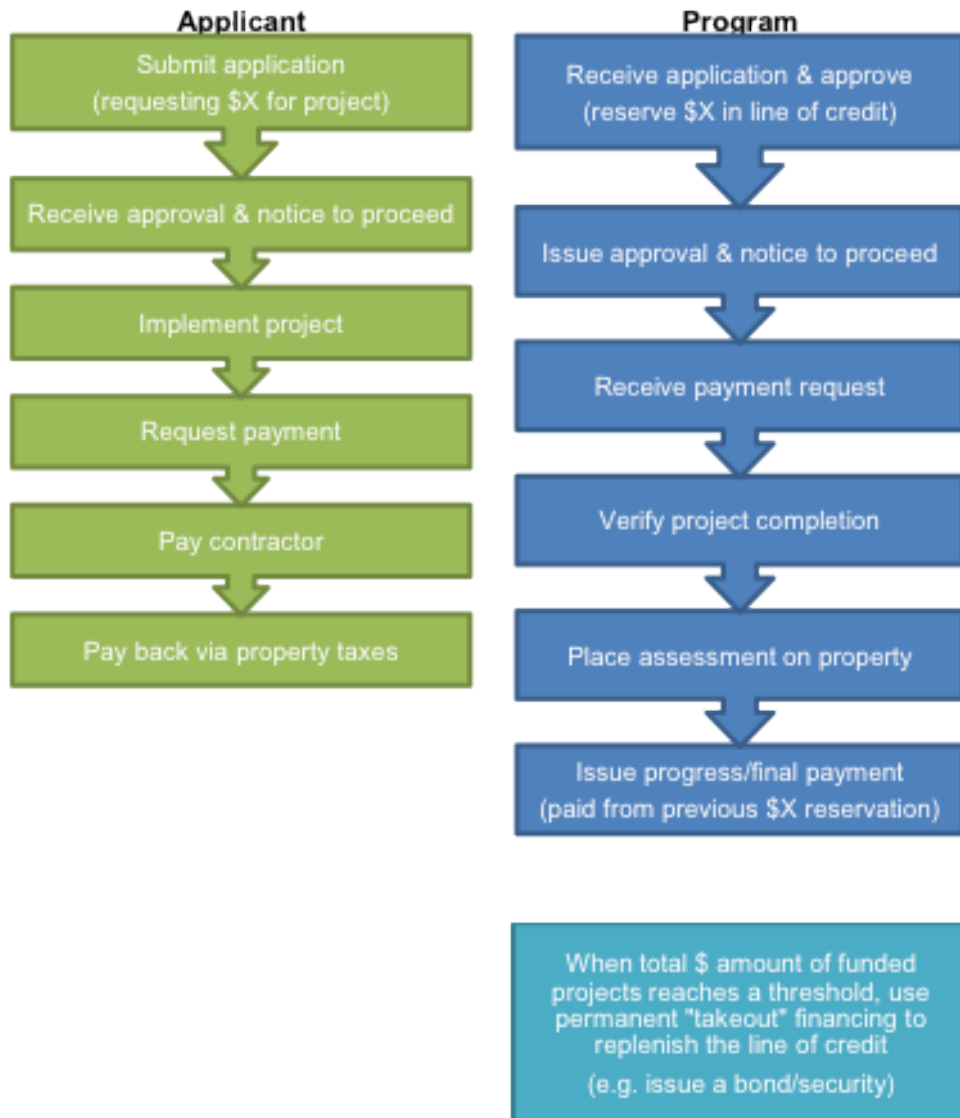
These approaches are discussed in more detail in the following sections.

#### 3.1 Warehoused (Closed Market, Individual Projects)

In the warehoused approach, a large line of credit (in the millions of dollars) is secured to fund energy efficiency and renewable energy projects. (Similarly, local or state governments can choose to fund projects from their reserves or investment portfolios.) When a commercial property owner submits an application and the PACE program approves it, a reservation is placed for the project amount against the total line of credit, thus reducing the total remaining line of credit available. The project is then allowed to proceed to implementation right away. When the project requests payment for work completed, it is paid from the reservation previously made. When the PACE program has issued enough total project funding from the line of credit to reach a certain threshold (determined by the program planners and their financial partners), the line of credit is then replenished—for example, by issuing a bond against the group of funded projects and using the proceeds to pay down the credit line (the threshold being a certain dollar amount that makes the transaction costs of issuing a bond a reasonable charge against the proceeds). The warehoused approach is the fastest way to fund projects because the funding from the line of credit is essentially available *on demand* without additional delay.

The Green Energy DC program and the Sonoma County Energy Independence Program (SCEIP) both rely upon a warehoused structure but use different capital sources. While DC's program relies upon private sources of capital, Sonoma uses the county's investment portfolio for warehousing. See Figure 1 for a diagram of the process flow.

**Figure 1 – Warehoused Approach Process Flow**



### 3.2 Pooled Bond (Open Market, Portfolio of Projects)

The pooled bond aggregates projects and finances them as a portfolio in order to achieve economies of scale, spread risk, and attract investor interest. This is especially advantageous for smaller projects, which are expensive to finance due to high fixed costs and may be less credit worthy. The pooled bond approach involves a waiting period during which applications for PACE financing are accepted and aggregated. The applications can be approved during the aggregation period, but the participants are not given permission to proceed to implementation. When a sufficient pool of requested project funding has been assembled, the local government sells a bond to cover and fund all of the included projects. This approach introduces two waiting periods: one while projects are aggregated (~30 to 90 days, or however long it takes to reach a sufficient dollar threshold), and the other while the bond completes the issuance process (~30 to 90 days). It is only after the bond is issued that the covered projects are given notice to proceed with implementation because it is only then that funding can be guaranteed.

This pooled bond approach is similar to the one previously used by Boulder County, Colorado, which successfully completed one commercial and two residential PACE bond issuances. The Toledo PACE Program is also using a

pooled bond model. See Figure 2 for a diagram of the process flow.

**Figure 2 – Pooled Bond Process Flow**



### 3.3 Open Market, (Open Market, Individual)

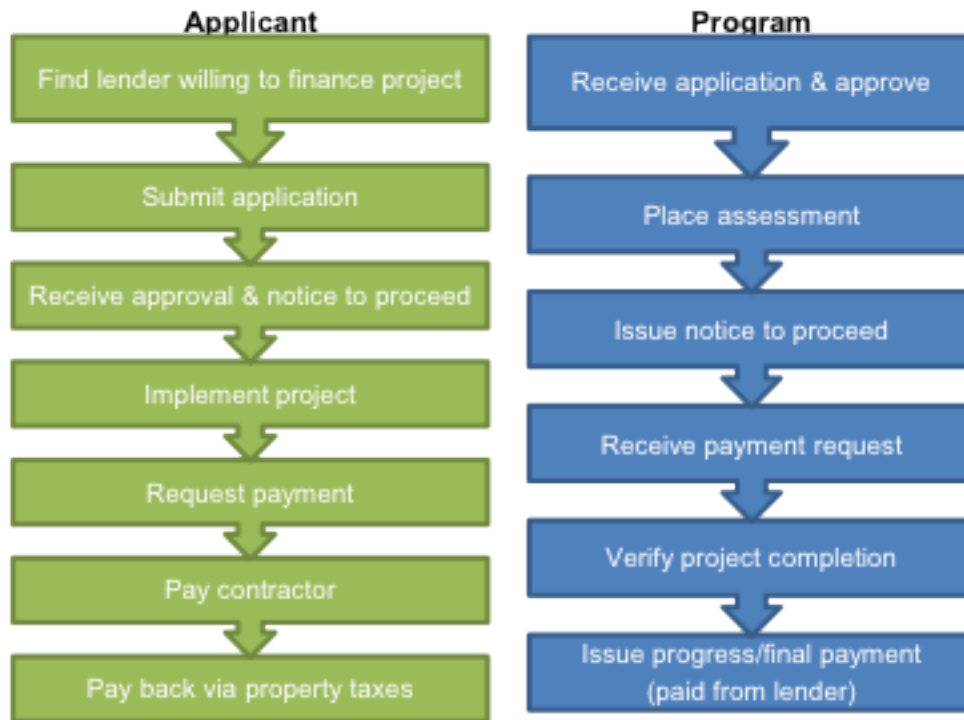
If a property owner has a financial institution that is interested in providing project financing directly and is willing to accept the PACE securitization and payback framework, then open market financing is an option. This avoids both waiting periods associated with the pooled bond approach and allows for immediate financing of projects at interest rates set by the underlying credit of the particular project. Open market financing can be easier for program planners to design and program administrators to run, because they do not have the responsibility to secure or replenish funding for the projects that are financed by the program. However, in order to foster an active, competitive market place, most open market programs develop a roster of interested capital providers. Property owners can compare the various rates offered within the roster, get assistance from the program in identifying the best possible capital options, or go out and identify a capital provider on their own.

Many open market programs are offered in concert with a pooled bond option. By offering both options the program can ensure that large creditworthy projects can benefit from the convenience and tailored terms of the open market approach while smaller dollar sized projects enjoy the risk distribution that the pool provides and access better rates than would otherwise be available in an open market program.

The open market financing model was pioneered by Los Angeles and San Francisco and is also being employed by

CaliforniaFIRST, the nation's largest commercial PACE program. Similar models are being utilized in Florida and Minnesota.

**Figure 3 – Open Market Process Flow**



### 3.4 Weighing the Options

Regardless of the type of financing a commercial PACE program uses, the type, condition, and image (i.e., how big and/or well-known a property or its owners are) of the properties included in the pool can have a significant impact on the interest rate available (offered by the funders) for the capital to finance the clean energy projects. A group of projects made up of mostly signature office buildings and premier hotels will almost always achieve more favorable interest rates than small, less well-known commercial projects, unless program planners apply significant credit enhancement (see Section 4. Determine If and How to Deploy Credit Enhancement).

Local governments should carefully structure a private capital commercial financing program with a watchful eye toward project credit quality, particularly at the start of a program, to attract funding with low interest rates.

The warehoused approach has a number of potential advantages over the other two approaches due to its on-demand availability; but in the current tight commercial lending environment, it is difficult to secure a large commercial line of credit without a substantial credit enhancement from the sponsoring program and/or evidence of substantial initial transaction volume. Therefore, either the pooled bond or owner-arranged approach is a more viable option in the short term for local or state agencies.

The pooled bond approach is also dependent on the bond market having an understanding and appetite for this kind of debt, as well as the strength of the portfolio of projects. Boulder County, Colorado and Toledo, Ohio had success in issuing a PACE bond based on a pooled approach in late 2010. The Boulder issuance was especially attractive to lenders since the county issued a qualified energy conservation bond (QECCB) backed by the county's moral obligation.

A number of communities chose to structure their new commercial PACE programs to use the open market model to launch their programs more quickly and with greater flexibility. This enables them to start getting projects done

and to gather more information on market segmentation, capital options, and data on repayment and default rates. Those statistics are expected to be helpful in building the case for more banks and investors that commercial PACE has sufficient volume at low risk of default.

Communities should consider the above caveats in light of the grantee's unique situation and decide which capital sourcing approaches work best in the local context at program launch. A list of existing programs is provided below that demonstrates the variety of program structures employed.

### ***Comparison of Existing Commercial PACE Programs***

<b>Program</b>	<b>Program Funding</b>	<b>Financing Structure</b>	<b>Lender Consent/Acknowledgement</b>
Ann Arbor PACE Program	Municipal Bond Revenues and/or Open Market	Warehoused with Open Market Option	Required
Boulder County ClimateSmart Loan Program (Suspended)	QECB Issuance with a Moral Obligation	Pooled Bond	Required
CaliforniaFIRST	Private	Open Market	Required
Clean Energy Sacramento	Private	Warehoused	Not Required
Connecticut C-PACE	Private	Open Market (Initial)	Required
Edina Emerald Energy Program	Private	Open Market	Required
California PACE	Private	Pooled Bond	Required
Florida Green Energy Works	Private	Open Market	Required
Green Corridor, Miami-Dade	Private	Warehoused	Not Required
Green Energy DC	Private	Warehoused	Required
GreenFinanceSF	Private	Open Market/Pooled	Required
Lean & Green Michigan	Private	Open Market	Required
Los Angeles County	Private	Open Market	Required
mPower Placer	County Treasury	Warehoused	Required
Palm Dessert Energy Independence Program	Municipal Funds and Redevelopment Agency Bonds	Warehoused	Required for Projects over \$30K
Western Riverside Council of Governments (HERO)	Private	Warehoused	Required
Sonoma County Energy Independence Program	County Treasury Funds	Warehoused	Required
Toledo PACE Program	Private	Pooled	Required
Yucaipa Energy Independence Program	Municipal	Warehoused	Required

## 4. Determine If and How to Deploy Credit Enhancement

### 4.1 The Role of Credit Enhancement

Credit enhancement refers to techniques used by debt issuers (in this case the local government) to raise the credit rating of their offering and thereby lower their interest costs. Stated another way, credit enhancement simply refers to the steps taken to artificially improve the likelihood that lenders or bond investors will be paid on time and in full. Reducing risk increases the comfort of those key stakeholders and may increase the odds that they will participate in a PACE program.

Of course, Commercial PACE already provides a relatively secure means of repayment by including the payment obligation in the owner's property tax bill. In the context of PACE, credit enhancement is generally used to provide even greater assurance that full payments to lenders would be made even if the property owners fail to pay their taxes on time. So while many programs have used public funds to improve rates, credit enhancement is not necessarily critical to program success and local governments can certainly launch programs without significant public subsidy.

Communities have a number of options for using federal or other funds to support and “credit enhance” their commercial PACE programs. The two primary methods used are creating a debt service reserves fund and/or placing a general or moral obligation on the bonds issued for a program. Details on these and several other options are presented in the sections below.

### 4.2 Create a Debt Service Reserve Fund

The program planner creates a reserve fund to make up for any shortfalls in PACE assessment receipts. This debt service reserve fund (DSRF) is a standard tool in land secured finance bonds.

Bond investors often expect there to be a DSRF to cover bond debt service (i.e., payments made to bond investors) in the event of late payments or defaults by participants. This is commonly an amount set aside with a trustee.<sup>11</sup> For assessment bonds, the typical DSRF is in the range of 5% to 10%. The reserve can be funded in several ways, but is usually added to the financed amount for each participant, so participants pay for it. For example, a \$10,000 project would be financed at an \$11,000 level in the case of a 10% DSRF. If a bond experiences low or no defaults, then the money in the reserve fund is generally used by the PACE program toward making the final payment on behalf of the property owner (assuming the owner funded the reserve). A DSRF may or may not be required for open market financing, but such a reserve is common in other forms of property assessment bonds.

Adding an additional 5% to 10% on top of the total project financing amount increases the annual percentage rate (APR) and can give applicants significant reason to pause and think hard about the costs of the PACE financing option. Therefore, anything that can be done to lower or alleviate that cost can bolster program participation. One appealing option is for communities to use their funds to provide the debt service reserve fund so that program applicants do not have to cover its cost.

### 4.3 General and/or Moral Obligation

Local or state governments can also fully or partially guarantee repayment by placing a general or moral obligation on the bonds. Under a general obligation, local or state governments pledge their full faith and credit to the bonds—effectively guaranteeing that if tax receipts fall short, they will make up the difference out of their own treasury. A moral obligation is a similar, but somewhat weaker, enhancement that was used by Boulder County, Colorado, for its PACE program. Moral obligation bonds do not require a local government to cover bond defaults, but do indicate it is very likely they will do so. Such guarantees improve the credit quality of the bonds or loan, but also affect the credit quality of the local government and count against the government's indebtedness limits.

---

<sup>11</sup> Note that other chapters in the Clean Energy Finance Guide refer to this reserve as a loan loss reserve fund (LRF), but in this chapter it is called a DSRF.

#### 4.4 Buy-Down Interest Rates

A third option is for grantees to use public funds to buy down the interest rate that will be paid by property owners to such a point that PACE financing becomes an attractive option. That can be a way to gain more attention for the PACE program, reward early participants in a newly launched program, and build market demand.

On a dollar-for-dollar basis, an interest rate buy down will result in the same APR as the funding of a 10% DSRF. However, many open market financing entities are not requiring a DSRF at this time making it a less universal subsidy.

#### 4.4 Subsidize Transaction Costs

As described in previous sections, applicants can face additional costs associated with participating in a commercial PACE program. Federal or other funds can be used to partially or fully cover one or more of those costs. A good candidate that could be subsidized or paid in full is the energy audit conducted on the property. That is an early and key step in the application process, so offsetting part or all of the audit cost might encourage more applicants to get involved. Funding for the audit can be made contingent on the property owner ultimately completing an energy retrofit or improvement.

#### 4.5 Offer Additional Rebates beyond Utility Rebates

Finally, federal or other funds can be used to augment the rebate/incentive amounts offered by utility programs to property owners undertaking clean energy improvements. That would, in turn, reduce the total amount of financing needed by the applicants for their projects. This is another way of encouraging participation in utility programs and possibly reducing the costs borne by the program associated with processing and approving an application or a project payment (in other words, use funds to subsidize transaction costs).

## 5. Choose Eligible Property Types

A commercial PACE program can cover a wide variety of property types, including office, retail, industrial, warehouse, agricultural, and multifamily (more than 4 units). A related subcategory of multifamily is affordable housing. And within each one of those broad property categories, there is wide variation in property subtypes. For example, retail includes the corner mom-and-pop store, big-box chain stores, and grocery stores. Multifamily includes a 2-story, 8-unit apartment building and a 30-story, 600-unit condo high-rise.

The mix of property types and sizes a local government might include has an impact on a number of PACE program features, including:

- Project size, complexity, and timeline
- Amount of financing needed
- Type of qualifying project measures relevant to the property type
- Owner permission (e.g., multifamily may involve getting permission of some or all tenants, the homeowner association, etc.)
- Skills and experience required to conduct an energy audit, if required
- Contractor requirements (e.g., licenses, certifications)
- Software modeling and other tools used by contractors, if required

The typical commercial energy auditor and contractors will be able to handle office buildings, retail, and warehouses because they commonly encounter those building types. Larger projects, over 100,000 square feet, will appeal to energy service companies (ESCOs) that specialize in larger undertakings. ESCOs may also offer a performance guarantee to their clients, which means that if the energy savings fall below the agreed-upon thresholds, the ESCO makes up the shortfall to the customer, thus reducing risk. Industrial, agricultural, and multifamily properties typically require more specialized auditing and construction knowledge and experience. In general, smaller properties have a very different set of contractors and requirements.

It is critical to include flexibility in program requirements and financing options to allow for a wide variety of commercial property types.



## 6. Assemble Eligible Project Measures

Two factors influence the types of measures eligible for financing under PACE. First, the state-level enabling legislation allowing the PACE financing mechanism to access governmental powers (i.e., to add a special assessment to property taxes) comes with a requirement that projects funded by PACE must serve a valid public purpose (e.g., greenhouse gas reductions, energy security). Legislation generally indicates the types of measures that can be financed and, depending upon the state, may include renewable energy technologies, energy efficiency work, and/or water conservation measures.

The second factor is that in DOE's [Guidelines for Pilot PACE Financing Programs](#)<sup>12</sup> (which mainly applies to residential PACE programs) DOE states, "...PACE financing should generally be limited to cost-effective measures to protect both participants and mortgage-holders until PACE program impacts become more widely understood. The financed package of energy improvements should be designed to pay for itself over the life of the assessment." DOE further recommends in those guidelines that the metric for judging a project's ability to pay for itself should be a Savings-to-Investment Ratio (SIR)<sup>13</sup> greater than one. In plain language, that means residential projects financed by PACE should save more money over their expected lifetimes than they cost to implement. Although the DOE guidelines mainly target residential PACE programs, you can choose to apply the cost-effectiveness recommendation to commercial as well.

Those two factors, therefore, strongly suggest that the eligible measures should be restricted to those that have a solid track record and, where possible, independent verification of their ability to save energy. The types of eligible measures can be expanded over time as the program administrator develops more knowledge and gains experience in evaluating projects and their actual associated savings. One proof of potential savings, for example, is that an eligible measure is already included in a utility's incentive program (see Section 9. Leverage Existing Utility Rebate/Incentive Programs for more information).

It can be challenging for a grantee trying to launch a new PACE program to develop a comprehensive list of eligible measures that covers all types of properties, improvements, and the aforementioned requirements. Therefore, a program may decide to draw up an official list of eligible measures, and then allow applicants to submit measures not on that list for consideration on a case-by-case basis. Some programs avoid prescriptive measure lists by providing generic guidance on the types of measures that can be financed and make determinations based on building audits or program discretion (see Section 11.2 Project Review).

---

<sup>12</sup> Guidelines for Pilot PACE Programs: [http://www1.eere.energy.gov/wip/pdfs/arra\\_guidelines\\_for\\_pilot\\_pace\\_programs.pdf](http://www1.eere.energy.gov/wip/pdfs/arra_guidelines_for_pilot_pace_programs.pdf).

<sup>13</sup> DOE defines SIR in its Guidelines for Pilot PACE Financing as follows:  $SIR = \frac{\text{[Estimated savings over the life of the assessment, discounted back to present value using an appropriate discount rate]}}{\text{[Amount financed through PACE assessment]}}$ . Savings are defined as the positive impacts of the energy improvements on participant cash flow. Savings can include reduced utility bills as well as any payments for renewable energy credits or other quantifiable environmental and health benefits that can be monetized. Savings should be calculated on an annual basis with an escalator for energy prices based either on the Energy Information Agency (EIA) U.S. forecast or a substantiated local energy price escalator.

## 7. Choose Energy Audit Requirements

Commercial PACE programs typically require applicants to have an energy audit or similar analysis of their property conducted by a third-party auditor/contractor or a utility-sponsored energy efficiency program. Given that some commercial property owners have an existing professional engineer that works on the building, programs should be flexible in helping property owners meet any energy audit requirement.

Ultimately whether a formal energy audit or less rigorous energy analysis is used, the program is trying to achieve a number of goals:

- Make the property owner aware of all energy/cost saving opportunities
- Make the property owner aware of the best energy/cost saving opportunities based on return on investment
- Provide independent analysis to the PACE program of the energy/cost savings of the measures for which the property owner is seeking mortgage lender consent

The inherent challenge of requiring energy audits is finding the balance between cost and rigor, especially across small, medium, and large projects with differing cost sensitivities. A sensible response to this challenge is for the program to develop tiered audit requirements based on the number and combination of measures being installed, project costs, and existing lender or underwriter requirements. These will likely include some combination of the audits, which are listed below in order of lowest to highest cost.

### Energy Audit Types and Descriptions

\* *ASHRAE: American Society for Heating, Refrigerating and Air-Conditioning Engineers*

- **Utility Rebate/Incentive Audit** – A free or low-cost audit that is part of a utility energy efficiency rebate/incentive program (this is often equivalent to an ASHRAE Level I Audit).
- **Targeted Audit** – Only examines the energy use of the system of concern, rather than the energy use of the whole building. This approach is generally used for large, single-system projects.
- **ASHRAE\* Level I Audit** a.k.a. *Walk-through Analysis* – A brief review of building systems with primarily qualitative results.
- **ASHRAE Level II Audit** a.k.a. *Energy Survey and Engineering Analysis* – This includes identifying energy efficiency measures with estimates of energy and cost savings for capital projects.
- **ASHRAE Level III Audit** a.k.a. *Detailed Analysis of Capital-intensive Modifications* – This includes more detailed calculations based on monitored end-use data or hourly building simulations. It also includes more detailed project specifications for retrofits.
- **Investment-Grade Audit (IGA)** – A very rigorous and expensive audit, typically undertaken to evaluate a potential upgrade to a facility's energy infrastructure, wherein it must compete for capital funding with non-energy related investments. The projected operating savings from the implementation of the project must be developed such that they provide a high level of confidence.

The cost of an audit can range from free (utility audit) to tens of thousands of dollars for an investment grade audit. Therefore, composing tiered audit requirements that are appropriate for all potential property/project sizes is critical to ensuring that the related costs do not become an unreasonable hurdle that dissuade property owners from participating.

Governments should note that multifamily housing is very different from other types of nonresidential buildings and will likely be subject to different audit protocols and standards than those for office, retail, and warehouse properties. Currently, a broad stakeholder group assembled by the California Home Energy Retrofit Coordinating Committee (HERCC) completed a set of protocol and standard recommendations for multifamily properties. Private firms are also working on multifamily energy retrofit analysis tools.

## 8. Choose Program Eligibility Criteria

Like any other type of financing, a PACE program must specify eligibility criteria that applicants are required to meet to be approved for financing. These criteria are likely to be heavily influenced by the criteria that the underwriters (e.g., banks or bond underwriters) will require applicants to meet.

Underwriting is the process of determining whether an applicant is creditworthy enough to receive financing. Both banks and underwriters will want to see that a consistent and appropriate set of underwriting criteria have been met by each and every property/property-owner participating in the PACE program. This is especially important when trying to issue a bond; the underwriter and investors want to ensure that all underlying collateral met the same criteria.

To this end, DOE issued underwriting best practice guidelines in its [Guidelines for Pilot PACE Financing Programs](#).<sup>14</sup> These best practice guidelines are specific to residential but largely applicable to commercial properties as well.

Ultimately, local governments will have to determine the right mix of requirements for their program, but a set of PACE commercial underwriting/program eligibility criteria might include the following:

- Applicant(s) has/have clear title to the property
- Property is located within the energy financing district
- All legal owners have agreed to participate and sign the application
- Applicant has written existing-lender (mortgage-holder) consent
- A maximum Lien to Value (LTV) ratio (i.e., what percentage the PACE financing will be compared to the property value) generally capped at 10%
- Applicant has no recent notices of default or foreclosure
- Applicant has no recent bankruptcies
- Applicant is current on mortgage payments
- There is a limit on involuntary liens (e.g., liens placed by contractors who were not paid for their work) on the property
- Details about current occupancy of the property are supplied

---

<sup>14</sup> Guidelines for Pilot PACE Programs: [http://www1.eere.energy.gov/wip/pdfs/arra\\_guidelines\\_for\\_pilot\\_pace\\_programs.pdf](http://www1.eere.energy.gov/wip/pdfs/arra_guidelines_for_pilot_pace_programs.pdf).

## 9. Where Applicable, Leverage Existing Utility Rebate/Incentive Programs

In many areas, local governments will want to consider designing their PACE program to leverage existing utility or state rebate/incentive programs. These programs are available in many, but not all states. To determine if any incentives are available in the program jurisdiction visit the Database of State Incentives for Renewables and Efficiency (DSIRE)<sup>15</sup>. Governments should note that sometimes the terms *rebate* and *incentive* are used interchangeably to describe utility programs, but there can be significant differences between the two, depending on what a local utility offers and how such offerings are structured. The programs and their typical differences can be summed up as follows:

- **Rebates:** *Prescriptive* measures/payments wherein there is a set payment amount per measure/unit that is on a fixed list of eligible measures. An application to a rebate program is generally made after the measures have been installed. For example, a customer installs a high- efficiency furnace and then receives a \$500 payment from the utility.
- **Incentives:** *Customized* payments wherein the payment amount is calculated for each measure based on a combination of kW and kWh reductions achieved in the specific context of deployment. An application to an incentive program is typically made *before* the measures have been installed and pre-approval (or *approval*) must be obtained before proceeding with the measures. An example of this type of program is the PG&E *Customized Retrofit Incentive*, also known as the *Statewide Customized Offering for Business*. (Note that an applicant will receive approval from the incentive program that also includes estimated payment amounts, but the final payment amounts may differ from the original approval estimates for a number of reasons.)

There are many reasons local governments may want to leverage existing utility rebate and incentive programs:

- They act as an outside, independent confirmation that the covered measures will likely result in energy savings and that the measures are cost-effective.
- Incentive (as opposed to rebate) programs tend to have a rigorous technical/engineering project review process that further guarantees the approved measures will achieve energy savings and provides an estimate of how much.
- These programs tend to have inspection, verification, and quality assurance (QA) processes that cover installed measures (with incentive programs usually having more rigorous processes than rebate programs).
- They reduce the amount of financing that applicants need to complete their clean energy projects.

Given those reasons, channeling PACE projects through existing utility rebate and incentive programs may be a good practice that can shift some of the commercial PACE effort and cost of:

- Reviewing projects to confirm the included measures are eligible and will save energy
- Verifying contractor/auditor energy saving estimates for the measures
- Verifying installation and QA of measures, possibly including onsite post-installation inspections

The potential drawbacks of participating in utility incentive programs (as opposed to rebate programs, which tend to be simpler) are as follows:

- The application process can be long and onerous.
- The review and approval can introduce significant time delays (could be as much as 30 to 45 days, although given the long lead time of many commercial projects, this may not be an issue).
- The PACE program does not have direct control over but depends on third-party programs (if there are capacity issues, the PACE program cannot necessarily do anything about them).
- The utility program might not cover all of a project's measures, in which case separate review, approval,

---

<sup>15</sup> Database of State Incentives for Renewables and Energy: [www.dsireusa.org](http://www.dsireusa.org).

---

QA, and/or inspection processes would be required for different measures (i.e., those measures covered by the utility program versus those that are not). And coordination would be required between those separate processes for a single project.

A commercial PACE program will benefit most from leveraging existing utility programs when a project's measures are eligible for participation in the utility programs. Therefore, a key thing for local governments to determine is the amount of overlap between PACE program eligible measures and the utility rebate/incentive program eligible measures.

If a local government determines they would like to coordinate with an existing utility program, the PACE program can then be designed either to: a) require PACE applicants to also participate in any applicable utility rebate/incentive program, or b) make it optional, but then charge applicants additional fees for project review if they choose not to participate in the utility programs. An example of effectively leveraging an existing utility program is the Sonoma County Energy Independence Program (SCEIP). It requires commercial properties to obtain a free onsite PG&E energy audit to determine the most effective route to maximizing their investment.

## 10. Plan Quality Assurance/Quality Control

Local governments will also have to consider how their PACE program will ensure that projects meet quality standards and guard against fraud. As in any large industry, a few unethical companies can take advantage of certain situations and not complete the project work as expected or promised. At the outset, program administrators should develop a quality management plan, which includes always using licensed contractors and making monitoring and verification of work a mandatory part of their commercial PACE programs.

There are a variety of specific practices a PACE program may want to incorporate into their quality management plan. At a minimum, after work has been completed, property owners should be required to submit finalized building permits (for those measures that require them) to the PACE administrator. This documentation can be included as a part of the package of documents a property owner will submit to request final payment. Further, as discussed in Section 9, a government may choose to coordinate their PACE program with existing utility programs, which typically already perform inspections of installed measures to verify completion and quality (especially the customized incentive programs).

In addition to the checks on completion and quality performed by utility and building inspectors, it is recommended that PACE programs include independent inspections of a portion of completed projects in their quality management plan. The purpose is to ensure quality expectations are met, to guard against fraud, and to make sure contractors are abiding by the terms of the program. Independent inspections may be performed by program staff or another third-party inspector. Inspections on a subset of projects can have two components:

1. Inspection of a certain number of the first projects completed by each contractor under the PACE program (e.g., the first three projects, or some unstated number of the first five projects)
2. Inspection of a random sampling of projects annually beyond the first projects included in #1 above (e.g., 15% of total projects annually)

Finally, in addition to independent post-installation inspections, a PACE program may decide a pre-installation inspection is appropriate and necessary to verify the *before* conditions and to guard against fraud.

## 11. Design Application Processing Procedures

It is vital for the PACE program to have clear processes both internally and externally to handle the application process properly and efficiently. The PACE application process typically includes the following actions for a property owner:

1. **Energy Audit:** Owner has a trained technician perform an energy audit that includes recommended measures for improving the property's energy efficiency.
2. **Eligible Measures:** Owner chooses measures to be included in the project based on PACE eligibility, goals, and cost effectiveness.
3. **Lender Consent:** Owner engages the mortgage-holder and obtains consent/acknowledgement to add the PACE assessment to the property tax bill.
4. **Application Submission:** Owner submits application package to the PACE administrator.
5. **Application Approval:** Owner receives application approval from the PACE administrator.
6. **Project Implementation and Completion:** Owner has licensed contractors implement the measures.
7. **Payment Request:** When project milestones are met or the project is completed, owner submits request for progress/final payment.
8. **Repayment:** Owner pays back the assessment via property taxes; the term is between 5 and 20 years, depending on the useful lives of the included measures.

The two points at which the PACE program administrator is most heavily involved are when the property owner submits the application (step 4) and when the applicant requests payment (step 7). Templates of the documents associated with these steps are included in the package of sample application documents, which can be downloaded on the [DOE Solution Center](#)<sup>16</sup>.

### 11.1 Making Approval as Simple and Objective as Possible

A recommended practice for any PACE program is to make the application approval process (at both steps 4 and 7) as objective as possible, by reducing the decision to a simple and consistent set of *go/no-go* decisions based on clear, defensible criteria. For example, the two key stages of application processing might include the following go/no-go criteria:

- **At point of application submission (step 4):**
  - Is the application filled out completely and signed by all legal owners?
  - Has written lender consent been obtained?
  - Has the applicant/property met all program eligibility criteria?
  - Does a property title search confirm legal owners and eligibility? (*see 11.3 for more information*)
  - Are all measures in the project eligible for financing?
  - Does project review verify that the total project will save energy? (*see 11.2 for more information*)
  - If the applicant is participating in a utility rebate/incentive program, has the associated paperwork been submitted?
  - Does the project meet the Savings-to-Investment Ratio (SIR) target, if any?
  - Are the chosen contractors eligible to participate in the program?
- **At point of request for progress/final payment (step 7):**
  - Has a lien been placed on the property to secure the financing?
  - Is there proof that the project has been completed or that a milestone has been reached?
  - Has the applicant signed and submitted the payment request form that states a milestone has been reached and the owners are satisfied with the work?

<sup>16</sup> DOE Solution Center Commercial Property-Assessed Clean Energy Financing Attachments: [http://www4.eere.energy.gov/wip/solutioncenter/finance\\_guide/sites/default/files/docs/ch12\\_attachments.pdf](http://www4.eere.energy.gov/wip/solutioncenter/finance_guide/sites/default/files/docs/ch12_attachments.pdf).

- If the applicant wants payment to go directly to the contractor, has the applicant signed a payment assignment document?
- Have appropriate permits been submitted?
- Have contractor invoices showing progress been submitted?
- Is an independent onsite inspection necessary, and if so, does it verify claimed progress?

## 11.2 Project Review

As stated previously, commercial PACE financing is available only for measures that will save energy, produce renewable energy, and/or conserve water (see Section 6. Assemble Eligible Project Measures for more detail). The level of rigor of this project review and the extent to which the local government wants to validate the projected savings is a key consideration for program planners.<sup>17</sup> Conducting more rigorous project reviews often requires a certain amount of energy engineering knowledge, experience, and professional judgment.

Program staff must review each submitted project at time of application to verify that it includes eligible measures and that those measures will save energy in the context where they are being deployed. These projects are likely to be significantly different, largely due to the mix of property sizes and types in a commercial program. This means that, as they are reviewing applications, PACE program administrators or their consultants will need to be well-versed in reviewing a wide range of project sizes and combinations of efficiency measures within them in order to verify the legitimacy and energy-saving potential of the projects that seek funding.

A key source of information to determine project savings is the energy audit submitted with the application, but energy audits come in all formats and use differing assumptions (e.g., escalation rate for energy, opportunity costs, etc.), which complicates the review process for the program administrator.

An excellent way for the PACE program to deal with such variation is to have its own analysis template (an Excel spreadsheet, for example) that applicants (or contractors on their behalf) must fill out and submit with their applications. See the Energy and Cost Savings Analysis Template included in the package of sample application documents for an example. By having a uniform project summary format (analysis template) that is the same for every applicant and uses a realistic, consistent set of assumptions, the program administrator can more quickly review the individual measure savings and total estimated energy/cost savings and cost-effectiveness of the project.

The commercial PACE program further benefits from having access to someone with sufficient energy engineering knowledge/experience who can review projects that are more complex (i.e., ones that have a lot of measures or equipment/materials that are not as common). This person could be a local government staff member in the same or another department (e.g., Planning Department or Department of Environment), or a consultant from an energy engineering services firm brought in on an as-needed basis.

## 11.3 Property Title Search


Ownership of commercial properties takes various forms. These include a corporation, limited liability company (LLC), partnership, trust/trustees/living trust, individual(s), joint tenants, and common property. Sometimes an entity that owns a property in one of those ways is nested within another legal entity.

The ownership variations affect a PACE program in two important ways: 1) determining who is or are legal property owner(s) with authority to encumber the property with a PACE tax assessment, and 2) determining whether the owner(s) meets the program eligibility requirements. Local governments can determine the answers to both by having a title search performed on the property. A firm with specialized expertise and experience usually conducts this search.

---

<sup>17</sup> The rigor of validating energy saving projections could be anything from merely checking that all measures are on the program's eligible measures list, to requiring energy audits and accepting their recommended measures' estimated savings, to having expert program staff or external consultants review each project or a subset of projects. Determining what method(s) will be used will depend on local government goals and stakeholder feedback—especially from existing lenders and investors/underwriters.





The complexities of commercial property ownership make commercial title searches more expensive than their residential counterparts, as it takes longer to trace the chain of legal entities and verify who the owners are and whether program eligibility requirements are met. Title search costs can range from \$200 to \$1,000 for a single property, and the PACE program must factor in this expense and decide how best to cover it (i.e., built into administrative costs or billed separately to the applicant).

## 12. Specify Contractor Requirements

The commercial building energy audit market is fragmented, with no universally accepted standards for auditors. As a result, a commercial PACE program cannot point to a single accreditation that auditors be required to have. In the absence of a single accreditation, PACE programs best serve their participants by providing them with a list of recommended licenses/credentials to seek in a contractor's team, along with questions to ask about their experience and what they will deliver to the client (the property owner seeking clean energy improvements). Minimum requirements for energy audit and energy service contractors seeking to participate in the program and be included in the list of eligible contractors should include:

- Hold licenses for the type of work they are doing, if any are required
- Get permits for any work that they do that requires a permit
- Attend a contractor information session where they learn specifics about the PACE program
- Sign a program terms and code of ethics agreement

If a contractor does not adhere to the program's terms and conditions for participation or fails to maintain passing scores on QA inspections, that contractor should be delisted and ineligible to perform work for current and future PACE program applicants.

Aside from providing a list of contractors that meet the general requirements for program participation, PACE programs may wish to avoid "endorsing" specific contractors because doing so could increase the program's (and, therefore, the local government's) legal liability if a participant has a problem with those contractors. To maintain good relationships with all contractors and build trust with the public, a commercial PACE program should remain neutral on service providers and, instead, set a reasonably high qualifications bar and work to foster a fair, competitive marketplace.

---

## 13. Market and Launch Program

Program marketing and outreach should focus on educating property owners on both the energy-related benefits, such as saving money and reducing greenhouse gas emissions, and the non-energy benefits, such as improving occupants' health and comfort, all of which are the result of energy efficiency and renewable energy improvements in commercial buildings. Property owners should be advised on the estimated costs and savings of installing efficiency measures or renewable energy under the commercial PACE program. A local government-sponsored PACE program should be rolled out with as much detail as possible on the costs of financing improvements and the availability of funds through the grantee's PACE program.

To help disseminate information to a broader audience, many programs have focused on working with associations of contractor, building owners, and/or building managers. Marketing efforts often include press releases, the development of brochures, and social media. Please reference the package of template marketing documents, which can be downloaded on the [DOE Solution Center](#)<sup>18</sup>.

---

<sup>18</sup> DOE Solution Center Commercial Property-Assessed Clean Energy Financing Attachments:  
[http://www4.eere.energy.gov/wip/solutioncenter/finance\\_guide/sites/default/files/docs/ch12\\_attachments.pdf](http://www4.eere.energy.gov/wip/solutioncenter/finance_guide/sites/default/files/docs/ch12_attachments.pdf).

## PACE Resources and Guidelines

### DOE Resources

- DOE Solution Center Commercial Property-Assessed Clean Energy Financing  
[http://www4.eere.energy.gov/wip/solutioncenter/finance\\_guide/content/commercial\\_property\\_assessed\\_clean\\_energy\\_financing](http://www4.eere.energy.gov/wip/solutioncenter/finance_guide/content/commercial_property_assessed_clean_energy_financing)
- Guidelines for Pilot PACE Financing Programs (issued May 7, 2010)  
[http://www1.eere.energy.gov/wip/pdfs/arra\\_guidelines\\_for\\_pilot\\_pace\\_programs.pdf](http://www1.eere.energy.gov/wip/pdfs/arra_guidelines_for_pilot_pace_programs.pdf)
- DOE Webinars on PACE  
<http://www1.eere.energy.gov/wip/solutioncenter/financialproducts/PACE.html>
- Status Update – Pilot PACE Financing Programs  
<http://www1.eere.energy.gov/wip/pace.html>

### White House Policy Framework for PACE Financing Programs (October 18<sup>th</sup>, 2009)

The DOE Guidelines (above) are intended to help implement the White House's *Policy Framework for PACE Financing Programs*, available at: [http://www.whitehouse.gov/assets/documents/PACE\\_Principles.pdf](http://www.whitehouse.gov/assets/documents/PACE_Principles.pdf)

### University of California, Berkeley Renewable and Appropriate Energy Laboratory (RAEL) Guide to Energy Efficiency & Renewable Energy Financing Districts for Local Governments

<http://rael.berkeley.edu/sites/default/files/berkeleysolar/HowTo.pdf>

### Institute for Building Efficiency, Setting the PACE: Financing Commercial Retrofits

[http://pacenow.org/wp-content/uploads/2013/02/Setting-the-PACE\\_Feb2013.pdf](http://pacenow.org/wp-content/uploads/2013/02/Setting-the-PACE_Feb2013.pdf)

### Lawrence Berkeley National Laboratory (LBNL) PACE Policy Briefs

- Update on Commercial Programs  
<http://eetd.lbl.gov/ea/ems/reports/pace-pb-032311.pdf>
- Accelerating the Payment of PACE Assessments  
[http://eetd.lbl.gov/ea/emp/reports/ee-policybrief\\_050410.pdf](http://eetd.lbl.gov/ea/emp/reports/ee-policybrief_050410.pdf)
- Transferring PACE Assessments Upon Home Sale  
[http://eetd.lbl.gov/ea/emp/reports/ee-policybrief\\_041210.pdf](http://eetd.lbl.gov/ea/emp/reports/ee-policybrief_041210.pdf)
- PACE and the FHFA  
[http://eetd.lbl.gov/ea/emp/reports/ee-policybrief\\_031710.pdf](http://eetd.lbl.gov/ea/emp/reports/ee-policybrief_031710.pdf)

### PACENow.org

[PACENow.org](http://pacenow.org) is a website that acts as a central collection hub for all news and information related to PACE and for coordinating legislative action to support PACE programs.

- Lender Support Study  
<http://pacenow.org/wp-content/uploads/2012/12/Lender-Support-Guide-12.28.20121.pdf>