MAPA REGIONAL C-PACE TOOLKIT

The Mid-Atlantic PACE Alliance (MAPA) is a regional partnership to advance Commercial Property Assessed Clean Energy (C-PACE) financing solutions. MAPA is supported by a grant from the U.S. Department of Energy.

MAPA Partner Organizations: Virginia Department of Mines, Minerals and Energy, District of Columbia Department of Energy and Environment, Maryland Clean Energy Center, Clean Energy Solutions, Inc., PACE Financial Servicing, Urban Ingenuity, Virginia Energy Efficiency Council, The Solar Foundation, Abacus Property Solutions, Arlington County, VA, Williams-Mullen, Northern Virginia Regional Commission, Metropolitan Washington Council of Governments, Sustainable Real Estate Solutions, City of Charlottesville, VA, Johnson Controls, Inc., Trane, and PACE Equity.

MID-ATLANTIC PACE ALLIANCE

ACKNOWLEDGEMENTS

MAPA appreciates the contributions from all of its partners and supporters in the development of this Regional C-PACE Toolkit. The views expressed in this Toolkit are not necessarily the views of the organizations listed on the cover. The information and recommendations contained in this Toolkit are based on best practices in the C-PACE industry and consensus among MAPA partners.

MAPA may periodically update this Toolkit as C-PACE program implementation and development evolves in the Mid-Atlantic region and nationally. MAPA's goal is to maintain this Toolkit so that information is current and relevant and may be referenced by C-PACE stakeholders in the region or elsewhere.

Acknowledgment: This material is based upon work supported by the Department of Energy, Office of Energy Efficiency and Renewable Energy (EERE), under Award Number DE-EE0007777.

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Section 1: Introduction

This regional Commercial Property Assessed Clean Energy (C-PACE) Toolkit was developed by the Mid-Atlantic PACE Alliance (MAPA) to share best practices, foster growth and increase program harmonization in Virginia, Maryland and the District of Columbia. This comprehensive resource is laid out in several sections. The Introduction addresses the following questions:

- What is Commercial PACE?
- How do C-PACE programs work?
- What are the key benefits to communities and local economies?
- How do I use this Toolkit?
- What is the Mid-Atlantic PACE Alliance?
- Why a regional approach to C-PACE?

Readers familiar with C-PACE may choose to skip to the state-specific guides in Section 2: Program Development Guides for Local Governments

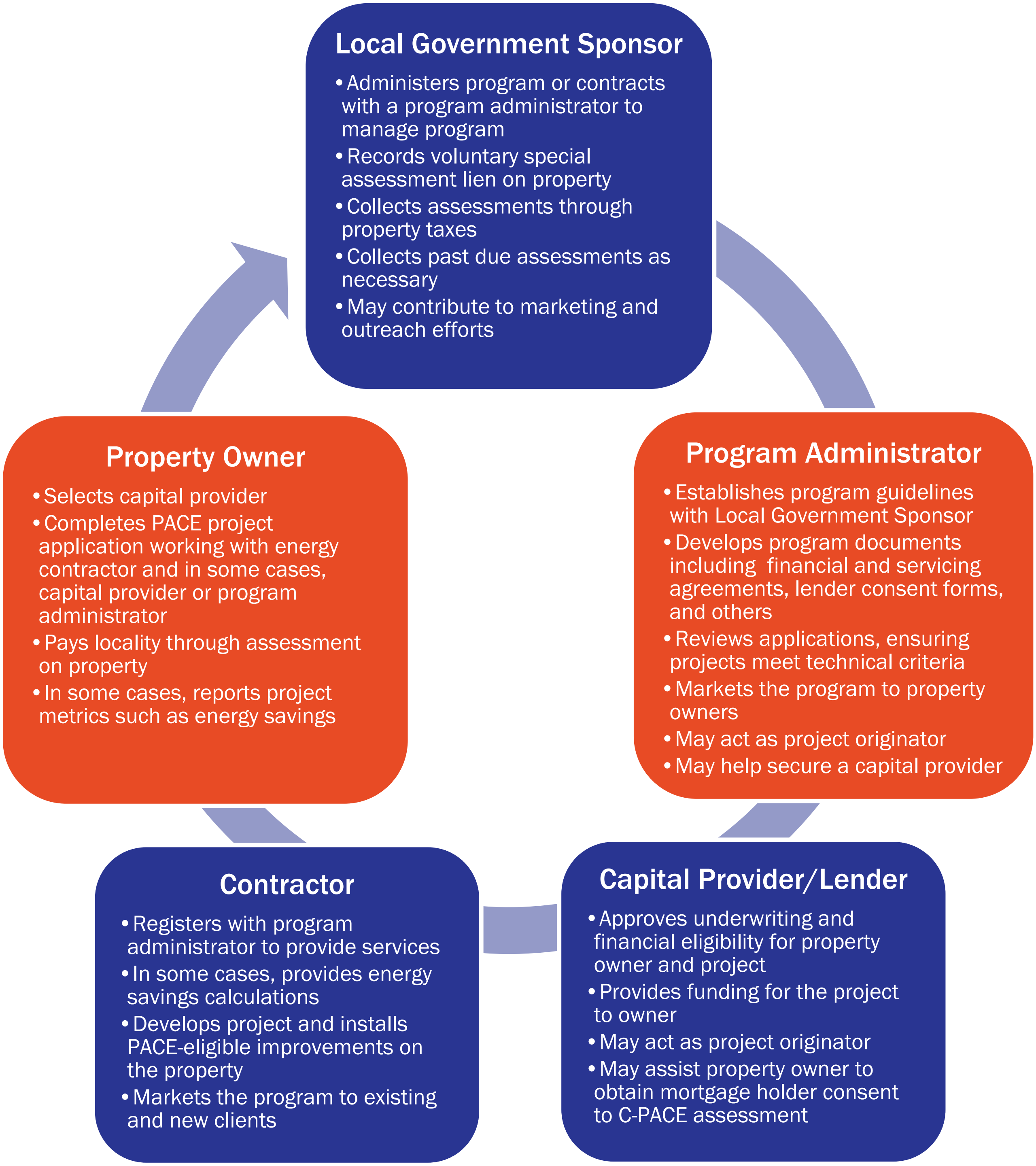
What is Commercial Property Assessed Clean Energy?

C-PACE is a financing mechanism designed to promote energy and water efficiency improvements, and installation of renewable energy systems, for commercial, industrial, agricultural, non-profit and multifamily buildings with 5 or more dwelling units. C-PACE programs are voluntary and allow property owners to obtain financing for eligible projects, typically through private lenders, and repay the assessment through the same mechanism by which property taxes are paid[1].

For C-PACE programs to become active, a state must pass enabling legislation giving local governments authority to offer C-PACE financing. Subsequently, localities must pass an ordinance or resolution allowing taxing authorities (e.g. counties, cities, or towns) to place C-PACE special assessments on the locality's tax rolls. The District of Columbia, Maryland, and Virginia have C-PACE enabling legislation, and have active programs operating in several localities. As of May 2018, 33 states have passed C-PACE enabling legislation and 20 have active C-PACE programs, according to PACENation.

[1] There is precedent for C-PACE assessments to be paid back on a utility bill (such as water or sewer bill) issued by the locality rather than a property tax bill, however this is not standard practice in the MAPA region or nationally.

Figure 1: C-PACE Program Roles and Responsibilities



The graphic above illustrates the roles for the primary participants in C-PACE programs. Specific roles and responsibilities may vary, depending on the priorities of the sponsoring jurisdiction and program structure.

Benefits of C-PACE

C-PACE is a public-private partnership that offers a number of advantages to communities and industry partners:

Local Governments:

- Furthers economic development by creating jobs and new revenue; may stabilize ownership and tenancy leading to enhanced and/or more predictable tax revenues
- Promotes community revitalization by upgrading buildings that may have deferred maintenance needs, or by repurposing buildings to more beneficial uses
- Enables environmental conservation by reducing energy and water use, promotes use of renewable energy systems, and improves air quality (e.g. avoiding non-attainment)

Building Owners:

- Requires no out-of-pocket costs and offers 100% upfront financing for the energy audit, feasibility studies and reports, design, installation and construction of eligible building improvements ("hard" and "soft" costs)
- Long repayment terms (up to 20 to 25 years) resulting in lower annual payments
- Assessment is affixed to property (not the owner) so if building is sold, assessment remains with the property
- Improvements can retain or attract new tenants, increase building value and lifespan, and improve occupant comfort and indoor air quality
- Fixed interest rates
- Off-balance sheet treatment[2] (does not add to owner debt)
- Upgrades result in reduced energy and water consumption and lower operating costs

TIP: When building owners need to upgrade energy equipment or wish to install renewable energy systems, the upfront cost is typically too high to pay with cash reserves. C-PACE was designed to address this challenge.

Capital Providers and Local Lenders:

- Good fixed rate of return over longer terms, without needing to refinance or incur more transaction costs

[2] There is no generally accepted accounting principle for off balance sheet treatment; it is always advisable to check with a tax professional.

- Assessments transfer to new ownership, so current owners have an incentive to make building improvements now, even if they choose to sell before the end of the loan term

Contractors:

- Energy Service Companies (ESCOs) and other contractors can utilize C-PACE financing to expand project scopes with existing customers and unlock additional business opportunities with new clients, creating jobs and additional value through the supply chain

TABLE 1 - COMPARISON OF FINANCING MECHANISMS FOR ENERGY UPGRADES

Attributes	C-PACE	Bank Loan	Lease	Power Purchase Agreement (PPA)
100% financing of hard and soft costs	☑	X	X	X
Does not tie up borrowing capacity	☑	X	☑	☑
Longer loan terms (up to 25 years)	☑	X	X	X
Fixed interest rate	☑	X	☑	N/A
Positive cashflow	☑	X	X	X
Take advantage of renewable energy tax credits	☑	☑	X	X
Less restrictive owner credit requirements	☑	X	X	X

MAPA partners believe it bears repeating that the compelling benefit of C-PACE for building owners is to address the problem of sufficient cash available to pay upfront for energy and water efficiency upgrades that can readily be financed through C-PACE. Upfront costs are a persistent barrier for building owners, often causing needed and beneficial capital improvements to be delayed through one or multiple budget cycles. C-PACE allows cash reserves, where available, to be conserved or used for core business priorities and operating expenses.

How to Use This Toolkit

This Toolkit was developed through the careful consideration of national and regional C-PACE industry best practices, identified through review of available C-PACE program research, and telephone and online surveys of program sponsors, administrators, and capital providers and contractors active in the C-PACE market. A summary of the survey results is available here.

This Toolkit is a resource for local governments, program administrators, capital providers, local lenders, building owners, contractors and other stakeholders in the Mid-Atlantic region on C-PACE best practices as they relate to the specific political and economic context of the region. Specifically, this Toolkit provides:

- Comprehensive guidelines, helpful tips, and sample documents for local governments seeking to sponsor and implement a C-PACE program in their jurisdiction, based on regional and national best practices
- Resources for other stakeholders interested in establishing C-PACE programs in their community
- Information about active C-PACE programs in the region
- Recommendations for increased harmonization among state and local governments and program administrators already operating C-PACE programs in the region

In addition to the Introduction, the Toolkit is organized into the following sections:

Section 2: Program Guides for Local Governments and Program Administrators

This section includes three state-specific guides:

Virginia Program Guide: This section is directed towards local governments in Virginia that are learning about C-PACE, but have yet to launch a C-PACE program in their jurisdiction. It includes guidance on program development, financial underwriting, technical project criteria, sample program documents, and a model ordinance developed by the Virginia Energy Efficiency Council (VAEEC). This section also includes information on Arlington County's C-PACE program, the first active C-PACE program in Virginia which launched in January, 2018.

Maryland Program Guide**:** Provides recommendations for Maryland local governments and information about the MD-PACE program currently operating in the state. The primary goal of this section is to provide actionable guidance that C-PACE sponsors and administrators may implement to further harmonize programs across the state and regionally. This section also includes guidance for localities in Maryland who have yet to enable or establish a C-PACE program.

District of Columbia Program Guide: Provides information and guidance for stakeholders participating in the DC PACE program. The goal of this section is to provide actionable guidance to local governments that will lead to more successful implementation and increased harmonization of C-PACE programs in the region.

These guides include references to the Regional Program Toolkit technical guidance documents (I.-IV., as shown below). These guides include C-PACE industry and program administration best practices and recommendations generally agreed upon by MAPA partners. MAPA notes that there may be state or local government directives or priorities which will lead to (or have led to) choices on program criteria and design that differ from the proposed standardized approaches.

Section 3: Regional Marketing Guide

The Regional Marketing Guide provides C-PACE marketing information and resources that can be utilized by program stakeholders.

About the Mid-Atlantic PACE Alliance

The Mid-Atlantic PACE Alliance (MAPA) is a project led by the Virginia Department of Mines, Minerals and Energy (DMME) and funded through a U.S. Department of Energy State Energy Program competitive grant obtained in January, 2017. MAPA project partners include C-PACE industry, nonprofit, and governmental partners from Virginia, Maryland, and the District of Columbia.

MAPA's Mission

The primary mission of MAPA is to accelerate the development of C-PACE programs and to significantly increase the number of projects in the region's existing C-PACE programs through increased program harmonization and coordinated outreach. MAPA seeks to promote greater consistency in the key attributes of C-PACE programs operating in the region, including:

- Administrative structure
- Financial underwriting guidelines
- Project and property owner eligibility
- Technical project requirements
- Tax assessment enrollment and enforcement mechanisms
- Contractor and capital training and support
- Building owner application and closing processes
- Marketing messages and strategies

MAPA's objective is to enable a larger, aggregated Mid-Atlantic marketplace capable of attracting sustained interest and involvement from property owners, capital providers, and energy services vendors and generate long-term demand. Through surveys conducted in 2017, MAPA obtained feedback from key industry partners which clearly indicated that a "patchwork quilt" of programs that vary significantly from locality to locality will be a barrier to their participation in C-PACE. From this regionally-coordinated framework, MAPA supports the growth and development of a regional project pipeline with sufficient volume ($80 million in loan value) to facilitate a self-sustaining, C-PACE marketplace, which will function with minimal public financial support.

Why a Regional C-PACE Approach?

The proximity and overlap of property owners, contractors, and capital providers working in the metropolitan Washington, D.C. area and surrounding jurisdictions was a chief impetus in the development of the Mid-Atlantic PACE Alliance. Realizing that C-PACE stakeholders in the greater D.C. area will likely cross jurisdictional boundaries, MAPA seeks to create as much standardization as possible among various C-PACE programs active and those forming in the region. Consistency across programs will increase confidence in C-PACE and lower barriers to participation by industry partners, such as building owners, capital providers and local lenders, and energy service companies. Standardized underwriting is also important for the secondary market, allowing capital providers and banks to package and securitize C-PACE assessments, allowing for fresh infusions of capital.

MAPA recognizes that while the DC-PACE program has experienced steady growth in recent years, C-PACE programs in Maryland and Virginia have developed at a slower rate than anticipated by key stakeholders working in the region. The Commonwealth of Virginia passed C-PACE enabling legislation in 2015, but as of June 2018, one jurisdiction (Arlington County) has passed an enabling ordinance and established a program.

While there are some differences between the active programs in DC, Maryland, and Virginia, MAPA is the culmination of C-PACE stakeholders across the three states recognizing that a coordinated approach is needed to foster regional market transformation and the growth of a self-sustaining C-PACE marketplace. MAPA's efforts are based on the assumption that the success of individual C-PACE programs is dependent on the health of the regional marketplace as a whole.

Section 2: Program Development Guides for Local Governments

Virginia Program Guide Overview

This section is to inform local governments and other stakeholders in Virginia interested in launching a Commercial Property Assessed Clean Energy (C-PACE) program on potential courses of action and available resources.

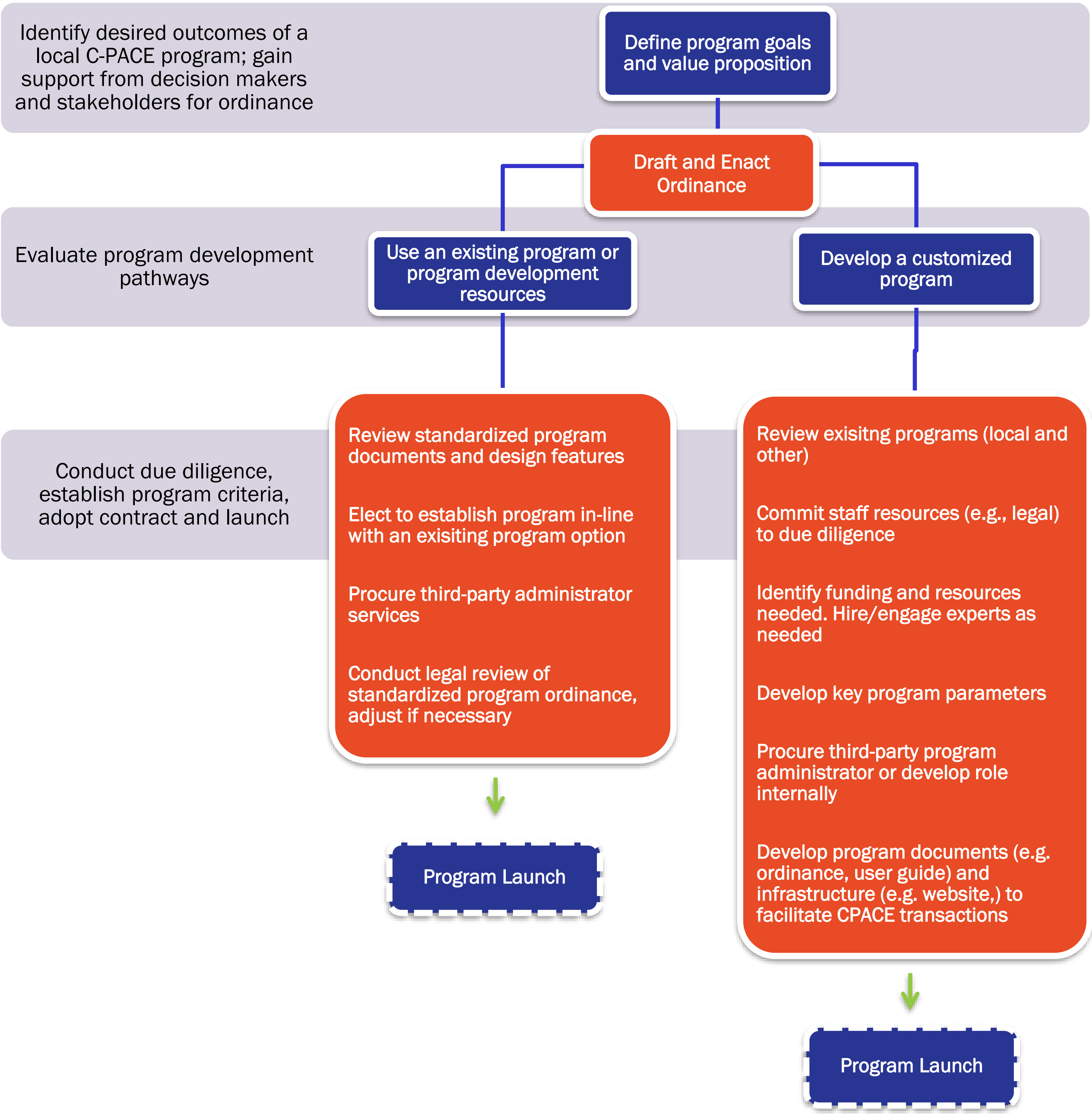
The jurisdiction's primary role is to conduct due diligence on the benefits of C-PACE to their constituents, and to determine its goals and desired program design. Mid-Atlantic PACE Alliance (MAPA) members are available to support VA jurisdictions as they consider C-PACE program development pathways. The primary audience for this section is local government representatives in Virginia. For Maryland local governments, please reference the Maryland Program Guide.

Developing a Commercial Property Assessed Clean Energy (C-PACE) Program in Virginia

The Virginia PACE statute allows localities to enact by ordinance the ability to "authorize contracts to provide loans for…clean energy improvements with free and willing property owners of both existing properties and new construction." Under these ordinances, localities may place a *voluntary special assessment* lien against a property that elects to participate in the loan program.

This guide outlines the decisions that local governments must make in establishing a C-PACE program, and provides guidance on program development decision points aligned with best practices nationally and in the Mid-Atlantic region. The graphic on the following pages outlines several of the key steps involved in launch of a C-PACE program in Virginia.

Figure 2 - Commercial PACE Program Development Process[3]



[3] This graphic is for illustrative purposes and is not intended to be inclusive of all C-PACE program development options and decision points. The enabling ordinance may be the first step, but localities may develop the solicitation/program structure ahead of (or in parallel with) the ordinance, and enact the ordinance as a last step before program launch.

Step 1: Determine Program Goals and Build Support

Jurisdictions considering the establishment of a C-PACE program will first determine what high-level goals a C-PACE program may help their community meet. Defining the "value proposition" of C-PACE and understanding the key motivators that will appeal to various decision makers and community stakeholders is critical to gaining support for and successfully implementing a C-PACE program.

C-PACE programs deliver many benefits for the jurisdictions in which they are enabled; the two most commonly cited reasons for local governments launching programs are:

1. **Economic Development and Community Revitalization:** C-PACE can provide improved access to capital for traditionally underserved property sectors, such as Class B and C office buildings, locally-owned small businesses, nonprofit organizations, and multifamily housing, enabling building owners to complete necessary energy conservation, renewable energy and water-saving improvements. These retrofits can reduce building operating costs, improve building condition, attract and retain businesses, improve occupant comfort, and allow capital to be invested instead into other projects and/or core business activities. C-PACE can also be used as part of the financing structure for substantial renovation and new construction projects, and creates business for energy and water services vendors, design and engineering professionals, and local lenders. Every $1 million invested in C-PACE results in the creation of 15 full-time jobs and stimulates other business investment.[4]

2. **Environmental Conservation**: C-PACE can help states and localities meet applicable resource conservation and greenhouse gas emission reduction goals by enabling more energy efficiency, renewable energy, and water conservation projects. Local governments can demonstrate leadership on environmental stewardship by establishing a C-PACE program, which may be important to constituents. Over 70 percent of the energy generated in the US is used in buildings. Because C-PACE allows for longer repayment terms compared to conventional property improvement loans, it leverages more investment so that deeper energy efficiency retrofits and/or more renewable energy systems may be installed. At scale, the conservation benefits of C-PACE are significant, considering that the average C-PACE project can yield electricity savings between 300-400 MWh over the lifetime of the measures installed, equivalent in terms of greenhouse gas emissions reduction to taking 47-63 cars off the road for a year[5].

Determining local goals will help jurisdictions garner support for C-PACE and possibly identify a "champion," a best practice noted by many jurisdictions that participated in surveys conducted by MAPA in 2017. Having a champion or central point of contact for various agencies and

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[4] Estimate courtesy of EcoNorthwest for PACENation.

[5] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

departments to act as a coordinator throughout the development phase is helpful to expedite the process. In order to build support within a local government, there are typically numerous departments that are potentially impacted by and need to be educated about C-PACE. This outreach and education helps explain the benefits C-PACE can provide to a locality, and allows departments to conduct their due diligence in terms of C-PACE program value to their jurisdiction. MAPA partners have learned that establishing and sustaining C-PACE as a priority relative to the many competing demands on local government staff time is a significant task and requires ongoing engagement.

Gaining support from local government elected officials and senior managers (City Manager, Director of Tax and Finance, Economic Development Director, Environmental Programs Director) is necessary to approve an enabling ordinance. MAPA partners note, however, that engagement from community stakeholders (building owners, business associations, environmental advocates, energy performance contractors and others) may help to drive the establishment of C-PACE, and may also be necessary to sustain its momentum through the legislative process and program development phase to program launch.

TIP: MAPA has developed C-PACE FAQs and informational PowerPoint presentation you can use to foster support in your jurisdiction.

MAPA partners in DC, Maryland and Virginia have shared that addressing the two key issues below are critical to building support for C-PACE from local governments:

1. **Program Development Time and Cost**
   The cost and use of local government staff time is not insignificant and may vary by jurisdiction, but in general both may be significantly reduced by leveraging existing resources and templates (as discussed in more detail below). When a program administrator (PA) is hired in the program development process may also influence these factors. For example, by bringing a PA in earlier in the process, there is more guidance and expertise on program design tradeoffs which can expedite the process of developing the program and explain options at decision points as they arise, leaving control with the local jurisdiction. With this said, until the program is launched (and fees to the PA paid by building owners) the PA is likely proceeding without compensation and at its own risk. Local governments may wish to consider some of the estimates of staff time required provided by the State of Michigan in NASEO's 2016 C-PACE report.

2. **Financial Risks**
   Because C-PACE programs utilize private capital providers, there is no debt obligated and little to no capital outlay and risk to local jurisdictions. In the event that a building owner does not pay a C-PACE assessment, as in other cases where a building owner is delinquent on real property taxes, the local jurisdiction's tax collection or tax sale protocol would be initiated.

MAPA partners in Virginia have been actively involved in building awareness of C-PACE among local governments. In addition to this Toolkit and the resources noted above, MAPA has recorded webinars that may be useful to local governments in understanding the key concepts and benefits of C-PACE to decision makers and stakeholders in their communities. These are available on the MAPA website at www.pacealliance.org. Interested parties may also join MAPA's e-mail list via the MAPA website to receive notifications about other MAPA events such as trainings, conferences or other information.

Step 2: Enacting an Ordinance: Virginia Specific Requirements

Chapter 389, Section 15.2-958.3 of the Code of Virginia authorizes localities to enact an ordinance to establish C-PACE. At minimum, the ordinance must define the following:

- Eligible improvements for which loans may be offered
- How the loans will be funded
- Interest rate and term during which property owners repay the loans
- Method of apportioning costs of running the program between property owners and the locality
- Minimum and maximum loan amounts
- How applications will be prioritized in the case that applications exceed the capacity of the program
- Who will administer the program, i.e. who has the authority to enter into contracts with property owners on behalf of the locality
- Terms and conditions proposed by the locality

Further, the ordinance must:

- Determine how the voluntary special assessment billing and collection process will be treated by the locality
- Offer private lending institutions the opportunity to participate in the program

Arlington County's ordinance for its C-PACE Program and Virginia Energy Efficiency Council's (VAEEC's) C-PACE Model Ordinance meet the statutory requirements of Chapter 389. The Virginia Model Ordinance was developed and issued by VAEEC and is not a product of MAPA. **MAPA encourages jurisdictions to review these ordinances,** as both provide guidance and may reduce the time and cost of developing an enabling ordinance for a C-PACE program.

Although the VA model ordinance and Arlington's ordinance were developed under the guidance of legal counsel, it is incumbent on local jurisdictions to consult legal counsel to ensure that either meets their needs.

Step 3: Consider and Select Program Development Pathway and Criteria

Once a jurisdiction has established support from key decision-makers for moving forward with a C-PACE program--which includes defining clear high-level program goals and the value proposition for a C-PACE program in the community—and passed an enabling ordinance, the next step is to determine a program development pathway. In Virginia, local governments have indicated that building support and establishing the value proposition will in part be a function of the opportunity to utilize a standardized approach so that program development time and cost are reduced.

While national C-PACE program best practices suggest that a statewide approach that utilizes a single program administrator leads to greater program standardization and uptake among jurisdictions, Virginia law is written such that authority to sponsor C-PACE programs is entirely vested with local governments: state government or non-governmental entities currently do not have the authority to sponsor or administer a C-PACE program, or to procure a third party program administrator to develop and implement a standardized program model for jurisdictions to use. The "opt-in" model has been demonstrated to be successful through the Maryland C-PACE (MD-PACE) program, where the majority of Maryland counties now offer C-PACE through that program. While there are several state agencies (DMME or Department of Housing and Community Development) that may have the capacity and expertise to sponsor a statewide program, establishing this additional authority would require further legislative action by the Virginia General Assembly.

For jurisdictions in Virginia, MAPA concludes that there are two primary pathways and ensuing steps required to establish a C-PACE program:

1. **Utilize publicly-available resources and program criteria (Arlington C-PACE or MAPA's program guidance documents/templates):** Individual jurisdictions consider these options with the intent of adopting a proven structure based on industry best practices. Either will significantly reduce a jurisdiction's cost and time to launch, while promoting consistency with other C-PACE programs in VA and the region.
2. **Develop a customized program**: Individual jurisdictions consider program criteria and design features best suited to local needs, review program administration options, and identify a source of funds to develop a program. This could include a competitive procurement process if a jurisdiction determines a third-party Program Administrator is needed. Individual jurisdictions may develop and administer programs with internal resources or competitively procure third-party program administrators on a case-by-case basis.

TABLE 2 – C-PACE PROGRAM DEVELOPMENT STEPS IN VIRGINIA

Utilize Publicly-Available C-PACE Program Design Resources		Develop a Customized C-PACE Program
Enact Ordinance		Enact ordinance
Pursue cooperative procurement through Arlington C-PACE[6]	**Utilize content from MAPA Toolkit (guides and document templates)**	
• Review Arlington C-PACE program and consider if it meets jurisdiction's needs • Contact Arlington's Procurement Officer for clearance to negotiate with program administrator (Sustainable Real Estate Solutions, SRS)	• Review MAPA program guides and consider if they meet jurisdiction's needs • Develop RFP for program administrator with MAPA template documents as established as program design with rider provision	• Analyze existing programs (local and other) to evaluate options and guide program design
• If negotiation is successful, finalize program criteria/documents with SRS and complete legal review	• Procure program administrator • Develop program guidelines and other resources (website, etc.)	• Identify funds for initial costs
• Launch and market program	• Finalize program documents with program administrator and complete legal review	• Hire/engage legal staff to draft documents
	• Launch and market program	• Issue RFP for program administrator or develop role internally
		• Finalize program design with program administrator or internal expert and complete legal review
		• Launch and market program

MAPA recommends optimizing consistency to the extent feasible with other programs throughout the Commonwealth and region, as significant differences between programs may deter or delay

[6] Please see page 19 for further information on the cooperative procurement opportunity with Arlington C-PACE Program.

the entrance of the necessary participants (building owners, capital provider and local lenders, and energy service companies) to the broader statewide market. MAPA considers options 1 and 2 in the table below to be the most feasible, since both incorporate C-PACE program best practices, reduce the administrative time and cost for jurisdictions, and are most conducive to regional harmonization and consistency.

TABLE 3 - EVALUATION OF C-PACE PROGRAM DEVELOPMENT APPROACHES IN VIRGINIA

	Utilize Publicly-Available C-PACE Program Design Resources		Develop Customized Program
	Option 1: "Ride" Arlington C-PACE Program	Option 2: Use MAPA Guides and Templates	
Pros	• Reduces time and resources needed to launch a program • Builds on due diligence Arlington County completed to competitively select a program administrator • Provides consistency with VA's first C-PACE program to launch	• Reduces time and expertise needed to develop/launch a program • Builds on guidelines developed for Virginia • May contribute to program standardization	• Allows a jurisdiction to tailor a program to meet specific needs, and statutory requirements
Cons	• Less flexibility in terms of designing program	• Less flexibility in terms of designing program • Requires time and resources to issue RFP and select successful proposer	• Requires staff time and resources to design program and develop ordinance and competitive solicitation • Requires internal expertise or third-party consultant to design program • May not support statewide or regional harmonization

Step 3.1: Use an Existing Program or Publicly-Available Program Model

The following section will discuss the process a jurisdiction may undertake to enable a C-PACE program under the two example program options:

1. Model the program after Arlington C-PACE, borrowing the legal, financial, and program documents, as well as the technology infrastructure such as the Arlington C-PACE website and quality assurance services.

2. Develop the program borrowing MAPA's program guides and templates and procure third-party services with MAPA program as foundation.

Step 3.2.1: Utilize Arlington C-PACE Contract via Cooperative Procurement

Arlington County is the first jurisdiction in Virginia to develop a C-PACE program, Arlington C-PACE, which launched in January, 2018. The program is based on industry best practices, and pairs Arlington's Rethink Energy team with Sustainable Real Estate Solutions (SRS), a third-party program administrator. The Arlington C-PACE website provides several resources which may be helpful for other Virginia jurisdictions to review.

Virginia jurisdictions have the option to utilize cooperative procurement, (sometimes referred to as "riding") Arlington County's contract with SRS as Program Administrator. This allows localities to fulfill competitive procurement requirements without going through a Request for Proposals (RFP) process. For more on how to use the Arlington County/SRS contract, please review the Cooperative Procurement Guidance document developed by DMME and Arlington County.

Additional Arlington C-PACE documents are available for review and include:

- Original Arlington RFP for 3rd Party Program Administration Services
- Arlington/SRS Contract and Scope of Work

The following is a summary of Arlington C-PACE program features (please refer to the Arlington C-PACE website for all available resources).

- Single, third-party program administration by SRS, providing:
    - Market outreach / property owner engagement
    - Contractor training
    - Capital provider outreach
    - Stakeholder tools and support services
- Fee structure:
    - No cost to the jurisdiction
    - No application fee
    - At project closing, a program administration fee equal to 2.5% of the project finance amount is due, not to exceed $75,000 per project
- Project eligibility:
    - Existing building and new construction projects are eligible
    - Energy efficiency, renewable energy and water conversation measures are eligible (See link for full list)
- Capital market:
    - Open market access to private capital
    - No public funds are used to finance projects

    - Property owners choose a preferred capital provider upfront, or SRS can review pre-approved projects with pre-qualified capital providers to determine funding interest
- Voluntary special assessment processing
- Capital provider is responsible for recording billing, collection, enforcement and administration of the lien. Security is evidenced by a financing agreement between the property owner and the capital provider
    - The capital provider and County co-manage the foreclosure and collection process
- Underwriting criteria:
    - Arlington C-PACE encourages, but does not require, a savings to investment ratio (SIR) of > 1; the SIR is calculated as the ratio of the total projected energy and water utility cost savings over the effective useful life of each improvement, divided by the total cost of those improvements, including all fees and interest charges
    - Minimum loan amount is $50,000; maximum loan amount is $25,000,000
    - Maximum lien to value of 30% determined by greater of assessed or appraised value
    - Maximum finance term based on weighted average useful life of the improvements determined by the program administrator
    - An energy audit (minimum ASHRAE Level 1 or comparable) or renewable energy feasibility study are encouraged, but may be waived if a single, like-kind measure is proposed (such as a boiler replacement)
    - New construction is eligible (Please see Arlington C-PACE User Guide for details)

Step 3.2.2 Utilize Content from MAPA's Program Guides and Templates

With this option, a jurisdiction may utilize the program guidance documents provided in the MAPA Toolkit and competitively solicit third-party administration services for a C-PACE program aligned with the criteria provided in those documents. This pathway would require the development and release of a Request for Proposals (RFP) and the ensuing selection of a qualified Program Administrator. MAPA cannot assist jurisdictions in the selection of a service provider, but can offer suggestions related to qualification criteria and provide sample RFP documents (See Ex. 1, Ex. 2, and Ex. 3). Similar to the Arlington C-PACE Program, if a jurisdiction establishes this program with a cooperative procurement or "rider" provision, other jurisdictions in Virginia could ride the contract once it is established.

The following is a summary of key elements of the MAPA program guides and templates.

- Single, third-party program administrator selected via competitively awarded RFP to provide:
    - Market outreach / property owner engagement
    - Contractor training
    - Capital provider outreach
- Fee structure
    - Program fees: discretion of individual jurisdiction
    - No cost to the jurisdiction

    - Full and transparent schedule of fees
    - Project closing costs, charged by the program administrator, to be determined by administrator and local jurisdiction
- Projects
    - Existing building and new construction projects are eligible
    - Eligible improvements included on <hyperlink to eligibility criteria doc>
    - Administrator cannot be project originator
    - Administrator cannot be capital provider to avoid conflicts of interest
- Capital Market
    - Open market for capital providers and regional/local lenders
    - No public funds are used to finance projects
    - Property owners can choose their preferred capital provider or seek assistance from program administrator
- Underwriting criteria follow guidelines in C-PACE Financial Underwriting Guide
- Voluntary special assessment processing
    - Recording, billing, collection, and enforcement is the responsibility of the local government, although billing and collecting may be outsourced; administration is provided by the program administrator and the local government
    - Security is evidenced by a tri-party agreement[7]
    - Local government is ultimately responsible for foreclosure and collection process
- Limitations of liability to local government consistent with VA Model C-PACE ordinance

Detailed comparison of key criteria of active programs in the MAPA region can be viewed here.

The following is a list of standard program document templates that a jurisdiction may choose to reference or use to establish a regionally-coordinated program in Virginia:

Program Guidelines:

1. Program Structure and Protocols Guidance
2. Property Type and Measures Eligibility Criteria
3. C-PACE Financial Underwriting
4. Technical Engineering Requirements

Educational Documents:

1. Regional C-PACE Marketing Guide [Section 3]
2. Frequently-Asked Questions
3. Sample List of Eligible Measures [in Project and Measures Eligibility Criteria]

Template Program Documents: For Program Administrators and Building Owners

1. Capital Provider Registration and Agreement

[7] Set of contractual documents that includes the owner, lender and local government as signatories and parties to the agreement and terms therein.

2. Contractor Registration Form
3. 3. Building Owner Project Application
4. 4. Energy Audit Worksheet

MAPA Takeaway

MAPA strongly encourages jurisdictions to continue to be aware of emerging trends and national best practices in the C-PACE industry, and share information amongst peer programs in the region

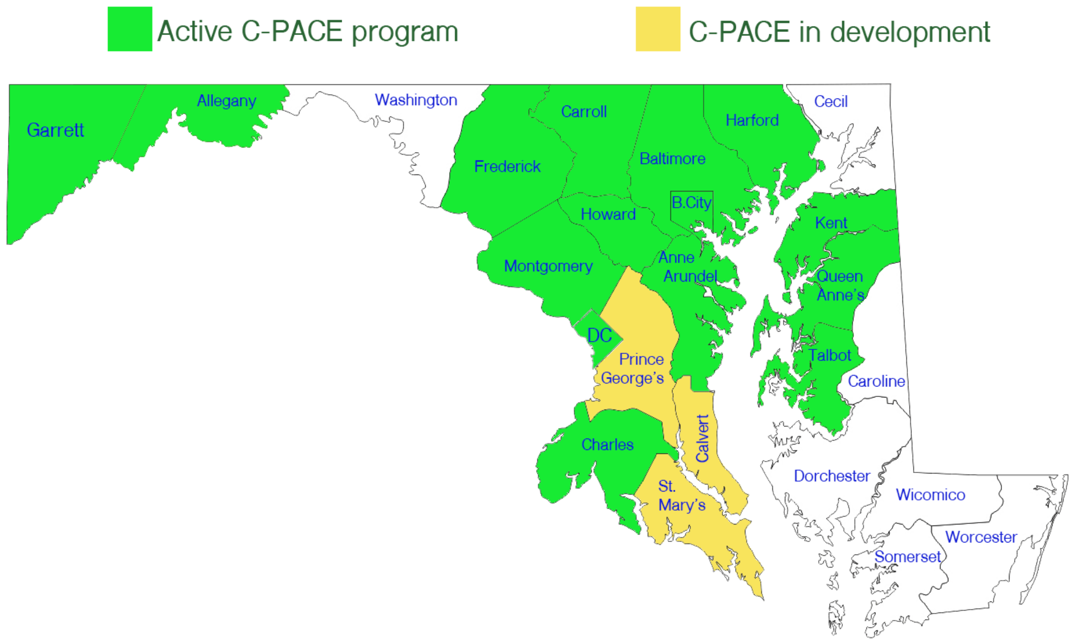
Maryland Program Guide

This section provides information and recommendations for Maryland local governments and program administrators currently operating C-PACE programs in the state. The primary goal is to provide actionable guidance that C-PACE sponsors and administrators may implement to further harmonize programs across the state and regionally. This section also includes specific guidance for localities in Maryland who have yet to enable or establish a C-PACE program.

C-PACE Programs in Maryland

State enabling legislation allows taxing jurisdictions to implement and administer commercial PACE financing independently. As a not-for-profit, instrumentality of State, the Maryland Clean Energy Center (MCEC) operates MD-PACE in a centralized and efficient manner to encourage adoption of standardized program guidelines and parameters across jurisdictions. MD-PACE also provides access to program administration and marketing services at no additional cost to program partners. National best practices suggest that such a statewide approach utilizing a single program administrator leads to greater program standardization and uptake among jurisdictions.

MD-PACE is an open platform program which allows approved licensed contractors and capital providers to participate in the state-wide marketplace in a competitive manner. C-PACE programs are currently operational in 14 Maryland counties and the City of Baltimore. Three counties are considering program development, while seven have yet to initiate program development.



The following Maryland counties have active C-PACE programs (as of June, 2018):

- Allegany
- Anne Arundel
- Baltimore
- Baltimore City
- Carroll
- Charles
- Frederick
- Garrett
- Harford
- Howard
- Kent
- Montgomery
- Queen Anne's
- Talbot
- Wicomico

Thirteen counties use the standard template program documents and program guidelines of MD-PACE, the statewide opt-in program administered by the Maryland Clean Energy Center through a partnership with PACE Financial Servicing (PFS). Montgomery County independently developed program parameters and procured third-party administration services from PFS via a competitive solicitation. Anne Arundel County passed its enabling C-PACE ordinance prior to the creation of the MD-PACE program and subsequently decided to join the MD-PACE program and selected PFS to administer its programs. While counties have adopted slightly differing versions of a C-PACE ordinance (see below), the universal selection of MCEC and/or PFS in Maryland counties has allowed program stakeholders to utilize generally standard loan agreements, C-PACE loan servicing contracts, and a single point of contact for servicing across county lines.

The table on the following page will identify key differences and similarities in C-PACE enabled jurisdictions in Maryland. It will also identify opportunities for increased harmonization between the MD-PACE program and other regional programs.

TABLE 4 – MD COUNTY PROGRAM CRITERIA

County	Total Loan-to-Value Ratio	Savings-to-Investment Ratio	PACE Assessment to Value Ratio	Minimum Loan Amount	Energy Audit Requirement	# of Payments Per Year	100% Financing for Hard & Soft Costs
Allegany	None	None	None	$25,000	No	1	Yes
Anne Arundel	None	> 1	None	$25,000	Yes	1	No
Baltimore	≤ 90%	None	≤ 20%	$5,000	Yes	1	Yes
Baltimore City	None	None	None	$25,000	No	1	Yes
Carroll	None	> 1	None	$25,000	Yes	1	Yes
Charles	None	None	None	$25,000	Yes	1	Yes
Frederick	None	None	None	$15,000	Yes	1	Yes
Garrett	None	None	None	$25,000	No	1	Yes
Harford	None	None	None	$25,000	No	1	Yes
Howard	None	> 1	None	$15,000	Yes	2	Yes
Kent	None	None	Up to Lender	$25,000	No	1	Yes
Montgomery	≤ 90%	None	≤ 20 %	$5,000	No	2	Yes
Queen Anne's	None	None	None	$25,000	Yes	1	Yes
Talbot	None	> 1	None	$25,000	Yes	1	Yes
MD-PACE Recommendation	MDPACE allows lender to determine if LTV ratio selected, should be based on appraisal and/or market value	MD-PACE prefers none. If SIR ratio selected, savings should include all project savings and revenues over the expected useful life (EUL) of the measures	MD-PACE allows lender to determine. If PTV ratio selected, should be based on appraisal and/or market value	MDPACE guidelines $25,000	MD-PACE guidelines require energy audits or feasibility analyses to demonstrate projects will reduce energy consumption or produce renewable energy. These must be reviewed by a third-party engineer to confirm projects meet the standards of the county's ordinance, including a SIR >1 if applicable	MDPACE guidelines call for 1	MDPACE allows C-PACE should cover feasibility study, audit, and commission-ing costs

Guidance for Counties with C-PACE Programs

The chart on the previous page shows the slight variations in program parameters adopted by each enabled jurisdiction in Maryland, taking into account differences in local economies, building inventories and demographics among those jurisdictions.

MAPA encourages harmonization among program attributes in Maryland to simplify processes for C-PACE stakeholders, including the program administrator, capital providers, contractors, and most importantly, building owners. There may be opportunities for Maryland jurisdictions to better harmonize program implementation throughout the state, and possibly work towards regional harmonization.

Pathways to Increased Harmonization

Streamlining the differences in program guidelines currently adopted between jurisdictions to enable harmonization state-wide in Maryland in the future is a consistent focus of MCEC and PFS. Currently, MCEC and PFS communicate closely with county governments in Maryland regarding potential C-PACE projects that are challenged due to nonconforming requirements. For example, both Montgomery and Baltimore counties amended their enabling C-PACE ordinances to allow for appraisal values to be utilized for LTV and PTV thresholds after credit-worthy building owners in each jurisdiction were unable to access C-PACE funds necessary to implement qualifying projects due to public assessor values representing below-market property values. Additionally, the City of Baltimore is currently pursuing a technical fix to its ordinance after input from PFS with respect to the description of the repayment process.

MCEC and PFS are confident that once the C-PACE tool is indeed being used and more projects have closed, county policy makers will have more political traction to address additional changes to their programs that will better harmonize the state.

As all jurisdictions in Maryland currently operate C-PACE programs through the MD-PACE banner or with PFS as administrator, the process of harmonizing program attributes should be coordinated by MCEC and PFS with those jurisdictions. In the future MCEC may elect to convene a workshop, inviting current MD-PACE county contacts, to discuss improved alignment of program criteria. Ultimately, each jurisdiction has the authority to set them to their standards.

As additional counties adopt enabling ordinances and initiate programs, MAPA can provide a set of best practices guidelines for MCEC and PFS to promulgate, thereby encouraging more harmonious program implementation with those already in place in the state and the region.

Guidance for Counties without C-PACE Programs

Counties contemplating the establishment of a C-PACE program should first determine what high-level goals a C-PACE program may meet in their community. Defining the “value proposition” of C-PACE and understanding the key motivations that will appeal to various decision makers and community stakeholders is critical to gaining support for and successfully implementing a C-PACE program.

C-PACE programs deliver myriad benefits for the jurisdictions in which they are enabled; the two most commonly cited reasons for local governments launching programs are:

1. **Economic Development and Community Revitalization:** C-PACE can provide improved access to capital for traditionally underserved property sectors, such as Class B and C office buildings, locally-owned small businesses, nonprofit organizations, and multifamily housing, to complete necessary energy conservation and water-saving improvements. These retrofits can reduce building operating costs, improve building condition and occupant comfort, and allow capital to be invested instead into other projects and/or core business activities. C-PACE can also be used as part of the financing structure for substantial renovation and new construction projects, and creates business for energy and water services vendors, design and engineering professionals, and local lenders. Every $1 million invested in C-PACE results in the creation of 15 full-time jobs.[8]

2. **Environmental Conservation**: C-PACE can help states and localities meet their resource conservation and greenhouse gas emission reduction goals by enabling more energy efficiency, renewable energy, and water conservation projects. Local governments can demonstrate leadership on environmental stewardship by establishing a C-PACE program which may be important to constituents. Over 70 percent of the energy generated in the US is used in buildings. Because C-PACE allows for longer repayment terms compared to conventional property improvement loans, it leverages more investment so that deeper energy efficiency retrofits and/or more renewable energy systems may be installed. At scale, the conservation benefits of C-PACE are significant, considering that the average C-PACE project can yield electricity savings between 300-400 MWh over the lifetime of the measures installed, equivalent in terms of greenhouse gas emissions reduction to taking 47-63 cars off the road for a year[9].

Determining local goals can help jurisdictions garner C-PACE support and possibly identify a “champion”, which was a best practice noted by many jurisdictions that participated in the surveys conducted by MAPA. Gaining support from elected officials (Councilmembers and/or Mayor) and senior managers (City Manager, Economic Development Director, Environmental Programs Director) as well as community stakeholders (building owners, environmental advocates, energy performance contractors and other) can help to prioritize the establishment of C-PACE and sustain its momentum.

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[8] Estimate courtesy of EcoNorthwest for PACENation.
[9] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

Once a county has established high-level program goals and defined the value proposition that a C-PACE program offers to the community, it is time to pass an ordinance or resolution to enable C-PACE in the jurisdiction. To maintain consistency within Maryland, **MAPA strongly recommends counties utilize the MD-PACE template ordinance for Maryland Counties**, which addresses the program parameters listed above that are *elective* for counties as well as provides standard language for operational C-PACE procedures that are *statutory* requirement and must be included in the ordinance.

The MD-PACE template ordinance empowers a county to select an outside program administrator and to authorize that program administrator to conduct key activities required of the county that are of paramount importance to capital providers and property owners. While no program administrator is named in the ordinance, **MAPA recommends that counties select the MD-PACE Program**. The MD-PACE Program eliminates much of the time and resources a jurisdiction would need to launch a program. As an instrumentality of the state, counties may execute an MOU with MCEC without requirement of competitive procurement, and counties can have confidence in MCEC's agent PFS, which has been selected by multiple MD counties independently through competitive procurement. Additionally through MCEC, MD-PACE offers template enabling ordinance language and standardized model contract documents that have been vetted by MD counties, capital providers, and property owners utilizing the program successfully, creating a starting point to help staff and officials expedite the program implementation process. Finally, the MD-PACE program espouses the key recommendations of MAPA across program, project, and financial underwriting criteria and now operates on behalf of the majority of jurisdictions in the state of Maryland.

District of Columbia Program Guide

This section provides background on the DC PACE program to stakeholders who are active in other Mid-Atlantic PACE Alliance (MAPA) jurisdictions in order to help them navigate expansion into the District. DC PACE is the most mature C-PACE program within the MAPA territory, and has several distinct features, along with many similarities to the MD-PACE program. In addition, this section considers opportunities for the District to further harmonize DC PACE with existing and future programs in neighboring states.

DC PACE Program History

The Energy Efficiency Financing Act of 2010 authorized PACE in the District. Subsequently, the Mayor designated authority for the program to the Department of Energy and Environment (DOEE), who procured Urban Ingenuity as program administrator through a competitive solicitation, resulting in the development of DC PACE. Subsequently, the DC Council passed the Sustainable DC Amendment Act of 2012, which included, among other things, language that was designed to make PACE program more actionable. Key adjustments included the ability for private lending institutions to fund DC-PACE projects instead of requiring a formal bond issuance for each transaction. In 2013, DC-PACE closed a pilot project which was the first use of PACE for an affordable housing property in the nation. After the pilot program period, the District and the program administrator developed program guidelines and structures, began training lenders and contractors, and officially launched in 2015.

DC PACE has grown rapidly over the past two years, with 16 projects and over $34 million in deals closed as of June, 2018. DC-PACE is an “open market”[10] for all qualified lenders and capital providers, and encourages those interested to register and fund C-PACE projects within the District. The program is unique due to the number of local and regional community banks that are active in the program, alongside national PACE specialty lenders. Legislation to establish a Green Finance Authority (“Green Bank”) for the District is now pending before the DC Council and could result in changes to the program administration and oversight structure of DC PACE.

In keeping with the District’s goals of equitable access to clean energy, community-based economic development, and support of affordable housing, DC PACE has developed several innovations that have helped PACE better serve multifamily housing and non-profits. As noted, the DC PACE pilot project set precedent for the use of PACE in affordable housing. A subsequent project was one of the earliest projects to receive approval from the U.S. Department of Housing and Urban Development (HUD), and DC PACE is now working to secure programmatic approval for the use of PACE on FHA-backed properties under HUD’s 2016 guidance on PACE. A shortage of affordable housing is a challenge in DC and the wider MAPA region, and PACE can play a useful role in reducing operating costs and supporting the long-term financial viability of affordable

[10] See Program Structures and Protocols Guidance for more information on C-PACE program market definitions.

housing projects. Further, several non-profits, including charter schools and religious institutions, have used PACE in the District. One of these projects represented the first use of tax-exempt PACE financing nationwide.

DC PACE: Key Distinguishing Factors

Many property owners, lenders, and contractors active in DC are also working in Maryland and Virginia. While the basics of the program are consistent with industry standards, there are a few important things to know for C-PACE market participants new to DC PACE.

TABLE 5 – DC-PACE PROGRAM KEY CRITERIA

Total Loan-to-Value Ratio	At discretion of capital provider; 80% guidance
Savings-to-Investment Ratio (SIR)	Greater than or equal to one*. All project savings (not just energy and water savings) may be counted toward SIR.
PACE Assessment-to-Value Ratio	At discretion of capital provider; guidance suggests 20% maximum if there is other existing debt, 35% if no other debt on property
Minimum Loan Amount	No statutory minimum, program guidance is about $100,000 (or slightly lower if project is only one or two measures). While DC PACE will approve smaller projects, our experience suggests that for projects significantly under this threshold, transaction costs become very high, and few capital providers are willing to fund the project.
Maximum Term	Term may not exceed the weighted useful life of the PACE-financed measures.
Energy Audit Requirements	In order to comply with SIR requirements, a technical application which includes estimated project savings is required. However, for many projects, a full energy audit is not required. For example, for solar projects, applicants may submit a solar feasibility study. For one or two measure, "like-for-like" replacement projects, a feasibility study and savings estimates (similar to an ASHRAE Level One audit) are sufficient. Multi-measure retrofit projects require an ASHRAE Level Two or similar audit.
# of Payments per Year	Two, on March 31 and September 15
100% Financing for Hard and Soft Costs?	Yes, subject to other underwriting criteria
Is New Construction Eligible?	Yes, see our Program Guidelines for more detailed information

*A pending legislative amendment would allow property owners to consent to an SIR less than one. Applicants would still need to document the project SIR.

Useful Resources:

- DC PACE Program Guidelines: These guidelines provide detailed information on eligibility requirements, program costs, the application process, and answers to frequently asked questions. The guidelines also include specific guidance to contractors and energy project developers preparing the technical component of an application. Several forms and an application checklist are also attached.

- DCPACE.com: The program website includes information for property owners about DC PACE, several case studies, a searchable directory of registered service providers, and a listing of registered capital providers. A page for service providers guides contractors and others through the registration process and provides information on supporting clients through the PACE application process. Lenders can find template documents as well as the lender registration form.

Future Regional Program Harmonization

With C-PACE programs now active in most Maryland counties and programs forming in Virginia localities, DC PACE will look for ways to increase harmonization and make it easier for stakeholders to work across markets. For example, the proposed adjustment to SIR requirements was motivated both by program experience and emerging best practices among other PACE programs, including MD-PACE. Further, DC PACE will work with its neighbors to create streamlined contractor registration and training programs, reducing the barriers to entry for program participants.

I. Program Structure and Protocols Guidance

This document provides guidance on the critical structural components any C-PACE program in the MAPA region should strive to integrate. This section addresses the “big picture” of how C-PACE programs work and answers the following questions:

- How are markets defined and which is preferable (open or closed)?
- How is the special assessment lien secured?
- When should the special assessment be filed?
- How to ensure PACE liens can be sold on the secondary market?
- What is the appropriate billing and collection process?
- How is delinquency or default enforced?
- What are the appropriate fees for the services needed that meet a particular jurisdiction’s criteria?

Market Type

C-PACE programs are typically defined as “open” or “closed,” with respect to the number of capital providers allowed to operate in a particular jurisdiction, and “single administrator” or “multiple administrator” in terms of the number of program administrators permitted to operate within a jurisdiction. In the MAPA region, programs currently operate primarily as “single administrator” and “open” for capital providers, meaning that multiple capital providers are allowed to participate and fund projects in the programs. **MAPA strongly recommends that jurisdictions maintain an open market** for capital providers and lenders and other service providers (such as energy service companies) so that the C-PACE market remains competitive for these services.

National best practices also suggest that a statewide or standardized approach that utilizes a single program administrator, providing standard documentation and project services to governments and capital providers across multiple jurisdictions leads to greater standardization, lower administrative burdens for local jurisdictions, economies of scale, and greater program uptake. In some other states (such as California and Florida) multiple PACE program administrators may operate within a single jurisdiction. Given that these states are large markets, and while competition among administrators may provide for lower costs to consumers, there are questions in terms of service quality that have arisen. For more information on C-PACE program administration models[11], please see the Lawrence Berkeley National Lab report **“Lessons in Commercial PACE Leadership: The Path from Legislation to Launch.”**

Single Administrator

The advantages of a single administrator, or more standardized and centralized models include:

[11]National Association of State Energy Officials (NASEO’s) 2016 publication “Accelerating the Commercial PACE Market” is another excellent resource on C-PACE program design models

- More efficient process for local governments, by avoiding a time and cost associated with a competitive procurement process.
- Lower administrative burden for local governments, by avoiding facilitating loan recordation, billing, collection, enforcement, and servicing on behalf of multiple parties.
- Increased standardization of program structure and implementation that benefits contractors, capital providers and local lenders, and property owners operating across jurisdictional lines by increasing consistency and lowering costs (i.e. legal cost to draft or review different sets of program guidelines and documents) and barriers to entry as project volume increases.
- More concentrated resources among the PA and potential for financial or administrative support at the state level that provides program staff with the resources to undertake necessary outreach and marketing activities.

In some C-PACE enabled states, such as Connecticut, Rhode Island and Colorado, local governments may only use the standardized, statewide C-PACE program offered through a state agency designated by the enabling state C-PACE legislation. None of the MAPA jurisdictions' enabling statutes identify such a state level administrator.

In the MAPA region, Maryland and D.C. have utilized an open capital provider market, single administrator approach. In Maryland, the Maryland Clean Energy Center (MCEC), an instrumentality of the state of Maryland, has established a partnership with a program administrator (PACE Financial Servicing) and promotes an "opt-in" model by which local governments can join the MD-PACE program through passing an enabling ordinance and executing a Memorandum of Understanding with MCEC. While this structure enables MD counties to access the MD-PACE program and over a dozen jurisdictions have opted into the program, several counties elected to secure the administrative service from MCEC and PFS through a competitive procurement process. Local governments are not required to utilize MD-PACE, and may choose another program design and administrator. In D.C., the District Department of Energy and Environment selected a single program administrator (Urban Ingenuity) through a competitive procurement process to establish the DC PACE program. A competitive procurement process ensures that due diligence is conducted with regard to cost, level of experience and services offered, and provides increased confidence for local governments opting in to a statewide program.

In Virginia, ***state*** government entities do not have the authority under current law to either run a C-PACE program themselves or to procure a third party program administrator that could develop and implement an opt-in model for Virginia jurisdictions. Although there is no statewide program in Virginia, DMME's Division of Energy, as the State Energy Office, is endeavoring to promote a harmonized approach through leading the Mid-Atlantic PACE Alliance grant project. For more information on program development in Virginia, see the Virginia Program Guide.

Open Market

All three states encourage an open market for lenders and capital providers. In addition to larger national and smaller regional banks, there are a number of firms specializing in C-PACE transactions that work in multiple states. This is an emerging industry and these lenders are looking for new markets. Several jurisdictions in the MAPA region expressed interest in getting more local lenders involved in C-PACE programs to keep capital invested in the local economy. It is an industry best practice for program administrators to maintain a list of registered capital providers by requiring them to complete a no-cost application process to verify participants are legitimate lending institutions.

Lien Security Structure

C-PACE financing is secured by a special assessment against the property, and repaid via installments billed on the property's real estate tax bill, on parity with the real estate taxes. C-PACE Special Assessments that go unpaid are secured by a lien which is enforceable against delinquent assessment amounts, typically including any penalties or other fees that are incurred as a result of the delinquency. Unlike a typical real estate transaction secured by a deed of trust, C-PACE financing "runs with the land" which means the assessment transfers automatically upon sale. This security structure ensures that the C-PACE lien is not extinguished upon change of ownership or foreclosure, which is of paramount importance to C-PACE capital providers and building owners and is one important underpinning of a functioning market. Another important component is that the financial instrument (C-PACE note or lien) secured by the assessment can be assigned by the original capital provider to subsequent capital providers over the life of the C-PACE assessment.

Another important element of C-PACE security relates to the timing for filing documentation on the land records to evidence the assessment, called "perfecting" the assessment on a property. In all but one jurisdiction in the MAPA region (Montgomery County, Maryland), the recording of a memo or assessment agreement evidencing the existence of the assessment on the property happens simultaneously with the financial closing of C-PACE funds, mitigating construction risk for capital providers. This means that the C-PACE financing covers the property owner's costs associated with the construction period, providing property owners with one "loan" product for both construction costs and long term financing. In Montgomery County, a confirmation of the C-PACE assessment, recorded on the land records to perfect the security of the C-PACE financing, is established post-construction; this means the security of C-PACE is not in place during the construction period and so C-PACE lenders typically will not extend funds until construction is complete. Property owners must secure a different source of construction funds, which may deter property owners as commercial projects are typically large in size and owners lack access to capital. Establishing the C-PACE lien prior to construction eliminates this barrier for customers and capital providers. Montgomery County may consider changing the security structure of its C-PACE program.

In most C-PACE-enabled jurisdictions, including localities in Maryland, and D.C., the C-PACE instrument creates no general financial liability of the government, with the C-PACE payments owned by the capital provider; the local governments are solely bound to remit funds actually received from property owners as C-PACE payments. In Virginia, the limit of liability to the localities is spelled out in both the Arlington ordinance and Virginia model ordinance (please see VA Program Guide for links to these documents). There are C-PACE programs that have utilized General Obligation bonds to provide capital (such as the Connecticut Green Bank C-PACE program) particularly during the early phases of the program. While DC, Maryland and Virginia localities may choose to keep bond funding as an option, it should not prevent private third-party financing.

Security Structure Recommendations:

State C-PACE laws in the MAPA region ensure that the C-PACE assessment is secured by a lien attached to the land. There are differences to how and when this special assessment is treated among C-PACE programs. **MAPA recommends that the documents which evidence the C-PACE assessment in each jurisdiction clearly state** that the:

1. Assessment has a first and prior lien against the real property on which the assessment is imposed until paid
2. An unpaid assessment, including all interest and penalties thereon, shall be enforced by the local taxing authority in the same manner as real property taxes
3. Assessment has the same priority status for any other ad valorem[12] tax, and if assessment is subordinate to real property taxes it should be senior to all other government assessments
4. Assessment is non-extinguishable, non-rescindable and non-accelerating
5. C-PACE payments are transferred to the capital providers in timely fashion
6. C-PACE payments are transferable to buyers of the notes

Additionally, the assessment should be secured on real property at time of C-PACE funding, prior to start of construction. Lien placement at funding mitigates construction risk to the capital provider or lender and encourages program participation.

Recording, Billing, Collection and Enforcement (Foreclosure) Process

One of the key components of great importance to capital providers is a clear description of how C-PACE assessments are recorded (security interest), how C-PACE assessment payments are billed to and collected from property owners, and how their security interest is cured if the

[12] Ad valorem taxes are those based on a percentage of the value of the property or item. Property taxes are commonly offered as an example of an ad valorem tax.

property owner ceases to make C-PACE assessment payments (default). The following table gives a general view of how this process is handled in the MAPA region:

TABLE 6 – CURRENT MID-ATLANTIC PROGRAM ROLES IN LIEN RECORDING AND BILLING

Function	DC-PACE	MD-PACE	Montgomery County	Arlington County
Record lien	P.A.	L.G.	L.G.	C.P.
Issue installment payments	L.G.	L.G.	L.G.	C.P.
Collect installment payments	L.G.	L.G.	L.G.	C.P.
Issue payments to capital providers	L.G. (P.AG.)	L.G via P.A.	L.G. via P.A.	N/A
Enforce/collect past due debt	L.G.	L.G.	L.G.	L.G./C.P.

P.A. = Program Administrator
L.G. = Local Government
C.P = Capital Provider
P.AG. = Paying Agent (third party servicer)

In Maryland, the local government remits payments to the program administrator who then disburses payments to the capital providers. In D.C. the C-PACE revenue note (executed by D.C. government) pledges the payments to the capital provider. In Arlington County, the capital provider is assigned the lien itself and therefore, bills and collects the C-PACE assessment payments. The VAEEC model ordinance follows property tax law in Virginia (referenced in the Virginia PACE statute) and specifies that the local government would be responsible for billing and collecting the PACE payments.

When and how foreclosure is carried out varies by state and local jurisdiction: the C-PACE lien can be assigned to lender or mortgage holder before it goes to auction in D.C. In Maryland, counties will sell tax liens on individual properties for all outstanding taxes and assessments due. In Virginia, an individual property sale must be conducted. Special servicing in case of delinquent payments is handled in some cases by the program administrator (Maryland), the local government (D.C.) or the capital provider (D.C. and Arlington).

Differences in state and local laws makes identical programs impracticable, however MAPA has severak recommendations (Table 7, on the following page) based on interviews with program administrators, capital providers, and alignment with industry best practices:

- Local governments bill, collect and enforce the C-PACE assessment and lien.
- Unless otherwise determined by state or local law, no partial payment of property taxes or C-PACE payments is allowable.

- The C-PACE special assessment payment is located on the property tax bill. In the case of D.C. and Baltimore City, the bill is sent separately but billed at the same time as the property taxes. This approach helps to ensure that the property owner understands the obligations of the C-PACE assessment.
- The C-PACE payment is remitted to capital providers a maximum of thirty days after receipt by local government.
- The enabling ordinance provides recourse–within limits of individual state law–to capital providers during the foreclosure process to take possession of the property.

TABLE 7 – MAPA RECOMMENDATIONS ON LIEN RECORDING AND BILLING

Function	Recommendation
Record lien	L.G. or P.A.
Bill payments	L.G. or C.P.
Collect payments	L.G. or C.P
Payments to capital providers	L.G. or P.A.
Enforce past due payments	L.G. or C.P

P.A. = Program Administrator
L.G. = Local Government
C.P = Capital Provider
P.AG. = Paying Agent (third party servicer)

Program Administrator Services and Fees

MAPA anticipates that local governments in the region who do not already have an active C-PACE program will choose to procure a third party to administer their programs, as DC and a majority of Maryland counties have done. Program administrators in general have no-cost contracts with either a state or local government program sponsor, with per project fees collected from participating building owners intended to cover the costs of running the following aspects of the program:

TABLE 8 – CURRENT PROGRAM ADMINSTRATOR ROLES

Administrator Role	DC-PACE	MD-PACE	Montgomery County (MD)	Arlington County (VA)
Marketing	X	X	X	X
Contractor Training	X	X	X	X
Project Application Review	X	X	X	X
Technical Review	X	X (optional through PA)	X (optional through PA)	X
Loan Sourcing	X (optional through PA)	N/A	N/A	N/A
Servicing	X	X	X	N/A

The program administration fee typically includes an upfront closing fee, and often an annual fee over the term of the assessment ("servicing strip") to pay for the cost of receiving, maintaining, and remitting C-PACE assessments as well as fiduciary responsibilities of managing escrow accounts that hold C-PACE assessment payments. In addition, some programs charge an application fee. In the MAPA region, the following table indicates the different fees charged by the respective program administrators. **MAPA recommends that each jurisdiction negotiate program administration fees with prospective vendors** based on level of service desired for their specific program. Further, all fees should be disclosed to potential participants. The local government sponsor must approve any changes to fees in advance.

TABLE 9 – CURRENT PROGRAM FEES

Administrator Fees	DC-PACE	MD-PACE	Montgomery County (MD)	Arlington County (VA)
Application Fee	$250	$150	$150	$0
Closing Fee	1.25% (min $2,500)	1.05%	1%	2.5% ($75,000 max)
Loan Sourcing	.75% (optional)	N/A	N/A	N/A
Annual Servicing	.2% plus $400 of principal	.16% with $300 min and $1,600 max	.16%	Charged by capital provider

Other fees not associated with the Program Administrator may include recording fees by the jurisdiction (or the capital provider in Arlington County) and financing related fees such as title reports, credit reports, third party audits/solar analyses among others. Some of the fees to the building owner may be charged by the capital provider or local lender. To date, one county in the MAPA region has decided to charge a collection fee. Others may choose to do so in the future.

II. Property Type and Measures Eligibility Criteria

This section provides comprehensive guidelines around program eligibility. A sample list of eligible measures is included in this section to give local governments, contractors, and building owners information about types of measures that may be financed through C-PACE. **MAPA recommends that to most effectively attract program participants,** a list of eligible measures be limited to the most commonly installed C-PACE measures and displayed prominently to building owners on marketing materials. The active programs in the region (DC PACE, MD PACE and Arlington County C-PACE) all provide good examples on how to clearly communicate C-PACE program eligibility to stakeholders on their respective websites.

General Property Eligibility

In general, it is desirable to keep project eligibility broad so as not to limit innovative uses of C-PACE financing. To promote regional consistency, C-PACE programs in the MAPA network would finance:

- Single or multiple measure projects that are intended to decrease energy and water consumption or expand use of renewable energy sources for any eligible building use or type.
- Measures that are substantially related to or necessary for the installation of these energy and water conservation or renewable generation measures (e.g. roof replacements to provide structural support to enable solar system installations).
- New construction projects, in cases where the energy and/or water conservation measures and/or renewable energy generation can be reasonably demonstrated as meeting standards above the jurisdiction's commercial or residential building code. Specific recommendations are discussed in more detail in the C-PACE Financial Underwriting Guide.

In addition, measures financeable through C-PACE should meet the following criteria:

- Attached to the property with sufficient permanence to be reasonably considered part of the property (land and/or buildings) from an assessment and lending perspective. Unless specifically restricted by state C-PACE laws, C-PACE improvements to land, such as ground mounted PV systems, should be financeable, unless the land is unimproved by any commercial structure.

C-PACE generally cannot be used to finance:

- Cosmetic improvements that serve no purpose in reducing energy and water consumption (e.g. new carpets, painting)
- Structural repairs not related to the installation of energy or water conservation measures
- Non-commercial/industrial appliances that cannot be considered substantially affixed to the property (e.g. residential refrigerators, microwaves, etc.)
    - Improvements on detached single-family, attached townhouses and residential buildings with four or fewer dwelling units

- In Virginia, condominium properties, including common areas, are not eligible per the Virginia statute

Specific Use Cases:

- **Non-Profits:** C-PACE can be used to finance projects on properties that are eligible to have assessment levied on their property, but are exempt from paying real estate taxes. In most jurisdictions, all properties are circumscribed by a tax parcel and are given a property tax ID by the assessor or tax collector per law; non-profit properties are simply coded as exempt from receiving real property taxes but may still receive (and the taxing authority typically has the ability to impose) surcharges (e.g. sewer improvements) via special assessment charges. In this case, C-PACE assessments would be placed on the tax bill or stand-alone bill and mailed to the non-profit; the bill would not include any line items for real property taxes owed.

- **Government:** Government-owned properties are typically not eligible for C-PACE financing because property taxes are not assessed on them. However, there is precedent for securing a C-PACE assessment against a government property which is leased to a non-governmental entity for at least as long as the C-PACE assessment term. The DC United Audi Field project, where the C-PACE financed improvements are on a property secured by a long term ground lease, is an example of this model.

- **Government-created agencies**, such as public housing authorities and airport and port authorities, may be eligible depending on legal structure. C-PACE applicability for affordable housing finance agencies may depend on how the agencies view the requirement that the senior mortgage is subordinated to the PACE lien. DC-PACE has successfully added C-PACE funding to tax credit-financed affordable housing projects, however this model has not been utilized to date in Maryland or Virginia.

Sample List of Eligible Improvements

The following list represents a sample of improvements that could be eligible measures for C-PACE projects and financing. Program administrators and local jurisdictions may want to consider keeping the C-PACE enabling ordinance broad enough to consider additional and/or alternative measures that are not listed here:

Resource Efficiency

1. Air Sealing
   a. Air Penetration elimination
   b. Building Envelope integrity
   c. Weather stripping

2. Insulation
    a. Defect Correction
    b. Attic, floor, walls, roof, ducts, hot water pipes
    c. Reflective insulation or radiant barriers

3. Heating, Ventilation, and Air Conditioning Systems – Meet ENERGY STAR® Specifications where applicable.
    a. Boilers
    b. Geothermal Exchange Heat Pumps
    c. HVAC control systems and building energy management systems
    d. Evaporative Coolers and Evaporative Pre-coolers
        i. Can be retrofitted on existing HVAC equipment
    e. Air Source Heat Pumps
        i. Split systems
            1. Rated at least Energy Efficiency Ratio (EER) ≥ 12.5
            2. Or, rated at least Heating Season Performance Factor (HSPF) ≥ 8.5
        ii. Package Units
            1. Rated at least Energy Efficiency Ratio (EER) ≥ 12
            2. Or, at least Heating Season Performance Factor (HSPF) ≥ 8
    f. Mini-splits
    g. Programmable and Web-based thermostats with fault detection
    h. Duct Leakage and Sealing
    i. Bathroom, ceiling fans – ENERGY STAR® certified
    j. Kitchen Exhaust fans
    k. Variable Air Volume Controls –per code
    l. Dedicated Outsider Air System (DOAS) and Heat or Energy Recovery Ventilators
    m. Desiccant Wheels
    n. Chiller and/or Cooling Tower
    o. Filter upgrades – (minimum MERV 8 Rating)
    p. Water-side economizing equipment
    q. Variable flow chilled water/hot water systems
    r. Variable Frequency Drives (VFDs)

4. Water Heating (ENERGY STAR® certified or qualifies for local gas and electric utility rebate)
    a. High Energy Factor (EF) electric – heat pump water heater
        i. Rated at least ENERGY STAR® EF > 2.2
    b. Natural gas storage
        i. ENERGY STAR® EF > 0.67 (<55 gallon), EF > 0.77 (>55 gallon)
    c. Tankless and point of use
        i. ENERGY STAR® EF > 0.9 (natural gas)
    d. Solar thermal including pool heating

5. Roofing – ENERGY STAR® Certified (Cool Roof Rating Council rated with minimum Solar Reflectance Index (SRI) of 90 at three years after installation)

6. Windows, doors, and openings
    a. Windows and glass doors shall have U value of 0.40 or less and solar heat gain coefficient of 0.25 or less
    b. Window filming – Spec Solar Heat Gain Coefficient (SHGC) and ENERGY STAR®
    c. Skylights
    d. Solar tubes
    e. External solar shades
    f. Internal light shelves

7. ENERGY STAR® commercial food service equipment

8. Lighting (ENERGY STAR® certified)
    a. LED new, replacement or retrofit fixtures and lamps
    b. Sensors
        i. Vacancy and occupancy mode (vacancy mode preferred for most areas)
        ii. Bi-level staircase and emergency lighting
        iii. Photocell control with bi-level for outdoor lighting (site and building mounted)
        iv. Wireless, daylight lighting controls
    c. Refrigerator Case LED Lighting with Occupancy Sensors
    d. Outdoor lighting (LED or bi-level)

9. Plumbing
    a. Fixtures (WaterSense certified or equivalent)
        i. Faucet aerators
        ii. Low-flow showerhead
        iii. High-efficiency toilets
        iv. High-efficiency urinals
        v. Waterless urinals
        vi. Pre-rinse spray valves
    b. Core-plumbing system
    c. Gray-water system
    d. Recirculation hot-water system (with timer when needed)
    e. Hot-water pipe insulation
    f. Demand water softener
    g. Cooling-condensate reuse
    h. Cooling-tower conductivity controllers
    i. Deionization
    j. Industrial-process water-use reduction
    k. Recycled water source

  l. Rainwater harvesting and storage (building and site)
  m. Submetering for building water-using systems
  n. Leak detection
  o. Domestic water booster pumps with VFD or Staging Controls

10. Site improvements
    a. Irrigation-control system
    b. High efficiency irrigation system

11. Energy generation, monitoring and storage
    a. Solar electricity generation (PV) systems
        i. Solar electricity generation components and wiring
        ii. Inverters and switches
        iii. Racking and brackets
        iv. Roof / property modifications required for installation
    b. Sub-metering
    c. System and circuit level monitoring or fault detection
    d. Heat recovery
    e. Combined Heat and Power (CHP)
    f. Thermal storage such as ice storage systems
    g. Energy Storage
        i. Electricity storage devices and components
        ii. Wiring
        iii. Inverters and switches
        iv. Building / property modifications required for installation

12. Pool equipment
    a. Variable speed circulating pumps
    b. Covers

13. Other
    a. Emerging technologies using the Custom Measures Track
    b. Track utilities using ENERGY STAR® Portfolio Manager
    c. Lease payment structures (prepaid leases) for eligible measures
    d. Electric vehicle charging stations

Custom Measures

The Custom Measures Track allows the Administrator to evaluate and approve funding for projects that are not “off the shelf” improvements listed in the Eligible Improvements. These custom projects may involve large scale industrial or commercial energy efficiency improvements; processing or industrial mechanical systems; renewable energy generation from sources such as geothermal and fuel cells, and site improvements resulting in reduced water consumption. The following are examples of custom measures that could be considered for funding:

1. Custom Energy Efficiency Measures
    a. Building energy management controls
    b. HVAC duct zoning control systems (large equipment)
    c. Irrigation pumps and controls
    d. Lighting controls
    e. Industrial and process equipment motors and controls
    f. Green roofing installations

2. Custom Energy Generation Measures
    a. Fuel cells
    b. Wind turbine power system
    c. Hydrogen fuel
    d. Other fuel sources (emerging technologies)
    e. Co-generation facility (heat and energy, e.g. steam)
    f. Biomass power generation system

3. Custom Stormwater Management Measures
    a. Bioswales and rain gardens

New Construction

New construction and change of use projects are eligible if energy modeling is conducted to measure and illustrate energy efficiency performance exceeding applicable energy codes, cost savings and public benefit.

1. Amenities and features that far exceed standard specifications
2. Energy storage with smart inverters – measuring savings and resilience benefits
3. Stand-alone solar plants – measuring new revenues as the benefit

III. C-PACE Financial Underwriting

Financial underwriting criteria are perhaps the C-PACE program attributes that can vary most from jurisdiction to jurisdiction. For that reason, they are also some of the most important attributes to harmonize in the Mid-Atlantic region. The underwriting criteria below are those generally used by capital providers to gauge if a property owner is assuming excessive debt liability through a C-PACE assessment.

In DC, Maryland, and Virginia, MAPA anticipates that C-PACE transactions will be funded by the private sector through a variety of capital providers and lenders. In D.C. and Maryland, capital providers perform their own underwriting, which typically focuses on the property's ability to pay back the assessment over the term of the financing. Because localities may have different drivers and priorities in establishing C-PACE programs, and because each project is different in terms of lease structure, ownership needs, and location, MAPA is not prescribing underwriting criteria, but offering guidance based on established best practices in the regional and nationally. This guidance also takes into account some of the thresholds included in the Virginia Uniform Statewide Financial Underwriting Guidelines issued by DMME in December, 2015.

Owner Financial Fitness and Eligibility

At minimum, capital providers must typically establish that a property does not have any involuntary liens placed on it, and that the owner(s) are not in default on their mortgage. In DC and MD, the owner must also be current on property taxes and have a clear tax payment history for some number of years in order to qualify. Virginia's code (VAC 15.2-958.3) also requires that a property owner must be current on taxes, not subject to any foreclosure or bankruptcy proceedings, and that property title is clear.

Loan-to-Value (LTV)

The ratio of total debt--including the potential C-PACE assessment and any existing mortgages or liens on the property--relative to the value of the property, as determined by a recent appraisal, market study, or assessment value. The DC-PACE Program caps LTV at 80% with exceptions grantable by the Program Administrator. Maryland counties do not stipulate an LTV threshold, with the exception of Montgomery County and Baltimore County, which cap LTV at 90%. Virginia localities have discretion in setting an LTV threshold, and are encouraged to set it at ≤90% of assessed or appraised value per the Virginia Uniform Underwriting Guidelines, with exceptions considered "on a case-by-case basis."

Program design considerations on LTV: Local governments that choose to require an LTV cap do so to limit the total amount of debt secured against a property as a means of reducing the risk that the property will become overleveraged. However, since the consent of existing mortgage lenders to the C-PACE assessment is required in all programs in the MAPA region, it is highly unlikely that any property with a mortgage will obtain such consent if the property leverage poses a financial risk of default. Additionally, C-PACE lenders are not allowed to accelerate repayment of the C-PACE financing and hold significant long-term risk in the properties they fund. C-PACE lenders' underwriting therefore typically takes careful consideration that a property owner will be in good financial position to pay taxes *as well as* debt service each year. Most local governments find sufficient assurances in the business risks and underwriting already conducted by the existing mortgage lender and C-PACE lender.

Both Montgomery and Baltimore Counties (MD) amended their original C-PACE ordinances from allowing only assessment values to appraisal values, to take into consideration that public assessment values do not reflect the actual saleable market value of a property with the proposed improvements. In both counties, a highly credit-worthy business was prevented from accessing C-PACE financing because the assessed value of their properties was too low until the ordinances were amended.

TIP: If local governments elect to include an LTV maximum, it should allow for the value of the property to be determined by a market appraisal that includes the value of the C-PACE funded improvements

PACE-to-Value Ratio (PTV)

PTV is the ratio of the PACE assessment to the value of the property, as determined by a recent appraisal, market study, or tax assessment. The DC-PACE program caps PTV at 20% where there is existing debt on the property, and 35% where this is no existing debt on the property, with exceptions grantable by the Program Administrator. Maryland counties do not stipulate a PTV threshold, with the exception of Montgomery County and Baltimore County, which cap PTV at 20%. The Arlington County (VA) C-PACE program establishes a Lien-to-Value cap of 30% with value based on the amount of the C-PACE assessment relative to the real market value of the improved property. Other Virginia counties are not precluded from requiring a PTV threshold.

Similar to LTV, if counties elect to include a PTV maximum, **MAPA recommends it should allow for the value of the property to be determined by a market appraisal** that includes the value of the C-PACE funded improvements. As noted in the LTV section above, both Montgomery and Baltimore Counties amended their original C-PACE ordinances from allowing only assessment values to appraisal values in recognition that public assessment values do not reflect the actual market value of a property. In both counties, a highly credit-worthy business was prevented from accessing C-PACE financing because the assessed value of their properties was too low until the ordinances were amended.

Debt-Service Coverage Ratio

Because PACE capital providers should ensure that the property demonstrates sufficient cash flow to pay the PACE assessment, MAPA does not recommend a specific debt-service coverage ratio.

Savings-to-Investment Ratio (SIR)

SIR is generally defined as the ratio of the dollar value of projected savings weighed against the dollar value of the C-PACE assessment, including principal and interest. An SIR of greater than one generally establishes that the project will be cashflow positive to the building owner(s). A positive SIR (1.0 or above) is a benchmark that signals benefits to C-PACE stakeholders. For example, capital providers or mortgage lenders may look more favorably on a project from an underwriting standpoint if the project generates savings that provide positive cashflow; local governments seeking to demonstrate economic development benefits may place a high value on showing the operational savings achievable through C-PACE projects to local businesses. Similarly, because energy cost savings are associated with environmental benefits of importance to constituents and supporters of C-PACE programs (such as energy use or greenhouse gas emissions reductions) a positive SIR may be seen as a proxy for desirable program outcomes.

Program design considerations on SIR: Some local governments have included SIR requirements for C-PACE funded projects as an additional financial underwriting criterion since projects that generate savings in an amount large enough to pay for C-PACE payments are perceived as more secure.

TIP: Local governments should be aware that SIR requirements may have unintended consequences on program participation. Because SIR thresholds typically focus solely on energy savings, they do not take into account many of the economic benefits of energy upgrades to property owners

Including an SIR requirement without careful consideration of the factors outlined below may limit the number of businesses that utilize a C-PACE program, or how deep and significant their investment in properties will be through C-PACE:

1. Many energy saving upgrades–including replacing old boilers, chillers and windows, or replacing or insulating roofs–may not save property owners significant dollar amounts on their utility bills specifically, though they will benefit owners economically in other critical ways such as conserving cash reserves, improving tenant comfort and retention, and increasing property values.

2. Energy prices vary significantly across the MAPA region, and so while a boiler or solar panel may cost the same from one town to another, the relative cash savings on energy bills realized by property owners may differ. Similarly, a simple retrofit in an area with lower energy costs may not as easily meet a strict SIR requirement, although there could be a significant benefit to the owner of being able to access C-PACE financing.

3. Property owners may be willing to invest in building energy upgrades and renewable energy systems that do not generate high cash surpluses, **and** may have the financial wherewithal to pay for these systems as demonstrated through DSCR, LTV, PTV and other traditional financial underwriting metrics utilized by capital providers and mortgage lenders.

4. Requiring an SIR necessarily requires that property owners measure their energy consumption prior and sometimes subsequent to implementing a project, which imposes additional costs on property owners voluntarily seeking to upgrade their buildings.

MAPA's guidance to local governments seeking to maximize participation in their C-PACE program to generate economic development and deep energy-saving projects is to carefully weigh the benefits of an SIR requirement against the potential costs and deterrents property owners may face. Local governments may choose to require that C-PACE funded projects demonstrate energy savings through an energy audit, while stopping short of requiring projects meet an SIR threshold. For local governments that do choose to include an SIR as a program criterion, there are approaches that can mitigate deterrents, while maintaining an SIR requirement:

1. Many local governments stipulate the project must be cash flow positive *during the term of financing* to ensure C-PACE payments are covered by savings. This is a challenge though since many energy improvements pay for themselves over a long period of time. By requiring an SIR over the term of financing, property owners will have no choice but to use C-PACE financing over long financing terms, which typically come with higher interest rates and therefore higher total accrued interest for the property owner. **Local governments can require savings be calculated over the full useful life of the improvements, which allows property owners to count the full lifetime savings of their project while simultaneously electing a shorter financing term with lower rates.**

2. Many local governments stipulate that C-PACE projects must be paid for by *energy* savings specifically. However, energy upgrade projects may generate other economic benefits for property owners, such as tax credits and/or tax deductions for clean energy, depreciation, operations and maintenance savings, capital cost avoidance and others. Water efficiency measures can also generate utility cost savings which can be included in the savings calculation, and are financeable through C-PACE. Property owners, capital providers, and mortgage lenders weighing the financial risk of a C-PACE project will *all look at the total economic benefits of the project.* **Local governments can require an SIR cover all project-related savings or revenues.**

4. Governments may have other imperatives and wish to make other measures financeable through C-PACE that may not have direct energy savings benefits. For example, the DC-PACE program allows for stormwater management measures to be financed to improve water quality. Coastal communities may value and wish to consider having C-PACE programs that can finance flood mitigation or shoreline

hardening measures. A number of C-PACE programs in California allow seismic retrofits to be financed, along with energy conservation measures and renewable energy systems. In many of these cases, these measures can be costly and make achieving an SIR greater than 1 difficult. **Accordingly, program sponsors and administrators may choose to forgo a strict SIR requirement, or allow for other means to account for savings that can be included in the calculation.**

TIP: MAPA encourages local governments considering utilizing an SIR to evaluate the benefits of including of other dollar savings (beyond utility cost savings) or other monetized benefits to define savings for purposes of SIR.

The DC-PACE program allows for a wide range of project savings, including utility savings and other benefits (such as rebates), to be factored into SIR calculations, which has the effect of increasing the accessibility of C-PACE for a wider variety of ownership/project types. In Virginia, however, because commercial building utility rebate programs are not robust, there are fewer opportunities to include these, and more conventional accounting of utility cost savings may be the norm. In Maryland, four counties have an SIR requirement.

TABLE 10 - SIR REQUIREMENTS OF ACTIVE C-PACE PROGRAMS IN THE MAPA REGION

	Arlington County, VA	Anne Arundel, Howard, Talbot, and Charles County (MD)	Other MD Counties	District of Columbia	MAPA Guides/Virginia Model Ordinance
SIR	SIR >1.0 encouraged, not required	SIR of >1.0 required	No SIR requirement	(SIR of ≥1.0 required)[13]	SIR at discretion of local sponsor
Savings	Total projected energy and water utility cost savings over the effective useful life of each improvement	Aggregate savings over term of financing	NA	Utility savings, O&M, avoided capital costs, fees, penalties, renewable energy revenues, tax credits, utility rebates and incentives	Refer to Program Guidelines
Investment	Total cost of those improvements, including all fees and interest charges	Amount of the principal of, and interest on, the PACE financing	NA	Amount of the principal of, and interest on, the PACE financing.	Total cost of improvements including reserves for construction period interest

Improvement costs usually cover: third party reports, design and installation of qualifying improvements, commissioning, energy savings guarantees/insurance, building accreditation, closing costs, permitting fees, program administration fees, measurement and verification (M&V) costs, and post-installation evaluation fees.

Savings-to-Investment Ratio (SIR) for New Construction

Localities should determine if C-PACE financing may be applied to ground-up new construction as part of the project financing. While several of the mature C-PACE programs do allow new

[13] A pending legislative amendment in DC would allow property owners to consent to an SIR less than one. Applicants would still need to document the project SIR.

construction projects to participate, there are nationally-recognized programs (such as the Texas PACE Authority's PACE in a Box program) that do not allow greenfield new construction projects to utilize C-PACE. If new construction projects are eligible, MAPA notes that there are two general approaches in the national C-PACE market for addressing SIR:

1. Require that new construction projects exceed current energy code in the state by a specific percentage, not subject to SIR (similar to Arlington C-PACE and Colorado C-PACE, both administered by SRS); or

2. Use a standardized baseline (such as ASHRAE 90.1-2007 or the municipality's current building code), estimate the "as designed" savings and use the energy cost savings delta in an SIR calculation to determine maximum PACE financeable amount (D.C. and Lean and Green Michigan). DC-PACE has used ASHRAE 90.1-2007 as a baseline to be consistent with energy modeling required for the Leadership in Energy and Environmental Design (LEED) rating system as many large new construction buildings in the District are required to meet LEED certification requirements. DC-PACE may modify this requirement to a more rigorous code baseline in the future as the baseline for LEED energy models and District building code shift. DC PACE may adjust its new construction guidelines if pending legislative adjustments to the SIR requirement become law.

Energy Audit

MAPA recommends that local governments require property owners to conduct an energy audit or project feasibility study to demonstrate at minimum the projects meet the eligibility criteria for saving energy and water, or producing renewable energy, per the enabling law and local ordinance. Such audits or studies may also be reviewed by a qualified third party engineer to ensure energy savings projections shared with property owners are, at minimum, reasonably estimated utilizing nationally accepted standards of estimating energy savings. This approach is taken in all the active programs in the MAPA region – D.C., Maryland counties, and Arlington County, VA, irrespective of whether an SIR test is also required. For more information on energy audits, please see the Technical Engineering Requirements section.

Minimum and Maximum Loan Amounts

Minimum and maximum loan amount may be established at the discretion of each jurisdiction. Particularly with minimum loan amounts, it is important to note that program administrators incur transaction costs for each project approval. MAPA has observed that a minimum loan amount of $50,000 seems to be a threshold for programs to recover costs and become self-sustaining and scalable, particularly for larger, urban markets. The Arlington C-PACE program has established a maximum loan amount of $25 million. For emerging programs and smaller local markets, it is possible to maintain a lower initial minimum loan amount in the ramp-up phase of a program and revisit this requirement as the program gains participation and steady revenue.

Maximum Loan Term

While 20 to 25 years is generally the maximum loan term established by C-PACE programs, MAPA recommends that the term of the assessment should not exceed the weighted expected useful life (EUL) of the PACE financed measures. In this respect, what programs establish as eligible measures will have impact on the length of loan terms.

IV. Technical Engineering Requirements

Standardized technical engineering requirements increase customer confidence in C-PACE, since well-planned and executed projects can be demonstrated to reduce utility consumption and operating costs. These requirements help ensure that C-PACE projects and programs contribute to public policy goals, such as limiting greenhouse gas emissions or conserving water resources.

Included in this section are excerpts from the Technical Application Guidance from the DC-PACE Program Guidelines, which thoroughly explain the technical requirements of that program to building owners and energy contractors. DC-PACE is flexible in its treatment of what can be considered savings, as described in their program guidelines. For additional information on estimated savings and savings-to-investment ratios (SIR), please see the Financial Underwriting Guidelines.

For more information about recommended eligible measures for C-PACE projects, see the Project Eligibility Criteria section.

Energy Audit or Feasibility Study

Typically, Program Administrators are responsible for ensuring that all Project Applications meet technical requirements. **MAPA recommends that programs require building owners to obtain an independent energy audit that meets industry standards**, either that of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) or the Investor Confidence Project (ICP). For single measure projects, an ASHRAE Level I audit is generally sufficient (single measure, like-kind measures may not require a full Level I Audit). For example, a re-lamping project where savings can be demonstrated through simple calculations based on replacement lamp wattage and run time. Projects incorporating multiple measures should complete an ASHRAE Level II audit. For a major building rehabilitation or change of use, an ASHRAE Level III audit is recommended. Programs should require detailed renewable energy system feasibility studies from a reputable solar developer for projects that will incorporate these systems.

ASHRAE Audit Levels

- **Level I – A walk-through audit.** An analysis made to assess building energy efficiency to identify potential energy conservation measures (ECMs), appropriate for simple one- or two-measure projects with readily determined costs and savings, such as lighting improvements or like-for-like equipment replacement.
- **Level II – An energy audit performed by an independent audit contractor.** A comprehensive analysis of the facility energy systems, energy use (via energy bills for at least the previous 12 consecutive months), and a quantitative evaluation of the ECMs proposed and associated cost and energy savings potential. This level of analysis can

involve advanced on-site measurements and use sophisticated simulation tools to evaluate the selected energy retrofits, and is appropriate for multi-measure retrofits whose savings and costs require more complex calculation. An evaluation of operations and maintenance costs savings (or increases) must be included in the analysis.

- **Level III – Investment-grade audit performed by independent auditor.** A detailed analysis including whole-building energy modeling, requiring rigorous engineering study, appropriate for larger projects involving major capital investments. This level of audit may be required for specific cases, for example: complex multi-measure projects or buildings that will be substantially changing use. For major additions and ground-up new construction projects, energy modeling must be performed (typically per ASHRAE 90.1, Appendix G) to project utility cost savings relative to a similar building meeting energy code performance.

The Investor Confidence Project

Investor Confidence Project (ICP) provides standardized audit protocols for both commercial and multifamily buildings (Large, Standard and Targeted). As with ASHRAE protocols, these increase in rigor and complexity, depending on the size of the building, cost of the project and nature of the retrofit (single measure or multi-measure). ICP also offers a certification that indicates the building has met the ICP audit protocols and will undertake an industry standard measurement and verification (M&V) process. More information about ICP is available at: http://www.eeperformance.org/

Audit and Feasibility Study Costs

Energy and water efficiency audits and renewable energy system feasibility costs will vary according to a number of factors, including: provider, market area, complexity of the project, and audit level required. **MAPA recommends that programs allow costs or energy and water audits and feasibility studies to be financed into the C-PACE assessment.**

Independent Validation

Independent third-party validation provides an additional degree of assurance that the package of ECMs and water-conservation measures proposed by the installing contractor will save the utility costs projected for the building owner and make the project cash-flow positive relative to the C-PACE assessment. Whether the project scope of work is primarily energy efficiency, renewable energy, or both, there is value to the owner in third-party review.

MAPA recommends that programs maintain a list of prequalified service providers, and establish clear criteria these providers must meet in order to participate. Some programs may require independent validators to hold Professional Engineer (PE) designation. For energy efficiency projects, the following are widely-recognized industry certifications and credentials that indicate the holder has familiarity with building energy systems and standard audit protocols:

American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE)

- Building Energy Assessment Professional (BEAP)
- Building Energy Modeling Professional (BEMP)

Association of Energy Engineers (AEE)

- Certified Energy Manager (CEM)
- Certified Measurement and Verification Professional (CMVP)
- Certified Energy Auditor (CEA)

Building Commissioning Association

- Certified Commissioning Professional

Building Performance Institute (BPI)

- Energy Auditor

Investor Confidence Project (ICP)

- Credentialed Quality Assurance Provider

MAPA notes that other PACE programs are beginning to implement ways to contain independent validation costs while maintaining a high degree of quality control. This could include requiring Independent Validation for the first three to five projects that a vendor completes. Once the vendor sufficiently demonstrates consistent accuracy and transparency in terms of the audit and energy use projections, vendors would be able to complete these without independent third-party validation, as determined by the program administrator, or an independent validator working on behalf of the program administrator.

Measurement and Verification (M&V)

Post-retrofit measurement and verification (M&V) of energy and water use performed by the building owner or by the owner's technical consultant is an important consideration in C-PACE program design and implementation. M&V is intended to validate that utility savings predicted during the project engineering and development phase are realized once the building is operating post-retrofit. Post-retrofit M&V may also help determine areas where actual energy use is higher (or lower) than anticipated, and if a follow-up visit from the installing contractor may help diagnose the underlying causes (for example, malfunctioning or improperly installed equipment). The scope and duration of the M&V impacts the cost, which is also an important program design consideration.

M&V is established best practice in larger, more mature C-PACE programs nationally. **MAPA recommends localities encourage post-project M&V, but not require it.** This is in part due to various underlying regulatory requirements for M&V within the MAPA jurisdictions. In DC, if the building is not already participating in the District's mandatory building benchmarking program, two pathways are available: M&V is required for two years post-retrofit, or the building must be benchmarked through ENERGY STAR Portfolio Manager, In Maryland, M&V requirements vary by county. In Virginia, Arlington County's C-PACE program encourages but does not require M&V, and both state code and VAEEC's model C-PACE ordinance are silent on M&V. Accordingly M&V requirements may vary, depending on the requirements established by the sponsoring locality in Virginia.

DC-PACE Program Technical Application Guidance *(from DC PACE Program Guidelines)*

Key Elements of the Energy Audit

Regardless of the level of energy audit required, there are a few required data points that must be completed in the energy audit worksheet:

- Scope of Energy Conservation Measures – List of the proposed ECMs, including description of the previously installed equipment (if applicable), schedule of equipment to be installed, and cost estimates for the proposed scope of work.
- Expected Useful Life of ECMs – Predicted lifetime of the proposed equipment and savings that they will generate – typically between 10 to 30 years for most pieces of equipment. Predicted Equipment Useful Life (EUL) should be based on ASHRAE (or other comparable industry standards) or manufacturer data, and the Administrator may request the source of the data.
- Energy Baseline –The energy savings will be calculated against a baseline, which will be documented as follows:
    - If baseline energy use data is available for the property, the contractor should provide:
        - Identification of the baseline period
        - Baseline energy consumption and demand data, including recent copies of all major use account billings
        - All independent variable data coinciding with the energy data, if applicable (e.g. changes in occupancy, weather data, ambient temperature, etc.);
        - All static factors coinciding with the energy data (e.g. occupancy, utility rates, etc.)
        - Details of baseline data analysis performed (if applicable), e.g. analysis, weather normalization, any other adjustments (such as adjustments needed to reflect expected changes in occupancy, or to create a code-compliant baseline if the building currently does not meet applicable building codes)
    - DC PACE allows for the use of PACE financing to fund energy and water saving improvements and related building upgrades in new construction and substantial rehabilitation projects.

    - For substantial rehabilitation projects, DC PACE will allow building owners to index baseline energy use to an appropriately rigorous, site-specific baseline demonstrated in a transparent energy model provided by the building owner's engineering or design firm and approved by DC PACE.
    - For new construction projects, the contractor may model a baseline that would conform at minimum with ASHRAE 90.1 – 2007 standards. The contractor or property owner may also choose to model a baseline in accordance with current or expected DC building code.
- Estimated Savings – The energy audit should project estimated savings to the property over the expected useful life of the equipment. DC PACE may consider savings from the following categories:
    - Utility Savings: Estimate of annual savings on electricity, gas, or water bills that will result from the proposed scope of work.
    - Operations & Maintenance Savings: Net avoided spending on operations and maintenance attributable to the new equipment, including costs of labor, spare parts, service contracts, etc. This may include annual savings or may only apply in some years during the life of the equipment.
    - Avoided Capital Costs: DC PACE will allow a portion of the capital cost of new equipment to be considered savings, if the equipment to be replaced is nearing (or past) the end of its useful life. A property owner typically sets aside money each year in order to pay for the eventual costs of system replacement. By paying upfront to replace systems before they fail, the owner is 'saving' in future years what they would otherwise need to be setting aside. The amount that can be included in the avoided capital costs category must be multiplied by the ratio of remaining useful life to total useful life of the equipment being replaced.
    - Avoided Fees or Penalties: Some projects may include future requirements such as waste disposal, wastewater treatment, pollution abatement, stormwater retention, etc. If these requirements are associated with environmental or energy regulations, the avoided future costs or penalties may be counted as a savings.
    - New Revenues: Revenues earned from solar plants, cogeneration, geothermal, wind, waste-to-energy, and certain other projects that generate renewable energy revenues, including ancillary services (such as PJM RegD market revenues) may be counted as savings.
    - Project Financial Savings: Where the installation of energy or water conservation measures makes a project eligible for DC PACE, and where the PACE funds can be demonstrated to displace higher cost capital resources, the resulting differential cost of capital for financing those improvements can be considered as a direct economic benefit resulting from the PACE project. These "Project Financial Savings" can be used when calculating the total stream of savings and other project benefits resulting from the PACE improvements for the purpose of sizing the PACE note and other underwriting and analysis of total project benefits. Financial savings are subject to the review and approval of the Administrator, the District, and the

selected Capital Provider. The project must meet all other underwriting constraints (including LTV and DSCR criteria).

- Other Monetized Benefits: Tax credits (Investment Tax Credit, accelerated depreciation), Solar Renewable Energy Credits, utility incentives and rebates, or other monetized benefits that are demonstrated to be reasonably expected to accrue to the Property Owner may be counted as savings.

- Methodology – Summary of the assumptions underlying the model, calculations, and the methodology used. DC PACE will accept both industry standard and proprietary energy audit analysis models.

Section 3: Regional C-PACE Marketing Guide

This section provides information and resources (*please see last page of this section for links to resources*) for stakeholders who are interested in marketing C-PACE. This information was developed based on discussions with C-PACE program administrators, state and local government sponsors, and energy services contractors operating nationally.

Why is Marketing C-PACE Important?

One might think that a financing program as beneficial as C-PACE would practically sell itself. However, time and time again, program administrators, local government sponsors, and contractors reported that a lack of marketing expertise and resources were key challenges impeding the growth of C-PACE programs in their jurisdictions.

TAKEAWAY: "A lack of resources to dedicate to marketing and operations is the largest barrier to a successful C-PACE program."
–C-PACE Program Administrator

C-PACE is still a relatively new financing model that does not yet enjoy widespread understanding like more traditional loan financing. At first, the benefits of C-PACE can be seen as "too good to be true," as building owners are not accustomed to 100% upfront financing with long terms of up to 20-25 years. As a result, C-PACE marketing faces two challenges: first, potential program stakeholders must be educated about the *concept* and *process* of C-PACE to build support for program development and start-up; secondly, marketers must actually sell the C-PACE *product* to building owners to obtain their interest and participation.

C-PACE Program Marketing and Outreach Roles

C-PACE Program marketing is typically undertaken by all key stakeholders in the PACE arena as follows:

Program Administrators: Program Administrators ("PAs") may work in conjunction with local government to do outreach, or may be primarily responsible for developing marketing plans and materials depending on how the scope of work with the local government is defined. Successful strategies employed by Program Administrators include:

- **Channel Partners:** PAs can provide information to building owners about C-PACE through existing networks and marketing channels that reach building owners, such as builder/building owners associations, chambers of commerce, and economic development forums. PAs work with these entities to reach building owners through press, newsletters, and events hosted by the channel partners.

- **Events and Trainings:** PAs host in-person meetings for local government agencies, channel partners, capital providers, project originators and contractors (see below) to provide more in-depth training on C-PACE. These trainings should go beyond summarizing the basic value proposition of C-PACE toward answering more technical questions these stakeholders face in order to facilitate closing of a C-PACE transaction. Trainings should feature expert stakeholders, including contractors, property owners and capital providers that have successfully funded C-PACE projects in the area, or with property types similar to the audience for which the event is held.

- **Communications and Press:** One of the most successful strategies for marketing C-PACE is to 'tell the story' of successful C-PACE projects. MAPA partners are actively involved in documenting and promoting these stories through news releases, case studies and videos. PAs, sponsoring local governments, contractors, project originators, building owners, and capital providers should all be encouraged to participate in ribbon cuttings, press stories, films or other forms of communications events around their projects.

- **Project Development.** PAs should take time to conduct individual calls and meetings with potential customers to answer questions from owners, project originators, capital providers or contractors considering C-PACE projects. PAs can be a 'neutral party' that provides information to any stakeholder and help them to make informed decisions, which is essential to facilitating project closings. Some PAs may choose to directly work as a Project Originator (see below) and work to develop qualifying C-PACE projects with building owners and to link them with capital providers in the program.

  PAs should coordinate with their government sponsor to determine whether this is an appropriate role for the PA. This may include incorporating additional protocols to ensure that participation by other project originators, capital providers and contractors is a transparent and competitive process. If these stakeholders believe they are competing with the PAs for business, they may reduce or stop their own marketing efforts. This can result in limited resources to market the program, leading to fewer projects and suboptimal outcomes for the program.

State or Local Government Sponsors: Governments can support the marketing efforts of program administrators by actively participating in marketing activities and allocating staff and resources towards program marketing. If the government sponsor can establish a marketing budget or devote staff time to outreach and marketing in the early years of C-PACE program development, the program will be more likely to achieve the revenue needed to be self-sustaining more quickly than relying on the resources of the PA alone.

TIP: Local governments can leverage the relationship between their Economic Development offices and the business community to identify marketing opportunities and events where program administrators can advertise C-PACE

Local governments can maintain active web resources for interested stakeholders, or provide direct links to web resources maintained by program administrators, and clearly communicate in those resources that C-PACE is a program supported and vetted by the local government. Local governments should also lead internal awareness-building and education efforts across departments about C-PACE. The level of marketing involvement varies by jurisdiction, but remains an important question for local governments to consider as they either build or launch a C-PACE program.

Project Originators: Project originators are companies with an expertise in finance, real estate and energy technologies that can help a building owner understand and rationalize the economic benefits of upgrading their building. Project originators may or may not also be a capital provider or contractor but typically receive a fee directly from the building owner for their services and therefore have an incentive to directly market a C-PACE program to potential clients. Program Administrators should actively seek to identify potential project originators in their area and educate them about C-PACE so Project Originators add C-PACE as one of the financing tools they offer to building owners.

Capital Providers: Capital providers often act as Project Originators and will actively seek property owners and educate them about the benefits of C-PACE. Capital Providers may also be interested in provided financial resources and/or their time to sponsor events, trainings, or any other opportunities where building owners will be educated about the C-PACE Program.

Contractors: Contractors are already in the basements and on the roofs of commercial buildings and typically have a good idea about what buildings may benefit from upgrades. Since building owners may be challenged to pay for building upgrades with cash, contractors are usually very interested in offering financing solutions, since they increase the likelihood of the sale of a commercial energy project. A successful marketing technique is to conduct training or workshop sessions for contractors that help them to offer C-PACE as a financing option for the products and services they are already selling to commercial building owners. C-PACE financing is a value-add contractors bring to other energy performance contracts, or product-specific financing they can offer through affiliation with a manufacturer. These trainings are typically hosted by the Program Administrator.

Defining the PACE Value Proposition

C-PACE is an attractive financing option for a number of building market subsectors, and is applicable to both single measure (such as HVAC replacement) or multi-measure retrofits, and new construction/substantial renovations. It can be utilized along with traditional financing where owners want to make significant upgrades in energy efficiency or install renewable energy systems. Early adopters of C-PACE may be property owners such as not-for-profits and community based organizations in need of capital improvements to their buildings who are unable to fund them internally or through the traditional capital markets. These property owners typically do not have the cash on-hand to pay for needed improvements, and may not have the asset value or cashflow to qualify for traditional loans. Other important selling points for C-PACE are longer loan terms and no impact on property owner's credit, because C-PACE does not require personal or corporate guarantees.

Nationally, according PACENation, roughly 60% of C-PACE projects include exclusively energy efficiency measures, approximately 25% have renewable energy systems only, and the remainder are mixed. Because energy efficiency measures that deliver significant utility cost savings and quicker return on investment (such as lighting or HVAC system upgrades) can put the owner in an improved cashflow position, these are some of the most commonly-installed measures. C-PACE has been utilized to fund a number of stand-alone solar PV systems, and purchase of the system with C-PACE financing allows the owner to take advantage of the federal Investment Tax Credit for solar. If solar leases or Power Purchase Agreements (PPAs) are available where the building is located, building owners may wish to consider if C-PACE is the best financing option for a single-measure renewable energy system (such as solar PV).

Seeking a Target Market

The target market is property owners with a clear need for capital improvements and the capacity to leverage C-PACE within a capital stack structure to fund the largest scope of work that is reasonable.

While almost all commercial property classes and sizes are capable of using and have used C-PACE, markets do vary depending on the nature of the building stock, and projects show certain characteristics more often than others. Historically, office, mixed use, and retail properties have been the most common real estate classes to use C-PACE (as shown in the chart from PACENation, on the following page). These property types most often have the financial and technical characteristics that make C-PACE attractive to property owners, developers, and capital providers. Buildings with very high energy use, such as industrial and health care facilities, are also good candidates. Owners with property to lease in very competitive markets have pressure to keep their product attractive to potential tenants; C-PACE allows them to do so while improving their bottom line.

TIP: Breaking the building market down by use and occupancy class and building configuration ("verticals") may lead to a successfully targeted marketing approach.

For example, the Connecticut Green Bank C-PACE program has had success working with solar installers to interest automobile dealerships in C-PACE.[14] Auto dealers have very high electricity demands due to lot and security lighting needs. Solar PV systems financed through C-PACE help the auto dealers reduce their energy bills significantly through a credit on their bills for energy produced (called "net metering"), which helps offset their energy costs, and improve their cashflow and profitability.

Chart 1 - C-PACE dollars funded by building type

(By $ funded)

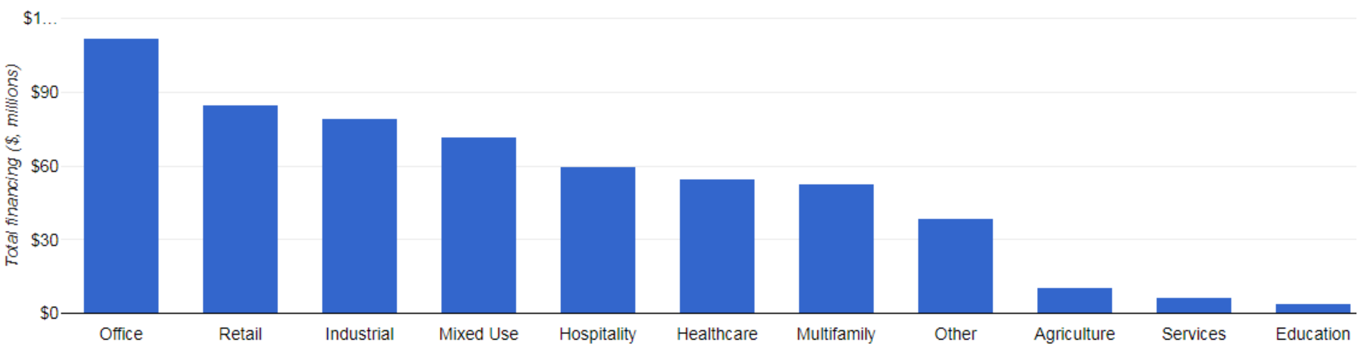

Chart sourced June, 2018 from: http://pacenation.us/pace-market-data/

Growing a Program

The most fundamental barrier to the growth of existing C-PACE programs is lack of demand from property owners. Program administrators generally attempt to overcome this barrier through various education, outreach, and training efforts. Successful programs have tended to demonstrate that persistent and well- targeted industry outreach programs are capable of increasing C-PACE awareness and understanding within specific building owner market sub-sectors, and accordingly increasing the number of inquiries and project applications. Successful programs also engage with major property owners for case studies of completed projects that encourage building owners to consider the financial benefits of C-PACE, and work closely with the interests and needs of local economic development agencies.

[14] Mackey Dykes, CT Green Bank, personal communication, 7/12/2017

TIP: Building strong contractor and project originator relationships is key to establishing a low-cost marketing channel to building owners for C-PACE programs

Many C-PACE program administrators point to energy performance contractors and solar installers as essential partners in success. As one program administrator said, "Contractors are constantly selling to building owners. Focusing on contractors is an initial way to 'juice the pipeline' with limited resources." Contractor education and training modules can be required for program participation, and should be offered consistently and at convenient times and locations (for in-person events) or offered online via video and webinar platforms. Capital providers and project originators should also be strongly encouraged to conduct their own marketing efforts. In addition to injecting additional marketing resources into programs, property owners respond more strongly to projects developed solely with private partners.

MAPA and Other Marketing Resources

Through the survey MAPA conducted of local governments in the tri-state region, there were several suggestions on how MAPA might contribute to C-PACE marketing efforts. MAPA has developed marketing materials that program administrators, local governments, contractors, and capital providers can use to engage with and educate key stakeholders.

MAPA has developed the following:

- ✓ This Toolkit
- ✓ What is C-PACE? and C-PACE FAQs documents available on the "Resources" page of MAPA's website.
- ✓ MAPA website (www.pacealliance.org) and social media co-promotion of C-PACE successes, milestones, and progress in the region
- ✓ An introductory "What is C-PACE?" PowerPoint presentation
- ✓ A series of webinars on C-PACE topics, all available on the MAPA site
- ✓ Networking and educational opportunities for C-PACE program stakeholders, such as the 2017 and 2018 annual MAPA forums, as well as "lunch and learns" and other educational events

Links to successful C-PACE promotional materials:

- ✓ DC-PACE Program - Case Studies
- ✓ Virginia Energy Efficiency Council - What is C-PACE video
- ✓ Texas PACE Authority - Flyers, Webinars and Videos
- ✓ PACENation - Case Studies Library

MAPA will develop:

- ✓ Case Studies of completed C-PACE projects across multiple property types and energy technologies in the MAPA region

- ✓ Quarterly newsletters with market progress, events, and educational resources
- ✓ Connection to utilities or energy service companies (ESCOs) in the region to pursue joint marketing ventures

Table 11 – Mid-Atlantic C-PACE Program Attributes

Attribute	District of Columbia	Maryland (MD-PACE)	Montgomery County (MD)	Virginia Law & Guidelines[1]	Arlington County (VA)
Eligible Property Types	Commercial, Industrial, Multifamily (5+ units), Non-profit and special use	Commercial Industrial, Multifamily (5+ units), Non-profit, Agricultural	Commercial Industrial, Multifamily (5+ units), Non-profit	All property types other than residential with <5 units or a condominium as defined in §55-79.2	Commercial, Industrial, Multifamily (5+ units), Nonprofit, Educational, (private), Agricultural
Eligible Project Improvements	Energy efficiency, renewable energy, water conservation (link to website list)	Energy efficiency, renewable energy, water conservation (link to website list)	Energy efficiency, renewable energy, water conservation (link to website list)	Energy efficiency, renewable energy, water conservation; local jurisdiction will establish by ordinance	Energy efficiency, renewable energy, water conservation improvements and related costs (link to website list)
Property Owner Eligibility	Current on property tax, assessments and mortgage; No Notice of Default or delinquencies in last three years or since ownership	Current on property tax, assessments and surcharges; Requires express mortgage lender consent	No property tax delinquencies for the last 5 years	Current on property tax, Assessments and Surcharges;	Current on Property Tax, Assessments and Surcharges; current on mortgage and deed of trust payments; property owner not in bankruptcy, property title not in dispute. Requires mortgage holder consent. Refer to Arlington County Ordinance section 68-6.
Participant Requirements					
Program Administrator	Urban Ingenuity	PACE Financing Servicing	PACE Financing Servicing	No statewide program administrator; program sponsors will be local governments	Sustainable Real Estate Solutions
Capital Providers	Open	Open	Open, with administrator approval (Greenworks is	Open	Open

Attribute	District of Columbia	Maryland (MD-PACE)	Montgomery County (MD)	Virginia Law & Guidelines[1]	Arlington County (VA)
			County Designated Lender)		
Contractors	Licensed, insured; must register with program and attend training	Must register with program; training required	Must register with program	To be determined by sponsor	Licensed. Must register with program and attend training
Existing Mortgage Holder	Consent required	Consent required	Consent required	Consent required	Consent required
Application / Building Owner Costs					
Application Fee	$250	$150	$150	To be determined by local sponsor/ administrator	none
P.A. Closing *(one-time fee)*	1.25% (min. $2,500)	1.05%	1%	“	2.5% of project amount financed, capped at $75,000 per project
Loan Sourcing fee *(if service offered)*	0.75% *(may be waived if complete application is provided)*	Not provided	Not Provided	“	None
Annual servicing fee	0.2% plus $400	0.16% or $300 if <$350k; $1,600 if >$1.8M	0.16% calculated on the outstanding principal balance	“	None
Underwriting Criteria					
Minimum loan amount	No statutory minimum, recommended is $100,000	Ranges from $5,000- $25,000 [See MD Program Guide for details.]	$5,000	To be determined by local sponsor	$50,000
Energy Audit Requirements	Energy audit / model or feasibility study required. Level corresponds with size and	Third party technical review required in all MD-PACE jurisdictions	Third party technical review required	DMME Guidelines recommend technical energy assessment based on size and scope of project or	Minimum ASHRAE Level I encouraged; Renewable Energy Feasibility Study (REFS) required for RE projects

Attribute	District of Columbia	Maryland (MD-PACE)	Montgomery County (MD)	Virginia Law & Guidelines[1]	Arlington County (VA)
	complexity of the project			capital provider requirements; following ASHRAE or ICP protocols recommended	
New Construction	Yes	Yes (requirements will be in revised MD-PACE Program Guidelines, to be issued soon)	No	Yes; criteria to be determined by local sponsor	Yes, minimum eligibility requirement is for building design to exceed VA energy conservation code by 15%.
PACE Assessment to Value Ratio	Program guidance suggests 20% (up to 35%, if no existing debt on property); final determination by capital provider	None (with exception of Montgomery and Baltimore County <20%)	20% of assessed or appraised value	No specific recommendation	PACE Lien-to-Value <30%
Savings-to-Investment Ratio (SIR)	SIR >1.0; SIR validation by 3rd party required	SIR >1.0 in Anne Arundel, Carroll, Charles, Howard and Talbot counties SIR not required in other counties. Required to demonstrate that savings are "likely to be realized as estimated"	None	DMME Guidelines recommend ≥1.0 with waiver option and case-by-case exceptions; Savings may include ancillary benefits to be defined by locality	SIR >1 encouraged, but not required
Risk Disclosure to Property Owner	Disclosure of risk form with owner signature required	Disclosure of risk form with owner signature required	Disclosure of risk form with owner signature required		Refer to the Arlington C-PACE Program Guide for recommended disclosures

Attribute	District of Columbia	Maryland (MD-PACE)	Montgomery County (MD)	Virginia Law & Guidelines[1]	Arlington County (VA)
Timing to File Assessment	Upon closing	After closing	After construction complete	After closing, prior to start of work	Promptly after closing
Post Project					
Ongoing Measurement & Verification (M&V)	Yes, either benchmarking through EPA Portfolio Manager or two years of M&V	At Owner or Lender discretion	Not required?	Specific requirements to be determined by local sponsor/ administrator	Post-construction commissioning required
Program Data Reporting	Required (Annual reporting on projects closed, amount of funding, project type, and anticipated savings	Not required	Not required	DMME Guidelines recommend PA collect and share 3 years of pre and post data with utility; recommend NDA such that only aggregated data will be available to the public	Semi-annually: type and number of ECMs, location, aggregate outstanding loans, average initial loan, number delinquent, number foreclosed

[1] Guidelines refers to DMME Commercial PACE Financial Underwriting Guidelines

Glossary of Acronyms:

ASHRAE: American Society of Heating, Refrigerating and Air-Conditioning Engineers
CP: Capital Provider
ECM: Energy Conservation Measure
ICP: Investor Confidence Project
M&V: Measurement and Verification (of energy/cost savings)
NDA: Non-Disclosure Agreement
PA: Program Administrator
IPMVP: International Performance Measurement and Verification Protocol
RE: Renewable Energy

ASHRAE Audit Levels:

- ASHRAE Level I – A walk-through audit. An analysis made to assess building energy efficiency to identify potential energy conservation measures (ECMs), appropriate for simple one or two measure projects with readily determined costs and savings, such as lighting improvements or like-for-like equipment replacement.

- ASHRAE Level II – An energy audit performed by an independent audit contractor. A comprehensive analysis of the facility energy systems, energy use, and a quantitative evaluation of the ECMs cost and savings potential. This level of analysis can involve advanced on-site measurements and sophisticated simulation tools to evaluate the selected energy retrofits, and is appropriate for multi-measure retrofits whose savings and costs require more complex calculation. An evaluation of operations and maintenance costs savings (or increases) must be included in the analysis.

- ASHRAE Level III – Investment-grade audit performed by independent auditor. A detailed analysis requiring rigorous engineering study and appropriate for major capital investments. This level of audit may be required for specific cases, e.g. multi-measure projects on new construction or for a building that will be substantially changing use.

APPENDIX A – FORM TEMPLATES

SAMPLE C-PACE PROJECT APPLICATION

CONTACT INFORMATION

First Name		Last Name	
Title		Company name	
Relationship to Building Owner			
Phone		E-mail	

PROPERTY INFORMATION

Street Address					
City		State		Zip Code	
Ownership Name		Property Sq. Ft.		Units	

☐Owner (fee simple has not been in bankruptcy in last 3 years)*

☐No property tax delinquency in last 3 years*

☐ No notices of default or foreclosure in last 3 years on property*

☐No mortgage delinquency, current on all payments on property

☐Mortgage is a CMBS loan?

☐Involuntary liens, judgments, or defaults on the property?

If so, list below:

*Or since owned property if less than stipulated period above

Property Type

☐Agriculture	☐Industrial	☐Corporation
☐Data Center	☐Laboratory	☐LLC
☐Education	☐Multifamily	☐Partnership
☐Food Service	☐Office	☐Trust
☐Hospital	☐Retail	☐501(c)3
☐Hospitality	☐Warehouse	☐Single owner
	☐Other	☐Other

Mortgage Lender Name		Estimated Property value	
Estimated Mortgage Balance		Source of valuation	
Has obtained lender consent?		Prior reports available?	

PROJECT INFORMATION

Estimated project cost		Estimated project start date	
Estimated annual savings ($)		Est. power generated (kW)	
Desired term			

Please provide a brief summary of the project and attach any relevant analysis if already performed:

SAMPLE LENDER APPLICATION

Contact Information

Contact Name: ______________________________

Contact Email: ______________________________

Contact Phone Number: ______________________________

Contact Office Address: ______________________________

____

Lender Information:

Name of Lending Institution: ______________________________

Lender Type: ______________________________

- [ ] FDIC Registered Institution such as a bank, savings bank, savings and loan association and federal or state credit union
- [ ] Insurance Company authorized to do business in one or more states
- [ ] Registered Investment Company, registered Business Development Company or a SBA small business investment company
- [ ] Publicly Traded Entity
- [ ] Private Entity or affiliate(s) that:
    - Has a minimum net worth of $3-$5 million
    - Has at least 3 years' experience in business or industrial lending or commercial real estate lending (including multifamily), or has a lending officer that has at least 3 years' experience in business or industrial lending/commercial real estate lending
    - Can provide independent certification as to availability of funds

Have you Financed PACE Transactions in the Past? ______Yes ______No

If "Yes", in which states were these transactions? (List)

____

____

____

____

Are you registered to conduct business in _______ County?	_______Yes ______ No
What is your preferred financing range (check all that apply)?	_____ <250k _____ $250-$500k _____ $500k-$1MM _____ > $1 MM

Sample Contractor Application

Applicant Information:

Company Name: ______________________________

Company Website: ______________________________

Company Address: ______________________________

Contact Name: ______________________________

Contact Title: ______________________________

Contact Email: ______________________________

Contact Phone Number: ______________________________

Service Offerings:

Categories of Services:

- [ ] Energy Benchmarking
- [ ] Energy Audits
- [ ] Energy Modeling and Analysis
- [ ] Measurement & Verification
- [ ] Project Commissioning
- [ ] Retro-Commissioning
- [ ] Project Design
- [ ] Project Management
- [ ] Project Development
- [ ] Project Installation

EE/RE Service Offerings:

- [ ] HVAC Systems Related
- [ ] Building Envelope Related
- [ ] Boilers, Chillers, Furnaces, etc.
- [ ] Energy Management Systems
- [ ] Solar PV
- [ ] Renewables General
- [ ] Energy Efficiency General
- [ ] Lighting
- [ ] Roofing
- [ ] Other, Please Describe

Additional Questions:

How Many Years has Your Company Been in Business? ______________________________

In Which State(s) Are Your Licensed? ______________________________

____

____

List all Relevant Certifications or Designations Held by Yourself or Someone Within Your Organization: ______________________________

____

____

Applicable License Name(s): ______________________________

Applicable License Number(s): ______________________________

Applicable License Expiration Date(s): ______________________________