



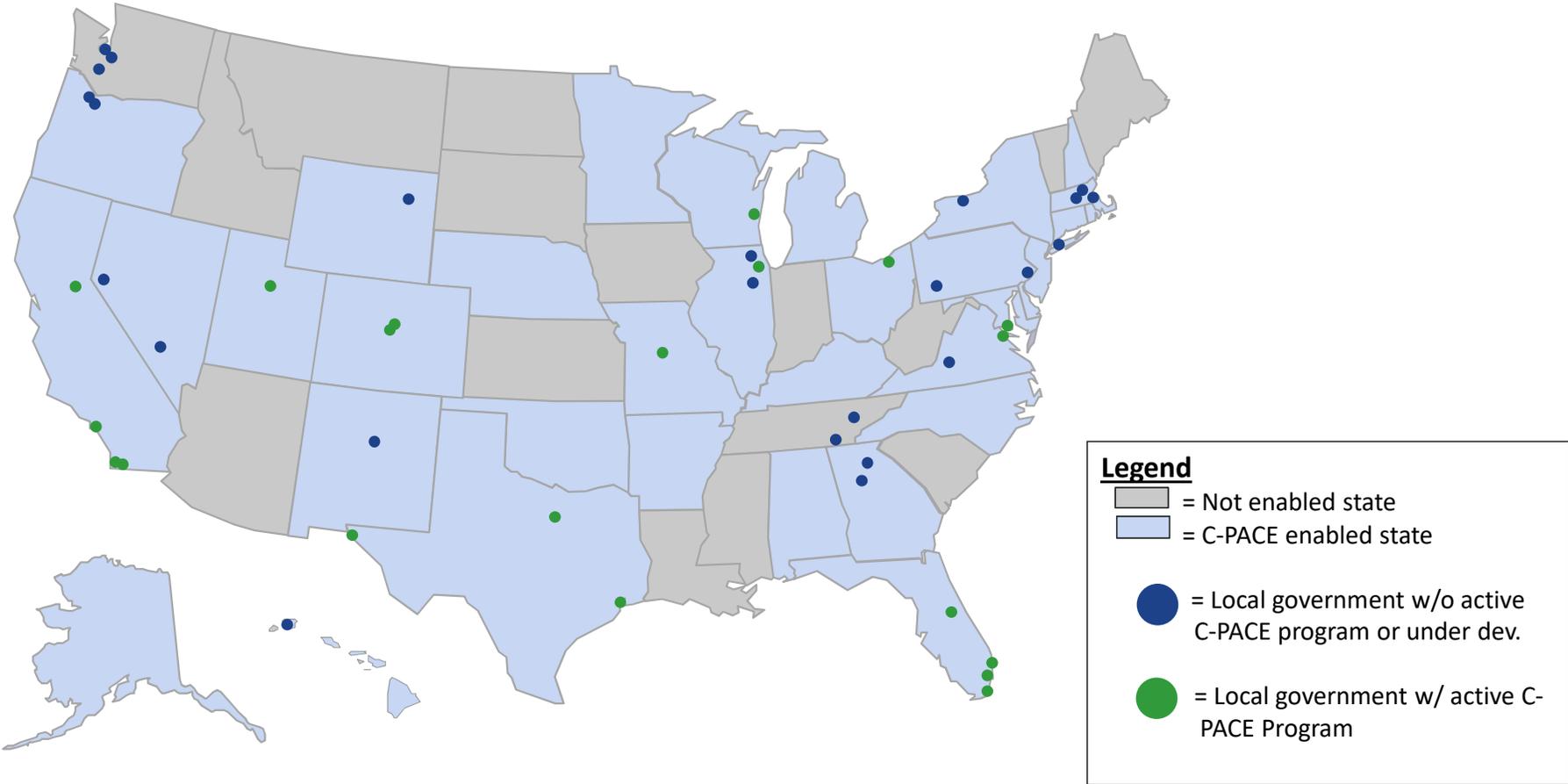
Building from the Ground Up: Lessons in Commercial PACE Leadership

July 11, 2019
4:00-5:30p ET



Closing the Gap: Projected Growth of New C-PACE Programs

89% of Better Buildings Challenge Local Governments are in states with C-PACE-enabling legislation; **Only 45%** have active C-PACE programs.



* Based on C-PACE state enabling legislation from [PACENation](http://PACENation.com)

DOE Resources

- [Lessons in Commercial PACE Leadership: The Path from Legislation to Launch](#)
 - *Fast track program set-up; learn from early C-PACE adopters.*
- [Commercial PACE Working Group](#)
 - *NEW: Commercial PACE Working Group: Year in Review (2018-2019)*
 - *NEW: Issue Brief – Commercial PACE Financing and the Special Assessment Process: Understanding Roles and Managing Risks for Local Governments*
- [Better Buildings Financing Navigator 2.0](#)
 - *Connect with Financial Allies including C-PACE service providers.*
- [Toolkit: Commercial PACE Financing for Resiliency](#)
 - *Featuring a fact sheet, recorded webinars, and case studies.*



Commercial PACE Financing and the Special Assessment Process: Understanding Roles and Managing Risks for Local Governments
Greg Lovertis and Lisa Schwartz | Lawrence Berkeley National Laboratory

Executive
This issue brief to participate (C-PACE) program whether to go specific barriers C-PACE program foreclosure or risks local government labor commitment including the

Key findings
To date, default delinquency
■ Since 2008 of about 1.1 payments); other credit local sources

WHAT IS COMMERCIAL PROPERTY ASSESSED CLEAN ENERGY?
Commercial property-assessed clean energy (CPACE) is a financing structure in which building owners borrow money for energy efficiency, renewable energy, or other projects and make repayments via an assessment on their property tax bill. The financing arrangement then remains with the property even if it is sold, facilitating long-term investments in building performance. CPACE may be funded by private investors or government programs, but it is only available in states with enabling legislation and active programs.

Speakers



Rich Dooley, Community Energy Coordinator, Arlington County



Jessa Coleman, Programs Manager, PACE Financial Servicing



Keith Derrington, Chief Operating Officer, Recurrent Innovative Solutions

Rich Dooley

Arlington County

U.S. DEPARTMENT OF
ENERGY



Arlington Commercial Property Assessed Clean Energy (C-PACE) Program

Better Buildings, Better Plants Summit

July 11, 2019

Today's Presentation Objectives

- **Why and how Arlington County launched a Commercial Property Assessed Clean Energy (C-PACE) financing program**
- **Stakeholders involved to create & launch the Arlington C-PACE program**
- **Metrics for success**
- **Program updates**



Why C-PACE? It Benefits Jurisdictions

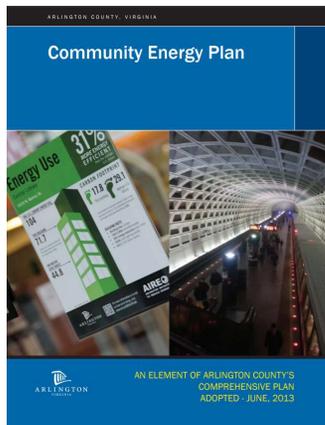
- Economic development
- Local job creation
- Energy savings
- CO₂ emissions reduction

Worked together with:

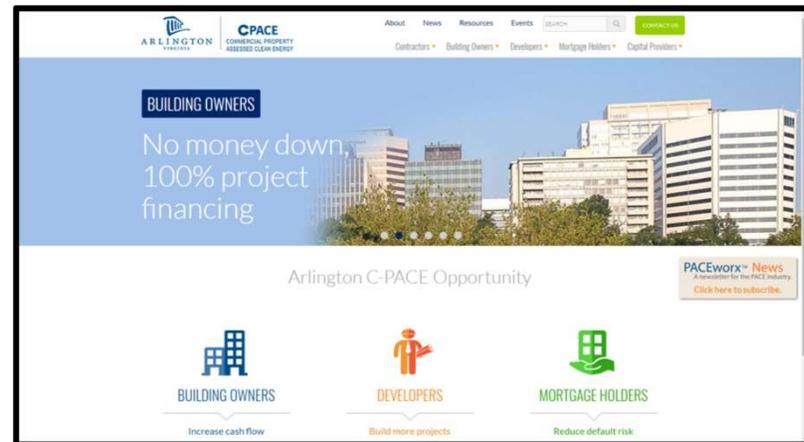
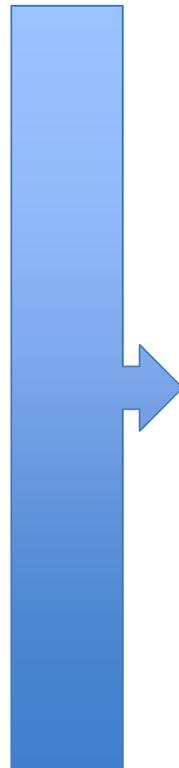
- Multiple County departments: Planning, Economic Development, Real Estate Assessments, Treasurer, Attorneys
- External stakeholders: Developers, property owners, brokers



Why C-PACE? Natural Fit for CEP Implementation



Buildings **Renewable Energy**



Arlington is implementing its award-winning Community Energy Plan



Arlington C-PACE Milestones

■ **Jul. 2015:** VA enacted updated C-PACE enabling legislation

■ **Jan. 2017:** SRS selected via RFP as Program Administrator

Process designed to enable other VA jurisdictions to create their own PACE program quickly and efficiently

■ **Nov. 2017:** Arlington County Board adopted C-PACE ordinance

■ **Jan. 2018:** Arlington launched VA's 1st C-PACE program

Website: www.arlington-pace.us



Public-Private Partnership

- **Rich Dooley, Arlington Initiative to Rethink Energy (AIRE)**
 - Arlington C-PACE Program Manager
 - Community Energy Coordinator
- **Scott Dicke, Sustainable Real Estate Solutions' Director of VA C-PACE Programs**
 - Arlington C-PACE Program Administrator
 - Provides outreach, education, and infrastructure to support the start-up and sustainable growth of new C-PACE programs across the Commonwealth
 - Collaborates with building owners, developers, contractors, mortgage holders and capital providers to meet stakeholder underwriting needs
 - SRS partners with state and local governments nationwide to administer C-PACE programs in: CA, CO, CT, OH, OR, RI, UT, VA



C-PACE for Existing Buildings – Arlington

- Building owners choose to install eligible energy efficiency, renewable energy, and/or water efficiency improvements
- 100% financing (no out-of-pocket expense, soft or hard costs) by private capital provider
- Costs are spread over periods up to 20+ years
- Repayment via a “PACE special assessment” billed and collected by private capital provider
- The repayment obligation can transfer to the new owner upon sale
- Goal: Energy savings \$\$ > the PACE payments; creating cash flow positive projects
- Target market is Class B & C buildings, Class A also eligible



C-PACE for Existing Buildings – Example

C-PACE Comparison to Other Funding Options

Sample \$1 million multi-measure project with ~6.25 year simple payback

	Cash	Bank Loan	C-PACE
Project Financing			
Down payment	(\$1,000,000)	(\$150,000)	\$0
Loan amount	\$0	\$850,000	\$1,000,000
Loan term	N/A	5 years	25 years
Interest rate	N/A	5.00%	6.25%
Annual Cash Flow			
Annual payment	N/A	\$196,329	\$80,095
Annual energy savings	\$160,000	\$160,000	\$160,000
Net annual cash flow	\$160,000	(\$36,329)	\$79,905
5-year Financial Performance			
5-year net cash flow	(\$200,000)	(\$331,643)	\$399,527
5-year NPV @ 6%	(\$326,022)	(\$303,029)	\$336,591
5-year IRR	(7.0%)	N/A	N/A

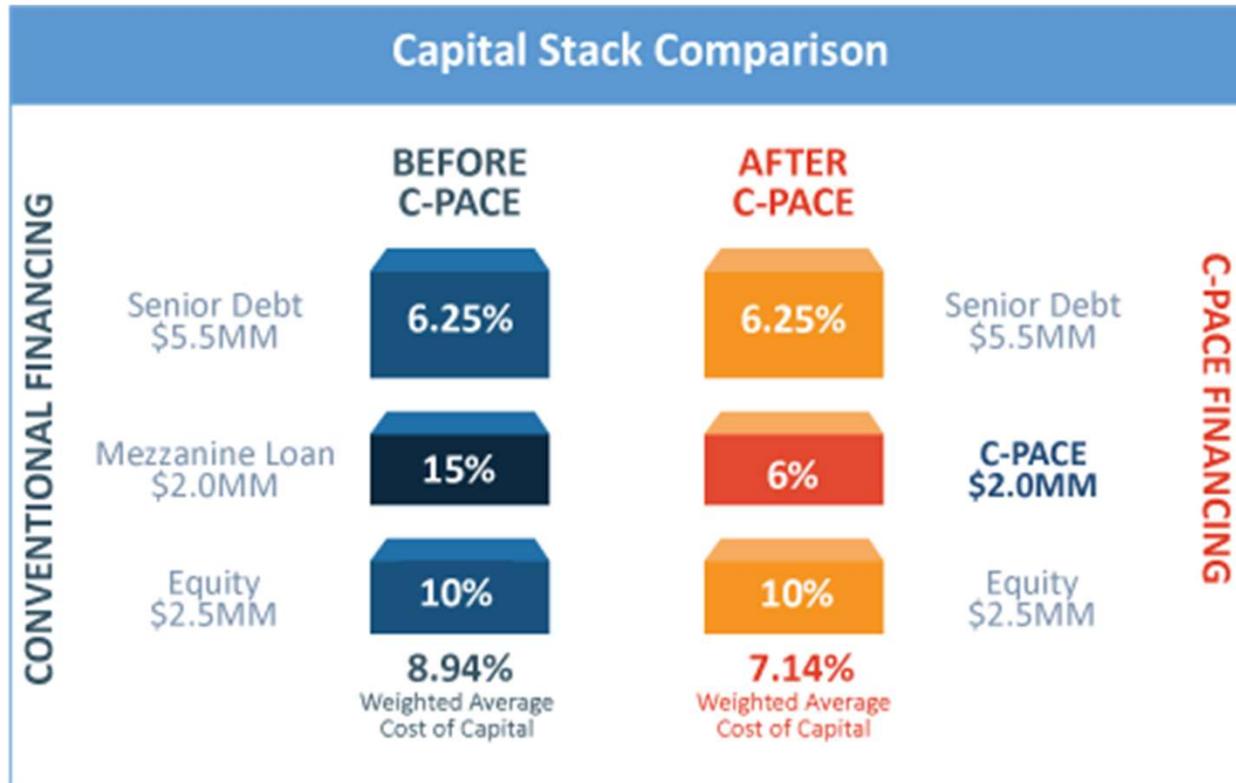
Assumes no utility cost escalation and no performance degradation to simplify case study

C-PACE for New Construction – Arlington

- **Developers can tap C-PACE financing to:**
 - Construct more efficient buildings, i.e. lower operating costs
 - Increase tenant comfort; accelerate occupancy
 - Include improvements often “value engineered” out of a project
- **Potential benefits to developer:**
 - Finance 15-20% of “Total Eligible Construction Cost”
 - Reduce owner equity contribution or high-cost mezzanine loan amounts
 - No personal guarantees required
 - No impact on working capital or developer’s credit



C-PACE for New Construction: Lower WACC



C-PACE for New Construction: Eligible Amount

- **C-PACE eligible finance amount determination process:**
 1. Determine Total Eligible Construction Cost (TECC)*
 2. Demonstrate “As Designed” building energy performance exceeds state code
 - a. Option 1: Model “Code Compliance” building energy performance at **VECC 2015 / IECC 2015 / ASHRAE 90.1-2013** baseline and model as-designed energy performance to exceed baseline by **5% or more**
 - b. Option 2: Model “Code Compliance” building energy performance at **VECC 2012 / IECC 2012 / ASHRAE 90.1-2010** baseline and model as-designed energy performance to exceed baseline by **15% or more**
 3. Multiply 20% x TECC to determine Maximum Eligible Amount

* Total Eligible Construction Costs include core building costs, excl. land acquisition, paving, etc. (typically 80%-90% of total project costs).

What's Eligible?

■ Eligible Property Types (C&I)

- Office
- Retail
- Hotel
- Multifamily (5+ units)
- Industrial
- Healthcare
- Non-profit

■ Non-Eligible Property Type

- Condominiums

■ Eligible Improvements (examples)

- Automated building controls
- Boilers, chillers & furnaces
- Building envelope (insulation, windows)
- Combined heat & power (CHP)
- High efficiency lighting
- Hot water heating systems
- HVAC upgrades, VRF installs, controls
- Solar PV systems, incl. roof upgrades
- Pumps, motors, drives

Arlington C-PACE Structure

- **Arlington is not paying SRS for its program administration work, nor is Arlington providing the capital for C-PACE projects**
- **Program administrator (PA) provides stakeholder tools & support services to facilitate successful transactions**
 - PA fee applied to closed transactions, aligning all interests
- **Open market access to private capital**
 - No public funds are used to finance projects
 - Property owner options:
 - Choose a preferred capital provider upfront, or
 - Program Administrator can review pre-approved projects with pre-qualified capital providers to determine funding interest
 - Repayment via a new “PACE special assessment” billed and collected by capital provider
- **VA law requires owners to receive mortgage holder consent**
 - PACE special assessment is a priority lien, akin to sewer assessment



Arlington Program Administrator Support

- **Contractor education & ongoing support services**
 - Project economic analysis tools to optimize for C-PACE financing
- **Building Owner/Developer support services**
 - Independent project technical review
 - Mortgage holder consent
 - Sourcing “best-fit” financing
- **Capital provider support services**
 - Project financial underwriting & closing support



C-PACE in the Mid-Atlantic

■ VA, MD, DC

- Mid-Atlantic PACE Alliance (MAPA) is a regional partnership of government, non-profit, and private sector entities. Goal is to accelerate the implementation of Commercial PACE programs and projects in the Mid-Atlantic region.

■ Statewide

- MAPA encourages local jurisdictions in VA to consider regional coordination
- Consistency in program requirements across VA jurisdictions is key to scaling C-PACE
- Arlington C-PACE legal and program documents available for review
- SRS engaging jurisdictions across the Commonwealth



Program Metrics

- # of C-PACE projects closed
- % of projects that close versus projects that reach initial application stage
- Average project size
- The value C-PACE projects added to buildings
- Funds disbursed for C-PACE projects
- Energy consumption reduction (actual vs. projected)
- Effect on carbon inventory
- Project costs
- # of days between a project's Initial application and the project being recorded on the lien
- # of training workshops held for contractors and capital providers
- Number of contractors trained and certified

Questions?

- **Rich Dooley**, Community Energy Coordinator, Arlington Initiative to Rethink Energy (AIRE)
 - rdooley@arlingtonva.us or 703-228-3532
- **Scott Dicke**, Sustainable Real Estate Solutions' Director of VA C-PACE Programs
 - SDicke@PACEworx.com or 703-344-6432
- **C-PACE Program website:** <https://arlington-pace.us/>



Jessa Coleman

PACE Financial Servicing

U.S. DEPARTMENT OF
ENERGY



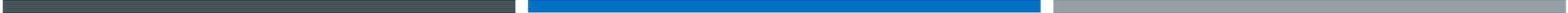
PACE FINANCIAL SERVICING

PROGRAM ADMINISTRATION & THE ROLE OF THE PROGRAM ADMINISTRATOR



AGENDA

1. Overview of PFS
2. The Role of the Program Administrator
3. PACE Program Structure
4. Challenges & Best Practices
5. Working with Program Stakeholders
6. The Project Cycle



OVERVIEW OF PFS

NATIONALLY RECOGNIZED, LOCALLY DRIVEN



HISTORY OF PFS

- PFS is a women-owned and operated business
- Senior team members were the primary architects of the award-winning Connecticut C-PACE Program, as well as the MD-PACE program and the Montgomery County C-PACE program
- PFS' senior team members have also acted as advisors to numerous state administrators in the crafting of C-PACE legislation and program design, including Pennsylvania, Colorado, Rhode Island, Texas, Delaware, New Jersey, South Carolina, and other states
- The Connecticut C-PACE program was the first program of its kind to achieve major scale: from its launch in 2013 to 2015, nearly half of the roughly \$200 million C-PACE transactions closed nationally during that time period were originated and administered in Connecticut under the direct leadership of the senior PFS team
- Several pioneering elements of the Connecticut Program – statewide administration, mandatory lender consent, standardized documents, and low-cost fees – have since been employed across a dozen states that have facilitated over \$300M in investment

Our Mission

To support governments in the creation of open, standardized, low-cost C-PACE markets designed to drive private sector C-PACE investment and scale

Core Value

To structure each C-PACE program in a manner that scales energy efficiency and clean energy while fulfilling the unique needs of each jurisdiction

ACCOMPLISHMENTS OF PFS

- Recognized as thought leaders in the industry on how to craft C-PACE programs that attract private capital at scale while minimizing administrative burden on local governments and cost for property owners
- PFS leadership team members are highly sought-after C-PACE experts that have been featured speakers at conferences hosted by PACENation and the Department of Energy, the Mid-Atlantic PACE Alliance, and more
- We are core contributors to the Mid-Atlantic PACE Alliance toolkit, a set of standard C-PACE program administration practices that were developed by a group of industry stakeholders in the Mid-Atlantic through the award of a U.S. Department of Energy grant in 2015
- In the Mid-Atlantic region, PFS designed and implemented the MD-PACE including all local legislation, contracts, program guidelines, and other services, in partnership with the Maryland Clean Energy Center
- PFS helped designed the newly launched Virginia PACE Program (VA-PACE) in partnership with the Virginia PACE Authority
- PFS was tapped to research PA tax and assessment law and procedures for local governments to assist on the governance structure and operating agreements between local governments and the Pennsylvania Sustainable Energy Fund
- PFS won a contract to advise the Alaska Energy Authority on statewide administration, financing options, and credit worthiness thresholds for C-PACE programs
- PFS supports the Virginia PACE Authority's efforts in administering the Loudon County, VA C-PACE Program



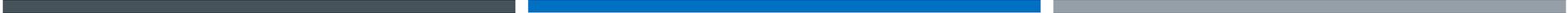
THE ROLE OF THE PROGRAM ADMINISTRATOR

DESIGN, IMPLEMENT, ADMINISTER

ACTIVITIES OF PROGRAM ADMINISTRATION



Design	Implementation	Administration
<ul style="list-style-type: none"> • Determine flow of funds for CPACE/role of tax collector • Identify and confirm CPACE enforcement remedies • Design standard ordinance • Design standard admin agreement for tax collectors • Design servicing agreement for lenders • Design recorded CPACE document • Design other financing docs as need • Design project technical standards • Legal/FA aid on tax/assessment law – basis for PACE operation 	<ul style="list-style-type: none"> • Outreach to local governments to bring into program • Passage of local PACE ordinances • Onboard/register lenders • Onboard/register contractors • Create program guidelines • Create program website 	<ul style="list-style-type: none"> • Regular marketing and outreach activities • Application review • Assessment creation • PACE collection and servicing (as applicable) • Continual marketing and outreach • Channel partner development • Upkeep of website • Upkeep of marketing collateral • Revision of program documents, as needed



PACE PROGRAM STRUCTURE

GETTING TO OPERATIONS DAY ONE



PROGRAM BUILD

Government Model



Single Statewide Option



State & Local Option



Strategic State Support



Limited or No State Support

Administrator Model



Non-Profit



Private



Green Bank (State)



Managed Services

MARKET DESIGN



Keep it Low Cost & Simple

Establish clear, concise guidelines and transparent processes without high fees



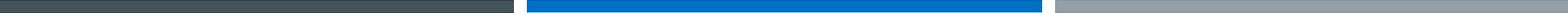
Keep it Open

Catalyze innovation and promote growth through open-market administration



Keep it Standard

Enable scale by implementing one set of rules for capital providers and contractors



CHALLENGES & BEST PRACTICES

PITFALLS TO AVOID AND RECOMMENDATIONS TO IMPLEMENT

CHALLENGES IDENTIFIED



Problems with Capital:

- Difficult to find lenders who will do small projects / how can small projects be streamlined to reduce cost of doing business?
- Deal flow is slow and sporadic
- Lengthy project closings make it difficult to gauge pipeline



Problems with Follow Through:

- Nothing keeps project owner from eliminating PACE from capital stack at anytime, up-to/including 11th hour
- Some potential customers only use PACE to leverage better terms with another lender (usually their regular bank)



Problems with People:

- Difficult to find contractors, technical advisors, etc. to do project scoping across a large region
- Complexity – difficult to train channel partners on how to sell PACE (+ lack of budget to educate)
- Talent - difficult to find people who understand engineering and finance and also have people skills

BEST PRACTICES



Local Relationships are Key

- Focus on building local government relationships along with state level associations
- Local influence can be detrimental to a program's build if the local interests do not understand PACE



Build or partner with an organization that has gravitas with local government



Don't Reinvent the Wheel

- Bring in PACE experts in for strategic and candid discussions on implementation
- "You don't know what you don't know," which can result in wasted resources



Use existing legal documents, knowledge, tap experts

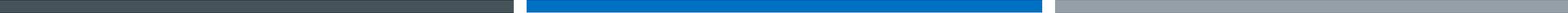


Non-Profits are Best Suited for Administration, but State Support is a Game Changer

- Non-profits have the local trust that other types of administrators do not have
- Non-profits are best suited to represent the public interest of PACE
- Yet, if PACE is more state government supported, there is a floor you can't fall beneath: if state government provided some gap stop, what could that look like?



Make it a non-profit or similarly trustworthy organization

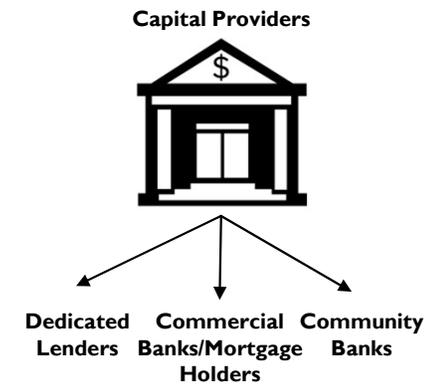
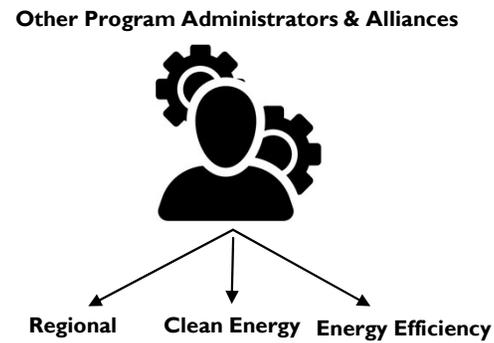
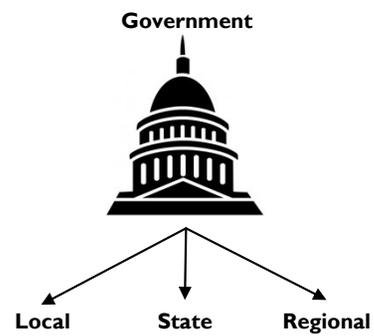


WORKING WITH PROGRAM STAKEHOLDERS

THE RELATIONSHIP BETWEEN PROGRAM ADMINISTRATORS AND OTHER STAKEHOLDERS



ECOSYSTEM OF COMMERCIAL REAL ESTATE DEVELOPMENT



MARKET INFLUENCERS

Economic Development Coordinators



- EDCs are a valuable source of information into the business environment in each county
- They know which companies are good PACE applicants and are a neutral arbiter that can recommend PACE from a position of authority
- It is imperative that they feel comfortable explaining PACE.

Contractors



- Contractors have an interest in promoting PACE because for them, PACE could be the funding that allows a property owner to move forward on hiring the contractor to execute a project
- There is a symbiotic relationship between PACE and contractors.

Capital Providers



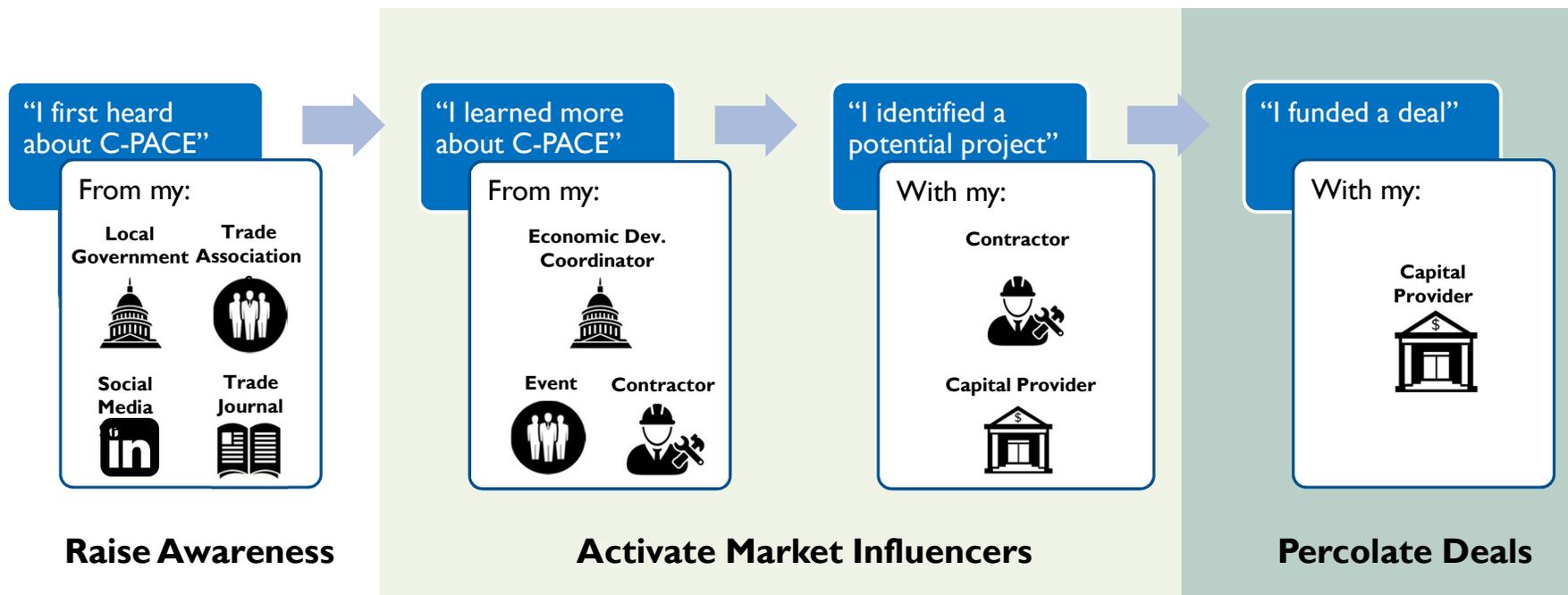
- Capital providers often originate their own projects; it is in their best interest as an additional source of revenue and they should be experts in the ecosystem

Utilities



- Utilities have a broad geographic base and are deeply tuned into the energy needs of their clients
- They are a potential channel partner for PACE
- There are several key considerations to making this relationship work, such as exploring a way to incentivize them to promote PACE

PROPERTY OWNER DECISION MAKING PROCESS



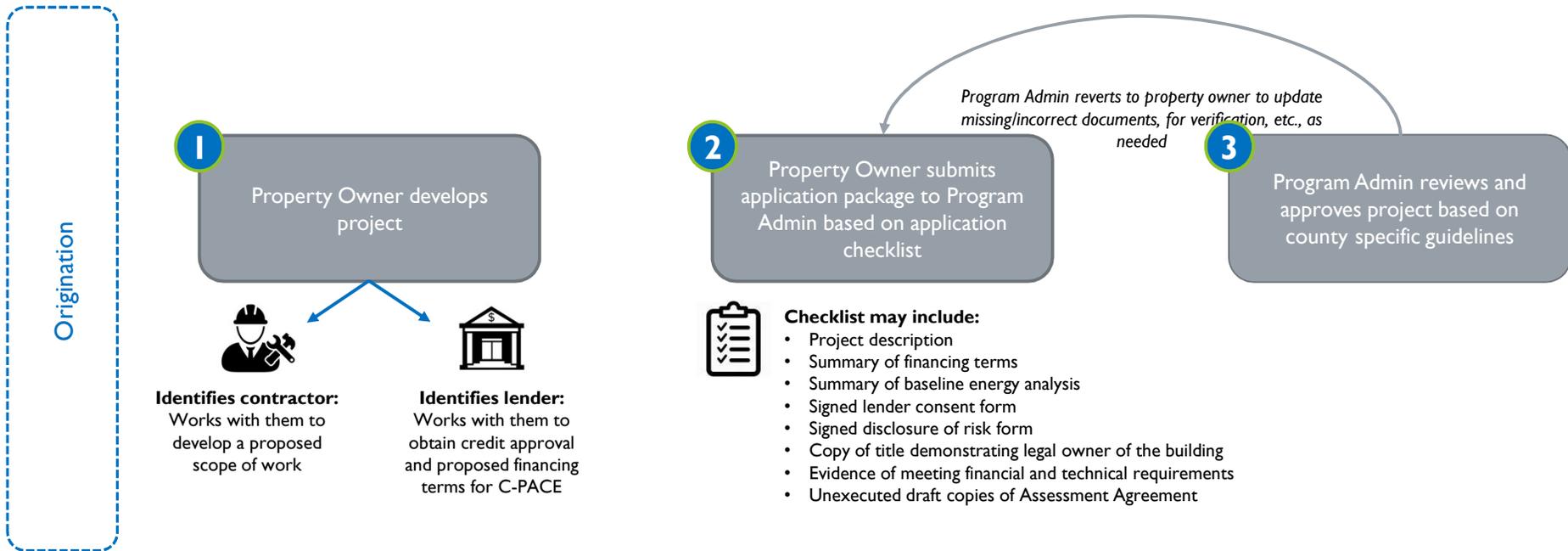


THE PROJECT CYCLE

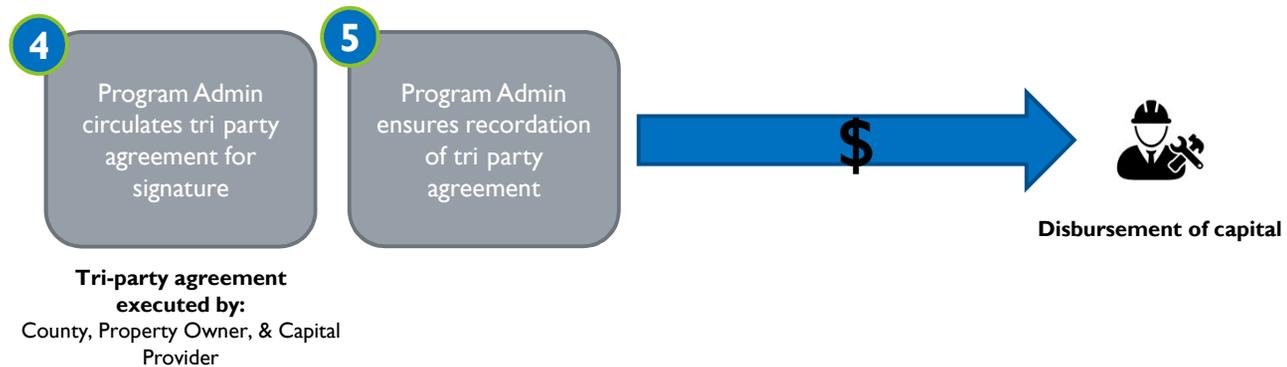
FROM SUBMISSION TO COLLECTION



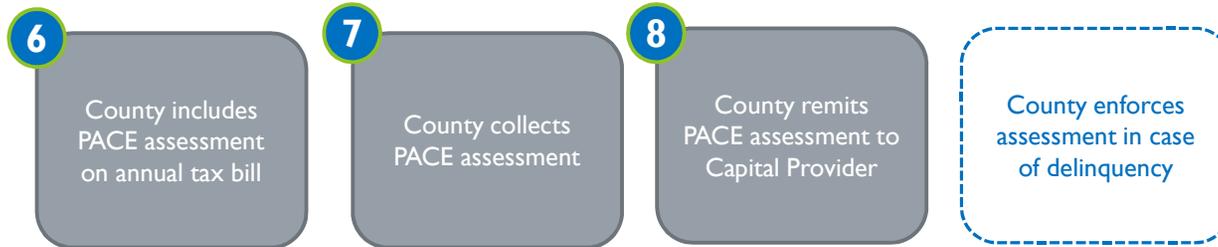
PROJECT DEVELOPMENT

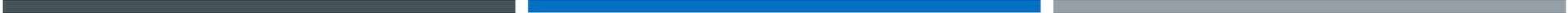


THE ROLE OF THE TRI-PARTY AGREEMENT



COLLECTION & REMITTANCE





THANK YOU!



Keith Derrington

Recurrent Innovation Solutions

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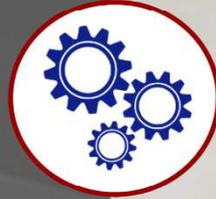
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DOE Better Buildings Summit 2019



Building System Specialists

We develop and implement strategies and solutions to improve building owner's financial position through stronger cash flows, higher building value, and reduced operating expense.



Concept through Commissioning

We are a team of engineers, technicians and installers with deep expertise in building systems, finance and construction. This allows us to work alongside our customers from project inception through commissioning and provide long term maintenance of systems.



Building a Track Record of Success

Through our design build service model, we have built a strong legacy of successful and on going relationships with our customers. From Fortune 500 companies to local real estate developers and non profits, our customers depend on our expertise to guide them through a complex energy landscape.



recurrent
INNOVATIVE SOLUTIONS

**Design
Build
Operate**

Life without C-PACE

Old paradigm: run systems until they fail due to limited operating budgets.

- Incentivizes quick fixes to limit outages
- Quick ship or inventory systems win out over energy efficiency
- No opportunity to optimize systems
- More costly for the owner in most cases in both first cost and future operating costs

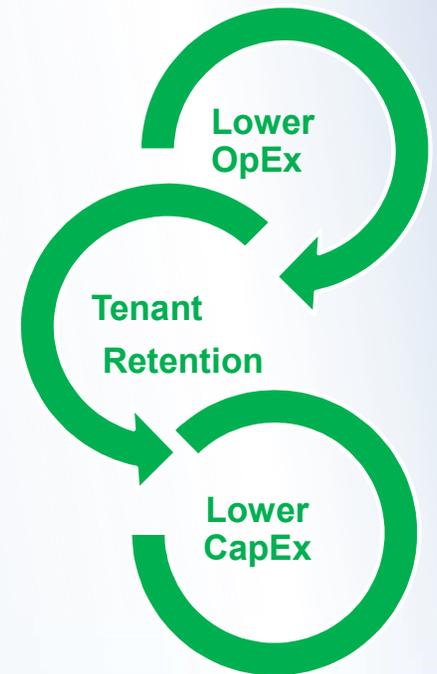
The Power of C-PACE

C-PACE transforms this paradigm for building owners and contractors:

- Aligns the interests of landlords and tenants
- Removes the capital barrier for project sales
- Provides finance structure to enable deep retrofits
- Leads to the development of larger well planned comprehensive projects
- Allows for the opportunity to leverage grants and utility incentives.

C-PACE Project Objectives

- Reduce operating expenses
 - Lower utility costs
 - Lower maintenance and repair costs
 - Onsite power production
- Improve tenant comfort
 - Better temperature control
 - Improved system reliability
- Leverage funding
 - 100% Financing
 - Maryland Energy Administration grant
 - Utility rebates
 - C-PACE financing
 - Federal Tax Credits (ITC, 179d)
 - Local Tax Credits (Green Building Property Tax Credit)



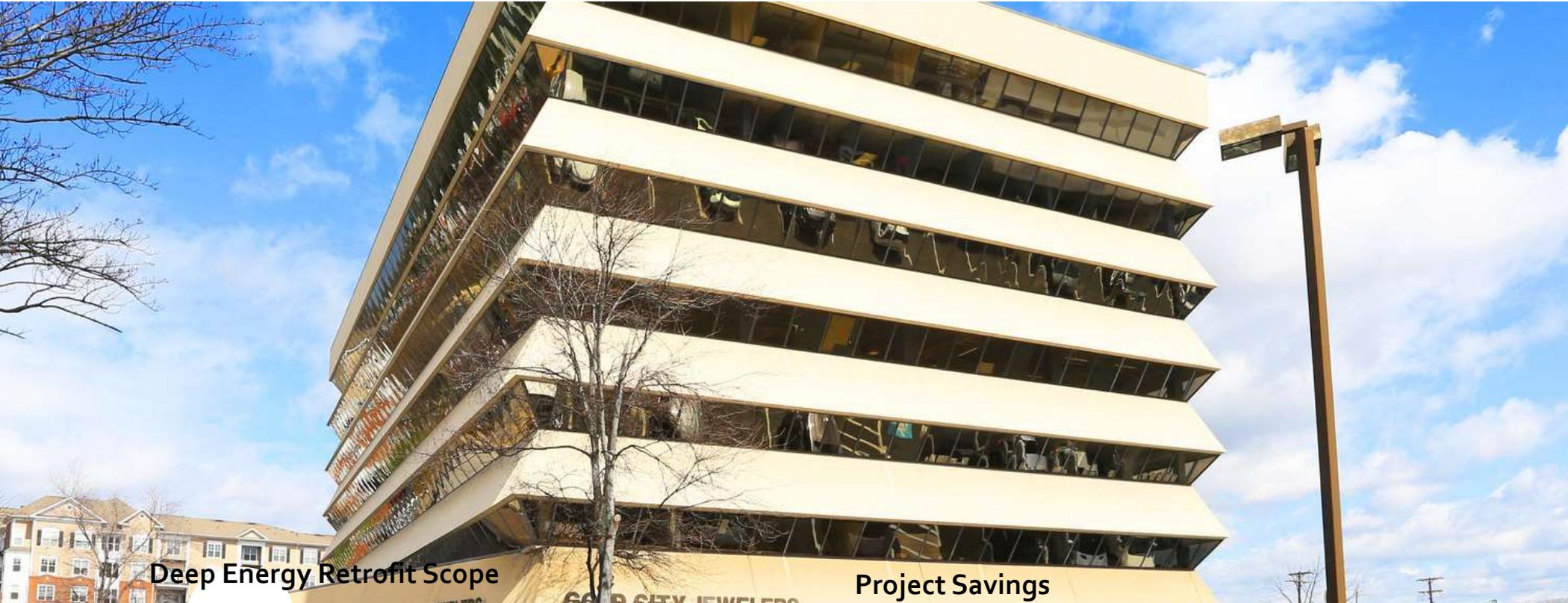
451 Hungerford Drive (Exchange Place) is 100,000+ ft² office building located at Rockville Town Square. The tenants are a combination of office and retail.

Location: Rockville, MD
Year Built: 1980
Size (ft²): 101,021
Sector: Commercial
Electric Bill: \$200,000+/yr
Recurrent's Role: Design-Build
Energy Assessment
C-PACE Financing

Project Goals:

1. Solve tenant comfort complaints
2. Reposition property in market
3. Reduce operating costs
4. Increase market value





Deep Energy Retrofit Scope

- Building Automation
- LED Lighting
- New Pumping Systems
- Domestic Water Retrofits
- 75 KW PV Solar System
- Meet LEED Silver EB

Project Savings



Electricity (51%)

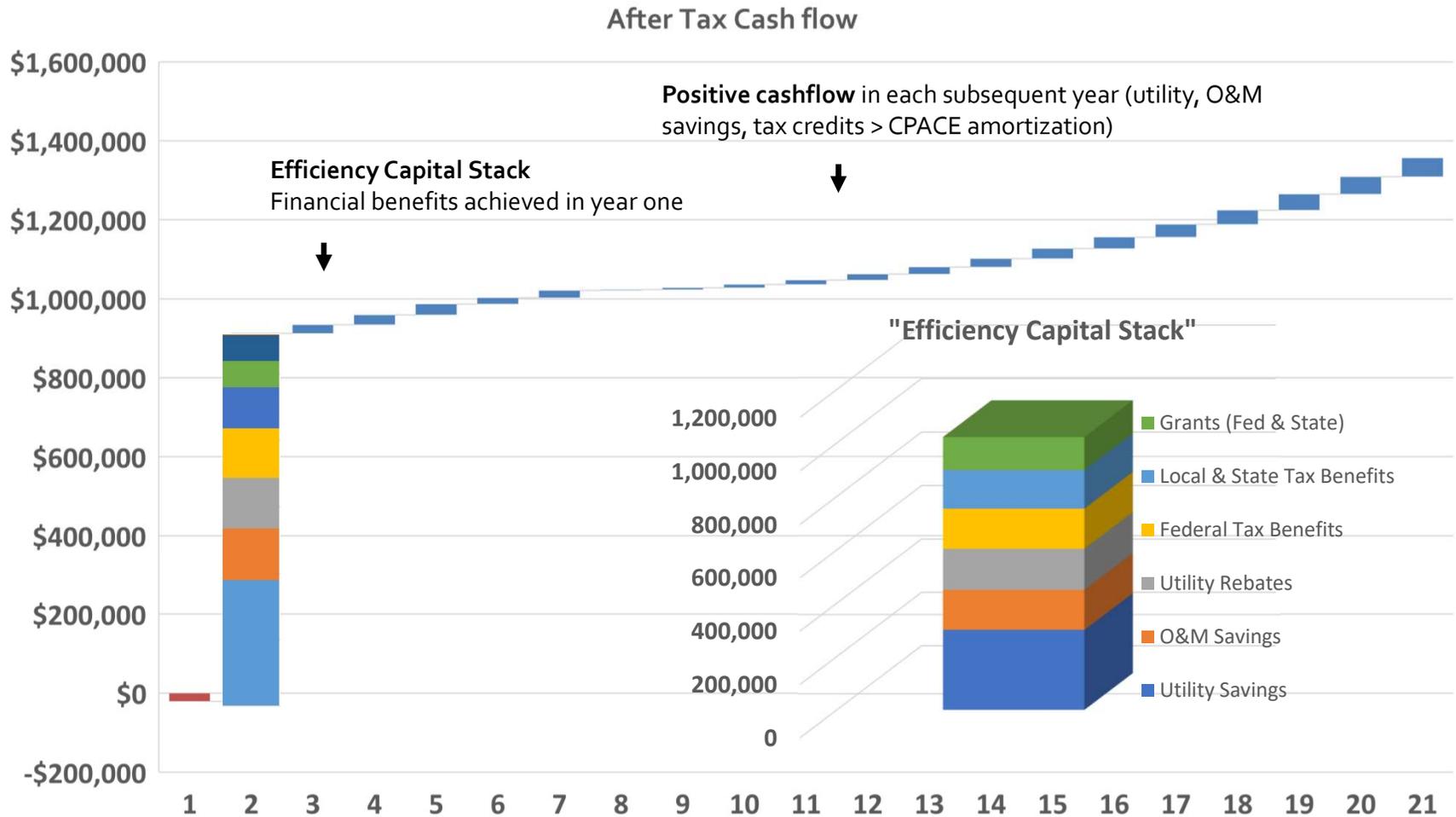


Natural Gas (11%)



Water (47%)

The Leverage Impact of C-PACE





Maryland University of Integrative Health is one of the leading graduate academic institutions for integrative health in the nation. The main academic building includes classroom, clinical and academic offices. Over 20,000 clinical treatments and consultations are performed at the facility each year



Location:	Laurel, MD
Year Built:	2002
Size (ft²):	33,000
Sector:	Education/Medical
Electric Bill:	\$162,000/yr
Recurrent's Role:	Energy Assessment Design-Build C-PACE Financial Structuring

Nonprofit (University)

Net Zero C-PACE



Building Issues

Energy Use

- 157 Kbtu/yr Energy Utilization Intensity (EUI)
- Energy use increasing

HVAC System

- Rooftop VAV with electric reheat
- Inefficient and failing to maintain comfort
- Frequency of outages increasing
- High repair costs

Building Control System

- Losing functionality due to failed components

Lighting

- Inefficient fluorescent fixtures
- Inefficient HID exterior lighting

Solutions

Energy Use

- 73% reduction in electric energy use
- 100% reduction in natural gas use
- Go Net Zero

HVAC System

- Variable Refrigerant Heat Recovery Heat Pump System
- Dedicated Outdoor Air System (DOAS) with Heat Recovery

Building Control System

- New Building Automation System
- CO₂ and VOC monitoring and control
- Electric submetering system

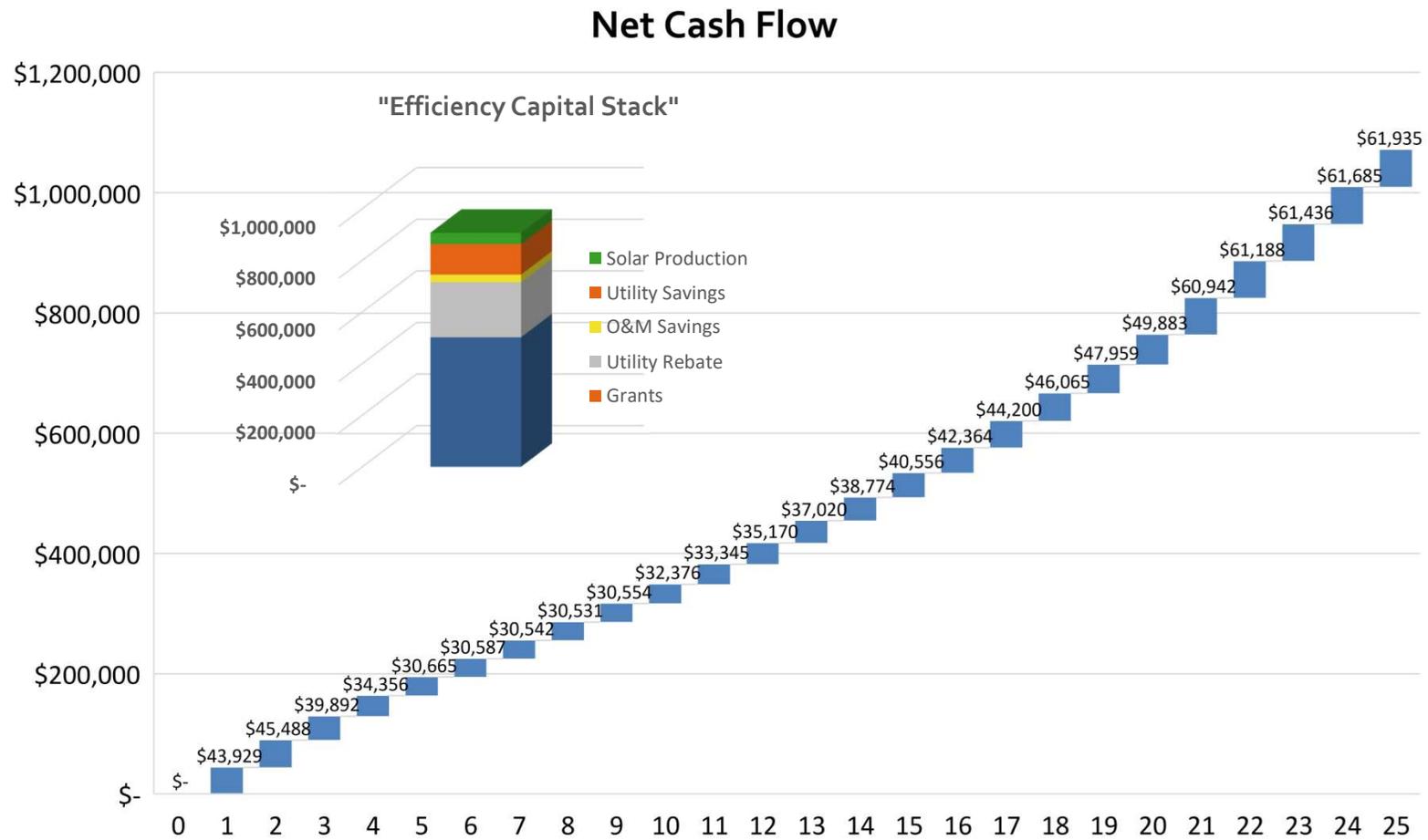
Lighting

- LED lighting, daylight dimming and occupancy controls

Solar

- 326 KW Carport Canopy with 6 EV Chargers

The Leverage Impact of C-PACE



Thank you

Keith Derrington, Chief Executive Officer
kderrington@recurrent.net



Discussion

Thank You

Speakers

Rich Dooley; E: Rdooley@arlingtonva.us

Jessa Coleman; E: jcoleman@paceservicing.com

Keith Derrington; E: kderrington@recurrent.net

Moderator

Sean Williamson; E: Sean.Williamson@ee.doe.gov

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