



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Commercial PACE: Updates from the Field & New Resources for Design and Implementation

March 19th, 2013

DOE's Technical Assistance Program



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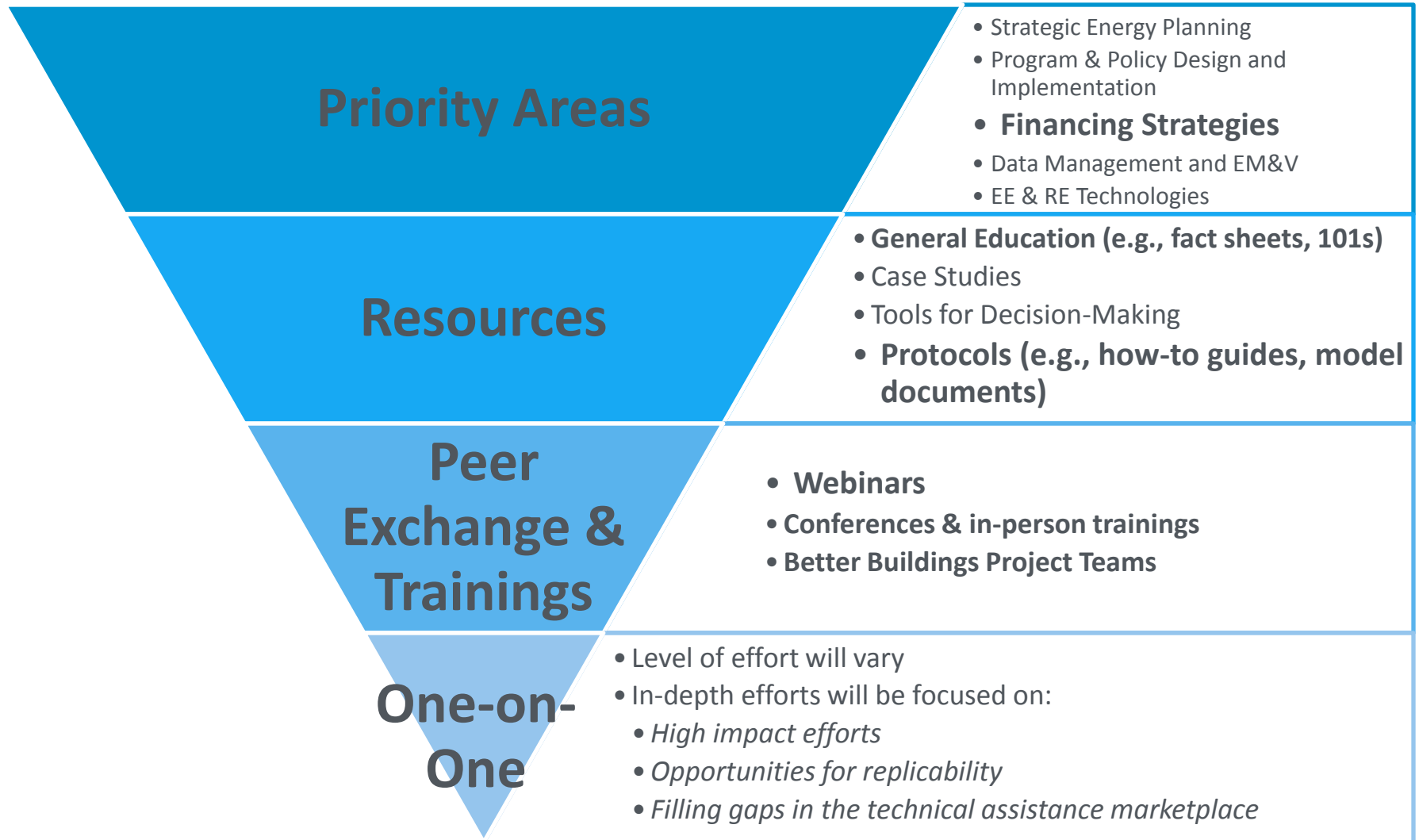
March 18th, 2013

DOE's Technical Assistance Program

Agenda

- Welcome & Introduction of Technical Assistance Program: Molly Lunn, U.S. DOE
- Commercial PACE Update & New Resources: Cisco DeVries, Renewable Funding
- Experiences from the Field:
 - Rich Chien, City & County of San Francisco
 - Genevieve Sherman, State of Connecticut
 - Jeremy Kalin, Eutectics Consulting/Minnesota PACE
- Q&A and Next Steps

DOE's Technical Assistance Program



Priority Area: Financing Strategies

- **Resources**

- *Commercial PACE materials* live now on DOE Solution Center
- Also featured: *DOE's Clean Energy Finance Guide* & other finance resources
- Improved Solution Center portal for finance resources live later this year

- **Peer exchange & trainings**

- One-time national peer exchange – follow up session next week, *Local Trends in Clean Energy Finance, Wednesday, March 27th*
- Long-term small group peer exchange – join the *Better Buildings Project Team for Financing Strategies, kicking off in May*
- Additional national webinars, including – *Guidelines for Developing a State ESPC Program (March 26th)* and *Financing Energy Upgrades for K-12 School Districts (April 11th)*

- Apply for **one-on-one assistance** and **peer matching**

Tap into Commercial PACE Resources

Visit our Commercial PACE pages on the TAP *Solution Center*

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Clean Energy Finance Guide for Residential & Commercial Building Improvements

Clean Energy Finance Guide

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Structures & Strategies

Property-Assessed Clean Energy Financing

Advantages & Disadvantages

Steps to Launch Program

Resources & Guidelines

Small Business Financing

Commercial Property-Assessed Clean Energy Financing

The property-assessed clean energy (PACE) model is a new, innovative mechanism for financing energy efficiency and renewable energy improvements on private property—commercial or residential. PACE programs allow local governments, when authorized by state law, to fund energy improvements on commercial and residential properties.

PACE financing for clean energy projects is generally based on an existing structure known as a “land-secured financing district,” often referred to as an assessment district, a local improvement district, or other similar phrase. In a typical assessment district, the local government issues bonds to fund projects with a public purpose such as streetlights, sewer systems, or underground utility lines. The recent extension of this financing model to energy efficiency and renewable energy allows a property owner to implement improvements without a large up-front cash payment.

The property owners that voluntarily choose to participate in a PACE program repay their improvement costs over a set time period—typically 10 to 20 years—through property assessments, which are secured by the property itself and paid as an addition to the owners’ property tax bills. Nonpayment generally results in the same set of repercussions as the failure to pay any other portion of a property tax bill.

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

Residential PACE programs have recently received considerable attention and regulatory scrutiny. Recent Federal Housing Finance Agency guidance letters have caused many residential PACE programs to suspend operations, but they do not directly affect commercial PACE programs.

Learn more about:

- [Advantages and Disadvantages of PACE Financing](#)
- [Overview of Steps to Launch a Commercial PACE Program](#)
- [General PACE Resources and Guidelines](#)

You can download the guide’s entire chapter on [Commercial Property-Assessed Clean Energy Financing](#) and [its attachments](#) .

http://www4.eere.energy.gov/wip/solutioncenter/finance_guide/content/commercial_property_assessed_clean_energy_financing

U.S. Department of Energy Commercial PACE Update and Materials

Cisco DeVries | March 19, 2013

RENEWABLE  FUNDING



How PACE Works

City or county creates type of land-secured financing district or similar legal mechanism



Property owners voluntarily sign up for financing and install energy projects



The lender provides funds to property owner to pay for energy project



Property owner repays bond through property tax bill (up to 20 years)

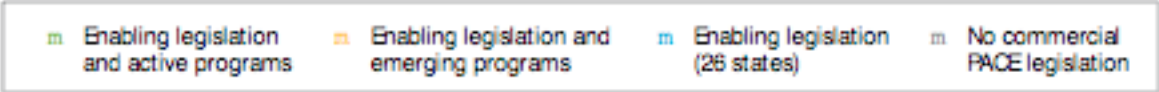


Regulatory Issues with Residential PACE

- **July 2010: FHFA guidance letter**
 - PACE creates “safety and soundness concerns.” Authorize punishment of PACE properties and communities:
 - **Require larger down payments** for all new mortgages issued in communities that offer PACE financing.
 - **Require mortgage holder consent** prior to homeowners receiving PACE financing.
 - **Tighten underwriting requirements** to make it harder for buyers to qualify for new mortgages in entire communities that offer PACE financing.
- **June 2012: FHFA Proposed Rule**
 - Court case resulted in requirement for FHFA to undertake rulemaking
 - Proposed rule would continue prohibition on PACE and directs Fannie Mae and Freddie Mac to take ‘immediate’ actions to protect first lien, including requiring immediate repayment of mortgage.
- **September 2013: Deadline for Final Rule**
 - FHFA indicates they are reviewing record regarding the value of energy improvements to homes.

The Commercial PACE Opportunity

- Commercial properties not regulated by the FHFA
- PACE helps solve fundamental challenges in the market
 - Long term financing at reasonable rates makes deep retrofits cash flow positive immediately
 - Ability to transfer obligation at ownership change allows for projects even when property sale is contemplated
 - Many leases will allow pass through to tenants for cost of improvements when attached to property tax bill
 - PACE lien provides improves likelihood of repayment, allowing for lower cost financing and access to larger pool of properties



Existing Commercial PACE Programs

- Ann Arbor PACE Program
- Boulder County ClimateSmart Loan Program (Suspended)
- CaliforniaFIRST
- Clean Energy Sacramento
- Connecticut C-PACE
- Edina Emerald Energy Program
- California PACE
- Florida Green Energy Works
- Green Corridor, Miami-Dade
- Green Energy DC
- GreenFinanceSF
- Lean & Green Michigan
- Los Angeles County
- mPower Placer
- Palm Dessert Energy Independence Program
- Western Riverside Council of Governments
- Sonoma County Energy Independence Program
- Toledo PACE Program
- Yucaipa Energy Independence Program

Popular Commercial PACE Financing Structures

1. **Warehouse model.** Government program sponsor or private capital provider uses a credit line (or internal capital) to fund projects, followed by 'takeout financing'.
2. **Pooled Bond model.** Program aggregates project applications and then issues a bond to fund all projects at the same time.
3. **Owner-arranged model.** Program provides access to a roster of approved finance entities which compete for opportunity to finance projects.

Questions Facing Local and State Governments

- **Residential.** Do you establish a program for residential financing now or wait for FHFA rulemaking to complete?
- **Alone or Together.** Do you establish a stand-alone program or participate in a larger statewide or regional effort?
- **Capital Source.** Do you provide a single source of capital established by the program or allow an open market for capital providers?
- **Lender Engagement.** Do you require the affirmative consent or acknowledgement from existing mortgage lenders?
- **Demand.** How to you best go about generating demand for the program?

DOE Provided Commercial PACE Materials

- Clean Energy Financing Guide Chapter 12: Commercial PACE Financing (Updated)
- Application Template Package (Updated)
- Marketing Template Package (New)

Clean Energy Financing Guide, Chapter 12

The Financing Guide chapter describes how to:

1. Review and address issues
2. Establish a supporting framework
3. Choose a capital sourcing approach
4. Determine if and how to deploy credit enhancement
5. Choose eligible property types
6. Assemble eligible project measures
7. Choose energy audit requirements
8. Choose program eligibility criteria
9. Leverage existing utility rebate/incentive programs
10. Plan quality assurance/quality control
11. Design application processing procedures
12. Specify contractor requirements
13. Market and launch the program

Template Application Documents

- Program Handbook
- Eligible Measures List
- Application Form
- Lender Acknowledgment Form

Template Marketing Documents

- Customizable Press Release
- Program Overview
- Program FAQ
- Program Brochure
- Social Media Toolkit



RENEWABLE  FUNDING

Cisco DeVries | cisco@renewfund.com | (510) 451-7900

GreenFinanceSF Case Study

Prologis Pier 1, San Francisco, CA

DOE Commercial PACE Webinar
March 19, 2013



Rich Chien, City and County of San Francisco

richard.chien@sfgov.org

GreenFinanceSF Basics



- Mello-Roos Community Facilities District Act 1982 (“special tax bonds”).
- Open Market C-PACE: City & County of San Francisco acts as conduit issuer.
- ARRA grants for debt service reserve fund (DSRF)
 - Helps cover payments to project investor in the case of late payments or default by property owner (optional)
 - Might also be used for interest rate buydown, and approved administrative costs.
- Program design with Renewable Funding, and extensive information sharing with Los Angeles Commercial PACE program and Clinton Climate Initiative/C40.
- Extensive outreach with property owners/managers, energy service providers, contractors, capital providers, mortgage lenders, and active and emerging PACE programs around the country.

GreenFinanceSF Features



- Program Flexibility
 - Multiple capital providers can compete to finance a wide range of buildings and projects
 - Owner-occupied or multitenant office; retail; industrial/warehouse; multifamily w/5+ units; nonprofit-owned
 - Energy efficiency, on-site renewable energy, water conservation
 - Financing terms can be customized for each transaction (interest rate and other terms)
 - Publicly-owned property are eligible
 - Leasehold interests can serve as security
 - Can leverage other financing tools (e.g. QECBs)
 - Could eventually offer to new construction projects

Building Background



Pier 1, San Francisco, CA

- 151,000 square feet of commercial class A office space on San Francisco's historic waterfront.
- In 1999, AMB Property Corporation entered into development agreement to renovate the original Pier 1 structure in a public-private partnership with the Port of SF, and operate the building under a 50 year master lease.
- In 2011 AMB merged with Prologis, becoming the largest owner and operator of commercial and industrial property in the world.
- 5 subtenants, including Port of San Francisco administrative offices.
- Electrical service provided by San Francisco Public Utilities Commission.



Project Background



- **Milestones**

- GreenFinanceSF commercial program launched Nov. 2011
- Prologis engaged Johnson Controls Inc. (JCI) in early 2012 to provide turnkey design and implementation of energy efficiency and solar upgrades for Pier 1
- Bond issued October 15, 2012
- Construction to be completed Q2/2013

- **Owner's Motivations**

- Reduce energy costs and consumption at Pier 1
- Update aging systems, resolve comfort problems, reduce maintenance costs, improve occupant experience
- Develop DOE Better Buildings case study

- **Other Notable Points**

- First C-PACE project in the City and County of San Francisco
- First “open market” C-PACE project to leverage QECB
- First privately-owned net metered solar project in SFPUC territory
- First privately financed C-PACE project to incorporate efficiency *and* renewables.



Project Scope



Retrocommissioning

- Optimize Siemens EMS to initiate and shut down systems as needed
- Optimize chilled water setpoints
- Install VFD drives on pumps; shut down pumps when not needed
- Optimize HW and CHW supply/return temperatures
- Repair air-side economizers

Lighting upgrade

- Upgrade fixtures, ballasts and bulbs with energy efficient products
- Enhance light quality and control
- Install photocells and occupancy sensors to control lights
- Install LED lighting in selected areas (ex: truss-mounted flood lights)
- Reduce maintenance by installing longer-life equipment

Solar

- Install 200kW rooftop solar array
- Solar modules installed parallel to roof surface (not visible from street)
- String inverter design (no ground space or building closets required)
- Mechanically fastened to roof – no ballast
- Modules placed in roof areas consistent with structural analysis

Related work

- Assessment, engineering and verification work
- Roof replacement under areas designated for solar array
- Match roof life with solar array life expectancy for ~40% of roof area
- 4-ply BUR with asphalt cap sheet that meets T24 requirements

Financing Details



- PACE bond: \$1,400,000
- Term: 20 years (longest useful life = solar PV)
- Bond purchaser: Clean Fund
- Issue date: October 15, 2012
- Project designed to align energy savings with payments
- Prologis master leasehold as security under Mello-Roos framework
- Program applied for and received a QECB allocation to enhance financing

PACE bond features	
Repayment term	20 yrs
PACE bond market interest rate	6.93%
QECB	3.07%
Net interest rate	3.86%

Qualified Energy Conservation Bonds (QECB's) are a form of tax credit bond that can be issued to finance government initiatives designed to reduce greenhouse gas emissions. Proceeds may be used to finance, in part, capital expenditures incurred for purposes of implementing "green community programs" (including the use of loans, grants, or other repayment mechanisms to implement such programs, such as GreenFinanceSF) under Sections 54A and 54D of the Internal Revenue Code. Subsidies can be tax credit payments in lieu of interest to bondholders, or as cash payments to issuers.

Many rules apply, incl. issuing and spending deadlines; Davis Bacon prevailing wage compliance; and costs of issuance limits.

For the 2012 updated guidance from IRS and the U.S. Treasury, see: <http://financing.lbl.gov/reports/qecb-guidance.pdf>.

Projected Performance



- **Projected energy savings**

- 390,486 kWh

- 17,580 therms

- **Projected solar energy production**

- 200kW: 245,520 kWh

	Electricity (kWh)	Gas (therms)	Annual Savings
Baseline use (2011)	1,858,862	55,590	-
Lighting	252,386	0	\$35,772
Retrocommissioning	138,100	17,580	\$30,091
Solar (200kW)	245,520	0	\$32,140
Total	636,006	17,580	\$98,003
Percent Savings	34%	32%	24%

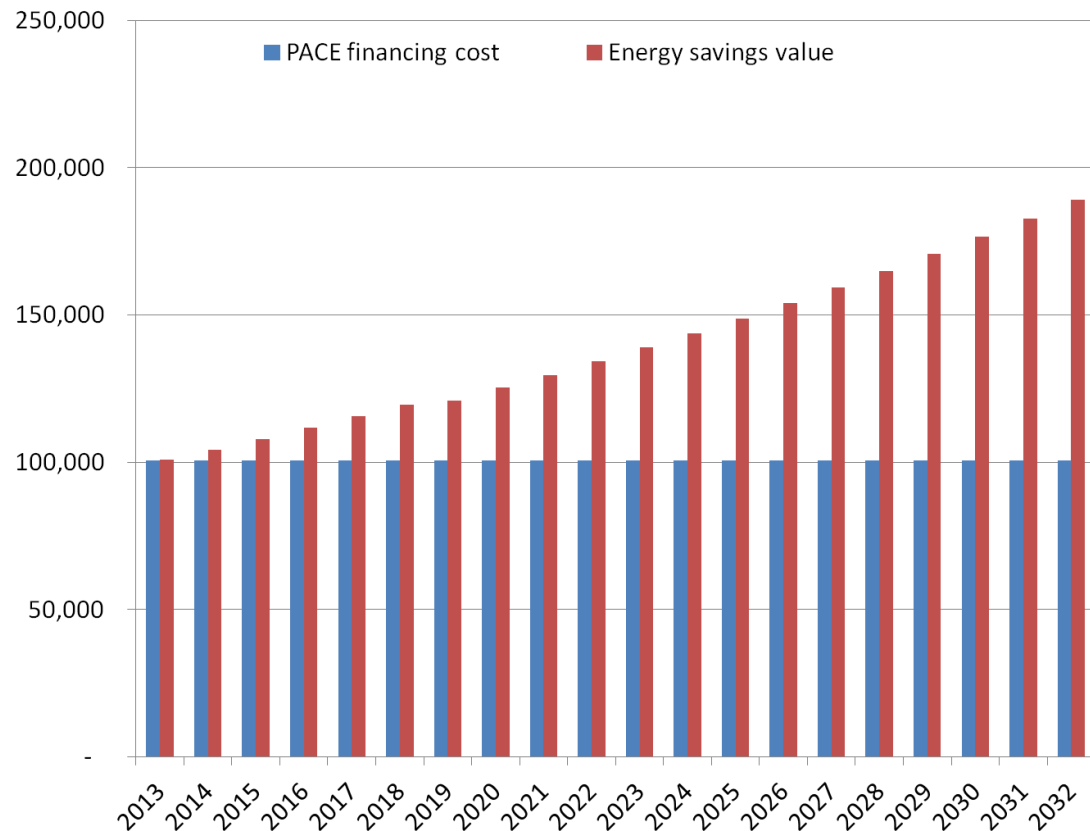
80% of energy cost savings attributed to the energy efficiency projects (lighting & HVAC)

Annual Costs and Savings



- Avoided cost increases in value as grid energy prices rise, projected at 3.5% per year
- Debt service schedule adjusted to track with energy price escalation
- NPV of energy savings: \$350,000

	Recurring Year 1	
Annual savings	\$98,000	(value increases with inflation)
Annual PACE bond assessment	~\$101,000	(adjusts periodically through bond term)



Cost Allocation



- Johnson Controls solution considered the whole building regardless of tenant
- Measures affect the whole building; i.e. improvements to central HVAC system benefit all tenant spaces
- PACE financing costs will be allocated pro rata to all subtenants including Port of San Francisco based on building square footage per existing leases.

	Total for Pier 1	Bay 1 Prologis	Bay 1A Prologis	Bay 2 Subtenant #1	Bay 3 Subtenant #2	Bay 3A Subtenant #3	Bay 4 Subtenant #4	Bay 5 Subtenant #5
Square footage	151,606	40,163	11,096	18,685	13,159	14,343	52,304	1,856
Percentage	100%	26.5%	7.3%	12.3%	8.7%	9.5%	34.5%	1.2%

Demand Reduction of Lighting + Solar

2011 baseline

Projected energy savings



Projected energy use w/ 200kW solar

Peak demand reduction ± 190 kW

A 200kW solar array produces brief energy surpluses, primarily on weekends when building is not actively used. Value of these surpluses est.: \$400/yr

7/1/2011

7/15/2011

7/31/2011

Energy surpluses (net-metered to SFPUC, negligible)

Team



- Owner: Prologis
- General Contractor: Johnson Controls Inc.
- Bond purchaser: Clean Fund
- City and County of San Francisco
 - SF Environment
 - Controller's Office of Public Finance
 - Port of San Francisco
 - San Francisco Public Utilities Commission
- Bond Counsel: Jones Hall
- Financial Advisor: Stifel
- Special Tax Administrator: Goodwin Consulting Group
- Fiscal Agent: US Bank
- Technical Consultant: kW Engineering
- Program Design: Renewable Funding



Getting Across the Finish Line



- Owner's "EE Champion" is key to move things forward
- City program staff can play an important role:
 - Outreach and education, marketing
 - Provide credibility to all participants
 - Help resolve "localized" policy issues (e.g. Port/Prologis relationship; SFPUC net metering of excess solar electricity; interdepartmental operations)
- Program flexibility (open market, Mello-Roos) helped this specific deal
- At this early stage of program implementation, consider using other available tools which can help transaction.
 - QECB introduced some complexity, but offered multiple benefits (lower borrowing costs, set a hard deadline to close the transaction)
- Teamwork needed!
- It's all about examples, case studies, and success stories...



Questions?

Rich Chien
richard.chien@sfgov.org
(415) 355-3761



Empowering you to make
smart energy choices

Clean Energy Finance and Investment Authority

C-PACE:

A financing tool for building owners

Energy Challenge in Connecticut



High Cost

CT has THE highest cost for electricity in the "lower 48"



Old, Energy Inefficient Building Stock

CT has some of the oldest and most energy inefficient building stock



Need for "Cleaner / Cheaper" Energy Sources

Programs that will diversify our energy mix into renewable/clean power



"More Reliable" Grid

5 major storms in 2 years with unacceptable outages

Who is CEFIA?



Help ensure Connecticut's energy security and community prosperity by realizing its environmental and economic opportunities through clean energy finance and investments.



Support the Governor's and legislature's energy strategy to achieve cleaner, cheaper and more reliable sources of energy while creating jobs and supporting local economic development

Connecticut's “Green Bank”



...transitioning programs away from government-funded grants, rebates, and other subsidies, and towards deploying private capital

...CEFIA was established in 2011 to develop programs that will leverage private sector capital to create long-term, sustainable financing for energy efficiency and clean energy to support residential, commercial, and industrial sector implementation of energy efficiency and clean energy measures.



Property Assessed Clean Energy

- An innovative financing structure that enables commercial, industrial, and multi-family property owners to access financing for qualified energy upgrades and repay through a benefit assessment on their property tax.

**Private capital
provides 100%
upfront, low-cost,
long-term funding**

**Repayment through
property taxes**

**A senior PACE lien is
put on the property
and stays regardless
of ownership**

Connecticut Special Session

Public Act 12-2 (June 2012)

- Commercial, industrial & multi-family property
- Requires the consent of the existing mortgage lender
- Requires $SIR > 1$; permanently affixed
- Enables municipalities to opt-in
- Enables CEFIA to administer a statewide program

CEFIA's Role in C-PACE

Design Program

- Publish Guidelines November 2012
- Onboard Municipalities
- Website launched (www.c-pace.com)

Administer Program

- Technical Underwriting
- Marketing & Outreach
- Work with Existing Mortgage Lenders

Attract Private Capital

- Qualify Capital Providers
- Offer Credit Enhancement tools (as needed)
- Provide capital (as needed)
- Develop warehouse / bonding authority (Q2 2013)



CEFIA's Role in C-PACE

Design Program

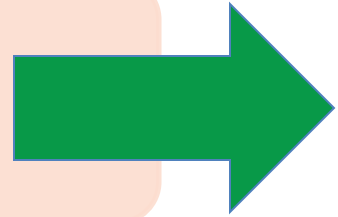
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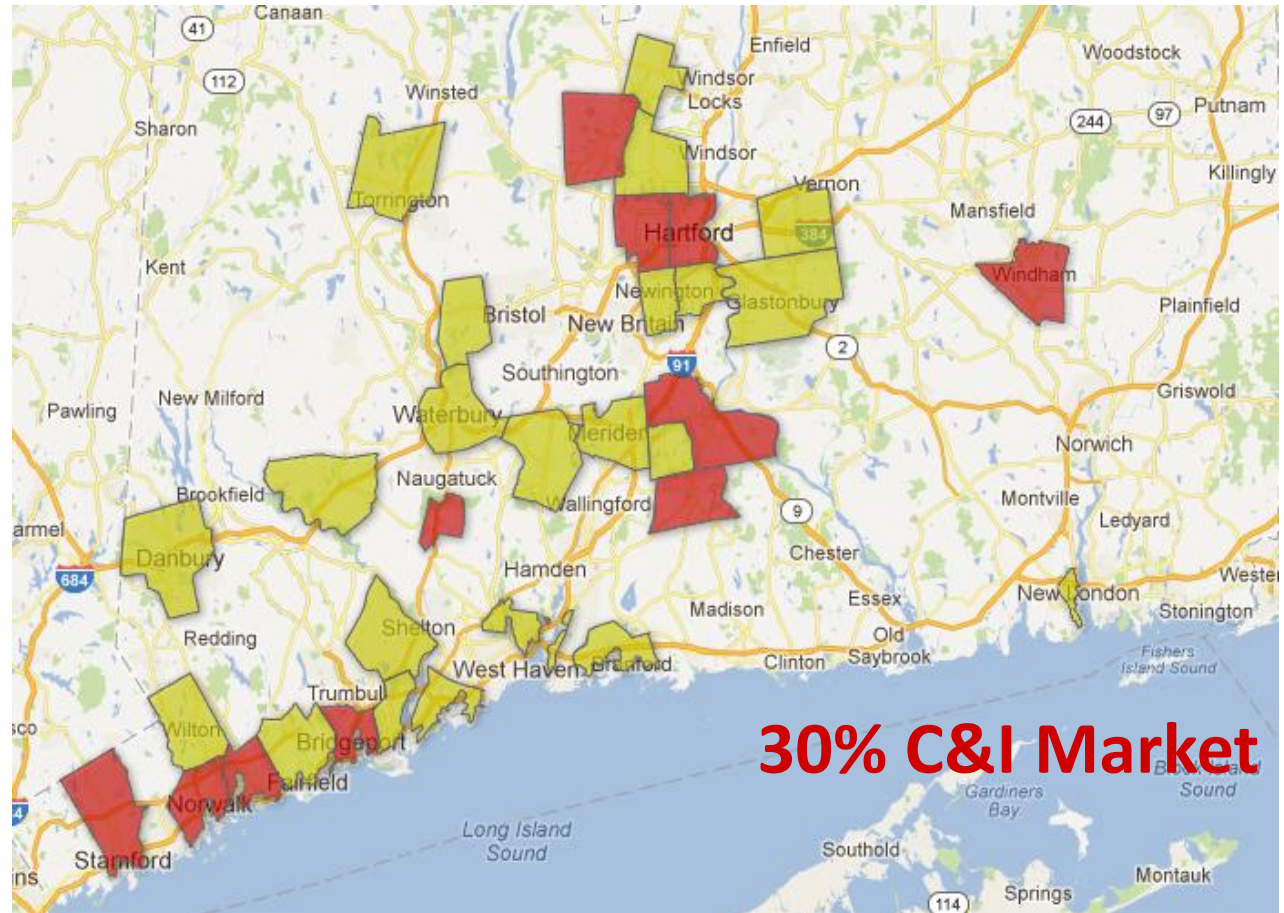
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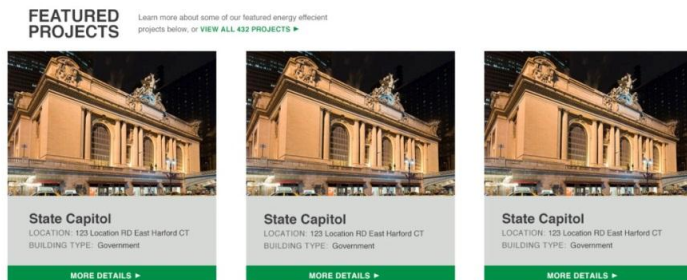


Municipalities Opted into C-PACE

- Beacon Falls
- Bridgeport
- Durham
- Hartford
- Middletown
- Norwalk
- Old Saybrook
- Simsbury
- Southbury
- Stamford
- Stratford
- West Hartford
- Westport
- Wilton
- Windham



Customers Apply Into C-PACE



step two | building information

Address of Property Date of construction

Is a parking area associated with the building?
If yes, provide description (above/interior ground, covered)
☐ Yes ☐ No Gross square footage
(not including any parking area)

Who occupies this property? ☐ Owner ☐ Tenant

Date and description of last major renovation.
(defined as a renovation that either involved expansion or reduction of the building's gross floor area by 10% or more, or that impacted total building energy use by more than 10%)

What type fuel use? natural gas, oil, steam, fuel provider (s) info:

Electricity provider

Do you currently pay property taxes on building? ☐ Yes ☐ No Are payments current? ☐ Yes ☐ No

Is there a current mortgage on the property?
☐ Yes ☐ No If yes, note the mortgage holder(s) Upload recent annual financial statement of property

Property assessed value Date of last assessment Estimated current value

Amount of debt
(current outstanding loan balance, including a breakout of the amount of the 1st or 2nd)

Are mortgage payments current? ☐ Yes ☐ No

Do you have clear title to the property with no encumbrances? ☐ Yes ☐ No

Are there any outstanding tax liens or notices of default? ☐ Yes ☐ No

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Contractor Registration

1. TERMS AND CONDITIONS

CEFIA will comply with Conn. Gen. Stat. Sections 4a-60 and 4a-60^a and CEFIA is subject to the requirements outlined in Sections 16-245N of the Conn. Gen. Stat. EC has read the Terms and Conditions of this RFQ and agrees to comply with these state contracting obligations. Further, CEFIA is a public agency for purposes of the Connecticut Freedom of Information Act (FOIA). This RFQ and any files or documents associated with the RFQ will be considered a public record and will be subject to disclosure under FOIA except for information falling within one of the exemptions in Conn. Gen. Stat. Sections § 1-210(b) and § 16-245n(d). EC has read the requirements in this RFQ concerning FOIA and confidential material. The full RFQ can be found [here](#).

☐ Yes. I agree that I have read and understand all Terms and Conditions of this RFQ.

2. COMPANY INFORMATION

* Company Name



feedback

Contractor & Customer Matchmaking



An
Energize CT
Program

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Filter By:

LOCATION

[x clear location](#)

Ex. Hartford CT

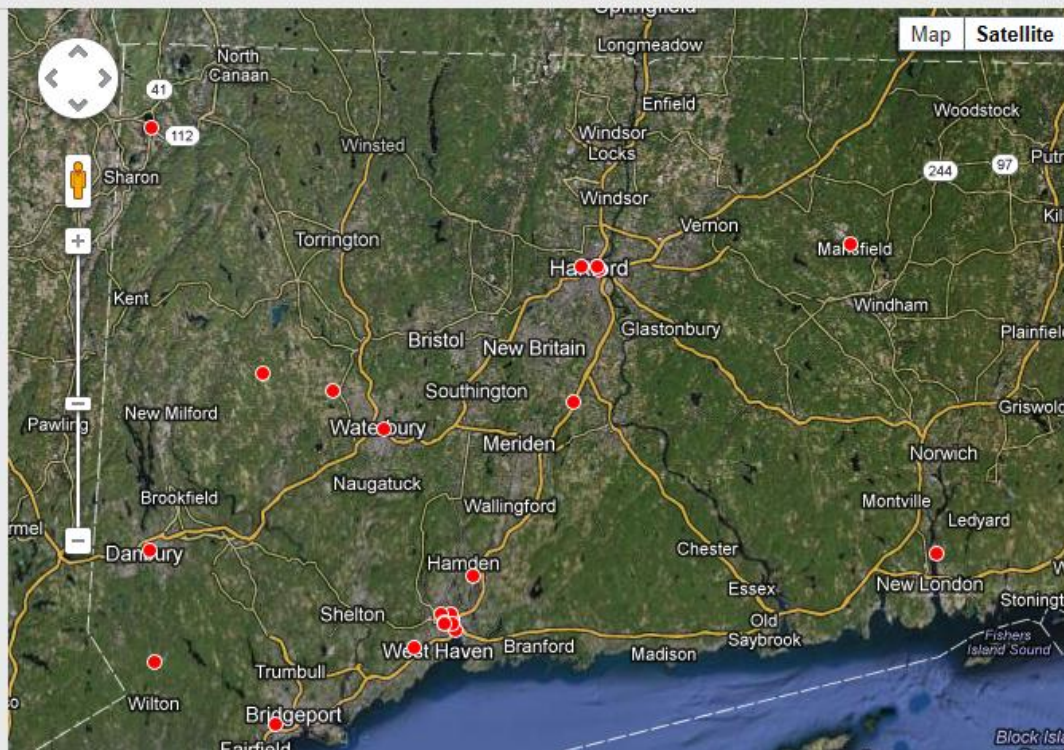
BUILDING TYPE

- Select -

Select a building type above.

AREA RANGE (FT²)

0 ft² to 350,000 ft²



1 2 3 4 5 6

Travelers - Hartford
1 TOWER SQ
06183 Hartford CT
CONNECTICUT US
TYPE: Office
TAGS: Energystar
SQ FT: 2,038,454 ft²



Long Wharf Maritime Center
555 LONG WHARF
DR 06511 New Haven CT
Connecticut US
TYPE: Office
TAGS: Energystar, LEED Registered, LEED-EB:OM V2009
SQ FT: 426,889 ft²



H. Pearce Real Estate
202 STATE ST



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BUILDING PROFILE

OFFICE

Metro Tower

One Station Place




OVERVIEW

INFORMATION

PROJECTS


Building Management


 **ALK OPERA**
Malkin Properties
Owners/Managers/Investors/Developers
New York, NY

Owner: BBSF, LLC
Status: Under Construction
Square Footage: 350,000 sq ft
Floor Count: 17

LEED System LEED CS 2.0
Version:
LEED Certification Registered
Level:
LEED Certification Not Applicable
Date:
LEED Owner Types: Profit Org.
LEED Registration 2007-01-02
Date:
Completed: Scheduled Completion 2013
Size: 350,000 square feet
Landlord: Malkin Properties, LLC
Architecture Firm: Cook and Fox Architects
Website: malkinproperties.com/properties/offices/metro-tower/


Projects [View All](#)

 [LEED Registered - Metro Tower](#)
LEED

 [Metro Green](#)
Completed

+

Have you done work on this building?
[Add your project](#)

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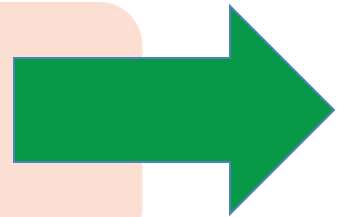
CEFIA's Role in C-PACE

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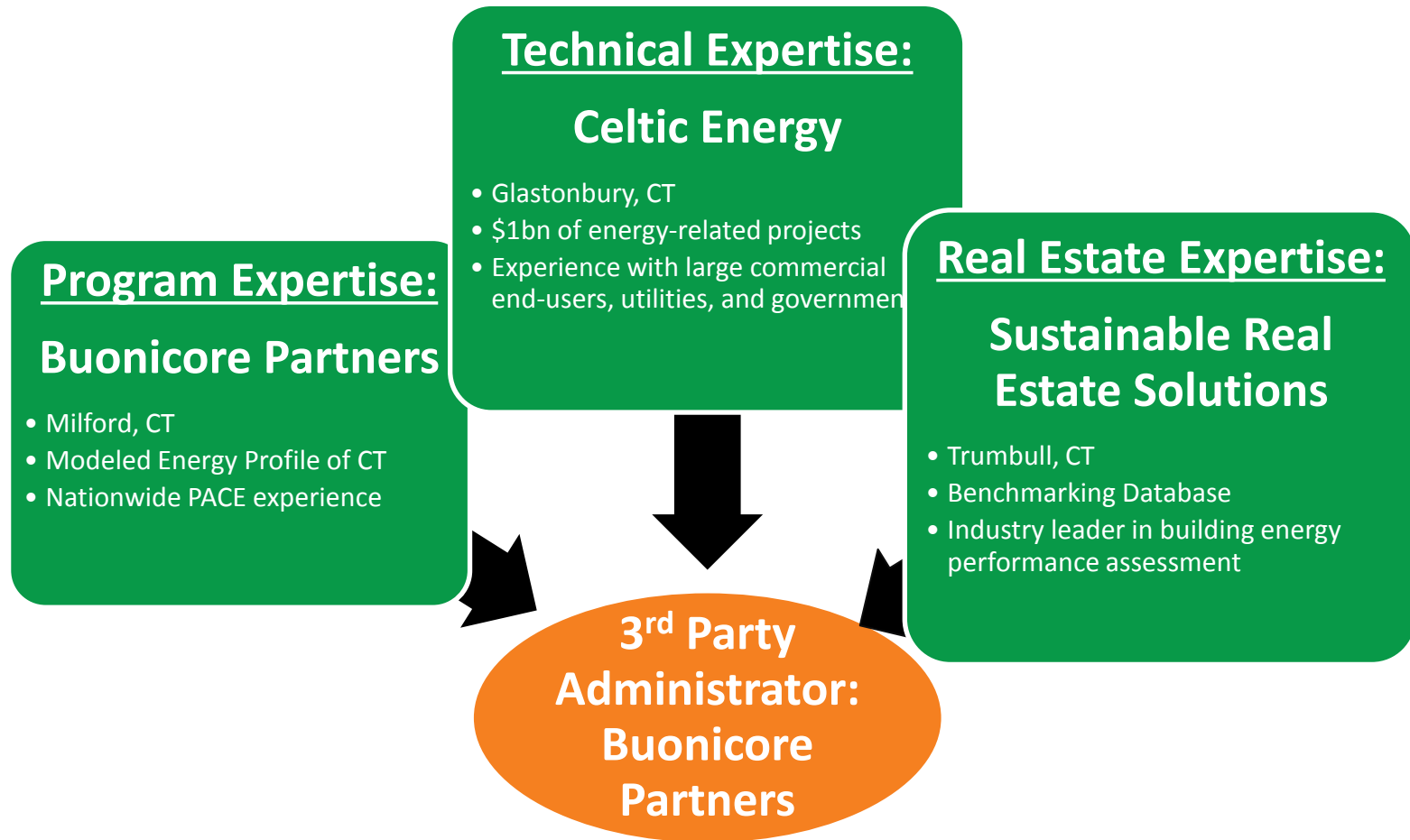
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- Marketing & Outreach
- Work with Existing Mortgage Lenders



Attract Private Capital

- Qualify Capital Providers
- Offer Credit Enhancement tools (as needed)
- Provide capital (as needed)
- Develop warehouse / bonding authority (Q2 2013)

C-PACE Partners do Technical Underwriting



Determine project eligibility

Anything that saves energy from baseline

... as long as it isn't going anywhere

- High efficiency lighting
- HVAC upgrades
- New automated building and HVAC controls
- Variable speed drives (VSDs) on motors fans and pumps
- High efficiency chillers, boilers, and furnaces
- High efficiency hot water heating systems
- Combustion and burner upgrades
- Fuel switching
- Water conservation
- Heat recovery and steam traps
- Building enclosure/envelope improvements
- BMS
- Renewable energy systems



M&V: Data Management Platform

- Full Assessment & Fast Track project data are entered & tracked in CEFIA's Data Management Platform (CDMP)
 - ▶ CDMP is powered by SRS's cloud-based software platform
 - ▶ CDMP facilitates key project data & analytics management across the entire project life cycle (project development through M&V)



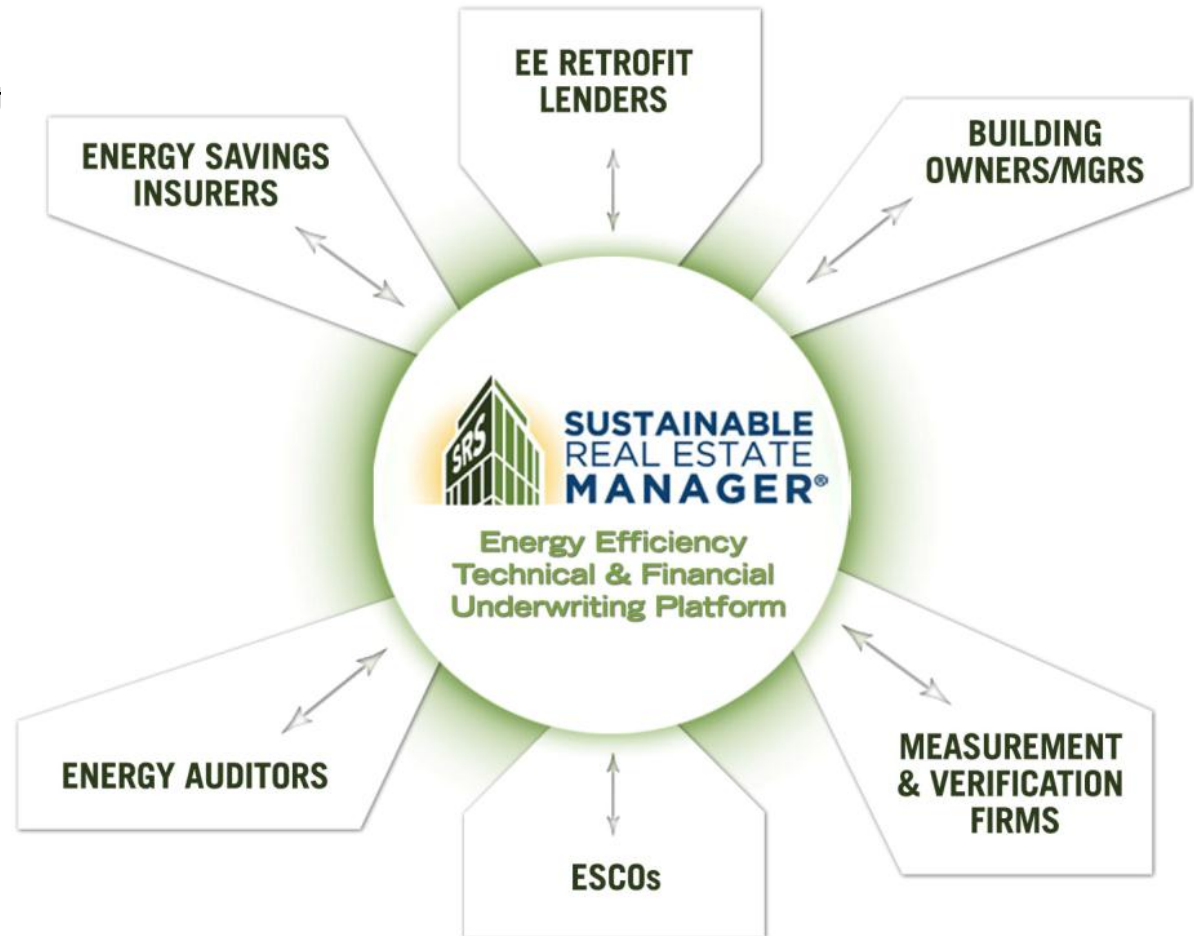
M&V: Data Management Platform

The Challenge

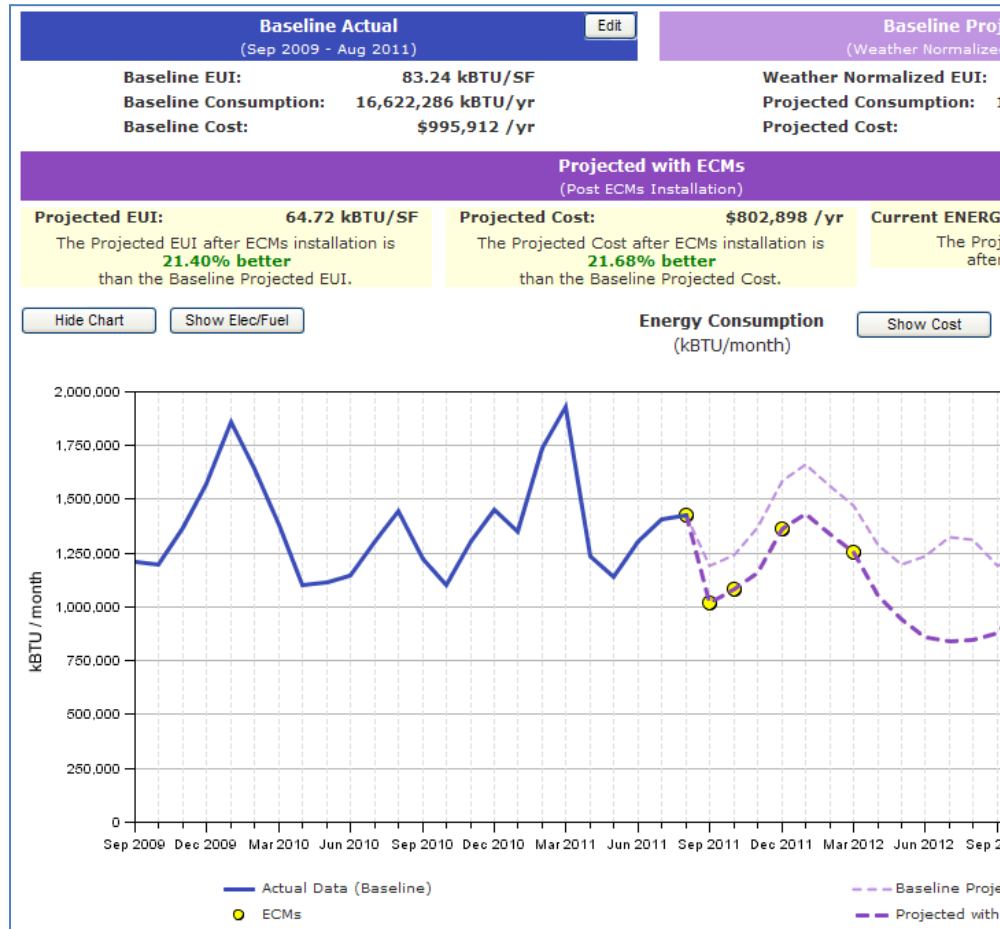
- Multiple interdependent stakeholders

The Solution

- C-PACE's transparent, unbiased technical & financial underwriting:
 - align interests
 - remove barriers
 - close deals!



M&V: Data Management Platform



	Projected
Costs and Savings:	
Estimated Required Investment (unleveraged):	\$1,992,976
Estimated Annual Savings:	\$258,563
Projected: \$21,547 avg. / month	
Return on Investment (ROI):	13.0%
Simple Payback Term (years):	7.71
True Payback Term (years):	7.33
Savings to Investment Ratio (unleveraged):	3.03
Savings to Investment Ratio (leveraged):	2.06
Total Cash Flows (unleveraged):	\$2,446,034
Total Cash Flows (leveraged):	\$1,507,840
Finance Scenario:	
Estimated Required Investment (100% leveraged):	\$0
Amount Financed:	\$1,992,976
Estimated Annual Debt Service:	\$195,411
180 months at 5.5% interest	\$16,284
Estimated First Year Benefit:	\$0
Excess Annual Cash Flow (first year):	\$63,152
Financial Analytics:	
Asset Value Impact from ECMs:	
@ 6.50% CAP rate	\$3,977,899
@ 7.50% CAP rate	\$3,447,512
@ 8.50% CAP rate	\$3,041,922
Asset Value Impact less Required Investment:	
@ 6.50% CAP rate	\$1,984,923
@ 7.50% CAP rate	\$1,454,536
@ 8.50% CAP rate	\$1,048,946
Internal Rate of Return (unleveraged IRR):	11.5%
Internal Rate of Return (leveraged IRR):	N/A
Net Present Value (unleveraged NPV):	\$470,296
Net Present Value (leveraged NPV):	\$790,653
Time to Positive Cash Flow (leveraged):	Immediate

CEFIA's Role in C-PACE

Design Program

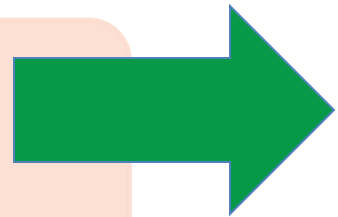
- Publish Guidelines November 2012
- Onboard Municipalities
- Website launched (www.c-pace.com)

Administer Program

- Technical Underwriting
- Marketing & Outreach
- Work with Existing Mortgage Lenders

Attract Private Capital

- Qualify Capital Providers
- Offer Credit Enhancement tools (as needed)
- Provide capital (as needed)
- Develop warehouse / bonding authority (Q2 2013)



Capital Partners

Qualified Capital Providers

- CEFIA qualified 8 capital providers through a RFI.
- “Lending tree” model

Owner Arranged Financing

- Property owner is free to choose their capital provider from the private market. There is no government financing required.

Construction and Term Financing from CEFIA

- CEFIA authorized \$20M short term facility for construction and term financing



structured finance ASSOCIATES, LLC

Marketing & Outreach

Sector	Total SF	Total Bldgs	Average Age*	Average Size (SF)	Total Unique Owners**
Class A	53 M	310	1983	172,000	190+
Class B	68 M	2,215	1964	31,000	1,720+
Class C	48 M	6,105	1933	8,000	5,030+
Industrial	282 M	7,465	1965	38,000	5,475+
Retail	198 M	18,000	1951	11,000	12,760+
Hospitality	21 M	370	1952	57,000	315+

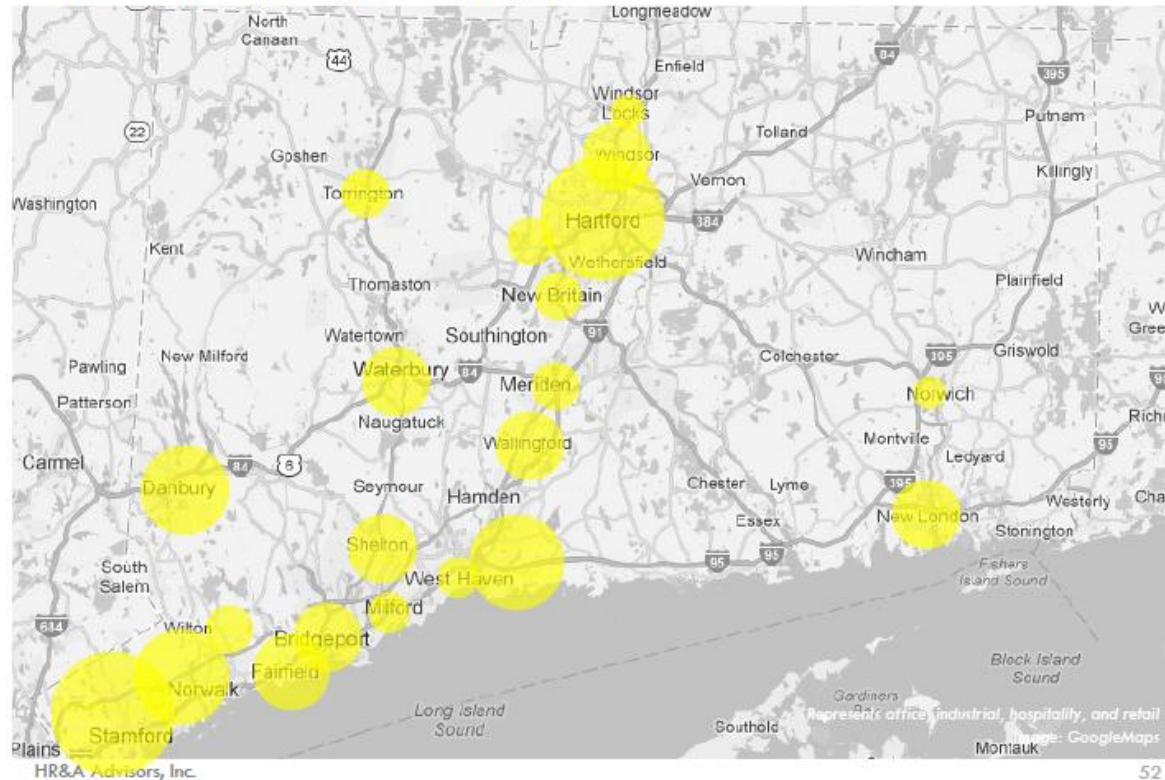
* Average age is true building age, and does not address major rehabilitation

** Represents the buildings for which data was available, which in all cases was the vast majority but not all. Thus the use of +c. For instance, data was available for 1,970 of the 2,215 Class B Office buildings.

Source: CoStar May 2012

Marketing & Outreach

Most identified opportunities are located in primary markets in southwest CT (I-95) and along I-91.





Empowering you to make
smart energy choices

Genevieve Sherman, Manager C-PACE
Clean Energy Finance and Investment Authority
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www.c-pace.com

Jeremy Kalin – Eutectics Consulting/Minnesota PACE



eutectics
consulting LLC

Clean Energy Project Financing | Energy Security

Clean Energy Financial Consulting

EutecticsLLC.com

Eutectics Consulting

We are a mission-oriented for-profit business, connecting businesses, contractors, and investors to move clean energy projects from concept to reality.

Clean Energy “Micro”-Project Finance Tools:

Energy Efficiency:

- 1. Green Loan*
- 2. Equipment Leasing*
- 3. St. Paul Port Authority RLF*
- 4. PACE*

Solar PV / Renewable Energy:

- 1. SolarNote*
- 2. PACE*
- 3. SolarEquity Lease**

Property Assessed. Clean Energy.

History in Minnesota:

- PACE legislation enacted in 2010
- City of Edina, a 1st-ring suburb of Minneapolis, established the Edina Emerald Energy (PACE) Program in early 2012 for a solar PV project.
- First community-bank funded project in Aug. 2012.

Property Assessed. Clean Energy.

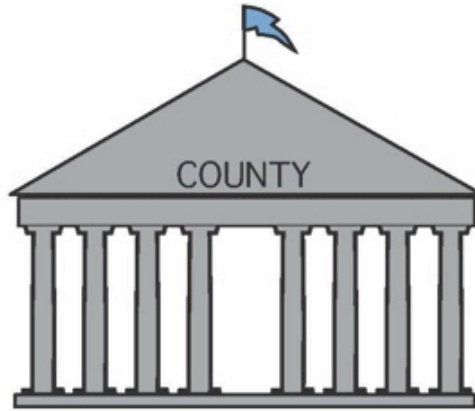
Minnesota PACE legislation:

- Added building-scale energy improvements to existing special assessment statute (§ 429.101).
- Limited to 10 year bonds, but 20-year extension likely in 2013.
- No requirement of “lender consent.”

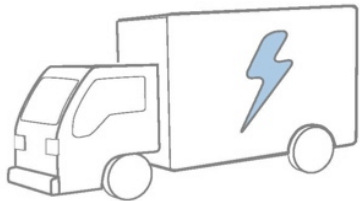
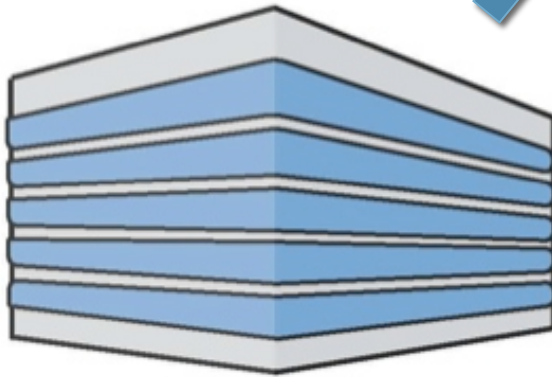
Property Assessed. Clean Energy.

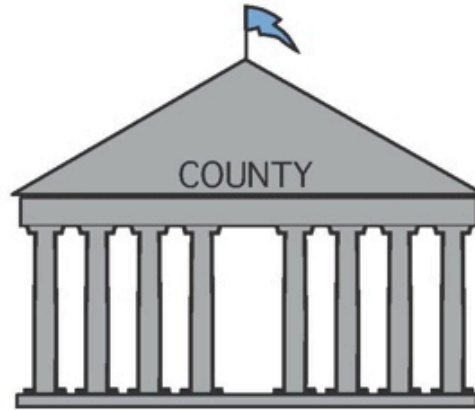
Minnesota PACE ‘programs’:

- Edina Emerald Energy Program is a stand-alone program.
- Other cities balked at a stand-alone program.
- New partnership is emerging, with a 3rd party PACE administrator, and cities joined via Joint Powers Agmt.

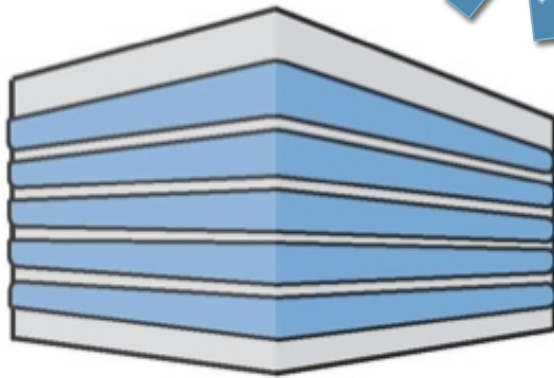
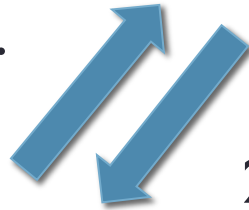


I. Apply for PACE loan.

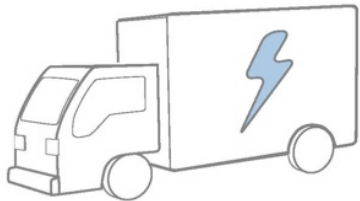


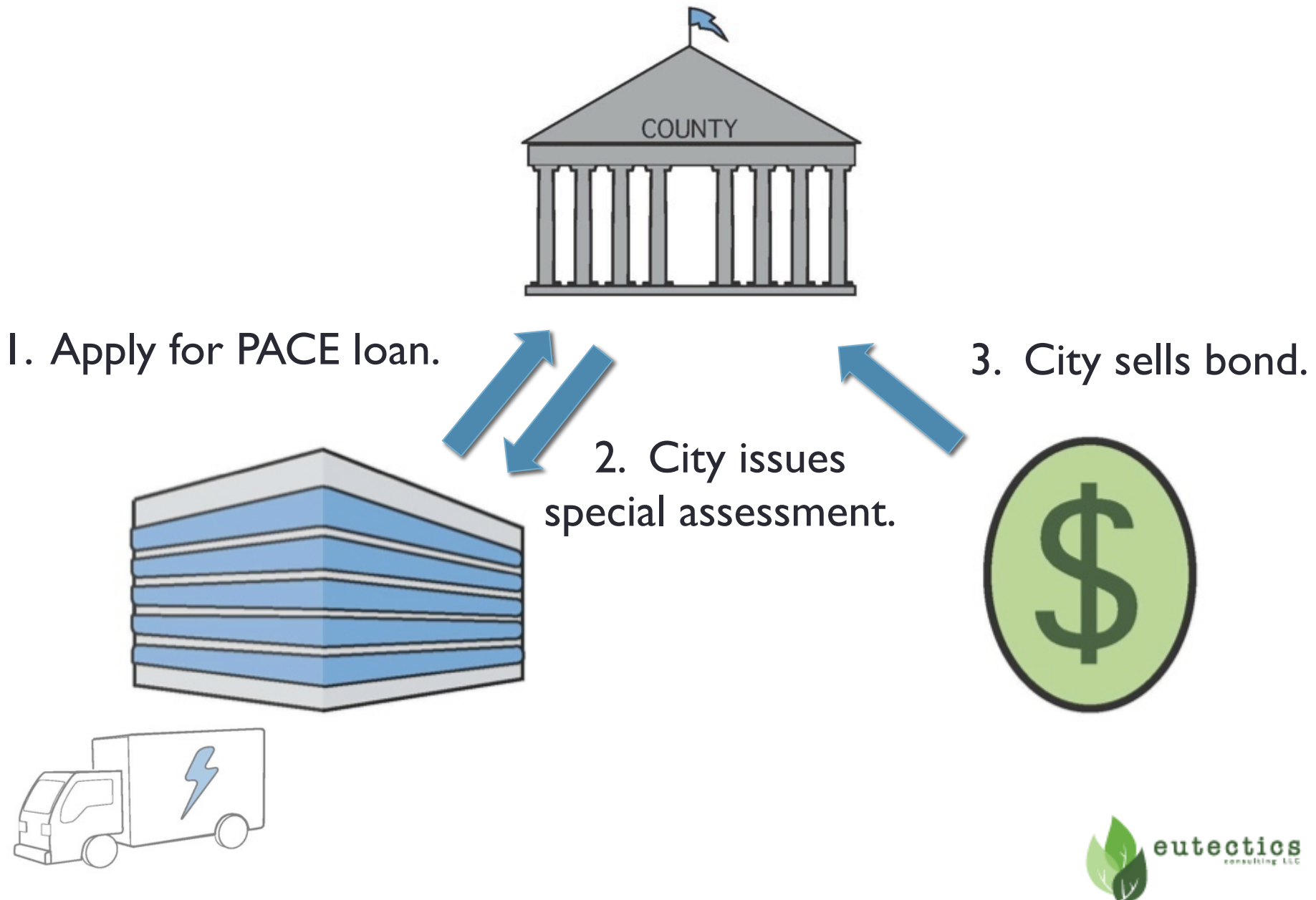


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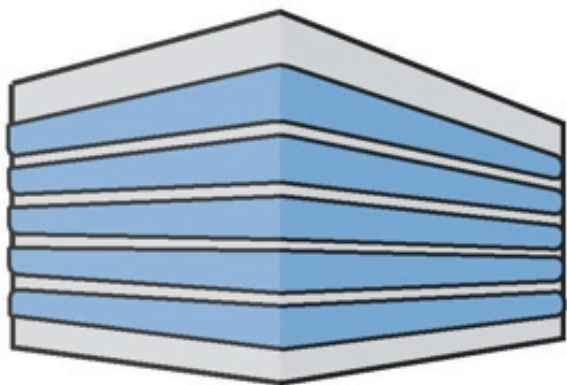
2. City issues special assessment.





Ex. 1: Restaurant upgrade

LED lights and hood fan controls



TOTAL COST:	\$ 50,622
--------------------	------------------

Xcel efficiency rebate	11,314
------------------------	--------

<u>TOTAL PACE LOAN</u>	<u>\$39,308</u>
-------------------------------	------------------------

<u>TOTAL DOWN</u>	<u>\$ 0</u>
--------------------------	--------------------

PACE loan repayment	9,334
---------------------	-------

<i>Energy and operations savings</i>	<i>15,296</i>
--------------------------------------	---------------

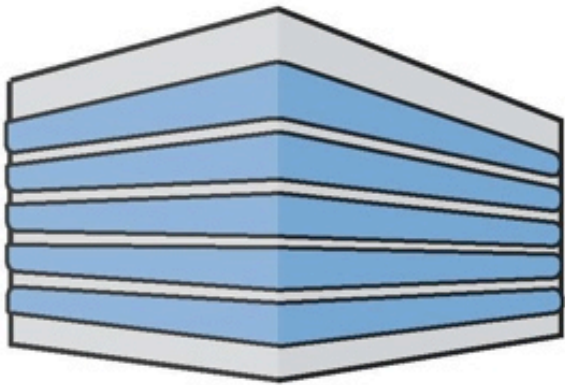
first year, adjust upwards 2.25% annually

<u>TOTAL SAVED / YRS 1-5</u>	<u>\$6,383</u>
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<u>TOTAL SAVED / YR 6+</u>	<u>\$17,096</u>
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Restaurant upgrade

*City of Edina EEEP loan for
LED lights and hood fan
controls*



TOTAL COST:	\$ 50,622
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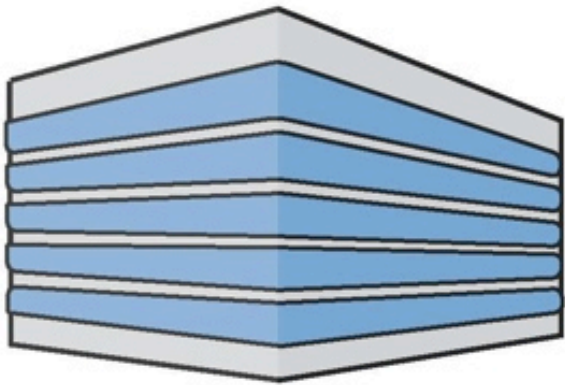
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Ex. 2: 20kW Solar PV

Minnesota-made solar PV system

(w/o state incentives)



TOTAL COST:	\$ 90,000
--------------------	------------------

<i>Cost per watt</i>	<i>\$4.50</i>
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Federal Investor Tax Credit	27,000
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Net Cost	63,000
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Financing costs	2,090
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<u>TOTAL PACE LOAN</u>	<u>\$65,090</u>
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<u>TOTAL DOWN</u>	<u>\$ 0</u>
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PACE loan repayment	9,160
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<i>Energy and tax savings</i>	<i>6,871</i>
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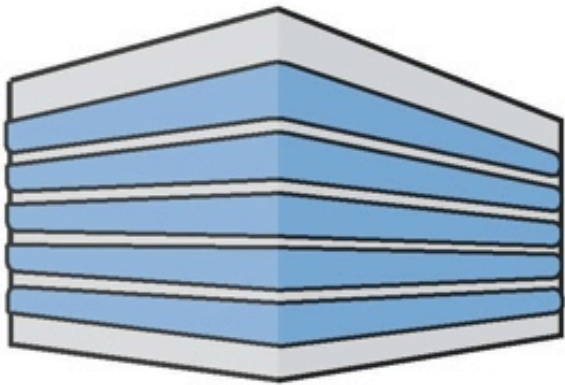
<u>TOTAL COST / YRS 1-10</u>	<u>\$2,289</u>
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<u>TOTAL SAVINGS / YR 11+</u>	<u>\$2,324</u>
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Ex. 2: 20kW Solar PV

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(w/o state incentives)



TOTAL COST: **\$ 90,000**

Cost per watt \$4.50

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Net Cost **63,000**

Financing costs 2,090

TOTAL PACE LOAN **\$65,090**

TOTAL DOWN **\$ 0**

PACE loan repayment 9,160

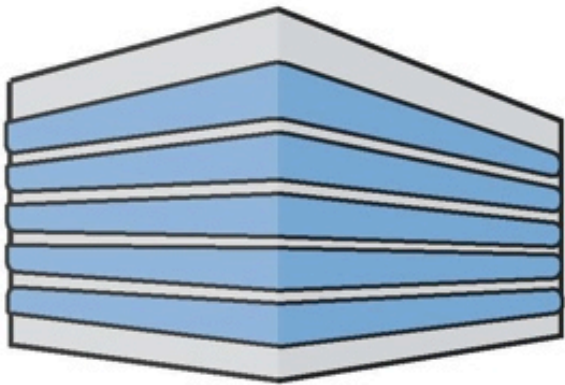
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TOTAL COST / YRS 1-10 **\$2,289**

TOTAL SAVINGS / YR 11+ **\$2,324**

Ex. 3: Corp. HQ

*Deep retrofit w / new HVAC,
lighting, controls and more*



TOTAL COST:	\$969,235
--------------------	------------------

Federal Efficiency Tax Credit	151,200
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Xcel/ <u>Centerpoint</u> Rebate	80,000
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Net Cost	738,035
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Eutectics fee	11,070
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<u>TOTAL PACE LOAN</u>	<u>\$749,125</u>
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<u>TOTAL DOWN</u>	<u>\$ 0</u>
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PACE loan repayment	109,032
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<i>Energy savings</i>	<i>128,275</i>
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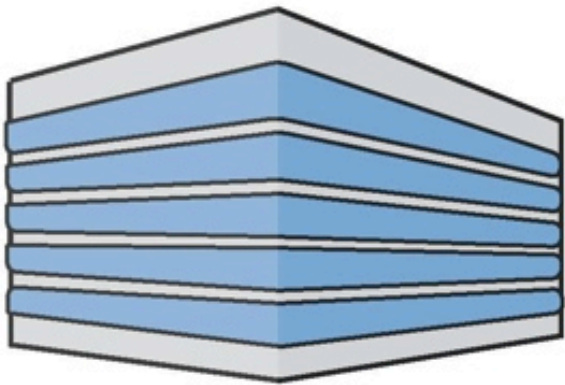
first year, adjust upwards 2% annually

<u>TOTAL SAVINGS / YRS 1-10</u>	<u>\$19,242</u>
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<u>TOTAL SAVINGS / YR 11</u>	<u>\$156,367</u>
-------------------------------------	-------------------------

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<u>TOTAL SAVINGS / YR 11</u>	<u>\$156,367</u>
-------------------------------------	-------------------------

Property Assessed. Clean Energy.

Minnesota PACE funding:

- “PACE in a box” tool kit from Edina will be used as PACE scales up.
- First EEEP privately-placed, taxable revenue bond was purchased by CleanFund at 7%.
- Bremer Bank, a state-chartered community bank, purchased at 5.5%.

Property Assessed. Clean Energy.

Minnesota PACE ‘state-wide’:

- Cities sign a Joint Power Agmt.
- Third-party partner responsible for: technical review; underwriting; origination; bond issuance; debt service, and debt service reserve.
- Cities issue special assessment, and pass on payments to Third Party.

Property Assessed. Clean Energy.

Minnesota PACE ‘state-wide’:

- Bond rates expected between 2% and 4%, depending on service territory and scale of project
- Third-party may add 0.5% - 1.0% for admin. costs.
- MUST be project based – no “pre-funded” PACE loan pool.



eutectics
consulting LLC

Jeremy Kalin, President | Jeremy@EutecticsLLC.com

612.353.5760

Questions & Next Steps

- **Resources** on Solution Center: <http://www1.eere.energy.gov/wip/solutioncenter/>
 - Today's presentation will be posted & *Commercial PACE materials* live now http://www4.eere.energy.gov/wip/solutioncenter/finance_guide/content/commercial_property_assessed_clean_energy_financing
 - Also featured are *DOE's Clean Energy Finance Guide* & other finance resources and improved portal for finance resources coming later this year
- All **peer exchange & trainings** can be found on Events Calendar: http://www1.eere.energy.gov/wip/solutioncenter/wip_events.html
 - National peer exchange *Local Trends in Clean Energy Finance*, March 27th
 - Additional national webinars, including – *Guidelines for Developing a State ESPC Program* (March 26th) and *Financing Energy Upgrades for K-12 School Districts* (April 11th)
 - To find out more about the *Better Buildings Project Team for Financing Strategies*, a long-term small-group peer exchange opportunity, email us at TechnicalAssistanceProgram@ee.doe.gov
- To apply for **one-on-one assistance** and **peer matching** (and to stay up-to-date on all of the latest TAP offerings by signing up for our newsletter) email us at TechnicalAssistanceProgram@ee.doe.gov



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ENERGY

Energy Efficiency &
Renewable Energy

Thank you to our speakers &
to all of you for joining us today!

DOE's Technical Assistance
Program welcomes your
questions and feedback at
TechnicalAssistanceProgram@ee.doe.gov