PACE: Innovations in Energy Efficiency Financing

Eleni Pelican
U.S. DOE
Milwaukee’s Open-Market PACE Program
A national implementation model
Finding a Competitive Advantage

- Energy efficiency makes buildings and cities more competitive
- Investing in energy efficiency means:
  - Lower operating costs
  - Better occupant experience
  - Local jobs
  - Better local air quality
  - Better tenant experience

- Cities need economic development tools to support existing buildings, not just new development.
- Reallocate budgets currently wasted on excess energy into building improvements that improve living conditions

“If you don’t have a competitive advantage, don’t compete.”

Jack Welch
Well known CEO
How Energy Efficiency Projects Support Profitability

- Operational savings (energy costs and maintenance calls)
- Improved occupant comfort and satisfaction → less complaints
- Reduce risk of unexpected breakdowns
Property Assess Clean Energy (PACE) Financing provides innovative financing to make energy efficiency, water efficiency, and clean energy projects like:

- New boilers
- New chillers
- Advanced building controls
- Solar Energy
- Lighting
- Other permanently fixed energy-saving improvements
PACE makes private capital available to Milwaukee building owners via public/private partnership

- Financing provided by private investors

- Payments for the improvements are collected from participating buildings by the City through a voluntarily-assumed municipal special charge

- Special Charge is collected on the annual property tax bill

Benefits to Building Owner, Tenants, and the Community
PACE in Milwaukee

- State of Wisconsin Enabling Statute: 66.0627(8)
- City of Milwaukee Ordinance: 304.26.5
- Administrative Rules: Program Manual including the PACE Supplemental Agreement Template in Appendix C.

Complete information at SmartEnergyPays.com/businesses
PACE Financing: “Square Dance”

City of Milwaukee

City remits payment to lender

PACE Lender (Clean Fund, MEDC, others)

Payment via Special Charge on Property Tax bill

Building Owner

$ to Owner

Energy Upgrades

Performance Contract (Projects $250k+)

Me² Participating Contractor
Milwaukee PACE legal framework

- City of Milwaukee
- Building Owner
- PACE Lender
- PACE Supplemental Loan Agreement (Long term finance)
- Construction Loan (Short term finance)
- Performance Contract (if project > $250,000)
- Construction Escrow Disbursement Agreement
- Contractor
- Escrow Agent (optional)
- **Traditional bank debt finance**
  - Financed by debt
  - Tied to building owner
  - 3-7 year terms
  - Cash flow negative
  - Payback required, 3-6 years
  - Upgrade over 5+ years
  - Capital expense

- **PACE Financing**
  - Financed special charge on property tax bill
  - Runs with the land
  - Up to 20 year terms
  - Cash flow positive
  - Payback, life of equipment
  - Upgrade whole building at once
  - Operating expense (check with your owner’s accounting)
  - Pass through to tenants (check your lease terms)
  - Equity side of capital stack
Example Project

- $500,000 project (HVAC and lighting)
- Guaranteed annual savings: $42,000 (12 year payback)
- Owner may want to sell property in 8 years
- Tenants pay energy bills for their spaces, and pro-rated property taxes

Would you do this project with traditional financing?

With PACE?
Eligibility

• Existing commercial building located in the City of Milwaukee
• No property tax delinquencies in the past three years
• Min project size: $150,000, based on current lenders
• Max PACE project size: 20% of Property Value
• Must use Participating Me2 Commercial Contractor \( \rightarrow \text{support of local jobs} \)
• Energy Savings Performance contract for projects $250,000+; SIR \( \geq 1 \)
• Existing Lien Holder Consent
• Participate in the Better Buildings Challenge
Application

1. Visit SmartEnergyPays.com for program information and list of Participating Contractors
2. Submit PACE Interest Form
3. Develop your project with Participating Me² Contractor
4. Submit PACE Application with defined project
5. Get lien holder(s) acknowledgement/consent
6. Close financing with City and Lender
Case Study: University Club

- Lender: Milwaukee Economic Development Corp.
- PACE Equity was project developer, using 5 installation contractors
- Scope: HVAC, Windows, Lighting, Steam Traps
- Project Size $662,000
- Amortization: 18 years
- Annual payment: $62,000
- Annual Guaranteed Savings (Year 1): $56,000
- Average Annual Savings: $75,000
Attracting Capital Providers

- Need to clarify which companies were willing and able to provide capital for PACE in Milwaukee

- Elements of a Milwaukee PACE provider:
  - Low-cost
  - Provide construction finance
  - Truly understand our local ordinances and policies
  - Quick turnaround of documents
  - Lender consent

- Issued RFQ for Capital Providers
  - PACE Equity
  - Blue Path Finance
  - Clean Fund

- Other lenders can join at any time
Tips for Implementing

- Work with private-sector constituency for PACE
- Biggest market for PACE may be in whole building redevelopments
- Program complexity evolves from statute to ordinance to program manual
- Milwaukee’s ordinance reflects interest in eliminating risk from local property taxpayers
- Think through and explain non-payment contingencies
- Have capital providers lined up before you market the program
- Manage the lawyers
- Keep it simple and flexible, as best you can
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SmartEnergyPays.com/businesses
Commercial Property Assessed
Clean Energy – the CT Story
Lessons from the first two years

May 28, 2015
1. About the Connecticut Green Bank
2. The Basics – How it Works
3. Financing C-PACE in Connecticut
4. Lessons and Challenges
The Connecticut Green Bank
Connecticut Green Bank Challenge: Mobilize Private Capital Investment in Clean Energy

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

…the Green Bank was established in 2011 to develop programs that will leverage private sector capital to create long-term, sustainable financing to support residential, commercial, and industrial sector implementation of energy efficiency and clean energy measures.
The Basics – How it Works
What is C-PACE?

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

- Current fixed rates to customers = 5-6% (for 10-20 year terms)

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

- Repayment through property taxes.

- A senior C-PACE lien is put on the property and stays regardless of ownership.
Key Statutory Provisions

- Commercial, industrial & multifamily properties
- Requires the **consent** of the existing mortgage lender
- Requires **SIR>1**; permanently affixed
- Enables municipalities to opt-in
- Enables CT Green Bank to administer a **statewide program**
How Owners Access C-PACE

**The C-PACE Process**

1. **Getting Started**
   - Building owner works with contractor to develop a project plan.
   - Owner submits project plan and financing application to C-PACE.
   - Application is reviewed.

2. **Getting Project Done**
   - C-PACE contacts local municipality and a lien is placed on property.
   - C-PACE loan is closed and funding goes to building owner.
   - Project begins.

3. **Paying It Off**
   - Owner begins saving money on their energy bills.
   - Owner repays C-PACE loan through a benefit assessment charge on their municipal tax bill.
   - Through improved property, owner enjoys increased cash flow and lower operating costs.
Financing C-PACE in Connecticut
Qualified Capital Providers (QCPs)
Results of Recruiting Great QCPs …

- No action

- So Green Bank steps in to provide warehouse facility / on-demand capital + active origination functions (including marketing, underwriting, closing, funding)
C-PACE: First Securitization
Green Bank Originates & Aggregates

CT Green Bank

$30M total in underlying Benefit Assessments sold to Clean Fund as capital provider, with Green Bank credit enhancement
Lessons and Challenges
Key Success Factors

- Legislative framework
  - Financing product works (senior lien)
  - SIR test ensures positive cash flow for owner and elicits consent from mortgage lender (30+ distinct institutions have provided consent)
  - Green Bank as administrator – good housekeeping stamp of approval
  - Statewide program – consistency for contractors, owners, lenders

- Programmatic
  - Contractor training and outreach to drive deal flow
  - Coordination with other utility programs to leverage “free money”
  - Momentum/word of mouth around the state (boot leather)

- Warehouse
  - On-demand capital
  - Standard, transparent rates
  - Low fees
  - Clear process from application to cash
Potential Challenges

- Volume considerations
- Limited capacity to meet demands of growing market (e.g. underwriting)
- Green Bank not structured efficiently to take on growth (overhead)
- Political risks associated with public nature of Green Bank
- Quasi-state processes (PSAs, state contracting requirements, staff recruitment and retention)
- Replicability around the country
Approach to Growth

- Two approaches:
  - First (primary play) – enable the creation of an external capital facility to support Green Bank origination
    - Do so in a way that preserves what Green Bank does well (making sure public benefit is served) while allowing scale to happen more cost effectively
    - Need margin within the facility to allow for self-sustainability and growth of origination efforts
    - Provide Green Bank participation as required to keep rates consistent (staying < 6%)
  - Second (future-oriented play) – provide “standard offer” to market to encourage competitive private-market origination
C-PACE: Second Private Capital Raise (May 2015)

(cost of capital down to ~ 4.8% + full coverage of upfront Green Bank expenses + higher advance rate)

Proposed Structure:

1. Green Bank enters into Mgmt Agreement with the Platform providing for the performance of origination functions and for reimbursement of expenses
2. Green Bank originates PACE loan with property owners; the PACE loan is transferred into the Warehouse for aggregation
3. Once the Warehouse reaches sufficient size, a securitization takeout will purchase the liens into PACE 2014-1 through the Securitization Vehicle
4. Collections in PACE 2014-1 are then distributed in accordance with the waterfall (described on the following page)
5. 3.5% Mezzanine Notes from Green Bank (“Credit Enhancement”)

1. To perform market making, origination, underwriting, legal, structuring and financing services, and fund and hold $5mm of annual C-PACE aggregation
2. Structure to mirror that of PACE 2014-1
3. Credit Enhancement will also include portfolio investments and liquidity and loss reserves of 5%
C-PACE: Standard Offer

Commercial Property Assessed Clean Energy (C-PACE) is an innovative program that is helping commercial, industrial and multi-family property owners access affordable, long-term financing for smart energy upgrades to their buildings.
Thank you!

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Connecticut Green Bank
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(860) 257-2882
Hilton Worldwide and Hannon Armstrong
Creating an Energy Efficiency End to End Solution

Key Program Objectives

- No out of pocket cost; all project costs financed and paid from guaranteed savings
- Easily transferred upon asset sale or transfer
- Improve return on investment and long term asset value
- Improve efficiencies and reduce operating expenses associated with increasing energy costs
- Comply with growing Green building codes and legislation
- Improve brand reputation and reduce environmental impact
# Financial Structures Compared

<table>
<thead>
<tr>
<th></th>
<th>Property Assessed Clean Energy (PACE)</th>
<th>Customer Financed (Capital Lease)</th>
<th>Energy Service Agreement (ESA)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Credit Evaluation</strong></td>
<td>✓ Lien to Value, Loan to Value, and limited financial review</td>
<td>Financial review of SPE and potential guarantee</td>
<td>Financial review of SPE and potential guarantee</td>
</tr>
<tr>
<td><strong>Payment Obligation</strong></td>
<td>✓ Special Assessment as part of Tax Bill</td>
<td>Unconditional</td>
<td>Contingent Upon Savings</td>
</tr>
<tr>
<td><strong>Term Length</strong></td>
<td>✓ Up to 20 years</td>
<td>5 - 7 years</td>
<td>5 - 10 years</td>
</tr>
<tr>
<td><strong>Beneficiary of Performance Guarantee</strong></td>
<td>✓ Customer/Hannon</td>
<td>✓ Customer</td>
<td>Hannon</td>
</tr>
<tr>
<td><strong>Title to ECMs</strong></td>
<td>✓ Customer owned</td>
<td>✓ Customer owned</td>
<td>Hannon owned</td>
</tr>
<tr>
<td><strong>Lien on ECMs</strong></td>
<td>✓ Tax Lien</td>
<td>UCC1</td>
<td>UCC1</td>
</tr>
<tr>
<td><strong>End of Term</strong></td>
<td>✓ Customer owns free and clear</td>
<td>✓ Customer owns free and clear</td>
<td>Purchased at FMV, renewed, or removal of ECMs</td>
</tr>
<tr>
<td><strong>Transfer to new ownership?</strong></td>
<td>✓ Tax lien - stays with property</td>
<td>Assignable to new owner pending credit review</td>
<td>Assignable to new owner pending credit review</td>
</tr>
<tr>
<td><strong>Terminable</strong></td>
<td>✓ Yes, with pre-payment and termination schedule</td>
<td>✓ Yes, with pre-payment and termination schedule</td>
<td>No</td>
</tr>
<tr>
<td><strong>Off-Balance Sheet?</strong></td>
<td>✓ Potentially (subject to determination by Customer’s auditors)</td>
<td>No</td>
<td>✓ Potentially (subject to determination by Customer’s auditors)</td>
</tr>
<tr>
<td><strong>Project Management Cost</strong></td>
<td>5-10%</td>
<td>5-10%</td>
<td>5-10%</td>
</tr>
<tr>
<td><strong>Performance Guarantee Cost</strong></td>
<td>✓ None required</td>
<td>✓ None required</td>
<td>20-30%</td>
</tr>
<tr>
<td><strong>Cost of Capital</strong></td>
<td>✓ Least</td>
<td>✓ Low</td>
<td>Most</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td>✓ Least</td>
<td>✓ Moderate</td>
<td>Most</td>
</tr>
</tbody>
</table>

Under all scenarios, financing cost of capital remains below Hilton/Blackstone total cost of capital
# Most ECMs Require No Performance Guarantee

<table>
<thead>
<tr>
<th>ENERGY CONSERVATION MEASURES (ECMS)</th>
<th>SIMPLE PAYBACK PERIOD (YEARS)</th>
<th>EQUIPMENT LIFE EXPECTANCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Management System &amp; Controls</td>
<td>1 to 4</td>
<td>20</td>
</tr>
<tr>
<td>Lighting Upgrade</td>
<td>1 to 2</td>
<td>20</td>
</tr>
<tr>
<td>Water Heater Replacement</td>
<td>1 to 4</td>
<td>15</td>
</tr>
<tr>
<td>High Efficiency Motors &amp; VFDs</td>
<td>1 to 4</td>
<td>20</td>
</tr>
<tr>
<td>Water Conservation Measures</td>
<td>1 to 5</td>
<td>20</td>
</tr>
<tr>
<td>Building Insulation - addition</td>
<td>10 to 15</td>
<td>-</td>
</tr>
<tr>
<td>Roof Insulation – addition</td>
<td>20 to 30</td>
<td>-</td>
</tr>
<tr>
<td>Kitchen Equipment replacement</td>
<td>15 to 20</td>
<td>30</td>
</tr>
<tr>
<td>Roof Replacement/Green Roof</td>
<td>20 to 50</td>
<td>20</td>
</tr>
<tr>
<td>Windows - replacement</td>
<td>15 to 50</td>
<td>40</td>
</tr>
<tr>
<td>Boiler - replacement</td>
<td>8 to 20</td>
<td>35</td>
</tr>
<tr>
<td>Chiller - replacement</td>
<td>5 to 12</td>
<td>25</td>
</tr>
<tr>
<td>Solar Panel Installation</td>
<td>8 to 15</td>
<td>25</td>
</tr>
<tr>
<td>Combined Heat &amp; Power Plant</td>
<td>15 to 20</td>
<td>20</td>
</tr>
</tbody>
</table>
Property Assessed Clean Energy ("PACE") Financing

Key Elements

1. PACE Statute and Ordinances are passed
2. Property owners voluntarily enter assessment contracts to finance energy improvements
3. Property owner repays the assessment through tax bill for up to 20 years
4. Estimated savings exceeds assessment payments creating net positive cash flow

The Steps of PACE Financing

- **Application:** Participant fills out an application with Hannon Armstrong & Municipality
- **Energy Audit:**
  - From approved contractor
  - Results determine which measures to install
  - Cost of audit incorporated into loan
- **Cost Estimates:** Participants obtain written "not to exceed" estimates from contractors
- **Review of Proposal:** Review of audit and bid information to ensure the proposed measures have a positive savings to investment ratio
- **Obtain Funding:**
  - Participant obtains funding from Hannon Armstrong
  - Funding can be in paid to escrow account for access by participant
- **Notice to Proceed:** Issued to contractors by participant
- **Completion of Projects:** Inspection and commission by participant
- **Contractor Payment:** Participant, through escrow agent, will directly pay contractor
- **Repayment:** Financing repaid via assessments on participant’s tax bill
- **Measurement and Verification:** Optional program to measure the project’s performance
Creating Value through Energy Retrofits

- Hotel value based on net operating income (NOI) before retrofit - $40mm

- Annual savings (increase in free cash flow) - increase in NOI) - $200k

- Average Hotel Capitalization rate 7%

- New hotel value based on NOI - $43mm (increase of 7.5%)
Case Study: Hilton Los Angeles/Universal City PACE Lien

Project Highlights

- Total PACE Project Size: $7 million
  - ECMs: Lighting retrofit, HVAC replacement, Chiller replacement, Window tinting, elevator modernization, water conservation (faucets/showers), EV charger installation, engineering, design and project management and other fees)

- Utility Cost Savings, Year 1: $800,000

- Operations & Maintenance Savings: $200,000

- Return on Investment: 78%

- Total Project Return on Investment over 20 year term: $12.5M
Case Study: Hilton Los Angeles/Universal City PACE Lien

*Increasing Net Asset Value at No Cost*

Excerpted from the appraisal prepared for Deutsche Bank (then current owner) by Cushman & Wakefield Valuation & Advisory

**Market Value as of:**

- **August 21, 2013 – “AS IS”:** $127,800,000, or $265,145 per room
- **August 21, 2016 – “Upon Completion”** $136,800,000, or $283,817 per room  
  **+10.7% INCREASE**
- **August 21, 2017 – “Upon Stabilization”** $159,900,000, or $331,743 per room  
  **+25.1% INCREASE**
Summary and Next Steps

1. Exploit the opportunity to use PACE as a financing structure wherever possible (Starting in California)
2. Identify financial partner and project management partners
3. Using broad energy data, identify a pilot portfolio of properties
4. Initiate Level 1 ASHRAE energy audits and evaluate results
5. Alignment of project scope with corporate goals (IRR, term, etc.)
6. Implement and commission energy projects within pilot
7. Measure and validate project performance as required
8. Reevaluate Pilot program
9. Launch broader energy program initiative based on the outcome of the pilot
The Hale Koa Hotel is an 817 room resort hotel located on 72 acres along Waikiki Beach. It is owned by the US Department of Defense and operates as an Armed Forces Recreation Center.

- HA funded a $679,000 investment in:
  - High efficiency heat pump water heaters to meet base load demand of hotel;
  - Piping, pipe insulation, and circulation pumps;
  - Additional hot water storage tank capacity; and
  - Automated controls for hot water system.

- 10 year term
- Vendor = Hawaiian Electric Company

Annual energy cost savings = ~$110,000
Annual Debt Service Payment = $93,000
Immediate Annual Savings = $17,000
Simple Payback = 6.2 years
Savings over term = $170,000
Ongoing Annual Savings = ~$110,000

<table>
<thead>
<tr>
<th>Amount Financed</th>
<th>$679,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Payment</td>
<td>-$93,000</td>
</tr>
<tr>
<td>Months of Payments</td>
<td>120</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>6.62%</td>
</tr>
</tbody>
</table>
Two million square foot Washington, DC headquarters of the GAO.

- HA Funded a $3,197,000 investment in:
  - New high efficiency hot water boilers.
  - Hot water pumps with high efficiency motors.
  - Piping and distribution systems.
  - Building automation controls for the boiler system.
- 5 year term
- Vendor = Washington Gas

<table>
<thead>
<tr>
<th>Amount Financed</th>
<th>$319,7000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Payment</td>
<td>-$692,000</td>
</tr>
<tr>
<td>Months of Payments</td>
<td>60</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>3.16%</td>
</tr>
</tbody>
</table>

Annual Cost Savings = ~$1,056,000
Annual Debt Service Payment = $692,000
Immediate Annual Savings = $364,000
Simple Payback = 3 years
Savings over term = $1,820,000
Ongoing Annual Savings = ~$1,000,000
Hannon Armstrong Overview
We provide capital, mostly senior debt, for profitable sustainable infrastructure projects

- Approximately $1.0 billion transactions financed since the IPO
- High credit quality obligors
- $2.2 billion assets under management
- 33 year-old firm, senior management team

Sustainable Infrastructure

How We Make Money

Assets On Balance Sheet
- Interest Income
- Rental Income
- Investment Income

Securitize with Institutional Investors
- Fee Income

Syndicate with Institutional Investors
- Fee Income
transactions closed since IPO

since its April 2013 IPO, HASI has closed almost $1.0 Billion of transactions...

- energy efficiency: 52%
- clean energy: 44%
- other: 4%

$.960B