Emerging Trends in Public-Private Financing Programs: Lessons Learned for PACE, On-Bill and Credit Enhancements

Kevin Moyer, Toledo Port Authority
Ben Taube, Ygrene Energy Fund
Moderator: Molly Lunn, U.S. DOE

Greg Leventis, Lawrence Berkeley National Laboratory
Setting the PACE in Ohio
“Revitalizing Communities, Businesses & Energy”

U.S. DOE Better Buildings Summit
Washington DC
May 8, 2014
Toledo Energy Efficiency Success

- National recognition.
- A top PACE district in the U.S. ($$ and ## projects).
- 60 building completed;
  20 in construction.
- $22,000,000 of financing issued:
  Bonds, QECBs, State Energy Funds & Revolving Loan Fund. Over
  $30,000,000 of capital acquired.
- $32,000,000 project pipeline.
- Broad customer projects.
- Strong brand recognition.
- Sustainable program.
Toledo PACE Model Customer Value

- Simple application & documentation.
- Funding from evaluation & design, to construction to long term operation.
- Facilitate & develop projects.
- 100% funding of all project cost, when customer needs it.
- Fixed rate assessments up to 15 years.
- Funding availability & attractive terms & conditions for underserved commercial & non-profit markets.
- Savings fund building improvements.
Toledo PACE Funding Structure Efficiency

- Strong Economic Development & Financing Reputation.

- Multiple Marketing Channels – Economic Development, Engineering & Contractor Professionals Are Key.

- Revolving Loan Fund & Warehouse Account Front End.

- Bond Pooling; Multiple Transactions; Several Tranches; 10% Borrower Primary Reserve, 15% Bond Reserve.

- Strong Public Private Leadership To Drive Local Economic Development, Capital Attraction, Community Sustainability.
PACE Lessons Learned

- Focus on offering PACE only financing.
- Eliminate loan oriented language.
- Easy application, documentation & PACE legislation.
- Simple lender consent to placement of special assessment on property.
- Project facilitation, development & management required.
- Partnerships, support & training resources for market leverage & deal flow.
PACE Trends in Ohio – Statute Revision

- PACE Statute Revision in process
  - New Bill – May 7, 2014
  - Adopt June 2014
- PACE District Management Flexibility
  - Non contiguous municipalities allowed
  - Owner, municipal and Port driven options
  - Reduce administrative burdens
- Financing Flexibility
  - Owner arranged, municipal directed, Port arranged
- Strength of Existing Statute
  - Easy to opt in – Easy to form & govern
  - Strong history of special assessment & lien perfection
PACE Trends in Ohio – Rapid Growth

- Ohio Development Services Agency (ODSA)
  - $18 million of new loan loss reserves.
  - TLCPA is master escrow agent
  - 6 major Ports have filed to receive LLRs
    - Toledo, Cleveland, Columbus, Dayton, Cincinnati, Akron
  - TLCPA select for program design & support by Columbus Franklin County Finance Authority & Dayton Montgomery County Port Authority

- PACE is poised to grow rapidly.
  - Toledo remains highly active & Cincinnati recently formed
  - Cleveland reinvigorating & Akron forming
  - Columbus & Dayton have identified projects & are forming
  - Many smaller municipalities coming forward driven by economic development, community revitalization & sustainability
National PACE Trends - Growing

- Market & Technology Drivers
  - PACE Acceptance & maturity as a financing tool
  - Project pipelines & completed financings are taking off
  - Aging building infrastructure & lack of commercial investment since ’08
  - Building mechanical system end of life.
  - New building controls, LED & high efficiency HVAC
  - Pent-up market demand
  - Community economic development & revitalization

- Established States Exploding & New States Coming Online
  - OH, CT, CA are leading
  - TX coming online; High activity CO, FL, MN, MI, WI, NY, MO.
  - $75M projects closed - $250M pipeline.
PACE Programs Today

218 Projects Closed - $72 mil - Pipeline of $220+ mil
Innovative Real Estate Finance Solutions
THE YGRENE TAX FINANCING MODEL

CERTIFIED CONTRACTORS
Utilize Financing to Market
Energy Efficiency Upgrades

LOCAL GOVERNMENT
Form Clean Energy District

COMMERCIAL & RESIDENTIAL
PROPERTY OWNERS
Use Financing to Pay for Upgrades

INVESTORS
Provide Project Financing &
Access to Capital Markets

Warehouse
Revolving Credit

Securitization or
Private Placement
WHAT IS PACE/ TAX FINANCING?

- 100% financing for building upgrades repaid through property tax bill
- Used in municipal finance for 30+ years
  - Airports, hospitals, sewage systems and waste treatment, school districts, etc.

Benefits of PACE Financing:

- 100% financing with no out-of-pocket costs
- Non-recourse to owner – stays with the building upon sale
- Improves balance sheet (tax not debt)
- 20-year fixed rate
- Tax deductible
- NNN pass-through
- 24-hour approval
- No payment for ~12 months

“It saved us 6 months of due diligence knowing this finance program had already been fully vetted by the city.”

~Dwight McRay, Managing Director, Metzler Real Estate Group
IMPROVEMENTS ELIGIBLE FOR PACE FINANCING

Building Shell
- External glass
- Windows & doors
- Roofing
- Reflective paints & coatings
- Landscaping & Irrigation
- Internal & external lighting
- Building envelope
- Sky-lighting or Day-lighting

COMFORT & EFFICIENCY
- Energy management systems
- Insulation & air sealing
- Ducting & ventilation
- HVAC systems
- Boilers & furnaces
- Motors & drives
- Chillers & refrigeration
- Hot water (tankless, solar thermal, natural gas)
- Core Plumbing
- Graywater Systems
- Recirculation

RENEWABLE ENERGY
- Solar PV
- Solar Thermal
- Wind
- Geothermal

WATER CONSERVATION
- (GA and CA)

WEATHER RESILIENCY (FL)
Super-seniority lien status

Pari passu with ad valorem property taxes

Maximum 10% lien secured by entire value of real property

Rigorous national underwriting standard

Non extinguishable through bankruptcy or other means

Foreclosable upon single missed payment, no acceleration

Historical repayment rates essentially 100%

Credit Enhanced

Indicative Rating: AA - AAA
Ygrene is a multi-state pace provider
- Have won 90+ municipalities across 3 states

<table>
<thead>
<tr>
<th>County/City</th>
<th>District Status</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sacramento City</td>
<td>Open</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Sacramento County</td>
<td>Open</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Yolo County</td>
<td>Open</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Butte County</td>
<td>Bond Validation</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Mendocino County</td>
<td>Bond Validation</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Coachella Valley</td>
<td>Open</td>
<td>Unlimited</td>
</tr>
<tr>
<td>City of Chula Vista</td>
<td>Bond Validation</td>
<td>Unlimited</td>
</tr>
<tr>
<td>City of San Diego</td>
<td>Contract</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>4,047,807</strong></td>
<td><strong>Unlimited</strong></td>
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</table>

<table>
<thead>
<tr>
<th>County/City</th>
<th>Population</th>
<th>Status</th>
<th>Authority</th>
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</thead>
<tbody>
<tr>
<td>Green Corridor</td>
<td>582,741</td>
<td>Open</td>
<td>$500M</td>
</tr>
<tr>
<td>Coastal Corridor</td>
<td>24,427</td>
<td>Bond Validation</td>
<td>$500M</td>
</tr>
<tr>
<td>Leon County</td>
<td>263,769</td>
<td>Bond Validation</td>
<td>$200M</td>
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<tr>
<td>Broward County</td>
<td>1,748,209</td>
<td>Bond Validation</td>
<td>TBD</td>
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<tr>
<td>Pinellas County</td>
<td>921,319</td>
<td>Contract</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3,580,485</strong></td>
<td></td>
<td><strong>$1.2B</strong></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>County/City</th>
<th>Population</th>
<th>Status</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Atlanta</td>
<td>443,775</td>
<td>Contract</td>
<td>$500M</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>443,775</strong></td>
<td></td>
<td><strong>$500M</strong></td>
</tr>
</tbody>
</table>

By: Ygrene
California, Florida, and Georgia
YGRENE Program Components

- Fully Funded Program
- Rigorous Underwriting & Standardization
- Project Management & Funding Platform
- Local Presence, Contractor Training & Support
- Marketing, Lead Generation & Origination

“The PACE Commercial Consortium is the missing piece in the jigsaw puzzle for cities looking to implement green plans”

-SIR RICHARD BRANSON
FOUNDER, CARBON WAR ROOM
YGRENE ORIGINATION & PROJECT MGT PLATFORM

1. DISTRICT LOCALIZATION
2. FUNDING APPLICATION & APPROVAL PROCESS
3. PROJECT WORKFLOW & APPROVAL PROCESS
4. CONSTRUCTION FUNDING
INTRODUCING A SIMPLE, SMART, AFFORDABLE WAY TO FINANCE CLEAN ENERGY HOME IMPROVEMENTS

NEW ROOFS

SOLAR PANELS

NEW WINDOWS, DOORS, SKYLIGHTS

NEW HEATERS AND AIR CONDITIONING

WATER HEATERS

POOL PUMPS & HEAT PUMP

WATER SAVING MEASURES & IRRIGATION

The City of Sacramento has made it easy for you to start living off-grid. You can improve the performance of your home, save energy, and live a healthier, safer environment.

Today you can upgrade your home with no out-of-pocket costs and 100% financing for qualified improvements.

You can now enjoy the many benefits of an energy efficient home:

* Lower utility bills
* Increase home value
* Improve indoor air quality
* Improve the quality and comfort of your home

It's easy to get started:

2. Choose your contractor.
3. Make the clean energy improvements of your choice.
4. Apply for financing through your property tax bill over periods of up to 20 years.

Don't miss this opportunity to live a healthier, safer life with clean energy improvements for your home. Visit us online today!
CASE STUDY – METRO CENTER, SACRAMENTO

$3,160,000 FINANCING

MECHANICAL SYSTEMS, INTERIOR AND EXTERIOR LIGHTING

WITH JOHNSON CONTROLS, COLLIERS INTERNATIONAL, METZLER REAL ESTATE

ANNUAL ENERGY SAVINGS: 27% $140,000

JOBS CREATED: 50

Sacramento Unveils Nation's Largest Clean Energy PACE Retrofit
Financing Energy Improvements on Utility Bills:
Market Updates and Key Program Design Considerations for Policymakers and Administrators

Greg Leventis

May 8, 2014
Agenda

• Objectives and approach
• Overview of the current state of on-bill programs
• 4 key program design features
• Case study:
  – Tennessee Valley Authority (TVA)
Report objectives and approach

• Objectives
  – Update landscape of on-bill lending
  – Actionable insights for stakeholders

• Approach
  – Baseline data from 30 on-bill programs
  – Interviews and case studies on 13 of these programs
Overview of current on-bill geography

On-bill program operating or planned
Overview of historic on-bill activity

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of participants</th>
<th>Lifetime volume</th>
<th>Average financial product size</th>
<th>Default rate ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>182,324</td>
<td>$1.055B</td>
<td>$5,787</td>
<td>0%-3%</td>
</tr>
<tr>
<td>Non-residential</td>
<td>50,339</td>
<td>$775M</td>
<td>$15,400</td>
<td>0.57%-2.9%</td>
</tr>
<tr>
<td>Total</td>
<td>232,663</td>
<td>$1.83B</td>
<td>$7,867</td>
<td>0%-3%</td>
</tr>
</tbody>
</table>

*Note: Not all programs reported default rates. Three had not launched at the time of writing.*
On-bill activity is heavily concentrated in a few initiatives

- Just 5 initiatives account for over 90% of on-bill activity
  - Tennessee Valley Authority (TVA)
  - Manitoba Hydro (MH)
  - Alliant Energy Wisconsin (Alliant)
  - United Illuminating/Connecticut Light & Power (CT SBEA)
  - National Grid (NG)

### Dollar Amount

- **TVA, MH, Alliant CT SBEA, NG**
  - $1.64B
  - (90%)
- **All others**
  - $190M
  - (10%)

### Number of Loans

- **TVA, MH, Alliant CT SBEA, NG**
  - 215K
  - (92%)
- **All others**
  - 18K
  - (8%)
## Summary of top 5 programs

<table>
<thead>
<tr>
<th></th>
<th>Residential</th>
<th>Non-Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TVA</td>
<td>Manitoba Hydro</td>
</tr>
<tr>
<td>Lifetime Volume</td>
<td>$500M</td>
<td>$290M</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>6% - 8%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Default Rate</td>
<td>3%</td>
<td>0.48%</td>
</tr>
<tr>
<td>Source of Capital</td>
<td>OBR (Private capital)</td>
<td>OBF (public monies)</td>
</tr>
</tbody>
</table>
Key program considerations

1. Disconnection and Meter Attachment: How is the Product Structured?

2. Capital Sources: Where Does the $$ Come From?

3. Customer Creditworthiness: Who is Eligible?

4. Eligible Measures: What Can They Do?
1. Disconnection & Meter Attachment: How is the product structured?

<table>
<thead>
<tr>
<th>Features/Issues</th>
<th>Line Item Billing</th>
<th>On-Bill Loan w/ Disconnection</th>
<th>On-Bill Tariff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan paid on utility bill</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Potential power disconnection</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Loan tied to the meter</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Survives bankruptcy/foreclosure</td>
<td></td>
<td></td>
<td>?</td>
</tr>
</tbody>
</table>

- Uncertainty about whether an on-bill tariff will survive a bankruptcy
- The value of disconnection as a risk management tool is still uncertain
2. Capital Sources: Where does the $$ come from?

<table>
<thead>
<tr>
<th>Program Type</th>
<th>Source of Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Bill Financing (OBF)</td>
<td>Public or Utility (bill-payer or shareholder) funded</td>
</tr>
<tr>
<td>On-Bill Repayment (OBR)</td>
<td>Private Investors</td>
</tr>
</tbody>
</table>

- Some programs using utility capital have done substantial volume
- Many paths to private capital
### Underwriting Approach

<table>
<thead>
<tr>
<th>Underwriting Approach</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard metrics/criteria</strong></td>
<td>Credit scores (e.g. ≥ 640 FICO)</td>
</tr>
<tr>
<td></td>
<td>Debt-to-income level (DTI) (e.g. ≤ 50%)</td>
</tr>
<tr>
<td><strong>Expanded</strong></td>
<td>Same metrics, relaxed criteria (e.g. ≥ 625 FICO, ≤ 70% DTI)</td>
</tr>
<tr>
<td><strong>Alternative</strong></td>
<td>Bill payment history</td>
</tr>
</tbody>
</table>

- Default rates low regardless of underwriting but...

- Application approval rates higher for programs using alternative underwriting
4. Eligible Measures: What can participants do?

• Key considerations:
  – Types of eligible measures
  – Single-measure vs. comprehensive retrofits
  – Bill impacts
Key findings from TVA
## Key Findings from TVA

<table>
<thead>
<tr>
<th></th>
<th>Energy Right Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Sector</strong></td>
<td>Residential</td>
</tr>
<tr>
<td><strong>Lifetime Volume</strong></td>
<td>Over $500 million since 1997</td>
</tr>
<tr>
<td><strong>2012 Volume</strong></td>
<td>$45 million</td>
</tr>
<tr>
<td><strong>Interest Rate</strong></td>
<td>6% - 8%</td>
</tr>
<tr>
<td><strong>Default Rate</strong></td>
<td>3%</td>
</tr>
<tr>
<td><strong>Source of Capital</strong></td>
<td>OBR (private capital with a TVA guarantee)</td>
</tr>
</tbody>
</table>
Schematic of TVA’s Energy Right Solutions
Contacts and further info

Contacts:

Charles Goldman
510-486-4637
cagoldman@lbl.gov

Greg Leventis
510-486-5965
gleventis@lbl.gov

For more information about on-bill programs see:

SEE Action Financing Solutions Working Group
http://www1.eere.energy.gov/seeaction/financing_solutions.html

LBNL Electricity Markets & Policy Group
http://emp.lbl.gov
Questions?