ONTARIO MUNICIPALITIES LOCAL IMPROVEMENT CHARGE PROGRAMS FOR ENERGY UPGRADES

DRAFT UPDATE STUDY

May 2016

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DUNSKY: OVERVIEW

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- Renewable Energy and Emerging Technologies
- Greenhouse Gas Reductions

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- Strategic and regulatory support
- Technical support and analysis

CLIENTELE

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- Governments
- Solution Providers
- Large consumers
- Non-profits

CONTENTS

MANDATE

Clean Air Partnerships mandated Dunsky to revisit the Residential LIC Program design developed in 2013 and provide an update on key developments that may impact further LIC roll out in Ontario.

1) *What is new since 2013*

2) *Potential for other delivery models*

3) *Clarity on applicable measures*

RESIDENTIAL PACE/LIC DEVELOPMENTS

RESIDENTIAL PACE/LIC DEVELOPMENTS

ACTIVE PROGRAMS

Program	Jurisdiction	Model	Key Features	Established
Sonoma	CA	Local Government	Early local government-led program that has been successful in generating volume and validated energy savings.	2009
YGreen	CA/FL	Third-Party	A privately funded 3rd party PACE provider operating in multiple states (soon expanding to GA)	2010
HERO	CA	Third-Party	An early innovator into effective PACE marketing and quick customer approval, now available in over 300 jurisdictions.	2011
Vermont PACE	VT	Government + third-party	Vermont PACE assessments are subordinate to existing mortgages, with a Loan Loss Reserve to cover private lenders	2012
Maine PACE	MN	Local Government	Established a $20.4 million revolving loan fund, with underwriting performed by 3rd party. PACE assessments are subordinate to a home mortgage.	2013
Open PACE	CA	Competitive	A turn-key PACE solution that offers s a choice among multiple pre-qualified PACE financing providers.	2015
Solar City	Halifax	Local Government	Financing only for solar (photovoltaic and thermal), includes direct install water conservation measures for all applicants.	2012
Home Energy Loan Program	Toronto	Local Government	Program offers low-interest loans are available using the City's reserve funds. Program requires mortgage lender consent and homme energy assessment.	2014
Residential PACE	NS	Local Government	NS Dept. of Energy providing support for administration costs for up to 25 municipalities that want to offer PACE financing.	2016

RECENT DEVELOPMENTS

MOST STATES HAVE RESIDENTIAL PACE-ENABLING LEGISLATION

Residential PACE (R-PACE) legislation is in place in 32 states and the District of Columbia, covering Roughly 80% of the U.S. population.

HOWEVER… FEW STATES HAVE ACTIVE PROGRAMS

Mortgage-lender concerns largely ceased residential PACE activity in 2013

- Current programs seek to address key lender concerns
- California established loan loss reserve for mortgage lenders effected by PACE liens
- Maine and Vermont applied a secondary lien model
- FL supreme court ruled that Florida Bankers' Association cannot block PACE (Oct 2015)
- Other states awaiting forthcoming FHA guidance on PACE

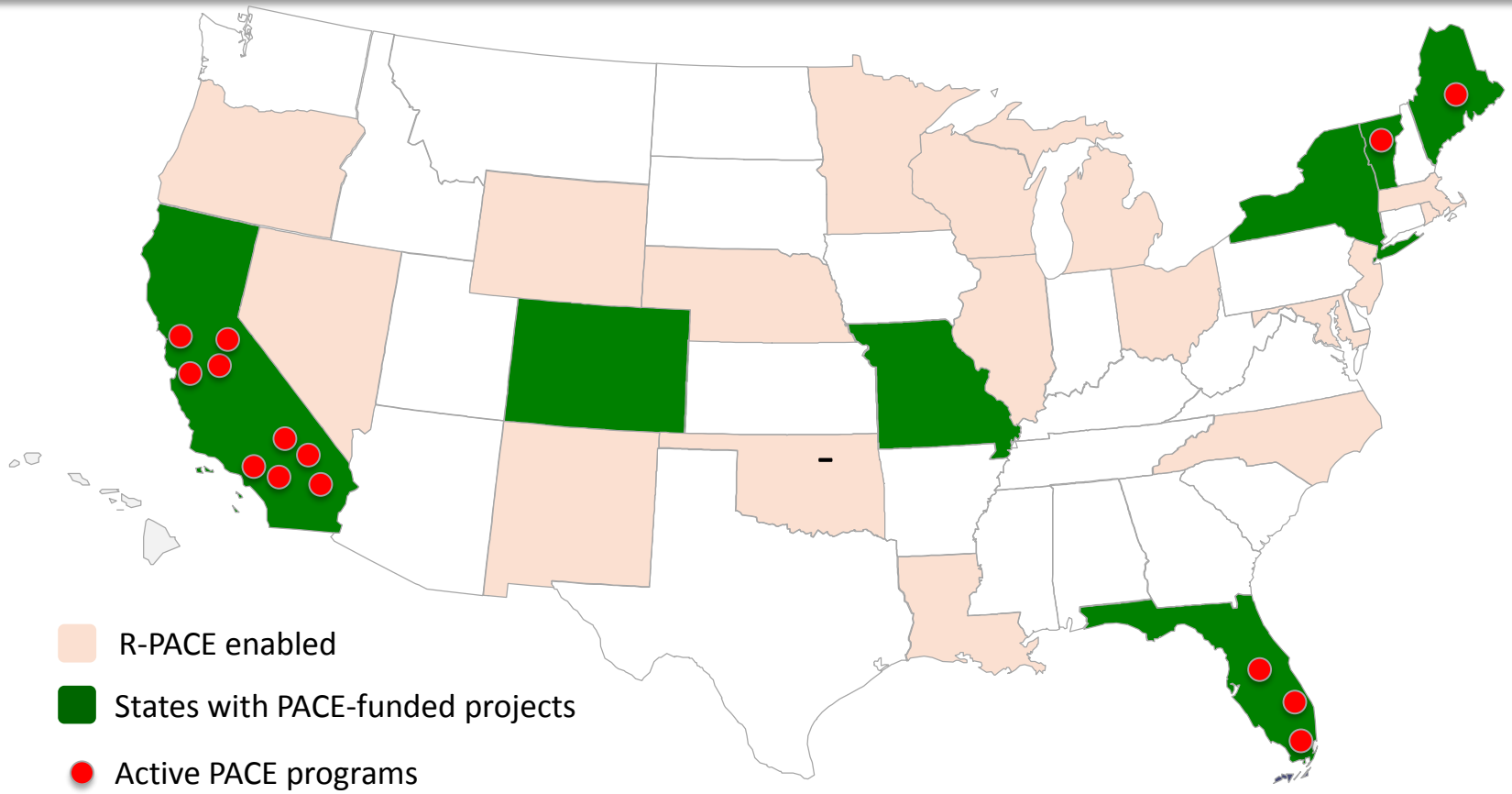
COMMERCIAL PACE MORE WIDESPREAD, BUT VOLUME IS LOW

By nature Commercial PACE programs require approval from all mortgage lenders

- C-PACE active in XX state – with the Connecticut C-PACE program generating the highest volume (over $57M by end of 2015)
- R-PACE and C-PACE models are very different programs, and as a result they are always implemented as independent programs

US PACE EXPERIENCE

RESIDENTIAL PACE COVERAGE



RESULTS TO DATE:

97,000+ retrofits $2.07+ billion invested 17,500+ jobs supported

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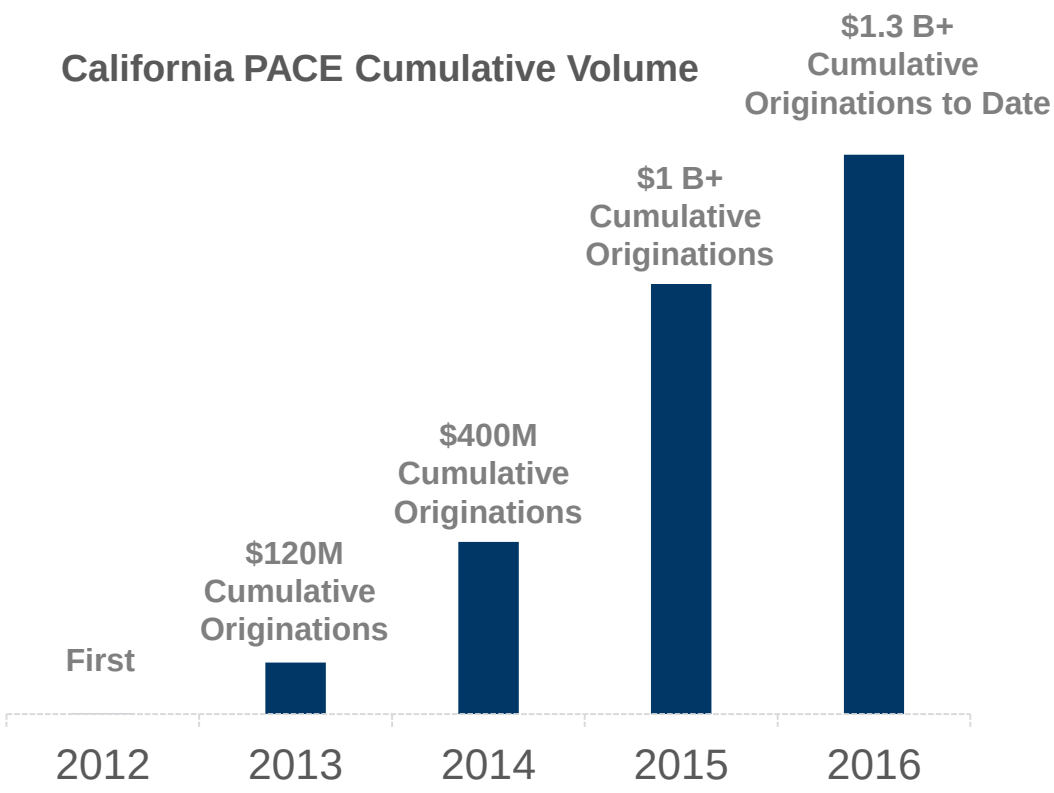
BRINGING PACE TO SCALE



Source: Renovate America

To date, 56,137 residential PACE financings valued at over $1.2 billion are covered by the PACE Loss Reserve in CA accounting for **95% of the Residential PACE market.**

This fast growing market is being **driven primarily by 3rd-party PACE providers** who leverage private capital and apply effective marketing.

The high volume **supports private securitization of PACE financings**, which typically requires tranches of assets valuing over $100M.

PACE LEGISLATION

STATE-WIDE MODELS

A few smaller states have established state-wide PACE programs attached to efficiency agencies that aim to:

- Overcome barriers for smaller municipalities and towns,
- Design PACE programs to integrate with efficiency incentives
- Protect PACE lenders where programs take a secondary lien position to respond to mortgage lender issues

EFFECTIVE LEGISLATION ELEMENTS

PACENation.org recommends a list of key elements be included for effective PACE legislation.
THE NEXT SLIDE COMPARES THIS TO ONTARIO REG. 586

OPTIONAL ELEMENTS

Define criteria to establish owner's ability to pay
Require benchmarking, energy audits
Early repayment at time of sale provisions
Lender consent requirements

California's **Joint Powers Authority model has been an effective tool for enrolling smaller municipalities** in PACE programs. It allows them to join as a member with little or no cost or administrative burden.

It allows municipalities to join an existing, centrally administered PACE program by passing a standard ordinance and joining the authority.

ONTARIO LIC REGULATION (O.Reg. 586/06)

INCLUSION OF KEY REG. ELEMENTS

Recommended PACE Leg.	O. Reg. 586/06	Municipal by-law suggestions
States public purpose goals and broadly outline measures (e.g. energy conservation, avoided costs, environmental concerns, economic development.)	Section 1.2.q Includes energy efficiency and renewable energy works	Consider indicating the specific public purpose goals of program, restate types of energy works covered and add mention of areas such as water conservation or seismic improvements
Specifies repayment mechanism: e.g. PACE assessment or similarly binding charge.	Section 30 (describes special assessment)	State clearly that only payable portion of the LIC will be added to tax roll each year
Applies **same manner of collection and lien status as property taxes** to PACE assessment.	Section 33 (describes lien)	Restate that lien only applies to LIC assessment payments in arrears
Confirms that **assessment will not be extinguished or accelerated due to default**	Not included	May want to include, along with language on early repayment options
Indicates PACE funding options: e.g. bonds, 3rd party capital, reserve funds	Section 34 – indicates how to apply reserve fund for long-term debt	Should state sources of funds for program and how the funds will be managed
Declares right for municipality to impose fees to offset administration costs	Section 12.2.2	Restate costs including administration, (3rd party or municipality), interest, design, materials and construction etc.
Allows contract for **program administration services from 3rd party providers**	Not included – not strictly forbidden	O.Reg language requires Municipality to carry out the work. May require further interpretation to allow 3rd party PACE providers.

SUMMARY OF FINDINGS

- Interest rates from 3.5% to 8% for residential programs
  - 3rd party provider programs are most successful at driving volume despite having highest interest rates
  - Focus on marketing, contractor networks, and quick turn around on applications to drive volume
- 3rd Party models emerging as the most successful
  - Require attention to energy efficiency project definitions and customer protection
  - Joint Powers Authorities allow many municipalities to share a single program
  - Sonoma County may be the only government program to achieve significant volume
- Municipal ordinance can be designed to complement the LIC/PACE legislation to ensure clarity for all stakeholders

MORTGAGE LENDER ISSUES

US FEDERAL HOUSING AUTHORITY CASE

2009

PACE PROGRAMS ESTABLISHED Programs in Colorado and California begin originating loans. Federal Housing Authority (FHA) expresses concerns over the risks PACE posses to mortgage lenders.

2010

FHA ISSUES OPPOSITION STATEMENT FHA instructs Freddie Mac and Fannie Mae to tighten requirements for homes with PACE loans, require lender sign-off and refuse transfer of PACE lien upon sale.

2011

PACE PROGRAMS CEASE Some programs continued until FHA issues guidance letter stating that they would no longer purchase mortgage loans on properties with outstanding PACE assessments

2014

FHA QUIETLY APPROVES LENDER TO ACCEPT PACE-TIED MORTGAGES PACE programs restart with new regulations and approaches, mortgage lenders accept but continue to protest priority lien

2015

FHA ISSUES ACCEPTABLE PACE CONDITIONS STATEMENT Over $2B in Residential PACE projects completed, largely concentrated in CA,CO, FL: many states still awaiting further federal guidance

US FEDERAL HOUSING AUTHORITY CASE

The FHA has described the conditions under which they will recognize PACE assessments:

Condition	Details
Lien Position	Only PACE liens that preserve payment priority for first lien mortgages through subordination
Payment, Structure and Term	PACE financing must be a fixed-rate, fully amortizing loan.
Equity Requirement	PACE financing should not cause a property to exceed FHA's maximum combined loan-to-value (CLTV) ratio
Record Keeping	PACE liens must be identifiable to a mortgage lender through a title search
Additional Consumer Protections	PACE programs must comply with federal and state consumer laws and should include disclosures to participating.

Concerns Over Secondary Lien

Assign PACE financing a secondary lien position **undermines the security that makes PACE attractive** for long-term lending.

Some programs have generated PACE volume under a secondary lien position, but only when a **public body has taken first-loss position** (through an LLR or by lender directly). To date there **has never been securitization of secondary lien based PACE financings**.

MORTGAGE LENDER CONCERNS

LENDER CONCERNS WITH PACE/LIC PRIORITY LIEN*

Threatens Liquidity of Mortgages in Secondary Market
May increase mortgage default rates
Can increase severity of loss to mortgage lender upon default
PACE loans may lack basic consumer protections: typically do not assess borrower's ability to repay

CANADIAN MORTGAGE AND HOUSING CORPORATION (CMHC)

No official CMHC position released to date – but have expressed concern over LIC/PACE senior lien position

CANADIAN BANKERS ASSOCIATION (CBA)

Home Energy Loan specialist group established internally
No official position – but have expressed concern over statutory priority lien and the borrowers ability to pay
Preference for 3rd party lending models

Mortgage Default Rates

The Canadian Banker's Association reports that as of January 2016 0.28% of Canadian mortgages are in arears.

To date there **is no evidence that PACE/LIC program has increased mortgage default rates** over current market levels.

* From 2012 letter to Federal Housing Authority (FHA) from American Banker Association

STRATEGIES AND APPROACHES

1. CLEAR BY-LAW LANGUAGE

The **Canadian Bankers Association** (CBA) recommends LIC bylaws clarify that only the portion of LIC added bi-annually to the tax roll has the same priority lien as property taxes. They also suggest Including ability to pay underwriting criteria (i.e. Debt to income thresholds).
*This is **the simplest way** for programs to address lender concerns*

2. REQUIRE MORTGAGE LENDER CONSENT

Toronto HELP provides homeowner with a lender acknowledgement and consent letter and form explaining program and loan details

3. LOAN LOSS RESERVE (LLR)

California State Treasury created $10M LLR to cover first mortgage lenders for any losses as a result of the PACE lien

4. SECONDARY LIEN POSITION FOR PACE/LIC

Vermont PACE: PACE liens are subordinate to first mortgage and backed by debt-service reserve funds
PACE Maine: PACE is a transferable loan that runs with the property: subordinate to primary mortgage
*Subordinate liens likely **the least desirable** for program administrators*

Lender Consent

Mortgage lender consent **ensures the banks, municipality and mortgage holder are all in agreement** with participation in the program.

However, requiring consent **adds a barrier to participation**, and **increases the hassle-factor** for participants.

In US, lenders often are only made aware of PACE liens when properties are sold or refinanced.

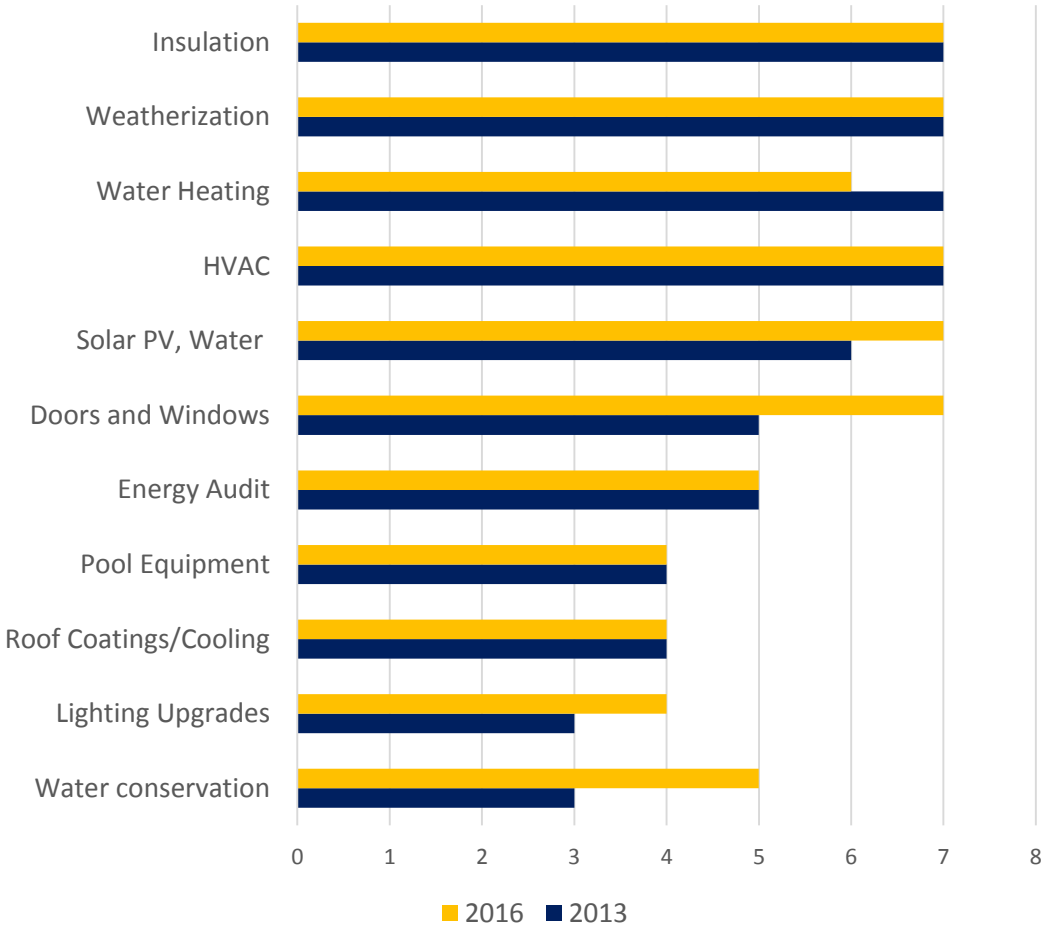
REVIEW OF ELIGIBLE MEASURES

COMPARISON FROM 2013 TO 2016

REVIEWED PROGRAMS 2013

HERO
Sonoma County EI
PACE Maine
Efficiency Vermont
HRM Solar City
Palm Desert EI*
Yucaipa EI*
Vancouver HELP*

**Note: Vancouver, Palm Desert and Yucaipa no longer operate independent PACE programs.*



REVIEWED PROGRAMS 2016

hero
SONOMA COUNTY ENERGY INDEPENDENCE PROGRAM
ygrene WORKS
CSCDA OPEN PACE
Efficiency Vermont
HOME ENERGY LOAN PROGRAM
HALIFAX
efficiency MAINE

MEETING LOCAL PRIORITIES

While some PACE/LIC programs have ended, others continue to grow and new players have entered the market, eligible measures continue to grow. From the start PACE/LIC programs have placed an emphasis on deeper savings through whole home efficiency and distributed generation.

Whole Home Efficiency

All programs (excluding HRM Solar City) include a full range of home energy upgrades: insulation, weatherization, doors and windows, HVAC improvements etc.
Many require home energy audits and will allow these costs to be included in financing

Renewable Energy

Renewables are another key element, focussing on solar PV, water heater and air preheating
California has over $300M in solar PV only projects to date
PACE Maine: Solar only eligible after 20% energy reduction through efficiency

Regional Priorities and New Measures Added

California: Water efficiency and drought resistance landscaping (drought) , seismic resistance
Florida: Wind resistance (hurricanes)
Vermont and Maine: Health and safety upgrades
New Measures: Electric Vehicle Charging Stations, Storage and Fuel Cells, Micro-wind energy, Geothermal, wood/pellet stoves

ENRGY CONSERVATION REQUIREMENTS

PACE/LIC programs often leverage existing programs and align with other incentives ensuring all customers have the same experience.

HOME ASSESSMENTS BY QUALIFIED EVALUATOR

Toronto HELP and **Nova Scotia PACE Pilots**: require home energy assessments in order to participate and qualify for recommended measures

PACE Maine: requires home energy audits by participating energy advisor to develop recommended measures

SHARED REQUIREMENTS WITH UTILITY INCENTIVE PROGRAMS

Toronto HELP: Initially limited to neighbourhoods covered by Enbridge's Home energy Conservation program (until 2015)

Nova Scotia PACE Pilots: Eligible upgrades defined by Efficiency Nova Scotia Home Energy Assessment program

California: some PACE programs require homeowners to apply and do not finance the costs covered by incentives*

HERO PACE Program: reports that many contractors stopped mentioning utility incentives, streamlining customers through PACE

KEY LEARNINGS

Three key learnings have emerged from the analysis:

Legislated Measures

Legislation rarely focuses on specific measures, but uses broad terms

- **California AB811**: Permanently fixed energy improvements
- **Florida:** includes list of included, but not limited to, measures: e.g. air-sealing, renewable energy, example wind resistance improvements

Private (3rd party) programs

Private programs are typically less strict on eligible measures

Often do not require an energy assessment

Some private PACE programs criticized for potentially financing standard-performance measures

Defining energy conservation measures

Energy Codes, utility incentive program measure definitions, Energy Star® can help ensure eligible measures out-perform standard equipment

While enabling legislation is usually broad, bylaws should clearly define the range of equipment, items, products and/or materials. This will not only benefit the public in their understanding of the program, but for the financing and administration of the program.

DELIVERY MODELS

PACE MODEL EVOLUTION

CALIFORNIA SHOWING THE POTENTIAL FOR PRIVATE PACE DELIVERY

As the number of participating municipalities expands in California, there is a shift from publicly run programs to private delivery and open markets.

First Wave: Local government programs	Second Wave: 3rd-party provider model	Third Wave: Competitive models
Examples: Sonoma PACE, PACE Maine, Toronto HELP	**Examples**: WRCOG HERO, California FIRST	**Examples**: Open PACE, YGREEN, HERO (Statewide)
Local government programs (state or muni) rely on public funds or bonds and administration. These typically have strong requirements to meet local energy and infrastructure goals. In many cases they have not met their uptake targets.	Privately administered programs emerged that leverage private capital and apply aggressive marketing through contractor networks. Western Riverside Council of Governments (WRCOG) HERO PACE initiated a quick web-based approval system to drive volume.	As HERO PACE expanded to over 300 jurisdictions, some municipalities are allowing multiple PACE providers to operate, and some providers may offer other unsecured products alongside PACE. This is expected lower interest rates and broaden access.

LOCAL GOVERNMENT

MODEL

The local government (municipal, county or state) provides the funds and administers the program.

Requires the government to invest in designing and implementing the program, including marketing approaches, setting eligibility criteria and financial management.

PROGRAM ADMINISTRATION

Municipal program administration may cover all aspects including registering the assessment and adding it to the property tax bill.

Statewide programs will require participating municipalities to manage the billing at a minimum.

Some aspects may be contracted to third-parties (The state charged Efficiency Vermont, the state's energy efficiency utility, with contacting each town that created a PACE district and offering to act as program administrator, at no charge to the towns.)

GOVERNMENT ROLE

Government funds typically used for lending. Requires access to municipal bonds or reserves, and often state, provincial or federal funds as well.

3rd PARTY PROVIDERS

MODEL

3rd party providers partner with local governments to access private capital and expertise offering turn key services for PACE district set up, administration and financing for energy and water efficiency upgrades.

PROGRAM ADMINISTRATION

All aspects of program administration managed by 3rd party including:
Contractor verification, training and support
Eligible product certification and verification
Municipal support
Marketing
Reporting on energy and environmental impacts
Consumer protection, support and dispute resolution

MUNICIPAL ROLE

Approves the program to enabling financing
Supervise 3rd party partner
Apply assessment to the property tax bill

OTHER

3rd Party often reimburses the municipality for the cost of registering the PACE assessment and updating the billing systems to collect the special tax

COMPETITIVE: OPEN PACE

MODEL

California Statewide Communities Development Authority (CSCDA) finances the installation of eligible products by issuing bonds backed by the assessments created by the Open PACE Program. CSCDA brings multiple programs to compete for homeowner's business.

PROGRAM ADMINISTRATION

CSCDA developed qualification criteria to select PACE Program Administrators to be included in the CSCDA Open PACE platform. The CSCDA Open PACE Program Administrators:

- Develop managed contractor networks in California communities
- Provide 100% financing for energy efficiency projects
- File repayment obligations through property tax bills

MUNICIPAL ROLE

California cities and counties must be a member of CSCDA and adopt a resolution to opt-in to CSCDA Open PACE in order to participate. Member cities and counties must register PACE assessments and add them to the property tax roll.

CSCDA OPEN PACE
PROPERTY ASSESSED CLEAN ENERGY

CSCDA takes responsibility for:

- ✓ entering into voluntary contractual assessment agreements with participating property owners,
- ✓ levying voluntary contractual PACE assessments,
- ✓ issuing bonds to finance improvements, and
- ✓ taking actions in the event of delinquencies.

3rd PARTY PROVIDERS

BENEFITS	• Do not rely on public capital and do not impact borrowing limits • Effective marketing from private providers can drive high volume • Minimal draw on municipal staff and resources
DRAWBACKS	• **Higher interests rates** are typically needed to support the marketing and origination costs: for example HERO PACE in California employs a team of over 200 people; HERO offers 6%-8% interest financing. • **Energy savings are harder to assess** and standards are less certain: 3rd party providers have been criticized for not requiring participants to access available utility incentives, and thus the resulting savings are difficult to quantify

- **Establishing a standard PACE ordinance over multiple jurisdictions, and if possible, a joint powers authority to govern the program**, can create a larger market to better attract a 3rd party provider.
- Municipalities still need to apply PACE assessments to the property tax billing.

CUSTOMER PROTECTION

Avoiding predatory lending is an important concern for 3rd-party delivery models

Predatory Lending Risk	Customer Protection Strategy
➢ Improper assessment of equity in home	✓ Mortgage + PACE capped at 90% of Fair Market Value (FMV) ✓ PACE capped at 15% of FMV
➢ Originated by unregulated parties (contractors) ➢ Fraud potential when program pays contractor directly	✓ Require use of licensed contractors registered with program ✓ Complaints and dispute resolution by program administrator ✓ Require contractor and homeowner sign-off for payments
➢ Loan terms exceed measure life ➢ Above-market interest rates	✓ Disclosure of financing terms and mortgage risks
➢ Resale complications	✓ Allow early repayment at sale
➢ Marketing to homeowners not qualifying for home equity loan	✓ Policy that prohibits unfair or deceitful marketing and communications: e.g. tax advice, cash incentives etc.

Other Consumer Protection… Maximum financing amounts, regular program reporting to public sector, establish special procedures for protected classes (e.g. Seniors), consumer privacy and data security

HOMESTYLE ENERGY MORTGAGE

ESTABLISHED 2016

The HomeStyle® Energy mortgage is **designed to encourage homeowners to transfer their PACE assessment balances to their mortgage at the time of refinancing or sale.**
It allows homeowners to increase their loan to value ratio above typical Fannie Mae limits to payback outstanding PACE assessments, at a low interest rate (currently 4%).

SIMPLE OPTIONS

Offers new flexibilities to refinance previous debt, for ex., homeowners can now take a limited cash- out (up to 15%of home's value) to pay off higher-interest energy improvement debt, including PACE loans.
Finance up to $3,500 in weatherization or water-efficient improvements with no energy report.

REFINANCING

Limited cash-out refinances may include the payoff of existing financing incurred for prior energy improvements made to the property (such as PACE liens, unsecured loans, or credit card debt).
If using HomeStyle Energy to pay for future energy-efficiency improvements, the lender must be able to operationally support the transaction, such as by administering escrow accounts and monitoring completion of the work.

KEY FINDINGS

OVERALL FINDINGS

- PACE experience has helped identify better practices for establishing and implementing PACE programs such as:
  - Broadening the range of measures to include other local priorities such as water conservation
  - Marketing around net bill savings, ease of access and whole project financing more effective than focus on interest rates
- Getting legislation and ordinances right can reduce stakeholder concerns
  - Make clear the public purpose and types of projects financed
  - Include specifics on how the homeowner's ability to pay will be assessed
  - Outline mechanisms to handle repayment and default-bankruptcy
  - Include strong customer protection protocols – especially for 3rd party providers

OVERALL FINDINGS

- Mortgage Lender concerns must be addressed…

  …. but program integrity should also be respected

  - Secondary liens for PACE reduce financing security and increase risk to the government and lenders: if at all possible maintain priority lien status.
  - Clear municipal ordinance, coupled with sound project selection may be sufficient to address most lender concerns

- Creating mechanisms for multiple municipalities/counties to join a common programs can increase access

  - Eg. California Joint Powers Authority, Maine common ordinance offer a simple sign-up for municipalities
  - Note: small towns may have limited capacity to add PACE assessments to tax role – further technical and financial support may be needed?

OVERALL FINDINGS

- **Bottom Line:** 3rd party models emerging as the most successful at driving volume
  - Offer the most effective marketing approaches, despite charging higher interest rates
  - Quick responses to applicants can reduce friction and drive uptake: e.g. HERO PACE can accept or refuse an on-line application in minutes
  - Government programs struggle to drive volume and can leave local government carrying significant risk: e.g. Vancouver, Toronto, Halifax, Vermont
  - Integrating 3rd party models with utility incentive program requirements can help ensure energy efficiency standards

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APPENDIX: EXAMPLE PROGRAM DESCRIPTIONS

DEVELOPMENTS SINCE 2013

RESIDENTIAL PACE

Program	Jurisdiction / Established	Delivery Model	Description	Interest rate and term
Sonoma	**CA 2009**	**Local Government**	Finance energy efficiency, water conservation, and solar energy improvements to existing homes and business properties via a voluntary property tax assessment.	7% for 10 or 20 year terms
HERO	**CA 2011**	**Third-Party**	Up to 20-year terms, borrow up to 15% of home's value Low, fixed rates	6%-8% up to 20 years
Open PACE	**CA 2015**	**Competitive**	Provides CSCDA members a turn-key PACE solution that provides property owners a choice among multiple pre-qualified PACE financing providers.	Not available
YGreen	**CA/FL 2010**	**Third-Party**	Privately funded program provides immediately accessible financing with no upfront costs for energy efficiency, renewables, water conservation, and, in certain areas, hurricane protection, electric vehicle charging stations and seismic upgrades.	Not available
Vermont PACE	**VT 2012**	**Local Government**	Vermont PACE assessments are subordinate to existing mortgages.	6% (0% for low income)
Maine PACE	**MN 2013**	**Local Government**	Efficiency Maine established a $20.4 million revolving loan fund for the PACE Loan program. PACE assessments are junior and subordinate in priority to a home mortgage.	4.99% for up to 15 years
HELP	**Toronto 2014**	**Local Government**	Low interest loans are available to qualifying homeowners who are interested in improving the energy and water efficiency of their home.	4.5% for up to 20 years
Solar City	**Halifax 2012**	**Local Government**	The Solar City program offers property owners in Halifax innovative solar energy options - hot water, photovoltaic (PV) and thermal (hot air), which can be financed through a solar collector account with the Halifax Regional Municipality	3.5% for 10 years
Residential PACE	**NS 2016**	**Local Government**	NS Dept. of Energy providing funding support for administration costs for up to 25 municipalities that want to offer PACE financing for energy efficiency improvements	Not available

CALIFORNIA PACE

STATE-WIDE LOAN LOSS RESERVE (LLR)

In 2013, a $10M LLR established by the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA). This, along with a loosening of FHA's opposition to PACE led to a renewed market for PACE in California

CALIFORNIA IS BIGGEST PACE MARKET IN US

CAEATFA initially enrolled eight PACE programs with PACE financings valued at over $350 million.
Currently 11 PACE programs are registered with the LLR, with over 56,000 residential PACE financings valued at approx. $1.2Bn
To date, CAEATFA has not received any claims on the LLR

CALIFORNIA AT THE PACE FOREFRONT:

The first PACE programs were established by local governments in CA (e.g. Berkeley and Sonoma)
Third-party providers now dominate the PACE in CA (e.g. HERO)
New models are emerging in CA for competition among PACE providers to improve conditions for participants (e.g. Open PACE)

CAEATFA's $10 M LLR will make first mortgage lenders whole for any losses in a foreclosure or a forced sale that are attributable to a PACE lien covered under the program.

CAEATFA staff initially estimated that the LLR would last between 8 to 12 years. Now that the program has been active for almost one year, CAEATFA is working with financial advisors to determine the program's potential long-term liability and longevity based on activity to date

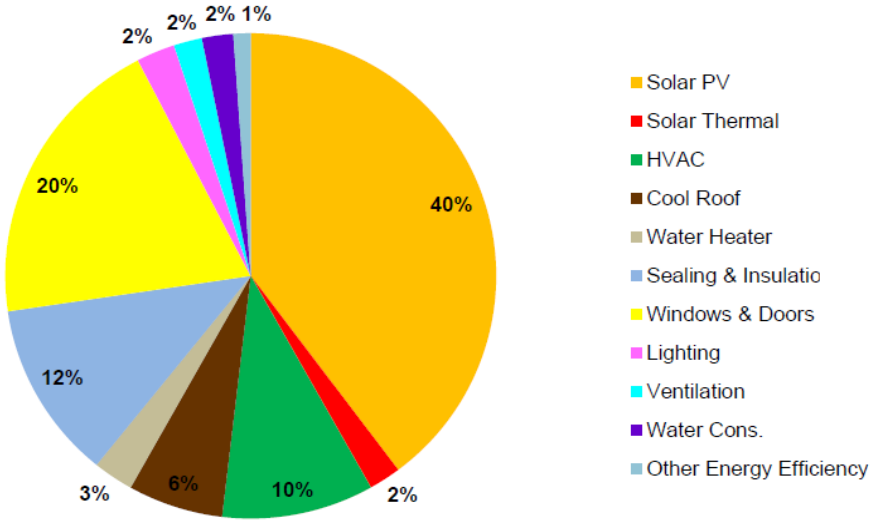
SONOMA COUNTY

ESTABLISHED: March 2009

Administered by local government
Established $20M loan pool

RESULTS TO DATE

2,150 Projects Complete ($73M)
0.35% delinquency, 0% default rate
40% of projects are Solar PV alone
58% Energy Efficiency,
89% of Projects completed by local contracto



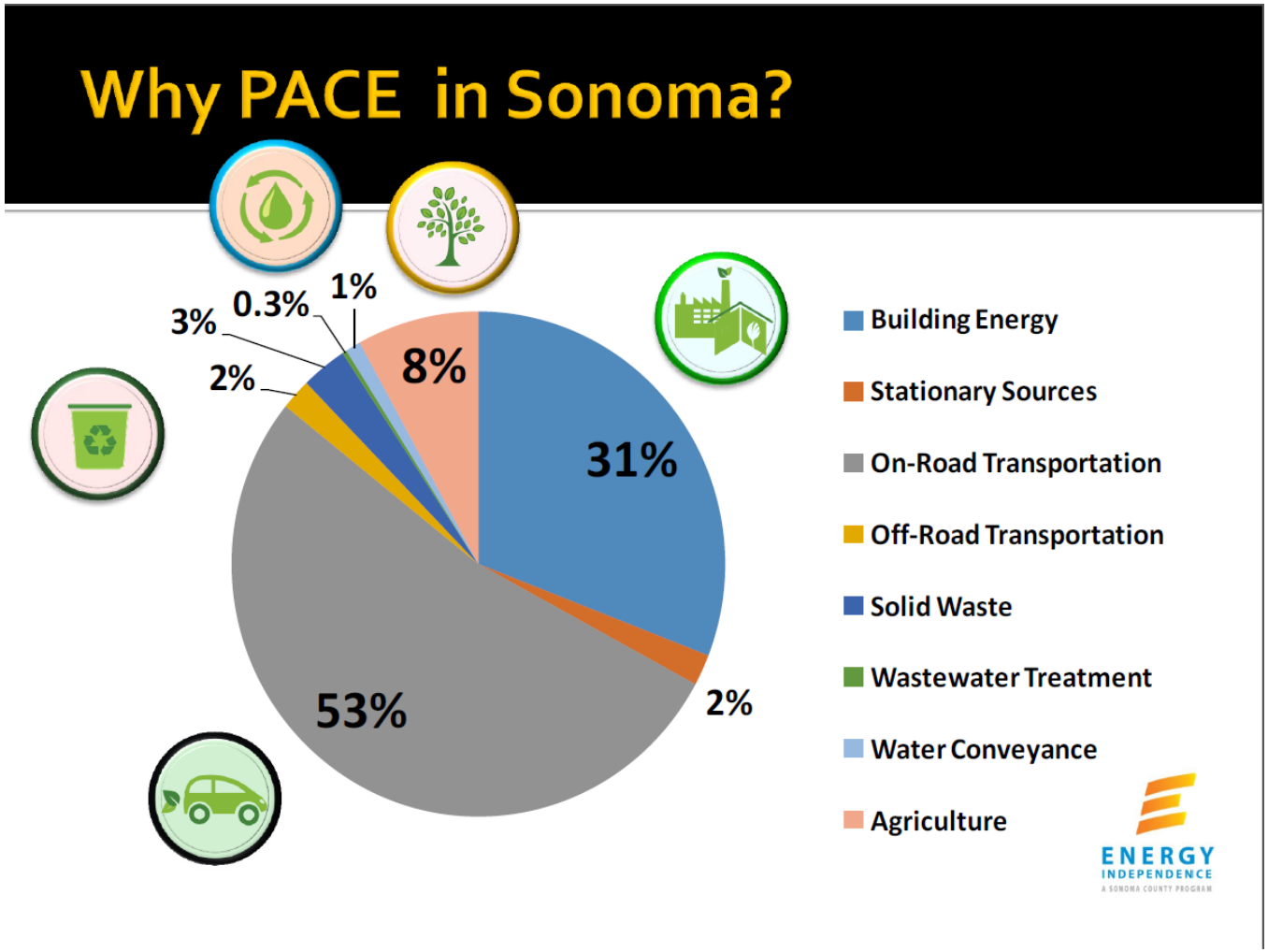
BARRIERS AND CHALLENGES

Volume slowing in latter years – perhaps a result of exhausting initial pent up demand

KEY LEARNINGS

Sonoma PACE takes an active role in educating other groups about PACE
Focus on local economy and protecting customers
Permits pulled for all PACE projects
Verify reasonable pricing/costs and equipment standards on all projects

SONOMA COUNTY



Building energy is the second largest source of GHG emissions – *accounting for 31% of all GHG emissions*

EXAMPLE 1: CALIFORNIA

HOME ENERGY RETROFIT OPPORTUNITY (HERO)

ESTABLISHED: 2011

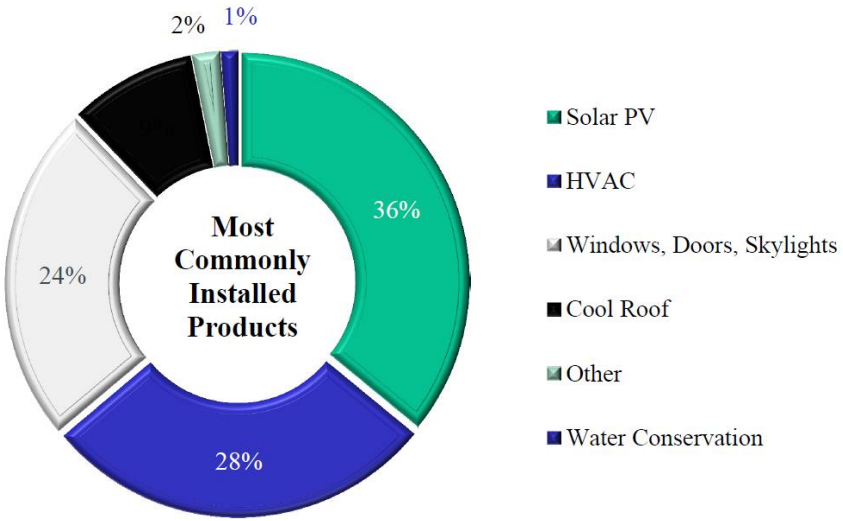
Western Riverside County (WRCOG) in 2011 (18 municipalities)
California HERO launched in 2014 (now available in 391 jurisdictions outside of WRCOG)
Residential program financed by Renovate America
Commercial HERO program financed by Samas Capital

RESULTS TO DATE

WRCOG: 149 projects ($32M)
2.66B kWh of savings (lifetime)

BARRIERS AND CHALLENGES

HERO has become so easy for contractors that the may fail to mention other incentives for fear of slowing down customer acquisition process



KEY LEARNINGS

Easy on-line application process - emailed response within minutes
Regional program offers economy of scale and consistent program delivery and marketing
PACE Homes sold at a premium of $199-$8,882 (recovery of 100% of renovation costs)
Nearly $7,000 PACE premium for homes purchased from foreclosure

HERO EXPANSION ACROSS CALIFORNIA

California HERO , CA

22,178 Homes Improved

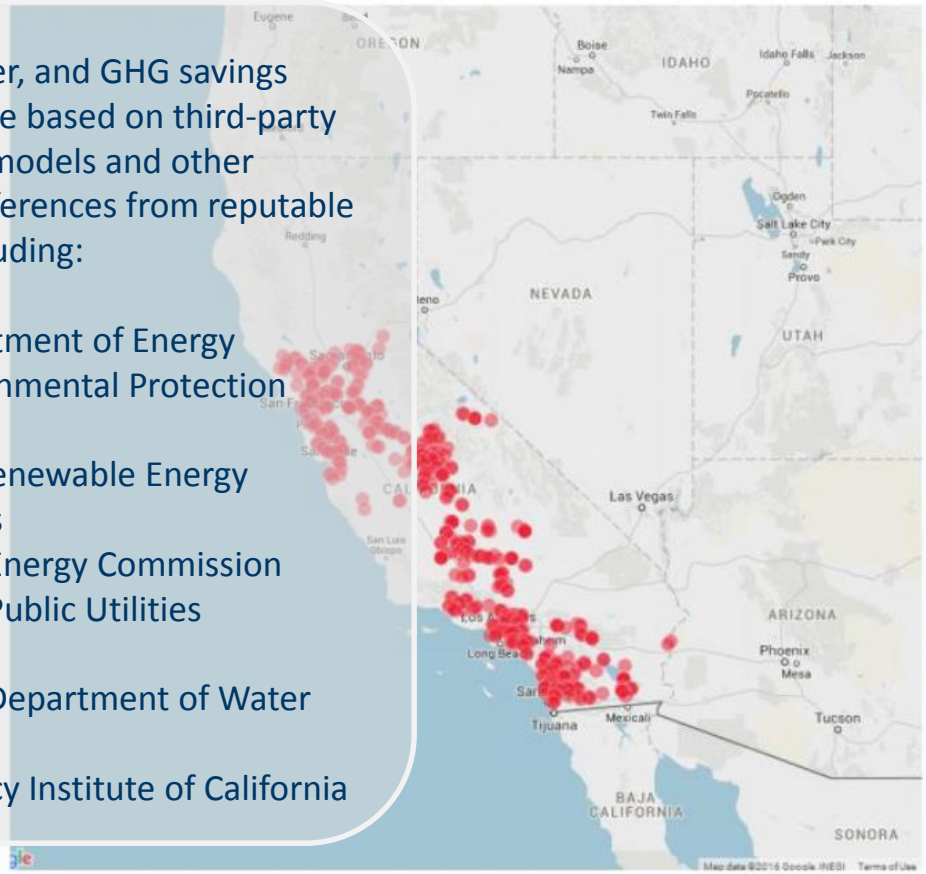
02/10/2014
HERO Launch Date

5,037,436
Housing Count

01/01/2011 - 03/23/2016
Report Range

Energy, water, and GHG savings estimates are based on third-party calculation models and other technical references from reputable sources including:

- U.S. Department of Energy
- U.S. Environmental Protection Agency
- National Renewable Energy Laboratories
- California Energy Commission
- California Public Utilities Commission
- California Department of Water Resources
- Public Policy Institute of California



Improvements

Type	Total Installed	Bill Savings
Energy	29.7K	$341M
Solar	14.4K	$660M
Water	2,021	$13.7M

Lifetime Impact

Applications Submitted	64.0K
Applications Approved	46.6K
Funded Amount	$541M
Economic Stimulus	$937M
Jobs Created	4,594
Energy Saved	3.37B kWh
Emissions Reduced	909K tons
Water Saved	1.54B gal

Learn how these numbers are calculated at https://www.herogov.com/faq

HERO EVALUATOIN FINDINGS

PROCESS EVALUAION: 2014-2016

First PACE program to have an extensive formal evaluat

PACE financing is only partly responsible for HERO's success. PACE transferability, eligibility, tenor are plusses, but…
The Customer experience is key: it is easy, fast, compelling
Contractors are trained and equipped to market and help deliver that experience. They are key influence and crucial to analysis

PRELIMINARY FINDINGS

HERO PACE may not be best for:

- Very small projects < $5,000
- Very large projects > 10%-15% of property value

HERO favors larger contractors

HERO's success requires significant staffing

- Renovate America has hundreds of employees and maintains a large call center
- Reps are in the field training and supporting contractors
- IT staff develop tools to support customer experience and contractors

BARRIERS AND CHALLENGES

Difficult to evaluate impact over and above state energy efficiency incentives

Intangibles such as ease of use can be hard to measure

Tangibles may be difficult to compare (e.g., rates, fees, tenors, eligible measures)

Need to ensure that there is access to customer lists to assess impacts

Ygrene Works

ESTABLISHED: 2010

In Spring 2006, a four-bank lending system called Green Energy Loan (GEL) was organized for the purpose of facilitating financing that would enable homeowners to retrofit their homes to reduce carbon emissions.

In 2010, Ygrene entered into discussions with multiple local banks to secure financial partnerships that provide the backbone for Ygrene's fully funded model.

First provider to offer program in multiple states: FL, CA, GA

Incorporated hurricane resistance measures for GA and FL

RESULTS TO DATE

Invested 1.34 billion dollars into local economies

Created 8,000 local jobs

2,000 projects completed to date (80% in CA, also in FL)

644,000 Mtons reduction in greenhouse gasses.

EXAMPLE 3: CALIFORNIA

OPEN PACE

ESTABLISHED: 2015

Offers member cities and counties with a turn-key PACE solution that gives property owners a choice among multiple pre-qualified PACE financing providers including:

AllianceNRG Program™ | CaliforniaFIRST | CLEANFUND Commercial PACE Capital | PACEFUNDING | spruce

RESULTS TO DATE

The maximum aggregate dollar amount of the principal component of contractual assessments to be levied under the Open PACE Program is $41 billion

Subject to increase if there is sufficient demand.

BARRIERS AND CHALLENGES

Need to address the potential for financing standard-performance measures

KEY LEARNINGS

Offers cities and counties relief from the future burden of vetting and approving new programs as the PACE market changes

OPEN PACE

KEY LEARNINGS

Highest Standards: CSCDA recently adopted a PACE consumer protection policy containing the highest standards of any PACE program.

Competition: CSCDA brings multiple programs to compete for homeowner's business. Programs interest rates are the lowest in the industry.

No City/County Obligation: Similar to conventional assessment financing, the City/County is not obligated to repay the bonds or pay the assessments levied on the participating properties.

No City/County staff support required: All Open PACE, assessment administration, bond issuance and bond administration functions are handled by CSCDA and its pre-qualified program administrators.

Prequalified PACE Administrators: CSCDA pre-qualifies PACE Administrators based on their business practices, qualifications, experience, and capital commitment to the PACE market.

EXAMPLE 4

VERMONT PACE

ESTABLISHED 2012

20 towns enacted PACE districts
First offer initiated in January 2013

RESULTS TO DATE

Minimal uptake: 20 PACE assessments to date
Difficulties attracting small towns: just 50 of 251 towns are singed up as PACE districts

BARRIERS AND CHALLENGES

Avg. community is less than 3,000
Application process is cumbersome
Not every town is a PACE district creating challenges for contractor support and clarity of offer

KEY LEARNINGS

A statewide PACE administrator can overcome barriers for small towns
A simplified application process is imperative to increase conversion rates
Every town that enacted PACE legislation had a local champion
Senior liens are thriving now. If this is no longer controversial, then recommend that PACE move to senior lien - advice is to wait to see what options are before committing resources.

Vermont PACE is viewed as a **catalyst -** increasing awareness and encouraging homeowners to make necessary upgrades whether they choose to use their own funds, PACE or other financing options.

MAINE PACE

ESTABLISH 2013

As of Sept 2013, 166 Maine municipalities passed PACE ordinances
Efficiency Maine administers the loan program on municipalities behalf

RESULTS TO DATE

Available in more than 180 municipalities
Minimum energy savings is at least 20%
As of Jan 2015, 150 loans were issued totalling $1.6M in improvements;
To qualify, work must include at least 1 eligible measure or total projected home savings greater than or equal to 20% as determined by an energy model

BARRIERS AND CHALLENGES

Issues of lien superiority for investors and the FHFA
Now offered as a secondary lien NOT attached to the property tax
Incentives were dropped when financing was introduced, causing a major drop in retrofit activity

KEY LEARNINGS

Under Maine's PACE legislation, a PACE assessment is secured by recording a "notice of a PACE agreement" in the registry of deeds, creating a PACE mortgage on the property.
Used a standard ordinance that any municipality or county could apply
Rebates and financing, including enabling strategies such as home labelling, training, etc. should be combined at least in the short term

TORONTO

HOME ENEGY LOAN PROGRAM

HOME ENERGY LOAN PROGRAM

ESTABLISH 2014

A three-year pilot designed and implemented by the City of Toronto
Two streams: Residential (HELP) and multi-family (Hi-RIS)
First program created under Ontario's LIC regulation (O.Reg 586/06)

RESULTS TO DATE

106 participants, $1.9M financing committed, 25% avg. energy reduction, 2.5t of GHG reductions
Initially HELP limited to neighbourhoods eligible for Enbridge incentives (energy audits and measures), eventually expanded city-wide.
HELP/Hi-RIS program recipient of 2016 FCM Sustainable Communities Award.

BARRIERS AND CHALLENGES

Marketing of program has not been as successful as hoped
Challenge in building awareness and leveraging promotions through channel partners
75% Drop-out rate for applications – primarily due to failure to obtain lender sign-off
Lenders typically disqualified homes with insured mortgages (owners with less than 20% equity)

KEY LEARNINGS

Improved marketing approach and budget are needed ($150K marketing budget in 2015-16)
Mortgage lender concerns and issues must be addressed to improve application success rate
HELP would benefit from home energy labelling requirement to value upgrades in home prices
Program sunsets in 2016 – will evaluate of results and make recommendations to council

SOLAR CITY PROGRAM

ESTABLISHED 2012

Two-year pilot project launched in 2013 ended in 2015
New Solar City program expected to launch in 2016 and includes Solar PV, Solar Hot Water and Solar Air

RESULTS TO DATE

3,268 homeowners expressed interest
1,265 participants had water conservation measures installed
381 homeowners completed installs
91% participants chose financing
60% adopted a live internet based monitoring system

BARRIERS AND CHALLENGES

Actual participation less than 1,000 cap, resulting in increased fee charged to homeowners to cover administrative costs of the pilot
Technology was limited to DHW and 1-2 panels – not suitable for all applications
Bylaw limits eligibility to residential homeowners and solar precluding energy efficiency measures and businesses

An FCM Green Municipal grant was contingent on a minimum of 1,250 homes having water conservation measures. 1,265 homes had water conservation measures installed during the initial assessment regardless of whether or not they received an offer to participate in the program.

Those surveyed, who did not accept HRM's program offer, stated **cost as the reason for not participating**

SOLAR CITY PROGRAM

KEY LEARNINGS

Communication: miscommunication that payment was attached to the property tax bill, but in reality it was done through the LIC structure, bill set up is flexible

Multiple contractors: a single vendor was selected for the pilot assessing homes, manufacturing and installing panels. This gave the illusion of a sole source arrangement

Pre-payment risk premium: 0.887% (approx. ¼ total interest charged to homeowners) was applied during the pilot. The pre-payment risk premium covers participants who elected to pay off their loan early and ensures sufficient LIC revenue to off-set all interest costs to HRM from the debenture. Risk is very low – currently at 10%, but HRM is covered in the event that up to 25% of loans were to be paid off before 10 years.

Data collection and ownership: define expected program reporting at the beginning to ensure required systems are in place to collect and track data. Establish upfront who owns the data and has access to it.

PACE PILOTS

ESTABLISHED: 2014

Municipality of the County of Richmond launched 1st rural PACE pilot for building envelop
Town of Berwick launches PACE pilot to finance energy efficient upgrades to residential and commercial properties.

FUTURE OF PACE IN NOVA SCOTIA

In 2016, the Dept. of Energy committed funding first year administration costs for up to 25 municipalities through Efficiency One.

- Municipalities expected to commit funding for additional 4 years.
- Municipality of the District of Guysborough (pop < 5,000) anticipates 40 participants over 5 years - no cap
- 3 other municipalities have issued RFPs for PACE pilots

PACE PILOTS

RESULTS

Richmond County pilot cancelled one month after launch

- Highlighted opportunities and referrals to the low income program
- Developed framework for future PACE pilots in NS

Town of Berwick: 14 residential participants, no commercial participants

BARRIERS AND CHALLENGES

High low income population

No marketing to promote program or provide direction to potential participants

Limited resources to address competing priorities

Cost neutrality difficult to achieve for small programs

Provincial funding commitment was not clear upfront creating delays

KEY LEARNINGS

Market analysis recommended to gauge interest and ability to participate

Marketing is extremely important

Dedicate appropriate resources to administer program

Need municipal will and support

dunsky

ENERGY CONSULTING