

It is also noteworthy, that in the C-PACE sector, the overwhelming majority of building owners make C-PACE financing decisions based on projected energy savings and cash flows. This contrasts with R-PACE where the project sizes are smaller and the conventional wisdom to date has been to simply refer to a DOE-approved list of improvements. This approach has the benefit of minimizing project scoping costs and the time it takes to consummate the transaction, both of which are understandable and valid concerns in the R-PACE sector.

Experience in the C-PACE sector, specifically with small, e.g. \$30,000 to \$75,000 projects, including like-for-like equipment replacement projects has demonstrated that the advances in technology, data, and analytics over the past several years makes it possible to estimate a reasonable range of energy savings given the selected improvement(s) and key variables such as property type, size, and weather conditions.

These market-driven technology advances provide substantial consumer protection benefits that are now available to R-PACE homeowners, contractors, program administrators/lenders in “real-time” and therefore are no longer an impediment to timely project scoping, underwriting and finance closing. Rather they form the foundation of underwriting best practices to ensure both program and project-level quality assurance.

This market evolution has helped to ensure that small-to-mid-size commercial building owners, who often have pent-up demand for capital intensive equipment replacement and limited capital budget, can access C-PACE financing to meet their upgrade needs. This market segment is often referred to as “resi-mercial” and is analogous to the challenges faced in serving the residential sector-challenges the DBO’s ability-to-pay underwriting standards will meet head-on.

Why have energy savings reasonableness projections not been adopted as a best practice in the R-PACE sector, as they have in C-PACE?

1. The core competency of R-PACE program administrators, who also serve as lenders, is finance. Their preference, bolstered by the fact that the savings risk is solely borne by the homeowner, is to punt the energy savings issue as a matter to be resolved between the contractor and homeowner, i.e. two consenting adults.
2. The core competency of R-PACE contractors is for the most part equipment installation. Such contractors are often inexperienced in developing technically sound energy savings projections.
3. Homeowners typically lack the technical knowledge required and are ill-equipped to evaluate the savings estimates as proposed by their contractors.

Resulting Problem:

Homeowners are left to fend for themselves, and may be subject to unscrupulous and deceptive sales tactics, driven by financial motives, which may include claims for exaggerated energy savings with little regard for the potential long-term consequences. Moreover, due to the structural flaws described above there are no market-forces at work to resolve the problem. As a result, the homeowner’s critical question: “What percentage of my R-PACE payment is reasonable to assume will be covered by my utility bill savings?” typically remains unanswered.

Potential Solution:

As noted above, the integration of projected energy savings into underwriting standards has served as a foundational pillar of the quality assurance/consumer protection best practices that have existed in the C-PACE sector for over five years. State agency sponsors of C-PACE programs have been well served by developing and deploying statewide technically sound underwriting standards. These lessons learned could provide thoughtful experienced based information to support DBO’s due diligence to establish ability-to-pay underwriting standards.

How can DBO meet this market challenge and implement energy savings reasonableness projections into its ability-to-pay underwriting regulations?

Based on the significant lessons learned in the “resi-mercial” sector, it is recommended that DBO, in its definition of ability-to-pay underwriting and disclosure requirements, include a projection of the range of energy savings that the project can reasonably be expected to achieve. This energy savings projection should be based on industry best practices, preferably conducted by an independent third-party to eliminate conflicts of interest, and should be disclosed to the homeowner prior to the execution of the financing agreement. This will ensure that homeowners have the unbiased information they need to make a project investment decision, including an estimated percentage of their R-PACE payment that is reasonable to assume will be covered by their utility bill savings.

The risk of failing to integrate such energy savings projections into the ability-to-pay underwriting will likely result in “more of the same”, i.e., outcomes that produce more homeowner dissatisfaction based on savings underperformance. This has been the R-PACE “elephant in the room” problem for years that has gone largely unaddressed.

With the passage of AB 1284, the opportunity has finally arisen to implement R-PACE “second generation” regulations that eliminate conflicts of interest and solve for this persistent and growing consumer protection problem that threatens the long-term reputation and viability of R-PACE. Done right, DBO’s regulations can make the changes needed to ensure R-PACE will deliver on its bright promise for the broad spectrum of homeowners in a “second generation” structure homeowners can trust.

See Exhibit “A”: Draft PACE Project Savings Estimate Report

This report mock-up provides DBO with an illustration of how such a projected energy savings reasonableness and disclosure solution might be provided by an independent third-party, preferably in “real-time” and at minimal cost to homeowners.

How will the inclusion of energy savings reasonableness projections into ability-to-pay underwriting impact the availability and cost of R-PACE financing?

Based on the “resi-mercial” sector experience, it is anticipated the integration of energy savings reasonableness projections into the ability-to-pay underwriting would add an incremental transaction cost in the range of \$150 to \$200 per project. Such transaction cost could be included in the finance amount and therefore not have any homeowner out-of-pocket cost impact.

As described above, the considerable benefits of disclosing to the homeowner an estimate of their project’s energy savings reasonableness, conducted by an independent third-party, will far outweigh the anticipated minimal transaction cost. Moreover, DBO’s implementation of this projected energy savings underwriting will usher in a welcome “second generation” R-PACE underwriting standard that will facilitate a new level of transparency and market participant confidence that is paramount for R-PACE success.

I welcome the opportunity to further discuss the comments and recommendations above and share relevant SRS experiences and lessons learned.

Respectfully submitted,



Brian McCarter
Chief Executive Officer
Sustainable Real Estate Solutions, Inc.
Phone: (203) 459-0567
Email: BMcCarter@PACEworx.com
Website: PACEworx.com

EXHIBIT "A"
DRAFT Report for Illustrative Purposes

PACE

Property Assessed Clean Energy

Savings Estimate Report:

Prepared for John and Mary Roberts

Property: 123 Main Street
Anaheim, CA 90620

Property Type: Colonial

Contractor: Best Energy, LLC.

Capital Provider: First PACE Lending

Report Date: December 30, 2017

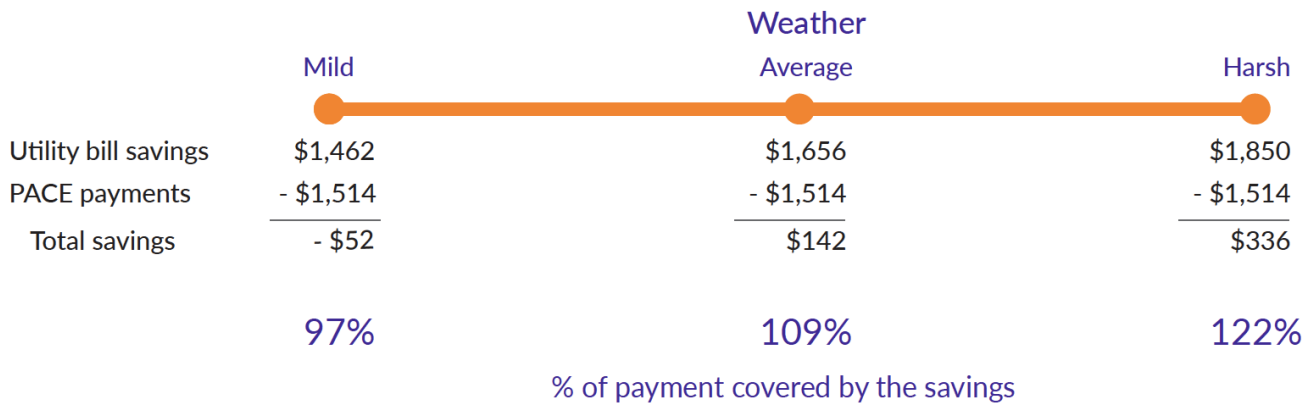


Savings Estimate Report

The California Department of Business Oversight (DBO), established by Assembly Bill 1284 as the regulatory authority to oversee California PACE programs, has established project underwriting requirements that include an estimate of energy cost savings. This report was prepared by a third-party, experienced in PACE project reviews, to provide you with an independent review of the energy cost savings projected for your home improvement project. A glossary of terms follows this report.

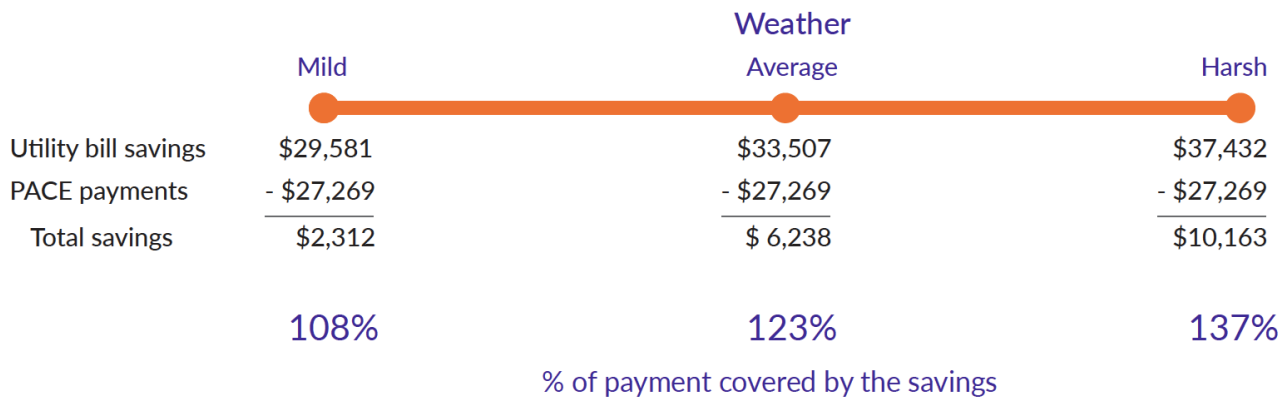
First-Year Savings

The chart below displays your estimated energy cost savings for the first year after the installation of your improvements. The savings reflect a range of possible weather conditions, from mild to harsh.



18-Year Finance Term Savings

The chart below displays your projected energy cost savings for the 18-year finance term. The savings reflect a range of possible weather conditions, from mild to harsh.



In addition to weather conditions, your projected savings may vary based on energy usage patterns, utility rate changes, occupant behavior, and performance degradation of the improvements over time. Considerations other than energy cost savings may factor into your decision to improve your home, such as the need to replace failed or inefficient equipment, or to make improvements to your home's comfort, health and safety, resiliency, and overall value.

Property Information

1988

Year Built

2,000

Square Footage

1

Number of Stories

Gas

Heat Source

\$0.73/CCF

Gas Cost

\$0.12/kWh

Electricity Cost

Home Improvements

The table below displays the installed costs of your improvements, as provided by your contractor. The finance term of 18 years was supplied by your PACE capital provider. Your projected energy unit and utility cost savings calculations are based on average weather conditions.

	Useful Life (Years)	Costs	Projected Energy Savings Average Weather Conditions		
			Unit Savings First Year	Utility Cost Savings	
				First Year	Finance Term
Condensing boiler	18	\$5,946	942 CCF	\$688	\$14,732
Air conditioning/Split system	18	\$5,604	3,300 kWh	\$396	\$8,479
LED lighting	13	\$252	1,050 kWh	\$126	\$1,850
Insulation/Sealing	20	\$3,200	244 CCF	\$178	\$3,811
Gas-fired water heater	15	\$1,340	367 CCF	\$268	\$4,635
Project totals (\$):		\$16,342		\$1,656	\$33,507
Energy savings (kWh):			4,350 kWh		
Energy savings (CCF):			1,553 CCF		
Average useful life (years):	18.0				

About This Report

This report, prepared by a third-party experienced in conducting independent savings reasonableness reviews of PACE projects, is intended to help you assess the cost effectiveness of your home improvement project, as financed under a California PACE program. The Department of Business Oversight (DBO), established by the state of California under Assembly Bill 1284 to oversee PACE, has established project underwriting requirements that include an estimate of energy cost savings. These underwriting standards are designed to provide participating homeowners with the information needed to make informed decisions.

The report contents are consistent with the U.S. Department of Energy (DOE) Best Practice Guidelines for Residential PACE Financing Programs, November 18, 2016. The guidelines recommend providing homeowners with the tools and resources necessary to evaluate the cost and savings of their energy efficiency, renewable energy, water conservation, and other eligible improvement projects.

Your savings projections are based on a DOE-approved residential energy simulation model that incorporates your:

- Home type (colonial, ranch, etc.)
- Home characteristics (year built, square footage, number of stories, etc.)
- Actual home energy consumption data, where available, or modeled energy consumption data
- Thirty years of historical weather data for your specific home location
- Eligible improvements recommended by your contractor.

Your projected savings range displayed in this report reflects a range of possible weather conditions, from mild to harsh.

Your energy savings are not guaranteed and may vary for several reasons, such as:

- Your home's configuration varies from the eight standard types used in the simulation model
- Occupant behavior and comfort level preference is not typical
- Extreme weather conditions, such as lengthy periods of extreme heat or extreme cold, may occur
- You fail to maintain the equipment
- Utility costs provided by your contractor are no longer valid
- Future utility costs are higher or lower than projected (an average 3 percent per year rate increase is assumed).

The accuracy of your projected energy savings may be improved if an energy audit is performed on your home by a qualified home energy auditor. Your PACE program contact or your local utility may be able to assist you in this effort.

Glossary of Terms

Capital Provider	The entity responsible for providing the homeowner with the capital for the home improvements, in the form of PACE financing to be repaid through the property tax bill.
CCF	One hundred cubic feet, the customary unit of measurement for natural gas volume. CCF is also referred to as a therm.
Contractor	The company that performs the work required for the identification and installation of the PACE-eligible home energy improvements.
DBO	The Department of Business Oversight (DBO) is the agency selected by the state of California to oversee the R-PACE program.
DOE	The U.S. Department of Energy, a federal agency.
Energy Codes	Standards adopted by states (and some local governments) that require construction and equipment to adhere to certain energy performance levels.
Energy Savings	<p><i>For energy efficiency equipment:</i> Energy savings are calculated using a DOE-approved residential simulation model. They are determined by subtracting the energy efficiency of the proposed equipment from a baseline. The baseline is established by the home energy code assumed to exist at the time the equipment that is being replaced would have been installed. Energy savings are projected for electricity in kWh and for fuel in CCF over a specific period of time. These values are then multiplied by the associated electricity cost (\$/kWh) and fuel cost (\$/CCF) to determine the energy cost savings in the specified period of time.</p> <p><i>For Solar PV renewable energy equipment:</i> Energy savings are equivalent to the amount of electricity produced (kWh) in a specific period of time, i.e., annually, multiplied by the associated electricity cost (\$/kWh).</p> <p>When energy savings are projected over the finance term, they reflect an average 3 percent increase per year for inflation and assume a 0.5-1 percent decrease per year for equipment performance degradation. If the estimated useful life of the improvement is less than the finance term, its savings are only summed over its estimated useful life. If the estimated useful life of the improvement is greater than the finance term, its savings are only summed over the finance term.</p>
Homeowner	The legal owner of the qualified real property.
Improvements	The eligible energy efficiency, renewable energy, or water conservation measures that are installed as part of the improvement project.
Installed Cost of Improvements	The amount of money required to install the home improvements, including materials and labor.
kWh	Kilowatt hours, a unit of measurement of the consumption of electricity over a period of time.
PACE Payments	The fixed payments you will make on your property tax bill to repay the PACE financing for your home improvements. PACE payments are determined for the first full year, after which they are summed over the term of the financing to determine the PACE payment over the finance term.
Property Assessed Clean Energy	An innovative mechanism for financing energy efficiency, renewable energy and water conservation improvements on private property. In California, there are multiple PACE programs for homeowners, e.g. HERO, CaliforniaFIRST, Ygrene WORKS. These programs are generally referred to as PACE, and were first enabled in 2007 with the passage of AB 811. In 2017, state legislators passed AB 1284 which established the Department of Business Oversight (DBO) as the regulatory authority over PACE programs in California.

Property Types	The eight most common home designs, including colonial, saltbox, federal, ranch, bungalow, raised ranch, split level, and traditional Cape Cod, that are used to model energy cost savings.
Residential Simulation Model	The computerized simulation of a home that focuses on the energy consumption of various energy-related items, such as air conditioning, heating, lighting, and hot water. Energy savings are projected using the model by evaluating energy consumption of the existing equipment and comparing it to the energy consumption of the proposed equipment.
Total Savings	The difference between the utility bill savings and the PACE payments in a specified period of time.
Unit Savings First Year	The energy savings of electricity (in kWh) and natural gas (in CCF) for the improvements over the first year after the installation of the improvements.
Useful Life (Years)	The estimated number of years the proposed energy equipment will perform as expected. The number is based on credible third-party sources such as the U.S. DOE, the U.S. EPA, ASHRAE, manufacturer warranty documentation, etc.
Utility Bill Savings	The savings on the electric and gas bill that will result from the energy efficiency and renewable energy improvements.
Utility Savings: Finance Term	The amount of money you are projected to save in utility costs over the PACE finance term. The length of the finance term is set by the capital provider.
Utility Savings: First Year	The amount of money you are projected to save in utility costs over the first full year after your home improvements are installed.
Weather Ranges	Home energy use is heavily influenced by weather, which can vary greatly year to year. Ranges (mild, average, harsh) are used to project energy savings. “Average weather” represents an average over 30 years, while “mild” and “harsh” weather are the upper and lower limits set by 95 percent of the weather experienced at the home’s location.