



**BEST PRACTICES FOR ENERGY RETROFIT PROGRAM DESIGN**

## **CASE STUDY: PALM DESERT, CALIFORNIA**

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This document is one of nine case studies conducted by the Best Practices Committee of the Home Performance Resource Center to examine government-run incentive programs that target residential energy efficiency retrofits and renewable power generation. These nine case studies were used to compile best practices recommendations for the design and implementation of successful home energy retrofit programs, specifically focusing on the areas of financing and incentives, marketing, workforce development and business models. Additional documents in the *Best Practices for Energy Retrofit Program Design* series are available online at [www.hprcenter.org](http://www.hprcenter.org).

# BEST PRACTICES FOR ENERGY RETROFIT PROGRAM DESIGN

## CASE STUDY: PALM DESERT, CALIFORNIA

### SUMMARY

The City of Palm Desert, California, has set a goal of reducing energy use by 30% by the end of 2011. Palm Desert runs two residential programs designed to help meet this goal. This case study primarily focuses on the city's Energy Independence Program (EIP), which provides Property Assessed Clean Energy (PACE) financing for commercial and residential energy efficiency improvements and installation of solar power systems. The loans are secured to the property and repaid through a special tax assessment, so the loan obligation stays with the property if the home is sold before the loan is fully paid off. Beginning in 2008, the program has offered a phased series of funding blocks distributed on a first-come, first-served basis to qualifying applicants.

The second program, Set to Save, is mentioned but not fully analyzed in this study. Set to Save is a partnership of the City of Palm Desert, The Energy Coalition (a California-based nonprofit energy education organization), and Palm Desert's investor-owned utilities, Southern California Edison and Southern California Gas Company. The program offers free basic energy evaluations and items like compact fluorescent light bulbs; provides incentives for customers to upgrade inefficient pool pumps, HVAC and other equipment; and conducts community outreach to maximize program participation.

### FINANCING PROCESS

Homeowners who want to apply for EIP financing begin by developing and pricing an energy improvement plan, either for self-installed work or as a bid from any appropriately licensed contractor. Energy audits are not required, though property owners can ask to receive a free on-site energy

### PROGRAM PROFILE

#### Incentive Type:

Property Assessed Clean Energy (PACE) financing for residential and commercial efficiency measures and renewables

#### Time Frame:

Program approved in Aug. 2008 and launched soon after; now in its third phase of funding

#### Homes in Jurisdiction:

28,021 (2000 census)

#### Property Owners Participating:

220 projects financed in the first two phases (216 residential and four commercial)

#### Investment:

\$7.5 million from city general fund for the first two phases; phase three is \$6 million (including \$5 in bonds), with at least 50% dedicated to energy efficiency measures

#### Energy Savings:

Data not available

#### Carbon Abatement:

Data not available

#### Finance Mechanism:

7% energy improvement loans with terms up to 20 years, repaid through a special assessment on the owner's property taxes

#### Jobs Created:

8.4% job growth in trade labor industries as of 11/12/09, while other counties lost construction jobs.

#### Web Site:

[www.cityofpalmdesert.org/Index.aspx?page=484](http://www.cityofpalmdesert.org/Index.aspx?page=484)

survey provided through the Set to Save program. The waiting time for these free assessments can be weeks or months, and the surveys do not include blower door tests or other data collection that would normally be conducted for a comprehensive energy audit.

Once homeowners have selected a bid from a contractor or priced out self-installed work, they submit a program application to the city, along with the bid information. The Palm Desert Office of Energy Management (OEM), which manages the program, runs a title check on the property and determines if the application meets program criteria, including but not limited to:

- Applicants must be free of bankruptcy can current on property tax payments
- The home must be properly insured
- Estimated project costs must range from \$5,000 to \$60,000 (or up to \$100,000 with city manager approval)
- The value-to-lien ratio must be at least 10 to 1 (or 8 to 1 with city manager approval)
- The term of the loan must not exceed the life span of the proposed energy improvements

Applicants are informed within 15 days of submitting the application if the loan has been approved. Once approved, customers have 10 business days to execute the loan. Once executed, the city records an assessment lien against the property, including a 10% buffer in case project costs rise. Property owners then enter into an agreement directly with a contractor, and they have six months to complete the job.

Funding is provided directly to the property owner within 20 business days after the work has been completed and confirmed with documentation, along with any inspections necessary. If the project cost exceeds \$20,000, the property owner may request a “progress payment” of up to 50% of the loan amount after at least 75% of the materials have been purchased and delivered to the property. Interest rates have been fixed at 7% with terms up to 20 years – competitive with commercially available unsecured interest rates.

## **PROGRAM DEVELOPMENT**

Tax-assessed financing – a relatively new concept pioneered by the city of Berkeley, California, to finance photovoltaic installations – was codified into California law in July 2008 as Assembly Bill 811 (AB 811), which authorized local governments throughout California to designate special tax-assessed energy improvement financing districts.

Palm Desert’s Energy Independence Program was conceived when Palm Desert City Councilman Jim Ferguson heard about the Berkeley FIRST PACE financing program (which is profiled in another case study in this series) and looked into launching a similar effort in Palm Desert. The city had already set a goal of cutting energy use by 30% by the end of 2011, and had launched the Set to Save program to start on that path. In August

2008, the city council approved the Energy Independence Program in accordance with AB 811 requirements and began processing loans shortly thereafter.

The first phase included \$2.5 million in financing, followed by an additional \$5 million in the second phase. Financing for the first two funding blocks came from city general funds. Financing for the third phase was negotiated with Wells Fargo Bank, which agreed to purchase \$6 million in lease revenue bonds.

Initially, the loan minimum was \$5,000 and there was no cap. Since then, the program has capped funding at \$100,000 per project, and funding over \$30,000 requires a consent agreement from the mortgage holder. If a proposed project exceeds \$60,000, the loan requires special approval by the city manager.

In the first two funding cycles, project money was heavily focused on solar PV, which accounted for about 70% of allocated funds even though it was only included in less than 50% of the projects (98 out of 206 projects). In phase three, the program has set aside 50% of the \$6 million in available financing specifically for energy efficiency improvements.

## **Marketing**

Marketing for the Energy Independence Program has taken several forms. Before the initial launch, the program received some earned media attention from local news organizations, which helped to build interest. The program reports that paid advertising in local publications, such as community-based newspapers, has been effective as well.

The city also leverages its Set to Save partnership to build participation in the Energy Independence Program. When Set to Save conducts free energy surveys and makes no-cost and subsidized energy upgrades in homes, program staff mention the Energy Independence Program as a way to finance projects that will achieve deeper energy savings. Those who are interested in the program can receive a list of local contractors and installers, which includes any relevant certifications the contractors hold.

Much of the marketing work is done directly by contractors and installers, who view the program as a big selling point for attracting customers. The program does not subsidize or incentivize contractor-run marketing efforts.

The program has had no trouble recruiting participants. Phase one funding was committed within three weeks, and phase two was fully subscribed within five weeks.

## **Workforce Development**

The program does not include a workforce development component, although there are worker training programs nearby that focus on renewable energy and energy efficiency upgrades, and the city had an existing pool of solar and HVAC installers before the program launched.

## Finance and Incentive Models

Interest rates are fixed at 7%, and loans are repaid over terms of up to 20 years in payments appended to annual property taxes. Loans range from \$5,000 to \$60,000, or up to \$100,000 if with city manager approval. Because the loans are affixed to the property being financed, they do not impact the borrower's credit, and the loan obligation automatically transfers to subsequent owners if the property is sold before the loan is fully paid off.

Qualifying measures include HVAC system upgrades, evaporative coolers, water heaters, solar photovoltaic systems, solar thermal systems, replacement windows and glass doors, skylights, attic and wall insulation, light fixtures, pool heaters and pool pumps, and reflective roofs and coatings. All items installed must meet program standards for energy ratings and other requirements.

The program does not require diagnostic energy audits, and program guidelines do not necessarily encourage a whole-house, building science approach to home retrofits. Rather, participants are encouraged to upgrade certain pieces of equipment like HVAC equipment and pool pumps that are prevalent in the region and use a significant amount of energy. Some efficiency measures like air sealing are not listed in the program-approved guidelines.

## METRICS AND FEEDBACK

In the first two funding phases, \$7.5 million was distributed to 220 projects (216 residential and four commercial). The third phase of financing began in February 2010 and is currently ongoing.

Of the 220 projects funded in the first two phases, 110 were efficiency-related only, 90 were solar only, and 20 were hybrid projects that included both efficiency measures and solar.

The city tracks how many jobs are completed and some other program data, but utility usage data is not gathered as part of the loan application process. However, the city is monitoring savings resulting from energy upgrades across city-run programs, and their analysis of the combined impact of both programs (EIP financing and Set to Save) has determined that as of Fall 2009, 40% of the city's energy savings goals have been reached.

Some solar contractors in the area have reported that sales have increased during program enrollment phases. One concern is that after all of the financing in a particular funding block has been allocated, potential customers may decide to wait until the next phase to undertake a retrofit project. This factor could cause significant peaks and valleys in customer demand that would complicate business planning, scheduling and hiring for local contractors.

Home Performance companies have not been as involved in the program as some other trades. The program lists certain efficiency upgrades that qualify for EIP financing, but

most are specific products and not performance-based work. As a result, HVAC and pool equipment companies have done well under the program, while Home Performance companies have seen less benefit.

There have been some complaints in the first two phases that program dollars ran out too quickly. Since then, the program has included a financing cap of \$60,000 (or \$100,000 with city manager approval) to encourage broader distribution of available funding.

## RECOMMENDATIONS

**PACE Financing:** Strong consumer demand for EIP loans has demonstrated the effectiveness of tax-assessed energy improvement financing as a tool for reducing household energy use and stimulating growth among businesses that perform program-approved upgrades. However, the program should strive to provide financing on an ongoing basis instead of offering phased blocks of funding, which can have a detrimental effect on local energy improvement businesses.

**Financing Caps:** Financing caps can be an effective tool for spreading available funding across a greater number of retrofit projects and promoting the most cost-effective measures.

**Promoting Energy Efficiency:** Whereas initial loan allocations disproportionately favored high-cost solar installations, the program is now dedicating at least 50% of available financing specifically toward energy efficiency upgrades. Because efficiency measures are generally more cost-effective than renewables, this approach is likely to generate greater energy savings per dollar spent on retrofit financing.

**Valuing Performance:** The program has approved various efficiency measures to qualify for financing, but they are largely equipment-specific and not based whole-house energy performance. This approach can overlook some lower-cost yet highly beneficial measures, and specified equipment may not be installed in ways that maximize energy savings, particularly since the program does not require building performance certifications or accreditations for contractors. Furthermore, as comprehensive energy audits are not required to apply for funding, property owners may not be realizing the energy savings they expect from their projects, which could cause problems long-term.

### SUMMARY OF RECOMMENDATIONS

- Provide PACE financing as an ongoing energy improvement loan program rather than phased funding blocks
- Cap the size of individual loans to assure the greatest impact of available funding
- Promote cost-effective energy efficiency measures so available funding isn't disproportionately allocated to high-cost renewables
- Require appropriate contractor accreditation and define qualifying retrofit measures to promote a whole-house, performance-based approach to energy improvements

## SOURCES

This report is based in part on interviews and e-mail correspondence with Benjamin Druyon, Energy Project Technician, Palm Desert Office of Energy Management; Earl Schmidt, Owner, Desert Power, Inc.; and Steven Meyers, Founder and President, Rational Energy Network.

Interviews and background research were conducted for the Home Performance Resource Center by Coby Rudolph.

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### Program-Related Web Sites:

Palm Desert Energy Independence Program: [www.cityofpalmdesert.org/Index.aspx?page=484](http://www.cityofpalmdesert.org/Index.aspx?page=484)

Set To Save: [www.settosave.com](http://www.settosave.com)

The Energy Coalition: [www.energycoalition.org](http://www.energycoalition.org)



The Home Performance Resource Center is a national 501(c)(3) nonprofit organization formed to conduct public policy and market research in support of the Home Performance industry. The Resource Center develops research materials for policymakers, energy program managers and industry stakeholders to promote job creation, economic recovery, lower household energy bills and deep reductions in residential carbon emissions through improved home energy efficiency.

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