

ECONOMIC OPPORTUNITY STUDIES

A Glossary of Energy Efficiency Financing Tools

By Nathan Warren

July 2011

Terms in this Glossary

Financing Tools	1
Energy Savings Performance Contracting	1
Loan-Loss Reserve Funds	2
On-Bill Financing.....	3
Property Assessed Clean Energy (PACE).....	4
Qualified Energy Bonds	5
Revolving Loan Funds	5
Subordinated-Senior Capital Structuring	6
Third Party Loan Insurance	7
New! FHA Supported Loan Programs	7
FHA <i>PowerSaver</i>	7
FHA + Fannie Mae – <i>Green Refinance Plus Retrofit Program</i>	8
Links	8
to Energy Savings Performance Contracting	8
to PACE Resources.....	8
to Loan Loss Reserve Fund Resources.....	9
to Revolving Loan Funds	9
to Leveraging HUD and Federal Resources	9
to More Resources on State EE Programs.....	9

FINANCING TOOLS

Listed below are financing tools for energy efficiency retrofits and clean energy measures for potential application to weatherize low-income housing, especially multi-family buildings.

Energy Savings Performance Contracting – An Energy Service Company (ESCO) installs and maintains retrofit measures and typically also provides the financing. The ESCO guarantees a specific amount of energy savings and in return is paid from the energy costs saved during the contract period, which usually lasts between 5 and 15 years. In almost all ESPC projects implemented in public buildings, the ESCO actually guarantees the savings to the customer.

The ESCO provides one single point of contract with responsibility for design, construction, performance, and assisting with financing sources. Some institutions will contract with ESCO's only for a period of time to be comfortable that the anticipated savings will be achieved. Energy guarantees and scope seldom venture outside of the original plan scope.

ECONOMIC OPPORTUNITIES STUDIES
www.opportunitystudies.org

While not a permitted use for Weatherization Assistance Program (W.A.P.) funding, this structure may benefit from being able to blend financing from several sources, including utility incentives or rebates, public revolving loan programs, state or federal government grants, bonds, loans and leases. ESPC projects are most appropriately utilized for a customer that wants to implement a comprehensive retrofit, rather than a single measure (e.g. lighting) project. It usually takes months to develop the technical specifications and financial plan for an ESPC project. Speed is less critical in an ESPC project than in residential.

The primary advantages of these contracts include the fact that the ESCO can provide the financing and does not have to be paid up-front. However, the consumer can only realize the full energy cost savings once the contract period has passed and the ESCO has received its payment.

Energy Performance Contracting might be most applicable to Public Housing Authorities who are exploring opportunities to finance energy efficient retrofits in their buildings and associated properties. However, PHAs must be diligent on acquiring the necessary tools and training to do so. This includes developing an RFP, evaluating responses, understanding how Energy Performance Contracts can solve maintenance problems, understanding project financials, resident education, healthy housing, and monitoring project savings performance.

Loan-Loss Reserve Funds – A Loan Loss Reserve Fund (LLRF) provides partial risk coverage to lenders, because the reserve will cover a previously specified amount of loan losses. LLRFs provide partial risk coverage to motivate commercial financial institutions to offer energy efficiency and renewable energy finance products, pioneer new products, broaden access to finance, extend loan tenors, lower interest rates. They can be funded with public monies, (e.g., ARRA SEP but not W.A.P.) and can support a range of efficiency and renewable energy finance structures. LLRFs are typically used with portfolios of small, unsecured loans.

Loss reserves provide a liquid, immediately accessible source of cash to offset covered losses incurred by a participant. As example, as a part of LLR program, an agreement might be formed between state (or local) governments with lenders to set up a 10% LLRF in exchange for providing residential retrofit loans. If a borrower default occurs, funds are then taken from the account (escrow) and distributed to the investors to ensure that they receive repayment. Then, loans continue to be made until the LLRF is exhausted or refilled from other sources. These sources might include fees from contractors participating in the program. This general structure protects a portfolio of loans against a limited amount of potential losses (but insufficient to cover large losses).

This form of credit enhancement is suitable for supporting local governments and possibly owners of low-income multifamily buildings. To set up a LRF program, interested entities must identify and research potential partners, obtain a partner, establish a good working relationship, and structure the LLRF program with the partner. Different partners have different lending practices and criteria. If the new LRF program can build on the lender's existing loan products (e.g., home improvement loans), then it is likely the partner's new product development process will likely be accelerated, and possibly jumpstarting the LRF program sooner than later. Establishing a financial partner is a necessary companion to set up a LLRF. The financial partner can be a commercial bank, a credit union, a nonbank finance company (leasing company or specialized FI), a community development financial institution, utilities, state-chartered (state-

ECONOMIC OPPORTUNITIES STUDIES
www.opportunitystudies.org

level) bond authorities or a combination of the above. Proposals must be sought from qualified financial partners to develop, administer, and promote an energy revolving loan program that will provide low-interest rate loans to residential products.

EXAMPLES

The following State LLRFs specifically address residential housing:

- [Keystone Help](#) provides homeowners in Pennsylvania with special financing and rebates for energy efficiency improvements
- [Michigan Saves](#) utilizes ARRA funds to provide partnering financial institutions with a loss reserve for loans that finance residential energy efficiency
- [Community Energy Challenge](#) (CED) provides Washington residents with quality information on ways to improve their energy usage and how to access preferential energy-efficiency loans. The program provides unique financing opportunities, and uses an audit report format which indicates retrofit recommendations and the expected cost savings of each measure. As a part of the program, low interest loans are made possible by the use of a LLRF and interest rate buy-downs. CED provides preferential term financing through the use of a LRF. [The Energy Efficiency Finance Corporation](#) (EEFC) – firm that focuses on financing for energy efficiency projects – acted as a consultant at during the CED financing development process.

On-Bill Financing – A strategy whereby a utility finances energy efficiency improvements, with the building owner paying off the costs over time through an additional charge assessed on their monthly utility bill.

Local authorities can establish these programs by working with their utility partners—or other public service agencies—to fund and administer on-bill financing programs, improving the prospects for investments in energy efficiency initiatives by small businesses and homeowners. It provides funds through utilities for the initial investment in energy measures so consumers do not have to put the money up-front. While administered by utilities, states and localities can facilitate adoption of on-bill financing through several channels, as described in a policy [Paying for Energy Upgrades through Utility Bills](#), from the Alliance to Save Energy.

On-bill financing might be an approach for CAAs to finance the retrofits in their own buildings and facilities – and less likely, but possible – housing they manage and own. Also, local governments can play a role and work with the local authority’s energy utility to develop an on-bill financing fund.

EXAMPLE

Midwest Energy is a customer-owned energy cooperative based in rural Kansas. Available to Midwest Energy’s 88,000 electric and/or gas customers, the *How\$mart* program enables consumers to pay for investments in energy-efficiency, including insulation, sealing, and heating and cooling systems, through a charge on their utility bill. Both homeowners and renters (with landlord permission) may participate in the program. Participants receive a free home energy audit, which is used to determine the most cost-effective improvements.

The [program](#) covers the upfront cost of the improvements; however estimated savings must be greater than the monthly surcharge. Not all improvements identified in the audit yield sufficient savings to be eligible for *How\$mart* financing. Where estimated savings fall short of the improvement costs, residents may "buy down" the balance by paying for the difference on their own.¹

Property Assessed Clean Energy (PACE) – A program that serves as innovative financing tool that allows local governments to provide attractive low-interest loans for energy efficiency investments to property owners. It is not currently useful for residential retrofits, but that may soon change. PACE financing is considered by many, including the Obama Administration, to be a promising energy retrofit financing tool for credit-worthy homeowners and businesses. However, the Federal Housing Finance Agency (FHFA) announced in July of 2010 that mortgages from homes with PACE loans cannot be sold in the federally-backed secondary mortgage market.

FHFA [stated](#) that energy retrofit lending programs, and specifically PACE programs, "present significant [loan] safety and soundness concerns" to government-backed home lenders (including Fannie Mae and Freddie Mac). The reason: the first liens for these loans alter traditional mortgage lending practice by giving the PACE program a claim on the property—as the debt is a "senior lien". The seller pays PACE bondholders back before the mortgage lender. The FHFA also stated that "significant risk to lenders and secondary market entities may alter valuations for mortgage-backed securities and are not essential for successful programs to spur energy conservation." Fannie Mae and Freddie Mac, the government-backed home mortgage lenders that control approximately 80 percent of American home mortgages, stated they would not accept home mortgages that included the PACE lien. That move has halted the program for homeowners.

PACE is financed by bonds whose proceeds are loaned to commercial or residential property owners on a voluntary basis to finance energy retrofits (efficiency measures and small renewable energy systems). This provides interested consumers with another option to consider when planning retrofits. PACE can be issued by municipal financing districts or finance companies, which give consumers local accessibility. This has been a contributing factor to the growing grassroots support for PACE across the country. Property owners who might participate in a PACE program receive financing for improvements that is repaid through an assessment which is billed with their property taxes for up to 20 years. The PACE financing spreads the cost of energy improvements over the expected life of the measures. The repayment obligation remains with the property that is improved and transfer automatically to the next property owner if the property is sold.² This is similar to financing for sewers and sidewalk infrastructure improvements. The PACE assessment is attached to and transfers with the property, not the property owner.

[EOS PACE PAPER](#)

PACE financing might assist credit-worthy private owners of eligible multi-family properties make a significant landlord contribution to Weatherization projects. PACE loans might also be

¹ CEP Conversations: Michael Volker of Midwest Energy, and their award-winning How\$mart energy efficiency program. 2008. Blog Entry. Climate and Energy Project Blog.

² PACE NOW. <http://pacenow.org/> [May 25, 2011]

ECONOMIC OPPORTUNITIES STUDIES
www.opportunitystudies.org

used to fund improvements that eligible homeowners urgently desire and can afford that are not allowable uses of W.A.P. funds (i.e., replacement windows or doors that many applicants request).

Depending on the local PACE regulations, small investments in these non-energy items may be allowable uses of client-borrowed funds; the long repayment period allowed may mean the added small fee assessed is a feasible expenditure, even for eligible homeowners (The household's record of prompt property tax payments will be important to loan approval). However, most W.A.P.-eligible energy consumers will not be considered credit-worthy. A more promising possibility is that PACE lending combined with the quality required by a city program will spur a surge of private demand for well-trained retrofitters. Community Action Agencies (CAAs) could provide services as a revenue raiser and a way to keep skilled W.A.P. workers employed.

Qualified Energy Bonds – Qualified Energy Conservation Bonds can support energy efficiency financing. Bonds consist of many different types of funds. Some of the more common types of bonds are tax-exempt bonds that can fund investments in government facilities or, subject to many limitations, investments in certain private activities. Those are known as private activity bonds. Another category is tax credit and tax subsidy bonds, the proceeds from the sale of which can be used to fund some energy efficiency and renewable energy projects-Qualified Energy Conservation Bonds (QECBs) are an example.

Qualified Energy Conservation Bonds (QECBs) may be issued by state, local and tribal governments to finance qualified energy conservation projects. Energy conservation bonds differ from traditional tax-exempt bonds in that the tax credits issued through the program are treated as taxable income for the bondholder.

Clean Renewable Energy Bonds (New CREBs) were issued between 2008 and 2010. They were issued by public power utilities, electric cooperatives, government entities (states, cities, counties, territories, Indian tribal governments), and certain lenders to finance renewable energy projects. The issuer paid the investor a taxable coupon and receives a rebate from the U.S. Treasury.

The IRS is not currently accepting applications for New CREB bond volume. The deadline for New CREB applications from electric cooperatives under IRS Announcement 2010-54 expired November 1, 2010. Bond volume for other eligible sectors (government entities and public power providers) was fully allocated in October 2009.³

Revolving Loan Funds – Loans are made to borrowers consistent with standard prudent lending practices. As loans are repaid by the borrowers, the money is returned to the RLF to make additional loans. In that manner, the RLF fund becomes an ongoing or "revolving" financial tool.

A RLF is an effective tool for residential energy efficiency improvements in the \$2,000 to \$10,000 range that are not large enough to justify taking out a second mortgage or equity line. The recent programs typically focus on financing the cost of efficiency upgrades such as

³ New Clean Renewable Energy Bonds http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US45F&re=1&ee=1 (last update Nov. 2010)

ECONOMIC OPPORTUNITIES STUDIES
www.opportunitystudies.org

appliances, lighting, insulation, and heating and cooling system upgrades. RLF's can be best implemented by municipal or county governments for energy efficiency projects including facility retrofits and municipal energy inventorying.

EXAMPLES

Local Option – Ohio Municipal Alternative Energy Revolving Loan Program

Ohio enacted legislation ([S.B. 232](#)) in 2010 authorizing municipalities and counties to establish revolving loan programs to finance renewable energy and energy efficiency projects that are associated with residential property. In order to establish an alternative energy revolving loan program, a municipality needs to adopt an ordinance that 1) creates the revolving loan fund in the local government's treasury; 2) provides a source of money to seed that fund; 3) establishes facilities criteria, procedures and terms and conditions for making loans from that fund; 4) specifies that property owners may repay loans in installments, which may be paid and collected as if they were special assessments; specifies that loan repayments and investment earnings are credited to that fund and; 5) establishes other measures that are necessary for the proper operation of the program to encourage alternative energy and energy efficient technologies.

RLFs are an eligible activity under the EECBG program which can be used for the "establishment of financial incentive programs for energy efficiency improvements." States and units of local government can create an RLF alone or with other EECBG recipients or other partners, but the RLF must adhere to the use and financial limitations federal Guidance for EECBG and SEP Grantees.

Weatherization local agencies that own affordable housing might be able to borrow from those RLFs for efficient new construction or for rehab projects extending the usable life of their buildings. Also, they may look to RLFs for credit for energy services small business start-up, expansion, and retention.

Subordinated-Senior Capital Structuring is a financing tool that allows for two types of capital to be placed into a loan. The first, subordinated capital, absorbs the potential first losses on a loan and might be set at 10% of the total loan amount. The second one, senior capital, does not absorb any losses until the subordinated capital is exhausted. This structure acts in some ways like a loan loss reserve and serves to attract the senior capital because the subordinated capital takes on the majority of the risk.

Subordinated/senior capital structure is also characterized as a credit enhancement which can also take the form of loan loss reserves, loan guarantees, loan loss insurance and debt service reserves.

Owners of affordable housing developments or group living facilities as well as any commercial property should be interested in whether the state or local energy programs have additional funding to commit to such projects in these last month of their ARRA programs . Community-based organizations that are considering projects that install renewable energy may also find source of subordinated capital from remaining ARRA or other state funds.

Subordinate-senior capital financing and loan programs for clean energy finance and have been highlighted by DOE. The State of Washington is using ARRA State Energy Program funds for subordinated-senior capital structuring. [The Energy Efficient Finance Corporation](#) is working with The Washington State Housing Finance Commission (WSHFC) in instances where ARRA funds are being used as a debt service reserve.

EXAMPLE

The WSHFC has recently launched a program, [Energy Efficiency Loan Program](#), to offer tax-exempt bond private placement financing of EE/RE projects for nonprofit and multifamily housing borrowers. Marketed in cooperation with a local energy service company, the financing program can support up to \$10 million in project loans. The minimum loan size is \$250,000, and a 10- to 15-year fixed-rate financing in the range of approximately 4%–5.5%. State ARRA SEP funds of \$1 million have been allotted for credit enhancement and program implementation support. The Commission has arranged for a single bond purchaser to approve the credit of borrowers case by case, and streamlined bond documentation has been developed to manage transaction costs. The WSHFC is the state charter bond authority that can issue tax exempt bonds for qualified low-income multifamily housing as well as other borrowers like nonprofits.

Third Party Loan Insurance – Third party loan Insurance is a financial arrangement whereby a third party bears some portion (or all) of a loss on a specific portfolio. This typically takes the form of a lender or investor purchasing an insurance policy from a third party against losses on a portfolio of loans up to a fixed percentage (the stop loss) of the sum of all the original loan amounts. The maximum insurance payout is determined by the value of the portfolio and not the value of individual loans.

EECBG funds can be used for the purchase of third party loan insurance. In order to ensure that a use of EECBG funds for third party loan insurance furthers the stated purposes of EECBG, the loans supported by the third party loan insurance must be for the purchase and installation of energy efficiency and renewable energy measures consistent with the EECBG regulations.⁴

NEW! FHA SUPPORTED LOAN PROGRAMS

FHA PowerSaver – Backed by the Federal Housing Administration (FHA), these new PowerSaver (PS) loans will offer homeowners up to \$25,000 to make energy-efficient improvements of their choice, including the installation of insulation, duct sealing, replacement doors and windows, HVAC systems, water heaters, solar panels, and geothermal systems.

PS is designed to support home energy improvement loans through mainstream lenders to consumers who can afford to make proven, energy savings measures. HUD states that PS was created to establish a national institutional loan product used by lenders with demonstrated experience in the residential energy efficiency market. The program will have loans that have a lien component as well as offer an unsecured component. HUD has selected 18 national, regional, and local lenders to participate in the new two-year program. Qualified improvements include the installation of insulation, duct sealing, replacement doors and windows, HVAC systems, water heaters, solar panels, and geothermal systems. Loans will be made for up to \$25,000. [PowerSaver Fact Sheet and DOE Press Release and Lenders](#)

⁴ Energy Efficiency and Conservation Block Grant Program Notice 10-011; April 21, 2010

ECONOMIC OPPORTUNITIES STUDIES
www.opportunitystudies.org

Lenders were partly selected based on areas where established home performance programs with contractors were already in place and communities are participating in DOE's Better Building Program.

More detail on the DOE Better Building Target Areas can be found on the [BetterBuildings Grant Recipient Map](#).

FHA + Fannie Mae – Green Refinance Plus Retrofit Program – Multifamily program that is intended to refinance expiring mortgages on Low Income Housing Tax Credit and other affordable properties and to lower annual operating costs by reducing energy consumption. Fannie Mae and HUD anticipate approximately \$100 million in initial refinance volume with an average loan amount of \$3.5 to \$5 million. FHA will insure up to an additional 4-5 percent of the loan amount, (on average, approximately \$150,000 to \$250,000/loan to provide additional loan funds to pay for property improvements that save energy and water costs for owners and tenants, such as energy efficient windows and Energy Star appliances, as well as other needed property renovations.

Requirements include that at least 5 % of the refinance loan proceeds be applied to the property renovation or energy retrofit. And, all rehab and energy improvements enhance value and improve property operations. In the underwriting, Fannie Mae will adopt a Green Property Needs Assessment (Green PNA) for the loans. The Green PNA will identify improvements that reduce energy and operating costs while helping borrowers make choices that allow for the greatest energy savings for their investment. The intent is to pair a conventional PNA provider with a green building/sustainability expert to create the ability to go beyond conventional PNA recommendations and integrate new green recommendations (i.e., moving from individual measures to a whole house system perspective).

Beginning in July 2011, Fannie Mae and its participating lenders will begin accepting applications to refinance owners' debt as well as improve the energy efficiency of their properties. ([Program document](#))

Links

to Energy Savings Performance Contracting

- Kansas Energy Office: [5 Steps to Successful Energy Savings Performance Contracting](#)
- HUD Public Housing Energy Conservation Clearinghouse:
www.hud.gov/offices/pih/programs/ph/phecc
- Arizona Commerce Authority: <http://www.azcommerce.com/Energy/ESPC.htm>
- State of Oregon – What is an energy savings performance contract?
<http://www.oregon.gov/ENERGY/CONS/ESPC/>

to PACE Resources

- PACE NOW: <http://pacenow.org/>
- Berkeley First program – Solar Photovoltaic PACE Pilot:
<https://berkeleyfirst.renewfund.com/learn-more/how-first-works>
- Ygrene Energy Fund provides efficient, no-cost implementation of PACE programs for cities and counties: <http://www.ygrene-energy.com/ygrene/home>

ECONOMIC OPPORTUNITIES STUDIES

www.opportunitystudies.org

- Renewable Funding provides turnkey administration, financing and technology services for clean energy programs to hundreds of cities and counties across the country – specializing in PACE financing tools: <https://www.renewfund.com/>

to Loan Loss Reserve Fund Resources

- [NASEO](http://www.naseo.org/resources/financing/llr/index.html) - State Financing Energy Resources: <http://www.naseo.org/resources/financing/llr/index.html>
- DOE Guidance for SEP on LLRFs: [Guidance for SEP on Loan-Loss Reserves](#).

to Revolving Loan Funds

- Examples and case studies on municipalities and states with existing energy RLFs can be found on the Council for Development Finance Agencies' Online Resource Database: <http://www.cdfa.net/cdfa/cdfaweb.nsf/ordsearch.html>
- DEO WIP Solutions Center - State and Municipal Revolving Loan Fund Facts: <http://www1.eere.energy.gov/wip/solutioncenter/financialproducts/revolvingloanfunds.html>

to Leveraging HUD and Federal Resources

- HUD Green Homes & Communities: <http://www.hud.gov/offices/cpd/about/conplan/greenhomes.cfm>
- Bringing Home the Green Recovery: <http://www.greenforall.org/resources/recoveryusersguide>
- ICLEI –Local Governments for Sustainability: <http://www.icleiusa.org/action-center/financing-staffing/funding-grant-opportunities/federal-and-national-funding>

to More Resources on State EE Programs

- ACEEE's State Energy Policy Website: <http://www.aceee.org/sector/state-policy>
- Database of State Incentives for Renewable Energy (DSIRE): <http://www.dsireusa.org/>
- National Association of State Energy Officials: <http://www.naseo.org>

Disclaimer: "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."