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S. Regenthal

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Purpose

This document is meant to assist state and local decision makers in understanding how the financing of energy savings performance contract projects can effectively fit into the structure of a revolving loan fund.

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A Note on the Revisions:

Table 1 on page 4 has been revised.

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Introduction

Numerous pre-existing and newly emerging state- and locally-managed revolving loan funds (RLFs) are being used in conjunction with energy savings performance contracts (ESPCs) as an option for financing of energy efficiency projects. This document presents an overview of ESPCs and how they fit within the RLF framework. There are a variety of options available to state and local governments to catalyze the disbursement of available capital from RLFs and increase the number of ESPC projects within their jurisdictions. To demonstrate the implementation of this type of financing program in action, this report concludes with four program case studies of state-sponsored RLFs where ESPCs are an allowed use of funds.

Overview of ESPC State and Local Financial Model¹

An ESPC is a negotiated contract between an entity and an energy service company (ESCO), whereby the two parties partner to work toward a common goal of energy and water savings and/or renewable energy production. After an ESCO is selected through a competitive process, they provide a detailed energy audit or investment grade audit resulting in a final proposal that includes a baseline for savings, proposed energy savings, total cost of the project, and other financial and proposed savings data. After negotiation and acceptance of a final proposal, the ESCO designs and constructs an energy savings project in consultation with the entity, and may or may not arrange the necessary financing. The ESCO guarantees that the improvements will generate energy cost savings sufficient to pay for the total cost of the project over the term of the contract. Interest rates can make a significant difference in the total amount of debt service paid over the life of the contract and the project's return on investment. Lower cost of financing allows for flexibility in adding additional energy conservation measures (ECMs) to fit within the maximum allowable term or can reduce the years required to pay off the investment through savings. If privately financed, the interest rate obtained in the state and local ESPC model is typically dependent on the credit rating and worthiness of the agency undertaking the contract. The interest cost and lender fees are passed through to the government entity in an ESPC. However, state and local ESPCs are more commonly financed through municipal leases, bonds, or some combination thereof. The figure below demonstrates the cash flow in a state and/or local government ESPC.

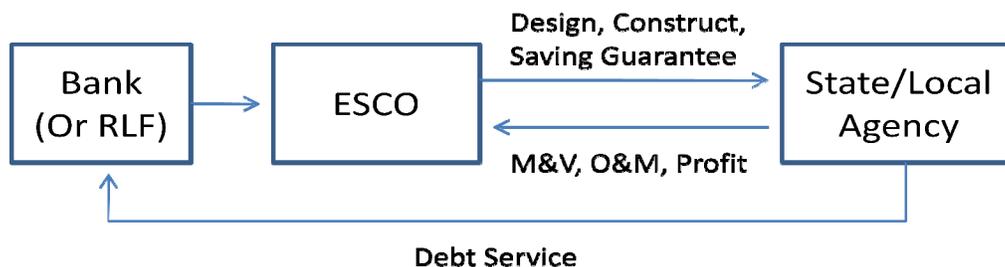


Figure 1. ESPC cash flow diagram

¹ U.S. Department of Energy Federal Energy Management Program. "Financing Mechanisms." <http://www1.eere.energy.gov/femp/financing/mechanisms.html>. Accessed December 2010.

Among the advantages provided by an ESPC when compared with a standard construction RFP project are the savings guarantee provided by the ESCO, the ability to complete a large-scale comprehensive project in all facilities to begin capturing savings immediately, and optionally the ability to secure the financing required for the project. If the savings guarantee is not of high value to the government entity, and financing is available in full through other financing options, an ESPC contract may not be the optimal implementation mechanism; although local government units that prefer comprehensive measures be delivered by a single company might still find an ESPC attractive. In some RLFs, the savings guarantee is required to secure the loan—Alaska’s Energy Efficiency Revolving Loan Program is an example.

Overview of Revolving Loan Funds

An RLF is a source of money from which loans are made. Loans are made to borrowers consistent with standard, prudent lending practices. Most RLF programs have a maximum allowable payback period for projects and explicitly state what types of projects are eligible for funding. As the borrowers repay loans, the money is returned to the RLF to make additional loans. In that manner, the RLF becomes an ongoing or "revolving" financial tool. In most cases the interest and fees paid by the RLF borrowers support program administration so that the fund’s capital base remains intact. Typically, RLFs lend money with specific goals or borrowers in mind. The range of RLF programs varies widely targeting such diverse areas as affordable housing, historical preservation, energy efficiency, safe drinking water, and small business development. RLFs are usually administered by government agencies or nonprofits with the goal of creating positive change within their community or target-lending group. Figure 2 shows the cash flow in an RLF.

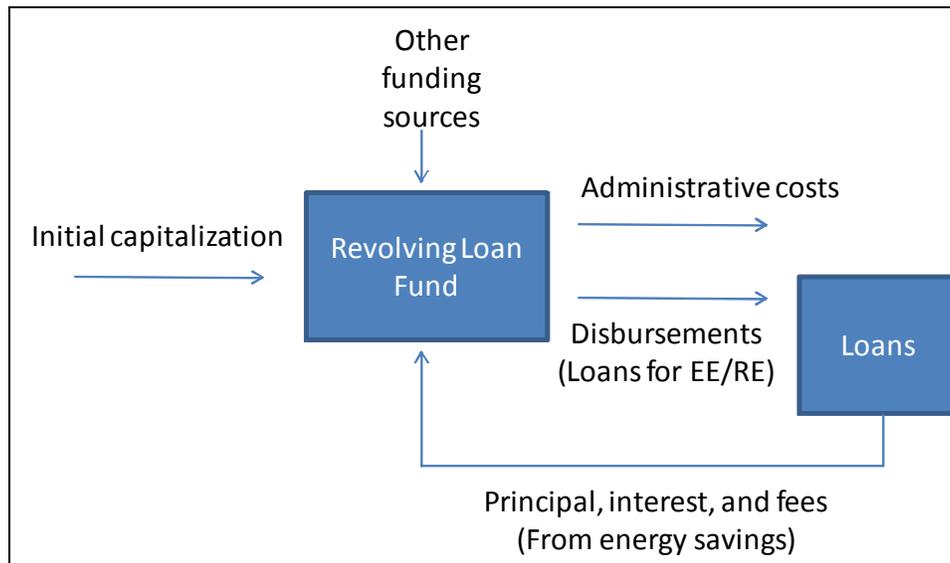


Figure 2. RLF cash flow diagram

Options for Using an RLF to Finance an ESPC

A revolving loan fund could be used to provide project financing of an ESPC contract. An RLF could finance the ESPC either in part or in full. Benefits afforded by an RLF compared to a typical ESPC loan might be a potentially lower interest rate for the financing (e.g., 3% compared to 5%) and lower financing procurement costs. Having a lower interest rate for project financing reduces the overall project cost over the lifetime of the ESPC. The reduced project cost is manifested in lower interest rate payments over the term of the contract. The lower interest rates can also increase the scope of the project to capture additional savings or increase the long-term energy savings of the agency's budget because the energy loan is paid back more quickly. The RLF is simply capital for project financing that is often available at a lower than market rate. An RLF could be used to fund a portion of an ESPC project such as the investment-grade audit or an energy manager, with the rest of the financing coming from the standard ESPC project financiers. The benefit of such an arrangement would be a lower overall total interest rate for the project. However, this benefit would be limited by a tradeoff between the decreased cost of project financing partially provided by the RLF and a potential increase in transaction costs caused by having two separate financing sources. Additionally, this type of arrangement would raise questions about senior and junior loan status that would need to be addressed in the event of default.

RLFs could potentially increase interest and availability of ESPCs, enabling state and/or local government units to more easily meet energy efficiency, renewable energy, water conservation, and emissions reduction goals. Use of an RLF could increase ESPC availability by providing financing to entities that would otherwise have issues qualifying for credit. The interest rate for state and local ESPCs is primarily determined by the government entity's credit rating and tax-exempt status. An RLF could expand project financing to agencies with lower credit ratings. For example, in Kentucky, with the collapse of the lending sector in 2008, the financing market for ESPCs was frozen, and the ESPC Revolving Loan Program provided a financing mechanism to keep ESPCs alive in the state. However, there are two potential pitfalls (in addition to the expansion of the pipeline of ESPC projects) and these should be considered in the development of programs. The first is an increase in the risk of loan defaults. Additionally, RLFs could increase interest in ESPCs through joint marketing with ESCOs or government programs that support ESPCs. Table 1 shows a comparison of the ESPC financing options.

Table 1. Comparison of ESPC, RLF, and Combined Options

	ESPC with Traditional Financing	ESPC with RLF Financing	ESPC with Combined RLF / Traditional Financing	RLF Financing of Standard Construction
Interest Rate	Market	RLF Rate	Market Rate less RLF portion	RLF Rate
ESCO Markup	YES	YES	YES	*Not Applicable
Savings Guarantee	YES, Negotiated M&V	YES, Negotiated M&V	YES, Negotiated M&V	Not typical – only if negotiated
Equipment Standard Manufacturer’s Warranty	Varies by equipment, typically 1 year	Varies by equipment, typically 1 year	Varies by equipment, typically 1 year	Varies by equipment, typically 1 year
Equipment “Repair and Replacement”	Negotiated	Negotiated	Negotiated	Agency Responsibility
Equipment Commissioning (Cx)	Highly recommended	Highly recommended	Highly recommended	Highly recommended
Energy Manager/ Continuous Cx Agent	As a Potential ECM/ Negotiable	As a Potential ECM/ Negotiable	As a Potential ECM/ Negotiable	Recommended
Maximum EE/RE Projects Available	As fit within terms of ESPC	As fit within RLF financing	As fit within terms of ESPC and RLF	As fit within RLF financing

*Note: Construction costs may be higher or lower in standard construction than ESPC but ESCO markup is not a consideration of this category (column).

Considerations for Including ESPCs as an Allowed Use of Funds in RLFs

Generally, the guidelines of an RLF will determine upfront what projects are financeable and if ESPCs are an allowed use of funds. RLF administrators must consider several factors before deciding if using an RLF for financing of ESPCs is desirable, such as:

Is the RLF loan rate lower than the ESPC financing rates available?

Is the RLF loan term acceptable to fit within the allowable term of an ESPC?

Is the RLF capital base large enough to fund numerous ESPCs that cost several million dollars and that may require several years to reach required payback?

How does the RLF administrator value the potentially reduced risk of loan default that a savings guarantee from the ESCO provides?

Will financing ESPCs increase the use of the RLF? If the RLF is new or undersubscribed, allowing for ESPC financing could increase or accelerate the number of loans an RLF is able to make.

How does the financing of ESPCs fit within the mission and goals of the RLF?

Once allowed and not-allowed use of funds is determined, an RLF will typically leave the implementation mechanism decision up to the government entity. If the RLF is willing to finance ESPC projects, the decision on whether or not to use an ESPC is left to the customer.

Following are some crucial questions state and local program developers should consider when planning to expand or develop an RLF program for use in conjunction with ESPCs.

Program Development Questions

- a) What department manages the RLF? If not the state energy office, how do the separate entities interact?
- b) Why was the RLF established?
- c) What problems was the RLF attempting to solve?
- d) What entities will the program serve (e.g., state government, state higher education, cities, counties, school districts, non-profits)?
- e) What market share of the funds will serve ESPC projects? What other projects will be funded?
- f) How will ESCOs be engaged to participate in: i) helping a client seek funding, ii) marketing the RLF?
- g) How will it be determined if the RLF is meeting the needs it set out to solve?
- h) What will the expected benefits be for: i) the customer, ii) the state, iii) the ESCO?
- i) How will the program support or compete with the local financing industry or the ESCO's ability to seek alternative funding?
- j) What will the starting fund amount be and how long will it be expected to last? How will it be sustained?
- k) Will there be a cap on the loan amount for any applicant? For any project?
- l) Will leveraging of the RLF be encouraged with other funding sources? How will leveraging work?

Answers to the previous questions can help guide program development, setting out clear objectives for implementing and administering program success. It is important to note that circumstances will differ by state and locality. The following case studies are presented to offer insight into the range of possible approaches to program development. Insight can be gained from how these other jurisdictions have structured their RLFs, including the indicators of program success, and lessons learned.

Case Studies

This section provides four brief case studies of state revolving loan programs in which ESPCs qualify. These case studies were developed through a process of web-based research and interviews with program directors and staff. Program maturity ranges from the Texas LoanSTAR example, which was initiated in 1988 and began qualifying ESPCs in 2001, Alabama's Local Government Energy Loan Program (LGELP), which began in 1997 and was opened up to ESPCs in 2009, the Green Bank of Kentucky, which began financing ESPCs from its 2009 inception, and finally, the Alaska revolving loan program (AEERLF), which began lending in September 2010.

While these four programs offer only a limited representation of all existing loan programs that qualify ESPCs, they characterize a broad range of varying program structures and styles from which several observations can be drawn on a number of distinguishing features:

Management: Programs are managed by a wide variety of agencies within the state.

Origin: Younger programs are initially established to allow ESPCs to qualify. More mature programs evolved to qualify ESPCs later in their development. Both types of programs (of those that have been in place long enough to lend funds) have found success in financing ESPCs to promote energy efficiency.

Funding: Initial funding for the profiled loan programs is attributed to a number of different sources.

Applicability: The Kentucky program has realized initial success by keeping a narrow focus on state buildings with plans of expanding to city and county programs as the program grows. Alternatively, the Alabama program is broadly applicable to different types of buildings. The programs profiled target projects in those sectors that private funding agencies are not currently funding. Therefore, these programs can be credited with filling a gap in financing energy efficiency efforts.

Marketing: Alabama provides an example of how loan programs can leverage ESPCs marketing ability through ESCO participation to provide no cost marketing for the loan program.

Evaluation: The evaluation of program effectiveness varies widely, resulting in challenges comparing multiple programs as well as parsing out the impacts of integrating ESPC financing into the loan portfolio.

Sustainability: Revolving loan fund programs are designed to be self-sustaining as loan repayments replenish depleted funds. Kentucky's plan to expand their program with additional capital is a result of a large enough fund base and successful lending. Alabama's budget and loan ceiling will have to be increased in order for the program to experience similar growth.

While the four case studies provide a range of state experiences with revolving loan programs that qualify ESPCs, a number of additional programs have recently been established with funding provided by the American Recovery and Reinvestment Act (ARRA) of 2009.

Experiences garnered by profiled programs going forward can inform the effective development of present and future programs. Table 2 presents a comparison of components characteristic to each state’s RLF program.

Table 2. Overview Comparison of Profiled State RLF Programs

	Green Bank (KY)	LGELP (AL)	LoanSTAR (TX)	AEERLF (AK)
Initial Fund Amount	\$14 million	\$2 million	\$127 million	Up to \$250 million
ESPC Initiated Date	July 2009	2009	2001	Sept. 2010
Source of Funds	ARRA Funds	Oil Overcharge Funds	Petroleum Violation Escrow Funds	General Obligation Bonds
Management Fee Assessed	-	3%	-	-
Loan Fee	-	-	-	0.5% to 0.1%
Maximum Loan Amount	\$2.6 million	\$350,000/\$500,000	\$5 million	-
Minimum Loan Amount	\$600,000	-	-	-
Loan Interest Rate	2.25%	0%	3%	Variable
Maximum Loan Term	15 years	10 years	10 years	15 years
Sectors Served	State Government	Schools, Local Government	Schools, State & Local Government, Hospitals	Schools, State & Local Government, Institutional
Number of Loans	5	2	20	0
Amount Loaned to Date	\$8 million	\$812,253	\$63 million	\$0

Green Bank of Kentucky—ESPC Revolving Loan Program²

Established in July 2009, the Green Bank of Kentucky is committed to promoting energy efficiency in the state. The ESPC Revolving Loan Program is available to all state agencies seeking to make energy efficiency improvements to their buildings or facilities. Initial funding for the program was provided by Recovery Act dollars with a starting program budget of just over \$14 million. In a signed agreement with the state energy office, the Finance Administration Cabinet is responsible for operating and managing the Green Bank.

Motivation for developing the program was in an attempt to solve the need for improving energy performance of Kentucky’s public buildings. In response to the shutdown of lending in the private tax-exempt market, one of the program’s main objectives is to drive ESPC projects. With the tightening of credit standards and an otherwise-volatile private financing market, public financing for ESPC projects may be the only stable and secure way to ensure money is available for investments in energy efficiency improvements.

² Kaplan, P. Correspondence. Director, Green Bank of Kentucky, Finance & Administration Cabinet.

Structure

Presently, only state buildings are served by the program, however, with additional resources, public buildings in cities and counties could also receive funding. There is no specific portion or amount of program funds allocated to financing ESPC projects. Neither is there a cap on the maximum loan amount.

Projects that cost over \$600,000 are eligible to apply for ESPC loans. The process requires a detailed investment grade energy audit and cost-benefit analysis, the costs of which may be rolled into the loan. The merits of submitted loan applications are considered based on feasibility, estimated energy usage reduction, savings, risk of default, size of loan requested, availability of funds, eligible uses of funds, and other factors. As a means for comparing effectiveness of implemented ECMs, borrowing agencies must submit status reports that include actual energy usage and costs. Measurement and verification may be done by the ESCO; however, no more than 5% of the cost of ECMs may be used for monitoring purposes.

Stipulated in the loan agreement is that the repayment period may not exceed the estimated life of the energy savings generated by the implemented ECMs, and the loan term is not to exceed 15 years. State agencies awarded loans sign an agreement allowing direct withdrawals of loan payments from utility operating accounts.

ESCOs are free to accept any source of funding utilized by their customers, so the state loan program is only providing one possible option. As such, the program is not considered to be in direct competition with the local financing industry. In fact, it was determined that local financial institutions were not servicing an identified unmet need of city and county ESPC funding.

Outcomes

To date, over \$8 million of program funds have been invested in ESPC projects. Customers have benefited as a direct result of available financing for energy projects that allows them to make capital improvements paid for by energy savings. The program not only finances energy performance improvements of state buildings, but, as more buildings pursue upgrades, it is also seen as a mechanism to increase economic development and create new jobs as well. Additionally, Green Bank monitors total energy reduction and costs avoided for each project. It is currently developing a way to display data that will publically highlight program performance.

Although the program has not been broadly marketed, Green Bank has been fully engaged with state ESCOs in helping applicants seek available financing. As a result of the program, it is determined that ESCOs benefit from more work opportunities.

In addition to ESPCs, loan funds from Green Bank program can also be used for a number of other energy conservation measures. From its initial \$14 million base, the fund has a little over

\$5 million remaining. It is expected that the remainder will be lent out by June 30, 2011. As a way to serve cities and counties who wish to improve energy efficiency measures in their public facilities, Green Bank is looking into securitizing a secondary market for its ESPC loans and is seeking additional capital to expand the program.

Alabama Local Government Energy Loan Program³

Established in 1997, the LGELP is a public-private partnership between the Alabama Department of Economic and Community Affairs (ADECA), which houses the state energy office, and Alabama's PowerSouth Energy Cooperative. The program's objective is to provide low-cost revolving loans for energy efficiency projects. The program has a \$2 million budget, funded by oil overcharge funds. Administration of the program is provided by PowerSouth Energy Cooperative.

Originally the program was created in partnership with U.S. Department of Agriculture Rural Development as a way to encourage energy efficiency upgrades in local government buildings and public schools in rural areas where little funding was available for needed energy improvements. The program was expanded to fund ESPCs in 2009.

Structure

LGELP was established to serve Alabama's public school districts and government facilities, including higher education campuses, as well as city, state, and county buildings. Program funding amounts are not allocated by energy efficiency project type, thus there is no limit on how much can be associated with ESPC projects, only that loans are capped at a maximum incentive of \$350,000 per local government or school campus, and \$500,000 per school system. Terms of the loan are 0% interest for up to 10 years, in addition to a 3% management fee. For applicants to qualify estimated simple payback of ECMs must be less than ten years.

In addition to an energy audit required prior to loan approval, an annual energy-use report must be submitted following the installation of energy conservation equipment. This requirement provides ease of tracking program performance by LGELP's administrators.

Outcomes

Despite the fact that entities are reluctant to take on any projects or loans that they perceive to tie-up needed funds, it is anticipated that with 0% interest loans, the energy savings from implemented ECMs will repay the loan amount in a short amount of time. Customers benefit from the low-cost financing available for energy retrofits that save money, which can then be used for other expenses, such as staff, supplies, etc. States, on the other hand, benefit from reduced energy demand and greenhouse gas emissions.

³ Clifton, K. Correspondence. Energy Program Manager, Alabama Department of Economic & Community Affairs.

Of those ESCOs that ADECA is in contact with, marketing of the program to clients who are considering energy upgrades is encouraged. Interest levels have increased as a result of ESCOs promoting the program. It is anticipated that LGELP will help ESCOs better market ESPCs because program funding enables the borrower to cover a portion of the upgrades with zero percent interest loan funds in a short period of time.

To date, the program has approved over \$800,000 in loans for ESPC projects. Although only a few loans have been approved, applications and interest is steadily increasing. Despite the fact that funds may be used to pay back a portion of an ESPC, the capped amount may not be substantial enough to finance an entire ESPC. Nonetheless, it is possible that additional funds could be obligated in the future, allowing the program and loan amounts to expand. If LGELP is to be sustainable financing ECPCs, it will have to increase its budget and the maximum allowable loan amount.

LGELP is an example of an existing loan program whose lending portfolio has evolved to include the financing of ESPCs in addition to other energy-savings projects. It has also demonstrated how instrumental ESCOs can be in the effective marketing of ESPC loan programs to their customers.

Texas LoanSTAR Revolving Loan Program⁴

Initiated by the Texas Energy Office in 1988, the Texas LoanSTAR (Saving Taxes and Resources) Program was approved by the U.S. Department of Energy (DOE) to be a statewide loan demonstration program targeted at improving the energy efficiency in the state's public buildings. Petroleum violation escrow funds received from the federal government were the sole source of funding at the initiation of the program. Statute requires that the loan fund be self-sustaining. In the case of LoanSTAR, it is the Texas State Energy Conservation Office (SECO) who is responsible for managing the fund. With a current balance of approximately \$126 million, LoanSTAR is the largest state-run building conservation program in the United States. In 2001, SECO received DOE approval for LoanSTAR to begin financing Energy Savings Performance Contracts (ESPCs).

As a revolving loan fund, the intent is that the base fund continues growing through interest payment receipts and lasts indefinitely. Low interest rate loans provided through the fund assist public institutions in financing energy cost-reduction efforts on their facility or facilities. The revolving loan mechanism allows the borrower to repay loans through the stream of cost savings realized from energy-efficiency retrofit projects.

Partnering ESCOs are generally active in maintaining open lines of communication with SECO in order to be aware of funding opportunities as they become available.

⁴ Trevino, E. Correspondence. Program Manager, State Energy Conservation Office.

Structure

Program financing for energy-related cost reduction retrofits specifically targets public buildings, including state agencies, public K-12 schools, public higher education institutions, tax-district supported public hospitals, and local governments. Borrowers secure financing from LoanSTAR through a competitive process. Twice a year, SECO publishes a notice of loan fund availability (NOLFA) and request for application announcement. In each NOLFA, the available funds, loan interest rate, and maximum loan amounts are announced. Historically, the maximum loan size has not exceeded \$5 million.

The application process enables the potential borrowers to self score their applications. Once the potential borrowers submit their applications, those applications are independently scored and ranked. The highest scoring applications are funded first.

It is possible for the borrower to use alternative funding sources in addition to LoanSTAR to buy down portions of a project that do not meet the program's funding criterion. The decision to leverage financing with other funding sources is made by the borrower.

Outcomes

LoanSTAR has been very successful in meeting its objectives. The LoanSTAR program has originated 208 loans. Since June 2003, 18 borrowers have utilized the ESPC structure. Twenty loans have been originated to these 18 borrowers, at a volume totaling \$63 million.

The LoanSTAR program has enabled the state to continue helping public entities improve the energy efficiency of buildings. LoanSTAR program borrowers benefit from the energy savings and capital improvements made to their facilities, using the resulting energy cost savings to pay for the principal and interest of installed energy conservation measures. ESCOs benefit because they can promote low-interest loans to prospective public entity borrowers.

The LoanSTAR program has also had a significant impact on mitigating environmental pollutants released into the atmosphere. As of December 2010, reported LoanSTAR funded projects have prevented the release of 10,119 tons of nitrogen oxides, 3,244,440 tons of carbon dioxide, and 7,188 tons of sulfur dioxide. Additionally, cumulative energy savings amounted to \$316,366,310.

Alaska—Energy Efficiency Revolving Loan Program⁵

Alaska's Energy Efficiency Revolving Loan Program (AEERLF) was authorized by the state legislature and established with \$250 million in general obligation bonds, issued and managed by the Alaska Housing Finance Corporation (AHFC). AHFC was able to use Recovery Act funding

⁵ Havelock, E. Correspondence. Multi-Family Underwriting Supervisor, Alaska Housing Finance Corporation.

for some of the start-up costs, but the AEERLF itself is funded by AHFC's ability to sell bonds. The program began in November 2010. To date, no loans have yet been closed under the program.

Structure

Funds are made available through loans to any public facility owned by the state, school district, municipality, or University of Alaska. Loans are structured so that the payments will be less than the savings estimated through investment grade audits (IGAs). The facility's legal governing body must authorize loan applications.

Audits must be performed by a certified energy auditor or certified energy manager, accredited through the Association of Energy Engineers. The IGA includes cost estimates needed to incorporate the ECMs. The AHFC Research and Rural Development Department (R2D2) contracted with five technical service providers to oversee the implementation of the IGAs. The AHFC mortgage department accepts the loan package, with the recommendations of R2D2 staff as to the integrity of the audits and cost estimates.

Current guidelines require an ESPC, with energy savings guarantees, to be implemented on any project in excess of \$250,000. There is no maximum loan amount, other than the program's \$250 million budget. Any performance guarantee will be assigned to AHFC as collateral.

Outcomes

AHFC will provide stable, predictable financing for energy efficiency retrofits that are based on IGAs, with performance guarantees or rigorous review. Data collection of before-and-after energy use, establishment of an energy use index, inventory of buildings, and construction type are all considered part of the measurement of success.

As the program is relatively new, there are no data yet on increased interest in ESPCs, other than an increased number of phone calls. AHFC has begun collecting benchmark data, including two-year histories of energy use, and is conducting outreach to educate public entities of the potential benefits of the program.

Initial data have been collected on several hundred buildings, and in the early stages of the program, it appears there is a high interest in moving through the audit stage. More data will be made available as the program matures