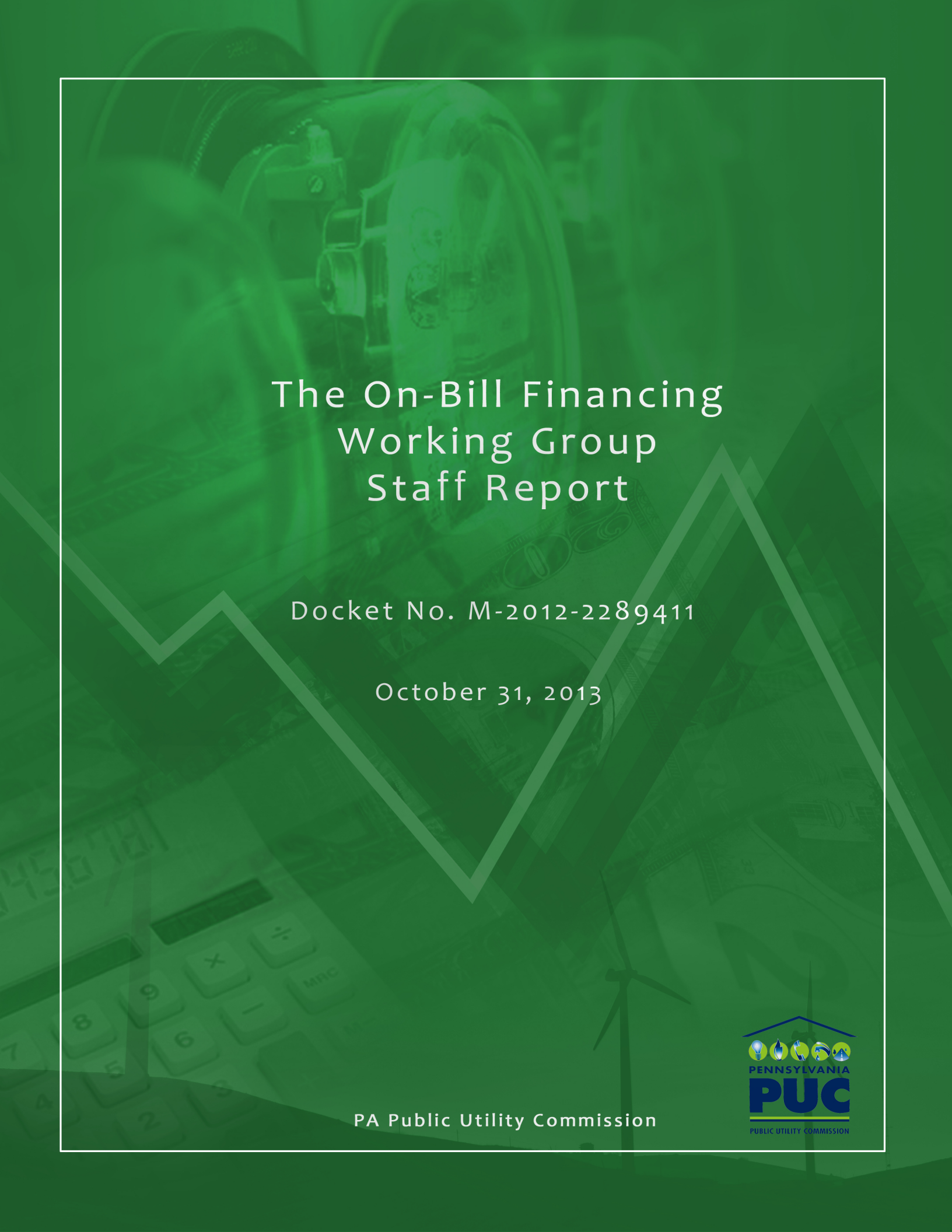

The On-Bill Financing Working Group Staff Report

Docket No. M-2012-2289411

October 31, 2013

PA Public Utility Commission

PENNSYLVANIA PUC PUBLIC UTILITY COMMISSION

PA PUBLIC UTILITY COMMISSION

The On-Bill Financing Working Group Staff Report

Docket No. M-2012-2289411

October 31, 2013

ACKNOWLEDGEMENTS

The Bureau of Technical Utility Services (TUS) and the Bureau of Consumer Services (BCS) of the Pennsylvania Public Utility Commission (PUC) would like to thank the members of the On-Bill Financing Working Group for their participation in the working group process. Working group meetings were productive and dynamic. In addition, group members were responsive to information requests as well as requests for potential on-bill financing models for the Commonwealth. TUS and BCS staff would like to extend additional gratitude to the members who joined together, led by John Costlow of the Sustainable Energy Fund (SEF), to put forth a potential small commercial model for the group to review and discuss early in the working group process. TUS and BCS staff would also like to thank David Evans of the Pennsylvania Housing Finance Agency (PHFA) for providing a second potential on-bill model for multifamily facilities. Finally, we would like to acknowledge Laurie Actman of the Energy Efficient Buildings Hub (EEB Hub) and her team not only for hosting the working group meeting in May, but also for their assistance in researching and drafting the best practices section of this report. TUS and BCS staff members considered the variety of viewpoints offered throughout the working group process when creating this report, paying close attention to working group discussions, the assortment of reference material, and all written comments that were provided from interested stakeholders. In sum, TUS and BCS staff would like to extend our gratitude to the On-Bill Financing Working Group for the time given to the group and for the insight provided. All efforts are very much appreciated.

Table of Contents

BACKGROUND

On August 2, 2012, the Pennsylvania Public Utility Commission (PUC) adopted the Act 129 Phase II Energy Efficiency and Conservation (EE&C) program Implementation Order.[1] In the Implementation Order, the Commission noted that, at that time, it did not have enough information on whether to direct the implementation of on-bill financing of EE&C measures. The Commission, however, noted the benefits of on-bill financing programs warranted further consideration.

The Commission directed the Bureaus of Consumer Services and Technical Utility Services to initiate a working group "to investigate best practices from other states and identify working models of on-bill financing and on-bill repayment that address the concerns of the utilities, consumer interest groups and other interested stakeholders."[2] The Commission further directed that "the goal of the working group will be to determine the feasibility of the inclusion of on-bill financing and on-bill repayment programs and to identify potential options for customers to obtain low-cost financing for energy efficiency projects to meet the needs of Pennsylvania consumers."[3]

WORKING GROUP PARTICIPANTS AND MEETINGS

The initial On-Bill Financing Working Group (OBFWG) meeting was held November 16, 2012. Participants attending included representatives from electric distribution companies (EDCs), consumer advocacy groups, industry trade groups, interested stakeholders and Commission staff. The purpose of the meeting was to identify the primary issues relevant to the potential implementation of on-bill financing for EE&C project purchase and installation expenses. Working group participants were asked to provide reference material relevant to on-bill financing and repayment (OBF/OBR) as well as to submit OBF/OBR models and/or potential pilot programs that would demonstrate the viability of OBF/OBR programs in Pennsylvania. Prior to a second OBFWG meeting on January 16, 2013, participants provided the reference material as well as a proposal for a pilot program as requested.

[1] *See Energy Efficiency and Conservation Program*, Implementation Order at Docket Nos. M-2012-2289411 and M-2008-2069887, entered on August 3, 2012 (Implementation Order).
[2] Implementation Order at 51.
[3] *Id*.

A proposed pilot program was presented at the January meeting. The pilot was developed jointly by several stakeholder groups led by the Sustainable Energy Fund (SEF) and focused on the small commercial sector. All working group participants were given the opportunity to provide feedback on the proposal both during and after the meeting.

The final meeting of the working group was held on May 17, 2013 at the Energy Efficient Buildings Hub (EEB Hub) in Philadelphia. The EEB Hub promoted the meeting by inviting additional stakeholders to participate. EEB Hub staff also provided a comprehensive OBF/OBR overview including best practices, benefits and disadvantages of OBF/OBR, and successful programs that have been implemented in other states. All OBFWG participants had the opportunity to provide additional feedback to the SEF's jointly proposed pilot as well as a pilot presented by the Pennsylvania Housing Finance Agency (PHFA). The PHFA proposal focused on providing on-bill financing options for multifamily units. The SEF and PHFA pilot proposals were presented as two separate programs that could work complementary to one another. Both pilot proposals are linked to this report as Appendices A and B.

ON-BILL FINANCING AND ON-BILL REPAYMENT BEST PRACTICES

Definitions

On-bill financing and on-bill repayment provide convenient mechanisms for utility customers to implement energy-efficiency improvements to their properties with no up-front costs, leveraging the existing utility billing system to manage the repayment of a loan obtained to cover the costs of the improvements. The term on-bill *financing* typically refers to a program where the utility is serving as the lender. Often the utility capitalizes on its program by establishing a revolving loan fund, using system-benefit charges or episodic government funds that become available (*e.g.*, funds from the American Recovery and Reinvestment Act of 2009 etc.). On-bill *repayment* typically refers to a program where the utility serves mainly as an intermediary between the customer and another institution that provides market-based lending.[4]

Another important characteristic of on-bill programs is whether the loan is tied to the customer, meaning that if the customer moves, the balance must be repaid; or the loan is

[4] A financing model in which a third party provides both the loans and administers energy efficiency programs is known as off-bill financing.

tied to the meter, meaning that if the customer moves, the next occupant is required to continue repayment for the remainder of the loan term. The latter is typically referred to as an on-bill *tariff* program, because a utility tariff is necessary to establish the obligation to continue repayment when the utility customer tied to a particular meter changes.

An attractive aspect of on-bill programs to utility customers is that, in principle, the energy cost savings resulting from an energy-efficiency improvement can be used to completely offset the monthly repayment amount. As a result, the loan can be cash-flow neutral to the customer, or "bill neutral," thereby reducing the likelihood of default. Once the loan repayment is complete, the customer benefits from lower utility bills on a going forward basis. Issues such as gaps in tenancy, creditworthiness, actual savings being less than projected savings, partial payments, termination of service for non-payment, and other circumstances must be addressed to make an on-bill program fully functional and effective from the perspective of all stakeholders.

Existing Programs

Robust examples of on-bill programs date back to the early 1990s in New England. A new surge in interest and deployment began in 2010 with multiple California utilities rolling out programs followed by the New York State Energy Research and Development Authority's (NYSERDA) Green Jobs/Green New York program in 2011.[5] A number of different elements define the scope of an on-bill program and its ability to achieve greater penetration of more comprehensive energy efficiency measures into a given market. Interest rates, loan terms, limits on loan amounts, synergy with existing programs, efficiency measure results, and qualification requirements are some of the key variables that must be evaluated in designing an effective program.

Based on the performance of existing programs, a number of overall observations become apparent. In most cases, on-bill financing or repayment is less of a program itself than it is a means to increase participation in an existing program. The broadest and most successful experiences have been associated with nesting on-bill financing within an existing program model to increase participation. Under these conditions, a customer typically receives a program incentive for a portion of the cost of an efficient equipment purchase or facility upgrade and then finances the remainder of the total purchase and installation costs on their utility bill until the financed balance is paid off. While on-bill

[5] Bell C.J., S. Nadel, and S. Hayes. 2011. On-Bill Financing for Energy Efficiency Improvements: A Review of Current Program Challenges, Opportunities, and Best Practices. American Council for an Energy Efficient Economy.

financing is squarely aimed at addressing a perceived lack of capital, the evidence from implemented programs strongly suggests that what truly motivates customers to act is a combination of the following three factors:

- An established program of energy efficiency incentives to leverage;
- A seamless turnkey transaction model – audit/assessment and project cost proposal, installation, and financing through a single party with one decision point and one accountable party; and
- Financing for the remainder of the project costs.

Actual field experience indicates that a lack of financing alone is a barrier for only a distinct minority of customers. For others, the more daunting barriers are the complexity of evaluating energy efficiency options, selecting reliable vendors to install them, and a general skepticism that these investments will produce the promised savings. The bundled program, including financing, offered together with a seamless transaction process provides a customer the comfort of having but one responsible party to hold accountable.

A couple of the larger, long-standing programs offer some useful insights into how on-bill financing and repayment programs can be designed and administered.

Mass-Save "Small Business Services"

Mass-Save "Small Business Services" is an on-bill financing program that is delivered by Massachusetts gas and electric utilities and energy efficiency service providers, including Columbia Gas of Massachusetts, The Berkshire Gas Co., Cape Light Compact, National Grid, New England Gas Co., NSTAR, Unitil and Western Massachusetts Electric Co.. National Grid pioneered the on-bill financing model 25 years ago. Since its inception, 30,000 loans have been made with a default rate of less than 2 percent as a part of a "Direct Install" comprehensive turnkey program for small businesses. No credit check is implemented in the loan process, nor is there a provision for utility termination if a customer defaults. The customer agreement is short and straight-forward. The template has been replicated in a number of jurisdictions in the northeast, such as New Hampshire, Rhode Island, Connecticut, New York and recently a pilot in Maine. The program features high incentives, in the range of 50 percent to 70 percent, provides turnkey installation of a comprehensive mix of electric (and in many jurisdictions gas) measures, and offers 0 percent financing for 12 to 24 months. The close rate, or completed number of projects, is between 50 percent and 70 percent.

California On-Bill Programs

In California, on-bill financing programs are delivered by SoCal Gas, San Diego Gas & Electric (SDG&E), Pacific Gas & Electric, and Southern California Edison. Common across all utilities are: bill neutrality, where projected utility bill savings off-set the costs of the loan payment; 0 percent interest; on-bill repayment; customer billing account history requirement, which is often evaluated for customer creditworthiness; maximum loan amounts; and service disconnection for non-payment. Individual utilities differ on some process details and the delivery channels. On-bill financing is layered on existing program application processes, qualifying measures and inspection requirements.

Two key takeaways of these programs are:

- 0 percent financing and bill neutrality are what 'sold' the program; and
- Customers have no preference for which entity provides loan capital. In contrast, account executives generally thought the introduction of a third-party capital provider would make the program complicated.[6]

As of March 2012, 603 loans were outstanding (80 percent through SDG&E), with a default rate of less than 1 percent. Small businesses were the primary recipient of loans, accounting for 79 percent of the loans and 61percent of the funds.[7] This represents 0.044 percent of the number of the utilities' commercial customers, of which there are over 1.3 million.[8] The story is similar for other programs in the United States, with most reporting less than 1 percent penetration of the customer base.[9] Strong marketing, persistent outreach to target customer segments and removal of any perceived barriers are needed to improve uptake.[10]

Survey of Program Practitioners and Experts

Drexel University recently conducted a survey of program implementers experienced with efficiency programs that contain an on-bill feature to provide an updated perspective

[6] The Cadmus Group. 2012. California 2010-2012 On-Bill Financing Process Evaluation and Market Assessment. Prepared for the California Public Utilities Commission.
[7] *Id.*
[8] U.S. Energy Information Administration. 2011. Retail sales of electricity to ultimate customers, by end-use sector, by state and utility, at: http://www.eia.gov/electricity/sales_revenue_price/pdf/table7.pdf
[9] Hayes, S., S. Nadel, C. Granda, and K. Hottel. 2011. What Have we Learned from Energy Efficiency Financing Programs. U.S. Dept. of Energy, DC: American Council for an Energy Efficient Economy.
[10] *Id.*

on these programs.[11] The survey entailed a series of semi-structured interviews with 10 experienced implementers of programs with on-bill financing and repayment, with about half engaged in the administration of existing programs. There was consensus across respondents on certain, non-program specific attributes. One significant finding was that tariff-based systems (where repayment stays with the meter) are rated more highly than loans (full repayment required if customer moves). Although tariff-based programs may be more difficult to implement for legal and regulatory reasons, the programs stand to produce deeper energy savings since time horizons are not constrained by the uncertainty of a tenant's length of occupancy. Bill neutrality was also considered important by all respondents, energy audits are viewed as an essential first step, and creditworthiness based on recent utility payment history are usually considered sufficient. Critical success factors are simplicity of the offering, standardization, and trust.

Pilot Program Design and Measurement

In general, successful energy efficiency programs incorporate clearly defined, mutually agreed-upon metrics. These metrics underpin effective program design, and are best developed in consultation with an independent, third-party evaluator who will use them as the basis for an evaluation plan.

Pilot programs are useful for testing, evaluating, and ultimately optimizing energy efficiency program design and administration. For a pilot to be considered successful, the costs, benefits and market potential of the program must be credibly demonstrated. Furthermore, the results of the pilot must be able to inform defensible, evidence-based decisions on whether and/or how a full scale program could be implemented.

Cost metrics:

The full costs of pilot implementation were documented and evaluated:

- Administrative costs, including costs to create a full-scale on-bill program and incremental costs (beyond current energy efficiency program management expenses) to manage a full-scale program on an ongoing basis.
- Finance costs.
- Unanticipated program costs, such as uncollectible expenses and defaults.

Benefits metrics:

The energy saving benefits from the pilot were documented and evaluated, such as:

[11] Hamilton, M. and P. Gurian. 2013. Program Design Considerations for On-Bill Financing and Repayment Programs: What the Experts Have to Say. Drexel University working document prepared on behalf of the EEB Hub.

- Achievement of economical energy savings (based on full implementation costs).
- Expansion of energy savings beyond what would have been achieved without the program (in terms of increasing the number of incremental participants – going "wider", and in terms of the number of measures installed – going "deeper").

Market potential metrics:
The market potential (energy efficiency market and capital market) of the pilot was measured and evaluated:

- Energy efficiency market
    - Effectiveness of the pilot at identifying and analyzing market opportunities for and barriers to a program with an on-bill feature in Pennsylvania (to include documentation of customer interest and/or concerns).
    - Credibility of potential impact estimates of taking the on-bill program to full scale and, based on these estimates, the potential for increase in the number of energy projects undertaken due to an on-bill program in Pennsylvania.
- Capital market
    - Sufficient, credible data to enable potential capital providers to make informed decisions about whether or how to support an on-bill program in Pennsylvania.

To help ensure the success of a pilot, the number of variables should also be minimized in order to provide clear evidence of impacts of the core hypotheses. For example, if, as anticipated, a key question to be answered is the consumer appetite for energy efficiency financing, then the underlying utility program offer should remain the same, with only the terms of the financing varying. In one case, a program offer such as a direct-install incentive could have a financing option attached to it as part of the pilot. In another variation, the financing could be combined with the incentive or, the financing could be applied to 100 percent of the cost. In both cases, the interest rate could vary from 0 percent to a rate sufficient to attract capital pool participants. Customer reaction and uptake could then be measured across these "pilot-program variations" as a means to test and, ultimately, optimize the final program design that emerges from the pilot.

Proposed Pennsylvania Models Compared to Best Practices of Other States

Both of the PA stakeholder proposed models share an administrative structure and market approach that relies on a third party On-Bill Administrator to handle all aspects of the

program, except for billing and collections, which would be handled by theEDCs. As described in the original SEF proposal:

> The On-Bill Administrator is the managing organization responsible to act as a conduit for capital from the capital pool to projects and subsequently recovers the distributed capital from project owners for repayment to capital pool participants. The On-Bill Administrator also acts as a single source for applications, credit approval and contractor qualification. Additionally, the On-Bill Administrator provides valuable oversight of the contactors in reviewing quoted savings for reasonableness and inspecting a portion (5 percent-15 percent) of installations to ensure they are delivering the quoted savings.

In both the SEF and PHFA models, energy efficiency retrofits would be aligned with, but not limited to, existing Act 129 programs. While potential new, non-Act 129 specific measures are not identified in the models, reference is made in the SEF model and in PHFA comments to possible building envelope measures that could be implemented as part of an on-bill repayment program. In addition, both models include providing 100 percent financing for remaining customer net costs after any Act 129 energy efficiency program rebates are applied.

Structurally and administratively, both models appear to be hybrids that combine off-bill financing with on-bill repayment. In each model, a program administrator assembles capital, provides loans and manages the implementation of energy efficiency programs (an off-bill financing model), while the utilities are responsible for processing repayments (an on-bill repayment model). This is a new and innovative approach and, to our knowledge, has not been tried in other states or utility territories.

For on-bill financing and on-bill repayment, utility programs typically use the financing to pay for whatever amount is left over after an incentive or rebate is applied, resulting in zero upfront customer investment. For off-bill financing, since such programs are administered independently, the utilities may or may not layer onto incentive programs and can, if they wish, initiate energy efficiency programs that differ from those being offered by the utilities. They can also provide 100 percent financing. In the vast majority of cases, however, the off-bill program administrator is responsible for program administration, loan management and billing and collections, as distinct from the proposed Pennsylvania models that assign the billing/collection function to the utilities (an on-bill repayment model).

Based on the above, the proposed Pennsylvania models suggested by SEF and PHFA are seen to be unique relative to standard practice in at least three key ways:

- The programs combine an off-bill model for program management and financing with an on-bill repayment model. Virtually all programs the EEB Hub analyzed either involved the utilities (on-bill financing or on-bill repayment models) or were fiscally and administratively completely independent of the utilities (off-bill). None of the programs combined the two.
- The programs include – or have the flexibility to include – energy efficiency measures outside the current program offers under Act 129. The programs analyzed by the EEB Hub (restricted to on-bill financing or on-bill repayment programs) all layer financing onto existing program offers and do not attempt to use financing to introduce and drive new programs.
- The programs appear to focus on providing 100 percent financing, as opposed to layering a financing option on top of one or more incentive programs. The programs analyzed by the EEB Hub – because the programs layer financing on top of existing incentive programs – typically finance the difference between the full cost of the measures and the value of the incentive.

Consequently, the stakeholder proposed Pennsylvania models really have no comparable, "best practice" precedents in other states. As noted throughout this report, typical best practices – specifically in utility-driven on-bill financing and on-bill repayment programs – layer financing onto existing program offers, finance only a portion of energy efficiency measure costs, and are focused on broadening and deepening participation in existing programs rather than driving new ones. The common features of their success are simplicity and a seamless one-stop customer experience. The proposed Pennsylvania pilot models are distinctly different from these best practice programs, making it difficult to compare that experience with what the stakeholders are proposing here.

ANALYSIS OF PENNSYLVANIA MODELS

The SEF and the PHFA each submitted proposed on-bill models to the OBFWG. Participants raised various concerns about each model, and no consensus on the viability of the models was reached. In analyzing the models, no clear design structure emerged. A synopsis of each model is provided in this report and comments and questions raised are incorporated into the analysis below. While the process was extensive and all input was

reviewed and considered by the OBFWG, not all will be specifically reflected in the following discussion. The complete comments are available for review at the PUC's website.

Synopsis of the SEF Model

- Primary Objectives:
  - Cover 100 percent of upfront costs
  - Recapture program costs directly from program participants
  - Lower participants' overall utility bills
  - Pay program and capital costs from utility bill reductions

- Key Entities:
  - Energy Users – EDC customers (Small C&I)
  - Contractor
  - On-Bill Administrator
  - EDC
  - Capital Pool Participants

The SEF On-Bill Repayment pilot model aims to better understand the potential uptake rate of a fully-implemented program, as well as the costs of such a program. The pilot is designed to uncover hidden costs and possible administrative issues as well as gauge the extent that access to capital is a key barrier to Act 129 program uptake. While focusing on small commercial and industrial participants, the SEF model seeks to capture supporting data for the capital providers and quantify the potential unmet need for such programs in Pennsylvania. SEF acknowledged existing entities could assume the role of the on-bill administrator, but in their absence, SEF noted it would be willing to fill that role. In addition, SEF noted it could provide funding for the pilot if no capital pool providers were secured. SEF provided two strawman tariffs detailing the specific components of the pilot programs, the Energy Savings Advance Rider (ESA) and the ESA Program Administrator Coordination Tariff (Links to full plan both as presented and after working group input available at Appendix A). In both tariffs, the obligation of the loan would remain with the meter.

Synopsis of PHFA Model

- Primary Objectives:

    - Address deteriorating multifamily housing facilities with energy efficiency retrofits
    - Provide funding solution to limited cash flow and debt restrictions
    - Overcome split incentives for master-metered properties
    - Preserve investment in affordable housing inventory in Pennsylvania

- Key Entities:
    - Energy Users –master-metered multifamily developments
    - On-Bill Administrator
    - EDC Capital Pool Providers

While similar to the SEF model, the PHFA On-Bill Repayment pilot model has a focused concentration on master-metered, affordable multifamily housing units, with market rate rental properties and apartment complexes also being eligible. This specific program is designed to service the aging multifamily housing stock in Pennsylvania and address some of the unique barriers that have historically kept this segment from receiving energy efficiency retrofits. The majority of affordable housing units in Pennsylvania are funded under the Housing and Urban Development and Low-Income Housing Tax Credit programs; and due to the restrictions on those programs, traditional lending avenues are negated by debt and lien prohibitions. Upgrades, such as energy efficiency retrofits must be executed by utilizing grants or unsecured funding. The PHFA model incorporates use of an on-bill administrator who would be responsible for key aspects of the program such as bill neutrality, an energy audit and benchmarking, property assessment and evaluation, low-cost financing, post-retrofit quality control, and training and education components for residents as well as maintenance and property management staff. Although based upon a tariff where the loan obligation would remain with the meter, the PHFA model indicates a flexible approach toward payments and possible disconnection, but notes the influence on risk and potential loan interest rates.

Discussion of SEF & PHFA Models

The OBFWG distributed discussion topics and questions centered around nine key areas. These topics provided a framework for discussion of the models, with participants able to submit written comments and concerns throughout the process. Because the two models are so similar, the discussion will combine comments and summaries and distinguish individual models where appropriate. Complete copies of submitted written comments as well as audio of certain discussions are available on the PUC's website.

Performance Metrics:

In order to measure the pilot program success, performance metrics had to be developed. The suggested metrics included the number of projects, length of pilot, program design, determination of target market segments, participation and default rates and energy savings.

Most OBFWG participants agreed pilot program limits must be identified, along with specific market segments. Consensus among the participants was that any pilots should be limited to targeting small commercial customers, including non-profit entities, schools, governmental and municipal facilities and multifamily housing. Focusing on this segment would allow an opportunity to prove or disprove that one of the key barriers to participation in energy efficiency programs was due to limited or lack of access to capital.

During ongoing discussions, additional barriers to participation were voiced and those included the split-incentive issues associated with multifamily housing, longevity concerns with leased properties, disruptions to tenants, inaccurate or over-stated energy savings estimates and shorter payback periods that would not encourage "deeper" efficiency measures. The pilots were designed to evaluate these obstacles and to weigh the benefits and costs of expanding into a "deeper" vs. "wider" program upon possible implementation.

The unique hybrid structure of the two models may permit the ability to test a number of compensation scenarios. A crucial function of the pilots would be to establish the optimal combination of resource acquisition cost and an acceptable rate of return for those capital pool providers, while creating program up-take levels that would justify expansion beyond the pilots. Manipulating the fees, interest rates, payback periods and other traditional components would yield invaluable guidance to the best design approach for a fully scaled program. The impact of interest rates in particular influences payback periods. If bill-neutrality is one of the primary desired outcomes, then energy efficiency measures may be limited and projects may fail to obtain the maximum energy savings possible under higher interest rate or shorter payback period scenarios.

Deployment/Implementation Timelines:

Participants of the working group agreed that any pilot program would need to undergo evaluation, preferably by an independent, third-party entity. In addition to project inspection and quality control measures, requirements to determine success or failure of the pilot would best be carried out in an impartial manner. While acknowledging one purpose of a pilot is to determine adjustments that would need to take place in order to implement a full-scale program, reasonable estimates and goals should be quantified for the pilot to be deemed a success. Minimal agreement was reached on the length of a pilot, with suggestions ranging from 12 to 36 months. Participants favored alignment with Act 129 Phase II programs so evaluation activities with the EDCs and the Statewide Evaluator would be complimentary, and market confusion and any gap between pilots and future programs could be minimized. Both pilots are well developed, but lack specific details regarding administrative and program details as revealed throughout the analysis and discussion. However, upon securing a partnering EDC, it does appear either model could be ramped up and operational in a short period of time.

Key Cost Components, Short and Long Term:

Both the SEF and the PHFA pilot models utilize an On-Bill Administrator to manage all major aspects of the program, except for billings and collection. Although both organizations may contribute to the funding provided by the capital pool providers, responsibility for project selection, determination of energy savings, contractors, and quality control would all be exclusively performed by SEF and PHFA. Both entities would also be compensated via an administrative fee, financed within the scope of the project. SEF submitted a flat, consistent charge, but during discussions with members it was determined that the amount suggested would be insufficient to cover actual anticipated costs. No specific figures for appropriate fees were proposed, although there appeared to be consensus that using an on-bill administrator would resolve many of the EDCs' concerns with regard to managing the operational aspects of the program. No decision was made on whether to require the on-bill administrator to be a separate entity from funding contributors, and PHFA expressed that scenarios could exist where it becomes necessary to use more than one on-bill administrator, citing their own qualifications, limited to multifamily housing buildings.

Even with the advent of the On-Bill Administrator, both models leave the billing and collection responsibilities with the EDCs. Much debate ensued on this topic, revolving around the system modifications the utilities would have to make to accommodate tracking and partial payment capabilities, and the projected costs of such upgrades. It

became obvious the costs could not be recovered based solely on the participation within the pilot models. Some participants noted the potential capital investment necessary to make the changes to a utility billing system would have to be socialized among ratepayers, and that recovery through a 1307 mechanism[12] would require authorization by statute and Commission approval. Reservations were raised that if attempts were made to recover costs through base rates, that such a substantial investment might be excluded if the pilots were not deemed successful, or if the Commission had not issued some sort of pre-approval. Regardless of method, the working group had significant unresolved questions concerning cost recovery and utility system modifications that require additional consideration.

Partial Payments and Termination:

For on-bill programs, the ability of the utility to terminate service for non-payment is associated with lowering the overall loan risk and has direct bearing on the interest rates assigned to the funding, especially in the case of a tariff-based program. The order that customer payments are applied can also influence the risk of a program. In some examples of successful on-bill programs implemented in other states, customer payments are pro-rated between utility and loan obligations. In other cases, payment is made to satisfy the utility bill first, and then the loan. The SEF model proposed that insufficient payments for the current balance due be applied first to cover the utility bill. If an unpaid balance is carried over until the next billing period, that payment would be applied in the following order: to any remaining utility balance; then to the current utility bill; and finally to the loan balance, prior and current.

PHFA favored a pro-rated approach to payment application, but noted the issue would need further review. Working group participants noted potential legal issues that could arise in Pennsylvania if a multifamily housing building owner was facing termination for insufficient loan payments, while current on the utility payments. In addition, other participants were concerned that EDCs may not be permitted to terminate service for a prior customer's unpaid charges, as would be the case with delinquency in a tariff-based program and transfer of loan obligations. Changes were proposed to protect tenants of multifamily dwellings from termination, but no resolution was reached. Residential customer protections by regulation may not apply to tenants in that situation, as most master-metered, multifamily buildings are classified as small commercial customers by the utilities, and are governed by different provisions. PHFA opined that if bill neutrality

[12] 66 Pa. C.S. §§ 1307

is indeed met, then a lapse in payment would have occurred with or without the involvement of an on-bill financed retrofit program. Further review is warranted to determine the proper order to apply partial payments and address delinquencies that could lead to service termination.

Energy Audits:

One of the key aspects to an energy efficiency retrofit is the energy audit that initially determines the potential savings and which energy efficiency measures should be included in the scope of the project. Since both the SEF and the PHFA proposed models were designed to be implemented in conjunction with Act 129, participants noted they are positioned to incorporate an energy audit and make savings estimates within the context of those existing programs. PHFA suggested the cost of the audit be borne by the customer until eligibility and project viability is confirmed, or if the customer decides not to pursue a retrofit project. PHFA also indicated some funding to offset partial costs of the audit may be available to qualifying buildings, and, if the project is approved, the entire cost could be included within the loan. Other participants noted the audits should be excluded from the pilot program entirely in order to minimize default risk. Generally, participants agreed audits should be paid for upfront and recovered within the loan or by rebate if the project moves forward.

Safety and Repair:

The working group agreed that any safety and repair costs necessary to install the energy efficiency measures, or to enhance their performance, should only be included in the project loan when doing so still results in bill neutrality, and meets the approved payback period. If substantive repairs to the building are required, those would be the sole responsibility of the customer and outside the scope of any financed retrofit project. Further, it was suggested that costs which would be eligible for inclusion should be recovered only from the segment of customers, *i.e.* small commercial, who participated in the pilot.

Potential Model Modifications:

The potential SEF and PHFA pilot models both proposed utilizing an on-bill administrator to manage the operational and lending roles of the programs. While working group participants did not oppose this structure, diverging opinions existed on

whether it was ideal. Questions arose regarding: how the on-bill administrator would be chosen if more than one entity wanted to manage the program; whether one administrator could function across multiple service territories if multiple EDCs participated; and whether the administrator should be separate from or associated with any funding sources or capital pool providers. Further questions centered on the liability and responsibility of the administrator in determining the credit worthiness of program applicants; the specific experience that would be required (if any); and how accountability and oversight of the administrator's role would be structured and regulated. PHFA noted in their model that creditworthiness should be more flexible if the administrator was working with a pool of lenders or investors, as the risk would be diluted. Both models would have the administrator evaluate the utility bill payment history of the applicant, with qualification terms differing slightly. No consensus was reached regarding credit worthiness determinations, with some working group participants favoring more flexible requirements that appropriately recognize and excuse minor or minimal payment delays. All participants agreed consistency across all program offers and with financing terms are important for gauging the success of pilots and their expansion to other programs and EDCs. No consensus was reached on how to qualify an on-bill administrator, but the possibility of multiple administrators and/or a single, state-wide administrator were discussed. Any EDC proposed on-bill pilot will have to provide details regarding the role of an on-bill administrator.

Bill Neutrality:

While it is acknowledged bill neutrality is a critical component of an on-bill program, it is also accepted that there is no way to effectively guarantee bill neutrality due to unforeseeable changes in rates, customer behavior or other influences on post-project energy usage such as severe weather. Calculating the energy savings used to determine the payback period and the loan amounts (and whether the savings offset the loan payment on the program participant's bill) presents additional challenges. Energy savings estimates are calculated by a variety of methods, including engineering estimates, custom measurement and verification protocols, or deemed savings within an energy efficiency program, such as the measures included within the Technical Reference Manual (TRM). Working group participants noted if the measures are too prescriptive, or limited, it could impede investment in more costly retrofit measures. Participants said a balance must be maintained between bill neutrality and the scope of a project. Such a balance is designed to promote the integration of more costly measures that achieve deeper savings as opposed to just promoting measures with a shorter payback period, such as lighting.

Participants were concerned that, as seen with some on-bill programs, quicker payback has often been favored in on-bill programs because of the elevated risk associated with longer paybacks. Both the SEF and the PHFA models are structured with a primary requirement that the cost of the post-retrofits, including loan payment, be equal to or less than the pre-retrofit billing, and have maximum loan terms and payback periods of eight and 10 years, respectively. Working group participants also strongly encouraged taking advantage of all the rebates available on specific measures under the Act 129 program, in order to foster inclusion of measures within a project that have higher upfront costs but lower lifecycle costs. No consensus was reached on a preferred length of a payback period, or whether placing limits on the length of the payback period was necessary. All participants did agree that in order to limit project risk and secure lower financing rates from capital pool providers, striving for bill neutrality was vital.

OBF-Act 129 Projects, Cost Recovery:

It has been established through the review of best practices that on-bill programs work best when layered upon existing energy efficiency programs, to fully leverage all available incentives and rebates. The proposed SEF and PHFA pilot models submitted to the working group are both designed to complement the Phase II Act 129 programs currently underway in Pennsylvania. Much discussion occurred regarding limiting the scope of the pilot programs to energy efficiency projects that would qualify under Act 129, and restricting the available measures to those listed in the TRM. Separate from the issue of cost recovery under Act 129, was the debate on whether the pilot had to meet the TRC test. In order to meet that stipulation, all administration and implementation costs would have to be determined. While intended to encourage uptake and bridge the financial barrier for small commercial customers, not all participants wanted to limit the EE retrofit measures to those covered by the TRM. PHFA, for instance, seeks to include improvements to the building envelope and insulation within the scope of their multifamily housing projects, which would require a custom measurement and verification protocol. Concerns also were expressed that an on-bill administrator's function of determining a project's energy savings estimates would duplicate existing Act 129 evaluation, measurement and verification framework outlined in the Act's EE&C Plans, incurring additional and unnecessary expense. Staff does not believe an on-bill pilot should be restricted to measures covered by the TRM; however, it should only include measures approved as part of the EDC's plan and the associated measurement and verification protocols.

Another issue that emerged from discussions was whether the on-bill administrator would have to apply to the Commission as a Conservation Service Provider (CSP), be required to comply with the provisions of Act 129, and whether they would be subjected to the competitive bid process. Some working group participants felt strongly that the duties performed by the on-bill administrator are similar to those provided by CSPs under Act 129, and therefore, the competitive bidding process should apply so that a chosen administrator would be in compliance with Pennsylvania law. The design of the on-bill pilot and duties of the on-bill administrator under the pilot design would determine whether the on-bill administrator qualifies as a CSP. Act 129 defines a CSP as an "entity that provides information and technical assistance on measures to enable a person to increase energy efficiency or reduce energy consumption…."[13] Under this definition, the on-bill administrator would appear to meet CSP definition only if it were providing information and advice on specific measures the customer should install. If, however, the on-bill administrator was simply approving loans for qualifying measures, calculating the amount of the loan, the loan payback period and the monthly loan charges, then it would appear that the on-bill administrator would not meet the definition of a CSP. Furthermore, if an on-bill administrator's duties meet the definition of a CSP, the EDC, as part of its pilot program filing may propose a more narrowly tailored competitively bid process to meet the limited scope of the pilot.

No consensus was reached regarding how to calculate the TRC for an on-bill pilot. We note that as the pilot should involve only previously approved plan measures, the administrative costs associated with the on-bill pilot may require a recalculation of the TRC for those measures covered under the pilot. The costs associated with any on-bill pilot and who is responsible for such costs, will have to be clearly identified in any proposal. Such costs include loan principal and interest defaults, as well as the administrative costs. The costs directly borne by the EDC would be subject to the Act 129 plan caps and cost recovery provisions.

SEF/PHFA Models	
Pros	**Cons**
Bill Neutral	Models lacking details, specifics
Targets Small Commercial, Multifamily Housing	Act 129 TRC recalculations may be necessary
Layers/Compliments Act 129 Programs	Interest rates and fees undetermined

[13] 66 Pa.C.S. § 2806.1(m).

Streamlined Process w/ On-Bill Administrator	Costly utility system modifications needed
Tariff-based	On-Bill Administrator Qualifications TBD

NEXT STEPS

In order to implement any of the proposed on-bill financing/repayment pilots covered in this report or another on-bill finance/repayment pilot, an EDC would have to seek Commission approval. As this would be a new, untested program, the EDC volunteering to seek approval through its Act 129 program would need to submit a Petition for a major plan change to give all interested parties an adequate opportunity to provide input and to fully inform the Commission. Through the related proceeding, it would be advisable for an EDC to seek input in the design of the pilot from interested stakeholders, including statutory advocates. While the Commission may determine that the pilot may not necessarily have to be cost-effective on a TRC basis, it must be designed in a way that the EDC and the Commission can determine whether a full scale program can be cost-effective. The savings obtained through the program should exceed what would have been obtained without the program, as well as provide benefits in excess of the administrative costs associated with the program. This is critical under the resource capped Act 129 EE&C programs unless a method can be found to fund these programs outside the 2 percent annual cost cap. Finally, a proposed on-bill pilot program should be designed to identify the market segments and/or the energy efficiency programs that could benefit from on-bill financing/repayment programs.

CONCLUSION

While the OBFWG was charged in part with determining "the feasibility of the inclusion of on-bill financing and on-bill repayment programs," the group was not charged with making recommendations regarding whether on-bill programs should be mandated in Pennsylvania. Based on documented experience in other states, on-bill programs may be effective in expanding the reach of existing energy efficiency programs, especially to specific niche or targeted groups of customers, such as multifamily housing or municipal entities that must work within a fixed budget. However, financing alone does not drive deeper energy savings – it is merely one critical component of a well-designed program. For Phase II of Act 129, the EDCs were encouraged to pursue deeper savings and implement "more comprehensive measures including whole house treatments."[14] The

[14] Implementation Order at 20.

proposed models presented by SEF and PHFA have the potential to assist in driving uptake within the small commercial sector by bridging cost barriers, and to make incorporating deeper retrofit projects more feasible. The models as presented, however, may not be viable without additional modifications. Specific program design details and parameters remain unresolved. Such unresolved details include cost concerns related to utility billing system upgrades, cost recovery, and Act 129 TRC and CSP applicability. These, along with other details, will have to be addressed in any proposed pilot. None of these obstacles, however, are insurmountable.

APPENDIX A

Links to Synopsis of SEF Proposed Model for Pilot Program:

- **Original Plan**
- **Original Plan Diagram**
- **Final After Working Group Input**

APPENDIX B

Links to Synopsis of PHFA Proposed Model for Pilot Program:

- **Original Plan**
- **Final After Working Group Input**

APPENDIX C

Working Group participants were requested to provide a list and summary of available "off-bill" financing options. These included both state and federal sources of funding for energy efficiency projects. Citizen's for Pennsylvania's Future (PennFuture) provided a summary, including explanation of advantages and disadvantages, of existing financing programs for the small commercial sector. Programs highlighted in this summary include the following:

- Small Business Advantage Grant Program
- Pollution Prevention Assistance Account (PPAA) Loan Program
- Act 129 Energy Efficiency and Conservation
- Sustainably Energy/Development Funds
- Qualified Energy Conservation Bonds
- Energy Savings Performance Contracting
- Demand Response

For more detailed information, please visit the PUC website.

The Energy Association of Pennsylvania (EAP) also provided a listing of funding available to small business and residential customers. EAP identified some of the same programs listed by PennFuture as well as some additional sources of funding. Programs highlighted in this summary include (excluding those mentioned above):
Small Business (statewide funding sources):

- PA Capital Access Program (PennCAP)
- Pennsylvania Economic Development Financing Authority
- High Performance Building Program (HPB)
- Small Business First Fund (SBF)
- Business Opportunities Fund (BOF)
- Center for Private Financing
- Alternative and Clean Energy Program – 2013 and High Performance Building Program - 2013
- Commonwealth Energy Group, LLC
- Machinery and Equipment Loan Fund
- Second Stage Loan Program

Small Business (federal/nationwide funding sources):

- "Small Loan Advantage" and "Community Advantage" Initiatives
- U.S. Small Business Administration
- Microloan Program
- U.S. Small Business Administration
- CDC/504 Loan Program
- Energy Efficiency and Renewable Energy Financing
- Small Business Innovation Research Program and Small Business Technology Transfer Program
- Energy Efficient Commercial Buildings Tax Deduction (through the end of 2013)
- Federal Renewable Energy Incentives
- Enterprise Community Partners
- Tax Incentives Assistance Project (TIAP)
- Central Business Funding
- Reap Energy Efficiency Program

Residential (statewide funding sources):

- Keystone Help Residential Energy Efficiency and Home Energy Loan Programs

Residential (federal/nationwide funding sources):

- Energy Efficient Mortgages
- FHA PowerSaver Pilot Program

For more detailed information, please visit the PUC's website.