I'll Gladly Pay You Tomorrow for an Energy Upgrade Today:
Integrating Financing into Residential Upgrade Programs

Joe Van Clock, Research Into Action, Portland OR
Marjorie McRae, Research Into Action, Portland OR
Jane S. Peters, Research Into Action, Portland OR
Edward Vine, Lawrence Berkeley National Laboratory, Berkeley CA

ABSTRACT

Because of its potential to reduce customers' first costs and leverage private funds, financing has been increasing in importance as a strategy for facilitating energy upgrades as program administrators seek to meet ambitious goals in a shifting energy efficiency landscape. Under the U.S. Department of Energy's (DOE) Better Buildings Neighborhood Program (BBNP), more than 30 grant recipients around the country devoted over $150 million to make attractive financing available for energy efficiency upgrades. Over the three-year period of the grant, nearly 13,000 participants used the grantees' loan programs. While loan uptake varied by grantee, on average, 18% of residential participants and 7% of nonresidential participants used loans in grantee programs that offered them.

This paper evaluates the experience of BBNP grantees to identify how programs can most effectively integrate loan offerings into their broader efforts to promote energy efficiency upgrades. The paper also identifies best practices from grantees' experience related to integrating financing into program outreach and trade ally interactions. Our research supports previous industry literature by suggesting that financing will be most effective as a complement to, rather than a replacement for, more traditional program approaches.

The paper draws on a wide range of data sources gathered for the process evaluation of the federal BBNP. These sources include in-depth interviews with grantees and their financial institution partners, grantee-reported data on spending and outcomes, and surveys of participants and non-participants in grantee programs. This paper also references existing industry knowledge on financing, drawn from a review of conference papers, industry reports, program evaluations, and other documents.

The paper will help program administrators effectively integrate financing into their programs and ensure that their loan offerings best serve the ultimate goal of increasing uptake of energy efficiency upgrades.

Introduction

Investment in financing programs has grown in recent years as program administrators have sought to leverage private funding to meet increasing efficiency and greenhouse gas reduction targets. With this growth in energy efficiency financing, industry actors have learned that financing products alone are not sufficient to generate significant demand for energy upgrades. Further, demand for energy upgrades may be a prerequisite for broader interest in energy efficiency lending among financial institutions, which may be reluctant to offer energy efficiency loan products if they are uncertain that sufficient demand for those products exists (Bell, Ferrante & Hewitt 2014). As a result, to effectively promote energy efficiency retrofits, financing products must be integrated within broader efficiency programs that incorporate elements designed to drive demand for energy upgrades. This paper examines the experience of 41 programs across the U.S. to identify effective strategies for integrating financing products into larger programs promoting comprehensive energy efficiency improvements.

This paper draws on the experience of organizations that received grants to administer energy efficiency programs through the U.S. Department of Energy's (DOE's) Better Buildings Neighborhood Program (BBNP), funded by the American Recovery and Reinvestment Act of 2009. Through the BBNP, DOE provided grants to 41 state and local governments, five of which further distributed their grant funds to a total of 24 sub-grantees. BBNP grantees and sub-grantees worked with nonprofits, building energy efficiency experts, contractor trade associations, financial institutions, utilities and other organizations to develop community-based programs, incentives, and financing options for comprehensive energy savings upgrades. Individual BBNP grants ranged from $1.3 million to $40 million, with approximately $508 million distributed across the 41 grantees. Among the 41 grantees, 38 offered financing, devoting approximately $153 million in BBNP grant funding to their financing programs. While the federal government has issued periodic funding opportunities for energy efficiency, none has been on the scale of BBNP.

All of the BBNP grant recipients' programs were broadly designed around three common purposes: (1) to obtain high-quality upgrades resulting in significant energy improvements (upgrades also described as whole building or comprehensive), (2) to incorporate a viable strategy for program sustainability, which DOE defined as continuing beyond the grant period without additional federal funding, and (3) to fundamentally and permanently transform energy markets to make energy efficiency and renewable energy the option of first choice (DOE 2009). While they shared these three broad objectives, each grant recipient implemented unique programs. The programs each grantee implemented varied widely. Grantee programs focused on the residential, multifamily, commercial/industrial, and agricultural sectors to varying degrees. While all grantees sought to promote comprehensive improvements, program offerings ranged from direct installation to prescriptive incentives for single measures to performance-based incentives based on energy modeling.

In a survey of 46 grantees and sub-grantees, 41 indicated they offered financing as part of their BBNP-funded programs. Grantees varied widely in the proportion of their BBNP awards devoted to financing. While nearly half of grantees (47%) devoted no more than 20% of their total award to financing, approximately one-fifth used a majority of their award on financing.

In examining the experiences of these grantees, this paper draws on data collected as part of the national process evaluation of the BBNP. Data for this evaluation were collected during the evaluation process and through mixed methods research. The conclusions and data presented are a combination of these mixed methods illustrating a thorough examination of the grantees' experiences and programs from multiple perspectives. Table 1 lists the data sources that contributed to this analysis. This paper also draws on a review of industry literature related to financing to place this study's findings in a broader context.

Table 1: Data Sources for BBNP Evaluation

Data Source		Respondents Providing Data on Financing
In-depth interviews with grantees and sub-grantees		41
In-depth interviews with financial partners		20
Grantee and sub-grantee web survey		41
Grantee Data Summary Reports	Spending Data	36
	Output Data	31
DOE-Maintained Project Database		31
Grantee-led Evaluations		11
Participant survey		2,399 respondents in 24 grantee territories

Non-participant survey	2,453 respondents in 44 grantee territories

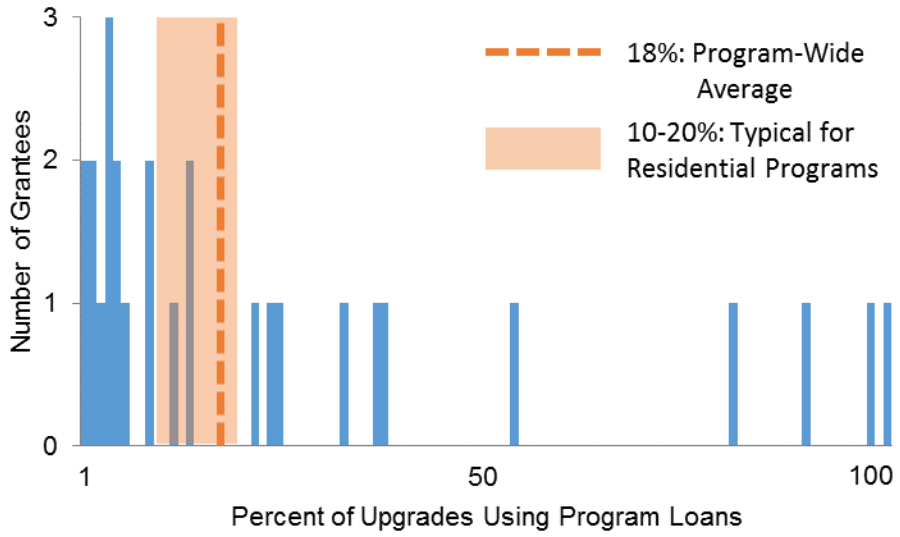
Role of Financing in Energy Efficiency Programs

The experience of BBNP grantees suggests that financing is a niche product that most participants in energy efficiency programs do not use, but is valuable to some. This section summarizes the level of financing uptake that grantees' experienced, reasons uptake may not have been higher, and the value that financing provides to those participants that use it.

Uptake of Loans

While grantees varied in the uptake of their loan offerings, most experienced relatively low levels of loan uptake. Grantees most often reported that fewer than 10% of their residential retrofits received loans, although a small group reported that more than 80% of their projects received loans (Figure 1).[1] Overall, 18% of residential retrofits completed through BBNP-funded programs offering loans used program financing. This rate is within the 10% to 20% range that program administrators participating in the State and Local Energy Efficiency Action Network (SEE Action) Residential Retrofit Working Group cited as typical for home energy upgrade programs offering financing (SEE Action 2011).

Figure 1: Uptake of Loans among BBNP-Funded Residential Programs (n=27)



Grantees experienced similar variation in uptake for their nonresidential loan offerings. As with residential loans, slightly fewer than half of the grantees with non-residential loans (47%) reported that fewer than 10% of their non-residential upgrades received loans. Nonetheless, one-third of grantees reported that a majority of their non-residential upgrades received loans, including some who reported that all of their non-

[1] Two of these programs exclusively offered loans to residential participants, one initially required participants to take out a loan, a requirement this grantee lifted approximately two-thirds of the way through the grant period, and one grantee forgave the full loan amount if participants remained in their homes for five years following the upgrade.

residential upgrades used loans. Across grantees, 7% of the non-residential upgrades completed in grantee territories where non-residential loans were available used program financing.

Reasons for Low Uptake

Industry literature suggests, and grantees' experience confirms, that financing alone is not sufficient to motivate large numbers of home and building owners to make upgrades. Industry sources suggest two reasons why this may be the case:

- Program-supported financial products may not be attractive to many participants.
- Concerns other than a lack of access to financing may take precedence in upgrade decisions.

First, for many potential program participants, a lack of access to financing may not pose a major barrier, or financing may not be an attractive solution. Homeowners undertaking whole house retrofits tend to be affluent and are likely to have cash or access to other attractive financing options (KEMA 2014). Even middle-income households have historically conducted a majority of their home improvements without using financing (Zimring et al. 2011). Some homeowners who could benefit from financing may also be reluctant to take on debt, particularly following the 2009 recession, which reduced many homeowners' certainty in the value of their homes and confidence in their future incomes (Ibid).

Second, sources suggest that other barriers, like a lack of awareness and understanding of the benefits of upgrades and the complexity and inconvenience of the upgrade process for the participant, may pose more significant challenges to upgrade programs than access to financing. For example, a baseline characterization study of the whole house energy upgrade market in California noted: "We believe that lack of awareness and understanding of the [energy upgrade] value proposition constitutes a more decisive barrier to participation…than consumers' financial constraints" (KEMA 2014). A report by the National Home Performance Council supports this position, stating that a combination of high monetary and non-monetary costs (in terms of managing and coordinating contractors), long payback periods, and uncertainty that predicted energy savings will be realized limit the appeal of whole house energy upgrades (LeBaron & Saul-Rinaldi 2013).

BBNP grantees' experiences implementing financing programs reflected both of the factors that industry literature suggests might limit uptake. Some grantees reported that participants do not always see financing as an attractive option, particularly if they are trying to reduce their overall household debt. Other grantees reported that the complexity of the retrofit process and skepticism on the part of potential participants were more important barriers to energy efficiency upgrades than the up-front costs. One grantee elaborated that skepticism of savings estimates could undermine the framing of efficiency upgrades as investments that would ultimately provide participants financial returns that exceeded their costs through energy cost savings, a common way that grantees promoted their loan offerings. According to this grantee, "We thought low interest loans would work, where it would pay out of savings, but it didn't happen. Folks don't understand this."

In the non-residential sector, grantees cited distinct characteristics of both small and large commercial participants that led to a lack of loan uptake. According to grantees, small commercial customers were reluctant to pursue loans for energy efficiency retrofits because they were averse to taking on debt. One grantee, whose commercial program largely served nonprofit organizations, stated that these organizations had a "propensity to reject debt under any circumstance, and any debt is bad debt." Grantees reported that it was difficult to design financing products for large commercial customers because these organizations often have existing relationships with financial institutions and access to other types of financing. Grantees also noted that it was challenging to design financing processes that could accommodate the long timeframes that large commercial participants require to plan and carry out retrofits.

Benefits of Financing

As is typical for other energy efficiency financing programs, a minority of most grantees' participants used financing, nonetheless program-supported financing was valuable to those participants that received it. In surveys of BBNP participants across the country, large majorities of both residential and commercial participants (73% and 86%, respectively) that used loans to pay for their upgrades gave high ratings to the importance of the loan in their decision to make upgrades. Two evaluations that individual grantees oversaw of their own BBNP-funded programs support these findings. One found that, while less than one-third (31%) of residential participants used program loans to pay for their upgrades, nearly two-thirds (63%) of those who did reported "the availability of financing played a major role in their upgrade decision" (WSU 2014). Another evaluation of programs in four states reported that although the programs experienced lower-than-expected loan uptake, program stakeholders reported that the availability of loans was critical for some homeowners (Cadmus 2014).

Program-supported loans have the potential to motivate participants to make upgrades in one of two ways. First, by expanding access to financing through relaxed underwriting criteria, they may allow participants who would not otherwise have had access to the necessary capital to make upgrades. Second, by offering interest rates and terms that are more attractive than other, non-efficiency-focused, financing options available to a participant, they may motivate participants to make efficiency upgrades rather than other types of home improvements. The next section describes ways that programs can design their financing products to leverage each of these benefits.

Characteristics of the Financial Product

In order to effectively integrate financing into an energy efficiency program, program administrators must determine whether financing products focused on making energy upgrades more attractive than other types of home improvements or financing products focused on expanding access to upgrades better serve the program's goals. The design of the financial product and interventions needed to bring that product to market differ based on the financing product's objective. The following sections explore these issues in greater detail.

Design of the Financial Product

In designing financing products, program administrators typically must prioritize either increasing access to financing or making a financial product available that is more attractive than the other options available to qualified participants. The interest rates and other terms of a loan reflect a financial institution's assessment of the risk that the loan poses to the lender. Lower-risk loans can justify attractive interest rates, but expanded access increases the loan portfolio's risk exposure. Thus, programs must choose which of these objectives is most compatible with their broader program goals. For example, programs seeking to reach traditionally underserved populations, like middle-income homeowners, may prioritize expanded access to capital. Programs seeking to promote high-cost upgrades likely to appeal to higher-income participants may prioritize increasing the attractiveness of their financing product.

BBNP grantees most often focused on designing financial products that would be more attractive than other options available to participants. To this end, grantees sought to offer loans at very low interest rates. In in-depth interviews, grantees reported offering interest rates for residential loans ranging from 0% to 7.5%, with half offering a loan product at 0% interest and more than three-fourths offering a loan product at 4.5% interest or less at some point during the grant period. Grantees stated that these low interest rates were necessary to generate participant interest in financing offers. According to a staff member at a financial institution that worked with one grantee, "the only way to get people interested in these loans is to get rates

close to zero." Some grantees explicitly drew a comparison between the financing products their programs offered and other options available to participants, particularly home equity loans. These grantees stated it was important for their financing products to have interest rates competitive with home equity loans.

A smaller group of grantees focused on expanding access to financing for energy efficiency upgrades. In particular, these grantees focused on middle-income populations, which they saw as particularly likely to benefit from energy efficiency financing. These grantees noted that it was less important to offer very low interest rates when designing financing products for participants who did not have access to other attractive financing options. According to one, "Some folks have home equity, but not our target market. We are a [Community Development Financial Institution] working with underserved communities. They don't have bankers, so they have the option of GE Financing at 14% or a credit card at 18% [to finance energy upgrades]. Our rates are competitive, about 7.5%."[2]

In order to expand access to financing, some grantees developed alternate loan qualification criteria. While most grantees used traditional financial metrics, like participants' credit scores, income levels, and debt-to-income ratios, to determine eligibility for financing, some developed systems that provided opportunities for participants that did not qualify through these traditional metrics to nonetheless receive a loan. In some cases, these grantees offered different financial products to participants' with different credit scores. In other cases, grantees allowed participants to qualify for financing based on their utility bill or mortgage payment history if they did not qualify based on traditional metrics.

Beyond making energy upgrades more attractive or expanding access, the design of a loan product can help to effectively integrate financing into the program participation process. For example, offering unsecured loans may reduce the time and complexity required to qualify participants for financing, contributing to a quick and simple financing qualification process, which multiple industry sources cited as a best practice (Zimring 2014, LBNL & HBC 2013, Von Schrader 2008). Nonetheless, unsecured loans increase the risk to the lender because there is no asset that the lender can repossess if the borrower defaults. As a result, in order to offer unsecured loans at rates competitive with home equity loans, which use the borrower's home as security, programs had to intervene in lending markets. The next section describes the strategies that BBNP grantees used to influence the loans available to their participants.

Use of Program Funds

Grantees used three primary mechanisms to make energy efficiency financing available – either offering more attractive terms or making financing available to a wider range of participants than the market would support on its own:

- **Loan loss reserve funds**, which set aside an amount equal to a proportion of each loan that a participating financial institution makes (frequently between 5% and 20%) to repay much of the lender's losses from loans that default.
- **Revolving loan funds**, in which grantees use program funds directly to make loans, with the expectation that the loan funds will be paid back, and used to make subsequent loans.
- **Interest rate buy-downs**, in which the program compensates lenders for the interest income lost by offering loans at a lower interest rate.

All three mechanisms could support either of the objectives for program-supported loan products described previously. Loan loss reserve funds were the most common strategy that BBNP grantees used to influence financial markets. These funds effectively reduce the risk loans pose to the lender by shifting a portion of that risk to the program. This is important to programs seeking to expand access to financing since

[2] Community Development Financial Institutions offer financial services to specific, targeted communities that are not well served by traditional financial institutions.

these programs seek to make financing available to participants that lenders would traditionally deem too great a risk. Loan loss reserves can also lead lenders to offer loans on more attractive terms since interest rates and other terms reflect a lender's assessment of the risk of a loan product.

Many grantees found it difficult to recruit financial institutions willing to offer the types of financial products that the programs sought. Revolving loan funds offer one solution to this challenge. Because revolving loan funds lend program funds directly, they provide program administrators with the greatest flexibility to set the terms and determine the underwriting criteria of their loan products. However, revolving loan funds typically support a smaller pool of loans than loan loss reserve funds, which leverage a financial institution's capital to fund loans. To overcome this constraint, one grantee established itself as a community development financial institution in order to raise capital from investors that it could lend to program participants.

A market characterization study completed for the California investor-owned utilities found that loan loss reserves typically have the potential to reduce interest rates by between three and five percent, likely lowering the interest rate on an unsecured loan from roughly 14% to roughly 10% (HBC 2011). To motivate financial institutions to offer loans at the very low interest rates necessary to make the program's financing products more attractive than participants' other options, BBNP grantees frequently offered interest rate buy-downs. Interest rate buy-downs can be costly for efficiency programs because, unlike revolving loan funds and loan loss reserves, interest rate buy-down funds are not regenerated as the loans are paid back. Staff at financial institutions that offered efficiency loans in partnership with grantees reported that interest in energy efficiency loans waned when interest rate buy-down funds ran out and rates returned to normal.

Partnerships with Financial Institutions

Partnerships with financial institutions are necessary for programs seeking to use loan loss reserves or interest rate buy-downs to leverage a larger pool of loan capital than their own funding sources will allow. Financial institution partnerships may also benefit programs loaning their own capital through revolving loan funds by eliminating the need for the program administrator to develop the infrastructure to originate and service loans within their own organization. The experience of BBNP grantees suggests that partnerships between efficiency programs and financial institutions are most successful when the financial institution shares the program administrator's objectives, as the design of the financial product itself must be consistent with the program's goals.

Grantees indicated that partnerships with credit unions and financial institutions specifically focused on energy efficiency lending were most effective. Grantees noted that their programs' interests aligned with the interests of their credit union partners, whose missions included community support. Contacts at partnering financial institutions also noted that credit unions are more likely to be community- and mission-driven, making them well suited to offer energy efficiency loan products. These contacts elaborated that credit unions are more likely to value the non-financial benefits of energy efficiency lending, such as helping the environment and supporting their local communities. A representative from a credit union that worked with one grantee stated that they would advise others: "If you are focused on residential, don't expect to make a lot of money. But go into it with the mindset that you will reduce the carbon footprint, assist the community, and provide a cost-effective means for the community to retrofit homes that will be easy on the budget."

Grantees also reported satisfaction with their partnerships with AFC First Financial and Energy Finance Solutions, organizations focused specifically on energy efficiency lending.[3] In some cases, grantees

[3] AFC First Financial is a financial institution that moved into energy efficiency lending from a background in unsecured

turned to these lenders after encountering little interest from traditional financial institutions operating in their program areas. Grantees reported that large banks were not as well suited to efficiency program partnerships as credit unions. According to two grantees, the centralized structure of many large banks made it difficult for them to implement programs at a smaller, local level and reduced their flexibility to coordinate with the program on marketing and other aspects of program delivery.

While most grantees worked with a single financial institution, those that worked with multiple financial partners described a variety of benefits to doing so. These grantees noted that working with multiple financial partners allowed them to reach a wider market, as each financial partner served different geographic areas or had the capacity to offer different types of loans. Grantees also reported that participants appreciated the opportunity to use a financial institution with which they had an existing relationship, and working with multiple financial institutions increased the likelihood that a participant would be able to work with an institution they knew. Finally, one grantee stated that partnering with multiple financial institutions had generated competition between financial partners, resulting in lower interest rates for participants.

Integration of Financial Products with Program Processes

Because of financing's role as a niche product – important to a small proportion of participants – industry literature and the experience of BBNP grantees suggests that the availability of financing is unlikely to motivate large numbers of upgrades. According to the summary of a meeting of small and mid-size lenders convened by ACEEE, "Lenders should not seek to sell loans for energy efficiency but instead to finance services that consumers already want" (Bell, Ferrante & Hewitt 2014). The lenders attending the meeting suggested that creating demand for upgrades is a role for the program (Ibid).

Rather than a marketing tool, generating interest in energy upgrades in the larger population, grantees reported that financing was more effective as a sales tool, motivating interested participants to move forward with upgrades.[4] According to one grantee, financing is "not designed to help build the market…but to facilitate the market." Grantees stated that financing was particularly effective as a sales tool in one-on-one situations in which the grantees or contractors could fully explain the details of the loan, the benefits of the upgrades, and address any concerns that the potential participant had. One grantee said, "You have to have [the participant] face-to-face to get their attention long enough to explain this. You are overcoming a belief that 'it's not for me, I can't afford it, I don't believe the savings will be that.'…It takes a trusted source."

A market characterization study for NYSERDA's Green Jobs-Green New York financing program suggests that financing can be an effective sales tool for upgrades. Almost all (95%) of the surveyed contractors reported recommending financing options to customers, and a majority speculated that the availability of financing allowed customers to complete larger upgrades.

To take advantage of financing as a sales tool for energy upgrades, grantees emphasized the importance of simplicity and ease of use for participants in the financing process. According to one grantee, "You need to make [the process] streamlined…people are willing to put their money down…but you have to make it easy to navigate and have the value clearly present."

One way that grantees sought to streamline the financing process was to ensure that participants learned about the program's financing offerings when that information would be most relevant. Grantees

consumer, home improvement lending. Energy Finance Solutions is a branch of the Wisconsin Energy Conservation Corporation that has become licensed to deliver financial products in many states.

[4] We make a distinction between marketing, which we define as efforts to generate awareness of, and interest in, a program or product within a broad target population, and sales, which we define as efforts to motivate individual, interested participants to adopt a product or participate in a program.

described efforts to ensure that participants had information about financing and considered its availability as they were weighing their upgrade options. Grantees noted that contractors or the program's energy advisors could play a key role in these efforts. One grantee stated that, "the degree to which we can train our contractors to offer a loan at the point of sale or to cross-sell or upsell is a really important piece of trying to penetrate the market in a more pervasive way." To encourage contractors to use program financing in their sales efforts, grantees reported that it was important to make the financing process easy for contractors to use and to provide support to contractors using financing.

BBNP grantees reported that coordination with financial institution partners was also important in informing participants about their programs' loan offerings. Two grantees noted that, while their programs had agreements with the financial institutions' executives, branch-level staff were not always aware of the program's loan offerings. According to one of these grantees, "Customers would get a referral [to the financial institution] from us, and the branch staff would say 'we don't offer that.'" This grantee trained staff at each of its financial partner's branches about the program.

Another way grantees sought to integrate their financing products with their broader program offerings was by defining measure eligibility requirements that allowed their financing products to complement their incentive offerings. For example, some grantees allowed participants to finance measures that did not qualify for incentives, like renewable energy installations or a limited amount of non-energy remodeling costs that might be necessary to install efficiency upgrades. Other grantees maintained more lenient cost-effectiveness requirements for measures receiving loans than for measures receiving incentives.

Not all BBNP grantees designed simple financing processes, and those with more complex processes frequently cited the need for greater simplicity as a lesson learned. In open-ended responses, two grantees reported that stringent requirements around the upgrades eligible for financing had turned away potential participants. A third grantee, a state housing finance agency that offered various types of home buying and home improvement loans, reported that replicating the approval process for other loan products had resulted in an unnecessarily complicated process.

Summary

Overall, relatively few participants in BBNP-funded programs that offered loans used them to pay for their upgrades. Grantees most often reported that fewer than 10% of their residential participants used loans, although across programs, 18% of participants in programs that offered loans used them. This average is in line with other home energy upgrade programs. Grantee experience and industry literature suggest two reasons for this limited uptake of loans: first, for participants who have access to other sources of capital or are reluctant to take on debt, a lack of access to financing may not pose a significant barrier. Second, for some participants, barriers other than access to financing, like a lack of awareness of the benefits of energy upgrades, or uncertainty that promised benefits will materialize, may take pose more pressing challenges than access to financing.

Although a minority of participants typically used grantees' financing offerings, the availability of loans was important in the decisions of those that used them to move forward with upgrades. Grantees used loans to motivate participants to make upgrades in two ways: first, grantees most often sought to make financing available on more attractive terms than participants would find elsewhere. Second, some grantees sought to expand access to financing to participants who would not otherwise be able to access attractive financing options.

Whether a grantee sought to make financing offerings more attractive to qualified borrowers or expand access to borrowers without other attractive financing options influenced the design of the grantees' financial products and the interventions needed to bring those products to market. Grantees seeking to increase the attractiveness of financing products primarily focused on creating products with

very low interest rates. Interest rates were less of a focus for grantees seeking to expand access to financing; instead, these grantees sought to either relax underwriting criteria or use alternative metrics like mortgage or utility bill payment history.

By shifting the risk of loans from the financial institution to the program, loan loss reserve funds, the most common strategy grantees used to influence financial markets, could contribute to either increased access or lower interest rates. Nonetheless, grantees often found financial institutions reluctant to offer loans on the terms the grantees sought. Revolving loan funds offered one solution to this challenge: by lending program funds directly, grantees had the greatest leeway to set financing terms and define underwriting criteria. Grantees also frequently used interest rate buy-downs to achieve very low interest rates, competitive with products like home equity loans.

In addition to designing financing products that reflect their program's goals, it is important for program administrators to effectively integrate financing into their broader program offerings. For BBNP grantees, this integration included designing financing products that were easy for participants and contractors to use and providing participants with information about their loan options as they were considering upgrade recommendations. Partnerships with financial institutions provided another opportunity for coordination with the broader program. Grantees found partnerships with mission-driven financial institutions like credit unions that shared the programs' goals of improving their communities most effective. Grantees also found it important to ensure that staff at all levels of their financial partners' organizations were informed about the program.

Conclusion

Energy efficiency loans are a niche product for participants in whole house programs; while they appeal to relatively few participants, loans are very important in facilitating upgrades for those that use them. Because of their value to the participants that use them, loans can be an important sales tool helping programs motivate interested participants to take action. Loans can serve as a sales tool in two ways: First, by offering financing on more attractive terms than a participant could obtain on their own, program-supported loans may motivate participants to make efficiency upgrades rather than some other type of home improvement. Second, by expanding access to financing, program supported loans could allow participants to make efficiency upgrades they could not otherwise afford.

To effectively integrate financing into their programs, program administrators must identify which of these objectives is most consistent with their broader program goals. The design of the financial product determines which of the objectives it will support, and should thus follow from program goals. As BBNP grantees found, it is also important to select a financial institution partner that shares a program's goals, and to integrate financing into the participation process as seamlessly as possible.

Due to the limited uptake of loans, financing alone is unlikely to drive widespread demand for comprehensive upgrades, and most programs promoting comprehensive upgrades are unlikely to see high volumes of loans. Recognizing these limitations can help program administrators most effectively allocate resources as they develop financial and non-financial products and services that are consistent with the broader goals of their programs.

References

Bell, Casey, Angela Ferrante, and Virginia Hewitt. 2014. Engaging Small to Mid-Size Lenders in the Market for Energy Efficiency Investment: Lessons Learned from the ACEEE Small Lender Energy Efficiency Convening (SLEEC). F1401. Washington DC: American Council for an Energy Efficient Economy.

Harcourt Brown & Carey, Inc. 2011. Energy Efficiency Financing in California: Needs and Gaps. Sacramento, CA: California Public Utilities Commission, Energy Division.

KEMA, Inc. 2014. Final Report: Baseline Characterization Market Effects Study of Investor-Owned Utility Whole House Retrofit Programs in California. Sacramento, CA: California Public Utilities Commission, Energy Division.

Lawrence Berkeley National Laboratory, and Harcourt Brown & Carey, Inc. 2013. Using Financing to Scale Up Energy Efficiency: Work Plan Recommendations for the SEE Action Financing Solutions Working Group. State and Local Energy Efficiency Action Network.

State and Local Energy Efficiency Action Network Residential Retrofit Working Group. 2011. Roadmap for the Home Energy Upgrade Market. U.S. Department of Energy.

The Cadmus Group, Inc. 2014. Multi-State Residential Retrofit Project: Process Evaluation Final. National Association of State Energy Officials (NASEO).

U.S. Department of Energy. 2009. "Financial Assistance Funding Opportunity Announcement Number: DE-FOA-0000148." Washington DC.

Von Schrader, Chandler, Dale Hoffmeyer, Patricia Plympton, Ed Thomas, and Katherine Johnson. 2008. "Best Practices and Lessons Learned from EPA/DOE's Home Performance with ENERGY STAR Program." *In Proceedings of the ACEEE Summer Study on Energy Efficiency in Buildings*, 2:370 – 2:374. Pacific Grove, CA: American Council for an Energy Efficient Economy.

Washington State University Energy Program. 2014. Seattle Community Power Works: Summary Outcomes and Lessons Learned 2010-2014. Olympia, Wash: Washington State University.

Zimring, Mark. 2014. "Energy Efficiency Financing Programs 101." presented at the Financing Solutions for Energy Efficiency: From Policy to Practice, February 18.

Zimring, Mark, Merrian Goggio Borgeson, Ian Hoffman, Charles Goldman, Elizabeth Stuart, Annika Todd, and Megan Billingsley. 2011. Delivering Energy Efficiency to Middle Income Single Family Households. LBNL-5244E. Berkeley: Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory.