SCEP
STATE & COMMUNITY ENERGY PROGRAMS

Driving Uptake for Energy Efficiency Financing Programs

Marketing and Outreach, Partnership Networks, and Program Design Considerations

Chris Kramer, Greg Leventis, and Jeff Deason

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Executive Summary

The number of energy efficiency financing programs across the country has grown significantly in recent years. However, results from a recent Berkeley Lab survey (see Appendix A) indicate that a large proportion of loan volume comes from a small number of successful programs: The top 10 programs (out of 59 surveyed) account for 76% of total loan volume. Moreover, 35% of surveyed programs report that their offerings are undersubscribed while only 12% report being oversubscribed. These data suggest that many programs could achieve greater uptake and impact through more effectively recruiting participants.

This report examines some of the primary factors that have contributed to high participant uptake among successful financing programs. We review best practices in partnerships (Chapter 2), direct marketing (Chapter 3), and program design (Chapter 4) that facilitate robust participation. Our findings are based on interviews with administrators of successful energy efficiency financing programs across geographies and market sectors. Berkeley Lab chose these programs based on quantitative program results, such as loan volume over time, as well as qualitative factors, such as reputation in the industry. Table ES-1 summarizes our best practice findings.

This report is primarily designed for state and local governments that have established energy efficiency financing programs or are considering doing so but are seeking insight into how they can ramp up program participation. In disseminating lessons learned from well-established programs that have experienced success in their target markets, the objective is to help scale up the large number of energy efficiency financing programs that seek to replicate these successes. This report can inform states, local governments, and other entities that will establish or expand clean energy financing programs with funding made available under the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA).[1]

1 Newly established programs include the Energy Efficiency Revolving Loan Fund Grant Capitalization Program (https://www.energy.gov/clean-energy-infrastructure/energy-efficiency-revolving-loan-fund-capitalization-grant-program) and the Greenhouse Gas Reduction Fund (https://www.epa.gov/inflation-reduction-act/greenhouse-gas-reduction-fund).

Table ES-1: Summary

	Partnership Networks	Direct Marketing	Program Design
Best Practices	**Contractors:** Dedicate specific program personnel with the primary responsibility of interfacing with contractors. Provide regular trainings on presenting the program to customers and spread information among contractor network about impact of program on closing rates. Offer social networking opportunities that incorporate contractors' common outside interests to cultivate contractor loyalty. **Lenders:** Encourage lenders to promote the program by offering benefits that may attract customers and reduce lender risk, such as low-cost subordinate capital. **Utilities:** Seek to leverage pre-established utility customer relationships. Consider utility administration of financing programs, or utilize other utility program resources, such as audits and engineering analyses, contractor training and certification, and incentives to bring down upfront costs and make financing more affordable. Formalize coordination with written agreements and specific utility roles to cement proactive collaboration. **Program Implementation Firms:** Contract with energy efficiency program implementation firms to extend outreach capacity. Establish volume and/ or savings targets that such firms are required or incentivized to achieve.	**Advertising:** Work with marketing firms to develop search terms and customer characteristics that may attract participants considering non-energy building renovation. Consider developing and disseminating sponsored content that fits easily into surrounding digital media formats. Consider the use of targeted email as an additional digital marketing strategy. **Technical Assistance:** Provide early-stage direct customer assistance on projects likely to generate significant savings and continue to help customers navigate the process to shepherd them toward project closing.	**Streamlined Program Delivery:** Simplify program application processes. Consider investing in field technology for contractors that allows for on-site approvals while maintaining appropriately rigorous underwriting standards. **Affordable Capital:** Offer capital at below-market rates and advertise those rates to contractors and customers. Consider specialized offers like zero-percent financing. Alternatively, focus on longer-term financing and train contractors to compare projected savings with monthly payments. **Flexible Project Scopes and Approval Processes:** Consider allowing customers to finance an entire renovation project with a single loan while reducing the cost of only the energy portion. Partner with lenders with expertise in extending credit prudently to lower-income and credit-challenged customers. **Trusted Program Delivery:** Spotlight any public agency or trusted utility brand associated with the program. Obtain quotes from public officials supporting the program. Use agency and community group outreach channels to help promote the program. **Partner-Friendly Design and Implementation:** Consider enabling approvals in the field. Fund loans quickly to avoid contractors having to float project costs and any subcontractor payments. Train contractors to market the program.
Testimonial	"Our primary marketing strategy is through contractors." (Michigan Saves)	"We all use Google for our different work components. Business owners are no different. What are they looking up that we can intersect with?" (NYSERDA)	"Just don't make it too complex." (National Energy Improvement Fund [NEIF])
Leading Programs to Learn More	Michigan Saves Residential and Commercial Programs (contractors) Nebraska Dollar and Energy Savings Loan Program (lenders) GoGreen Home Energy Financing Program (California) (utilities)	NYSERDA Multifamily Financing (digital marketing) Smart-E Loan Program (Connecticut) (digital marketing) Montgomery County Green Bank Residential and Commercial Programs (technical assistance)	Pacific Gas and Electric (PG&E) On-Bill Financing Program (streamlined delivery; partner-friendly) LoanSTAR Revolving Loan Fund Program (Texas) (affordable capital) Nebraska Dollar and Energy Saving Loan (flexible project scopes) NEIF (trusted partners)

1. Introduction

This report aims to inform state and local governments about best practices to increase participation in energy efficiency financing programs.

The report, which is based on interviews with staff from leading energy efficiency financing programs, found that partnerships with market actors, such as contractors, lenders, and utilities are key to driving uptake. Contractors, in particular, are key to successful program promotion. Some programs also rely on traditional and innovative direct marketing techniques (carried out by the program staff themselves) to reach wider audiences. Aside from marketing, program design features and processes can attract or deter customers. This report touches on program design features to the extent that they impact the rate of program uptake; Leventis, et al. (2016) provides a more thorough discussion of program design features.

The report addresses successful practices to drive uptake across market sectors while the appendix includes sector-specific case studies that dig deeper into particular challenges and opportunities that programs face in seeking to increase participation.

1.1 Programs Reviewed

Berkeley Lab selected and interviewed program administrators of 14 of the country's leading energy efficiency financing programs about key factors that have led to their success. Table 1 lists the programs included in this report. The programs represent a cross-section of market sectors and administrator types. Leading programs were chosen based on a mix of factors, including annual loan volume, program history, growth trends, and geographic diversity. While state and local governments are the primary audience for this report, the programs chosen offer lessons and guidance to others, regardless of how each program is administered. Berkeley Lab brought insights gathered from these programs to a steering committee of experts for review and discussion, helping to fine-tune and extrapolate upon key points in this report.[2]

2 The Steering Committee consisted of 5 individuals including Steven Gerson of 548 Capital, Peter Krajsa of the National Energy Improvement Fund, Andrea Janecko of the Connecticut Green Bank, Mary Templeton of Michigan Saves, and Tucker Wright of KSV.

Table 1. Programs Interviewed

Administrator Type	Administrator Name	Program Focus For This Report	Market Sector Focus	Structure and Function
State Energy Office	Nebraska Department of Environment and Energy (NDEE)	Nebraska Dollar and Energy Savings Loan Program	Residential and commercial	Participation loan program: provides subordinate capital at 0%; blended with private lender capital to lower rates.
	New York State Energy Research and Development Authority (NYSERDA)	Multifamily Financing (via the Small Business Financing Program)	Multifamily residential	Participation loan program: NYSERDA provides subordinate capital; blended with private capital; multifamily financing falls under Small Business Financing Program.
	Texas State Energy Conservation Office (SECO)	LoanSTAR Revolving Loan Program	Publicly owned facilities	Revolving loan fund with low-cost capital funding 100% of project costs for state and locally owned facilities.
State Financing and Infrastructure Authorities	California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA)	GoGreen Home Energy Financing Program	Single-family residential	Loss reserve fund protecting against participating private lender losses on energy-related loans, allowing them to offer more favorable terms
	Hawaii Green Infrastructure Authority (HGIA)	Green Energy Market Securitization (GEMS) Program	Publicly owned facilities	Administers $50 million revolving fund for energy efficiency improvements in state buildings, covering up to 100% of project costs.
Utility	Mass Save and Massachusetts regulated utilities	HEAT Loan	Single-family residential	Interest-rate buy-down program, bringing private lender rates down to 0% for customers, using utility ratepayer capital. Offered by all Massachusetts regulated utilities under the umbrella of the Mass Save energy efficiency programs.
	Midwest Energy	How$mart Program	Single-family residential	On-bill repayment program (on-bill tariff / Inclusive Utility Investment model); covers project costs exceeding projected energy savings; stays with property if owner moves.
	Pacific Gas and Electric (PG&E)	On-Bill Financing (OBF) Program	Commercial	Utility program funded with ratepayer capital, offered to customers at 0% and repaid on the utility bill.
Publicly Chartered Nonprofit	Michigan Saves	Residential and commercial programs	Residential and commercial	Publicly chartered nonprofit operating independently from state government. Provides loss reserve to private lenders to allow them to offer more favorable terms to customers.
	Montgomery County Green Bank (Maryland)	Residential and commercial programs	Residential and commercial	Residential financing offered through utility programs; commercial financing includes a range of several products.
Private Nonprofit	Elevate Energy	Multi-Family Energy Savings Program	Multifamily residential	Runs multifamily utility incentive program; sources financing from nonprofit lender Community Investment Corporation.
	Inclusive Prosperity Capital (IPC)	Smart-E Loan Program	Single-family residential	Works closely with the Connecticut Green Bank to help administer programs; also offers its own financing nationally.
Private Benefit Corporation	National Energy Improvement Fund (NEIF)	Single-family residential programs	Single-family residential	Private for-profit mission-driven corporation sourcing financing from private lenders. Provides its own financing products; also helps administer public and utility programs.

While states directly administer only five of the thirteen programs interviewed, state agencies are connected in some way to most of the programs interviewed. For example, public charters initiated Michigan Saves and the Montgomery County Green Bank, though both function as independent nonprofits. Utility programs, such as those run by Mass Save and PG&E (Pacific Gas and Electric), operate within a regulated framework of energy efficiency programs overseen by state entities. Even independent administrators, such as the National Energy Improvement Fund (NEIF) and Inclusive Prosperity Capital (IPC), frequently partner with public, quasi-public, or publicly regulated energy efficiency programs.

While several state energy agencies successfully administer financing programs in house, some may wish to consider alternatives, such as partnering with a private entity with financing expertise and capacity. Other options may include working with green banks[3] where available, or seeking to partner with utility programs, which can potentially integrate financing offers into their overall energy efficiency program portfolios.

1.2 Structure of the Report

This report has three main sections, each representing the primary areas of focus that emerged from the interviews as key factors in driving uptake:

1. Partnerships with other networks like contractors and lenders ("Partnership Networks")
2. Direct marketing by program administrators themselves ("Direct Marketing")
3. Program design elements that either help or hinder program uptake ("Program Design").[4]

Each main section of the report has three primary sub-sections: objectives, implementation, and evaluation. These categories will help readers consider 1) why they might consider certain programmatic options, depending on their end goals; 2) how to achieve those goals using effective ongoing practices; and 3) how to determine the level of success of different strategies chosen to drive program uptake.

At the end of the report, several case studies highlight key takeaways for each of the four primary market sectors focused on in this report: single family, multifamily, commercial, and publicly owned facilities.

3 For more on green banks, see (Gilleo, 2016) ("Created by states or local jurisdictions, green banks leverage public funds to stimulate capital investment in clean energy projects.").

4 This last category focuses primarily on structural program elements that impact ongoing implementation and customer recruitment processes, rather than pre-launch program design alternatives For more on pre-launch program design choices, see Leventis, et al. (2016) and the Revolving Loan Fund Bootcamp from the State Energy Program's 2022 National Training Forum: https://www.energy.gov/sites/default/files/2022-11/11-RLF%20Bootcamp.pdf.

2. Partnership Networks

Many programs generate project leads through partnerships with outside networks. Indeed, a key theme that emerged across interviews and market sectors was that partnership networks, and particularly contractor networks, were essential to driving program uptake.

2.1 Partnership Objectives

- Harness a much larger number of customer touch points than is available to the program directly (e.g., contractor industry, lender networks, utility programs)
- Take advantage of competitive private-sector motivations to generate customer leads (use contractor/lender networks as program "sales force")
- Tap into pre-established customer base to mine for program leads (e.g., HVAC customers, home improvement borrowers, utility service customers)

2.2 Partnership Implementation

Methods of establishing successful partnerships vary depending on the types of partnerships being cultivated, such as contractors, lenders, local and regional utilities, and others. Certain themes resonate across these networks, however. One theme is the central role of networks in promoting the program to potential customers. Contractors, lenders, and other partners typically do this more efficiently and at a lower cost than direct outreach to customers by program staff. In-person interactions such as onsite project or loan application processes provide partners with natural opportunities to suggest program benefits to customers.

Key Strategies for Partnership Networks

- Contractors: Dedicate specific program personnel with the primary responsibility of interfacing with contractors. Provide regular trainings on presenting the program to customers and spread information among contractor network about impact of program on closing rates. Offer social networking opportunities to cultivate contractor loyalty.
- Lenders: Encourage lenders to promote the program by offering benefits that may attract customers and reduce lender risk, such as low-cost subordinate capital.
- Utilities: Seek to leverage utility budgets, regulatory accountability, and pre-established customer base. Explore option of utility administration of financing programs or formalize coordination with written agreements and specific roles for utility partners.
- Program Implementation Firms: Contract with energy efficiency program implementation firms to extend outreach capacity. Establish volume and/or savings targets that such firms are expected to achieve.
- Specialized Financing Providers: Work with for-profit or non-profit financing providers that specialize in energy efficiency program implementation.

Programs also make efforts to demonstrate their value to their partners. In many cases, programs offer training to help partners leverage program offerings effectively to increase their own customer uptake rates. Many programs also maintain a list of approved or certified contractors, and participating contractors can advertise their program approval to bolster trust among customers.[5]

Several programs also provide materials or talking points that partners can present directly to customers. Partners often act as a direct extension of program promotional efforts, with significant potential to expand program outreach and increase uptake.

> "Contractors are our sales force. If I were a private company, they'd be leading the charge, generating leads to the program. We use them to bring about new business and repeat business."
>
> —NYSERDA

2.2.1 Contractor Network Implementation

The most common type of partnership network highlighted across programs was the contractor network. This held true across geographic regions and market sectors. For example, in Mass Save's residential program in Massachusetts, "contractors are the most likely source of information to customers." Programs that serve customers across multiple market sectors also rely heavily on their contractor networks to generate leads, with Midwest Energy's How$mart program reporting, "Contractors are our biggest source" of incoming projects, and Montgomery County's Green Bank noting contractors are "the ones out there beating the bushes, trying to get customers," making contractors the "first order of opportunity" in efforts to drive program uptake.

Michigan Saves has established a dedicated contractor outreach team whose sole purpose is to interface with its contractor network (see Figure 1). Michigan Saves provides frequent training to contractors on its financing offerings, encouraging contractors to include financing in every customer proposal. The program also helps contractors present the financing in ways most likely to generate customer interest, such as comparing monthly payments to utility bill savings to show how projects can be economically beneficial from the beginning.[6]

5 Programs may need to balance the increased credibility that comes from more robust contractor requirements against the level of effort required to participate in the program, which may impact its attractiveness to contractors.

6 See ACEEE's report "Messaging Comprehensive Retrofits" for more: (https://www.aceee.org/research-report/b2403).

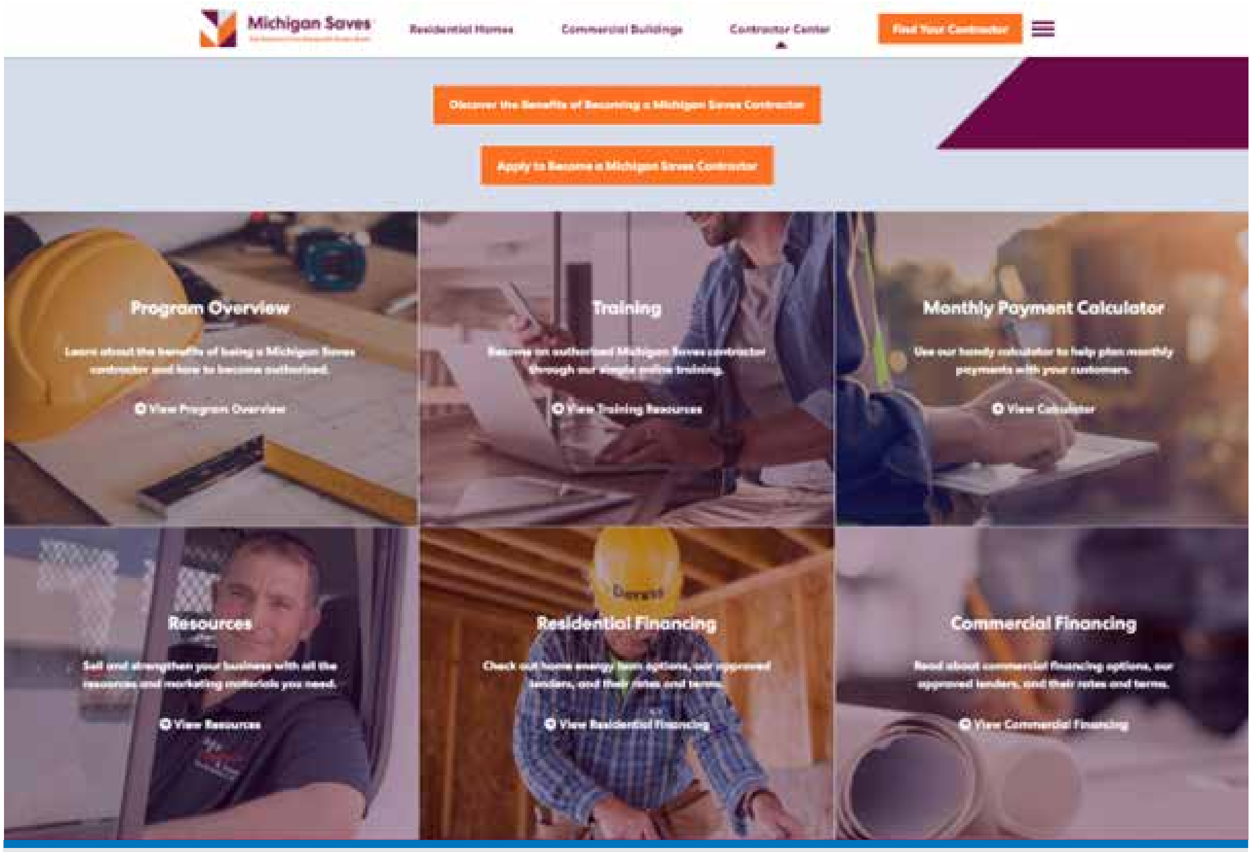

Figure 1. Contractor portal (website). Michigan Saves offers a range of contractor supports, accessible through its website.

Michigan Saves also promotes brand awareness among contractors. The program acknowledges that its brand is perhaps not widely recognized among customers but is well known among contractors because of the program's outreach. To help generate good will and keep the program top of mind among contractors, Michigan Saves offers periodic social events to show the program's appreciation, paid for with program fees and designed to appeal to contractors' recreational interests. As a publicly chartered entity that operates as an independent nonprofit, Michigan Saves has the flexibility to use its budget on these types of events, in ways that might be more restricted among comparable programs in the public sector. While other, strictly public programs may be somewhat more restricted, they may be able to partner with private program implementation firms that have greater flexibility, as well as offer similar good will gestures within their public limitations.

2.2.2 Lenders

Some programs also rely on lender networks for program promotion, although less commonly than contractors. Not every program interviewed works with private lender networks, as some, such as PG&E's commercial financing program and the Texas LoanSTAR public sector program, offer their own capital to customers directly. In contrast, other programs maintain extensive private lender networks, such as Mass Save's corps of approximately 120 lenders offering the program's HEAT Loan product. While the program has developed this extensive lender network, contractors – rather than lenders – are primarily responsible for lead generation. The extent of the lender network does add convenience for customers, however, by giving them multiple choices in their geographic areas and potentially allowing them to work with lenders with whom they may have a pre-existing relationship. These financing providers cycle funding back into their communities and can help drive uptake with customers who may have stronger ongoing ties with their local lenders than with participating contractors. Certain mission-driven community lenders, such as the Capital Good Fund, have helped make the program more accessible to harder-to-reach customers.

One program interviewed, the Nebraska Dollar and Energy Savings Loan program (the Nebraska program), did report relying on lenders as primary lead generators (see Figure 2). Program administrators described their structure as a "participation loan program."

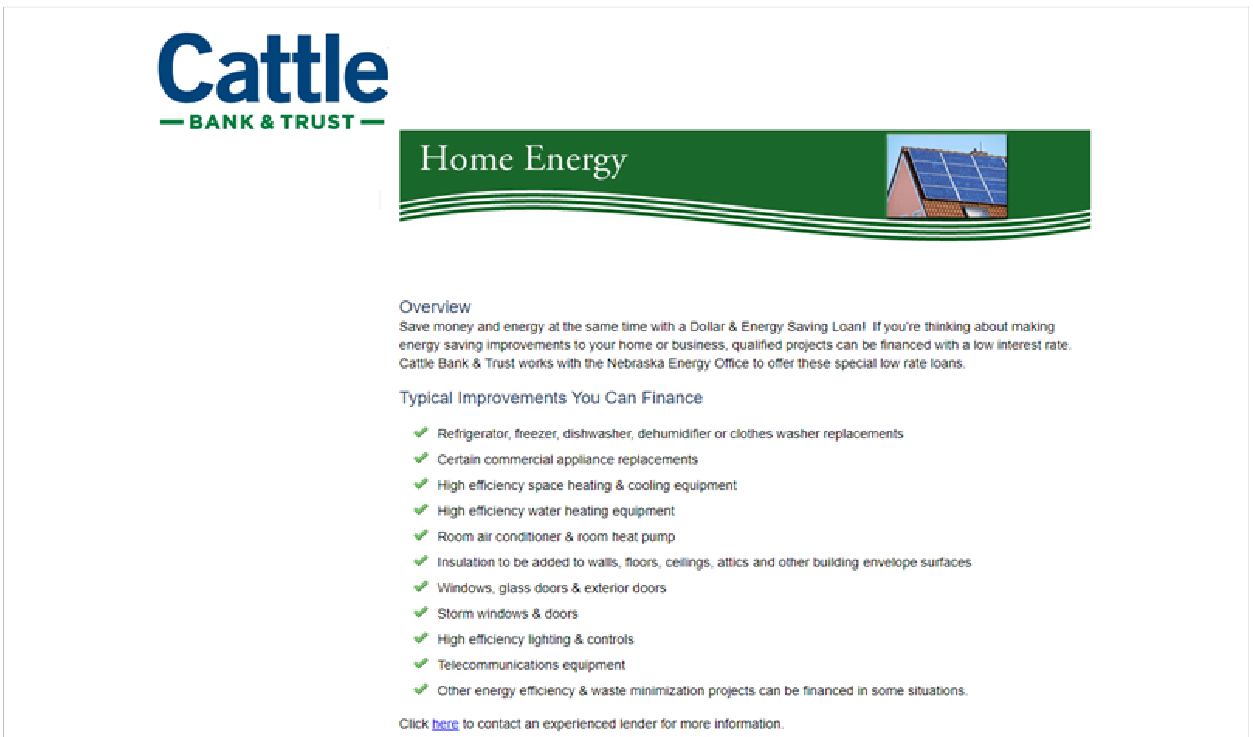

Figure 2. Program promotion by a lending partner. Example of a Nebraska Dollar and Energy Savings Loans program promotion through a lending partner website.

Participation loans are loans made by multiple lenders to the same customer, and typically include a passive capital provider who offers a portion of the loan capital and a "lead lender" that handles customer-facing roles, such as lead generation and loan origination. In the Nebraska program, private lenders take the leading role, interacting directly with customers, while the program participates by providing a portion of the loan capital on the back end. Over 100 different lenders have participated in the program, though a small number account for most of the loans.

The Nebraska program offers its capital without expectation of interest payments, lowering the rate to the customer when blended with interest-bearing capital from private lenders. One active role the program takes on is approving projects from a technical standpoint according to program-related energy requirements. This step in the process requires the program to collect more information from customers than would otherwise be required, sometimes causing lenders to weigh the benefit of zero-interest capital from the program against the hassle of additional forms and approvals. Nevertheless, the program has sustained itself for over 30 years, attracting enough ongoing interest from private lenders to keep its capital continuously revolving. Notably, the Nebraska program does not actively market the program to contractors and does not maintain contractor approval requirements. While some contractors who consistently use the program do help generate program volume, lenders serve as the primary vehicle for program promotion to customers.

2.2.3 Utilities

Utilities themselves run several of the reviewed programs. Other programs coordinate closely with utilities in their region as important program partners, including CAEATFA in California, IPC in Connecticut, and Michigan Saves. Both types of programs provide insights into the value that utilities can offer regarding customer outreach. One option state agencies may wish to consider is partnering with regulated utilities that can integrate financing along with their other energy efficiency offerings or work with independent partners to help them do so.

2.2.3.1 Utility-Run Programs

Interviews of utility-run programs revealed three advantages that utility-run programs may offer relative to other partnership networks: (1) accountability through regulatory oversight; (2) a large pre-existing customer base that may contact the utility for solutions to high energy bills; and (3) a complementary suite of energy efficiency programs, funded by utility customers, with budgets that are often significantly larger and more consistent year-to-year than those of public agency programs.

For example, in PG&E's case, the regulated nature of the program provides an additional level of accountability for achieving program results, based on energy savings targets set by the California Public Utilities Commission. PG&E has hired several large private program implementation firms to bring in projects, which contribute to overall energy savings goals. By establishing front-end energy savings targets and hiring firms based on their ability to help meet those targets, PG&E maintains an operating environment that motivates implementers to stay on track.

Utility-run programs also benefit from a pre-existing customer base. Midwest Energy customers, for example, seek out the program even without proactive marketing, generally spurred by increases in energy prices. As this example illustrates, utilities may be helpful partners even when they do not conduct proactive marketing to customers, because utilities provide ongoing energy services to customers, who may contact the utility on their own initiative to discuss their bills. When contacted, utilities can make customers aware of the opportunity to participate in an energy efficiency financing program to help lower their energy usage.

Regarding budgets, National Grid's Mass Save energy efficiency program budget gives it the flexibility to buy down financing rates to zero percent. The zero percent rate creates a positive feedback loop, as contractors use the financing as a selling feature, which then builds greater awareness of the offer, to the point that customers have come to expect it as part of any proposed energy efficiency project.

Mass Save treats financing as one part of its integrated energy efficiency strategy, which also includes energy audits, cash incentives, and technical assistance to customers. This approach helps broaden the program's goals from simply closing loans to generating energy savings using its comprehensive suite of program offerings. The 0% loan offering may help drive both financing and overall program uptake, but the latter is considered the ultimate goal. As program administrators put it, "We're not advertising to someone who wants a loan. The customer is not looking for financing, they're looking for a heating system."

"We're not advertising to someone who wants a loan. The customer is not looking for financing, they're looking for a heating system."

—Mass Save

2.2.3.2 Utility Partnerships

Several programs have established partnerships with utilities that contribute to program uptake. These partnerships often come with significant benefits, such as additional funding, staffing capacity, and customer reach. Utility partnerships tend to work best where the partnerships are formalized and roles are clearly spelled out. In some cases, products may end up competing when utility and non-utility programs both offer financing, or financing may compete with, rather than complement, other energy efficiency programs. Without formal integration, utilities tend to be less likely to promote non-utility financing, even when offered by public or quasi-public agencies.

On the plus side, utilities can bring customers into financing programs. For example, in Connecticut, utilities offer their own energy efficiency program, but some customers may not qualify due to project type eligibility requirements or utility underwriting based on bill payment history. IPC assists the Connecticut Green Bank to offer an alternative financing product, the Smart-E loan program. Most Smart-E loan volume comes through the primary lender affiliated with the utilities' own financing program, which passes along customers that do not qualify for utility financing. IPC emphasizes the benefits of this relationship in terms of generating Smart-E loan volume. Given the lower interest rates often available through the utility financing programs, however, Smart-E program managers note that acquiring customers more directly in the market can be challenging.

In some cases, utility partnerships are highly integrated with the operations of financing program administrators. For example, in California, CAEATFA coordinates a financing program under the state Treasury department, but partners with the state's regulated utilities for day-to-day program management and oversight of program budgets and administration. Utility energy efficiency teams help implement the program, giving the somewhat leaner CAEATFA staff flexibility to focus on program design and ongoing

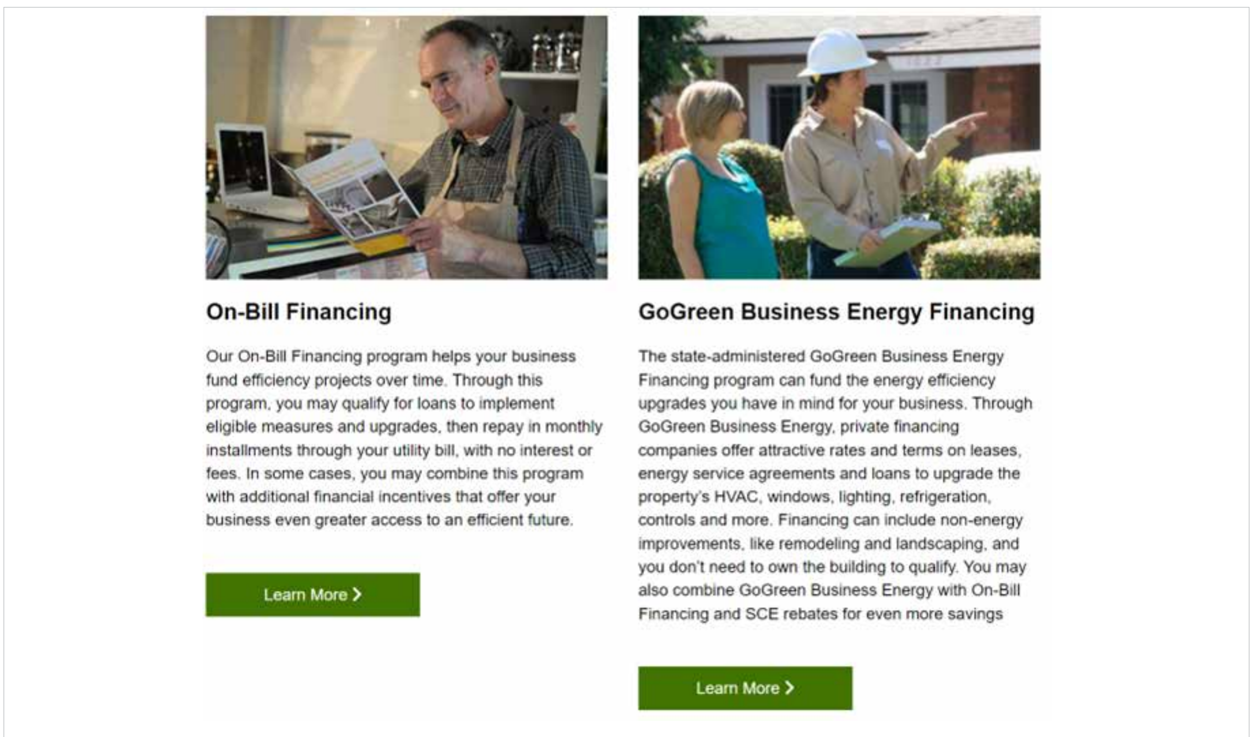

Figure 3. Promotion of alternative financing products. SoCal Edison presents its own 0% on-bill financing program (left) alongside CAEATFA's GoGreen financing program (right) offered in partnership with private lenders.

improvement. While CAEATFA closely collaborates with their utility partners, the utilities promote CAEATFA financing alongside alternative financing options to allow customers to choose whatever options works best for them (see Figure 3).

In some states, publicly regulated utilities and public or quasi-public green banks may have well-established coordination processes (Gilleo et al. 2016). On the other hand, Michigan Saves has found it necessary to proactively seek out and establish formalized partnerships, with utilities generating leads and Michigan Saves making capital available to utility customers. Where such a partnership exists, utility promotion

1. Download the latest version of the Consumers Energy incentive application. When submitting, clearly indicate that you are using Michigan Saves to expedite review.

2. Apply for financing through your authorized Michigan Saves contractor and include the utility project number that is provided after submitting the incentive application.

3. Once Michigan Saves approves financing, a confirmation email will be sent to the customer, contractor, and Consumers Energy.

4. After Consumers Energy reviews your incentive application and receives confirmation of Michigan Saves financing, a reservation email will be issued to the customer and contractor that details the incentives that are expected to be awarded to the customer. The incentive to buy down the interest rate will be assigned to Michigan Saves. Please do not begin your project until you have received a reservation letter. You then have 90 days—or until November 30, 2022, whichever is first—to complete the project.

5. A final application must be submitted to Consumers Energy within 60 days of project completion.

Consumers Energy Count on Us®

Michigan Saves

Figure 4. Utility partnership roles. The program roles of Michigan Saves and Consumers Energy, a public utility in Michigan, were clearly laid out for program participants during a successful pilot partnership (the pilot has closed and is no longer available).

of its financing products has been robust. Figure 4 shows how an active partnership with Consumers Energy, in which the utility has a clearly defined role, plays out from a consumer perspective.

2.2.4 Implementation Partners

The partnership networks described above all involve independent entities that work with a program either voluntarily or, in some cases, under a written agreement defining the roles of each independent party. A different type of partnership involves networks of implementation partners that help roll out a program under contract to the program administrator. Generally, where there is a network of multiple implementation partners, the administrator is a large enough entity to oversee these vendors; for example, a utility energy efficiency program with dedicated program management staff to whom the implementation partners report. In such cases, program implementation partners take on responsibility for helping utilities achieve regulated energy savings obligations. In this way, private vendors operate like subcontractors to utility programs with the utilities maintaining the primary relationship with the state energy office.

One example of this type of relationship is Mass Save, the umbrella energy efficiency program that offers the HEAT Loan. Mass Save is overseen by the Massachusetts Energy Efficiency and Resource Management Council (EERMC) in coordination with the Massachusetts State Energy Office, the Department of Energy Resources. The EERMC delegates administration of the program to six different utilities in the state. The utilities, for their part, work with "lead vendors," program implementation firms that help drive uptake for the program across multiple utility territories in the state, developing unified marketing collateral and other coordinated outreach strategies. The state energy office relies on the utilities to oversee the program on a day-to-day basis, while the private entity partners work across utilities to market HEAT Loans and other program offerings statewide.

PG&E maintains a somewhat similar arrangement with its own network of five implementation partners, who contract with PG&E directly to drive program volume. These implementation partners are expected to know the program and be able to run it on PG&E's behalf to attain energy savings goals. Implementation partners often subcontract to additional program implementation firms with experience in particular markets, further expanding the potential reach of the program.

2.2.4.1 Single Implementation Partners

Some programs work with single private partners rather than a network of implementers to help drive uptake for their programs. For example, NYSERDA's multifamily program contracts with a "full-services marketing firm" because the program staff "don't have the bandwidth to execute all the activities" of the program. NYSERDA's lead program administrator referred to the team of individuals at their partner marketing firm as "the depth of my bench." She noted that the relationship between NYSERDA and their marketing partner is reciprocal, saying, "They take their cues from us, but we also lean on them to help guide the process."

Depending on available budget in a given year, NYSERDA might task their marketing partner with conducting both quantitative and qualitative market research, such as surveys and in-depth interviews. Once the information comes back, NYSERDA and its partner "work together as a team to hear what the market is telling us." They then work collaboratively to craft messages tailored to the market audience and identify channels to push those messages out to potential customers.

2.2.4.2 Specialized Financing Partners

Some programs work with specialty financing providers—firms that help bring capital to a program, usually sourced from traditional lenders, and also may administer programs or provide other important program implementation services.

For example, IPC assists the Connecticut Green Bank to bring financing products to market, such as the Smart-E residential energy loan. IPC is a "not-for-profit investment fund scaling energy financing solutions that channel investment capital to program partners in communities that need it most."[7] As this description suggests, IPC takes a much more proactive role in sourcing capital and implementing financing programs than private lenders, who typically limit their program participation to providing capital and underwriting loan applications. Indeed, part of IPC's role is to coordinate with lenders to bring in the capital for the Smart-E lending product. IPC also conducts marketing research and outreach efforts to help drive uptake for the program. As a specialized financing entity with expertise in energy efficiency program implementation, IPC can help bridge the gap between lenders and potential efficiency program customers. The organization has recently expanded its reach beyond Connecticut, partnering with Michigan Saves in offering affordable housing and nonprofit facility loans.

Similarly, NEIF describes its mission in an equally comprehensive way, as an entity that "facilitates access to capital to support energy improvements in buildings through nuanced understanding of capital structures, market needs, utility and state efficiency programs and efficient delivery of financing through our partners." NEIF is supervised and regulated as a consumer lender and servicer in 30 states, with a 1,500-plus network of approved and vetted energy improvement contractors and operates residential and commercial financing platforms nationally in partnership with over a dozen utilities. NEIF also administers programs for states and governments and was recently selected as the administrator of new green bank and lending programs in Pennsylvania and Delaware.

2.3 Partnership Network Evaluation

Methods for determining the effectiveness of partnership networks vary depending on the relationship between program partners and program administrators. Programs

7 https://www.inclusiveprosperitycapital.org

administered by utilities, such as PG&E's commercial financing program and Mass Save's HEAT Loan, generally follow established methods of evaluating whether performance has met expectations. When utilities or other program administrators subcontract to program implementation firms, these subcontracts often include clear written guidance regarding the goals and targets that implementers are expected to achieve within a given timeframe. Methods of evaluating utility program success generally incorporate the work of any subcontracted partners.

Understanding how financing products help achieve efficiency program goals can sometimes require nuanced investigation, both to separate the value of financing from other program offerings and to assess the value of programmatic financing offerings as compared with private financing alternatives. Professional program evaluators have addressed these types of challenges in recent years, particularly in the context of regulated utility programs, as discussed at greater length in Kramer et al. (2015).

Programs generally do not set volume targets for individual participants in voluntary partnership networks (such as contractors and lenders), but programs can nonetheless track the level of project uptake attributable to each partner. In many cases (for example, the Nebraska Dollar and Energy Savings Loan program as described above), a relatively small percentage of their networks is responsible for a relatively high percentage of project uptake, summarized in shorthand as an "80/20 rule" (80 percent of projects from 20 percent of the partners).

Program administrators may need to consider how they plan to translate project uptake driven by voluntary partnerships into documented energy savings. In some cases, contractors may be accustomed to incorporating savings measurement protocols into their projects to access program benefits, particularly if they are partnering with regulated utility-run programs. Energy services companies (ESCO) also track savings closely for purposes of determining whether contracted savings performance has been achieved. Lenders typically do not get involved in the technical aspects of savings measurement, so program administrators focused on achieving energy savings goals may need to consider alternative ways of tracking project savings in addition to the loan and project volume numbers that lenders are most likely to report.

Beyond quantitative information, ongoing qualitative investigation is important in understanding and improving the effectiveness of partnership networks. For example, programs may wish to evaluate whether contractors present financing to some or all customers, whether they compare financing to potential savings to make projects more economically attractive, and whether partners use marketing collateral developed by program administrators or develop their own materials.

3. Direct Marketing

"Direct marketing" refers to any type of outreach effort between program staff and potential customers designed to increase program participation, without relying on a program intermediary such as a contractor or lender.

> **Key Strategies for Direct Marketing**
>
> - Online Advertising: Work with marketing firms to develop search terms and customer characteristics that may attract participants considering building renovation, not necessarily specific to energy efficiency. Use these terms and customer profiles for paid search, search engine optimization, social media, and display advertising.
> - Technical Assistance: Provide direct customer assistance on projects likely to generate significant savings, including analysis of energy savings opportunities and technical assistance to lead participants through each stage of the program.

Although direct marketing by program administrators may seem like the most straightforward method of program promotion, many of the programs interviewed place less emphasis on direct marketing methods than on partnerships with intermediary networks to increase program participation. Programs often have limited resources relative to these broad networks and engage less frequently with potential customers. Several programs conduct little or no direct marketing efforts themselves, relying entirely or primarily on intermediaries to generate program leads. The sections below explore the practices of programs that do engage in direct marketing in more detail.

3.1 Direct Marketing Objectives

- Strategically complement partner-driven marketing (e.g., pursue approaches that the program is well positioned to take on internally)
- Consider strategies that are not dependent on direct customer-facing interaction (e.g., develop targeted digital marketing approaches)
- Offer resources that may increase customer confidence (e.g., impartial technical assistance, program-developed savings calculators)

3.2 Direct Marketing Implementation

3.2.1 Digital Marketing

Programs using digital marketing strategies to generate program leads focus heavily on defining target audience characteristics, as well as choosing the digital marketing channels that work best for them. The New York State Energy Research and Development Authority (NYSERDA) targets potential customers for its multifamily program by using a "paid search" strategy, meaning paying search engine companies (e.g., Google or

Yahoo!) to display advertisements to users based on search terms entered. In NYSERDA's case, search engine users are shown program advertisements if their search terms and other characteristics (e.g., location) match those that NYSERDA provides to the search engine company. To implement this method, NYSERDA determines key internet search terms that multifamily customers are likely to use when embarking on building projects.

Notably, NYSERDA recognizes that many potential customers might not specifically have energy efficiency in mind. Instead, they are often considering more general building upgrades. In particular, multifamily building owners, developers, and managers of government-subsidized properties might perform searches for available housing finance and tax credit funding, and might do so at specific points in the building lifecycle when housing regulations require upgrades.[8] NYSERDA developed a list of search terms that includes not only energy-related terms, but also more general housing, finance, and upgrade-related terminology. NYSERDA described this digital marketing strategy as their

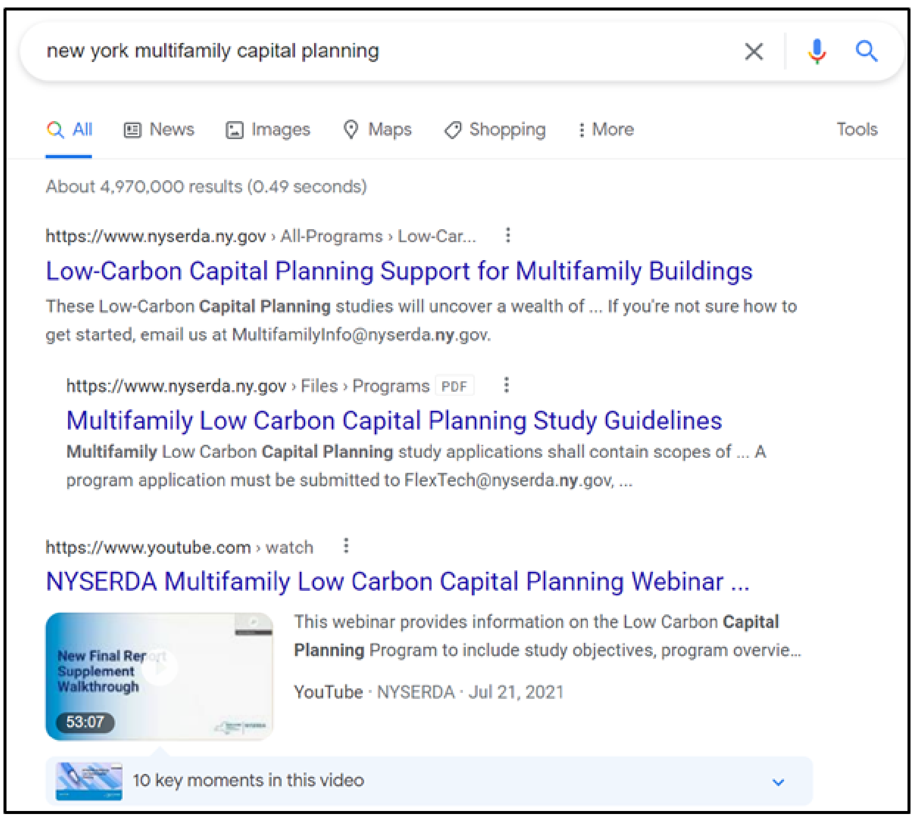

Figure 5. Search engine optimization. A search for "new york multifamily capital planning" returns several top results from NYSERDA.

8 For example, buildings subsidized with federal low-income housing tax credits with 15-year affordability restrictions are required to complete general upgrades to receive a new tax credit allocation after this period. States may also have their own renovation requirements for allocating housing subsidies. For more information, see: https://www.huduser.gov/portal//publications/pdf/what_happens_lihtc_v2.pdf

"biggest bang for the buck" in terms of direct marketing expenditures. Identifying such terms can also be helpful for another strategy, search engine optimization (SEO). SEO are tactics to help move links to a program (in this case) to the top of people's searches without paying for search results (see Figure 5).[9]

IPC, which works closely with the Connecticut Green Bank, has also thought carefully about its digital marketing strategy. Like NYSERDA, IPC uses targeted search terms to advertise to potential customers who search for relevant items. In addition, IPC uses search engine optimization, working with search engine companies to help ensure that IPC's available program offerings land near the top of relevant search results.

Beyond Internet search strategies, IPC has also worked with digital marketing companies to implement "display advertising," in which program advertisements show up on websites and social media accounts that are related to multifamily building renovation. Display advertising can also be targeted to online users both geographically and demographically.

In exploring which social media channels to focus on, both IPC and NYSERDA identified certain services that have been more effective or less so for their programs, which were not the same across the two programs. For example, whereas NYSERDA uses Instagram as part of its social media strategy, IPC chooses not to use Instagram because program managers feel that the service's typical posts might not be as fitting for program advertisements. Instead, in IPC's case, Facebook provides its best customer leads.

Both programs take advantage of the relative cost-effectiveness of digital marketing as compared to alternative strategies, such as direct mail, that can be more expensive and yield lower response rates. The low cost of digital marketing makes it especially helpful in the face of program budget cuts or constraints. Certain customer subsegments are less likely to be reached online, however, such as some customers in older age groups, making direct mail and other traditional strategies potentially valuable for reaching those customers.[10]

3.2.2 Technical Assistance

One-on-one outreach to specific facility owners can be economical, if the expected savings payoff is large enough to justify the investment of time and effort to move a project forward. Sourcing large facility projects often requires sustained engagement

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9 Note that searching for the same terms may bring different results depending on factors such as who is searching and where the search is conducted.

10 According to Pew Research Center, Americans ages 65+ used social media at a lower rate on every platform than Americans aged 18 – 29 in 2023. Notably, however, a majority of respondents in the older age group did report having ever used YouTube (60%) and Facebook (58%). Differences in usage by platform were especially significant in these two age groups for Instagram (78% vs. 15%), TikTok (62% vs. 10%), and Snapchat (65% vs. 4%). Pew Research Center, Social Media Fact Sheet, 2024, https://www.pewresearch.org/internet/fact-sheet/social-media/#panel-4abfc543-4bd1-4b1f-bd4a-e7c67728ab76.

with building owners, as project proposals tend to be more complex in larger buildings. Efforts that begin with promotional outreach often lead into technical assistance for customers considering whether to move forward with a project. In such cases, the line between marketing and technical assistance sometimes blurs.

For example, the Texas LoanSTAR program exclusively targets the public sector, in which facilities tend to be larger and may require a more complex engagement process from a technical and regulatory standpoint. As one means of outreach, the program offers energy assessments to potential customers to help them identify energy-saving opportunities. While the assessments themselves constitute a form of technical assistance, they also generate leads for completing actual projects. The program actively follows up with recipients of energy assessments to encourage them to move ahead with the upgrade process once they fully understand the scope of energy saving opportunities.

The Montgomery County Green Bank also provides direct technical assistance to facility owners. The Green Bank has found this type of outreach particularly helpful in facilities and developments with common ownership structures, such as condominiums. Housing boards comprised of building residents often run such developments. Board members do not necessarily have a technical background in facility management and are often residents engaged in general oversight. These boards often contract facility managers on a short-term basis, and these contracted managers may not always consider the value of longer-term investments. As a result, capital planning in these facilities can sometimes be reactive, focusing on deferred maintenance, rather than proactively looking for cost-saving opportunities. By conducting extended outreach to these facilities, through in-person meetings and reports on potential energy improvements, the Green Bank helps present the value proposition of energy saving upgrades in ways that board members can grasp and helps them figure out how to fit energy upgrades into their capital planning process. Projects that move forward can potentially generate a significant savings payoff, given the building size and number of owners involved.

Not all programs targeting larger facilities are as directly proactive. For example, contractors in PG&E's commercial program generate most program leads, while program staff focus more on streamlining back-end operations to make it easier for contractors to guide customers through the program.

3.3 Direct Marketing Evaluation

3.3.1 Digital Marketing

Program staff can easily gather data on how many and which types of customers click on which digital advertisements. From there, program staff can potentially track how customers interact with the program website.

There is also an opportunity to learn from the market based on search terms. For example, marketing firm KSV tracks which search terms lead to website of programs they work with, and how engaged customers are once they reach the site. If search terms with a certain focus, disproportionately lead to higher traffic and/or more engaged visitors, that insight may inform future marketing messages and content.

Once customers leave the digital environment to consider whether to move forward and take action, however, there is often a drop-off in the ease of evaluation. This drop-off does not necessarily differ from the challenges of tracking customers recruited in other ways, but digital marketing does not always provide better insights than other strategies at later phases of the customer recruitment process.

3.3.2 Technical Assistance

Programs typically track the effectiveness of direct marketing in the large building sector on a somewhat case-by-case basis, as there tend to be fewer projects per unit of savings generated. As these projects tend to involve greater direct involvement of program staff from start to finish, program staff can provide greater qualitative depth regarding what approaches are successful with certain customers, as well as reasons that other potential customers reject proposals or stall out in the process. To bolster this understanding, certain programs follow up with customers after a period of time to gather their reactions to program and project promotion. For example, after one year, the Texas LoanSTAR program follows up with all building owners who have received a building assessment through the program regardless of whether they move forward with recommended upgrades. By contacting these stalled program applicants directly, the program can gather insights into reasons that those applicants have not completed their applications. For example, the program recently found that some public schools had not moved forward with loans after having received federal grant funds through the Elementary and Secondary School Emergency Relief Fund.

4. Program Design

4.1 Program Design Objectives

- Focus on developing and refining program features that streamline the customer onboarding process (e.g., simple and quick applications), while maintaining prudent underwriting and consumer protections

> "Process, not product, may be the single greatest obstacle."
>
> —National Energy Improvement Fund

- Pay as much attention to basic product featsures (e.g., affordability, flexible scoping, backing of a trusted source) as to specialized design components
- Make sure the program works well for partners (e.g., pay contractors quickly if they float project costs; provide training and support on presenting the product to customers)

Key Strategies for Program Design

- Streamlined Program Delivery: Simplify program application processes and cut down on administrative red tape, such as drawn-out technical approvals. Consider investing in field technology for contractors that allows for on-site approvals while maintaining appropriately rigorous underwriting standards.
- Affordable Capital: Offer capital at below-market rates and advertise to contractors to encourage them to direct customers to the program. Consider specialized offers like 0% financing when possible, to attract customers directly. Alternatively, focus on longer-term financing and train contractors to present project economics by comparing projected savings with monthly payments.
- Flexible Project Scopes and Approval Processes: Allow customers to finance an entire renovation project with a single loan, potentially by offering below-market capital only for the energy-related portions of a project. Partner with lenders with expertise in extending credit prudently to lower-income and credit-challenged customers.
- Trusted Program Delivery: Spotlight any public agency brand associated with the program. Include quotes from public officials supporting the program in advertising materials and use public agency outreach channels to help promote the program.
- Partner-Friendly Design and implementation: Design features that make the product easy to use, such as approvals in the field and minimizing the time before contractors receive payments. Train contractors to use the program in ways that can help them close more sales, such as comparing financing payments to projected savings.

4.2 Implementing Program Design

Leventis et al. (2016) describes various options and tradeoffs in energy efficiency financing program design in detail. Many of those choices are made prior to program launch. Program design can also be thought of dynamically, focusing on the mechanics and processes of ongoing program implementation. In terms of driving uptake, effective implementation is essential to success. As one interviewee from NEIF put it, unless program mechanics are implemented effectively, "Process, not product, may be the single greatest obstacle" to success.

This section summarizes key ingredients in successful program design.

4.2.1 Streamlined Program Delivery

Simplicity in program design is a significant factor in driving program participation. Quick and easy loan application processes are an example, sometimes supported with technology platforms that contractors can bring into the field. Using these platforms, contractors can help customers get pre-approved for loans as an integrated part of a project sales pitch. To help ensure consumer protection, programs can maintain prudent underwriting criteria for pre-approval and often establish processes to review applications in more detail for customers who may not have met initial pre-approval requirements. Streamlining technical requirements for program participation, such as project eligibility parameters and energy savings calculations, also helps facilitate program participation.

PG&E's commercial financing program serves as an example of these themes. Many of the projects that receive PG&E program financing overlap with their "custom" incentive program for projects in larger commercial facilities. Many customers find the program requirements for participation in the custom program burdensome to the point that they choose to forgo available incentives. While the custom program was at one time the primary channel through which PG&E received financing participants, customers often take the cash incentives primarily to access the program's 0% financing offer.

In response to this observation, PG&E made several shifts in program design. Most notably, they opened the program to customers who are interested only in the financing offer. The program also promotes its financing product with more streamlined technical requirements than those required for receiving cash payments through the custom incentive program. Receiving the discounted financing is simpler than receiving custom incentives, with a basic front-end check designed primarily to ensure that savings projections are within reasonable bounds, rather than strictly conforming to detailed engineering protocols. In the wake of these changes, most program participants have been accessing the financing alone, without accompanying incentives, lowering utility costs.

4.2.2 Affordable Capital

Pre-launch program design choices, such as accessing low-cost capital sources, can help make programs affordable for customers. Successful programs do more, however, than simply put low-cost capital in place. They typically present financing options and project economics during the implementation phase in ways that appeal to channel partners and end-use customers.

For example, many potential customers of the Texas LoanSTAR program, such as K-12 schools and local governments (see Figure 6), are served by the ESCO market. ESCOs that are pitching projects to these customers can make their pitches more competitive by offering LoanSTAR program financing, at rates and terms that are more attractive than what competitors might provide. By offering a product to the ESCO market that makes their offers more competitive, the program attracts project leads from ESCOs.

Other programs address affordability by promoting low monthly payments to customers as part of the sales pitch and comparing those payments to potential energy savings to make the projects even more attractive. For example, Michigan Saves manages a loan loss reserve fund that protects its participating lenders from write-offs, which helps them offer 15-year financing that significantly reduce customer monthly payments. Michigan Saves focuses its contractor training on presenting projects as attractively as possible to customers using this monthly payment framework, rather than focusing on interest rates. The program has found that this approach has attracted more participants.

Figure 6. The Texas LoanSTAR program can make pitches to K-12 schools and local governments more competitive.

Certain programs also offer financing rates that are low enough to garner attention. For example, Mass Save has offered its HEAT Loan program at a 0% rate for many years and has grown the program steadily over time. The program uses utility ratepayer funds to buy down private lender rates. At this point, program administrators speculate that the HEAT Loan is pervasive enough in the market that if a potential customer is offered any other financing product, "The customer is going to expect the HEAT Loan" instead. As a result, the program has received feedback indicating that most contractors use the product as a selling feature.

Finally, presenting financing alongside incentives and other discounts may make the overall sales pitch more attractive. For example, contractors may inform customers how much of the project cost can be covered with incentives, rebates, tax credits, etc., and then present a lower monthly payment amount with financing after these discounts are included. In some cases, the reduced financing payments may be low enough to make the project cash-flow-positive relative to projected savings.

4.2.3 Flexible Project Scopes and Approval Processes

Many successful programs broaden the set of potential customers and projects that programs will approve, both in terms of installed measures and loan approval. The Nebraska Dollar and Energy Saving Loans program takes an approach that allows flexibility in project scope. The program does not limit the overall possible scope of a financing project. Instead, it uses zero-interest capital to support improvements that meet its technical requirements, while allowing lender partners to finance other measures in the same loan without zero-interest capital support. Like cash incentive programs that may pay out only on certain measures as part of a whole-building renovation, the Nebraska program helps bring down financing costs for energy-related improvements within larger projects.

Mechanically, the Nebraska program implements this approach by providing a portion of the financing capital needed for energy-related improvements – but not for other improvements – and forgoing any interest on repayment of its portion, thereby lowering the overall effective financing rate to the customer. As a result, the customer can take out a single loan from a participating lender, rather than having to secure one loan for energy-related measures and a separate loan for other aspects of a project.

Even with technical flexibility, some potential customers seeking to participate in an energy efficiency financing program may not immediately qualify from a loan approval perspective. Programs have taken various approaches to reaching a broader range of credit-challenged customers. In general, these approaches depend on careful review of a customer's ability to pay. In some cases, traditional lenders take on this role. Michigan Saves, for example, works with their suite of lenders to take a second look at customers who are not automatically pre-approved for financing. Lenders may decide to offer customers lower loan amounts, or longer loan terms with lower monthly payments, to make repayments more feasible. Through this approach, the program over time has been able to lower its minimum credit score from 640 to 600, supported by a loan loss reserve that helps make lenders whole in the case of any write-offs. The program also has alternative capital available from the U.S. Department of Agriculture that it can use to fund loans to customers who may not qualify under local lender requirements.

In other cases, programs may work with specialized community lenders that are trained to extend credit to hard-to-reach markets. For example, Mass Save refers customers who do not meet private lender underwriting requirements to a nonprofit lending partner called the Capital Good Fund. This mission-driven lender is a certified Community Development Financial Institution (CDFI). In the event a private lender cannot underwrite a prospective customer, Mass Save encourages them to refer customers to the Capital Good Fund.

4.2.4 Trusted Program Delivery

Across market sectors, many successful programs promote energy efficiency financing through a trusted source, such as a government agency. In several of these cases, the trusted source is not necessarily responsible for all aspects of program implementation, but its involvement in the program helps give potential customers greater confidence about participating.

For example, the Hawaii Green Infrastructure Authority (HGIA) reported that trust is an important factor in its public-sector energy financing activities. HGIA reported that the state Department of Education, which has been a primary participant in the HGIA program, has opted for public financing from HGIA without a savings guarantee, instead of financing with a privately backed guarantee. HGIA observed that the education department's choice of public financing over a private guarantee was likely related to trust. With a private guarantee, the education department could be concerned about fine print if it came time to call on the guarantee, resulting in a financial dispute and potential losses to the agency. By contrast, the Department of Education could trust that HGIA would be working in the public interest, making its financing more attractive even without a savings guarantee.

Similar themes emerged in interviews from other sectors. For example, a predecessor to NEIF, known as AFC First, established a residential collaboration in the state of Pennsylvania that was backed by the State Treasury. While AFC First was primarily responsible for running the program, interviewees remarked that "the state has a lot more clout than we do" and could "leverage reputational" influence. With this assistance, the state's backing helped ensure successful ongoing implementation.

4.2.5 Partner-Friendly Design and Administration

Processes that work well for key program partners, such as contractors and lenders, also help drive uptake. On the contractor side, certain partner-friendly processes help make a program run more smoothly before, during, and after a project sale. For example, before Michigan Saves contractors incorporate its financing into their sales process, they receive training on how to present it most attractively from an economic standpoint. During the sale itself, streamlined approvals not only reduce customer barriers but also fit into a contractor's sales pitch.

Transferring funds quickly after a sale is secured also helps contractors with their business. As PG&E put it, "We always pay as soon as we can after completion, especially because we're giving them 100%" of project costs from program financing. Until that time, the contractor is "floating" the entirety of the project cost. Program administrators understand that contractors "have to pay people. They can't wait for that."

With regard to lending partners, highlighting the strong overall performance of energy efficiency loans historically may encourage lenders to take a greater interest in promoting them.[11]

4.3 Program Evaluation

Certain specific characteristics of program implementation may lend themselves more easily to quantitative evaluation than others. Even those factors that are more easily quantifiable, however, can be challenging to test in practice. For example, evaluators might wish to study different interest rates and loan terms to evaluate the impact of these factors on uptake; however, in practice this variation is limited because it can be difficult to offer different rates to different customers or to vary rates over time without disrupting the market. Similarly, while programs can modify eligibility criteria to expand or restrict program accessibility, changes of this type are not generally made experimentally, given the potential impact on risks to customers and lenders. Technology requirements can also vary but are typically changed in light of shifts in programmatic priorities rather than to test the market.

Other characteristics, such as simplicity and trustworthiness, can be even more difficult to pin down in practice. At times, programs may be able to observe a shift in uptake after streamlining their processes or receiving the backing of a trusted source, but it can often be difficult to parse out the degree of uptake attributable to such factors alongside other dynamic trends.

Similarly, partner-friendliness may also be difficult to quantify. A range of different factors can impact the level of engagement and product promotion that program partners take on, from the level of outreach by program staff to the attractiveness of the product itself to the ease and convenience of program processes. In some cases, programs may be able to gather self-reported participant data on the importance of program financing in facilitating energy upgrades, which may help contractors understand the value of

11 See "Long-Term Performance of Energy Efficiency Loan Portfolios," State and Local Energy Efficiency Action Network, https://emp.lbl.gov/publications/long-term-performance-energy.

promoting financing to facilitate sales.[12] Granular loan performance data can also help lending partners gain confidence and increase their understanding of their energy efficiency portfolios, which may encourage more proactive participation.

The qualitative nature of many key factors in the success of energy efficiency financing programs, and the difficulty of testing even those that are quantifiable, point to the value of gathering qualitative information as effectively as possible and combining it with whatever quantitative data points may be available. Market research that provides insights into the effectiveness of program processes, including periodic market surveys with both program participants and those who had dropped out or never participated. In some programs, staff conduct some of this research themselves, while other program administrators, such as NYSERDA, employed professional marketing firms. In the world of regulated utility-run programs, professional program evaluation firms also conduct process evaluations that can provide helpful insights into the effectiveness of program processes and potential areas for improvement.[13]

It is also worth noting that programs can reach out to experienced program administrators in other jurisdictions for their insights, as Berkeley Lab did for this report. Many of the insights described herein were raised or confirmed by a steering committee consisting of experienced program implementers and marketers. Such experts have often spent many years deploying their offerings into the market and can provide helpful observations and recommendations based on their depth of experience.

12 For more on quantitatively evaluating the energy savings impact of energy efficiency financing programs, see "Making It Count: Understanding the Value of Energy Efficiency Financing Programs Funded by Utility Customers," State and Local Energy Efficiency Action Network, https://www.energy.gov/sites/default/files/2021-07/making-it-count-final-v2.pdf.

13 According to the American Council for an Energy-Efficient Economy, "Process evaluations assess qualitative aspects of energy efficiency programs, such as their design, implementation, communications, and customer experience." For more information, see: https://www.aceee.org/topic/emv.

5. Conclusions

The most common observation from interviewees for this report was the importance of partnership networks in program promotion, with contractors most frequently cited as the most essential outreach channel to potential customers. There was broad consensus across both geographic areas and market sectors regarding the importance of contractors to the promotion of energy efficiency financing programs, as summed up in the table of sample quotes from interviewees below.

Sample Quotes Regarding Contactor Partnerships
"Our primary marketing strategy is through contractors" (Michigan Saves).
"Contractors are our biggest source (of project leads)" (Midwest Energy).
"Our first order of opportunity is working with the contractor core. They're the ones out there beating the bushes, trying to get customers" (Montgomery County Green Bank).
"Contractors are our sales force. If I were a private company, they'd be leading the charge, generating leads to the program. We use them to bring about new business and repeat business" (NYSERDA).
"Making sure our program is integrated with trade professionals, in a way they want to use it, is the most important factor" (in marketing the program) (PG&E).

Regarding lenders as a source of program leads, the feedback is more mixed. Several programs interviewed originate loans themselves and therefore do not rely on a network of lenders to promote the program. Among those that do maintain lender networks, their role in program promotion varies, with certain programs citing them as central to lead generation and others viewing their promotional role as secondary to that of contractors.

Sample Quotes Regarding Lender Partnerships
"Our main points of contact are with lenders and customers when they call in. … Marketing or reaching out actually involves reaching to the lenders first" (Nebraska Dollar and Energy Saving Loan Program).
Our program is "not so front and center for customers. … Some end customers recognize us, but a lot are with their lender" (Michigan Saves).
"With the lenders, it's a smaller pool. Mostly, the customers are going to the contractor first, identifying something they want or need, and then looking for the money to support it" (IPC).
"Contractors are the most likely source of information. … Lender marketing is on the margins" (Mass Save HEAT Loan).

Utilities also stand out as a potentially important source of program promotion. Programs that use utilities to source projects are generally either administered by utilities directly or operate using formalized partnerships between utilities and the program administrator.

Where partnerships between program administrators and utilities are less formal, programs sometimes encounter difficulties in coordination or find these relationships less fruitful for driving program uptake.

Finally, several programs benefited from partnering with other types of entities, such as subcontracted networks of program implementation firms as well as voluntary partnerships with public agencies and community outreach organizations. Overall, these types of arrangements varied widely from program to program.

By and large, programs rely less on their own direct marketing efforts, with certain exceptions. A few programs had put considerable effort into honing digital marketing strategies through channels such as targeted social media advertising and paid search. In addition, in some programs targeting larger facilities, direct marketing and technical assistance sometimes overlapped. These examples typically involved more drawn-out facility needs assessments and project scoping in close coordination with building owners, serving as integral parts of the sales process.

Beyond marketing and outreach, certain elements of program design also impact program uptake. This report summarizes key themes that emerged in this regard, with an emphasis on programs being simple, affordable, flexible, trusted, and partner friendly.

The following checklist of strategies highlights actions that program administrators may wish to consider, drawn from each of the main areas of focus from these interviews: partnerships, direct marketing, and program design.

Notably, interviewees across programs underscored that financing itself is not a key driver of program uptake but, rather, a means of facilitating projects that customers pursue for other reasons. Key insights regarding effective program implementation center as much or more on broader programmatic factors as on financing itself.

We drew these conclusions from programs administered by a range of entities, including public agencies, utilities, quasi-public institutions such as green banks, and private firms that often partner with public or regulated programs. Regardless of the type of program administrator, the key lessons may be broadly applicable to any energy efficiency financing program, such as those housed in state and local energy offices. Partnership networks tended to emerge from all types of programs as essential to program uptake with targeted direct marketing and efficient program processes also resonating across multiple interviews. The range of administrator types also highlights the option for state and local entities to work with other public or quasi-public administrators, or private implementation firms, to drive implementation.

Table 2. Summary of potential strategies to drive uptake

Category	Specific Actions
Partnership Networks	• **Contractors**: Dedicate specific program personnel with the primary responsibility of interfacing with contractors. Provide regular trainings on presenting the program to customers and spread information among contractor network about impact of program on closing rates. Offer social networking opportunities to cultivate contractor loyalty. • **Lenders**: Encourage lenders to promote the program by offering benefits that may attract customers and reduce lender risk, such as low-cost subordinate capital. • **Utilities**: Seek to leverage utility budgets, regulatory accountability, and pre-established customer base. Explore option of utility administration of financing programs or formalize coordination with written agreements and specific roles for utility partners. • **Program Implementation Firms**: Contract with energy efficiency program implementation firms to extend outreach capacity. Establish volume and/or savings targets that such firms are expected to achieve. • **Specialized Financing Providers**: Work with for-profit or non-profit financing providers that specialize in energy efficiency program implementation.
Direct Marketing	• **Online Advertising**: Work with marketing firms to develop search terms and customer characteristics that may attract participants considering building renovation, not necessarily specific to energy efficiency. Use these terms and customer profiles for paid search, search engine optimization, social media, and display advertising. • **Technical Assistance**: Provide direct customer assistance on projects likely to generate significant savings, including analysis of energy savings opportunities and technical assistance to lead participants through each stage of the program.
Program Design	• **Streamlined Program Delivery**: Simplify program application processes and cut down on administrative red tape, such as drawn-out technical approvals. Consider investing in field technology for contractors that allows for on-site approvals while maintaining appropriately rigorous underwriting standards. • **Affordable Capital**: Offer capital at below-market rates and advertise to contractors to encourage them to direct customers to the program. Consider specialized offers like 0% financing when possible, to attract customers directly. Alternatively, focus on longer-term financing and train contractors to present project economics by comparing projected savings with monthly payments. • **Flexible Project Scopes and Approval Processes**: Allow customers to finance an entire renovation project with a single loan, potentially by offering below-market capital only for the energy-related portions of a project. Partner with lenders with expertise in extending credit prudently to lower-income and credit-challenged customers. • **Trusted Program Delivery**: Spotlight any public agency brand associated with the program. Include quotes from public officials supporting the program in advertising materials and use public agency outreach channels to help promote the program. • **Partner-Friendly Design and implementation**: Design features that make the product easy to use, such as approvals in the field and minimizing the time before contractors receive payments. Train contractors to use the program in ways that can help them close more sales, such as comparing financing payments to projected savings.

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Appendix A. Case Studies

The examples below are chosen from specific market sectors the programs serve: single family, multifamily, commercial, and public-sector facilities. While many of the themes that resonated throughout the interviews conducted for this report held true across various market sectors, certain strategies or their applications varied by sector served in ways that may be helpful to note. Each of the specific case studies below presents an example of how a program sought to drive participation. The chosen examples represent well-established programs in their respective sectors that have ramped up participation in ways that may be helpful for program administrators elsewhere to consider.

A-1 Single Family: Michigan Saves

Michigan Saves offers both a residential and commercial energy efficiency financing product. Here we focus on their offering for the single-family, residential market, which they managed to grow significantly even during the COVID pandemic. They offer a traditional off-bill loan in partnership with six credit unions, with the following terms:

- Eligible improvements include energy efficiency, solar PV, battery storage, EV charging stations, water efficiency measures, and remediation measures such as lead abatement, asbestos and mold removal, and radon mitigation.
- Interest rates start at approximately 7 to 9%, depending on the lender.[14]
- Terms extend up to 15 years for most lenders, with 20-year terms offered by some credit unions for solar and storage.
- Loan amounts are capped at $40,000 to $100,000, varying by lender.

Partnership Networks Single Family: Michigan Saves	
Contractors	Michigan Saves treats contractors as the primary channel for program uptake. The program employs a four-person contractor outreach team to interface with program contractors on a regular basis. The program provides contractors on the single-family side with a technology platform that works on phones, tablets, and laptops to allow contactors to help customers get pre-approved during the sales visit. Contractors also receive training on how to position the financing offer during the sale, in terms of monthly payments relative to energy savings, to help make the economics of a project more attractive to customers. To help maintain and grow contractor loyalty, the program offers free events to contractors such as social gatherings and other incentives. They also send marketing communications to contractors both in and out of the program letting them know how much volume the program has generated, to pique contractors' interest in using the program.
Lenders	The program has worked with a core group of lenders over time to track loan performance across the program and bring down the need for financial reserves to cover losses, while expanding credit eligibility thresholds. For customers who do not meet those thresholds, the program has worked with its lender network to encourage them to take a closer case-by-case look at a potential customer's ability to pay.
Utilities	The program complements utility energy efficiency programs, but utilities are not the primary marketing channel. On the residential side, Michigan Saves is working with two utilities to offer on-bill programs to reach more credit-challenged customers. External capital from USDA is used for on-bill loans in one program, while capital in the other program comes from the city that owns the participating municipal utility.
Other	The program partners closely with the city of Ann Arbor, Michigan, which uses program contractors for any energy efficiency or strategic electrification work that the city promotes.

14 Interest rates fluctuate with the market. Current interest rates for program lenders are available at https://michigansaves.org/residential-homes/.

Direct Marketing Single Family: Michigan Saves
Michigan Saves primarily markets through contractors, rather than conducting direct-to-consumer marketing.

Program Design Single Family: Michigan Saves	
Streamlined Program Delivery	The technology platform for residential contractors simplifies the loan application and pre-approval process, making it easy for contractors to include as part of their sales pitch.
Affordable Capital	The program trains contractors to pitch projects in terms of monthly payments, encouraging them to integrate financing into every offer to make projects more affordable to potential participants. The program offers fifteen-year loan terms to reduce monthly payments. A loan loss reserve protecting local lenders helps them feel comfortable offering these longer terms, as well as more flexibility in credit underwriting.
Flexible Project Scopes and Approval Processes	Minimum credit thresholds have come down over time as the program has developed a track record of loan performance.
Trusted Program Delivery	Michigan Saves focuses on brand awareness among contractors rather than customers directly. Among contractors, program awareness is high. The program relies on customer relationships with contractors and lenders to bring an element of trust into the transaction. The program provides frequent training to contractors to help them present the program to customers in ways that increase confidence in program offerings.
Partner-Friendly Design and implementation	One challenge for the program in terms of partner friendliness is that the program charges contractors a fee to participate, which has led to some degree of contractor pushback. However, the program makes up for this by demonstrating to contractors how it can help improve their sales and publishing overall dollar volume to demonstrate the program's value. The program has found that contractors value the ability to offer attractive rates and terms to their customers, along with flexible underwriting and accessible capital. Contractor training, streamlined technology, a dedicated contractor outreach team, and free contractor networking and social events also help instill and maintain contractor loyalty.

A-2 Multifamily: NYSERDA

NYSERDA offers energy efficiency financing to participants in its overall multifamily performance program, which also incorporates cash incentives for meeting certain energy savings targets. NYSERDA also offers a long-running single-family residential loan program; however, this case study focuses on multifamily financing. Participants in the multifamily program can also receive financing for renewable energy projects without having to complete the performance program requirements. On the energy efficiency side, NYSERDA offers two financing options. First, the program works with private lenders across the state to provide half the capital for an energy efficiency product, bringing down the overall cost of financing to the customer. Second, NYSERDA also offers a 0% on-bill financing product to customers of certain utilities throughout the state using a single competitively chosen capital provider. Both types of financing cap the loan term at a maximum of ten years, with the on-bill option requiring projected energy savings to exceed loan payments.

Partnership Networks Multifamily: NYSERDA	
Contractors	While NYSERDA conducts more direct marketing than some of the other programs interviewed, they nonetheless referred to contractors as their "sales force" and characterized them as "leading the charge." Contractors help generate leads for the program, bring in both new business and repeat business.
Lenders	By working with a network of lenders across the state, NYSERDA offers flexibility to potential customers to choose their own lender, while simultaneously offering a 0% interest on-bill program for projects projected to be cash-flow- positive for customers who may prefer the convenience and greater assurance of that option.
Utilities	While NYSERDA does not focus on utilities as a primary marketing channel for its multifamily financing program, it does partner with several utilities, including some of the largest in the state, to offer its on-bill product.
Other	NYSERDA partners informally with state and local housing agencies to direct potential customers who are engaged in securing general housing finance toward their energy efficiency program as a way of incorporating energy improvement measures into overall housing construction and renovation projects.

Direct Marketing
Multifamily: NYSERDA

NYSERDA makes extensive use of digital marketing through a paid search strategy to attract potential customers who may be embarking on renovation projects and searching for terms that are not necessarily energy specific. Among housing developments that receive subsidized support, there is typically a regularly prescribed renovation and rehabilitation cycle, with various types of housing financing and tax credits available. NYSERDA's energy efficiency financing program targets terms related to these opportunities to advertise its efficiency opportunities in conjunction with overall renovation projects. The agency also uses Facebook and Instagram to advertise its offerings on social media.

In another type of direct marketing, NYSERDA works with owners of building portfolios as well as building managers who may manage properties for multiple owners. NYSERDA keeps in contact with these types of participants to help them participate multiple times to cover their range of properties.

Program Design Multifamily: NYSERDA	
Streamlined Program Delivery	NYSERDA develops materials for contractors that are designed to help them explain the program to potential customers in ways that are easily comprehensible. The messaging in these materials focuses on how energy efficiency can be "infused" into overall capital planning, so that building owners perceive it as part of their regular process, rather than an additional burden.
Affordable Capital	NYSERDA addresses price sensitivity in two ways based on its dual offerings. In one offering, it helps bring down rates from lenders across the state by providing capital at a low interest rate covering 50% of the loan, to help lower the overall effective rate to the customer. In its other offering, structured with on-bill repayment, NYSERDA offers the loan at a 0% rate and verifies that projected cash flows should be sufficient to cover loan payments.
Flexible Project Scopes and Approval Processes	NYSERDA has found that its multifamily customers typically have financing available to them. In its partnerships with private lenders, NYSERDA allows the lenders to use their own underwriting criteria. The availability of multiple participating lenders across the state does allow potential customers to shop for a lender that will work with them. For its on-bill option, NYSERDA applies relatively standard credit requirements.
Trusted Program Delivery	NYSERDA provides customers increased confidence in the value of energy investments by offering an on-bill financing option in which the agency verifies that projected cash flows are expected to exceed loan payments. As these parameters may restrict the scope of the project, customers who prefer greater flexibility can opt for NYSERDA's alternative off-bill product offered through a statewide lending network.
Partner-Friendly Design and implementation	Over time, NYSERDA has developed a suite of materials to help contractor partners present the multifamily program to potential customers, including advertising collateral, streamlined processing templates, and talking points for the sales process.

A-3 Commercial: PG&E

PG&E lends out its own energy efficiency program funds for its commercial financing program, offering the following terms to commercial and public organizations:

- 0% on-bill financing.
- Maximum term of ten years.
- Loans range from a minimum of $5,000 to a maximum of $4 million (higher by exception on a discretionary basis). Loans above $250,000 require submission of additional technical information and may not be automatically approved.
- Loan payments must be fully offset over the loan term by projected energy savings.
- Underwriting based solely on utility bill payment history.

Customers are not required to apply for incentives to receive program financing, and technical requirements for financing eligibility are generally less stringent than requirements for cash incentives.

Partnership Networks Commercial: PG&E	
Contractors	Private implementation firms hired by PG&E are the primary source of program leads for PG&E's commercial financing program, with assistance from participating contractors who are part of PG&E's Trade Professional Alliance ("Trade Pros"). Trade Pros have access to co-marketing materials developed by PG&E, live and archived training courses, a lending library of energy measurement devices useful for specific project types, and assistance from dedicated PG&E staff. Trade Pros are required to take a specific course on the commercial financing program on an annual basis.
Lenders	The program does not partner with private lenders and restricts loans only to energy-related improvements. PG&E lends out energy efficiency program capital under its commercial financing program. The program approves customers based on utility bill payment history. PG&E sets lending terms and lends at a 0% interest rate. Customers with project scopes extending beyond eligible measures under the program must seek out separate financing to cover the additional items.
Utilities	PG&E administers its programs, including its commercial financing program, under the auspices of the California Public Utilities Commission (CPUC). As a regulated entity, PG&E is accountable to the state for carrying out programs that the state prescribes and approves, while bringing the resources of a large utility to bear on program promotion and implementation.
Other	PG&E works with several program implementation firms who help administer their programs. These private implementers bring additional capacity to program promotion and are accountable for meeting pre-established energy savings targets. Often the implementers themselves will partner with additional private firms as subcontractors.

Direct Marketing Commercial: PG&E
PG&E conducts minimal direct marketing of its commercial financing program, relying heavily on its contractor network to generate leads for the program.

Program Design Commercial: PG&E	
Streamlined Program Delivery	Eligibility is based on a customer's utility bill payment history, requiring 24 months of being a PG&E customer and at least 12 months in good standing. This underwriting process is far more streamlined than traditional credit underwriting. Project eligibility uses simplified savings projections based on expected meter readings, rather than a more complicated "net savings" calculation that is common among other energy efficiency programs. On the back end, the program forgoes project-by-project inspections, relying instead on a "spot inspection" process to check for any systemic fraud using a sampling methodology.
Affordable Capital	Using energy efficiency program capital, PG&E sets the interest rate for the program at 0%. Projects are also required to be cash-flow-positive on a projected basis.
Flexible Project Scopes and Approval Processes	The utility bill underwriting process provides significant flexibility for participation as compared with a more in-depth credit review.
Trusted Program Delivery	PG&E relies on contractors to be the face of the program and works especially well with contractors who develop repeat business with customers that own multiple properties. PG&E's backing adds credibility to the program and the program's projected cash-flow-positive requirement helps give customers greater confidence in their investments.
Partner-Friendly Design and implementation	PG&E makes a point of paying contractors as soon as possible after project completion so that contractors will not have to "float" project costs any longer than necessary from a business operating standpoint. Relationship managers at PG&E stay in close touch with contractors to ensure they have support and provide written materials and video explanations of program processes.

A-4 Public Sector: Texas LoanSTAR

The Texas LoanSTAR program provides low-cost financing to public sector state and local facilities to support energy efficiency retrofits, with the following terms:

- Loans are priced at 1% or 2%, depending on the programmatic source of capital.
- The maximum loan size is $8 million but customers can take out as many as three loans at a time for a total of $24 million.
- Loan terms are capped at 15 years.
- Projected energy savings are required to fully offset loan repayments.

The State Energy Conservation Office (SECO), which falls under the office of the State Comptroller, houses the LoanSTAR program.

Partnership Networks Public Sector: Texas LoanSTAR	
Contractors	While the LoanSTAR program conducts a fair amount of direct marketing, it nonetheless characterized contractors as “driving the projects.” The program provides frequent trainings to contractors and makes regular presentations to contractor trade groups to build awareness of the product. Many incoming calls for potential projects come from ESCO contractors with customers who may be unsure what financing source to use. The department which houses the LoanSTAR program also co-chairs the Texas chapter of the Energy Services Coalition.
Lenders	As the capital provider for the program, Texas LoanSTAR does not work with other lenders in the market. Thus far, their capital pools have been sufficient to meet demand.
Utilities	LoanSTAR does not partner formally with utilities in the state, but incentives offered by utilities can help offset project costs.
Other	Texas LoanSTAR contracts with three professional engineering firms to provide technical assistance to customers on their energy improvement projects. The engineers provide customers with preliminary energy needs assessments and help customers through the implementation process by reviewing the work of contractors before, during, and after a project. Potential customers often feel more comfortable moving forward with projects, knowing that these engineers would provide objective advice and oversight on behalf of the program.

Direct Marketing Public Sector: Texas LoanSTAR
The LoanSTAR program conducts extensive marketing, primarily through in-person engagement with potential customers and associations representing both public agencies and contractors. There are 24 regional councils of governments in Texas, which program administrators present to regularly to ensure these groups are aware of the program and to reach new members (important given the rate of turnover in the wake of local and regional elections). The program also presents to the Texas Energy Managers Association, which represents energy managers in public agencies, and to the State Energy Advisory Group, with membership comprising both public energy managers and staff from the department in which the program is housed. Summing up its reasoning for conducting this regular in-person outreach, the program explained, “We have to make sure we stay on everybody’s mind.”

Program Design Public Sector: Texas LoanSTAR	
Streamlined Program Delivery	The LoanSTAR program requires no credit underwriting, only a technical review to ensure compliance with project standards. As its target audience consists exclusively of public entities, the program does not experience loan defaults and any delinquencies are generally attributable to changes in staff. The relatively straightforward loan structure may also appeal to entities not wishing to take on more complex financing arrangements such as bonds, particularly for project scopes that may be narrowly targeted to energy improvements and require less funding than a typical bond issuance.
Affordable Capital	Interest rates for the program are either 1% for loans funded with federal dollars from the American Recovery and Reinvestment Act or 2% for loans from the program's general fund, coming in well below typical market rates in either case. Terms can extend up to 15 years to lower periodic repayment costs, which must be fully offset by projected energy savings. State legislation prohibits the state from reducing budgets of participating agencies by the dollar value of energy savings realized, to avoid disincentivizing state agencies from engaging in the program.
Flexible Project Scopes and Approval Processes	The program is open not only to state agencies but also local public entities, public colleges and universities, public K-12 schools (excluding charter schools), and both public and nonprofit hospitals. With no credit underwriting required, any eligible entity that meets technical project requirements may participate. Eligible measures are relatively broad and include energy efficiency, load management, renewable generation, and water efficiency improvements.
Trusted Program Delivery	Staff from the State Energy Conservation Office, in which the LoanSTAR program resides, provide formal reviews of energy savings projections to ensure that projected cash flows are expected to fully offset loan payments, helping reassure potential customers in their assessments of the potential economic impact of their investments. In addition, the program engages professional engineering firms that visit the site before, during, and after completion of the project. The program assures participants that the engineers will protect them from any issues that might arise during installation of the improvements. This independent oversight brings participants an increased level of comfort. The program also follows up with all participants who have completed projects, to make sure they are happy with the services they have received and to offer assistance in addressing any issues that may arise. This follow-up has helped strengthen the relationship between customers and the program, with several participants becoming repeat customers to cover additional projects.
Partner-Friendly Design and implementation	By serving as co-chair of the Energy Services Coalition in Texas, staff from the Conservation Office can keep the LoanSTAR program aware of any needs or concerns raised by the state's ESCO contractor representatives. Contractors incorporate the loan's low interest rates as part of their sales process, helping them generate additional business.