

Putting All the Puzzle Pieces Together: Braiding and Other Approaches to Maximizing Benefits for Low-Income Customers from Multiple Offerings

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ABSTRACT

The growing need to "braid," or combine multiple funding sources and programs is critical for maintaining and expanding energy efficiency services for income-eligible customers, especially amid shifts in federal funding. However, many implementation teams for single-family and multi-family residential energy efficiency programs continue to experience challenges in successfully braiding funding from multiple sources. This paper focuses on the reasons for those challenges and the specific program design decisions that make braiding difficult. We explore some of the best practices and examples of successful braiding. We also describe the conditions and specific program implementation decisions that support successful braiding of state, utility, and/or federal funds for low-income residential programs. Newer approaches of braiding from the state-administered HOMES/HEAR rebate programs are also discussed, along with examples of how weatherization, energy efficiency, and solar programs can be combined to provide maximum savings and benefits to end-use customers in the income-eligible market. Based on these examples, we highlight key lessons learned and recommendations for program design/management of weatherization, energy efficiency, solar, and energy storage programs.

Introduction

In recent years, many federal agencies and some state agencies have reduced or frozen funds for a variety of energy efficiency, weatherization, and decarbonization programs. In one example, the Executive Order issued on January 20, 2025 paused the disbursement of funds appropriated for the Inflation Reduction Act and the Infrastructure Investment and Jobs Act, which included appropriations for the federal Weatherization Assistance Program (WAP). (Executive Order, 2025). The American Council for an Energy Efficient Economy (ACEEE) had reported in late 2024 that the Policy 2025 agenda for a conservative administration had been planning to repeal these two pieces of legislation as well as eliminating many Department of Energy (DOE) programs, including "efficiency tax rebates, home energy rebates, industrial demonstrations, appliance standards, the entire Office of Energy Efficiency and Renewable Energy, ARPA-A funding, loans for clean energy projects, and more." (ACEEE, 2024a). The U.S. DOE did release WAP funds on July 8, 2025, but the authorization for the program expired in September 2025 and was not reinstated until January 2026. Although bills have been introduced to Congress to extend the funding for WAP through 2030, these bills have not been passed.

In a state example, the Arizona Corporation Commission (ACC) voted in December 2025 to unanimously reduce the budget for Arizona Public Service energy efficiency programs. The utility had requested to expand the programs, but the ACC instead reduced the budget from \$91

million to \$41 million. These sharp reductions eliminated incentives for most residential upgrades, homebuilder benefits and customer education materials. The Commissioners explained their decision by alleging that the energy efficiency programs were not effective and depended on unnecessary subsidies funded by ratepayers (Shutsky, 2025).

As a result of these threatened or actual program cuts, homeowners, property owners, and other key stakeholders face a high level of uncertainty, leading to a potential reduction in investment in energy efficiency measures. The actual budget cuts have created funding gaps for energy efficiency improvements. In addition, energy costs have been rising sharply in 2025 and 2026. In 2025, regulators approved 43 different rate hikes across the country totaling \$11.6 billion, leading to 56 million Americans seeing higher utility bills (Cunningham, 2026). The root causes of these energy cost increases are the ongoing expansion of energy-intensive data centers by the artificial intelligence (AI) industry, coupled with the federal administration's rollback of clean energy tax credits. (Roush, 2026).

Not surprisingly, given a reduction of energy efficiency and weatherization programs coupled with rising costs, income eligible customers in particular continue to struggle to pay their energy bills. According to one report, the average overdue balance on utility bills climbed from \$597 to \$789, a 32% jump (Figure 1). The same report found that 1 in 20 Americans are burdened by household utility debt. While there is no reliable, single source for the number of utility cutoffs across the country, one source estimated 3.5 million Americans experienced utility cutoffs in 2024, with an increase to 4.0 million Americans in 2025. (Cunningham, 2025).

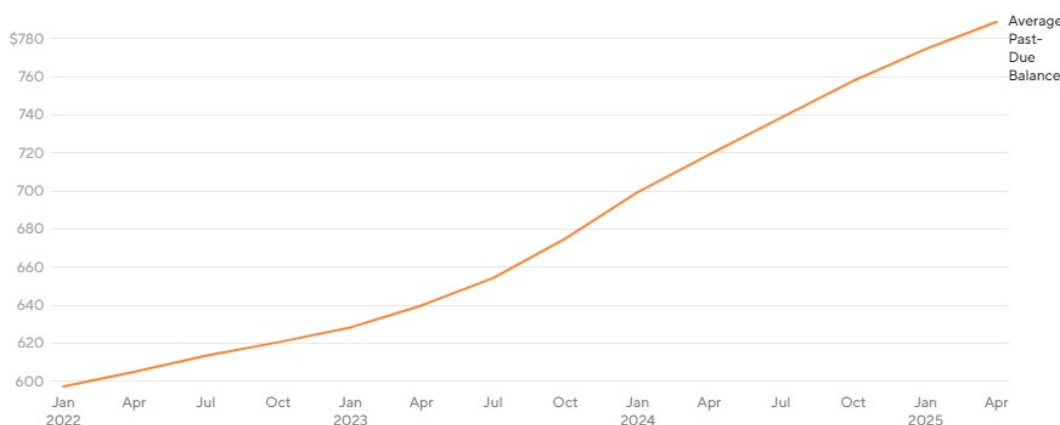


Figure 1. The average utility overdue balance in the U.S. has soared. *Source:* Cunningham, 2025, cited from The Century Foundation and Protect Borrowers.

Given these uncertainties and lack of funding sources in the energy efficiency market, braiding, or intentionally combining multiple funding sources to support a single project, has become more important than ever. By using a strategic approach, braiding can be used to expand the reach of existing programs to serve more customers and can allow for more comprehensive retrofits that address health and safety as well as energy efficiency. Braiding can enable more complex energy measures and can also ensure that programs are better able to support equity goals to fund income-eligible customer projects. Braiding can also be used to reduce or eliminate upfront costs for income-eligible customers; research has also shown that limiting or eliminating upfront costs can help property owners undertake substantial energy efficiency projects and

overcome barriers related to competition for scarce funding for capital projects. (Morales and Nadel, 2022).

Challenges to Braiding Funds and Suggested Solutions

Despite the importance of braiding funds in order to continue offering energy efficiency incentives, there are some program design decisions that make it difficult to braid funds for income eligible customers. Some of these barriers and challenges, as well as suggested solutions, are discussed below.

Income Eligibility Requirements

One common issue with braiding funds is the different income eligibility requirements of the funding. Federal WAP funding is typically reserved for families or households at or below 200% of the federal poverty level (FPL); many local, state, or utility programs for weatherization or energy efficiency are intended for households at or below 80% area median income (AMI), or sometimes up to 120% AMI, and these differing income levels do not typically align. For example, Table 1 shows a comparison of 200% FPL and 80% AMI for the Chicago, Illinois region. All families that are at the upper end of the 80% AMI levels are far above the 200% FPL levels and would not be eligible for any funding that requires the 200% FPL benchmark. Thus, program implementers need to be careful in screening the income levels of potential participants and understand which sources of funding are available to households of different levels.

Table 1. 200% of the federal poverty level compared to 80% AMI for Chicago, Illinois in 2026

Household/ Family Size	2026 200% FPL for the 48 Contiguous States	80% AMI for the Chicago-Naperville-Joliet, IL Housing and Urban Development (HUD) Metro FMR Area (as of April 1, 2025)
One person	\$31,920	\$67,150
Two persons	\$43,280	\$76,750
Three persons	\$54,650	\$86,350
Four persons	\$66,000	\$95,900
Five persons	\$77,360	\$103,600
Six persons	\$88,720	\$111,250
Seven persons	\$100,080	\$118,950
Eight persons	\$111,440	\$126,600

Even small income eligibility changes can cause friction in the braiding process. Two programs that both require participants to be at the 80% AMI level or below could still see mismatches if one program updates their 80% AMI levels annually, while another program only updates their 80% AMI levels every 2-3 years. In this situation, families at the top of the income level could be eligible for one program but not the other one. Thus, a best practice is to update

the income levels annually, to ensure funds can be braided with other programs that have the same income eligibility requirements.

Data Privacy

Most program implementers for utility, state, or federal energy efficiency or weatherization programs are not allowed to share customer information with other, similar program implementers. For example, personally identifiable information such as a customer's name, address, income information, phone number, or email address is typically required to be kept confidential. While customers can opt to have their information shared with other program implementers, often the process is burdensome or occurs after the retrofits are completed.

One way to overcome this barrier is to include an option for a customer to consent to sharing their information with other program implementers when they are signing up for one program. This strategy can also be used if two programs have the exact same income eligibility requirements so that customers do not need to have their income verified for multiple programs but rather can have their income verified once and allow that verification to be used for multiple programs (known as categorial eligibility).

This strategy has been put in place between the City of Chicago's Green Homes Chicago program, which funds free home energy upgrades and energy efficiency retrofits to income-eligible homeowners, and the Illinois Solar for All (ILSFA) program, in which income-eligible participants see no or low upfront costs for solar and see guaranteed savings on their electricity bills. When participants sign up for Green Homes Chicago, they are income-verified by the City of Chicago. They also can sign a form in which they authorize the City to share their information and income verification status with the ILSFA program administrator. If the customer signs the consent form, the City shares their information with the ILSFA program, and they are automatically qualified as income eligible and able to participate in ILSFA.

Data Reporting

Another challenge to braiding funds is the differing requirements for data reporting from each funder. Some funders, such as utilities, may be more focused on energy savings while other funders could be more focused on cost savings, quality of life improvements, and/or greenhouse gas emission reductions. Ensuring that the program implementers are capturing all needed data fields at the inception of the project is crucial to ensuring compliance with each funder's data reporting requirements.

Attribution

A common challenge for braiding is attribution, or which program funder receives credit for the energy savings due to having caused the decision to implement the energy-saving measure. Attribution is a challenge to braiding multiple funding streams because it becomes difficult to determine which funding stream led to the decision to implement the measure. Also, some programs may have non-incentive contributions to energy efficiency projects, such as technical assistance (such as in the form of a free energy assessment or audit); administrative assistance; marketing; relationships or a network of vetted contractors; or the use of other energy efficiency program infrastructure (Cosgrove, 2024).

Other Requirements

Other requirements may make braiding challenging. Many federal sources may require compliance with Davis Bacon Act requirements, although if the funds are going to a single-family homeowner, Davis Bacon may not apply.

Sequencing of the measures and the funding may also be important. Before electrification of appliances and equipment, weatherization should be completed. If a customer is interested in solar, it should be considered after both weatherization and electrification. This sequencing can provide an additional layer of complexity, especially if each measure or set of measures is funded through a different source.

In general, the more measures, the more parties involved (i.e. multiple parties may own or fund a multi-family property), and the more funders of the energy efficiency and/or solar measures, the more complex the braiding (Figure 2), which makes braiding more difficult to complete.

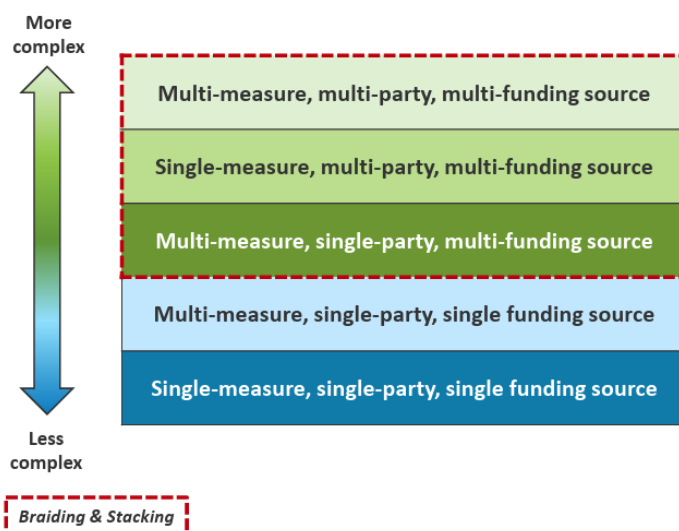


Figure 2. Braiding and stacking complexity. *Source:* Malott, 2024.

Braiding Federal HOMES and HEAR Funding with Local, State, or Utility Funds

The Home Energy Rebates (HOMES) and Home Electrification and Appliances Rebates (HEAR) programs authorized by the Inflation Reduction Act were designed with braiding in mind. The purpose of these programs is to lower energy bills by investing in energy efficiency, and to reduce carbon emissions by replacing older appliances with high-efficiency electric appliances. Each of these federal programs is intended to supplement state and local funding to lead to deeper home retrofits and, in some cases, decarbonization of homes and multi-family properties.

Importantly, these two programs (and nearly all federally funded programs) cannot typically be combined with other federal funds for the same measure, although they can be combined for the same project. For example, a project to weatherize a home and convert the heating/cooling systems to heat pumps could receive federal WAP funds for the weatherization,

and then HOMES or HEAR funding for the heat pump conversion, but you cannot combine WAP and HOMES funding for the same weatherization measures.

In other examples, it is possible to braid HOMES/HEAR funding with Low-Income Housing Tax Credits (LIHTC), although the two funding sources cannot fund the same measure(s), and it is highly complex (Department of Energy, 2024). One exception is that HOMES/HEAR funding can be combined with the State Energy Program Energy Efficiency Revolving Loan Fund for the same measure; however, these loans are only intended to provide upfront funding while the homeowner or building owner waits for the rebates to be processed and must be paid back (Malott, 2024).

However, the HOMES/HEAR programs and other federal programs such as WAP are designed to be combined with other funding sources, such as state, local, or utility-funded energy efficiency programs. In one example, Commonwealth Edison (ComEd), an investor-owned electric utility in Illinois, has been partnering on this type of braiding funds with the Illinois Department of Economic Opportunity, the Illinois state agency that administers state and federally-funded weatherization assistance program (the Illinois Home Weatherization Assistance Program, or IHWAP), since 2018. In this partnership, ComEd combines ratepayer energy efficiency funds with state and federal weatherization funding, so that most weatherization and other measures for low-income customers are provided for free, including air sealing, insulation, HVAC replacement, water heater repairs, and health and safety measures. In 2022, customers received enough comprehensive retrofits to save an average of \$800 a year on utility bills (ACEEE, 2014b).

In the case of HOMES and HEAR, braiding federal dollars with state, local, and/or ratepayer funds is most easily achieved for the states that have a statewide energy efficiency program infrastructure. For example, Wisconsin has a longstanding statewide energy efficiency program, Focus on Energy, overseen by the Public Service Commission of Wisconsin. The program is funded by both investor-owned utilities and participating municipal and electric cooperative utilities. According to the state of Wisconsin, “utilizing Focus on Energy’s existing statewide framework for delivering energy efficiency programs and rebates uniquely positions Wisconsin to deliver HOMES and HEAR rebates to households across the state expeditiously and effectively. Focus on Energy will continue to manage and maintain its existing programs separately from the Home Energy Rebate programs to ensure transparency, accountability, and compliance.” (Evers, 2025). Focus on Energy also created an online rebate finder, FocusonEnergy.com/get-started, that allows homeowners or renters to enter basic information and see all the rebates available, including state and federally-funded options. While not all states have HOMES and HEAR funding available yet, some states such as Wisconsin and Michigan do have these funding sources available, and at the time of writing this paper, additional states are expected to receive and release the HOMES and HEAR funding in the near future.

In the case of Focus on Energy, some measures that can be funded by HOMES and HEAR are not currently funded by the utilities, offering a unique braiding opportunity. For example, HEAR funding can be used for electric wiring and electric panel upgrades, which are not typically available from other funding sources. These upgrades are especially critical to be braided by income-eligible customers wanting to take advantage of electrification and solar rebates, but in the past have been unable to do so because of the electrical upgrades needed.

Navigator Programs

Given the high level of complexity required to properly identify and sequence eligible measures, and braid disparate funding sources for a comprehensive retrofit project, the “Navigator” program design offers a unique model for achieving braiding in complex situations.

Navigator programs can be structured in a variety of ways. Most navigator programs provide people to serve as navigators, who can also be called energy coaches. In some cases, navigators could be trained volunteers, but in most cases, they are trained staff. Navigator programs may also provide a process for a homeowner or building owner to implement various energy upgrades and stack or braid the incentives and rebates. Navigator programs may also include an online portal or tool to educate homeowners and building owners on which programs and incentives they might be eligible to receive. Finally, a navigator program could also include software to track which incentives and rebates have been issued to each homeowner or building owner. Navigator programs do not necessarily have all of these components but should have at least one of them. Many navigator programs also offer technical assistance, including energy audits or assessments, so that the full suite of energy upgrades can be identified prior to providing navigation of various funding sources.

One major advantage of navigator programs is to enable building owners and homeowners to complete a more comprehensive energy upgrade or electrification of their property. By only participating in one program, often only one measure or a more limited set of measures are available. But by tapping into multiple funding sources and programs, a wider range of upgrades may be possible, spanning weatherization, energy efficiency, electrification, solar, and electric vehicle charging infrastructure. A more comprehensive suite of upgrades typically enables higher energy bill savings, leading to a bigger affordability impact for participants experiencing lower incomes.

In addition, whether or not the navigator program disburses funds is a key aspect of the navigator program design. In some instances, the program administrator of the navigator program receives funding from the various funding streams and disburses the dollars to homeowners or building owners as they apply and receive the upgrades. This model of a centralized program administrator serving as a navigator enables the navigator program to fully track the incentives and rebates received by each participating property/building owner and further simplifies the participation process. However, this program design is only possible if the funder of the Navigator program has access to all or most of the funding sources being utilized.

In a different model, the navigator program provides the people (either staff or volunteers) to serve as navigators and may provide other technical assistance, and/or an online portal with information, but does not disburse any funds directly for energy upgrades. In this model, the navigator program determines the incentives that the building owner is eligible to receive and also provides assistance to the building owner to apply for each incentive or rebate. This non-disbursing model is typically used if the funder of the navigator program does not have access to all the funding sources. For example, this model could be used if a city, county, or state government entity is developing a navigator program but would like building owners to utilize utility ratepayer-funded energy efficiency programs. In this model, the navigator program administrator forms relationships with the program administrators of the programs that do disburse the funds in order to operate the navigator program. However, accurate tracking of which incentives are received by each homeowner or building owner is not possible in this model unless data-sharing agreements are in place.

The National Consumer Law Center (NCLC) and the National Housing Law Project (NHLP) issued a white paper providing program design recommendations specifically to prioritize participation of low-income consumers and tenants in the design and rollout of HOMES and HEAR programs. One of their top recommendations is to establish funded navigators, particularly when “state rebate plans are not coordinated (braided, stacked, and sequenced) with the existing low-income programs.” In these cases, states were encouraged to develop a program in which funded navigators to guide the low-income consumers through the sequencing and braiding of state, local, utility, and federal funding sources. (NCLC, NHLP, 2024).

Additional recommendations are:

- Independence of navigators: The navigators should not be added to an existing program implementer’s scope of work for one of the programs to be braided, as it could create conflicts of interest and may not be highly effective. Instead, navigators should be independent and focused on braiding the rebates and incentives that are in the best interest of the customer and their household.
 - Note that this recommendation would be in place with the model in which the navigator does not disburse funds. If the navigator does disburse funds, then multiple funding sources would be needed and the navigator should not be disbursing only one source of funds, or else would not be considered independent.
- Community outreach and language access: Navigators can also be used to help conduct outreach regarding the HOMES/HEAR programs and can help households that speak a language other than English gain access to the programs.

Several local municipalities have implemented highly successful navigator programs that are able to braid multiple, disparate funding sources to ensure highly comprehensive weatherization, electrification, and solar/storage upgrades in homes and multi-family properties. If participants tried to navigate multiple funding sources on their own, it is likely that they may participate in one program but not the others due to the complexity of the braiding process. The purpose of the navigator role is to determine who qualifies for what, what funding source pays for what measure(s), and the best sequencing.

Sustain Dane

Sustain Dane, a community-based 501(c)3 nonprofit organization in Dane County, Wisconsin, in partnership with the City of Madison, the city of Fitchburg, and the City of Middleton, launched the Efficiency Navigator Program in Dane County, Wisconsin. This program, implemented by Elevate alongside Sustain Dane, is intended to address housing resilience, equity, and climate change by helping small to medium-sized multifamily housing become more efficient, affordable, and resilient while reducing operating costs for owners and energy cost burden for residents.

The program is designed to provide a one-stop-shop for building owners to decrease time and effort in identifying efficiency opportunities and accessing incentives. The program design includes a centralized program administrator and navigator, in which the program implementer (Sustain Dane, in partnership with Elevate) does disburse most of the funding directly to program participants. In some cases, program participants also receive rebates from the HOMES

and HEAR programs or utility rebate programs directly from the program administrators of those programs. The program is focused on serving:

- Residents at or below 80% AMI, and
- Unsubsidized affordable multifamily housing with 2 or more units
 - Currently, 67% of the available affordable housing stock in Dane County is unsubsidized

Critically, building owners work with one single point of contact during their entire engagement in the program. In addition, the program seeks to fully cover the cost of all upgrades at 100% while also emphasizing decarbonization of all participating properties. The program also includes a workforce component to enhance and grow the local workforce for energy efficiency and decarbonization retrofits.

The program process is shown in Figure 3. First, initial outreach occurs to engage the participant; program staff then complete an energy assessment. The program team receives bids and quotes from contractors in the program network, then works to braid incentives and coordinate additional financing.

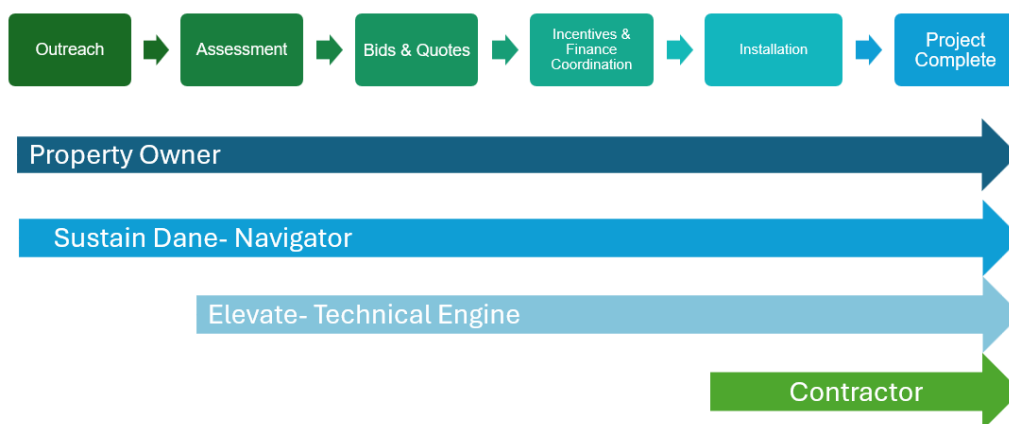


Figure 3. Sustain Dane Navigator Process. *Source:* Corso, 2026.

As shown in Figure 3, Sustain Dane provides the navigation services to the building participants, while Elevate is the “technical engine” behind the scenes. The services provided by Elevate include determining which incentives each building owner or homeowner is eligible to receive; performing technical analysis and technical assistance as needed for the energy measures, including performing an energy assessment; working with local contractors to ensure measures are installed properly, and tracking the information, including the costs, benefits, non-energy benefits, and savings. Currently, tracking occurs on a spreadsheet, but software could be used for tracking in the future.

The funding flows in several ways, adding to the complexity the homeowner would face without a navigator program (Figure 4). Some public and private funds flow directly to Sustain Dane, while some private funds also flow directly to Elevate. Sustain Dane and Elevate are partnered in the implementation of this navigator program and both organizations work closely together. If Elevate is the recipient of any funds, those dollars flow from Elevate to Sustain

Dane, which then disburses the funds to the contractors performing work at the participants' homes or buildings once measures are installed. The contractor and/or the building owner may also receive funding directly from the HOMES/HEAR or utility rebates.

Many of the private funds are philanthropic grants. Other sources of funding include:

- Federal: Community Change Grant from the U.S. Environmental Protection Agency
- State: state grants as well as state-managed American Rescue Plan Act funds
- Municipal: CIP funds as well as other City grants

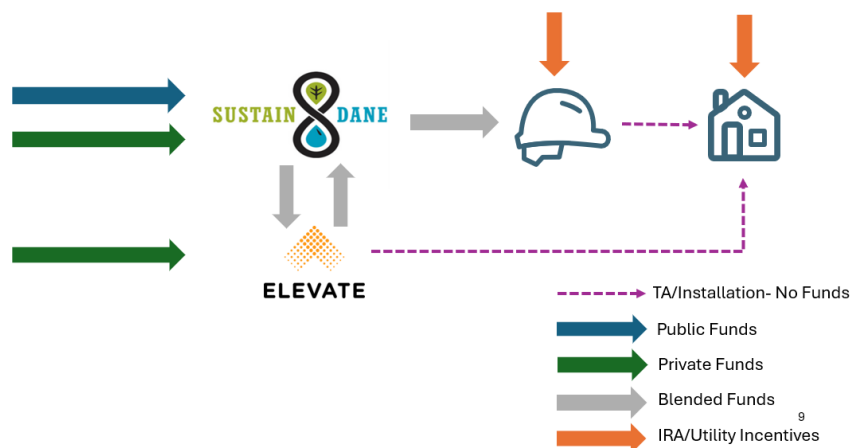


Figure 4: Sustain Dane Flow of Funds. *Source:* Corso, 2026.

Overall, navigator programs can come at a higher cost for administration, but this higher cost enables deeper energy measure installation a much better customer journey and experience for participants. The Sustain Dane Energy Navigator program is administered at a cost of approximately \$4,000 per unit; this cost does not include the cost of equipment or measure installation but does include the navigator program administration. The equipment and installation costs vary widely, based on the needs of the property, and may include: health and safety upgrades, weatherization, energy efficiency, electrification, and/or rooftop solar. So far, the Sustain Dane program has served 106 residential units in 2023; 72 residential units in 2024; and 62 residential units in 2025.

The City of Ann Arbor

Similar to the Sustain Dane Navigator Program, Elevate is working with the City of Ann Arbor, Michigan to implement a navigator program focused on the Bryant neighborhood of Ann Arbor. In this program design, however, the City pays for all upgrades, including new equipment. As a result, the homeowner or building owner is not eligible to receive HOMES and HEAR rebates, which are only applicable to a homeowner or building owner who purchases and/or pays for the measures or equipment.

Funding sources for the program include state grants, philanthropic funding, and utility rebates. One key aspect of both the Sustain Dane and Ann Arbor navigator programs is including

and braiding the philanthropic funding, which often has more flexibility than other funding sources. For example, weatherization funds can only be used for weatherization, but in some regions, weatherization funds are limited and may be fully expended in a short amount of time. Utility rebates and incentives must meet strict cost effectiveness tests in most states, and some states do not allow utility funding to be used for electrification (fuel switching). Philanthropic funds can be used to fill these types of gaps, as the dollars are typically not earmarked for specific types of measures, and can often be used for electrification. This type of funding can be key to pulling together all the funds and also covering program administration costs.

Similar to the recommendations from the NCLC and NHLP, Elevate has found that municipalities or states interested in a navigator style program should prioritize funding a central program administrator rather than having multiple administrators collaborate to braid funds. The complexity of combining weatherization, energy efficiency, health and safety upgrades, electrification, and solar/storage requires a neutral party to decipher and coordinate the funding streams.

Similarly, adding navigation services to an existing contract can be complex and less effective, if the navigation services are not the primary purpose of the contract. An independent navigator can develop and have in mind the total scope of work of a more comprehensive retrofit than would be possible from just one program and determine all the measures needed. Engaging one program administrator from an existing program to serve as a navigator is less desirable because that program has its own objectives but may not see the big picture of a more comprehensive retrofit. It is also simpler for one source to cover the cost of navigator program administration, while multiple sources cover the cost of the retrofits.

The Village of Oak Park

Similar to Sustain Dane, the Village of Oak Park, Illinois has established the Oak Park Energy Navigator, or OPEN. The Village funds a central navigator program, implemented by Elevate, that conducts outreach, identifies participants, completes comprehensive energy assessments, and then provides a single point of contact for homeowners and building owners interested in pursuing upgrades. The upgrades are funded from a combination of local, state, and federal funds, and ratepayer utility incentive programs. An illustration of the customer journey in OPEN is provided in Figure 5. In this model, the OPEN program does not disburse funds but rather directs participants to the various program administrators of local, state, federal, and utility funds and supports participants as they apply for those funds and install measures. The navigation services in OPEN include conducting the energy assessment; providing a personalized home energy roadmap to each participant; and providing energy navigation services to support the homeowner or building owner in implementing their home energy roadmap.

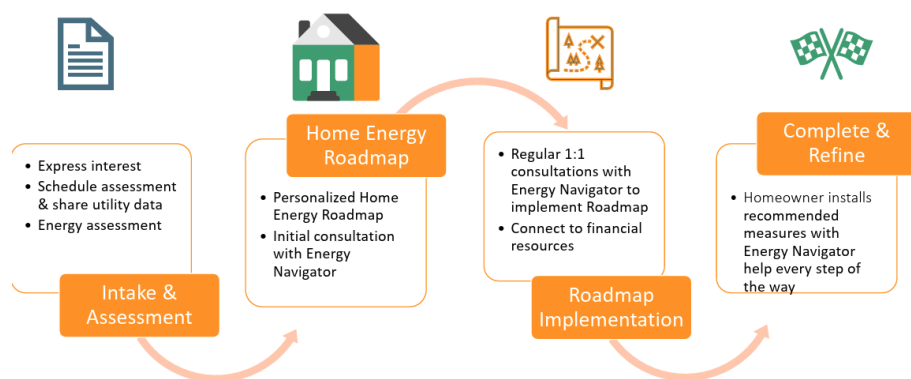


Figure 5: OPEN participant journey. *Source:* Elevate, 2026.

While OPEN just launched in February 2026, the Sustain Dane and Ann Arbor Navigator programs have been established for longer periods and have started to see impressive results. In one example, a property in the Sustain Dane program was able to complete over \$160,000 worth of retrofits, including air sealing and insulation, heat pump water heaters, heat pumps for heating and cooling, electrical upgrades, and solar (Corso, 2026).

The current cost of administering OPEN is approximately \$6,250 per building. Some properties are single-family homes and some are multi-family residential properties. In addition, some property owners are mainly interested in the energy assessment report and may not need extensive energy navigation services, while other property owners are expected to require more time-intensive navigation services. Thus, the cost of providing energy navigation services could vary based on the building owner's level of expertise and needs.

In the first year of operation, OPEN is expected to provide 67 energy assessments and associated energy road maps and will also provide energy navigation services to these property owners. The program aims to serve a balance of market-rate and income-eligible properties. There is strong demand for the program from potential participants and owners of market-rate homes are on a wait list for future services as of the writing of this paper.

Scaling Energy Navigator Programs

While the energy navigator programs discussed thus far in this paper are locally funded and smaller in nature, there is opportunity to scale these programs to reach a larger number of participants. Several states are considering or in the process of developing a statewide energy navigator program, although there is not yet a statewide energy navigator program available at the time of the writing of this paper.

The Mass Clean Energy Center provides a program called the Home Modernization Navigator in two cities (Springfield and Lowell) in Massachusetts, with a goal of expanding the program statewide after the initial launch in these two cities. According to the program's website, "Massachusetts residents pursuing electrification, efficiency and renewable energy projects must navigate a complex landscape of programs and incentives. Additionally, many of these programs have historically underserved renters, low- and moderate-income residents, and

non-native English speakers. Residents need customized, ongoing support to help them navigate these programs based on their unique interests and needs.” The initial focus of the program is underserved groups such as renters, low- and moderate-income residents, and Environmental Justice populations. The program provides “decarbonization support on technical questions and helps customers navigate available incentives and financing.” (Mass Clean Energy Center, 2026).

Vermont is currently exploring a statewide energy navigator program, based in part on the success and popularity of a local program provided by the Climate Economy Action Center of Addison County, a nonprofit organization. (Kampner, 2026). Illinois is also exploring a statewide energy “hub,” which may include an online portal and may also include navigation services for residential and commercial building owners.

Additional Financing Options

Even with the combination of federal, state, local, and utility funds, some funding gaps remain for the most comprehensive projects, keeping these critical and cost saving projects out of reach for many income-eligible homeowners or property owners. A recent analysis focused on funding gaps for income-eligible properties and modeled the costs and savings for both full and partial electrification (Klug and Greco, 2025). This analysis included several key findings and recommendations that are relevant for program implementers:

- Even with HOMES and HEAR incentives, funding gaps remained for the income-eligible projects and these gaps ranged from 13% to 49% of the project cost.
- Annual energy cost savings could be used to reasonably fund a loan to close the funding gap.
- Adding solar to the project greatly increases the expected energy savings, and those savings can be leveraged to fund other measures such as heat pumps.
- Eliminating the incentives and rebates made most projects financially infeasible for income-eligible homeowners.

Regarding the third bullet above, either rooftop solar or community solar could be included in order to improve the savings of projects. However, rooftop solar provides deeper savings and is typically preferred. In one example of this approach, Elevate has been working on a project in Michigan with a Tribe to retrofit approximately 145 housing units to include full electrification (in most cases) and rooftop solar. The project is funded by a Climate Pollution Reduction Grant from the U.S. EPA and also leverages HEAR rebates and tax credits. Some of the energy navigator programs discussed in this paper also incorporate rooftop solar incentives to help maximize the energy cost savings. The strategy of combining rooftop solar with other upgrades can be especially helpful in the case of electrification of a home, as the electricity production from the solar panels help offset any increased costs from electrification.

Importantly, one key recommendation is for loan providers to develop loans based on the expected energy cost savings; at a reasonable interest rate of 6%, these loans were judged to be achievable for income-eligible households, including having a 20% holdback or reserve.

The 20% holdback is essentially a requirement that the project have a 20% minimum threshold for savings. For example, if the participant’s previous electric bill is \$1,000 per year, the project should reduce that bill to \$800 per year or less.

There are several reasons for the recommended minimum savings threshold of 20%. First of all, modeled energy savings can vary from actual savings due to changes in weather patterns (such as an extremely hot summer or an extremely cold winter) and also variability in solar panel production. In addition, the addition of rooftop solar panels often means that participants can no longer participate in budget billing, in which the utility averages out the cost of the energy bill over the course of the year, and standardizes the amount charged to the participant each month. Budget billing reduces peaks and valleys of utility bills, and without budget billing, participants can sometimes have trouble paying higher utility bills if there is a peak. The 20% minimum savings requirement also helps to address this challenge.

Lowering the interest rate below 6% increases the range of fundable projects even further. Some states and utilities are already offering low interest or zero interest loans to help fund energy efficiency improvements. Atlantic City Electric, a New Jersey-based utility, offers energy efficiency rebates in combination with a 0% interest loan. Projects are eligible for loans (based on certain limitations) if they qualify for the rebates. The utility ratepayer funds cover all the project interest, so the customer receives the 0% interest loan, while private capital is used for the loan capital. The financing program is operated by the National Energy Improvement Fund (Brown, 2026).

Conclusion

Energy efficiency, weatherization, decarbonization, and solar/storage programs may all have similar goals, such as reducing energy use, lowering energy bills, and decarbonizing residential buildings, but these types of programs will never have uniform requirements. At the same time, performing comprehensive retrofits that cover weatherization, other energy efficiency measures, electrification, solar, and energy storage can be more impactful to reducing energy costs and reaching climate goals than only installing one set of measures.

Developing programs with braiding in mind can allow program implementers to combine funding sources in order to deliver more comprehensive retrofits. In cases where the complexity is high due to the number of programs and/or measures being braided, developing a navigator program to assist participants in braiding the sources together can have much improved results. Even when funding gaps still exist, offering loans at reasonable rates based on the expected energy savings, or using funding sources to offer low-interest or zero-interest loans can help make more projects financially feasible.

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