

# Addressing Contractor Challenges to Participation in Building Energy Upgrade Programs

Monica Guevara, Emerald Cities Collaborative

Melissa Robson, Elevate

Michelle Becker, Elevate



## Introduction

This document aims to help building energy upgrade program planners and administrators create an environment in which contractors can thrive and utilize their skills for energy efficiency projects. By providing resources and examples of contractor support options, this resource is intended to be beneficial to local governments, nonprofits, and for-profits working with contractors on energy efficiency projects.

Building energy upgrade programs and projects often rely on local construction trade contractors such as heating, ventilation, and air conditioning (HVAC) technicians, weatherization installers, and electricians. As local governments, utilities, coalitions, and others launch and expand programs, they may need to support firms to ensure enough contractors are available to meet demand and do quality work. Table 1 outlines common challenges contractors face in growing and developing their businesses to meet contracting demands, and highlights support opportunities to address these challenges.

**Table 1: Common contractor challenges and potential support**

Challenge	Contractor support
<a href="#"><u>Access to capital</u></a>	<ul style="list-style-type: none"> <li>• Bridge loans</li> <li>• Lines of credit</li> <li>• Term loans / mobilization funds</li> <li>• Advance payments / advances</li> <li>• Green banks</li> <li>• Shared ownership models</li> </ul>
<a href="#"><u>Finding and affording additional insurance &amp; bonding</u></a>	<ul style="list-style-type: none"> <li>• Insurance and bonding education</li> <li>• Insurance and bonding partnerships</li> <li>• Wrap-up insurance: owner-controlled insurance program / contractor-controlled insurance program</li> </ul>
<a href="#"><u>Connecting building upgrade programs and contractors</u></a>	<ul style="list-style-type: none"> <li>• Contractor networks</li> <li>• Accelerators, incubators, mentorship models</li> <li>• Contractor finder tool</li> </ul>
<a href="#"><u>Administrative capacity</u></a>	<ul style="list-style-type: none"> <li>• Streamlined program paperwork and requirements</li> <li>• Business operational support programs</li> <li>• Technology solutions</li> <li>• Shared administrative services</li> <li>• Publicly available contractor resources</li> </ul>
<a href="#"><u>Access to technical training</u></a>	<ul style="list-style-type: none"> <li>• Training</li> <li>• Certifications</li> <li>• Vetted training and certification resources</li> <li>• Local partnership options</li> <li>• Leveraging training within contractor networks</li> </ul>
<a href="#"><u>Technology adoption</u></a>	<ul style="list-style-type: none"> <li>• Publicly available resources directed toward contractor and consumer education</li> <li>• Reduce contractor risk through incentives</li> <li>• Leveraging distributors and manufacturers as partners</li> </ul>

Support opportunities are covered in depth in the following pages. Each section outlines the challenges and organizes the types of support options available on a spectrum of light to intensive interventions. The light-touch interventions are characterized by smaller budgets and less staffing required to launch. Intensive-touch interventions typically require larger budgets and more staff time, and the impact is typically amplified through partnership.

A glossary is provided at the end of the document.

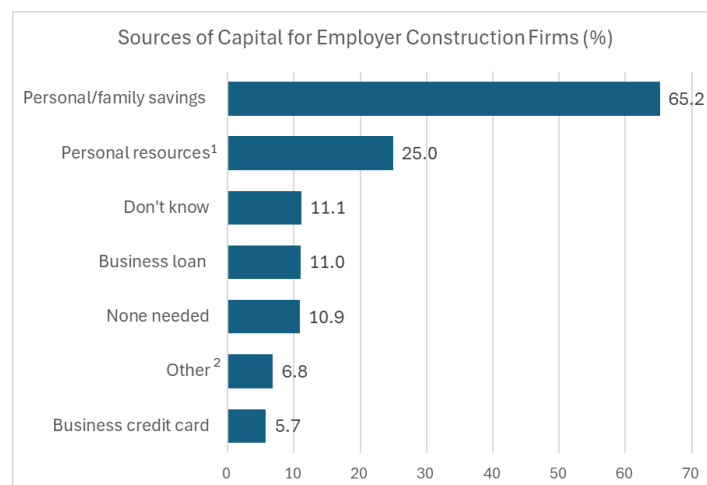
# Access to capital

Challenge	Contractor support
Limited upfront capital leads to slower growth rates and the inability to mobilize on larger contracts.	<ul style="list-style-type: none"><li>• Bridge loans</li><li>• Lines of credit</li><li>• Term loans / mobilization funds</li><li>• Advance payments / advances</li><li>• Green banks</li><li>• Shared ownership models</li></ul>

Access to capital is frequently cited as one of the biggest obstacles to growth for contractors. Lenders may view construction businesses—and, in particular, small construction businesses—as high risk due to revenue fluctuations, potential for project delays, cost overruns, and market fluctuations. Financing entities can be hesitant to provide small business loans to construction businesses, resulting in limited sources of capital and scale for this vital sector. Opportunities to support the growth and capacity of contractors by enhancing their access to funding are outlined in this section.

Optimal funding for construction firms usually includes start-up equity, term loans to fund equipment, and a line of credit to fund working capital needs. As illustrated in figure 1, the majority of construction firms fund their business start-up through the owner’s personal or family savings, highlighting the need for more opportunities for access to capital in the construction industry.

**Figure 1: Sources of capital for employer construction firms**



Source: [2016 US Census Annual Social and Economic Supplement](#)

1. Includes personal credit cards, personal assets, and home equity loans.
2. Includes grants, venture capital, government loans, government-guaranteed business loans, and other sources of capital.

Program administrators can support access to capital with a broad range of interventions. Light-touch models include partnering with local lenders or financial advisors; more intensive solutions could include launching financing products for contractors. Below is an example; additional approaches can be found in Appendix A.

#### **Financing solution example: Elevate Line of Credit**

The [Elevate Line of Credit \(ELOC\)](#) provides capital access and ongoing coaching to help small business contractors get the upfront capital they need to take on bigger jobs and strengthen business operations. Launched in 2024, ELOC is a pilot program administered by Elevate, currently focused on serving contractors in the Chicago area.

ELOC provides one-year, low-interest loans up to \$50,000 for renewable energy, energy efficiency, and home health and safety projects performed by small business contractors. ELOC is designed to help contractors overcome the challenge of covering upfront material and labor costs for energy efficiency and renewable energy projects, especially when payments are delayed and traditional financing is out of reach. Traditional financing may be out of reach for contractors who do not meet minimum credit score requirements, collateral minimums, or are dissuaded by a perception of onerous application requirements that often involve financial documents. The ELOC program provides access to capital for small business contractors that have at least a few years of experience in the industry, a good pipeline of projects that position them for growth, and an interest and commitment to improving their business operations.

Both pre- and post-loan technical assistance is provided to the contractors to support their financial readiness and assist them as they prepare application materials. Once contractors are approved for the ELOC, they also commit to monthly sessions to improve their back-office operations. At the end of the one-year period, contractors will have gained experience with a line of credit, strengthened business operations, and have financial documents they can use to apply for more traditional sources of capital.

Types of lending institutions vary significantly in their approach to lending. Banks often have the most rigorous criteria while credit unions and local lenders can be more flexible. Community Development Financial Institutions (CDFIs) are community-based lenders that typically have more flexible funding criteria and have a mission to assist businesses operating in distressed communities (learn more on the [U.S. Treasury program page](#)). Another potential financing resource is green banks. Green banks are public, quasi-public, or nonprofit financing entities that leverage public and private capital to pursue goals for energy efficiency and other projects that reduce emissions. A list of green banks can be found on the [U.S. Environmental Protection Agency](#) website or on the [Coalition for Green Capital](#) website.

## Considerations for next steps

The table below provides suggestions for light, medium, and intensive resources and solutions to help contractors with access to capital. Directly supporting contractors with access to capital through a loan or equity fund requires significant funding and program staffing resources. If resources are limited, options in the “resource light” section may be preferable, such as partnering or creating a resource hub. Establishing financing incentives and products may be more viable in markets with more robust contractor networks and increased resources.

Resource light	Resource medium	Resource intensive
<ul style="list-style-type: none"><li>• Partner with <a href="#">Small Business Administration (SBA)</a> local lenders or financial advisors</li><li>• Create or share a financing resource hub for contractors</li></ul>	<ul style="list-style-type: none"><li>• Provide funding for financial advisors to offer guidance to contractors seeking capital</li><li>• Provide incentives to local lenders such as lending guarantees, lending insurance, or loan loss reserves</li><li>• Stipulate prompt pay requirements for general contractors (GCs) and their subcontractors</li></ul>	<ul style="list-style-type: none"><li>• Provide funding to establish a loan or equity fund for contractors</li><li>• Provide funding to support the establishment of contractor worker cooperatives or joint ventures</li></ul>

# Finding and affording insurance and bonding

Challenge	Contractor support
Increased insurance and bonding requirements may increase the cost of mobilization and decrease profitability; this barrier is typically encountered on larger projects or public works contracts.	<ul style="list-style-type: none"><li>• Insurance and bonding education</li><li>• Insurance and bonding partnerships</li><li>• Wrap-up insurance: owner-controlled or contractor-controlled insurance program</li></ul>

Risks associated with construction projects include accidental property damage, injuries, lack of performance, faulty workmanship, and more. To mitigate these risks, insurance coverage and bonding are often required for contractors to participate in construction projects. Larger contracts and projects may require increased insurance coverage and bonding requirements. These increased requirements can be more expensive to comply with, creating a barrier for smaller firms that may not have the capital to afford increased premiums.

**Insurance and bonding education** supports small business contractors in preparedness for larger projects. Clear communication of specific insurance and bonding requirements is a good first step to set contractors up for success in finding the right insurance and bonding options.

The most common requests of contractors are a certificate of liability recognizing the project owner as an additional insured on the contractor's policy, and an endorsement ([explanation from Farmer Brown Insurance](#)). This protects the project owner from liability stemming from a contractor's work. Providing examples of the exact wording desired on the endorsement and the precise project owner's name can alleviate confusion and administrative delays. For example, Sonoma County, California, provides visual samples of both an [additional insured](#) and [certificate of liability](#).

## **Insurance and bonding education example: New York City's Bond Readiness Program**

New York City's Department of Small Business Services offers a [Bond Readiness Program](#). This 12-session program for construction firms includes education, training, and financial management guidance. Participants are also connected with a network of surety companies, which provide bonds that guarantee completion of the work of the small business to its customers. The intent of the program is to help construction firms obtain surety bonds and increase their bond capacity in order to take on New York City construction projects.

**Insurance and bonding partnerships** - Partnering with an insurer or bonding organization specialized in working with contractors can help create referral avenues for contractors to connect with reliable vendors, education opportunities, or specialized training in insurance and bonding. Examples of potential partners include [The Viti Companies](#) and [Merriwether & Williams Insurance Services](#).

## Considerations for next steps

Resource light	Resource medium	Resource intensive
<ul style="list-style-type: none"> <li>• Host a post-award meeting to discuss contractor insurance expectations and requirements</li> <li>• Provide example language and forms for contractors to use when requesting documents from their insurer or bond issuer</li> <li>• Provide examples of the insurance documents that contractors are required to have, such as <b>additional insured</b> endorsements (<a href="#">explanation of additional insured from Procore</a>)</li> <li>• Provide an insurance and bonding contact person for follow-up questions</li> <li>• Share existing insurance and bonding educational resources, such as the <a href="#">Green Workforce Connect</a> guide to insurance</li> </ul>	<ul style="list-style-type: none"> <li>• Create insurance and bonding educational resources</li> <li>• Partner with and fund insurance and bonding entities to provide contractors with technical assistance and education</li> </ul>	<ul style="list-style-type: none"> <li>• Create insurance and bonding educational courses or programs</li> <li>• Offer wrap-up insurance such as an owner-controlled insurance program or contractor-controlled insurance program</li> </ul>

### Wrap-up insurance

A more hands-on intervention is the project or program owner offering an **owner-controlled insurance program (OCIP)** or requiring the general contractor to offer a **contractor-controlled insurance program (CCIP)**. Both are a type of “wrap-up” insurance where the project owner or contractor purchases a single insurance policy to cover the owner, GC, and subcontractors, resulting in consistent insurance protections across multiple contractors. Often there are cost savings to the subcontractors due to purchasing insurance in bulk, but an added administrative burden to the owner or GC to enroll each subcontractor on the project. This type of insurance is limited to larger projects and is often only available for projects or programs that are \$25 million or greater in aggregate value. Examples of an OCIP in action include the [Federal Highway Administration](#) and [Los Angeles United School District](#).

## Connecting building upgrade programs and contractors

Challenge	Contractor support
Contractors may not know of opportunities to participate in upgrade programs or be connected to other contractors to share information.	<ul style="list-style-type: none"><li>• Contractor networks</li><li>• Accelerators, incubators, and mentorship models</li><li>• Development of a contractor finder tool</li></ul>

**Contractor networks** can provide an opportunity to train groups of contractors on the desired technologies and administrative requirements associated with a building upgrade program.

Contractor networks:

- Provide a mechanism for administrators to communicate information and resources to contractors.
- Provide customers with a way to identify vetted and qualified contractors.
- Connect contractors to quality leads.
- Provide a platform for contractors to share lessons learned and best practices.

Often, utilities and other entities develop contractor networks for their programs to serve as a connector between the customers and contractors who will complete the energy efficiency work. Examples include [Efficiency Maine Qualified Partners](#), [MassSave](#), [Air Source Heat Pump Collaborative](#), [Illinois Shines Approved Vendors](#), and [California Energy Connection](#).

To encourage contractor participation, it's best if the contractor network vetting process is simple and transparent. Consider the following when designing contractor qualification requirements:

- Aligning contractor qualifications with industry standards, including local licensing and insurance requirements, which reduces unnecessary barriers to entry while ensuring contractors are qualified to perform work ([local licensing explanation from Service Titan](#)).
- Communicating program rules, relevant training, and resources. Some contractor networks require orientation and annual training that outlines the requirements, processes, and benefits for participating.
- A contractor agreement or participation agreement (see slide 29 [here](#)) can outline program requirements, define roles and responsibilities, outline performance expectations, and provide a mechanism to revoke participation if standards are not met.
- Feedback loops create an avenue to learn about issues contractors or customers may face.



- Quality assurance measures can ensure that the contractor network delivers satisfactory work and that customers have a positive experience. For example, the Pacific Northwest National Laboratory's (PNNL's) and Department of Energy's (DOE's) [Quality Install Tool](#) expedites the process of documenting installation quality for residential upgrade measures.
- Requirements can help projects meet their diversity goals by attracting and building capacity among firms owned by minorities, women, veterans, and disadvantaged individuals.

Benefits that can increase contractor participation include access to incentives for their customers, visibility that drives customer leads, and resources to support customer acquisition, such as marketing materials ([examples from Bonneville Power Administration](#)). For deeper support, see the "Access to technical training" and "Administrative capacity" sections of this resource.

To further drive contractor participation, proactive business development models can be implemented to support contractors facing common barriers to participation. Examples include cohort-based learning models such as **accelerators**, **incubators**, and **mentor-protégé** programs. Research<sup>1</sup> suggests that benefits of a cohort-based learning model may include:

- Increased accountability
- Professional connections and opportunities for collaboration
- Reduced isolation, which is especially important for small and emerging businesses
- Accelerated and real-time learning
- Greater strategic thinking

### Examples of the accelerator model

Using a cohort-style model, contractor accelerators can range from a few weeks to months-long programs designed to accelerate the growth and capability of contractors by focusing on common contractor challenges. Examples include [Elevate's Contractor Accelerators](#) and [Emerald Cities Collaborative's E-Contractor Academy](#), which provide business development and technology education. Both host programming across the United States.

For additional guidance on developing a contractor accelerator program, see the National Laboratory of the Rockies' (formerly known as the National Renewable Energy Laboratory) [Community Toolkit for Designing and Implementing a Contractor Accelerator Program](#).

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<sup>1</sup> Oldham, Todd. 2017. [The impact of a cohort-based learning model on student success within vocational technical certificates at a community college](#) (Doctoral dissertation, Northeastern University).

### **Example of mentor-protégé model: Illinois Shines Mentorship Program**

Illinois Shines is administered by the Illinois Power Agency, an independent state government agency. The [Illinois Shines Mentorship Program](#) is one example of a model that successfully engaged and supported small businesses. Twelve contractors from the Illinois Shines Approved Vendor (AV) network were selected for the Mentorship Pilot cohort to participate in a training series and option to attend one-on-one mentorship sessions with more experienced contractors already participating in the program.

The training equips less experienced AVs with the knowledge and skills to successfully participate in the [Illinois Shines Program](#) and features presentations on program requirements, application submission processes and procedures, marketing best practices, risk mitigation, and additional program resources. Following a successful pilot, the program was expanded, and subsequent post-program participant survey responses illustrate high levels of engagement and satisfaction, which is detailed in the [Mentorship Program Final Report](#). The cohort-based mentorship model serves as an effective mechanism for contractors to share resources and information that supports program participation, in turn strengthening the network of vetted and prepared contractors available to customers.

Creating a contractor network can also benefit customers by creating a mechanism for finding contractors qualified to complete their upgrade. Administrators can ensure contractor networks are reflective of the communities that the program serves by recruiting underrepresented contractors. To make it easy for customers to identify contractors that have been vetted by the building upgrade program, it is helpful to create an online, customer-facing contractor finder tool ([example from Energy Trust of Oregon](#)). To ensure this tool is effective:

- Create and regularly update contractor profiles that include information such as business name, contact information, services provided, regions serviced, languages spoken, certifications (e.g., Disadvantaged Business Enterprise, Minority Business Enterprise, Woman Business Enterprise, etc.), and financing offered.
- Design for an easy, user-friendly experience by including filters (e.g., location, services provided, etc.), search functionality, and a user-friendly interface on mobile and desktop systems.

To further support customers with projects that require more than one trade, it is important to ensure teams of contractors are prepared to take on whole-building retrofit projects. Administrators can play a role by providing program navigator or matchmaking services to support the formation of contractor partnerships.

## Considerations for next steps

Resource light	Resource medium	Resource intensive
Research contractor networks and contractor support programs in your area to identify potential partnerships.	Align program requirements and contractor qualifications as much as possible with surrounding local and state programs.	Consider developing or supporting cohort-style programs for small contractors, such as the accelerator, incubator, or mentorship examples above.

The National Laboratory of the Rockies (formerly known as the National Renewable Energy Laboratory) operates the Building Business Network, which provides technical assistance to entities supporting contractors in energy efficiency and high-performance buildings. An example of its technical assistance work is available in this [presentation](#), and the Building Business Network can be reached at [B-Biz@nrel.gov](mailto:B-Biz@nrel.gov).

### Potential partners

- Local utilities
- Local governments
- Weatherization Assistance Programs (WAPs)
- Industry associations
- Chambers of commerce
- Business development agencies
- Local nonprofit organizations

# Administrative Capacity

Challenge	Contractor support
Limited administrative capacity can inhibit growth or the ability to take on larger projects.	<ul style="list-style-type: none"><li>• Streamlined program paperwork and requirements</li><li>• Business operational support programs</li><li>• Technology solutions</li><li>• Shared administrative services</li><li>• Publicly available contractor resources</li></ul>

Limited administrative capacity can inhibit contractors' growth or ability to take on larger projects. Streamlining administrative processes in upgrade programs can increase the quantity of contractors able to take on larger and simultaneous projects.

**Streamlined program paperwork and requirements** can reduce barriers for contractors with limited administrative capacity to participate in programs. Some steps that program administrators can take to reduce administrative burden on contractors include:

- Using simple and clear instructions for supporting documentation and program applications.
- Creating multiple methods for completing and submitting forms and documents, including hard copy and digital options.
- Providing information and paperwork in contractors' preferred language(s). Ensure that translated materials are high-quality and vetted.
- Aligning paperwork and requirements with industry standards or other programs in the region.
- Providing sufficient staffing to guide contractors through paperwork and inquiries.

Programs can also provide in-person, virtual, and on-demand guidance on how to navigate requirements and complete paperwork. To support successful contractor participation, programs should provide guidance (e.g., demonstrations, templates, and completed examples) on the following processes, if applicable:

- Completing incentive paperwork
- Expectations and requirements for responding to requests for proposals (RFPs)
- Tracking and submitting wage compliance documentation
- Required supplemental project documentation (e.g., specifications manual, quality control checklists, home energy assessments, or technical documentation such as a [Manual J](#))
- Business documentation (e.g., certificate of insurance [COI] with additional insurance) and invoicing requirements (e.g., W9)

Beyond basic programmatic administrative support, business operational support programs, office and communications technologies, and publicly available contractor resources such as templates can support the administrative capacity of small and emerging contractors.

#### **Example of business operational support program: Illinois Contractor Accelerator Program**

[Elevate's Illinois Contractor Accelerator Program \(ICA\)](#) focuses on building administrative capacity and preparing contractors historically underrepresented in the clean energy economy to work on energy efficiency and renewable energy projects. The program offers educational workshops, networking events, and business development services.

First, participating contractors develop a growth plan to identify their business needs and goals, which are addressed through a variety of services offered by local providers. Services include bonding capacity and insurance, estimating and bidding, business certification support, branding and website design, and legal and human resources consulting services. Tailored guidance helps to increase businesses' operational efficiency and capacity, which is key to achieving business growth goals and increasing their ability to take on more projects.

**Small business incubator** spaces such as [Tabor 100](#) offer shared office space, virtual office services, and training for contractors to build administrative capacity and reduce administrative burden.

**Technology** can reduce the cost of performing certain administrative tasks through automation as opposed to hiring additional personnel. Examples include virtual office assistants, outsourcing accounting/marketing, customer relationship management systems or databases, automated phone systems, and AI customer response systems. Most of these options are available on a subscription basis and cost may be a barrier to small contractors. Administrators may consider providing business development stipends for certain eligible expenses to support small businesses scaling up.

**Shared administrative services** is another way for contractors to benefit from administrative support while distributing the cost among many. An example of this type of service for contractors is [Builders Avenue](#).

Additionally, publicly available contractor resources, such as templates for commonly needed documents are outlined in Appendix B: Administrative Support Resource Examples.

## Considerations for next steps

Resource light	Resource medium	Resource intensive
<ul style="list-style-type: none"><li>• Streamline application and incentive paperwork</li><li>• Align with other contractor network requirements</li><li>• Use multiple methods for document submission and instructions</li></ul>	<ul style="list-style-type: none"><li>• Provide hands-on support with paperwork</li><li>• Gather and share administrative resources with contractors</li><li>• Partner with local organizations that provide administrative support or technical assistance</li></ul>	<ul style="list-style-type: none"><li>• Create or fund programs or resources that support contractors' administrative capacity</li></ul>

# Access to technical training

Challenge	Contractor support
Contractors may not be well versed in the most up-to-date equipment and retrofit measures, thus limiting their ability to perform or bid on these projects.	<ul style="list-style-type: none"><li>• Training</li><li>• Certifications</li><li>• Vetted training and certification resources</li><li>• Local partnership options</li></ul>

Building materials and systems are constantly evolving to provide more comfort, energy savings, and adaptability. To leverage these new building technologies, contractors may seek support to understand the options available, build the technical skills to do quality installations, and ensure a good customer experience.

However, contractors face several barriers to finding appropriate training and certifications. These barriers may include lack of awareness, cost, overall time commitment, cost benefit of training versus revenue-generating activities, and distance to the training location. While licensure for certain key trades in energy efficiency, such as electrical and plumbing, are typically regulated by the local government and have clear pathways, they also often require several years of apprenticeship to complete.

Other areas of energy efficiency are not as clear and attempting to parse out quality trainings and certifications can be challenging. **Training** is offered by a patchwork of local entities including:

- Trade unions
- Non-union trade entities
- Equipment manufacturers
- Equipment distributors
- Utilities
- Trade schools and community colleges
- Weatherization implementers
- Industry trade organizations
- Nonprofit organizations

**Certifications** often involve a cost to obtain and frequently a cost to maintain. The benefit to the contractor is typically additional credibility to customers signaling a level of quality. However, this credibility is only possible if the credential is widely recognized and results in customers being swayed by the credential.

The [Energy Skilled recognition](#) site is an excellent resource for **vett ed certifications and trainings**. Some contractor networks offer free or subsidized training opportunities to contractors participating in their programs. Examples of local entities offering training and certification to their workforce are [Efficiency Maine](#) and [Illinois Solar for All](#). Contractors with one or more employees that have completed an Energy Skilled recognized training or certification also benefit from Google search priority.

**Local partnerships** are a valuable tool to leverage for technical training. Partnering with other energy efficiency programs and coalescing on preferred trainings or certifications can minimize duplication of efforts and redundancy in training for contractors. It can also help minimize costs for any individual partner organization. Partnering with workforce boards may help subsidize the cost of upskilling workers.

## Considerations for next steps

Doing a scan of trainings and certifications available can help provide a landscape of local offerings. Meeting with other energy efficiency program providers to agree on preferred and vetted trainings or certifications can result in maximizing economies of scale in training offerings.

Resource light	Resource medium	Resource intensive
<ul style="list-style-type: none"><li>• Connect providers to desired certifications</li><li>• Subsidize the cost of contractors obtaining the desired certifications</li><li>• Consider online, virtual reality, or asynchronous methods of training</li></ul>	<ul style="list-style-type: none"><li>• Partner locally with training organizations or energy efficiency programs to provide technical training</li><li>• Co-sponsor technical trainings or certifications</li></ul>	<ul style="list-style-type: none"><li>• Sponsor technical training</li></ul>



# Contractor technology adoption

Challenge	Contractor support
Contractors may be reluctant to adopt new technologies.	<ul style="list-style-type: none"><li>• Publicly available resources directed toward contractor and consumer education</li><li>• Reduce contractor risk through incentives</li><li>• Leveraging distributors and manufacturers as partners</li></ul>

Contractors are most comfortable using and promoting familiar technologies and equipment. Convincing contractors to shift technologies to something that may be new to them increases risk to the firm owners in the form of training expenses, customer dissatisfaction, and costly callbacks. All of these can impact the contractor's bottom line and make them reluctant to update their mode of operation.

Decreasing the risk or increasing the demand for these technologies can make the business case for the switch. Below are a few strategies that may prove helpful.

1. **Increase consumer demand through informed customers.** Informing consumers about high-performance technologies may increase overall demand and requests to contractors for those technologies. If the contractors notice an increase in requests for energy upgrades, they will be more likely to undertake training and offer new products and services. Story-based public relations campaigns, such as the Building Decarbonization Coalition's [The Switch Is On](#), can be impactful. Conversely, an informed contractor can also become an energy efficiency ambassador as they break down energy efficiency technologies at a homeowners' kitchen table. Leveraging the tips in the Access to Technical Training section can also help proliferate information and increase demand. Additionally, publicly available information such as [DOE's Building Science Education Solution Center](#) can provide easy leave-behinds and reputable resources for contractors.
2. **Reduce contractor risk through incentives.** Incentives provide a financial motivator to influence decisions. [Efficiency Maine](#) designed its incentive to offset any additional costs that the contractors would have by offering energy-efficient options. This incentive eliminated any hesitancy about offering energy efficiency options by eliminating the cost difference to contractors.
3. **Leverage distributors and manufacturers as partners.** Many equipment manufacturers offer designations and incentives that differentiate contractors in the marketplace. Examples include the [Mitsubishi Diamond Contractor](#) program and [Daikin Comfort Pro Contractors](#). Contractors must sell a certain number of heat pumps and undergo training

to be eligible. Certified contractors can benefit from extended warranties and discounts. Some programs have coordinated bulk purchasing to reduce costs.

### **Midwest Heating & Cooling Collaborative**

The [Midwest Heating & Cooling Collaborative](#) addresses technology adoption of high-performance HVAC technology to support market transformation. The Collaborative shares information, resources, and best practices and brings together industry stakeholders, including contractors, to understand and address the barriers to technology adoption.

## **Considerations for next steps**

<b>Resource light</b>	<b>Resource medium</b>	<b>Resource intensive</b>
<ul style="list-style-type: none"><li>Assess the current state by examining the contractor marketplace for adoption of high-performance technologies. This can be done via contractor surveys, focus groups, or inquiring with local industry and trade groups.</li></ul>	<ul style="list-style-type: none"><li>Conduct a landscape or gap analysis to assess the reach and effectiveness of local partners, nonprofit organizations, distributors, manufacturers, and other relevant stakeholders.</li></ul>	<ul style="list-style-type: none"><li>Expand partnerships with other local entities to create or adapt contractor education opportunities to be specific to your program.</li></ul>

## Conclusion

Program administrators play an essential role in designing and implementing programs that are easy for contractors to navigate. Program design that addresses the barriers that small construction businesses face, as well as additional support offerings can further ensure that these contractors can participate and be energy efficiency ambassadors. Depending on funding availability and the availability of local resources, administrators can consider addressing contractor challenges through light, medium, or intensive measures. Leveraging partnerships wherever possible can boost program impact and uptake.

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# Appendix A

## Types of Capital

The chart below lists different types of funding mechanisms available. We have categorized them broadly into debt, equity, and grants. Debt instruments are those where repayment is expected often with fees or interest charges often correlated with the risk level. Equity is characterized by an investment in a business in exchange for a percentage of ownership of the business and return on the investment is correlated with the profitability of the business. Grants are typically characterized by an investment into the business with no expectation of repayment.

Type of funding	Funding category	Description & examples
Bridge loans / mobilization loans	Debt	A short-term loan designed to bridge financing gaps or gaps in cash flow. Similarly, a mobilization loan provides upfront funding to contractors to be able to pay for initial outlays to start a project and is typically paid back with cash flow from the project.
Line of credit	Debt	A line of credit offers a predetermined limit of funds that can be used, revolved, and repaid over time. Often the full interest is only charged on the amount used. Most banks, credit unions, and other depository institutions offer business lines of credit.
Term loans	Debt	Term loans are the most common form of loan available to businesses, characterized by a lump sum being given to the borrower at the beginning of the term and monthly payments occurring over a period of time to repay the loan in full. Interest rates can be fixed or variable. Some <a href="#">State Small Business Credit Initiative (SSBCI)</a> programs leverage their funds to reduce the interest rates for certain borrowers, provide <a href="#">cash as collateral</a> , or provide <a href="#">guarantees</a> to lenders to encourage more loan approvals. There are also <a href="#">Community Development Financial Institutions (CDFIs)</a> that provide more flexible forms of financing to small businesses.
Revenue-based loans	Debt	These term loans base their repayment on the business' revenue levels. They offer a more flexible form of repayment and benefit businesses that experience cash flow fluctuations. An example is a partnership between <a href="#">Washington State's Department of Commerce</a> , the Grow America Fund, and Denkyem to offer revenue-based loans to small businesses.
Advance payments / advances	Debt	Contracts can be structured so that small contractors can access an initial deposit to begin work from the project owner or prime. Advance payments are sometimes only offered to

Type of funding	Funding category	Description & examples
Contract-based loans / purchase order financing	Debt	<p>contractors that have participated in training, are a part of a network, or have done similar project work.</p> <p>This type of loan provides funds for the initial costs of a particular project, and repayment is structured to happen from the cash flow of the project as opposed to the whole business operation. Examples include <a href="#">NYC Contract Financing Loan Fund</a>.</p>
Shared ownership models	Equity	<p>Cooperative ownership or employee-owned businesses may be another way of raising capital, diversifying risk, and distributing wealth. Examples include <a href="#">Amicus Solar</a> and <a href="#">Sustainergy</a>. Resources for co-op development include the <a href="#">Northwest Cooperative Development Center</a> and <a href="#">Center for Family Life</a>.</p>
Workforce grants or incentives	Grants	<p>Small businesses are the largest creator of jobs in the United States. Workforce boards often have programs that incentivize hiring, especially for applicants that may be using public safety net programs. Some programs may specifically target energy efficient jobs such as the <a href="#">King County JumpStart</a> program.</p>
Energy efficiency grants	Grants	<p>This is a type of grant that incentivizes certain business contributions toward energy efficiency or energy generation. Most grants have a competitive application process, often prioritizing energy savings or non-energy benefits. They can sometimes entail reporting or restrictions on the use of funds and often are very targeted. Examples include the <a href="#">Illinois Equitable Energy Future Grant Program</a>.</p>

# Appendix B

## Administrative Support Resource Examples

Administrative support resource	Notes
Interstate Renewable Energy Council (IREC) Green Workforce Connect	<p>Most of the resources below are also available in Spanish:</p> <ul style="list-style-type: none"><li>• <a href="#">Weatherization contractor guide to success</a></li><li>• <a href="#">Energy contractor employee handbook guide</a></li><li>• <a href="#">Energy contractor employee handbook template</a></li><li>• <a href="#">Templates and guides</a> – including a business plan template, financial statements, and accounting documents</li></ul>
Bonneville Power Administration (BPA) Comfort Ready Home	<p>Some of the resources below are also available in Spanish:</p> <ul style="list-style-type: none"><li>• <a href="#">Marketing toolkit</a> - includes template proposals, Google guide, ad guidance, and homeowner handouts</li><li>• <a href="#">Comfort Ready Home product guides</a></li></ul>

# Appendix C

## Glossary

Term	Description
Accelerator program	A business accelerator program helps small and emerging businesses grow through coaching, resources, training, and networking. A contractor accelerator program is designed for small construction businesses.
Contractor cooperatives or joint ventures	A worker cooperative is a business entity model where the workers own and control the business, sharing profits and decision-making collectively. A joint venture (JV) is a partnership where two or more contractors combine resources, capacity, and experience to undertake a project.
W/M/D/VBE Certification	Small businesses owned and controlled by minority, women, and socially and economically disadvantaged persons can be certified by federal, state and local governments. Many public works projects have inclusion goals that encourage contracting with small and disadvantaged firms. WBE = Women Business Enterprise. MBE = Minority Business Enterprise. DBE = Disadvantaged Business Enterprise. VBE = Veteran Business Enterprise.
Financing	Could include debt or equity infusions of capital into a business.
General contractor (GC) or prime contractor	Sometimes called a prime contractor, a general contractor is responsible for the day-to-day management of a construction project from beginning to end, coordination and supervision of subcontractors, suppliers, and labor, and communication of information to all parties involved.
Incubator program	A small business incubator is a program or organization that provides comprehensive business support services, which may include shared services, office space, and more in order to foster growth.
Lending guarantees, lending insurance, or loan loss reserves	A lending guarantee is a promise by a third party, or guarantor, to assume a borrower's debt obligation if the borrower defaults. Lending insurance products are designed to protect a lender's financial interests when they provide a loan. Loan loss reserves are funds set aside to cover future losses from uncollectible loans.
Mentor-protégé program	A mentor-protégé or mentorship program pairs new and emerging businesses with more established firms who provide guidance based on their experience.
Prompt pay policies	A prompt payment policy sets deadlines for when project owners, prime contractors, and subcontractors must pay for work performed on construction projects.
Program administrator	Entity administering a building energy upgrade program.
Small business coaching	Refers to the ecosystem of entities providing support, training, and one-on-one coaching to small businesses. Sometimes referred to as technical assistance. Examples include Small Business Development Centers (SBDCs), Women's Business Centers (WBC), Veterans Business Outreach Centers (VBOC), SCORE, Minority Business Development Agency (MBDA), APEX Accelerators, and other locally operated entities.