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NW DUCTLESS HEAT PUMP PROJECT

RECOMMENDED PRACTICES FOR A DUCTLESS HEAT PUMP PROGRAM:

COMMUNITY ORGANIZATIONS

Introduction:

A goal of the Northwest Ductless Heat Pump Project (NWDHPP) is to accelerate the adoption of ductless heat pumps as an alternative to electric resistance heating in residential applications by addressing market barriers.

In support of this goal, the Northwest Energy Efficiency Alliance (NEEA) identified community organizations as potential market transformation partners that can be a sustaining connector between the communities they serve, and the opportunity presented by ductless heat pump technology. This guide uses the term "community organization" to apply to any public or private nonprofit organization of demonstrated effectiveness that provides educational or related services to individuals in the community.

Some community organizations are well-positioned, through their interactions with their client populations, to identify homes that are good candidates for ductless systems with potential for high electric utility bill savings. Community organizations can act as strong market partners by providing referrals, educating their clients about the technology, aggregating residents for bulk purchases, and providing technical and skilled labor for installations, which may contribute to sustained adoption in the target market homes, as well as lowering installation and heating costs to the clients they serve.

To create this guide, the project team identified and contacted community organizations that have already incorporated ductless heat pumps into their services to learn from their experiences and to share lessons learned and recommended practices with utilities and other community organizations interested in offering ductless heat pumps in their communities.

APPROACH

The project team sought out community organizations in Idaho, Montana, Oregon, Washington, and beyond who have educated their constituencies about ductless mini-split technology and how to access ductless heat pumps for their homes. The community organizations interviewed do not have a primary or original mission that is explicitly focused on ductless heat pump installations. The team conducted in-depth interviews with four organizations.

ORGANIZATIONS INTERVIEWED

NeighborWorks of Grays Harbor County

The mission of NeighborWorks® is to develop partnerships in the community among residents, businesses, and the government to create safe and affordable housing opportunities for all residents of Grays Harbor County, Washington. NeighborWorks® makes this happen by combining program and financial resources with those of lenders, installers, landlords, other non-profits, and neighborhoods.

The NeighborWorks® ductless heat pump program provides free equipment and installation. All participants must fit NeighborWorks® definition of low income. NeighborWorks® installs ductless systems in houses occupied by both homeowners and renters if the person living in the house meets the program qualifications. Grays Harbor Public Utility Department asked NeighborWorks® to create the program and has paid for it each year.

- Years active with ductless heat pumps: since 2017
- Number of ductless heat pumps installed: approximately 200 per year in 2017 and 2018

Yakama Nation Housing Authority

The mission of the Yakama Nation Housing Authority is to provide safe, decent, affordable, and healthy housing for the families of the Yakama Nation.

Their ductless heat pump program provides free equipment and installation. The program began in 2015, and it installs only in affordable housing apartments owned by the Yakama Nation. In most of these residential units, the tribe pays for the electricity. The apartments are largely duplexes and fourplexes. The Yakama Nation Housing Authority operates like a Community Housing Assistance Program (CHAP) agency with ample staffing. They buy ductless systems in bulk and their staff installs the equipment. The Yakama Nation territory covers 2,186 square miles served by three different electric utilities: Pacific Power, Klickitat PUD, and Yakama Power. Klickitat PUD and Yakama Power are Bonneville Power Administration (BPA) utilities. The Yakama Nation Housing Authority operates the program using grants from the Department of Energy and BPA.

- Years active with ductless heat pumps: since 2015
- Number of ductless heat pumps installed: approximately 75 total

Community Action Team

The Community Action Team (C.A.T.) is a locally controlled, private, not-for-profit corporation serving Oregon's Columbia, Clatsop, and Tillamook counties. C.A.T.'s focus is to mobilize resources and address the needs of the economically disadvantaged. C.A.T. currently serves over 16,000 people annually. Their mission is to connect people with resources needed to become self-sufficient.

The C.A.T. ductless heat pump program provides free installation and ductless systems to low-income populations. They use a wide variety of funding sources including state dollars, utility dollars, and yearly grants. Two of their larger programs are the Emergency Heat Program and the Housing Rehabilitation Program. C.A.T. releases a request for proposals (RFPs) every other year and selects four to five installers so they can install in multiple counties and housing types.

- Years active with ductless heat pumps: since 2011
- Number of ductless heat pumps installed: 30-50 per year

Energize Rogue

Energize Rogue is a partnership of nonprofits, community organizations, and energy professionals who have teamed up to help make energy efficient upgrades simpler and more affordable. Led by Rogue Climate and Spark Northwest, Energize Rogue completed three limited-time group purchase campaigns for homes and businesses in Oregon's Josephine, Jackson, and Douglas counties to install ductless heat pumps at a discounted rate and reduce utility bills. Rogue Climate is a nonprofit with a mission to bring communities together for practical climate change solutions that result in clean energy, sustainable jobs, and a healthy environment. Spark Northwest is a regional nonprofit that accelerates the transition to clean energy one community at a time. Spark Northwest has partnered with community organizations to complete 24 similar group purchase campaigns since 2011. The Energize Rogue effort was made possible by a United Stated Department of Agriculture (USDA) Rural Business Development Grant to advance a clean energy economy in southern Oregon,

The group purchase was a community-driven campaign that engaged volunteers from each county to conduct outreach about the opportunity to save energy and money by installing ductless heat pumps. Information about the campaign was disseminated by email (using the Rogue Climate list), published news articles, and word of mouth. Interested parties attended local workshops. Energize Rogue also used local volunteers to help select a local installer through a competitive bidding process. A copy of their RFP is available through the NWDHPP.

- Years active with ductless heat pumps: 2017-2018
- Number of ductless heat pumps installed: 195 total as of 2018

MAKING THE CASE FOR DUCTLESS

The first step for a community organization is to clearly identify how ductless systems fit into the mission of their organization and gain approval from their governing body. There are many reasons for implementing a ductless heat pump program that revolve around helping their clients and helping the environment, including:

- **Monthly savings on energy bills**. A ductless system will heat homes for a fraction of the cost of electric-resistance furnaces via forced-air, baseboards, in-wall cadets, or ceiling heat. Ductless heat pumps can help a property owner or renter reduce monthly electricity bills by up to 50% in comparison. Advancement of ductless systems fit into a community organization's mission to help their clients with monthly bills in low-income communities. To build a strong case, an organization should calculate the likely savings and the return on investment.
- **Year-round comfort.** With ductless heat pumps, warm or cool air is distributed more efficiently and evenly than with electric-resistance heaters, making living areas more comfortable. For populations requiring greater temperature control and consistency, such as seniors or people with circulation or other health challenges, these systems can provide better temperature consistency and comfort than baseboard and other zonal heating options.
- **One system for both heating and cooling.** Ductless heat pump systems come with built-in cooling capabilities, providing occupants with air conditioning during summer months.
- **Easy, quick installation.** Ductless systems can be installed hassle-free, often in half a day, with no invasive ductwork installation required.
- **A healthier choice.** Lower heating costs has been shown to lead to occupants increasing the temperature on their thermostats, which can lead to improved health outcomes.
- **Environmental impact.** For organizations focused on serving environmental goals, ductless systems are a strong choice because they use less energy than most other electric heating and cooling technology.

RECOMMENDED PROGRAM STRUCTURE BEST PRACTICES

This section summarizes recommended practices based on community organization interviews in 2018. The best practices are available to any organization to guide the development and implementation of a ductless heat pump program for their community.

Getting Started

To begin planning a ductless heat pump program, the organization should assess the housing stock in their community along with their ability to recruit participants in a ductless offering. A ductless heat pump program will most benefit occupants of smaller and older electrically heated homes. Community organizations will need to decide if they can reach enough interested participants to justify a reduced-price bulk purchase or reduced-price installation. If the right housing stock exists and the organization can reach the occupants, the next step is to determine the scope of services and the level of support to provide to the constituency. Community organization ductless heat pump programs generally fall into one of two categories: *community organization funded programs* or *community organization arranged programs.*

Community organization funded programs are those that offer subsidized or free installations for qualified constituents. With a funded program, the community organization will need to decide if the organization will pay for all or part of the equipment and installation. Then, based on funding levels, the community organization will determine how many ductless systems can be installed within the funding period, typically one or two years.

A community organization arranged program assumes the participant will pay the costs of the program. In this type of program, the community organization will need to negotiate the price or installation of the equipment and educate their constituencies about the opportunity.

As community organizations continue to innovate and find new ways to serve their constituencies, new models for ductless heat pump programs will continue to emerge.

Strategic Alliances

While planning a new ductless heat pump program, the community organization should identify and leverage strategic alliances. Community organizations can create a successful program by leveraging alliances within the organization or with outside organizations, groups, or public entities in similar or related industries. Primary alliance candidates include local agencies and internal staff members who provide residential home services. The community organization should reach out to local utility efficiency program staff and ask about available services and support. Additionally, the community organization can identify any community advocates who share the ductless heat pump program's goals.

Why:

Creating strategic alliances with various agencies will support fulfilling program or organizational goals and expand the capacity of the program by saving resources and leveraging existing experts.

How:

Take stock of existing partnerships. Look to existing community alliances such as health organizations, Housing and Urban Development (HUD) officials, AmeriCorps, and environmental organizations to help find the right homes and interested occupants. Tap into skilled labor with in-house staff or volunteer pools to help with technical aspects of the program. Find out if any partner organizations have technical capabilities or funding that can combine with the community organization's existing capabilities.

Communicate regularly with all utilities or utility organizations to see what help is available. They may be able to customize a program or incentive to fit specific needs. Check to see if the local utility offers free training for in-house installers or if the utility has their own ductless system specialists.

Solicit help from local volunteers to raise awareness in neighborhoods and/or work with local environmental organizations with similar goals.

Use resources available through external stakeholders such as weatherization training programs to launch a ductless heat pump program, as they already have the structure and are already reaching households. Use federal housing qualification services to help qualify candidates. Utilize personnel from other departments such as case management, emergency management, weatherization, and similar programs to help find worthy candidates for installation.

Examples:

All community organizations interviewed had experience leveraging new and existing alliances. Here are some examples:

- One community organization works with the BPA to train their weatherization installers to put in ductless systems.
- One community organization works with a local health organization to help identify candidates by finding patients with breathing issues, chronic colds, or pneumonia. These candidates may be keeping their heat too low due to the high cost of heating and upgrading their heating system may improve their comfort with a ductless systems providing less expensive and more consistent heat. This community organization created a memorandum of understanding to document the relationship with the health care group and they communicate on a regular basis.

- One community organization has a salaried employee who is qualified to perform basic home repairs, carpentry, and weatherization. This technician can assess and prepare the homes for installations and bring costs down by reducing installer time on site.
- Another community organization uses their designated Housing and Urban Development (HUD) officer to prequalify low-income individuals for free ductless system installations. HUD already pays for an in-office person to provide financial education to homeowners. To become qualified for a free ductless system, the community organization requires the homeowner to go through HUD financial education training. This approach has a dual impact. It results in more homeowners receiving assistance through HUD and the ductless heat pump program finds qualified candidates.
- A community organization worked with a local grassroots clean energy group to find candidates for ductless heat pump installations. The climate change organization provided access to their email lists and assisted the community organization in reaching candidates interested in decreasing energy use.

Funding

Maximize funding from federal and state government, utilities, and other sources to install ductless heat pumps. Funding for ductless heat pump installations does not need to come directly from a program designed just for ductless system installations. Funding can come from many sources, and ductless systems can be installed as a part of other programs.

Why:

Funding from multiple sources allows an organization to install more heat pumps and reach more homes. Funding from many sources can also help serve multiple organization goals simultaneously and stretch their funding dollars further. There are existing federal and state programs designed to help homeowners and renters, and ductless heat pump programs should look to tap into these funds. Check with local utilities to see if they have programs that partner with or support community organizations. A ductless heat pump program can appropriately leverage funding targeted for health outcomes, poverty reduction, utility energy use reduction, and environmental impact.

How:

Consider emergency-heat funds, weatherization funds, utility rebates, custom utility assistance programs, health care funds, and greenhouse gas (GHG) emissions reduction funding as options. Cities and other government bodies are starting to invest in climate action plans that may include funding for efficient HVAC equipment.

Example:

- One community organization uses funding from one program to reach candidates, walk through the home, and begin discussions about their energy efficiency needs. Then, the community organization uses funding from multiple programs to make energy upgrades once they understand the needs of the occupant. This community organization does not have a program explicitly designated for ductless heat pumps, but they have installed approximately 25 ductless systems per year by combining funding from other programs and grants.

Participant Recruitment

Target Criteria

Create a clearly defined and measurable program goal that clarifies the purpose, the accomplishments, and what success will look like. Then use the goal to create the recruitment target criteria. If the goal of the program is to educate a specific geographic area about the benefits of ductless systems, the organization will have different target recruitment criteria than an organization with a goal to install a designated number of ductless systems for

lower income clients. Deciding the goals in advance and communicating them within the organization will avoid confusion later about what is most important. Knowing the goals of the program will help define the target audience and allow an organization to narrow their recruitment efforts.

Why:

Recruitment criteria can be vary greatly based on funding restrictions, scope of offer, and targeted client base or geographic area, for example. Without clear target criteria, a program could create too much interest or not enough interest. In either case, the program risks spending too much staff time and program dollars on recruitment.

How:

Carefully review funding source guidance to determine who may receive benefits and what restrictions apply to use of the funding.

To effectively recruit candidates to meet the program goals, create clear recruitment criteria. Identify the type of home (size, age, configuration, geographic area, type of existing heating or cooling) and type of occupant (renter, owner, low income, self-financing).

Ductless systems are flexible and work well in a variety of house configurations, but the greatest benefits in cost and comfort will come from narrowing the size, age, and heat type of the target homes. When determining which homes to target, it is helpful to understand the type of homes that are best suited for ductless systems. For example, ductless systems are ideal for replacing or supplementing baseboard, wall and ceiling heat, wood stoves, electric furnaces, electric plug-in space heaters, and propane or kerosene space heaters. A cost-effective solution for a small electrically heated home consists of a single-zone heat pump system serving the main area of the house, with existing electric baseboards remaining in bedrooms and bathrooms as supplemental heat.

Evaluate the organization's existing staff expertise and abilities and consider what scope of program the organization has the capacity to deliver. Determine how much funding is available and if the organization has enough staff and time to manage the marketing, recruitment, installation, and maintenance.

Establish a way to prioritize targets, such as smallest electrically heated homes or oldest heating system first, or another system of impact assessment.

Examples:

- One community organization initially targeted manufactured home parks to narrow the house type to small, one level, electrically heated homes. They install free ductless systems for low-income individuals and families within several counties. The organization has limited funds and staff time constraints. If their recruitment methods target too many candidates, the calls will overwhelm the organization. As a result, they carefully determine their target populations each year. They decide how many heat pump installations they can handle that year, then carefully recruit from their target populations, such as seniors, occupants with specific health issues, or narrowed geographic locations.
- One community organization decided to replace existing heat in apartments starting with the oldest first and completing 10-15 per year. The organization owns 400 apartments, which they hope to convert to electric heat pumps over time.
- Another community organization looks at houses as they arrive in their weatherization or heat assistance programs. The organization has a technician on staff that will check each house for appropriateness including size of house, number of stories, age of house, type of heating system, and outside condenser location. If the technician believes that a ductless system will work well in that home and they have funds available, the community organization will recommend and pay for the installation of a new ductless system.

Renters and Property Owners

A ductless heat pump program can target renters, property owners, or both. Programs that include renters may need to provide free or very low-cost ductless heat pump installations. It is unlikely that a renter will pay any part of a new heating system for a home they do not own. Property owners may not be willing or ready to make the investment required to update or improve the heating and cooling systems of their property.

Why:

Thirty to forty percent of the population of the Northwest live in rental housing. Including both renters and property owners in recruitment efforts could broaden the reach of the program. The recruitment process will be different for renters versus property owners. It can be more difficult and may take longer to recruit and install a ductless system into a rental property because it will involve recruiting both the renter and the property owner. Often, the renter is responsible for heating and cooling bills but has little to no control over the type of heating system in the home. This can be expensive for a renter or they may choose to live with colder spaces in the winter and/or a hot home in the summer to save money. The renter may be interested in a new ductless system, but the property owner may be unwilling to pay for it.

How:

Market the ductless heat pump concept to anyone that lives in a smaller, older, electrically heated home. Prepare the value proposition to address renters and property owners. When a renter shows interest in a ductless heat pump installation, know that it will be a two-step process. Get the renter engaged, visually inspect the house for compatibility with a ductless system, and then contact the property owner. Some property owners use property managers to respond to inquiries, and property issues from their renters, so the community organization may have to reach the property owner through the property manager or management firm. Explain the program and the benefits of a ductless system as a value to the property. Tell the owner that the heat pump should last for 20 years, will lower energy costs, provide more consistent heat, create happier renters, and will be easy to run and maintain. In addition, it will provide cooling that may not currently be available in the rental property.

To capture any of the rental market, a community organization may find success by partnering with low income funding agencies and using federal, state, local, and utility resources to reduce or eliminate the cost of a ductless system.

Example:

- One community organization was successful with renters by recruiting and screening the renter for income qualifications and then asking for the property owner's contact information. After the renter expressed interest and was prequalified, the community organization contacted the property owner, explained the benefits of ductless heat pumps, and offered to pay the full cost of equipment and installation. The installed ductless heat pump became a permanent fixture in the house and did not move with the renter.

Participant Recruitment

The amount of community outreach needed will vary based upon the size and scope of a program. Consider from the outset how to gain the interest and trust of the target candidates. Programs should determine a realistic timeframe for recruitment and understand it may take several outreach and education touches to establish interest, vet the home, and ultimately gain their participation. Prepare education materials ahead of time for various audiences or partner organizations and identify a way for interested participants to contact someone to answer their questions.

Why:

All programs, even ones that install free ductless systems, need to identify candidates, vet the homes, and successfully recruit participants. It can be difficult to compete for target participant attention and gain their trust,

especially when displaying a new technology. Candidates may need the opportunity to see, feel, and hear about ductless heat pumps. They will want to understand the technology, do their own research, and ask questions.

How:

For efficient recruitment, begin by identifying a cluster of eligible homes. Finding homes in a small geographic area has many benefits. Meeting with occupants and reviewing the home for suitability is easier if homes are closer together. Installations are less expensive and faster if homes are closer together, and marketing is easier if neighbors pass the word about the program. Look for manufactured home parks, retirement communities, and neighborhoods with home sizes and architecture suitable for ductless systems. Additional ways to recruit candidates include:

- Hold informational and recruitment meetings in community spaces and offer seminars, short talks, or exhibit at local events.
- Become visible in the community by writing a regular column about residential energy efficiency, comfort, maintenance, and air quality in buildings.
- Offer a list of local small businesses where a homeowner can see a ductless heat pump such as coffee shops, restaurants, services, or offices.
- Recruit a person from within the community to serve as an advocate, a trusted source of information about ductless heat pumps for family and friends.
- Provide candidates literature and handouts detailing the ductless heat pump value proposition. Include a website link where candidates can easily find additional information.
- If participants are paying for all or part of the installation, create easy-to-use calculators to help the candidate determine their potential electricity bill savings and the return on investment.

Examples:

- One community organization writes a monthly column about home maintenance for the local paper, and when they need more participants, they write a column about the advantages of ductless heat pumps and provide information about their program.
- One community organization advertised in the local paper and at community centers. The organization also held ten public meetings to discuss the technology and gather community questions and participant applications. This community organization had 600 attendees at ten meetings. Meeting information was disseminated via news articles, word of mouth, and emails using an existing email list.

PROGRAM RFP BEST PRACTICES

Smooth installation with high-quality, affordable equipment is the goal of every program. The size and breadth of your program should dictate the type and quantity of installations. If the program plans to use in-house installers, then they will need to issue a request for proposal (RFP) for equipment. However, if the program plans to use outside installers, then the community organization should consider issuing two RFPs: one for equipment and one for installers. Programs can save money if they create two RFPs instead of one. Competition exists not only between installers but also between brands of heat pumps. The first RFP should be for the equipment and will yield an equipment price that can be given to installers. The second RFP will focus on the cost of labor. Both scenarios are covered below.

Distributors – Request for Proposals

Issue an RFP to local distributors to obtain a bulk purchase price. Distributors sell heating and cooling equipment, and the installer, in-house or contracted, will purchase from a distributor. It could be very advantageous to the program if the community organization works directly with a distributor to establish a bulk purchase price to help bring down the overall cost for each installation.

Why:

This helps the community organization secure a competitive price for the product and allows the organization to specify the desired type of equipment (in general terms of efficiency, performance, and warranty), so that participants will be happy with the result.

How:

Issue an RFP to local distributors of ductless products. Review RFPs issued by other community organizations. Consider the following actions when structuring the RFP:

- Specify the length of warranty, the HSPF efficiency rating, and other performance criteria such as the system heating capacity at a specific outdoor temperature (either 17° F or 5° F is recommended depending on the climate zone).
- Ask the bidder to respond with a cover letter and a project quote listing a single model for a price. Request the quote be valid for 180 days with the option to renew for up to 365 days and request this in writing with the quote.
- Inform the bidder that the community organization will choose the installer(s) to perform the installation work based on the winning equipment bid and work with the bidder to ensure they can sell to the winning installer(s).

Examples:

- Contact the NWDHPP at info@GoingDuctless.com to view the sample RFPs document

Installers – Request for Proposals

Issue an RFP to local installers. To line up an installer or installers to put in the ductless systems, consider issuing an RFP and instituting a selection process. This has worked well for many community organizations.

Why:

It is important to establish standards for installation to ensure the most reliable and effective installation. Issuing an RFP allows a community organization to select the right installer(s). An RFP allows organizations to define the type of installation needed, limits the scope of work, and help secure a more competitive price.

How:

Contact the NWDHPP at info@GoingDuctless.com for the sample RFPs document to view templates utilized by other organizations. Consider the following actions when structuring an RFP:

- Assemble a team for the RFP review process that includes someone experienced with the technology who can objectively review the brands, installer credentials, and the bidder's estimated installation time and costs. Ask community volunteers to join the RFP review committee and look to local government councils, grassroot organizations, and other community leaders. Consider inviting a utility representative to participate in the process.
- Offer installers the opportunity to comment on the RFP before it is released to gain their participation in the process.
- Have a good understanding of the homes the organization expects to serve. Be clear about the scope of work expected from the bidder. For example, clarify the following potential questions: Who will vet the homes for approval to meet the bid expectations? Will electrical upgrades be necessary and who will handle the upgrades? Will there be a maximum line set length? How will extraordinary costs be vetted?
- Request that bidders understand local requirements, including zoning and setbacks for outdoor units, flood and snow zones, and cold climate requirements.

- To specify the installation requirements, issue the desired installation guidelines or provide the Installation Best Practices Guide as an attachment to the RFP and require that bidders agree to adhere to this document.
- Give bidders enough time to assemble their costs and response. Three weeks is recommended.
- Schedule a bidder workshop for installers to go over the RFP and make bidder attendance mandatory.
- Reduce paperwork requirements whenever possible. Keep installer and candidate paperwork as limited as reasonable. Find ways to cut down or reduce barriers.
- Conversely, consider making the paperwork more onerous for the installations requiring an exception to the agreed upon installation price so installers put greater consideration into the need for an exception.
- Attempt to guarantee installations timed in batches instead of one at a time to enable cost efficiencies in the bid.
- To get the lowest price, ask bidders to supply a complete installation price, less the original equipment cost. If you have conducted a product RFP with distributors, state that you will provide an equipment quote for a brand and model selected by the community organization. In the RFP, list the brands and models that will be involved in the program, and ask bidders to list any of these brands/models they will not install and support. This information will be necessary to match up the equipment RFP with the installation RFP.
- If the community organization is not procuring equipment itself through a separate RFP, be sure to limit the bidder-selected ductless heat pump brands **and** models to those with a great reputation for heating comfort. When choosing the ductless heat pump model or specifications, do not skimp on quality for price. Be sure to specify brands that have a good support network, local expertise at the distributor level, and support at the national headquarters.
- Also, if there is not a separate RFP for equipment, then specify the length of warranty, the HSPF efficiency rating, and other performance criteria such as the system heating capacity at a specific outdoor temperature (either 17° F or 5° F is recommended depending on the climate zone).
- Inform the installation RFP bidders they are responsible for all post-install support and warranty responses.
- Recruit bidders by reaching out to installers that already have a relationship with the community organization. Ask local utilities for a list of recommended installers. Look to manufacturer websites for dealer locators to find local installers.
- Request that the bidder describe their installation methods, including stocking and warehousing practice, and the number of installers they use for each home.
- Explain any local or specific requirements such as what is needed in flood zones or high-snow areas.
- Determine and inform bidders of the program's payment terms. Offering quick payment terms (e.g. five days after an installation inspection) may yield lower bid prices.
- Provide potential bidders with sample (redacted) proposals, if available, from an earlier campaign. Send these out before the bidders meeting and let them ask questions. Do this to ensure that no bidders are disqualified for not understanding RFP expectations.

When reviewing proposals, consider the following recommendations for selecting the winning installer(s):

- Select an installer for whom ductless heat pumps are an active part of their business, installing three or more per month.
- If the community organization's service area spans a large region and includes different weather conditions (high elevations or coastal areas), consider awarding contracts to multiple bidders. Balance this with the need to maintain a reasonable number of installations awarded per chosen installer.
- If the community organization is running a ductless heat pump buying group for participants and requires standard pricing, then choose one installer instead of multiple installers.

Examples:

- Contact the NWDHPP at info@GoingDuctless.com for the RFP Guide to see sample RFPs.

INSTALLATION BEST PRACTICES

Program rules should promote protocols that result in optimal installation quality and customer satisfaction. Consider the following program rules and methods.

Leave the existing electrical heating system in place

When installing a ductless system, the NWDHPP recommends keeping the old electrical heating system operative. Set the ductless system and the back-up heat thermostats and controls to allow the ductless heat pump to take care of as much of the heating load as possible with the back-up heat only coming on to supplement in colder temperatures or in isolated rooms in the home. Educate the occupant on ductless heat pump controls and efficient use of the back-up heat.

Why:

It can be expensive and complicated to install ductless as the only source of heating in the home. The old system should be used as a secondary heat source if heat from the ductless system does not reach into all the rooms of the residence. A ductless system is most efficient when it is serving most of the heat load and does not have to compete with other heating sources. In extreme cold temperatures, the ductless heat pump may need to run a defrost cycle and is not able to work at its full heating capacity. In these extreme temperatures, the home may require the back-up heat to supplement the heat load. Because the technology is still unfamiliar to many Americans, educating the occupant on system controls after installation is very important for maximum comfort and savings.

How:

The simplest, most effective ductless system install is a single zone system in the main living area, leaving the pre-existing heat to serve the secondary zones outside the main living area. While a ductless system can be used as a primary heat source, encourage occupants to keep their existing electric heating units as supplementary heating in case of extreme weather conditions or for use in hard-to-reach extremities of the home.

Set the thermostat on the back-up heat to work supplemental to the ductless heat pump. Require the installer to educate the occupant about how the heat pump and existing system controls work together, what they were set to, and why. Then leave them with instruction manuals and resources they can reference when the seasons change and when they need a reminder.

Post Installation

Once the system is installed, educate the occupant about using and maintaining the new equipment. Every organization interviewed mentioned the importance of occupant education of equipment use and maintenance. A ductless heat pump should last for 20 years, but it will decrease in both comfort and efficiency if not maintained or used properly. Ensure that occupants are satisfied and well-educated about their new systems. Do everything possible to educate the occupant at the completion of the installation on topics like system settings, controls, use of back-up heat, and regular maintenance and cleaning of both the indoor and the outdoor units.

Consider allocating budget for a technician or program staff to stop in at each home on a yearly basis or when the season changes to conduct routine maintenance and to re-educate the occupants on system use, efficiency and cleaning. To maximize the comfort and efficiency of a ductless system, it should be maintained with yearly servicing by a trained technician and consistent air filter changes.

Why:

A ductless heat pump system will most likely be an unfamiliar technology for the occupant. While they are not difficult to use, there is a learning curve associated with their use. The occupant should understand how to use it to maximize comfort and efficiency as well as how to maintain it. Cleaning the filters on the indoor unit is necessary and should be done every two months. The occupant should keep debris from building up around the outdoor unit and blocking the airflow or drainage holes with inspections at least once every three months. Clearing debris should also be a first response to any concerns about heating performance, before calling the installer, program, or technician. Additionally, the system performance should be checked, and both the indoor and outdoor units thoroughly cleaned, once a year to ensure a properly operating environment. Educating occupants to self-diagnose issues and conduct basic maintenance will cut down on call backs, complaints, and questions which can use up valuable staff time.

How:

Ensure that occupants are satisfied and understand how to get the greatest benefit from the ductless system. For rental units, work with the property owner or property manager to develop a renter education strategy and a regular schedule for system cleaning and maintenance.

Consider hiring an experienced HVAC technician, training a staff person, or retaining an installer on contract. If the community organization has construction or weatherization services staff, it is relatively easy to train them on ductless system maintenance and troubleshooting basics. The NWDHPP and the local distributor may be resources for this training. Ask a local utility expert or the NWDHPP team for references.

The technical expert can provide post-install support and maintenance and can provide support or quality control to contracted installers. They can also provide guidance on the RFP and help with selecting brands, models.

Resources

- Check out GoingDuctless.com for a multitude of materials for understanding and marketing ductless heat pumps.
- View sample RFPs in the NWDHPP RFP Guide. Email a team member at info@GoingDuctless.com to obtain copies.
- Spark Northwest is a nonprofit organization that provides technical services to organizations looking to implement heat pump programs. Reach Spark Northwest at 206-328-2441 or connect@sparknorthwest.org.