ASK A CONTRACTOR

The key to a successful heat pump installation is working with an experienced contractor. You can find local contractors by referring to the Switch Is On website. It is always a good idea to get three quotes for your project. You can easily check to make sure the contractors' licenses are current, active, insured, and do not have any outstanding disciplinary actions or citations by typing their license number in the CSLB website. Review CSLB's resources on hiring a licensed contractor.

Keep in mind that your contractor might not identify heat pumps as a good choice for you. Many contractors prefer to do what they've always done, while some are resistant to electrification simply because they're unfamiliar with it. 3C-REN supports contractors by providing training opportunities to understand and install heat pump technologies.

Step 1: Vet your contractor.

What kind of license do you have?

- For heat pump water heater projects (HPWHs): B (General Building License) and C-20s (Warm Air Heating, Ventilating, and Air Conditioning license). A C-36 (Plumbing License) contractor can install a HPWH if the HPWH does not include electrical work, or, the HPWH does require electrical work and the Authority Having Jurisdiction (AHJ) has a water heater permit or a joint plumbing/electrical permit, or, an electrical permit is required for an electrical panel or circuit upgrade that permit which can be applied for by a C-36 in a Joint Venture with a C-10, by a C-10, or by General B contractor.
- For heat pump HVAC projects: General B and C-20s. If the electric service panel needs to be upgraded, you will need a C-10 (Electrician's License) contractor.
- Keep in mind that General B contractors can perform any work and are the only license type that can subcontract their work out to subcontractors. Read more about subcontractors at the end of this resource.

Will you hire subcontractors to complete portions of the project?

- It is important to work with your contractor to understand the full scope of your project, and the expertise needed to ensure your appliance is installed correctly. Only B-licensed contractors can subcontract the work out to subcontractors. Verify the subcontractor's license information on the CSLB website. Ensure the licenses are not expired, current, active, insured, and do not have any outstanding disciplinary actions or citations.

Have you participated in manufacturer training for the systems you would install, and can you provide references from previous customers?

- Before hiring any contractor or installer, you should assess their experience and expertise in conducting your project. You can assess this experience based on how your contractor responds to the questions outlined in this checklist. To view a 3C-REN on-demand training about HPWHs and the energy code, see here.

Will you pull a permit for my project?

- Confirm that the contractor will be pulling a permit for your project to ensure a safe, accurate, and legal installation. For HPWH and heat pump HVAC projects it is in your best interest for your contractor to pull a permit to comply with health, safety and building codes, even if they present it as optional. The permitting

process goes through several stages and requires your cooperation in scheduling an in-home (and sometimes virtual) inspection in order to finalize the permit.

- For energy code related questions, you or your contractor can contact take advantage of 3C-REN's Energy Code Coach. Our on-demand service helps the region navigate California's energy code. Our experts provide personalized support within one business day online, text, over the phone, over the counter, or in the field. To get in touch with the Energy Code Coach, call or text (805) 220-9991.

Step 2: Talk about design.

How will the system be sized?

- Your contractor may perform a heat load calculation which is an estimate of the heating sources impacting a space, such as from lighting, outside air temperature, and solar radiation. This calculation ensures the heat pump system selected for the building is optimal at heating or cooling the space. It is recommended to conduct a heat load calculation to avoid over sizing a system (buying more than you need).
- To ensure that your heat pump water heater is properly sized to meet your hot water needs, your contractor will plan for the number of gallons of hot water your heat pump water heater can produce per hour. This capacity is dependent on the size of the tank and the amount of heat the system can produce and related to the device's first hour rating.

Where will the systems be installed?

- Outdoors:
    - HVAC (Ductless air-source heat pump HVAC systems, also known as mini-split heat pumps)
        - Ensure the outdoor location of the unit avoids direct sunlight and contact with vegetation. Generally, for clearance around the unit, there should be 5 inches between the wall and unit and 20 inches of space above the unit, and ensure your contractor pre-determines piping, insulation, and aesthetics of the project. The unit can either be wall mounted or secured to a flat, concrete pad on the ground. Heat pumps create noise like that of a refrigerator (50-90 decibels), so be aware of placing heat pump units below bedroom windows or other sensitive areas.
    - Water Heating
        - Verify outdoor heat pump water heater (HPWH) setback and noise requirements with your local building department. Your contractor should work with you to build an outdoor closet that provides your HPWH with sufficient air volume, air circulation, ventilation, and insulation.
- Indoors:
    - HVAC
        - Ductless, mini-split systems: The indoor unit, known as the air handler, should be mounted in a central location on an exterior wall since it will also be connected to an outdoor unit. The unit should be accessible for maintenance with proper clearances from the ceiling.
        - Ducted systems: Common locations include a garage, an open space such as a laundry room, or a closet with appropriate venting and air space*.

        - Heat pumps: Ensure the unit is placed in a location where operational noise of 50-90 decibels will not cause disturbance in the home.
    - Water Heating
        - A heat pump water heater should be installed in areas with sufficient air volume or ventilation based on the manufacturer's recommendations. Indoor areas such as mechanical rooms, laundry rooms, closets, garages, and basements should provide adequate venting and air space.
        - A heat pump water heater cools the space it's located with cold, dehumidified air and during winter months, this air could be unnecessarily adding load to your heating system. Given our temperate climate in the Central Coast region, this added cold air might not drastically impact your system. However, this air can be either ducted outside or utilized for cooling on warmer days throughout the year.

Will I need an electrical panel upgrade?

- You may need an electrical panel upgrade if you live in an older home, or your current electrical panel is less than 200 amps. Panel upgrades will ensure that your HVAC or HPWH will have enough power to operate.

I live close to the beach, should I worry about the corrosive air on a heat pump?

- Due to the nature of living near the ocean and the corresponding higher levels of salt in the air, some houses located in coastal communities may experience higher rates of corrosivity to equipment. If using an air-source heat pump, anti-corrosive coating could be applied to the coils which can help protect the equipment for five to ten years.

What are the options for handling condensate generated by the heat pump?

- Heat pumps generate condensation, just like the condensation you might find on a cold glass of water on a warm day. Since the condensate is not generated from combustion, the water is clean and doesn't have to be routed to the sewer. This water can be directed to a collection tray or to the ground which in turn can be used to water plants, if desired.

Step 3: Discuss pricing and maintenance.

Which incentives or financing are available for my project?

- Make sure to ask about state and local incentives, whether your contractor is participating in the programs, and how those incentives will decrease the price of the project.
- 3C-REN's single-family program provides incentives directly to contractors. The highest incentives are paid when customers that are served are on discounted utility rates (CARE) or speak a primary language other than English. If your contractor is enrolled, they can pass some of these savings on to you. This program also provides incentives to the contractor for other energy saving upgrades - you may be surprised at the low cost of a comprehensive energy efficiency retrofit!
- The TECH Clean California program provides incentives directly to contractors at least $3,000 per project for heat pumps HVAC and heat pump water heaters. If your contractor is enrolled in this program, you will see these discounts on your project invoice. To find a contractor already enrolled in TECH, see here

- Central Coast Community Energy's (3CE) electrification program will provide additional incentives directly to contractors for most heat pump projects in 3CE territory. If your contractor is enrolled in in the TECH program, they will be able to easily access these additional funds, which may also be passed on as savings to you. This program is coming soon for Santa Barbara and San Luis Obispo County residents, excluding the City of Santa Barbara (coming soon).
- The GoGreen Home (GGH) program is administered by the State of California with support from the investor-owned utilities. GGH facilitates financing for energy retrofits for qualifying properties. To find a contactor participating in the GoGreen Home program, see here.

What long-term maintenance is associated with my project, and will it be covered by warranty?

- There are two types of warranties: an equipment warranty provided by the manufacturer and a labor warranty provided by the contractor. Discuss both warranties with the contractor, ensure they will become active by registering them, and verify with the manufacturer.
- Most manufacturers will provide a standard 5-year equipment warranty as soon as the equipment is purchased; however, you could get an additional 5 years simply by registering your new heat pump. If registered, the equipment warranty could increase to a 10-year warranty for parts and a 10-year conditional unit replacement warranty on select models. Each brand will vary slightly in their warranty offerings depending on model so be sure to review the specifics for your new heat pump system.
- Contractors should also provide a labor warranty to protect your equipment. While the timeframe of this warranty will depend on the contractor, it's reasonable to expect a 10-year labor warranty.
- These systems should be easy to operate, but to ensure they operate efficiently, you should engage your contractor on how to properly maintain these systems. Make sure you have a copy of the operating manual saved.

Step 4: Mark your calendar!

What kind of timeline should I expect?

- There are many factors that could affect an installation timeline such as size of the house, the type of heat pump, and the location of the heat pump. Installations can range from 6 hours to several days, depending on the system size and location. If building retrofits or electrical panel upgrades are necessary, the installation will take more time. Be sure to ask your contractor how far out they are scheduling new installations - they may be scheduling new installations weeks or even months out in their calendar.

Step 5: Enjoy!

- Congratulations for making the switch to a heat pump! Our local electricity is already very clean, and on the pathway to 100% renewable energy. By embracing this technology, you are making a responsible decision to keep your home comfortable using renewable energy rather than burning natural gas.

References

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