



# Heat Pumps: A buyer's checklist

FACT SHEET

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Air source heat pumps are a smart choice for keeping your energy bills low and your home comfortable all year round.

Much like a refrigerator, heat pumps utilize electricity to move heat from cool spaces to warm spaces and vice versa. Because heat pumps move heat rather than generate it, they are a more economically sound way of heating and cooling your home.

The technology has advanced significantly to the point where efficient, cold-climate heat pumps can effectively heat your home through an Illinois winter. And the same device can cool your family in hot summers.

CUB put together a step-by-step checklist to help you consider replacing your gas furnace or boiler with an air source heat pump.



## Check List

- 1. Start planning now.** Plan ahead to determine the best air source heat pump for your home, and to find a quality contractor to do the work. Waiting until your old heating or cooling system fails can be expensive. Contractors may charge extra for emergency services, and you may be tempted to buy the latest model of your old, inefficient system. Other upgrades may be necessary to ensure your home is equipped for an air source heat pump, so planning ahead is crucial.
- 2. Weatherize your home.** Before you switch to an air source heat pump, improve your home's energy efficiency. That will ensure your heat pump is working at its maximum potential.

  - Start by checking with your utility to complete a free [Home Energy Assessment](#), or hire a contractor to do a [home audit](#), which is a more comprehensive assessment. The free assessment or audit helps to prioritize insulation and weatherization projects for your home.
  - Home Energy Assessments are run by utilities and often for income-qualified utility customers, but no matter your income, you should check what your electric utility offers. In a Home Energy Assessment, an energy expert makes efficiency recommendations and can provide energy-saving products (LEDs, low-flow shower heads, pipe insulation) for free.
  - A home energy audit—a much more comprehensive process that can take several hours—will test your home and show you where you lose heat due to unsealed windows or a lack of insulation. CUB strongly
- 3. Shop around to find quality heat pump installers.** Most air source heat pump manufacturers certify installers and list them on their websites ([Mitsubishi](#), [Daikin](#), [Carrier](#), [LG](#), [Trane](#), etc). This is a great starting place to find qualified installers. You should get at least three quotes and make sure you feel comfortable with an installer's professionalism, competency and price. Your utility also might have a list of qualified installers. Both [ComEd](#) and [Ameren Illinois](#), for example, have databases that provide a list of qualified energy efficiency and HVAC professionals who can help you install your system as well as apply any applicable rebates. Your HVAC professional might not be familiar with modern air source heat pump technology so it's important to make sure you ask the right questions. (See our list below.)
- 4. Consider what kind of heat pump you want.** It is important that you buy an energy-efficient cold-climate air source heat pump. Make sure the pump has the Energy Star label—the federal government's

encourages getting an audit prior to getting a heat pump. It's an important first step in ensuring your home will be comfortable with a heat pump. There are also tax credits that will allow you to subsidize the cost. Improving your home's insulation will not only help you save money and make your home more comfortable, but it also is critical to installing a heat pump. Insulation helps to ensure that you buy a heat pump that is the correct size and capacity for your home. This avoids wasting money buying the wrong heat pump.

designation for super-efficient projects, and always confirm with the contractor what the temperature capability of the air source heat pump is. A properly designed cold climate air source heat pump can keep a home comfortable **even on days when the ambient temperature goes below -13 degrees**. Make sure the contractor you go with uses the nonprofit Northeast Energy Efficiency Partnerships (NEEP) **Sizing and Selecting Guide, Cold Climate Installation Guide** and **cold climate heat pump list**.

5. **Insist on load calculations.** If you plan on having your new system heat your entire home, the proposal

should always start with a load calculation. This means the installer measures the rooms and window dimensions, records the window types and the direction they face, and makes a list of the insulation values in your attic, walls, and basement.

All of these details are needed to calculate the amount of necessary heating and cooling to keep the home comfortable. “Bigger” is not “better” when it comes to heat pumps. In fact, a system that is too big is needlessly expensive, may not properly heat and cool your home and could cause your energy bills to increase.

## Key questions for your contractor

When you’re talking to a prospective heating and cooling expert about switching to an electric alternative, it’s important to ask the right questions to make sure they’re the right professional for the job. Consider the following:

- Can you provide references from previous customers with similar systems?
  - Have you participated in manufacturer training for this specific system?
  - What level of certification do you have with this heat pump’s manufacturer?
  - What are the available incentives or rebates? Will you help apply them?
  - Will I need any electrical service upgrade to accommodate the heat pumps?
  - Will I need to hire my own electrician to provide the electrical work?
  - Will you use any subcontractors in the process? If so, who are they and what jobs will they do?
  - Do you use the **Air Conditioning Contractors of America Manual J** to calculate the right size, considering your home’s foundation, wall thicknesses, insulation values, windows and air filtration? (Whoever you choose should do this.)
  - Where will you mount the outdoor unit(s), and how?
- (Brackets bolted to an exterior wall may create unwanted noise in a sensitive area like a bedroom; ground-mounted units should always be on a stand to keep them above the normal snow line. Units should also be shielded from wind, rain, and snow-melt dripping off the roof.)
- Will exterior piping (referred to as a line set) be visible? Will it be insulated (preferred)?
  - What type of indoor units are you recommending, where will they be located, and why?
  - Do you recommend a wall-mounted thermostat or control? (This is needed for ducted systems. For ductless units serving larger spaces, it can enhance comfort by sensing the temperature in a central location.)
  - Do you always perform a triple evacuation before charging the refrigerant lines?
  - Will you provide training for me on how to properly operate and maintain the system?
  - Do you provide a warranty for the systems you install? How long does it last?
  - Can I get a quote that details the equipment model numbers and itemizes any other parts and accessories for which I’ll be charged?

## Helpful Resources

For more information, check out these resources:

- **Air-Source Heat Pumps (Department of Energy)** This is a Department of Energy introduction to air source heat pumps, which can deliver up to three times more heat energy to a home than the electrical energy it consumes.
- **Electric Heat Pump Customer Buying & Operation Guide (Focus on Energy)** This guide is produced by Focus on Energy, Wisconsin utilities’ statewide program for energy efficiency.
- **What’s the deal with air source heat pumps? CUB investigates** CUB’s introduction to air source heat pumps.
- **Air source heat pumps: questions for your installer (Mass Save)** This helpful list of questions is produced by Mass Save, which is an energy efficiency program from Massachusetts’ utilities and efficiency providers.