

FACT SHEET

Air-Source Heat Pumps (ASHPs)

Why are Air Source heat pumps a great option for many homes?

- It is well-proven technology. Just ask your refrigerator if it works!
- For every unit of electricity they use, an ASHP brings 2 to 3 units of heating energy into your home. This is possible because the electricity powers a refrigeration cycle that captures and transfers more heat from outside air than the energy it takes to run the heat pump.
- Because of their super energy efficiency, ASHPs can be very cost-effective.
- They give efficient, effective air-conditioning too for no extra cost.
- ASHPs are easy to install with little disturbance to home or yard.
- They are highly modular and can be used equally well to heat the whole house, a new addition, or to supplement heating and cooling in an underserved room that is chronically cold in winter or hot in summer.
- With proper design, they can supply 100% of the heating needed on Tompkins County's coldest winter days.
- Because nothing is burned in the home, heat pumps heat and cool while giving you the cleanest and healthiest air to breathe.
- ASHPs can be run using renewable electricity and you are on the way to carbon neutral home heating and cooling!



Can I afford an ASHP?

See price sheets on-line for examples from the 2018 HeatSmart program.

ASHPs are not currently eligible for federal or state tax credits, but there is a NY State NYSERDA incentive of \$500/outside unit.

They are eligible for NYSERDA Green Energy Green jobs NY loans with as low as 3.5% interest.

Pricing, more fact sheets and schedules for HeatSmart community meetings and tours are available at:

www.HeatSmartTompkins.org

Are there different kinds of ASHPs for different situations?

Absolutely!

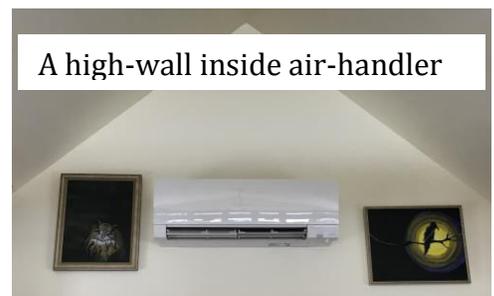
One kind is called a *ductless mini-split*. This has an outside unit that includes the compressor (upper right) connected to an inside air handler (lower right) that releases heat into the room. The inside and outside units are connected only by refrigerant circulating between them in a closed loop of small diameter copper tubing; no air ducts are involved. Outside air is blown through the outside unit by its fan when capturing heat, and room air is pulled through the inside unit by another fan to release heat into the home.

Ductless mini-splits exist as both single-zone and multizone varieties.

The single-zone systems, with all outside and inside units occurring in matched pairs, are ideal for modular applications, while multizone systems, with one larger outside unit connected to many inside air handlers, become more important in whole-home applications.

But outside units can also be connected to various kinds of ducted systems including centralized forced air. A variation on this system is a 'dual fuel' unit which works in concert with a furnace that takes over at colder temperatures. HeatSmart encourages people to make a full conversion away from fossil fuels, but if this is impractical, then the dual fuel units can be a very cost-effective halfway step with the added benefit of air-conditioning in the summer.

An experienced installer will help determine what system type is best for you!



A high-wall inside air-handler



A floor-level inside air-handler