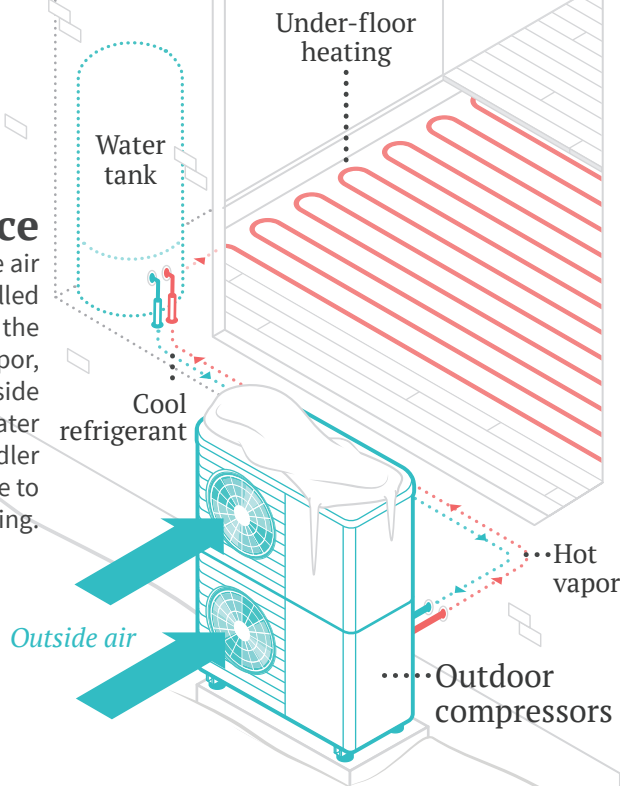


# Heat Pumps

Widening consumer understanding of beneficial electrification is creating a groundswell of interest in everything from electric vehicles to induction stoves. Among the appliances getting particular attention are heat pumps, which can efficiently condition a space by transferring heat or cold from the air or ground. They're not a new technology, but recent advances have made them even more efficient, versatile and easier to install. Here's a look at the three primary heat pump types and how they're used.

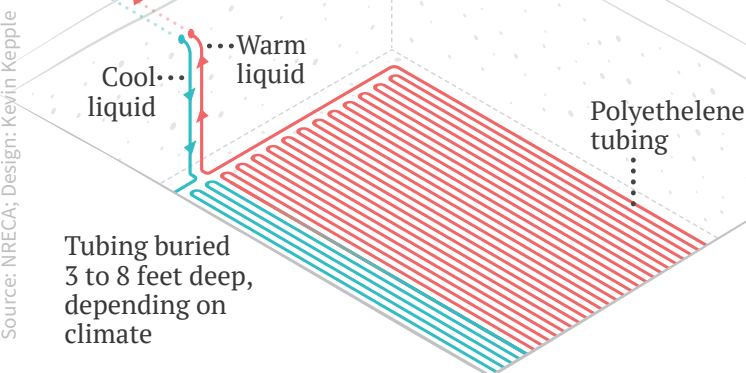
## Air-Source

Heat is extracted from the air using a fan and refrigerant-filled coils. A compressor turns the refrigerant into warm vapor, which is pumped to coils inside the building for use in a water tank or air handler. Air-handler systems can run in reverse to cool the building.

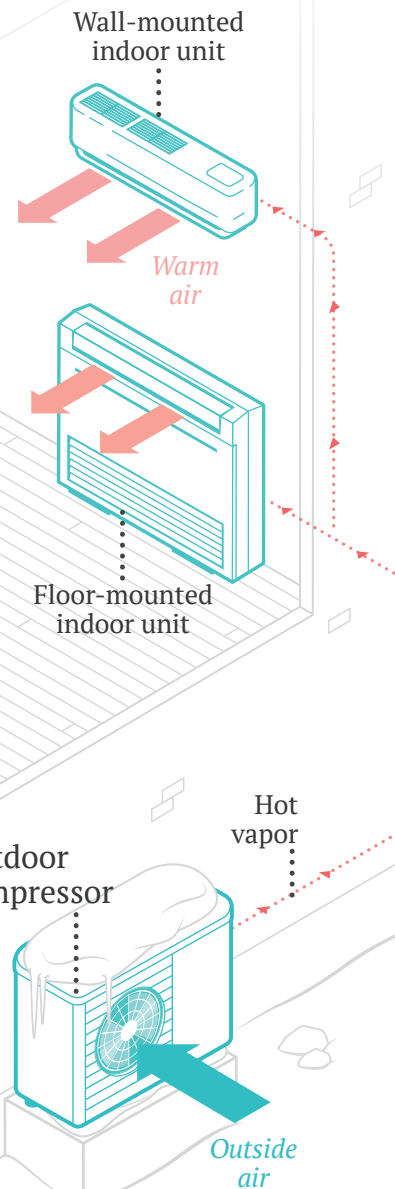


## Ground-Source

Refrigerant- or water-filled tubing absorbs the relatively constant temperature found underground and transfers it to an indoor air handler. The flow can be reversed to cool the building.



Tubing buried 3 to 8 feet deep, depending on climate



## Mini-Split

Air-source heat pump system that works with small indoor condenser units to heat or cool. Good for homes that don't already have ductwork.