



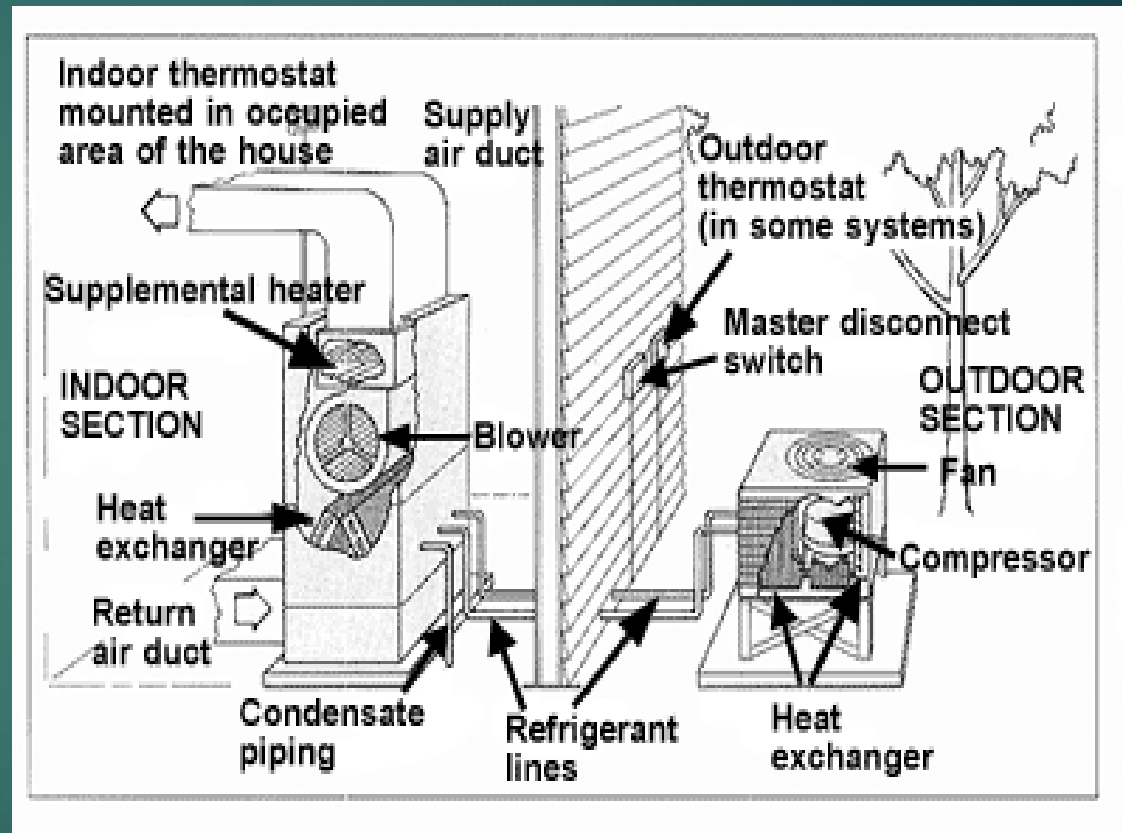
Air To Air Heat Pumps

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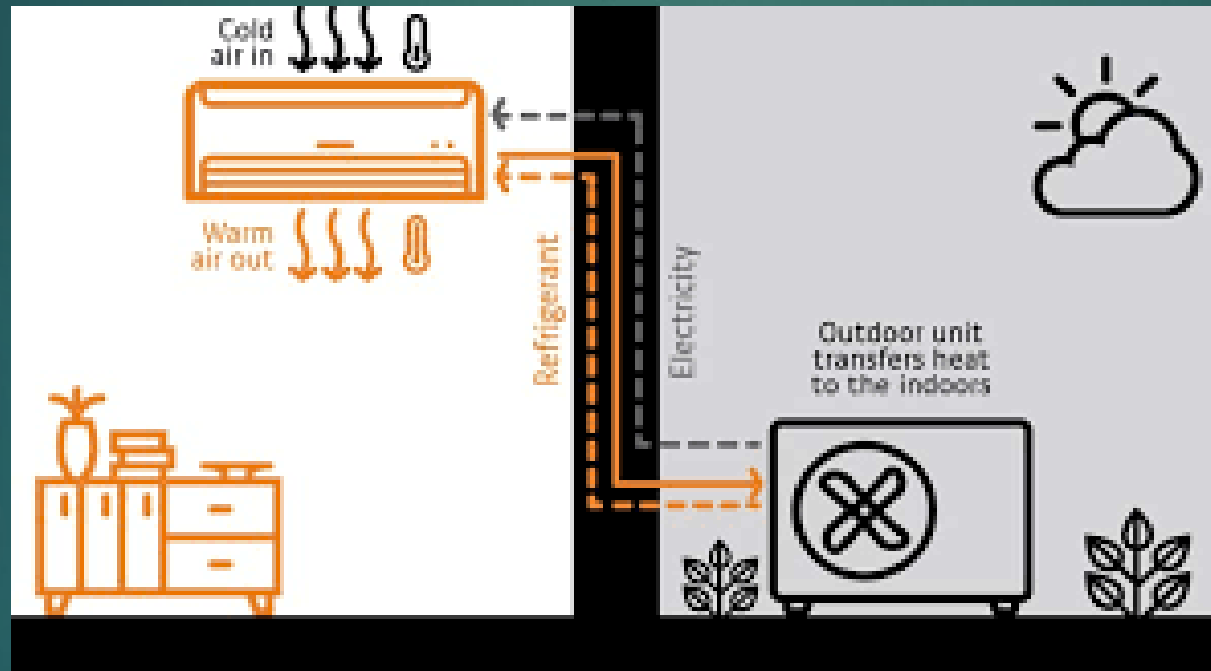
IOWA LAKES ELECTRIC COOPERATIVE

What is a heat pump?

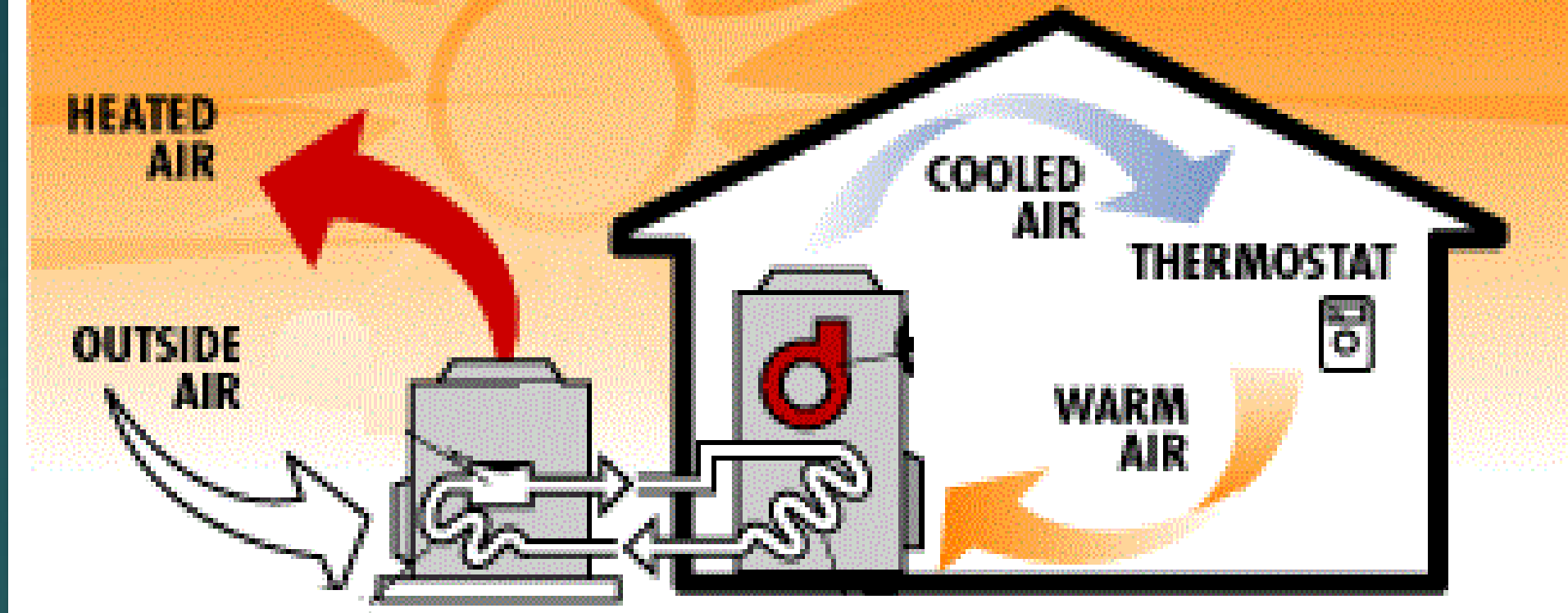


Home heating and cooling unit

- Air to Air Heat Pumps transfer heat from one place to another.
- It is capable of heating and cooling.
- Runs completely off of electricity.
- The outdoor compressor and condenser work in conjunction with the indoor air handling unit.
- It completes a basic refrigeration cycle, warming or cooling the coils in the air handler

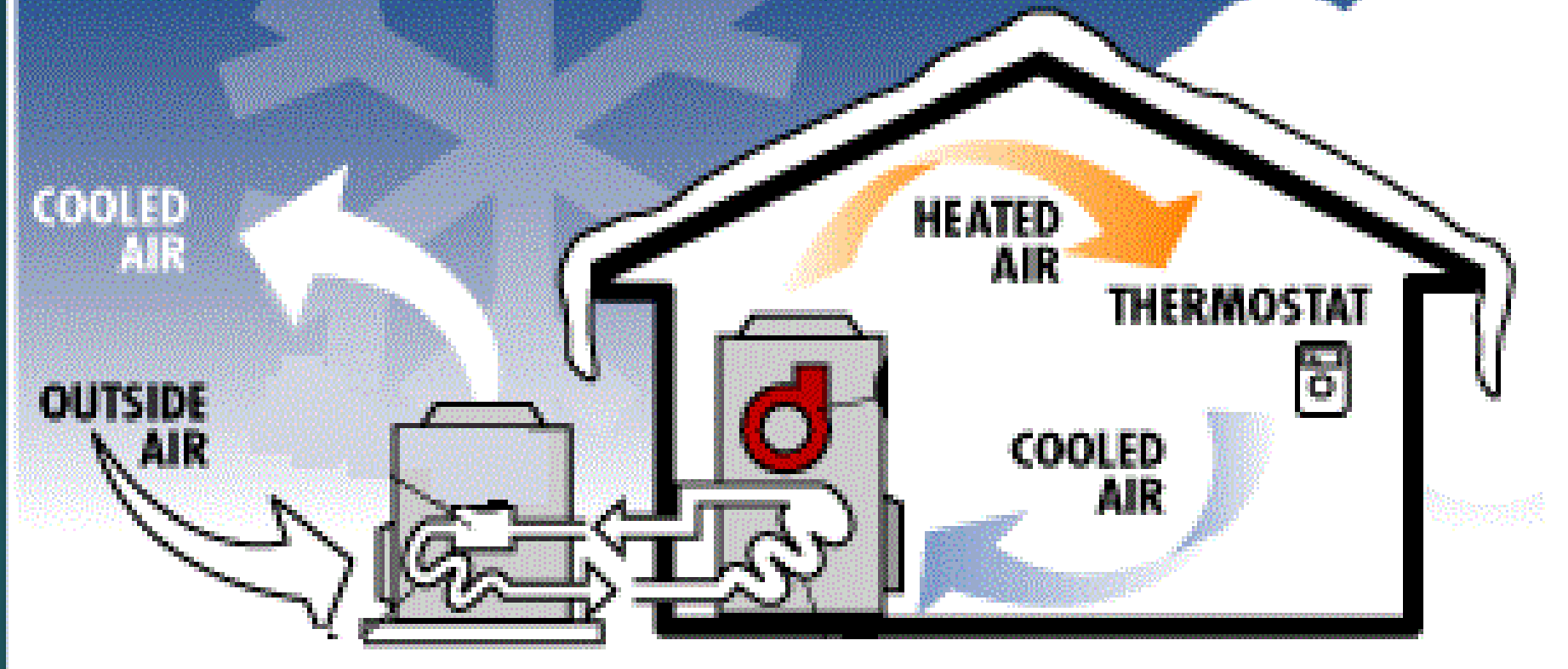


SUMMER

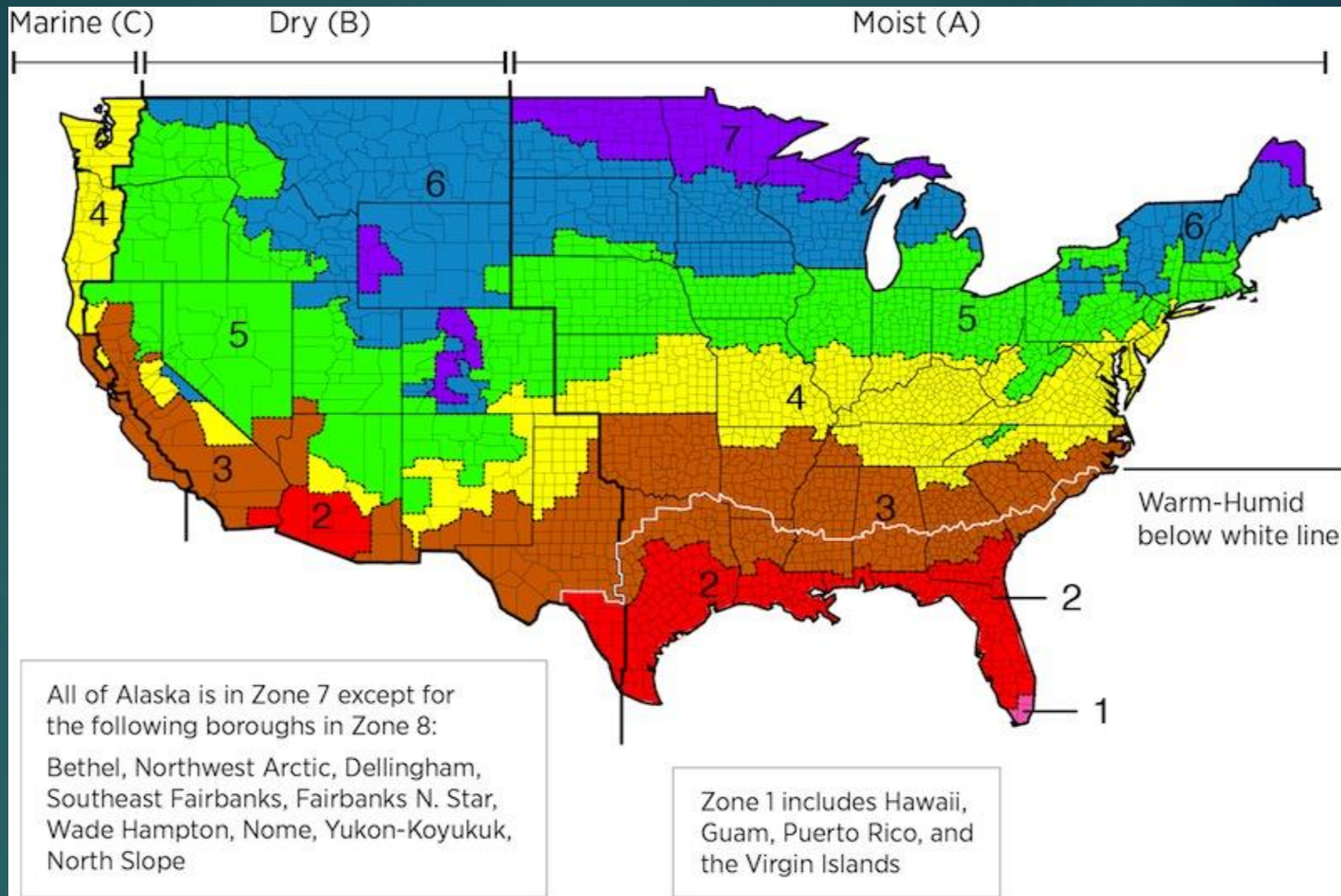


- Warm air from inside the home is pulled into the air handler
- The compressor circulates refrigerant between the indoor evaporator and the outdoor condenser
- This process has a cooling effect and cooled air is passed through the homes air ducts

WINTER



- The process is reversed
- Cool air from in the house is pulled into the air handler
- Heat from outside moved into the house
- When extra heat is needed on particularly cold days, supplemental electric-resistance elements kick on inside the air handler to add warmth to the air that is passing through.



Air to Air Heat Pumps are approved for use in all 7 climate zones



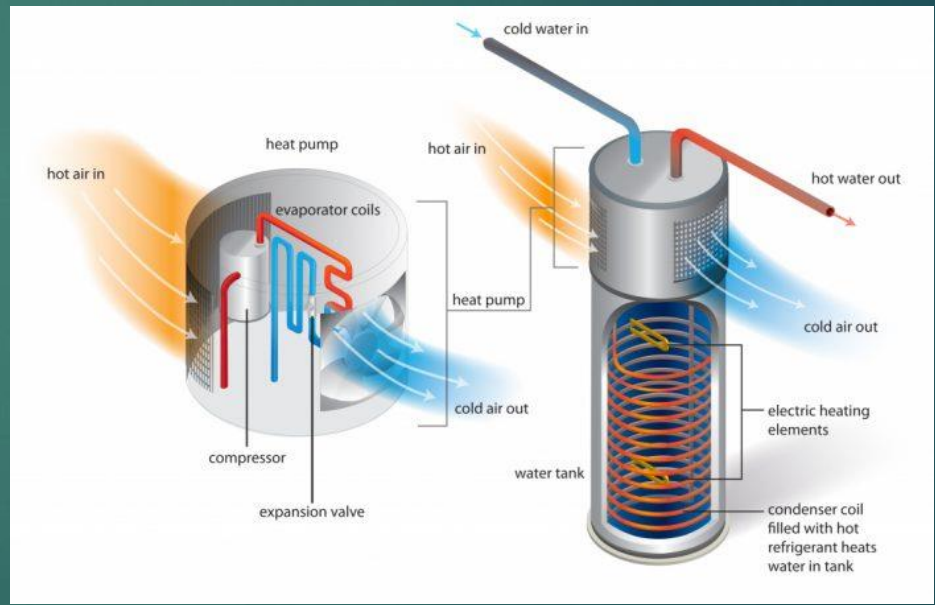
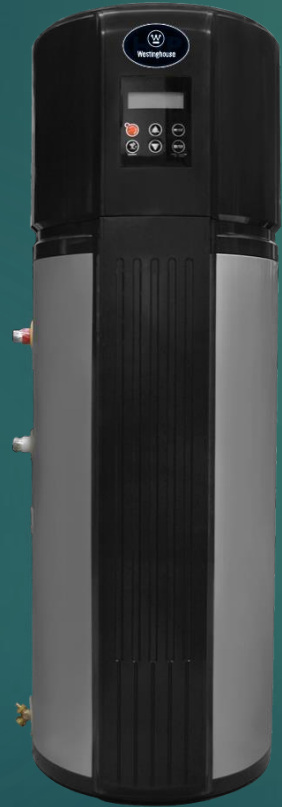
- A well-installed air source heat pump system is capable of providing 1.5 to 3 times the amount of electrical energy it consumes
- Electricity is readily available and price does not fluctuate like propane.
- No need to check the propane tank or worry about running out.



Many electric cars are using air to air heat pumps to condition the interior of the cab

Such as the Nissan Leaf

- Water heaters have also adapted heat pump technology.
- Increasing the energy factor from 0.95 for a standard water heater to 2-3.5 for a heat pump water heater with equal water usage



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