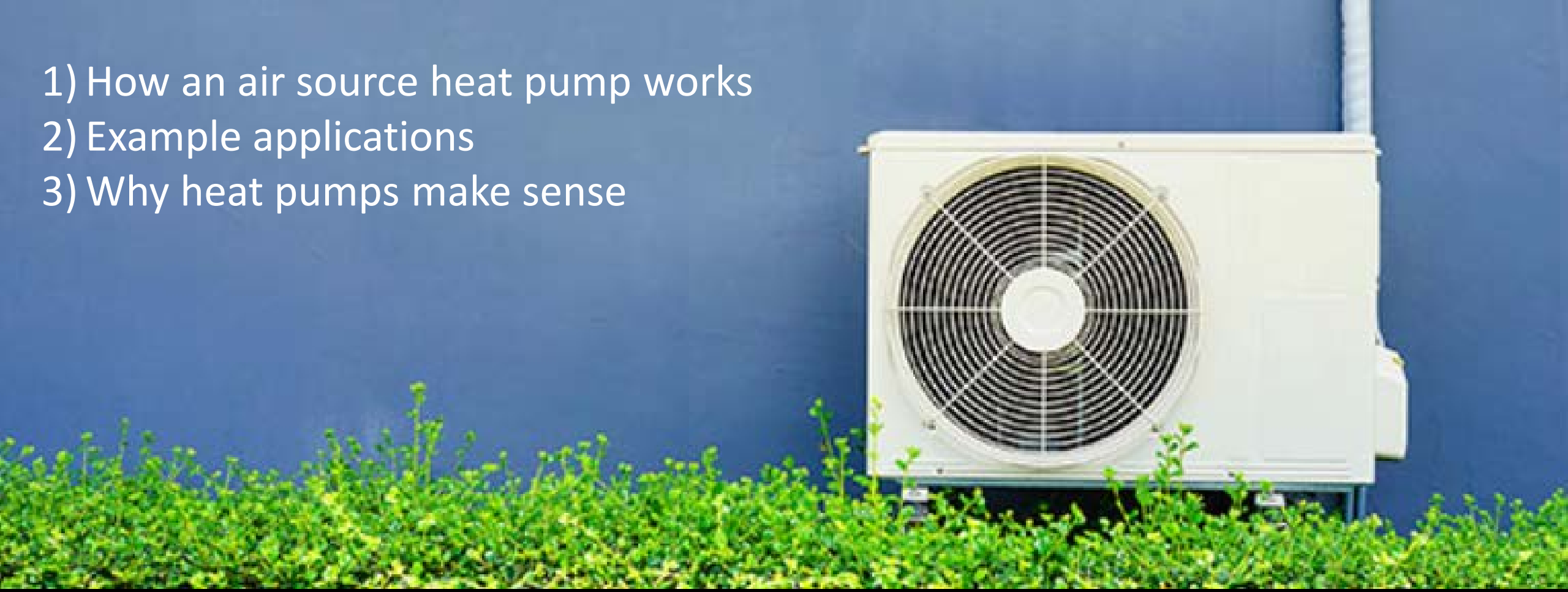
Delaware

Energy Efficiency Advisory Council

Air Source Heat Pumps

Optimal ENERGY Integrated Energy Resources

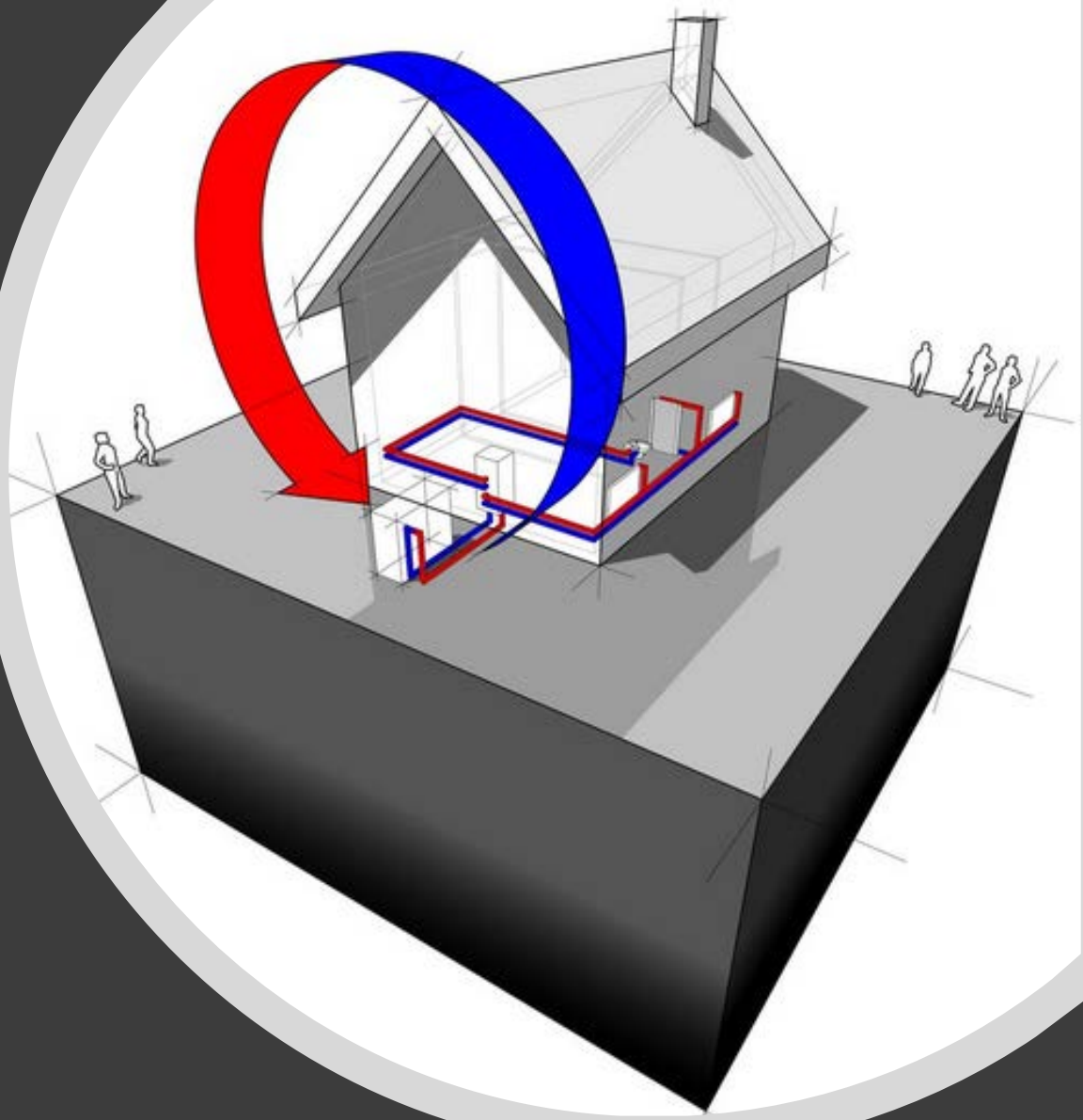
1) How an air source heat pump works
2) Example applications
3) Why heat pumps make sense

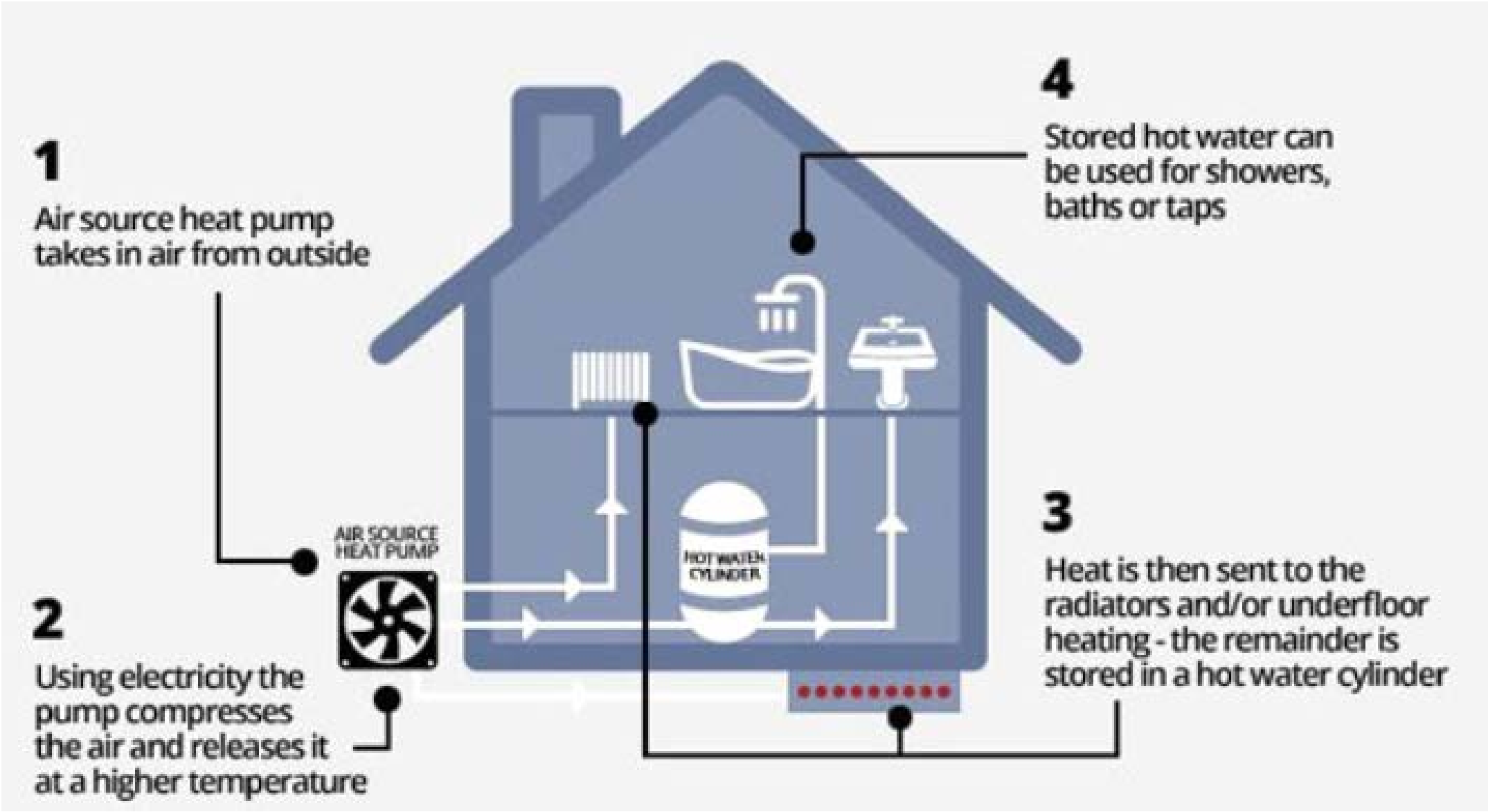


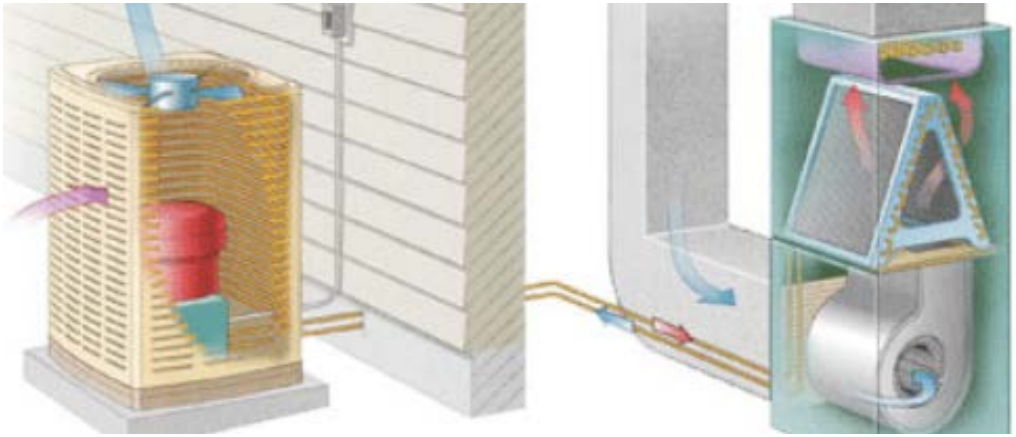
Air Source Heat Pumps

How an Air Source Heat Pump Works

- An air source heat pump uses the same technology as your window AC unit, your car AC, and your central AC. Except:
  - It can run in reverse to provide both heat and cooling.
  - It uses a cold-climate capable refrigerant.
  - It uses a variable speed compressor and/or refrigerant flow.




1
Air source heat pump takes in air from outside
2
Using electricity the pump compresses the air and releases it at a higher temperature
AIR SOURCE HEAT PUMP
HOT WATER CYLINDER
3
Heat is then sent to the radiators and/or underfloor heating - the remainder is stored in a hot water cylinder
4
Stored hot water can be used for showers, baths or taps



Application:
Air to Air (Ducted forced air and Ductless mini-splits)

Application:
Air to Water
(Water Heating, Radiant Heating)

Why Heat Pumps Make Sense

- Heat Pumps:
  - Are Energy Efficient
  - Provide Cost Savings to the Customer
  - They can be controlled by the utility for demand response options
  - Can be cheaper than other systems in new construction
  - Less piping and ductwork
  - Deliver better air quality
  - Long lifetime (20+ years)
  - Have a lower carbon footprint