

What does an Energy Carbon Net-Zero School look like?

Richard Smith
(James Veness is teaching)

School
Energy
Efficiency

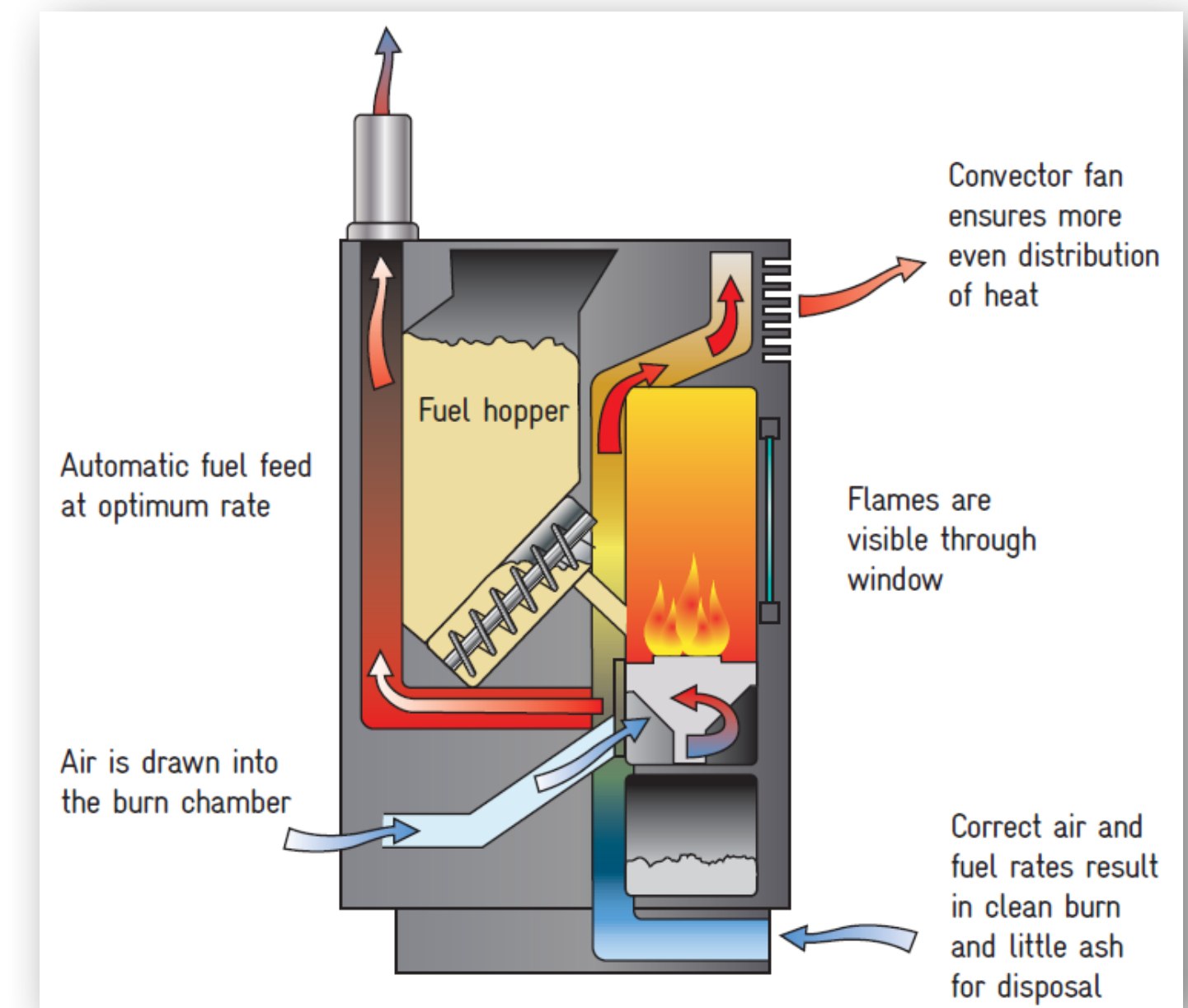


LESSO₂
Low Energy Sustainable Schools



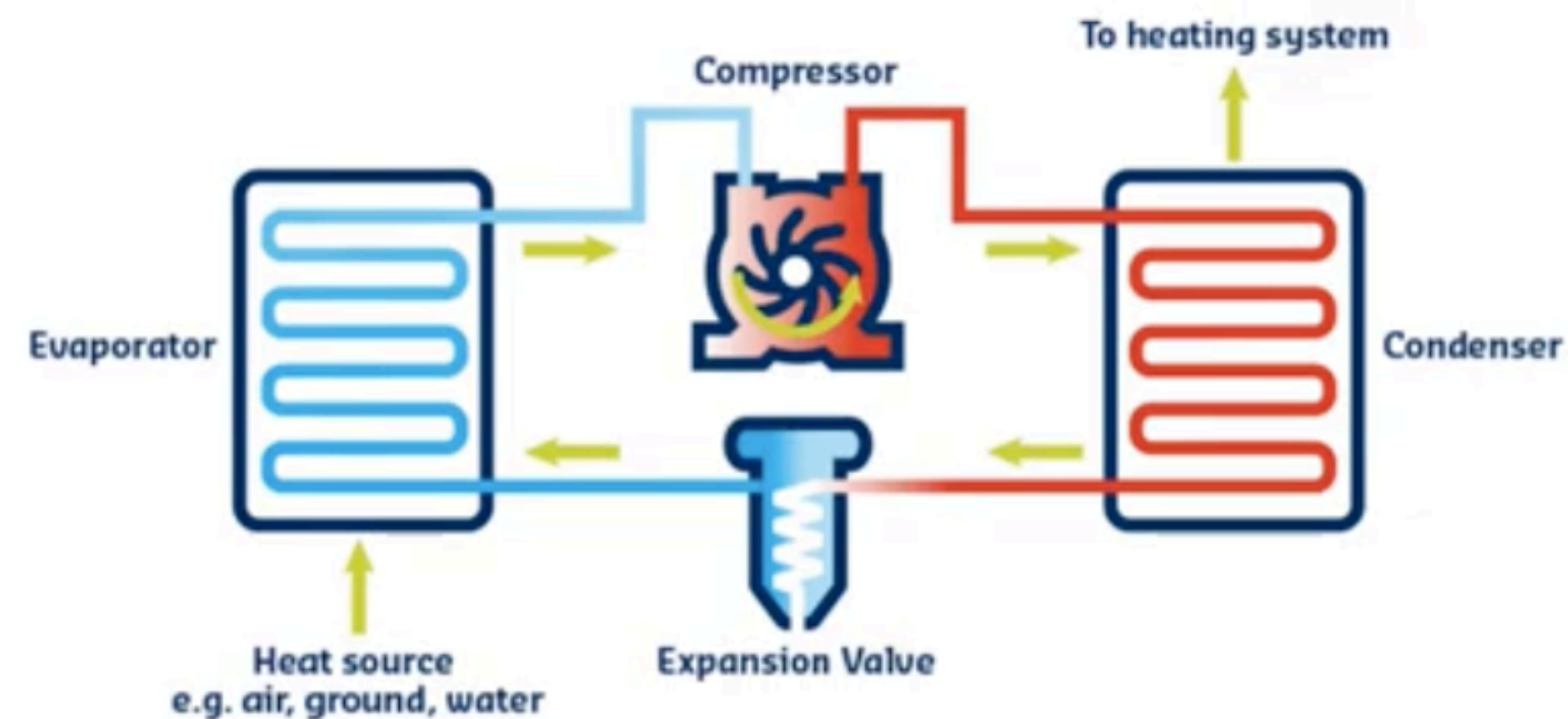
Wind Power

Biomass



Common Renewable Energy Options

Heat pumps move heat from a cooler place to a warmer place.



Heat Pumps

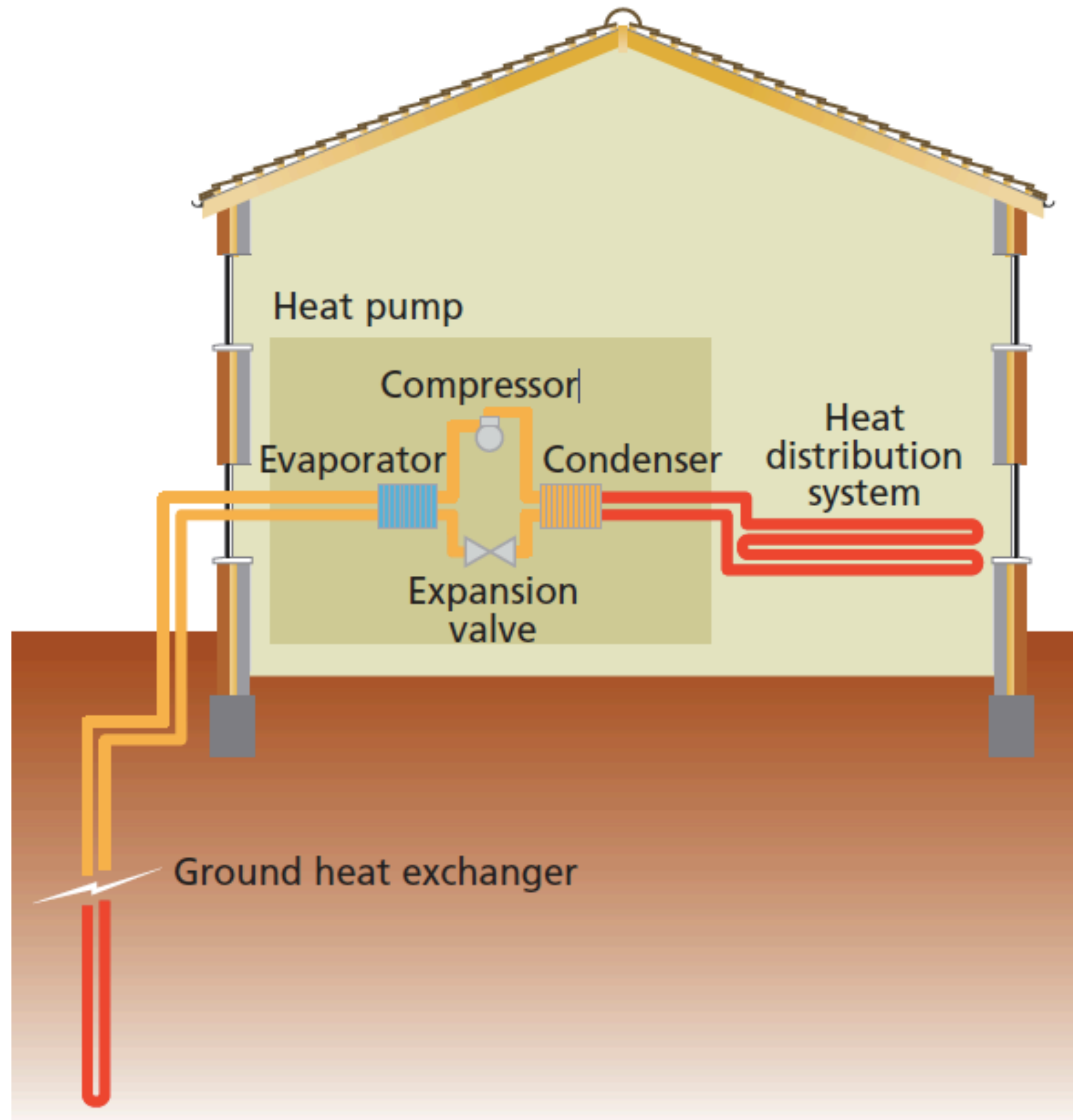


Solar Panels

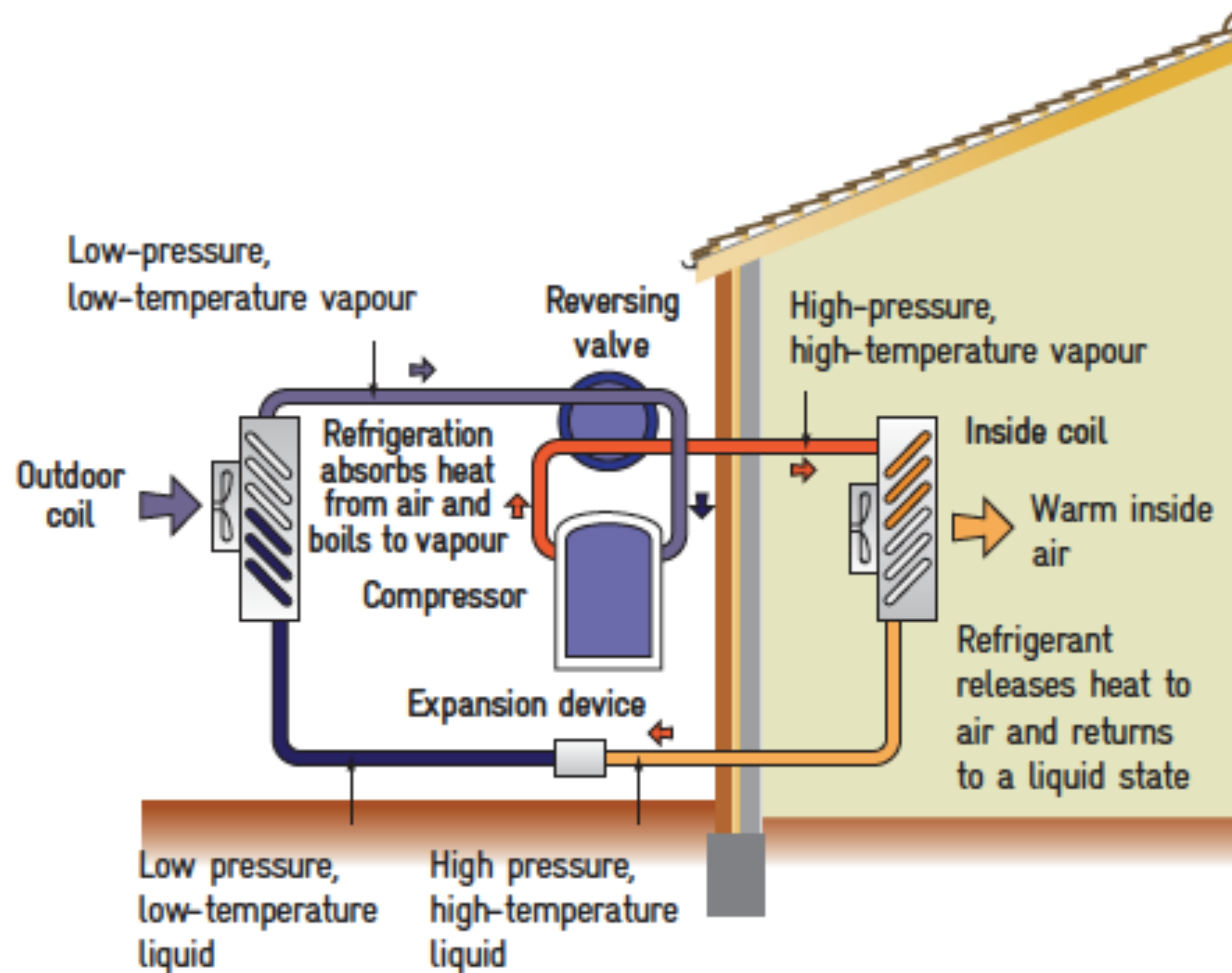
Heat Networks



Ground Source Heat Pump



Air-Source Heat Pumps



Hydrogen

- One of the most abundant elements in the world
- Versatile, long-term alternative to burning fossil fuels
- Produces no carbon emissions at the point of use
- Has the potential to be produced with low or zero emissions
- Unlikely to play a role in the near-term, due to the expense and lack of local and national infrastructure
- Has the potential to complete the move to a zero carbon energy system

Decarbonising Heating

- Reduce heating demand. If we don't use it then we don't have to generate it
- Heat networks are to be more more prevalent in the UK
- Hydrogen Vs Heat Pumps debate to be played out over the next 10 years
- Heat pumps is a known quantity
 - Can be installed locally at a manageable high rate
 - More efficient than hydrogen as they utilise an existing heat source
- Future will hold many solutions for the wide variety of boilers in the UK
- Whichever the technology, the message is they need to change, so plans need drawing up now

What we can expect in the near and far future

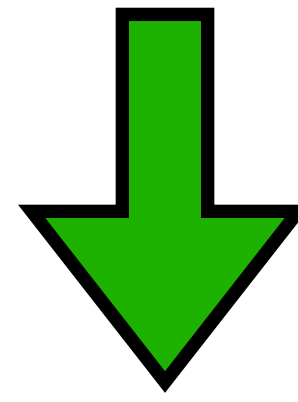
- Space heating demand will lessen
- Building structure will need to withstand more severe storms of wind and rain
- Need to cope with warmer summers and more frequent heatwaves
- Keeping it cool enough for occupants is as big an issue as heating

Carbon Net-Zero Roadmap

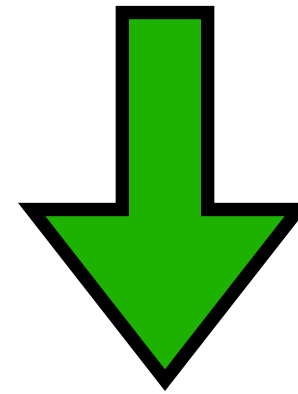
**DOING NOTHING
IS NOT AN OPTION**

Carbon Net-Zero Roadmap

Plan a roadmap of Energy Efficiency projects during the 2020s

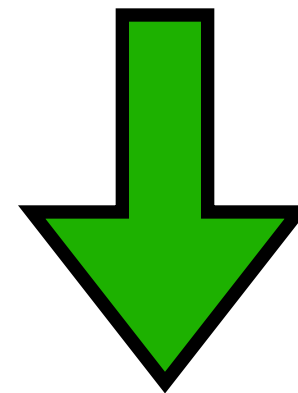


Combat Overheating



Decarbonise Electricity with Solar Panels

Batteries soon, but not yet



District Heating or Heat Pump

Energy
Efficiency
+
Cooling
measures



Solar Panels



District or School?



District Heat
Network
(Heat pumps)



Ground-source
Heat Pumps

Future?

Hydrogen
Boilers / CHP

Carbon Off-setting



Do we need it?

Now Carbon Net-Zero is sorted...

A quick announcement...



LESS   

Low Energy Sustainable Schools

School
Energy
Efficiency



LESS   

Low Energy Sustainable Schools



**LESS CO₂ / SCHOOLS
WORKING TOGETHER
TO SAVE ENERGY**

**Reduce energy usage.
Save money on bills.
Lower CO₂ emissions.**

WHAT DO THE WORKSHOPS COVER?



WORKSHOP 1

Quick wins
to energy
savings



WORKSHOP 2

Engaging with
your staff and
students



WORKSHOP 3

Linking
sustainability into
your teaching

- Put into practice what you have learnt
- Help become part of your school's culture
- Share your experiences, challenges and successes

Get in touch

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