

Heat Pump Association

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Heat Pump Association

HPA works to:

- Accurately represent the technology to professional and customer groups
- Assist with the design of a policy and technical framework for the mass deployment of heat pumps.
- Ensure that heat pumps are correctly identified throughout the UK as a renewable technology

What is the context for this representation?

The greatest change in heating in the lifetime of most people.

Wood, then charcoal, then coal, then gas and electricity, then oil and LPG.

Now renewable energy based on low energy input and low CO₂ emissions

National carbon targets

UK 15% of energy from Renewables by
2020 (EU Target)

UK – Climate Change Act requires an 80%
reduction in CO₂ emissions (compared
to 1990 base) by 2050.

Policy design

In the 2020/2050 context, these are not small changes.

Massively ambitious!

Renewable Heat Consultation talked of 8m homes, many by 2020.

Includes solar thermal, biomass, micro-chp.

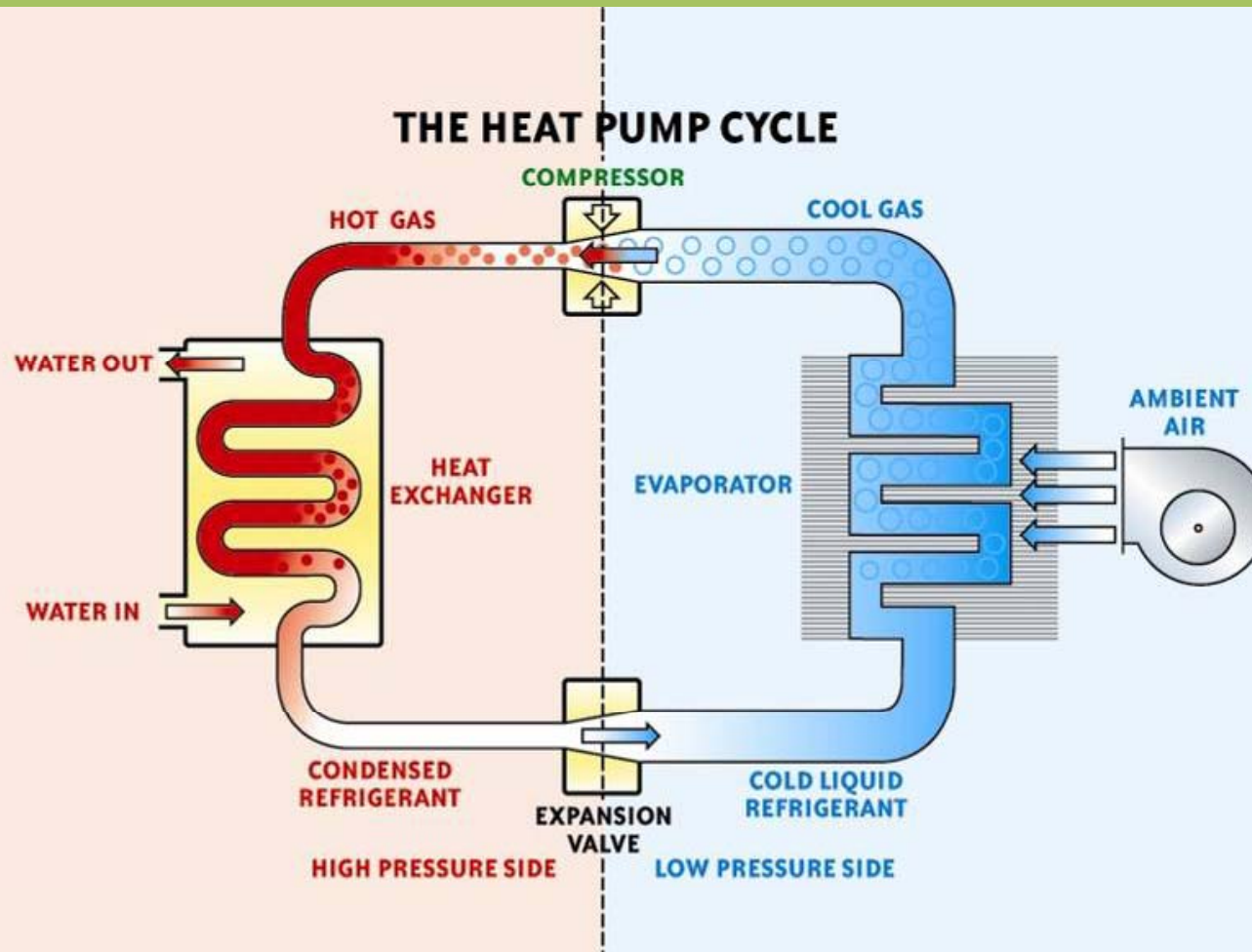
Step change in adoption and installation

Now government and its advisors are able to include heat pumps as a technology to be deployed to help achieve CO2 emissions reduction targets. All recent consultation documents propose a major role for HPs.

Quality of product and installation is of paramount importance.

For this reason HPA supports the Microgeneration Certification Scheme and has been heavily involved from the start.

Hot and Cold

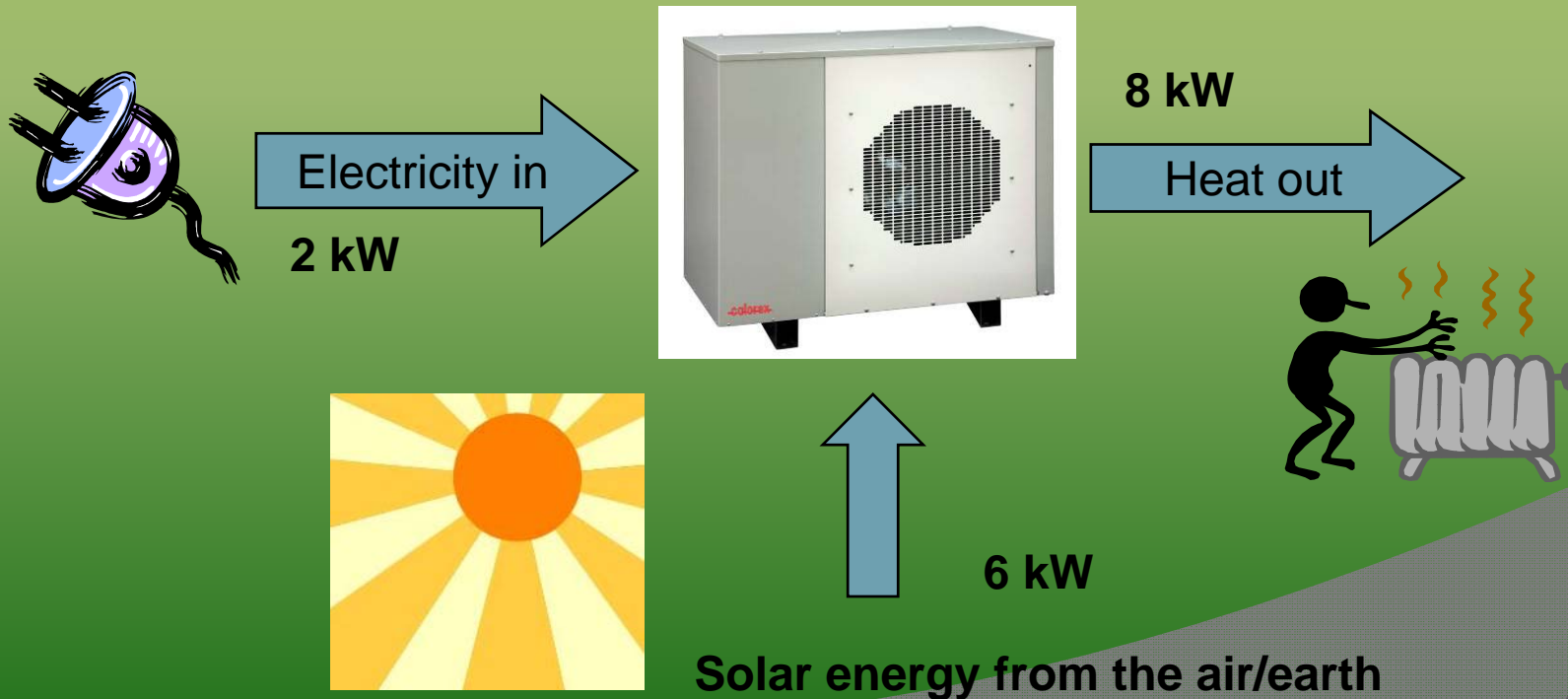


COP - Coefficient of Performance

$$\text{COP} = \frac{\text{Energy Out}}{\text{Energy In}}$$

$$\text{COP} = 4 \text{ or Efficiency} = 400\%$$

e.g. 8 kW Heat out
2 kW Electricity In

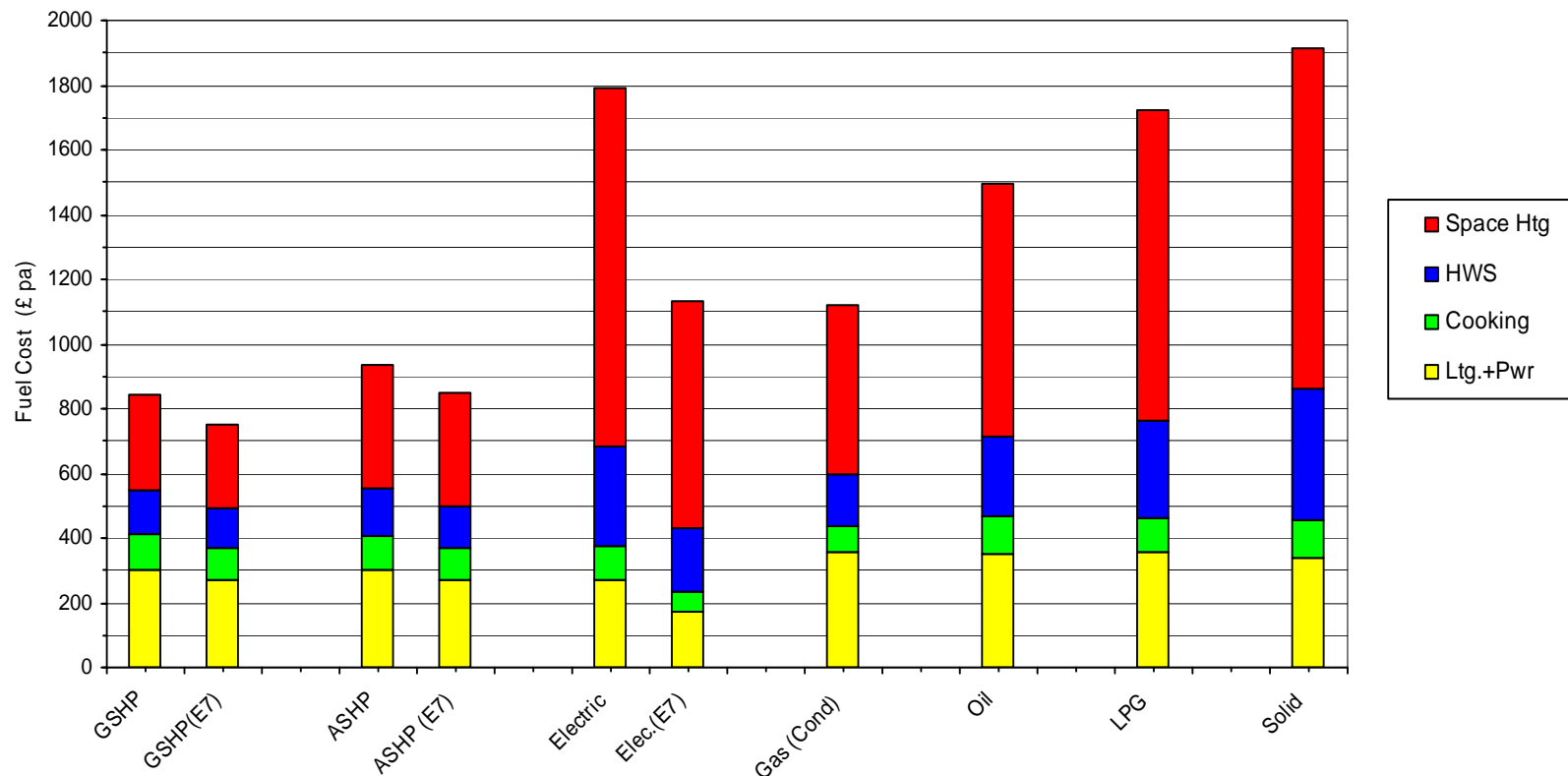


Advantages of Heat Pump v Boiler

- Energy efficient
- Easy to install
- No flues or ducting
- No oil tank or LPG cylinder
- No fumes odours or smoke
- No specialist skills required
- Simple controls
- Corrosion resistant construction

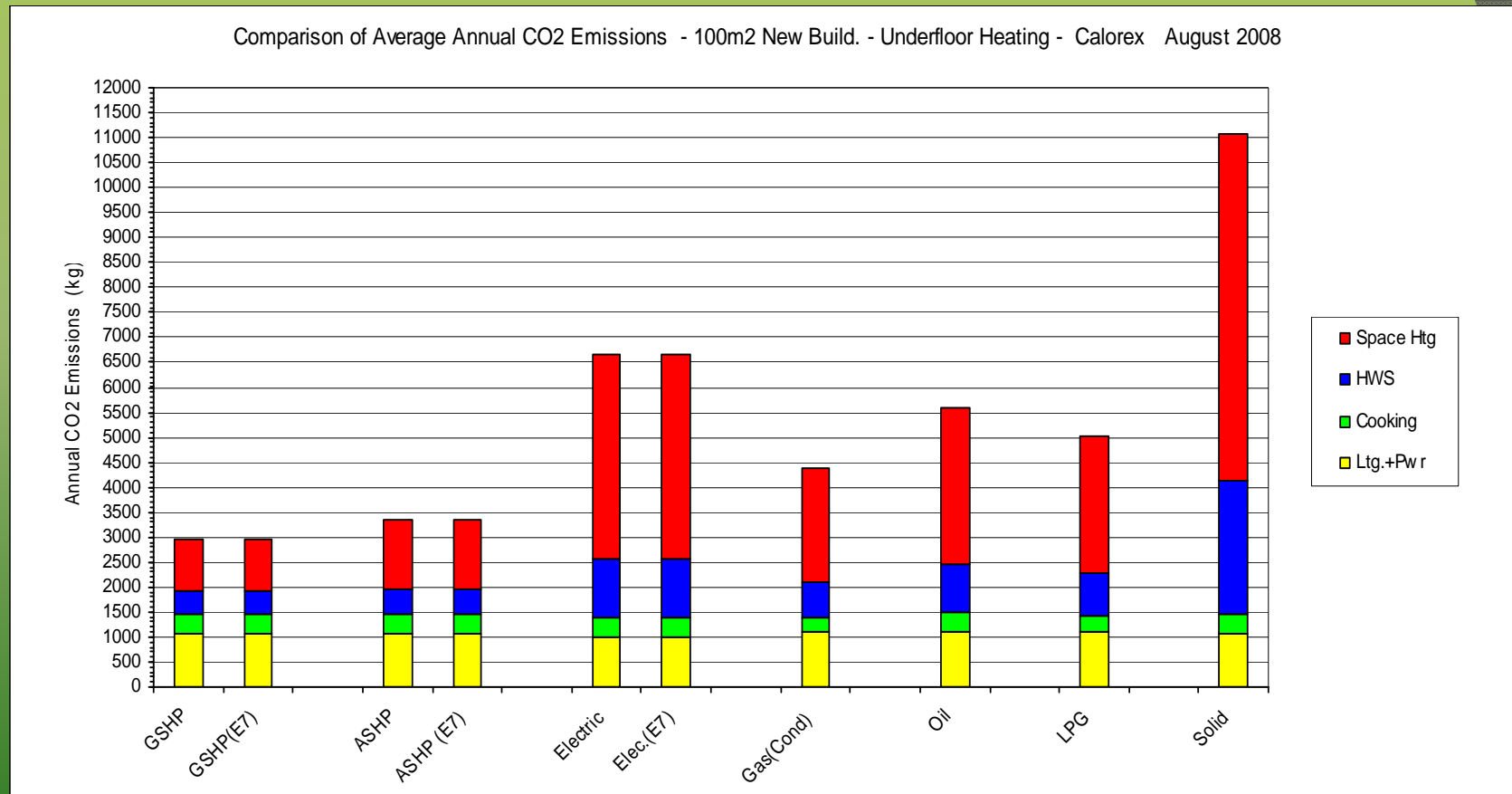
Running Cost savings

Average Annual Fuel Cost Comparison 100m2 New Build. - Underfloor Heating - Calorex August 2008



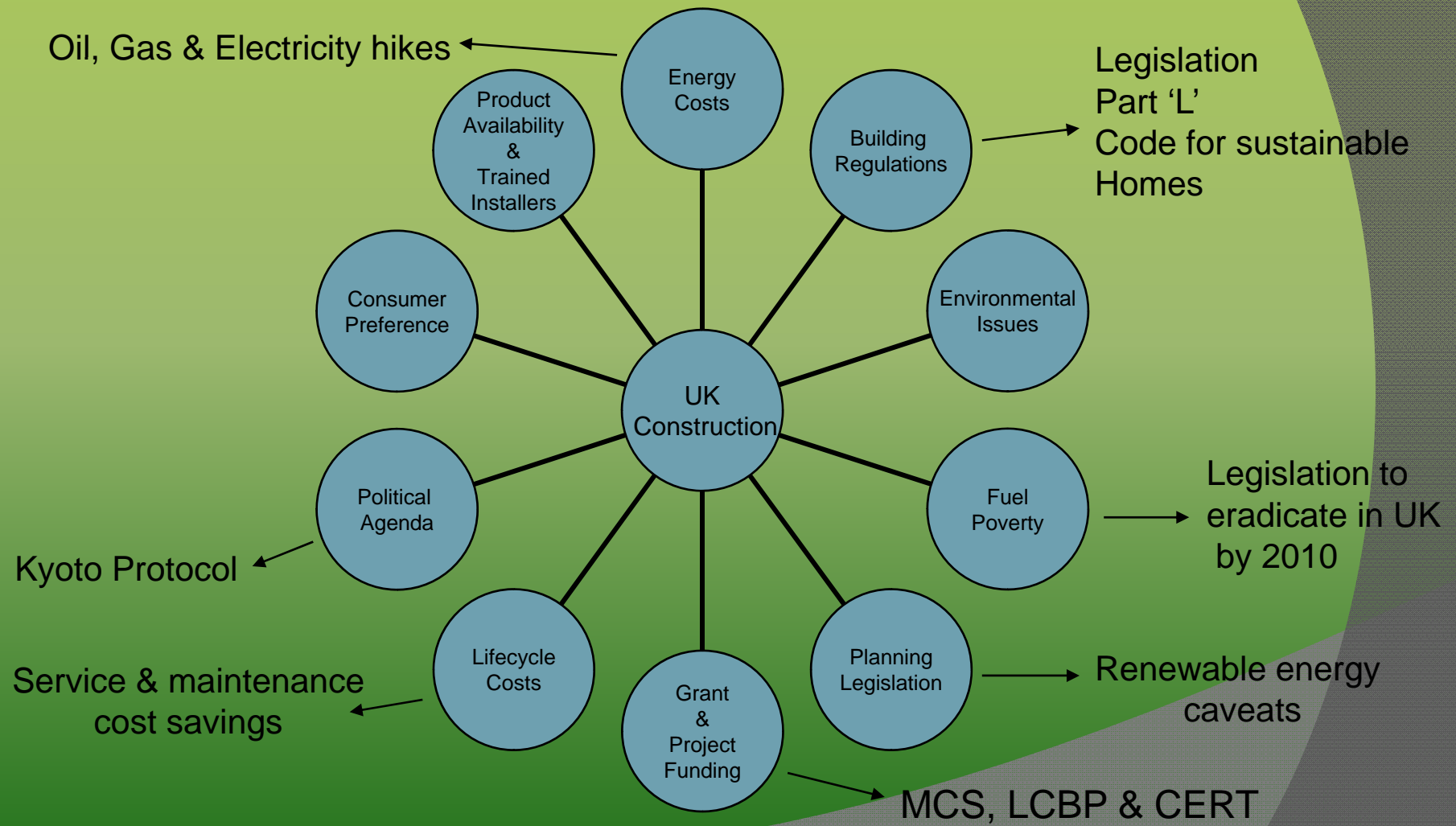
Source:- EON

Carbon savings



Source:- EON

Key Drivers



Air & Ground Source Heat Pumps



Designed for domestic heating as a substitute for a fossil fuel boiler

GSHP or ASHP?

GSHP's

- Ultimate heat pump performance
- Additional ground works needed
- Maintenance free operation
- Quiet and unobtrusive



ASHP's

- At least 75% of GSHP performance for ~ 50% of the cost
- Easier to install than GSHP's
- Retro-fit for immediate carbon savings
- Can be used in high rise dwellings

Heat Pump Applications



Heat Pump Applications



How important will this market be?

Very important!

No official statistics as yet, but a group is being formed now to collate for UK companies.

Unofficial figures from HPA for domestic sales are @ 9-10000 units p.a.

Companies building production capacity in UK and abroad

Sales of heat pumps in UK commercial applications already exceed 200000 p.a.

So the technology isn't strange, only the development of the domestic market is needed.

Let's look at the experience of neighbouring countries:

European Experience(Domestic)

Source-European Heat Pump Association
(HPA a founder member of EHPA)

Total sales in Austria, Finland, France,
Germany, Italy, Norway, Sweden,
Switzerland:

2005 249394

2007 392756

2008 576392

European Experience (Domestic)

Ground and air source heat pumps for use with hydronic (wet) heating systems

France 2005 – 25200. 2008 - 152510

Germany 2005 – 17281. 2008 – 62452

Sweden 2005 - 44872. 2008 – 41923

(heat pumps in 50% of single family homes)

Switzerland 2005-11877. 2008 – 20520

These figures exclude exhaust air and air/air.

Switzerland (Domestic)

Heat pumps now outsell oil and gas boilers

Heat pumps 41%

Oil fired boilers 24%

Gas fired boilers 31%

Climate

Many of these countries have more hostile winter climates than UK, but air source is growing faster than ground source.

What next to develop the market?

- Good products properly installed- MCS
- Robust training of installers in HPs
- Continued focus on carbon savings
- Appropriate government policy to drive adoption without creating a short term 'bubble'.
- Good decisions on CO2 emission values of energy and reduction of unnecessary barriers to adoption.

HPA involvement

- Advice on technology
- Operating efficiencies
- Pay-back calculations
- CO2 emission thinking
- Deployability/industry capacity
- Electrical requirements and loadings
- Sound levels
- Heat distribution/ flow temperatures

The Heat Pump Association is always there to help and guide you.

See our website

www.heatpumps.org.uk

Lots of technical data, explanation of jargon, useful applications.