

Ground Source Heat Pump Association Webinar Series 2020

Heat Pumps in the UK - History and Current Policy

Webinar video available on YouTube

<https://youtu.be/jdrV9kapUGU>

14th May 2020

The ultimate renewable energy source



Policy history

Much of it is poor from the heat pump sector's perspective

Occasional glimmers from publications such as the Clean Growth Strategy which talked up ending high carbon fossil fuel use in the 2030s and “smart” use of heat pumps alongside smart charging of EVs

RHI supported deployment is just beginning to take the market forward. Domestic and Non-Domestic RHI applications are growing strongly

Better to look forwards, having learned from the past

What is the impact on emissions from heat?

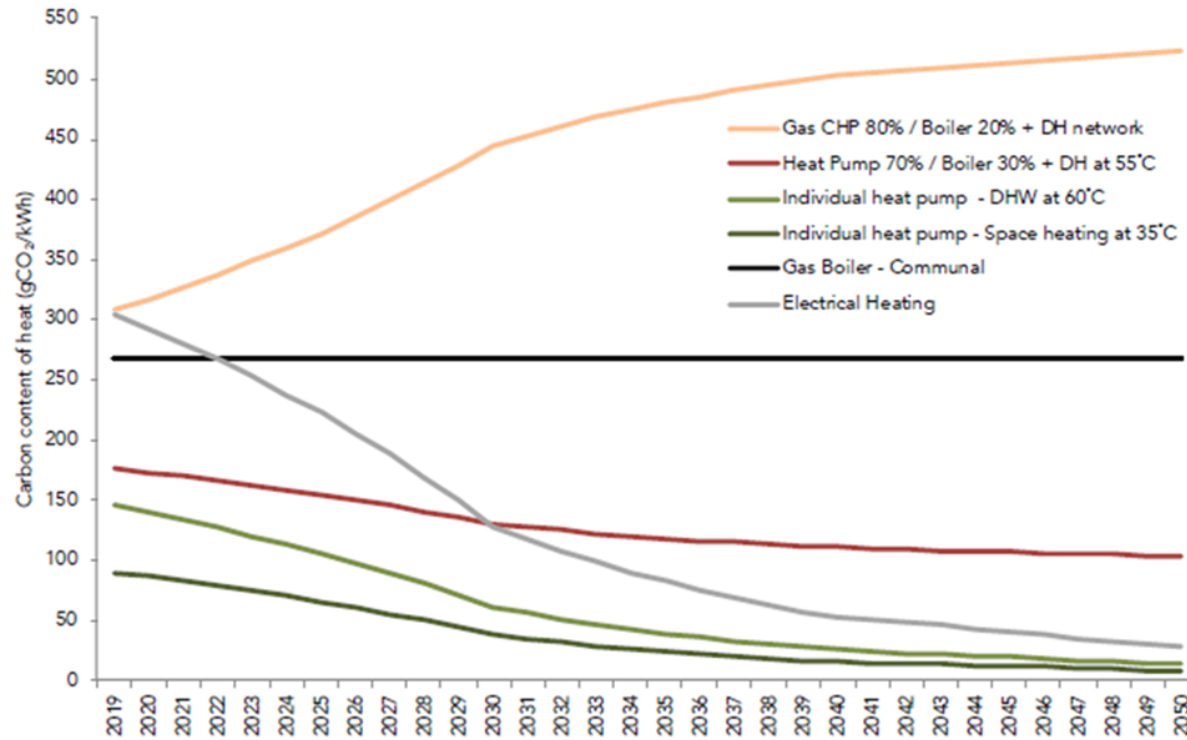


Figure 4.05 – Projected carbon factor of heat based on HM Treasury Green Book marginal emission factors

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GridWatch

Carbonising rapidly

being phased out and wind generation increases the carbon intensity of the Grid is bad news for those who can see that the decarbonisation of heat is greatly helped by ultimately the Electrification of Heat.

CO₂ from Heating Systems

UK Average
 Grid at -> 2020-01-22 21:30
 is emitting -> 328 grams CO₂ / kWh

Ground Source Heat Pump (400%):	82
Ground Source Heat Pump (320%):	102
Direct Electric heating (100%):	328
Gas boiler (85%):	215
Oil boiler (85%):	320
Coal (50%):	630

grams CO₂ per kWh delivered heat

GSHPA
www.gshp.org.uk

Displaying the CO₂ released from different heating technologies. GSHPA values are for 2 typical levels of efficiency; 320% (COP=3.2) & 400% (COP=4). Grid carbon intensity uses real-time data. The value reflects the decline in generation from coal & the growing contribution from renewable power technologies.

Data courtesy of National Grid CO₂ Intensity API. Original thinking J.C.W. Parker. Developed & sponsored by GeoScience Ltd. Running on pythonspyhere

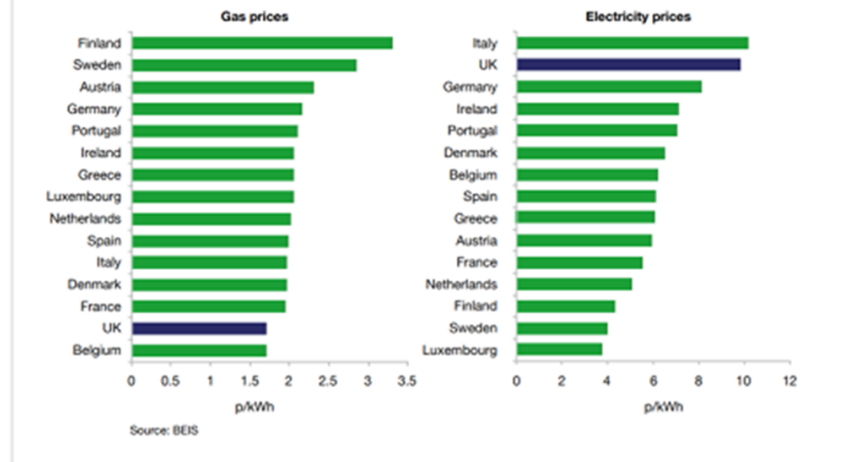
View live UK generation status

- Select new area
- UK Average
 - Scotland
 - N. Scotland
 - S. Scotland
 - N.E. England
 - N.W. England
 - Yorkshire
 - Wales
 - North Wales
 - South Wales
 - East Midlands
 - West Midlands
 - East England
 - S.E. England
 - South England
 - South West
 - England
 - London

What has held heat pump deployment back?

- Building Regulations grid carbon factor
- UK raw fuel spark gap favours gas
- Fossil fuel subsidies, “green” levies are applied to electricity only – 18% or so inflationary result
- Lack of robust fossil fuel standards environment
- Poor renewables subsidy strategy
- The interests of the incumbents
- Consumer awareness
- Heating industry skills and knowledge

Figure 12: Industrial electricity and gas prices for large consumers in the EU15 in 2016, including taxes¹³⁵



Who is right?

Who is supporting or planning for the mass deployment of heat pumps?

- The Committee on Climate Change (immediate action on new build and off-gas)
- National Grid (Future Energy Scenarios)
- Energy Systems Catapult (Heat Pump Demonstrator Programme)
- OFGEM
- Europe
- UK cities (London, Manchester, Bristol, Leeds, Oxford, etc.)
- The DNOs (connect & notify)
- Even BEIS
- Sir David MacKay

The consumer is key

What factors are in play with the consumer

- Fossil fuels work(?)
- Resistance to, or fear of, change
- Very low valuation of energy (resistance to insulation)
- Capital cost of change
- Operational costs (spark gap)
- Knowledge & understanding
- Environmental attitudes (Sir David Attenborough, Greta) and increasing intergenerational pressure
- Regulations (MEES, Building Regulations)
- Government subsidy
- A better offer (controllability), transitional approaches (hybrids)

Training

The UK heating industry needs to force a step change on heat pump training & education

- Installer level – a work in progress (MCS, HPA, GSHPA, etc.)
- Apprenticeships – a work in progress
- CIBSE – a work in progress for commercial applications
- Reach out to schools & further education (T-levels, building services engineering from September 2020)
- Domestic Energy Assessors (improvements to EPCs)
- Heat pumps are increasingly IT-led, remote access, optimisation, weather forecasting, flexible tariffs
- New appeal to a changing demographic at entry level, including an increasing proportion of women

Current policy

What is government thinking at the heart of policy determination?

- Evidence suggests that we just do not know
- No long term plan
- No Energy White Paper
- Low Carbon Heat Roadmap – when?
- Building Regulations & Future Homes Standard – when?
- Ultra low ambitions for domestic heat pump installation support
- No effective strategy for non-domestic heat pump support which recognises the need for stable policy over several years

Requirements for success in decarbonised heat

Get on with it, is the message from all sides

- Clear long term signals to make the sector investable, including in training
- New funding models to reduce consumer costs (assets, storage)
- Access to lower cost consumer borrowing
- Recognition that purchasing decisions based on significant change need time, not just time, stable policy time!
- Steady progress on closing the spark gap
- Recognition of the value of improved air-quality (NHS costs and premature deaths)
- Recognition of the value of on-shoring energy (security, balance of payments, UK labour – jobs, up-skilling)

Win friends and influence people

The heat pump sector needs to build influence...

- to contribute to the Green Recovery, post COVID-19
- to help government face up to the phasing out of fossil fuels and to press on with technologies available now, rather than waiting for a utopian answer
- to persuade government and others of the close synergy between EVs and heat in an increasingly electrified world
- to create unstoppable momentum
- by developing a grand coalition in support of the electrification of heat



Questions.....

and thank you
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