

# UK Home Heating Decarbonisation

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# Summary

- 20M current UK homes need to convert from gas to heat pump to decarbonise by 2050
- I am looking for ways to make those heat pump retrofits cheaper and more effective and robust and user friendly
- I will spread the word as I go, including via trade press and influencers, mass media ...

# Motivation and History

- I have been thinking about fixing climate change since at least 2007 (<https://www.earth.org.uk/>)
- I spent the last decade inventing and bringing to market a domestic heating control (Radbot)
- I have spent my life founding start-ups, and consulting
- I work with my local council and environmental groups on climate
- The climate still needs lots of help, thus this research!

# Me me me! Imposter Syndrome vs Wisdom?

- I am very new to academic research
- I have done grant-funded "industrial research"
- I have done lots of innovation
- I have done lots of production system delivery and maintenance
- I have a network of contacts
- Though I **know** that I don't know what I'm doing, that's not new!
- It is OK to flounder, ask for help, and pivot!
- While floundering, I do so professionally with an audit trail and test cases, where possible...

# Possible Topics/Papers

I keep thinking of new topics that jump the queue, but these seem important:

- TRVs and heat pumps – how do they interact, and should we ditch them, keep them or adapt them and how we use them? (An interesting teaser from Heat Geek got me started on this PhD!)
- Heat pumps and fabric improvements – if we cannot do fabric improvements first then what should we do?
- Improving agency and understanding for users of heat pumps to end up with cheaper more comfortable homes – controls that work!

# Current Work

- I am looking at the puzzler posed by a heat pump industry star, Heat Geek, indicating that turning down room temperatures to save energy (eg with TRVs) may end up using more:  
<https://www.heatgeek.com/why-not-to-zone-heat-pumps-or-boilers/>
- I am currently working to extend this simple model to something like a sample of actual housing stock and representative locations across the UK to see if the effect is (a) real and (b) a big enough issue to change user guidance and even building regulations (eg England's part L): <https://github.com/DamonHD/TRVmodel>

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