

Green gas

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[winter summer heat and electricity use](#) Green gas has been in the news recently. As this site has blogged on a number of times decarbonisation of electricity is relatively easy. Decarbonisation of [heat](#) is not. Renewable heat by contrast is as we covered in our [book](#) is a highly disruptive technology with less options and common underlying drawbacks. One solution is to use green gas. There are two options one of which is hydrogen which is what the report the Oxford institute for energy studies report concentrates on. They assume that the methane will be converted to hydrogen and CO₂ which will be captured and stored. They point out a number of advantages the UK has which in regard to using hydrogen as well as the drawbacks of other technologies. These drawbacks are covered in the blog post above and our book. The advantages they say are that existing pipes can be used. I'm surprised about this since hydrogen being a small molecule compared to methane is more likely to leak through nano sized holes. My understanding was that special pipes would be needed (which if true is highly critical). The distribution network was also (largely) built for town gas. Made from coal this contained hydrogen and carbon monoxide, so makes a switch easier. The UK is also very dense population wise as well. They reckon that the cost could be as little as 8p/unit although this as they admit is very hard to determine. However there are number of disadvantages to "green gas". First the energy embodied in hydrogen is too low (see [heat](#) is not. Renewable heat by contrast is as we covered in our [here](#)). Second they understate the disruption in switching on all burners using natural gas. This had to be done in the early 70's in switching from town gas to natural gas. Many more people have central heating than then, although more people probably use electric cookers. Carbon capture and storage is untested at scale using combustion (as they admit). It will also take energy to pump the CO₂ underground and the long term geological effects are unknown. All this makes me believe this is a non starter. Personally I think we should go for biogas (methane). This allows for full use of existing infrastructure. The problem is we could meet only about 25% of UK needs and it relies on food waste which we are rightly keen to cut down.

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