Clean Heat, “The biggest challenge of our generation?”

Bold statement perhaps with so much going on in politics, conflict, disease and poverty. Of course they are all linked but at the base of every strand of the unravelling fabric of our society we get to global warming and firmly at the core of this is the use of fossil fuels.

The reasons to use fossil fuel in Britain, approx 25% is electricity production, 25% for transport. Heat makes up about 50%, mainly from burning gas in our cities and whilst we have a goal, progress isn’t quick enough.

So, what is wrong with burning gas?

Well they say the first step to reform is to accept you have a problem. Drugs, alcohol, gambling; cure comes after acceptance. Our problem is gas.

Given the clear statement in the Paris Agreement to decarbonise, backed by Climate Change Act 2008 and subsequent Scottish legislation and advice from bodies such as the Climate Change Committee, heating needs to change.

Switching or repurposing the gas network from methane to Hydrogen, technically is possible. That’s a problem with engineers. One asks them “can it be done” and they invariably say “yes”.

What society really needs is an assessment of “should it be done” and that brings in other aspects such as finance, pace and broader outcomes.

There are ambitious plans to explore the viability of hydrogen in Leeds. The repurposing of every km of gas network and every device is possible but it’s complex which is why the estimates are in the tens of billions of pounds. Spending that amount of money isn’t quick so the estimates for completion of this 10% of our national gas challenge are mid-2030s.

> **“What we need is a clear and simple plan of how to roll out non-combustion, high efficiency heating solutions. In individual buildings it’s called a heat pump.”**

Like an exam situation it’s always good advice to read and reread the question paper and keep an eye on the clock. 2050 people! We need a society that is largely fossil fuel free, far lower emissions, we aren’t loaded so need cost effective solutions. We have a mountain to climb so today is a good day to make good progress and we don’t want to exacerbate air quality which seems to be out of control in our cities. Achieving 10% by 2035 smells of desperate fail on the part of the gas networks.

Christmas is a special time of year and closely followed by Hogmanay which once the fog has lifted sends me googling for when London will breach it’s air quality limits for the year. One might be expected to think Autumn, maybe summer but for the last few years I’ve been watching it this dubious achievement occurs around the 1st week in January. No wonder the UK Government is being challenged. That said, London has woken up and pioneered clean air zones and whilst not widely reported in the press is preventing new buildings from having their heating from gas or even gas CHP. This is an interesting and necessary move but brings me to two points.

Firstly, developers must not be allowed to pick a cheap solution in direct electric heating. The challenge to the UK grid of electrification is evident. We must lessen the challenge by using electricity wisely. Secondly and this is what is really worrying. Planning only touches new buildings or heavy refurbs.

What we need is a clear and simple plan of how to roll out non-combustion, high efficiency heating solutions. In individual buildings it’s called a heat pump. There are over 1 million sold in Europe every year. Every year they get more efficient and reach higher temperatures so even our rather poor building stock would work.

The grid demand?

Well the local grid I’m told must allow every house to have 1kW simultaneously. That’s a 50% higher than a 2 slice toaster, so I’d be astounded if it wasn’t possible.

So 1kW for a domestic heat pump would allow 3kW of heat which in gas terms would be about 15p every hour. Take 20 hours a day (it makes sense to avoid peak times) and this would be an annual heating bill of over £1000. Quite a lot of heat for a manageable electrical load.

Why isn’t it happening?

Human nature. We are programmed to be short term.

We need government to set the signal, ala diesel 2032 saying “replacement gas boilers will be banned” by 2030. I’d immediately ban gas boilers in new houses. It kind of is except folk seem to ignore it. It’s even in the Clean Growth Strategy of the Conservative Government. At a fixed price or variable vs consumption, 10% cheaper than gas but using a domestic heat pump. The big guns would fix the kinks in the supply chain and have a hugely flexible load that can dim down if the grid is stressed. The consumer doesn’t have to stump up cash. The local authority would add a bonus on council tax if the property was resold. Everyone wins.

So what’s stopping us?

Well no end user can deliver this district heating. It has to be offered to them by a DH company. And no DH investor will speculatively spend millions on a pipe network/clean heat generation if the end users don’t have to buy from them.

Our client city Drammen, in Norway, solved this very simply. They said every building must connect but they must be offered heat at a fair price and hey presto, investment money was found and DH appeared.

So, who does that sound like?

For me, it will be a cities alliance… Edinburgh say “yes” and Glasgow say “maybe”. All backed up with enforcement notices from SEPA.

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