Procure PLUS

news

Energy White paper

David Kemp (Sustainability and Growth, Procure Plus) gives his view on the latest developments.

Another day, another Government publication with implications for the low carbon agenda and social landlord investment plans……

Following on from the most recent '10 Point Plan' published by Government, this Energy White Paper unsurprisingly builds on a lot of the announcements and policy initiatives previously mentioned.

It is great to see a number of areas that weren't addressed or even mentioned in the 10 Point Plan are referred to within the White Paper. That said, there remains enough uncertainty around some issues and again, areas not included, to suggest that this White Paper should be viewed as another 'stepping stone' towards achievement of our Net Zero carbon target as opposed to a definitive and final route.

Again, we've looked to pick out a few choice areas from the White Paper, encouraging and concerning, which we feel are of relevance to our social housing customers and could inform their investment decision making processes and internal policy targets relating to zero carbon and fuel poverty.

Consumers

The perverse situation of current policies designed to support delivery of low carbon objectives whilst actually penalising lower carbon fuel has finally been recognised by Government. The financial impacts of all the 'green crap' (to quote our erstwhile Prime Minister) have been applied to electricity costs for many years, meaning consumers have been disincentivised from moving away from a fuel with a higher carbon intensity (gas) because lower carbon electricity was being artificially inflated in price due to policy intervention. The need to review how environmental levies, like ECO and Warm Homes Discount, are applied to energy bills, so as to continue to provide the needed financial support to continue addressing fuel poverty and carbon reduction without penalising lower carbon fuels, is very much welcomed. What this looks like in practice however, we'll have to wait and see.

Likewise, we'll have to wait and see how Government intend to address how energy consumers are to pay for continued investment into our energy networks. Today around 25% of energy bills are due to transmission and network management costs. In an era of increased decentralised and 'self' generation where energy consumption and generation is collocated, the current approach to cost recovery will fall disproportionately on those unable to self-generate or live at some distance from generation sites. The situation obviously needs looking at but again, this White Paper points to future work and study rather than giving clear answers.

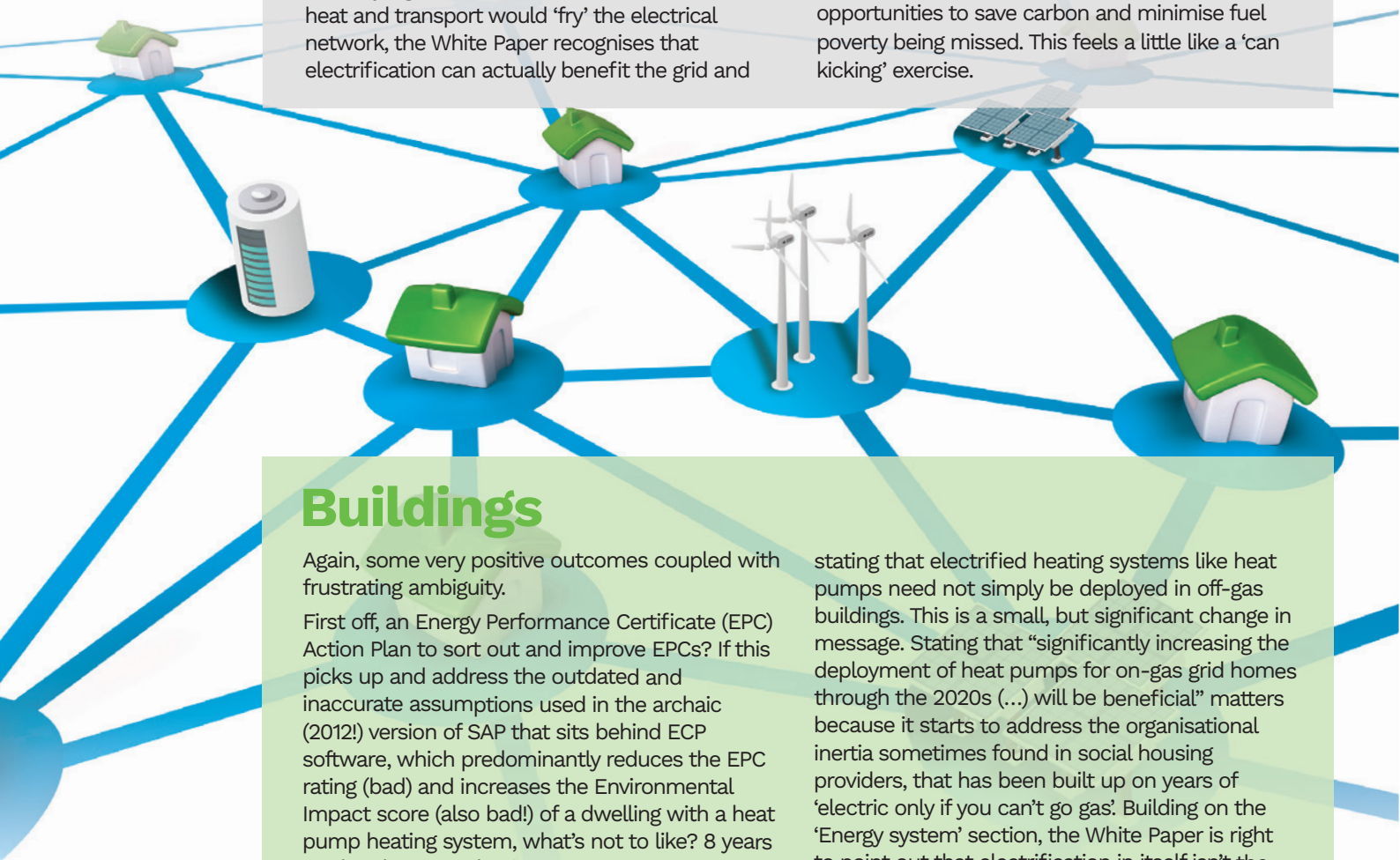
Conspicuous by its absence though is any mention of the impact on consumers from any significant shift to hydrogen (H2) for domestic heating. As a manufactured fuel, using either renewable electricity (green H2) or gas with carbon capture and storage (blue H2), it will surely cost more per kWh delivered to the end customer than grid electricity? I cannot see how electricity costs (including generation and transmission to manufacturing centres) coupled with conversion losses then added to H2 storage and transmission costs themselves can provide a lower cost fuel to a homeowner on a kWh heat output basis from a H2 boiler than, say, a heat pump with a very modest (poor even) seasonal performance factor of 2.5 powered directly by the same low carbon grid.

Energy system

It's great to see that flexibility and small-scale energy storage is mentioned in the White Paper. The ERDF funded 'Homes as Energy Systems' (HaES) project that Procure Plus leads on, with Northwards Housing, Stockport Homes Group, Manchester City Council and Stockport MBC (as well as the University of Salford, Upside Energy and RetrofitWorks), is explicitly trialling how decentralised and distributed energy generation and storage can support energy network management to lower carbon emissions and create revenue streams for social landlords. When HaES was launched, the barriers to portfolios of small-scale energy stores from entering energy markets were recognised so the commitment in the White Paper for Government to "ensure distributed flexibility is able to participate in all markets" is another welcome validation of the concept behind HaES.

Contrary to the position of many energy system stakeholders (or vested interests?) who proclaim that any significant increase in electrification of heat and transport would 'fry' the electrical network, the White Paper recognises that electrification can actually benefit the grid and reduce running costs for consumers when used in conjunction with storage and smart meters. To hear directly from Government that any shift in policy away from gas heating is not going to bring the energy network to its knees will help address some of the underlying concerns that social landlords have about the impact that this sort of decision could have sort of policy change across the social housing sector.

The recognition in the White Paper of the need to maintain investment in the gas network is welcomed - regardless of the long-term future of natural gas as a fuel, a gas transmission network will be required to support the development and delivery of H2. That said, the future of gas is not addressed in any more a meaningful way than 'we'll consult later'. I think greater clarity over the direction of travel could have been given, certainly in relation to domestic gas, given social housing providers will continue to invest at scale in gas technology over the coming years resulting in opportunities to save carbon and minimise fuel poverty being missed. This feels a little like a 'can kicking' exercise.



Buildings

Again, some very positive outcomes coupled with frustrating ambiguity.

First off, an Energy Performance Certificate (EPC) Action Plan to sort out and improve EPCs? If this picks up and address the outdated and inaccurate assumptions used in the archaic (2012!) version of SAP that sits behind ECP software, which predominantly reduces the EPC rating (bad) and increases the Environmental Impact score (also bad!) of a dwelling with a heat pump heating system, what's not to like? 8 years too late by my reckoning.

Secondly, the reiteration of the Government's 10 Point Plan target for heat pump deployment is brilliant, but it doesn't stop there! For the first time, as far as I'm aware, we have Government stating that electrified heating systems like heat pumps need not simply be deployed in off-gas buildings. This is a small, but significant change in message. Stating that "significantly increasing the deployment of heat pumps for on-gas grid homes through the 2020s (...) will be beneficial" matters because it starts to address the organisational inertia sometimes found in social housing providers, that has been built up on years of 'electric only if you can't go gas'. Building on the 'Energy system' section, the White Paper is right to point out that electrification in itself isn't the solution. Thermal and electrical storage, along with load shifting and demand response services, will be needed to minimise the amounts of additional renewable generation, alleviate network

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capacity issues and offer lower running costs to consumers. For social housing Asset Managers with stock at the EPC D/C or above mark, this could be perhaps be translated (admittedly over simplistically!) as heat pump, battery, smart controls and time of use tariff?

Given the above, I'm still baffled by the lack of any dedicated policy initiative focused on increasing deployment of solar PV. The eagle eyed amongst you will have noticed the obvious carbon and bill saving intervention missing from my translated list of measures – heat pump, PV, battery, smart controls and time of use tariff. I've previously written about the local economic development opportunity as well as 'no regret' carbon and bill saving opportunity that domestic (and commercial) PV provides so yes, I'm stumped as to why it remains in the shadows when it comes to current thinking on energy policy contained in this White Paper.

Aside from the omission of PV, it remains the lack of clarity over role of hydrogen at the domestic level that, perhaps, is the biggest weakness of the White Paper. For the second time in this document, we have a text-book example of procrastination - "We will work in partnership with industry to evaluate hydrogen as an option for heating our homes and workplaces and develop plans for a possible pilot hydrogen town before the end of the decade." We know green H2 (and perhaps blue H2 too) will be needed if the UK is to achieve its legally binding carbon target, that is not up for debate. What is needed from this White Paper is certainty over the immediate future of domestic heat to encourage and incentivise the army of supply chain companies that are needed to install the 600,000 heat pumps a year that Government want by 2028.

Will this happen if consumers and social landlord investors and developers continue to install gas or even H2 ready boilers in the belief that domestic H2 is coming? No.

Will the UK, individual LA and even social landlords themselves achieve, their own stretching zero carbon deadlines by installing H2 ready boilers and waiting for green H2 to come down the pipes? No.

Will carefully calculated carbon budgets (not arbitrary dates for zero carbon but quantities of carbon equating to a share of UK wide carbon emissions to achieve net zero by 2050 and avoid catastrophic climate change) be met or will they be blown to smithereens if everyone banks on zero carbon H2 and a H2 ready boiler? I won't answer that one.

This is equally where the Government does not seem to be listening to its own scientific advisers on the Climate Change Committee as to what policies are needed to deliver the UK's Sixth Carbon Budget and 2050 Net Zero target. Highlights from the latest Policies for the Sixth Carbon Budget and Net Zero document, produced by the CCC, on the domestic heat issue include the following:

- **Sales of gas boilers to all homes and business should be phased out by 2033 to allow enough uptake of low-carbon heat to decarbonise buildings by 2050**
- **Full hydrogen conversion is "not recommended" due to the low system efficiency which poses a significant supply-side challenge (300GW of wind to produce 800TWh of H2)**
- **Full electrification of domestic heat is challenging "(though not impossible)."**
- **Electrification of heat is "of primary strategic importance for Net Zero" even where hydrogen grid conversion is widespread (such as in areas adjacent to industrial cluster)**
- **Early deployment of heat pumps helps reduce emissions sooner (meaning increased efforts to save greater amounts of carbon at a later date are avoided), helps to increase consumer confidence and understanding in the technology in advance of other policy measures to support deployment and also help supply chain reduce costs through familiarity of delivery**

So, there you have it.

If we are to achieve zero carbon and have a heat pump supply chain (installers and local manufacture) able to deliver at the scale required, a clearer message and commitment from Government on decarbonising domestic heat through electrification right now, and throughout the 2020s, is needed.

Like policies on PV, it's just not in this White Paper unfortunately.