

What decisions are needed for the UK to achieve its hydrogen ambitions?

Blog post by Senior Associate Lilah Howson-Smith, 11 November 2020

With the prime minister set to make a set-piece speech next week on how the UK meets its net-zero commitment, the big question remains how far he will emphasise the importance of hydrogen to the country's green ambitions. Pressure has been ratcheting up in the context of Europe and China committing substantial funds to hydrogen in their recovery plans, but the UK has not yet produced a strategy to match.

Kwasi Kwarteng, the government minister tasked with scaling-up production and attracting private investment, has promised a UK hydrogen strategy this winter. Clearly, the government likes the idea of net-zero and powering a green recovery that also helps to buoy the politically important red wall seats it won at the last election, which delivers a lot of bang for buck in terms of productivity and research and development. But so far, the government has not explained what this means in practice and postponed answering the three crucial questions: how it produces hydrogen at scale, which uses it favours and how it reduces cost. The way it responds to these policy dilemmas will ultimately determine the success of any future hydrogen efforts.

In the first instance, there is an ideological choice for the government to make on the type of hydrogen it wants to produce. The UK has shown no appetite to indicate a preference on whether hydrogen is produced by electrolysis power by wind or decomposed natural gas, with the carbon captured. This reflects the fact that the UK has strengths in both blue and green. In electrolysis, Sheffield based ITM Power, for instance, is a global leader in electrolysis manufacture, while for blue hydrogen the country's natural gas reserves, infrastructure and CCS opportunities are significant potential assets. A strategy that confirms this neutrality will be directive to investors.

Secondly, while politicians are keen to emphasise hydrogen's all-encompassing utility, the UK will have to prioritise a particular end-use to provide a starting point to scale up. All signs point to them favouring transport and integrated industries. These end-uses have a visible market and respond to the innate difficulties in transporting hydrogen by creating 'clusters' of industries that rely on it (as is being developed in Yorkshire and the Humber) or storing it in fuel cells. While heating through hydrogen may be technically possible and a longer-term goal, the public and the grid has not yet been 'warmed up' to the short-term disruption this will likely require.

Finally, the government will have to address that hydrogen today is expensive, and alternative fuels are cheaper. The policy interventions that closed the price gap on renewables will be instructive; in practice, this means there will be an initial focus on subsidising production either through contractual payments to suppliers (as in CfDs for wind) or regulated returns (as in nuclear). However, the timeline for funding looks set to be impacted by the delay to the three-year spending review and budget, although the outstanding commitment to a 'net-zero review' by HMT this autumn means it cannot be delayed indefinitely.

These remaining questions show that while the Conservatives' championing of green measures goes a long way in terms of good intentions, there are still policy choices required to make sure they can deliver in creating a viable market for hydrogen. And while some certainty can be deduced from political enthusiasm, it is these early decisions that should be paid attention to in determining which hydrogen applications are profitable in the future.