The Government's Package on low-carbon hydrogen

Briefing contents

Hydrogen Strategy

Introduction and Context

On 17th August the Government released its long-awaited Hydrogen Strategy, which sets out the key steps needed in the 2020s to deliver a functioning hydrogen economy and meet its target of 5 GW of low-carbon hydrogen production capacity by 2030 set out in the Energy White Paper. It also sets the context for further scale up through Carbon Budget 6 to Net Zero by 2050.

The Government press release on the Strategy can be found here.

Government analysis, which underpins the Strategy, suggests that 20 – 35% of the UK's energy consumption by 2050 could be hydrogen based, which could be critical to meet the UK targets of net zero emissions by 2050 and cutting emissions by 78% by 2035.

We have summarised below key highlights from each of the five chapters in the Strategy:

Chapter 1 The case for low carbon hydrogen

Hydrogen in the UK today

- Majority of hydrogen production and consumption in the UK is "high carbon" - so-called grey hydrogen, produced from natural gas without the use of CCS.
- The strategy highlights some of the production methods to produce "low carbon" (such as blue hydrogen), or even "zero carbon" in the case of green, electrolytic hydrogen. Disappointingly here BEIS does not mention other hydrogen production pathways that can deliver zero or event negative GHG emissions, though some of these will be mentioned later in the document.

The role of hydrogen in meeting net zero

- The document identifies low carbon hydrogen as essential for net zero in the UK, suggesting hydrogen could be needed to make up 20-35% of final energy consumption in 2050 (250-460TWh) - variability dependent on cost and availability of hydrogen and hydrogen-using technologies
- Two main goals for 2020s:
    - Ensure hydrogen is readily available, reasonably priced, in sufficient volume, and undoubtedly low carbon.
    - Ensure that hydrogen-using equipment is safe, reliable, and accessible to potential users.

The UK's hydrogen opportunity

- Support a 'twin track' of *blue* hydrogen and 'electrolytic' *green* hydrogen. Again, there is not recognition here that there are other hydrogen production pathways that can deliver zero or negative emissions and can make substantial inroads in the 2020s and help meet the Government Net Zero target. A number of additional pathways are mentioned in chapter 2.
- *Blue* hydrogen will be centred in four industrial centres by 2030, which have existing infrastructure to support CCUS capabilities and storage sites and will be significant potential demand centres for hydrogen.

The UK's hydrogen ambition

- In the *Ten Point Plan for a Green Industrial Revolution* (TPP), the Government set out the ambition for 5GW of low carbon hydrogen production capacity by 2030.
    - This is estimated to correspond to total emissions savings of 41 $MtCO_2e$ between 2023 and 2032.
    - This could support over 9,000 jobs and £900 million of gross value added by 2030.
    - Government support to de-risk early projects could unlock £4 billion of private sector co-investment up to 2030.
- In post-2030 high-hydrogen scenario estimates, Government estimates up to 100,000 jobs by 2050.
- The UK is keen to avoid an over-reliance on low carbon hydrogen imports, and consequently wants to establish a strong domestic market to create jobs and growth, and develop international export opportunities.

UK Hydrogen Strategy strategic framework

The UK Hydrogen Strategy provides 6 principles to guide future policy decisions and Government action:

- Long term value for money for taxpayers and consumers: *driving down long-term costs*
- Growing the economy whilst cutting emissions: *create new, high-quality jobs, including in the transition of high carbon sectors*
- Securing strategic advantages for the UK: *nurture UK capabilities and expertise, supporting private innovation and investment*
- Minimising disruption and cost for consumers and households: *reduce costs, address risks, and provide safety and technical assurance*
- Keeping options open, adapting as the market develops: *ensuring optionality to deliver a number of credible net zero pathways to 2050*
- Taking a holistic approach: *focus on the entire hydrogen system, supporting coordination between all stakeholders, and stay in step with other renewable energy developments*

The UK Hydrogen Strategy also highlights strategic challenges which need to be overcome, focused on the cost of hydrogen, various sources of uncertainty inhibiting investment, limiting infrastructure, and the 'chicken and egg' problem of balancing demand and supply for market growth.

Finally, the UK Hydrogen Strategy outlines 9 strategic outcomes to measure success by 2030:

- 2030 ambition: 5GW of low carbon hydrogen production capacity; hope for 1GW by 2025.

- Decarbonise existing hydrogen supply
- Decrease the costs of hydrogen production
- Ensure diverse end-user demand
- Increase public awareness: public awareness and acceptance of the use of hydrogen across the energy system
- Promote UK economic growth, opportunities, and jobs
- Reduce emissions under Carbon Budgets 4 and 5
- Preparation for hydrogen ramp-up beyond 2030
- Evidence-based policy development

Hydrogen in the devolved administrations

The Government is working with the devolved administrations to support research and innovation and deployment of low carbon hydrogen. Part of this close cooperation is through the joint government-industry Hydrogen Advisory Council.

- Scotland
    - Potential of 21 - 126TWh of hydrogen per year by 2045
    - Hydrogen Policy Statement published December 2020
    - Hydrogen Action Plan will be published later this year, supported by a £100 million programme of investment from 2021 to 2026
- Wales
    - Hydrogen pathway report published December 2020
    - Finalised strategic position on hydrogen to be published in early autumn 2021
    - A Welsh Hydrogen Business Research and Innovation for Decarbonisation initiative is also being developed
- Northern Ireland
    - Currently consulting on policy options for its new Energy Strategy, including hydrogen

Chapter 2 Scaling up the hydrogen economy

Hydrogen 2020s Roadmap and Key Milestones

- Launch NZHF early 2022
- Phase 1 CCUS cluster decision 2021
- Finalise low carbon hydrogen standard 2022
- Finalise business model 2022
- Heat neighbourhood trial 2023
- Value for money case for blending Q3 2022
- Aiming for 1GW production capacity 2025
- At least 2 CCUS clusters by 2025
- Heat village trial 2025
- Hydrogen heating decision by 2026
- Decision on HGVs mid-2020s
- Ambition for 5GW production capacity 2030
- 4 CCUS clusters by 2030

- Potential pilot hydrogen town by 2030
- Ambition for 40GW offshore wind by 20

Key commitments to support hydrogen production

- Ambition for 5GW of low carbon hydrogen production capacity by 2030.
- £240m Net Zero Hydrogen Fund in early 2022 for co-investment in early hydrogen production projects.
- £60 million Low Carbon Hydrogen Supply 2 competition.
- Finalise design of UK standard for low carbon hydrogen by early 2022.
- Finalise Hydrogen Business Model in 2022, enabling first contracts to be allocated from Q1 2023.
- Provide further detail on our production strategy and twin track approach by early 2022.
- £1 billion for the Carbon Capture and Storage (CCS) Infrastructure Fund
- Carbon Capture, Usage and Storage (CCUS) Cluster Sequencing Process will look to identify at least two CCUS clusters.
- The NZHF will provide up to £240 million of government co-investment to support new low carbon hydrogen production out to 2025.

The chapter lists some of the production methods that are expected to be deployed in the 2020s. These include but are not limited to SMR and ATR with CCS, grid and on-site electrolysis and bioenergy with carbon capture and storage. There is no reference to biomass gasification without CCUS, which can still deliver significant carbon savings.

Hydrogen Networks and Storage

Government will:

- Launch a call for evidence on the future of the gas system in 2021.
    - review the overarching market framework set out in the Gas Act 1986 to ensure appropriate powers are in place to help a hydrogen future.
    - Already reviewing gas quality standards with a view to enabling the existing gas network to have access to a wider range of gases.
- Review systemic hydrogen network and storage requirements in the 2020s and beyond and provide an update in early 2022.
- Deliver £68 million Longer Duration Energy Storage Demonstration competition.
- Deliver £60 million Low Carbon Hydrogen Supply 2 competition.
- Hydrogen Business Model consultation includes specific questions on the treatment of small scale storage within the Model, results expected in 2022

Government sees as strategic the hydrogen's ability to store energy for long periods of time and in large quantities and envisage storage will be a key part of future network infrastructure. It highlights that storage can support security of supply and can support faster and greater integration of renewable capacity and a transition to a fully decarbonised power system.

Use of Hydrogen

Government expects **industry to form a lead option** for both, early hydrogen use and in the longer term.

They also see hydrogen as playing an **important role in a fully decarbonised power sector**, through the system flexibility that electrolytic production and hydrogen storage can provide and the potential for flexible power generation using hydrogen as a fuel – helping to balance a more variable renewables-based electricity grid.

The strategy mentions the **fundamental role of hydrogen in decarbonise transport**, especially in areas of heavy transport that batteries cannot reach (buses, HGVs, international shipping and aviation).

Finally, Government recognises that hydrogen **has a role to play in heating**, as an alternative to electrification, and that it is supporting major studies and testing projects to fill the evidence gaps on costs, benefits and feasibility of using hydrogen for heating.

Industry

Government will:

- Deliver Phase 2 of the £315m Industrial Energy Transformation Fund.
- Launch a £55 million Industrial Fuel Switching 2 competition in 2021.
- Launch a call for evidence on 'hydrogen-ready' industrial equipment by the end of 2021.
- Launch a call for evidence on the phase out of carbon intensive hydrogen production in industry within a year.
- Support hydrogen producers to decarbonise through the Industrial Carbon Capture and Hydrogen Business Models and finalise the design elements of a UK standard for low carbon hydrogen by early 2022.
- Deliver £10 million of new innovation funding to help distilleries go green through Green Distilleries Fund.
- Deliver £40 million Red Diesel Replacement Competition to fund technologies that switch Non Road Mobile Machinery (NRMM) to hydrogen.
- Engage with industry on possible requirements for a research and innovation facility to support hydrogen.

Power

- The 2020s will be focused on deploying a future generation of electrolysers, and throughout the 2020s Government expects long duration hydrogen storage coming online, integrating hydrogen into our power system.
- The Government recently published Modelling 2050 - Electricity System Analysis report exploring the potential role of hydrogen in our changing energy system.
- It also published:
    - a Call for Evidence on 'Decarbonisation Readiness' for new power generation in July 2021. This included hydrogen conversion as an alternative decarbonisation route.
    - a Call for Evidence on facilitating the deployment of large-scale and long-duration electricity storage.
        - This included information on hydrogen technologies that are used in the power system.
        - Government supporting innovation in energy storage through electrolysis

- Capacity Market 2021. This focused on actions to bring forward more low carbon capacity in the future such as hydrogen-fired generation.

Heat

- Net Zero Innovation Portfolio will allow further support to be directed towards innovation for end-users of hydrogen heating as needed.
- Government will consult later this year on the case for enabling, or requiring, gas boilers to be easily convertible to use hydrogen by 2026
- It will prepare for hydrogen for heat trials – a hydrogen neighbourhood by 2023 and a hydrogen village by 2025.

Transport

- £23 million Hydrogen for Transport Programme.
- Government will deliver a National Bus Strategy.
    - This includes setting an end date for the sale of new diesel buses and the Zero Emission Bus Regional Areas (ZEBRA) scheme.
    - ZEBRA will provide up to £120 million in 2021/22 to begin delivery of 4,000 new zero emission buses, and the infrastructure needed to support them.
- Government is investing £20 million in designing trials for electric road systems and hydrogen fuel cell HGV.
    - This includes a battery electric trial to establish the feasibility of these technologies in the UK.
- Government launched the £20 million Clean Maritime Demonstration Competition in March this year.
    - This aims to speed up the design and development of zero emission vessels through tech demonstrations.
- The UK's first 'Hydrogen Transport Hub' in Tees Valley will focus on future hydrogen research and development and real world testing.
- Government will provide £4.8 million to support the development of a hydrogen hub in Holyhead, Wales.
    - This will pilot the creation of hydrogen from renewable energy and its use as a zero-emission fuel in HGV.

Creating a Market

Government will:

- set out further detail on the revenue mechanism which will provide funding for the Business Model in 2021.
- establish a Hydrogen Regulators Forum in 2021.
- assess market frameworks to drive investment and deployment of hydrogen, and provide an update in early 2022
- assess regulatory barriers facing hydrogen projects and provide an update in early 2022.
- complete an indicative assessment of blending up to 20 per cent hydrogen into the existing gas network by late 2022.

- undertake further work to develop appropriate market frameworks to drive investment.
- create a Hydrogen Regulators Forum, with representation across the relevant regulatory areas.
- consult this year on the institutional arrangements governing the energy system over the long term.
    - This includes system operation and energy code governance.
- The Hy4heat programme, is supporting the construction of unoccupied homes that will feature Hy4Heat-funded prototype boilers, hobs, cookers, fires and meters to showcase the potential use of 100 per cent hydrogen.

Chapter 3 Realising economic benefits for the UK

Key commitments include

- **Hydrogen Sector Development Action Plan** to be published by early 2022
- **Early Careers Professionals Forum**, to exist under the Hydrogen Advisory Council
- Supporting hydrogen through the £1 billion Net Zero Innovation Portfolio
- Develop a **hydrogen technology R&I roadmap**
- Deliver as one of the co-leads of Mission Innovation's new **Clean Hydrogen Mission**

The UK Hydrogen Strategy aims to draw on lessons from the development of other low carbon technologies to ensure that the potential economic benefits from a low carbon hydrogen markets are delivered in the UK.

Building a world class supply chain

Government:

- has carried out an initial assessment of current UK low carbon hydrogen supply chain capabilities and strengths
- will publish more detail in a **Hydrogen Sector Development Plan** by early 2022
- UK supply chain development roadmap
    - **In early 2020s**, UK suppliers build foundation, building on strengths in electrochemical technologies and exporting to Europe and SE Asia; deployment of these technologies in small-scale electrolytic projects and transport; supply chains supporting the oil and gas sector pivot towards hydrogen economy
    - **In mid 2020s**, UK has opportunity to deploy blue hydrogen projects; supply chains prepare for scaled-up deployment; continued support for innovative hydrogen projects
    - **In late 2020s onwards**, continued growth in production as well as in end-use markets; UK takes advantage of natural assets for hydrogen storage; supply chains and skills base are well positioned to support accelerated domestic growth and export opportunities; hydrogen sector supports other sectors incl. construction, automotive, and steel.

Government will be introducing economic benefit assessments in the Net Zero Hydrogen Fund and Hydrogen Business Model. It is expected that hydrogen developers will work to ensure that UK supply chain companies, including SMEs, are in a fair position to bid in hydrogen projects.

However, early on, Government intervention is likely to be limited, to encourage competitive growth. Later measures may be in line with the Contracts for Difference (CfD) allocation process, which require a supply chain plan providing evidence of UK content. More details to come concerning possible Government intervention in Hydrogen Action Plan

Creating jobs and upskilling industry

- Government will coordinate with industry, trade unions, devolved administrations, local authorities, and enterprise agencies to establish skills gaps and provide support for sustained and quality jobs, with investment in the relevant skills.
- In line with Government's *Skills for Jobs* report and *Plan for Growth*, Government will support a local approach first, with apprenticeships and re-skilling programs to tackle skills gap
- As part of the North Sea Transition Deal, the Government committed to champion the role of the oil and gas sector workforce in the energy transition. Government will support initiatives to ensure the portability and mutual recognition of professional qualifications to ensure the easy transfer of skilled workers to the hydrogen sector
- Measures will be introduced through the Net Zero Hydrogen Fund incentivising developers to demonstrate support for a strong skills based and good-quality jobs.

Maximising research and innovation strengths

- Hydrogen features as one of ten key priority areas for £1 billion **Net Zero Innovation Portfolio**
- Under NZIP, the £60 million **Hydrogen Supply 2 Competition** will be launched
- Commitment to increase R&D investment by 2.4% of GDP by 2027, and increase public funding for R&D to £22 billion per year by 2024
- Government Innovation Strategy, to be published later in 2021, will provide a general guide for how R&I will be supported in the UK
- An R&I working group in the Hydrogen Advisory Council will develop a **Hydrogen R&I Roadmap**
- The UK will support open and active engagement to accelerate progress in R&I globally

Attracting investment

- New Office for Investment and UK Infrastructure Bank to be main leaders in encouraging private investment in UK hydrogen projects

Realising export opportunities

- Government sees great national and market opportunity for hydrogen-related exports: up to a quarter of UK hydrogen jobs could be driven by exports by 2030.
- Short term focus will be securing domestic deployment of hydrogen, but with UK Export Finance, Government will support UK hydrogen company exports through the £2 billion earmarked to finance clean growth projects overseas.

Chapter 4: Demonstrating international leadership

The UK in international partnerships

- Through the G7, the UK will reaffirm the importance of low carbon hydrogen in the clean energy transition.
- The UK will seek commitments to increase its hydrogen production and deployment at G7.
    - This will support the establishment of a future international hydrogen market.
- The UK will bring together international actors who recognise the crucial role that hydrogen can play in tackling emissions.
- This approach will include developing countries, and both public and private sector initiatives.
    - This will send a clear signal about hydrogen's place in the future global energy mix.
    - This will give investors and innovators across the value chain confidence, certainty and clarity.

Ensuring fair distribution of shared gains and supporting hydrogen through trade agreements

- The UK will continue to support hydrogen-enabled transitions and share relevant UK expertise.
    - This includes support to develop hydrogen roadmaps in Mexico and South Africa through the Partnering for Accelerated Climate Transitions programme.
    - As well as UK support for scoping green hydrogen production, priority uses and export opportunities in Morocco.
- The UK will ensure an attractive trade regulation environment, facilitating investment in hydrogen technologies.

Chapter 5: Tracking progress

Government Approach to Tracking Progress

Government will:

- track progress while also supporting data collection on low carbon hydrogen.
    - Gov will incorporate data on its hydrogen deployment into existing BEIS energy systems publications.
- track progress against the following outcomes:
    - Progress towards 2030 ambition
    - Decarbonisation of existing UK hydrogen economy
    - Lower cost of hydrogen production
    - End to end hydrogen system with diverse range of users
    - Increased public awareness
    - Emissions reduction under Carbon Budgets 4 and 5
    - Evidence-based policy making

Consultations released with the Strategy

Consultation on a business model for low carbon hydrogen

In this consultation, BEIS are seeking views from industry on the business model design, and its design features. The consultation closes on **25th October 2021**.

The aim of the business models is to overcome the cost gap between low carbon hydrogen and higher carbon counterfactual fuels. We highlight below some of the key sections in the consultation, but please read the consultation for further detail on all the sections.

Addressing the price risk (section 4 of the consultation)

- The Government preferred business model option is a 'variable premium' price support mechanism, though other options such as 'fixed price' and 'fixed premium' are also set out. A variable premium involves setting a 'strike price', which is intended to represent the price that the hydrogen producer needs to achieve to cover their production costs, and a 'reference price', which is intended to represent the market value of hydrogen. The premium is calculated as the difference between the two. This type of approach is seen by the Government as delivering greater value for money.
- In the absence of a market benchmark price for low carbon hydrogen, the Government set out seven options for identifying a 'proxy' value that can be used as a reference price. Their preferred option is to adopt in the near-term the highest of two proxies – natural gas price and achieved sales price, combined with additional contractual measures to incentivise producers to seek higher priced sales. For future projects, they propose to integrate a market benchmark price into the reference price at the earliest opportunity.
- Since hydrogen production requires an input fuel, such as natural gas or electricity, and its price vary across time, BEIS also set out options for indexation of the strike price.

Addressing the volume risk (section 5 of the consultation)

- BEIS are proposing that a 'sliding scale' mechanism is used, which would pay a higher level of price support on initial volumes, allowing the producer to recover fixed costs at relatively low offtake volumes. The level of price support would taper off as volumes increase, with last volumes recovering only marginal costs and equity returns.

Supporting different technologies and project types, allocation, contract duration, funding and other features

- The consultation also highlights how the support mechanism proposed will accommodate different production technologies and types of projects (section 6 - BEIS are not minded to introduce a separate business model for small scale projects and this section explains why. Other scheme features, such as contract length, volume scaling, and compatibility with other Government schemes are also set out (section 7).
- In section 8 BEIS seek views on the most appropriate allocation mechanism for the hydrogen business model contract, both in the near term and long term, especially for those projects that are not eligible under the CCUS cluster sequencing process. In the short term, Government is minded to invite project applications in 2022, for assessment against defined evaluation and eligibility criteria, followed by a bilateral process with selected projects to enable final investment decisions to be made from 2023. In the medium term, they expect a competitive allocation (auction).
- BEIS also seek stakeholders' views on how the business models should be funded (ie who should bear the costs). This could be done by passing the costs on to energy bills (ie by introducing a levy on bills) but taking into account consumers' affordability.

Expected response

- A BEIS response is expected to the consultation in Q1 or Q2 2022, in line with the other proposals.

Consultation on setting a Low Carbon Hydrogen standard

This consultation is seeking views by **25 October 2021**. The aim is to ensure that the hydrogen being produced is sufficiently low carbon to contribute UK carbon budget targets and net zero commitments and any projects receiving BEIS support via the NZHF or the HBM schemes would need to comply with the standard. Contracts awarded would be grandfathered and therefore stay the same even if later standards changed. BEIS are also considering "whether the standard could also be developed into a certification scheme to support the deployment of low carbon hydrogen across the economy and support future international trade in low carbon hydrogen."

The key elements of the consultation are on:

- The scope of the standard, including its use and coverage across different production methods and geographic location. This could cover just the UK or include imports and exports. BEIS are also considering whether to list a set of allowable production routes or leave this open.
- The system boundary of where the standard applies (ie where it is produced, where it is used, or its point of use and emissions during use), chain of custody (mass balance or book and claim), purity and pressure, embodied emissions (proposed to be excluded from the calculations), and what global warming potential factors to apply to hydrogen.
- Consideration of different primary energy inputs and feedstock emissions. In particular, BEIS are seeking views and evidence on whether waste feedstocks should be considered with counterfactuals under the standard.
- Further GHG methodology / calculation considerations, including the proposed units of measurement being gCO_2e/MJ LHV when measuring GHG emissions intensity and defining an emissions threshold on an absolute basis.
- A threshold for GHG emissions, including whether this is an absolute level (rather than relative to a counterfactual fuel), what threshold would be appropriate, and whether this threshold should tighten over time.
- Delivery and administration of a UK low carbon hydrogen standard, including by which body (not necessarily BEIS).

Options for electrolysers connected directly to power sources

A key matter for members will be how electrolysers on the power grid is treated. The following options are being investigated (quoted/abridged from the consultation, p30-31):

- Allow low carbon electricity use to be claimed based on physical links. Options could include:
    - Off grid – the whole system (low carbon electricity source and electrolyser) is not connected to the grid;
    - Use of curtailed / constrained power – the generator is connected to the grid but supplies the electrolyser only when grid supply is not possible;

- No import from the grid allowed – the generator supplies to the grid and to the electrolyser, but the electrolyser does not use electricity from the grid (with additionality requirements).
- Allowing low carbon electricity to be claimed based on traded activities alone. This could require hydrogen producers to prove a certain percentage of their power demand is met by PPAs with existing plant or guarantees of origin. This could include:
    - Cancellation of guarantees of origin or equivalent – i.e. the user buys and cancels certificates associated with low carbon power production.
    - Bilateral power purchase agreement with cancellation of guarantees of origin or equivalent – i.e. the user buys low carbon power and cancels certificates associated with it.
- Allow low carbon electricity use to be claimed based on traded activities, with cancellation of guarantees of origin or equivalent, and with further conditions which could include:
    - Temporal correlation with electricity generation (e.g. at hourly level in order to ensure that electrolysis supports grid stability and integration of large shares of fluctuating renewables);
    - Geographical correlation with electricity generation (e.g. within a certain distance, or the user not being on the other side of grid congestion that would prevent the renewable electricity being used, i.e. there is available transmission capacity); and
    - Additionality considerations, ie "to ensure that use of electricity for hydrogen production incentivises new low carbon power generation rather than just diverting low carbon electricity".
- Allow electrolysers to plug into the existing grid. To calculate GHG emissions of this option, we would need to take an average carbon intensity of the grid if hydrogen producers are unable to provide local or temporal carbon intensity data related to the grid at the time of use.

Expected response

A BEIS response is expected to the consultation in Q1 or Q2 2022, in line with the other proposals.

Accompanying analysis

The consultation has been informed by a consultancy report from E4Tech and Ludwig Bulkow systemtechnik Gmbh, available here.

Net Zero Hydrogen Fund Consultation

The Net Zero Hydrogen Fund Consultation sets out proposed scope, design and delivery of the Fund, worth up to £240 million, which Government intends to launch in early 2022. The consultation closes on **25th October 2021**.

BEIS are seeking your views on the key features of the Fund's design, which are:

- Support for multiple hydrogen production technologies, including the two main types (CCUS-enabled, and electrolytic hydrogen);
- A focus on technologies that are able to deploy in the 2020s; and
- Grant funding to be provided on a co-funded basis. This will include capital funding for the build of new low carbon hydrogen production facilities (some of which will also require the business models support). The fund will help de-risk private sector investment and support new projects to take Final Investment Decision (FID). The fund will also provide development support for feasibility and engineering studies (development support / DEVEX).
- BEIS have highlighted that they are looking to support multiple technologies and are seeking views on technologies that may be ready to produce low carbon hydrogen in the early 2020s.
- BEIS are proposing that projects that require a hydrogen specific business model to each FID should be allowed to apply for NZHF capital co-funding subject to meeting the relevant eligibility criteria. Similarly, projects that do not require a hydrogen specific business model to each FID (e.g. smaller, electrolytic projects that supply hydrogen to transport) should still benefit from CAPEX support through the NZHF.
- Section 4 of the consultation is particularly relevant as it sets out the eligibility criteria these projects will have to meet in order to be awarded the fund.
    - The hydrogen will need to meet the Government low-carbon hydrogen standard (see relevant consultation below) and demonstrate they will be creating additional hydrogen production.
    - Projects must be UK based and must with a TRL of 7 or more.
    - Projects applying for CAPEX must prove to have an agreement in principle with an offtaker – there will be a minimum threshold set for production volumes these agreements must cover
    - Projects applying for DEVEX will need to demonstrate demand for hydrogen with the primary offtaker ready to accept hydrogen by the project Commercial Operation Date
    - Finance requirements must also be met

For further detail on the above and the proposed bidding process as well as assessment criteria, see the consultation.

Consultation on hydrogen for heat: facilitating a grid conversion hydrogen heating trial

This consultation seeks views on proposals to legislate in order to allow Gas Distribution Network Operators to effectively carry out the activities needed to deliver a grid conversion hydrogen trial, and potentially to enhance existing consumer protections to ensure that those living in the trial area continue to receive fair treatment.

The consultation closes on 28th September.

Further documents released and new funds

- Analytical annex (covering whole package)
- Hydrogen production cost report

In addition, the Government has launched £105 million new funding to support polluting industry to decarbonise under the Net Zero Innovation Portfolio, including:

- £55 million Industrial Fuel Switching Competition (our member briefing here)
- £40 million Red Diesel Replacement Competition, (our member briefing here) and
- £10 million Industrial Energy Efficiency Accelerator (IEEA) (our member briefing here).