

THE UK'S HOTLY ANTICIPATED HYDROGEN STRATEGY – COOL BRITANNIA, OR FULL OF HOT AIR?

7 SEPTEMBER 2021 • ARTICLE



As a result of its geography, geology, infrastructure and capabilities, the UK has an important opportunity to demonstrate global leadership in low carbon hydrogen and to secure competitive advantage. Building hydrogen production and enabling use across multiple sectors will be critical for developing domestic capacity and capabilities, and securing green jobs across the UK. (UK Hydrogen Strategy, page 10)

The Department for Business, Energy and Industrial Strategy (BEIS) published the UK Hydrogen Strategy on 17 August 2021 (the Strategy). It is an important step toward decarbonisation and meeting the United Kingdom's (UK) legally binding net zero emissions targets, particularly as Glasgow is set to host COP26 later this year.

The Strategy articulates a clear goal of 5 GW of low carbon hydrogen production capacity by 2030 as “a signal of the government's firm commitment to work with industry to develop a strong and enduring UK hydrogen economy”. It sets out the case for low carbon hydrogen (chapter 1), plans for scaling up the hydrogen economy (chapter 2), realisation of economic benefits for the UK (chapter 3), ambitions to demonstrate international leadership (chapter 4) and how progress will be tracked (chapter 5).

Large scale deployment of hydrogen will require investment from private sector equity, debt funds and traditional lenders. Although helpful in setting the tone and the scale of the UK's hydrogen ambitions, the Strategy overall is lacking in concrete proposals and very light on details of the supporting regulatory framework that would address concerns about commercial scaling up. With no clear identification of routes to market, subsidy support, or regulatory treatment of hydrogen production and transportation, the UK still has a long way to go compared to jurisdictions such as Germany.

DOES IT DELIVER?

We commented in our previous article on the hopes of the industry. Now that the moment of truth has arrived, does the Strategy deliver?

The industry had high hopes for 5 GW of green hydrogen by 2025 and 10 GW by 2030. It's not just the numbers that have fallen short, but also the type of hydrogen. “Low carbon hydrogen” can include not only green hydrogen, but also yellow, blue and turquoise (see our beginners guide for a refresher on the hydrogen rainbow).

Some of the stated hopes and ambitions of the Hydrogen Strategy Now campaign and the UKHfCA Position Paper are:

- to create and sustain hundreds of thousands of high-skilled, green jobs in all parts of the country;
- to secure private investment into the UK and unlock export opportunities for our products and skills;
- the deployment of 10 GW of green hydrogen by 2030, reaching 80 GW of capacity by 2050 if the government is supportive and there is enough cooperation between the public and private sectors;
- a targeted policy implemented to support small-scale and on-site distributed green hydrogen production in order to have 5 GW of hydrogen capacity in place by 2025;
- support for the sector in the form of capital grants, tariffs and even a CfD-style model for hydrogen projects; and
- a rollout of hydrogen fuelling infrastructure along major transportation routes.

Hydrogen in the UK, Watson Farley & Williams LLP, 3 March 2021

THE HYDROGEN ECONOMY

Chapter 2 of the Strategy sets out a roadmap to developing a hydrogen economy in the 2020s. It covers a range of supporting policies and required actions:

1. Development of networks and storage infrastructure, including repurposed infrastructure.
2. Creation of regulatory frameworks to give the right signals, ensure safety standards are in place, address deployment barriers and ensure planning and permitting regimes are in place.
3. Development of market frameworks to finalise business models, provide revenue support for the transport sector, drive private investment and eventually lead to subsidy free production and use by the 2030s.
4. Grant funding to support capital investment across production and end use.
5. Continued research and innovation to develop and accelerate technology.
6. Sector development to build and support the UK supply chain and its skills base, with a view to global deployment by the 2030s.
7. International activity and markets development, sharing key technology and regulatory barriers identified and coordinating innovation, policy and regulation to deliver deployment across the value chain in key markets and facilitate cross-border trading by the late 2020s.
8. Raising public and consumer awareness to tackle the demand side piece of the market puzzle that has so long eluded government's emissions reduction efforts.
9. Facilitation of private investment by forming strategic partnerships with key organisations, securing private investment starting with small scale projects and innovation and building up to investment in workforces, demonstration projects and manufacturing facilities.
10. Industry development and deployment, with industry taking the lead with government support, to engage consumers in local communities and lead large-scale cluster projects and their eventual expansion.

WATSON FARLEY & WILLIAMS

The Strategy sets out the government's key commitments in relation to production, networks and storage, use and creating a market. There is some overlap in these areas, but the key commitments are set out in the table below. While this may look like a definitive step forward, many in the industry might notice that not all of these commitments are new.

Hydrogen Production	Hydrogen Use
Deliver 5 GW of low carbon hydrogen production capacity by 2030.	Launch a call for evidence on 'hydrogen-ready' industrial equipment by the end of 2021.
Launch of a £240m Net Zero Hydrogen Fund in early 2022 for co-investment in early hydrogen production projects to support commercial deployment.	Launch a call for evidence on phase-out of carbon-intensive hydrogen production in industry within a year.
Launch of a £240m Net Zero Hydrogen Fund in early 2022 for co-investment in early hydrogen production projects to support commercial deployment.	Launch a call for evidence on phase-out of carbon-intensive hydrogen production in industry within a year.
Deliver the £60m Low Carbon Hydrogen Low Carbon Hydrogen Supply 2 competition (open for submissions until 31 August 2021).	Deliver Phase 2 of the £315m Industrial Energy Transformation Fund ¹ .
Finalise the design of a UK low carbon hydrogen standard by early 2022 (consultation open until 25 October 2021).	Launch a £55m Industrial Fuel Switching ² competition in 2021.
Finalise the Hydrogen Business Model in 2022, enabling first contracts to be allocated from Q1 2023 (consultation open until 25 October 2021).	Prepare hydrogen for heat trials – a hydrogen neighbourhood by 2023, hydrogen village by 2025 and potential pilot hydrogen town by 2030.
Provide further detail on the production strategy and twin track approach (supporting electrolysis and CCUS) by early 2022.	Aim to consult in 2021 on 'hydrogen-ready' boilers by 2026. Continue the multi-million pound support for transport decarbonisation, including support for deployment, trials and demonstration of hydrogen buses, HGVs, shipping, aviation and multi-modal transport hubs.
HYDROGEN NETWORKS AND STORAGE	CREATING A MARKET
Launch a call for evidence on the future of the gas system in 2021.	Set out further detail on the revenue mechanism which will provide funding for the Business Model in 2021.

HYDROGEN NETWORKS AND STORAGE

Review systemic hydrogen network and storage requirements in the 2020s and beyond, including a need for economic regulation and funding, and provide an update in early 2022.

Deliver the £68m Longer Duration Energy Storage Demonstration competition (closed for submission on 13 August 2021).

CREATING A MARKET

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 the value for money case for blending up to 20% hydrogen into the existing gas network by late 2022 and aim to make a final policy decision in late 2023.

While a cynic might throw around accusations of “padding” out the Strategy by including commitments that are already nearing completion (making them easy wins for government), the Strategy does recognise that there is still a long way to go:

"While this strategy package sets out the initial steps, there is far more to do and we will continue to develop policy over the coming months and years."

(UK Hydrogen Strategy, page 71)

As the CCC's and our own analysis makes clear, rapid progress and learning by doing in the 2020s is vital. The roadmap at Chapter 2.1 highlights a challenging trajectory to meet our 2030 ambition and [Carbon Budget 6] beyond this. While government intervention across the hydrogen value chain will be essential, we remain committed to market-led approaches that build and maintain competitive tension. ... While this strategy package sets out the initial steps, there is far more to do and we will continue to develop policy over coming months and years. (UK Hydrogen Strategy, page 71)

While we applaud this ambition, we (along with industry) had hoped that the Strategy would deliver more policy and regulatory certainty, particularly as it is the market-led approaches which have been driving the nascent hydrogen market

forward while we waited for publication of the Strategy. However, rather than setting out policy and regulation, the Strategy merely recognises that it is needed:

Government action will be required to put in place a wider policy framework covering regulations and, where needed, market support mechanisms in production, demand and supporting network and storage infrastructure, taking account of evolution in the electricity and gas markets and linkages to wider economic activity and networks. (UK Hydrogen Strategy, page 72)

This is a step in the right direction, but we had expected the Strategy to begin laying out that policy framework in a more concrete and practical manner rather than listing government's aspirations.

REALISING ECONOMIC BENEFITS FOR THE UK

Chapter 3 of the Strategy sets out a number of commitments to realise economic benefits for "UK plc", but again, these seem to be more aspirational than concrete. The introductory text of this chapter sets out some great ambitions, but the result is essentially a plan to make a plan:

We will work in partnership with industry, the academic and research and innovation community, devolved administrations, local authorities, workers and civil society to harness the best of the UK's skills and capabilities. We will share these with – and learn from – expertise elsewhere and capitalise on our world-leading academic and industrial research and innovation base. (UK Hydrogen Strategy, page 85)

We want to see UK companies at the forefront of the growing global hydrogen market and we are developing policy that will attract and secure investment in a pipeline of British projects, driving rapid progress to foster our exportable strengths and get ahead in the global market. (UK Hydrogen Strategy, page 86)

The key commitments – and our comments – are set out in the following table. Again, the keen eyed reader will notice that not all of these commitments are new either.

Key Commitment	WFW Commentary
Prepare a Hydrogen Sector Development Action Plan, including for UK supply chains, by early 2022.	An Action Plan is welcome, though many in industry had hoped to see that Action Plan set out as part of the Strategy.
Establish an Early Career Professionals Forum under the Hydrogen Advisory Council.	<p>There will be a lot of work required to ensure that the Forum is as effective as possible and this is recognised in the Strategy (page 89):</p> <p><i>As part of our work to develop the low carbon hydrogen sector, we will assess the opportunities for hydrogen employment across the UK.</i></p> <p><i>We will work with industry, trade unions, the devolved administrations, local authorities and enterprise agencies to support sustained and quality jobs and ensure that there is effective and targeted investment in relevant skills.</i></p> <p><i>We will work with industry, education providers and local and regional authorities to explore opportunities for relevant skills programmes, including apprenticeships and re-skilling programmes.</i></p>

Key Commitment	WFW Commentary
Support hydrogen innovation as one of the ten key priority areas in the £1bn Net Zero Innovation Portfolio.	This is not a new commitment – it was detailed in Point 2 of the Ten Point Plan for a Green Industrial Revolution Plan for a Green Industrial Revolution published in November 2020: ...our aim is for the UK to develop 5 GW of low carbon hydrogen production capacity by 2030 that could see the UK benefit from around 8,000 jobs across our industrial heartlands and beyond. This will be supported by a range of measures, including a £240m Net Zero Hydrogen Fund... (page 10)
Work with the Hydrogen Advisory Council Research & Innovation Working Group to develop a UK hydrogen technology R&I roadmap.	Boosting the UK’s research, innovation and development capability is admirable and no doubt welcome news for industry. However, the only concrete commitment is buried in the text of the Strategy; it is relatively obvious why this is the case as it only “includes” hydrogen: <i>To provide crucial long-term certainty for researchers and innovators, we have also already committed to increasing our investment in research and development (R&D) to 2.4 per cent of GDP by 2027 and to increasing public funding for R&D to £22bn per year by 2024. This will further boost the UK R&I ecosystem, including hydrogen-related activity. (UK Hydrogen Strategy, page 92)</i>
Deliver as one of the co-leads of Mission Innovation’s new Clean Hydrogen Mission.	

DEMONSTRATING INTERNATIONAL LEADERSHIP

Chapter 4 of the Strategy makes no commitments, key or otherwise. Instead, it trots out the UK’s various international partnerships and articulates some lofty leadership goals:

*These include Mission Innovation (MI), the Clean Energy Ministerial (CEM), the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE), the Hydrogen Energy Ministerial, the International Energy Agency (IEA) and the International Renewable Energy Agency (IRENA) **(UK Hydrogen Strategy, page 100)***

*Through the G7, we will reaffirm the importance of low carbon hydrogen in the clean energy transition and seek commitments to increase its production and deployment. **(UK Hydrogen Strategy, page 101)***

*Through our global climate leadership, including through our co-Presidency of COP26, we will seek to bring together public and private actors who recognise the crucial role that hydrogen can play in tackling emissions and unleashing clean growth, to facilitate greater coordination and progress across international hydrogen innovation, deployment and policy activity. **(UK Hydrogen Strategy, page 101)***

The UK will also use its position as a leading advocate for free trade to galvanise action on hydrogen. We will seize opportunities, including through Free Trade Agreements and our place in the World Trade Organization, to support the development of a global low carbon hydrogen market. (UK Hydrogen Strategy, page 103)

Overall, in terms of international leadership, the Strategy is high on ambition and low on detail. We can only hope that further detail will come out after COP26, with concrete plans and commitments from all parties.

TRACKING PROGRESS

The Strategy's main plan in terms of tracking progress (set out in chapter 5) is to collect lots of data while minimising reporting burdens on government and industry. Helpfully, there are a number of metrics set out and, though these will need to be developed, they are a good starting point. They include measuring performance against concrete indicators and metrics including:

- capacity of low carbon hydrogen installed in GW;
- volume of hydrogen produced in TWh;
- levelised cost of hydrogen production in £/MWh; and
- number of low carbon hydrogen jobs available in the UK.

This list is by no means comprehensive, and it remains to be seen how quickly and effectively the commitments made in the Strategy will deliver.

SUMMARY

The UK government's clear ambition is to be at the forefront of the hydrogen economy globally. However, much of the development to date has been taken forward by industry and the Strategy indicates a continued reliance on an industry-led approach. While this is no bad thing, clarity on policies and regulation is still required.

"However, much of the development to date has been taken forward by industry and the Strategy indicates a continued reliance on an industry-led approach."

We hope to see concrete plans around legislating for the uptake and roll out of hydrogen at every point in the value chain, from production to consumption. Many of the key commitments promise detail in 2022 – let's hope they deliver.

[1] This £325m of funding was announced in the 2018 Budget and is available until 2024. Phase 2 has not yet launched.

[2] The second competition has not yet launched.

KEY CONTACTS



EMMANUEL NINOS

PARTNER • LONDON

T: +44 20 7814 8046

eninos@wfw.com



HEIKE TRISCHMANN

PARTNER • LONDON

T: +44 20 7863 8973

htrischmann@wfw.com



MARIANNE ANTON

COUNSEL • LONDON

T: +44 20 3314 6330

manton@wfw.com

DISCLAIMER

Watson Farley & Williams is a sector specialist international law firm with a focus on the energy, infrastructure and transport sectors. With offices in Athens, Bangkok, Dubai, Dusseldorf, Frankfurt, Hamburg, Hanoi, Hong Kong, London, Madrid, Milan, Munich, New York, Paris, Rome, Seoul, Singapore, Sydney and Tokyo our 700+ lawyers work as integrated teams to provide practical, commercially focussed advice to our clients around the world.

All references to 'Watson Farley & Williams', 'WFW' and 'the firm' in this document mean Watson Farley & Williams LLP and/or its affiliated entities. Any reference to a 'partner' means a member of Watson Farley & Williams LLP, or a member, partner, employee or consultant with equivalent standing and qualification in WFW Affiliated Entities. A list of members of Watson Farley & Williams LLP and their professional qualifications is open to inspection on request.

Watson Farley & Williams LLP is a limited liability partnership registered in England and Wales with registered number OC312252. It is authorised and regulated by the Solicitors Regulation Authority and its members are solicitors or registered foreign lawyers.

The information provided in this publication (the "Information") is for general and illustrative purposes only and it is not intended to provide advice whether that advice is financial, legal, accounting, tax or any other type of advice, and should not be relied upon in that regard. While every reasonable effort is made to ensure that the Information provided is accurate at the time of publication, no representation or warranty, express or implied, is made as to the accuracy, timeliness, completeness, validity or currency of the Information and WFW assume no responsibility to you or any third party for the consequences of any errors or omissions. To the maximum extent permitted by law, WFW shall not be liable for indirect or consequential loss or damage, including without limitation any loss or damage whatsoever arising from any use of this publication or the Information.

This publication constitutes attorney advertising.