

State of the Hydrogen Nation 2021



Introduction

The Hydrogen Strategy Now campaign was launched in June 2020. Over 60 businesses and trade bodies, who collectively have £3bn of "shovel-ready" private investment for UK hydrogen projects, joined together to call on the UK Government to develop a Hydrogen Strategy. Since then 67 cross-party parliamentarians have joined this campaign, hydrogen has become one of the most discussed issues in Parliament and the Prime Minister put it as Point Two in his Ten Point Plan.

A core message of the campaign is that industry is not calling for the UK Government to match the levels of public finance committed by other hydrogen nations, such as Germany and France. The Government has said that its forthcoming Hydrogen Strategy will create incentives for the private sector to invest "rather than writing Government cheques", and the campaign agrees with the Business Secretary that "the success of the hydrogen deployment will involve a substantial degree of private capital and private investment". For this reason, the campaign has focused on sharing with Government the practical, proactive policies required to unlock private investment across the UK.

Introduction

The State of the Hydrogen Nation Survey has collated the views of industry leaders on the progress and potential of the UK hydrogen sector to date, and the policy measures required to maximise the industries potential to create jobs, support the Prime Minister's levelling-up agenda and achieve major Net Zero gains in the short and long term.

This survey is the first of its kind in the UK and brings together the views of leading businesses and organisations at the forefront of the hydrogen economy.

120

national and
international
businesses took part

100,000

collectively employing over
100,000 people

£150bn

with a combined net worth
of over £150 billion

Key findings

- 1. 78% believe the 5GW hydrogen production target set out in the PM's Ten Point Plan could be more ambitious.**

Industry stands ready to deliver and encourages the Government to set a bigger, bolder target to support further and faster private investment and job creation into UK hydrogen projects.
- 2. 61% are not confident that the Hydrogen Strategy will create a 'world leading' hydrogen market.**

This finding should be closely considered by ministers, as providing business with the confidence to invest is key to realising their ambition of creating a world leading hydrogen market.
- 3. 49% say the lack of a Hydrogen Strategy has stalled or reduced valuable investments in the UK hydrogen sector, and 38.4% say the UK is more difficult to invest in than other countries.**

The Government must publish its Hydrogen Strategy within the "first half of this year", as it has repeatedly committed. The current lack of strategy is delaying investment and slowing Net Zero progress.

Key findings

4. **36.8% said they will be investing in the UK next year, with Europe being a close second preference investment location.**

This reinforces the availability of 'shovel-ready' private investment for UK hydrogen projects, which can bring near term job creation and Net Zero gains.

5. **65% feel the Government is 'somewhat' coordinated across departments on hydrogen.**

This is a strong position to build from, and the campaign recommends this could be strengthened by creating a cross-government political working group on hydrogen which includes representatives from the devolved administrations and local government.

6. **73.7% think Scotland is doing the most on hydrogen compared to the other devolved administrations.**

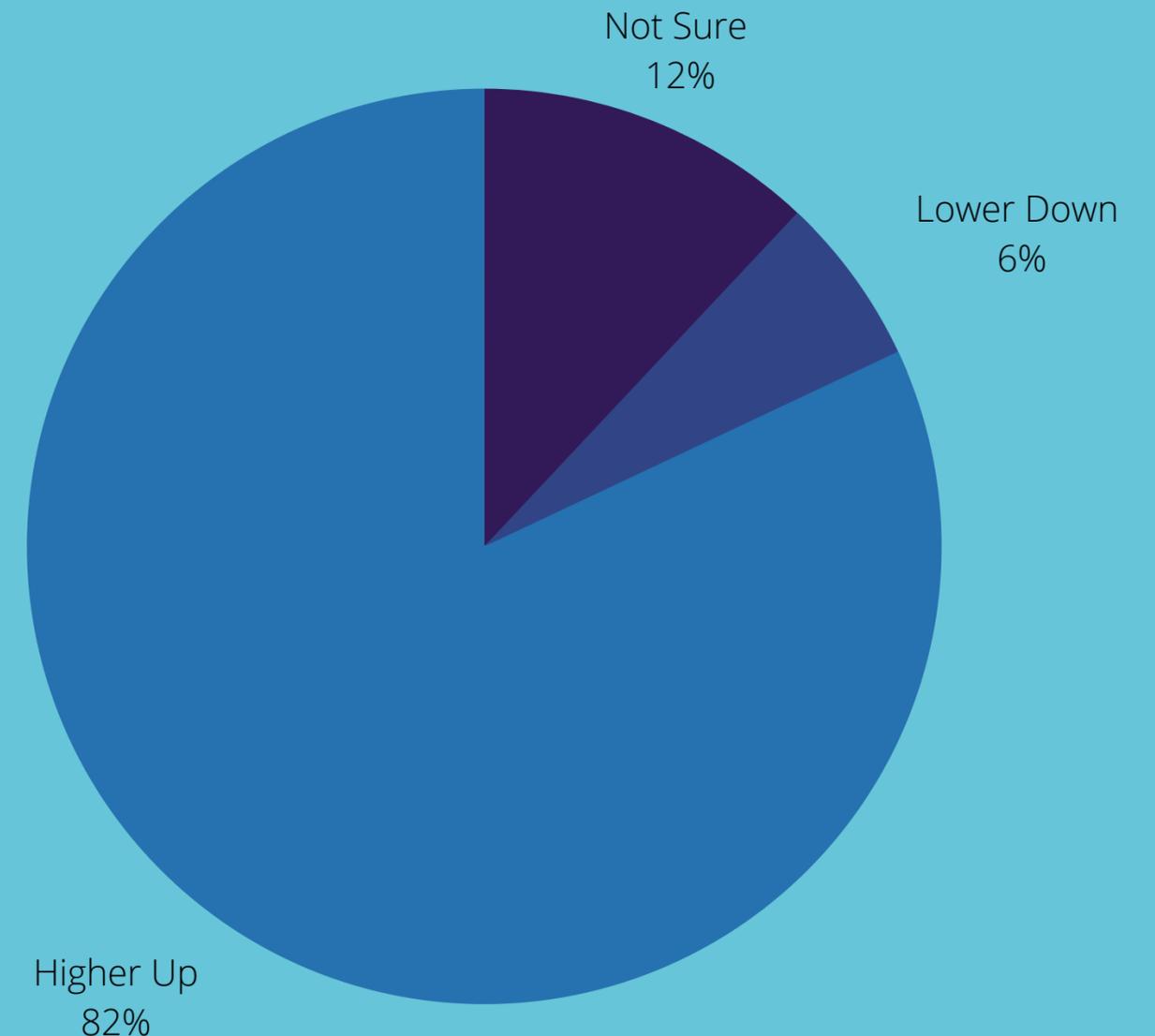
The Scottish Government's ambitious hydrogen production target of 5GW of renewable and low-carbon hydrogen production by 2030, combined with other decarbonisation commitments, has given it a clear lead over other devolved administrations

Hydrogen & the political agenda

Political support for the UK's hydrogen opportunity has grown significantly over the last 12 months. Hydrogen is Point Two in the Prime Minister's Ten Point Plan for a Green Industrial Revolution. It featured heavily in the Energy White Paper, and there are several major upcoming policy documents that are expected to include significant commitments on hydrogen - the Transport Decarbonisation Plan, the Heat and Buildings Strategy, and the Hydrogen Strategy itself.

The Transport Secretary, the Business Energy and Industrial Strategy (BEIS) Secretary, and many other ministers, have also publicly expressed their support for, and commitment to, the hydrogen agenda.

As a result, industry feels strongly that hydrogen is higher up the Government's policy agenda than this time 12 months ago.



Is hydrogen higher up or lower down the Government's policy agenda than this time 12 months ago?

The Government's Record

The survey asked industry what it thought has been the most important measure the Government has taken on hydrogen.

The inclusion of hydrogen as Point Two of the Prime Minister's Ten Point Plan, and the associated UK target of 5GW of hydrogen production by 2030, are overwhelmingly seen by industry as the most important measures the Government has taken to date.

Respondents also highlighted the commitment to publish a UK Hydrogen Strategy, the creation of hydrogen hubs in Teesside and Holyhead, proposals for a Clean Maritime Fund, consideration of hydrogen-ready appliances, and the creation of the Hydrogen Advisory Council as important signals to industry of the Government's growing enthusiasm for hydrogen.

However, respondents were also clear that the Government now needs to follow up on the positive rhetoric with strong and ambitious policy.

"Recognising the essential role of hydrogen in Net Zero, via policy ambition documents, but action is still to come to support the industry."

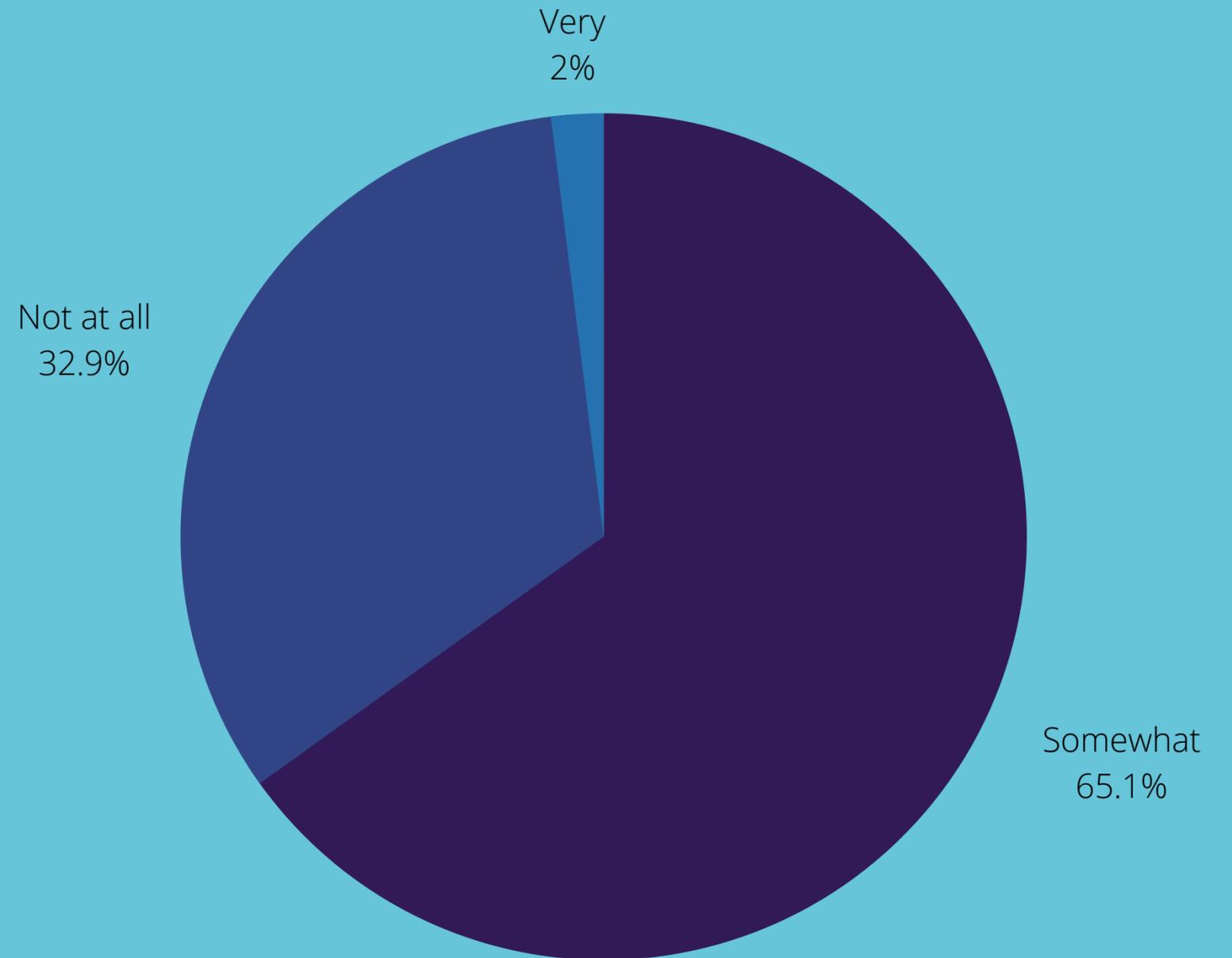
"The hydrogen industry is at a critical point with industry ready to commit capital to turn ambitions into reality. The government must not miss this opportunity and provide suitable support through an appropriate business model."

"Explicitly including tangible targets within policy, this has highlighted to industry that Hydrogen is a serious solution. This is particularly important in the building services industry, whereby electrification has been seen as the 'only' solution by many."

Government coordination

65.1% of respondents think the Government is 'somewhat' coordinated across departments on hydrogen. However, a significant minority of 32.9% think it is 'not at all' coordinated.

The Hydrogen Strategy Now campaign has previously recommended that a cross-government political working group on hydrogen is created, and that this includes representatives from the devolved administrations and local government. These survey findings reinforce this recommendation.

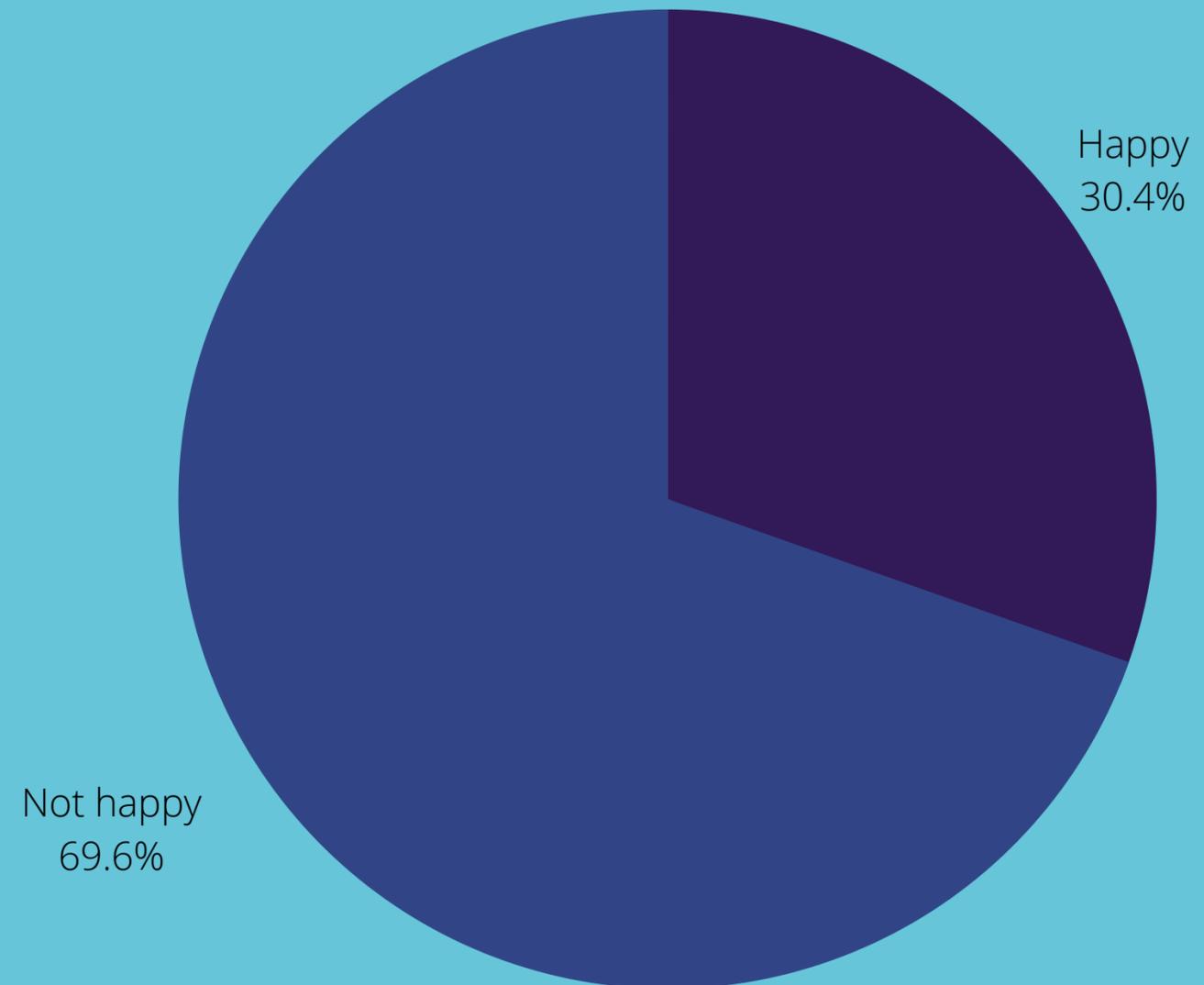


Is the Government coordinated across departments on hydrogen?

Business models

The survey results show that the Government's current approach to business models and support regimes are not popular, which is not surprising given these are not fully developed.

It is likely these views will change with the forthcoming publication of the Hydrogen Strategy as well as the consultation on long term, sustainable business models.



Are you happy with the Government's approach to business models and support regimes?

The UK's hydrogen potential

Industry does not feel that the UK is currently living up to this ambition, highlighting the need for a Hydrogen Strategy to enable further and faster progress.

81% of industry responded negatively when asked whether the UK is currently meeting its full hydrogen potential. Just 17% said they are 'quite confident' that the UK is meeting its potential and only 2% of respondents said they are 'extremely confident' the UK is meeting its full hydrogen potential.

Industry is also concerned the Hydrogen Strategy will not deliver the necessary policy environment to meet the Government's 'world-leading' ambition, with 61% stating they 'are not confident' the strategy will fulfil this aim. Less than a third (19%) believe the Government's plan will set a path towards a world-leading hydrogen market.

"There is huge potential in the UK. Everything rides on the government getting the strategy right. They are engaging with industry with the right intent but things move slowly."

"Lots of talk and not much action. We need long term confidence in the hydrogen market."

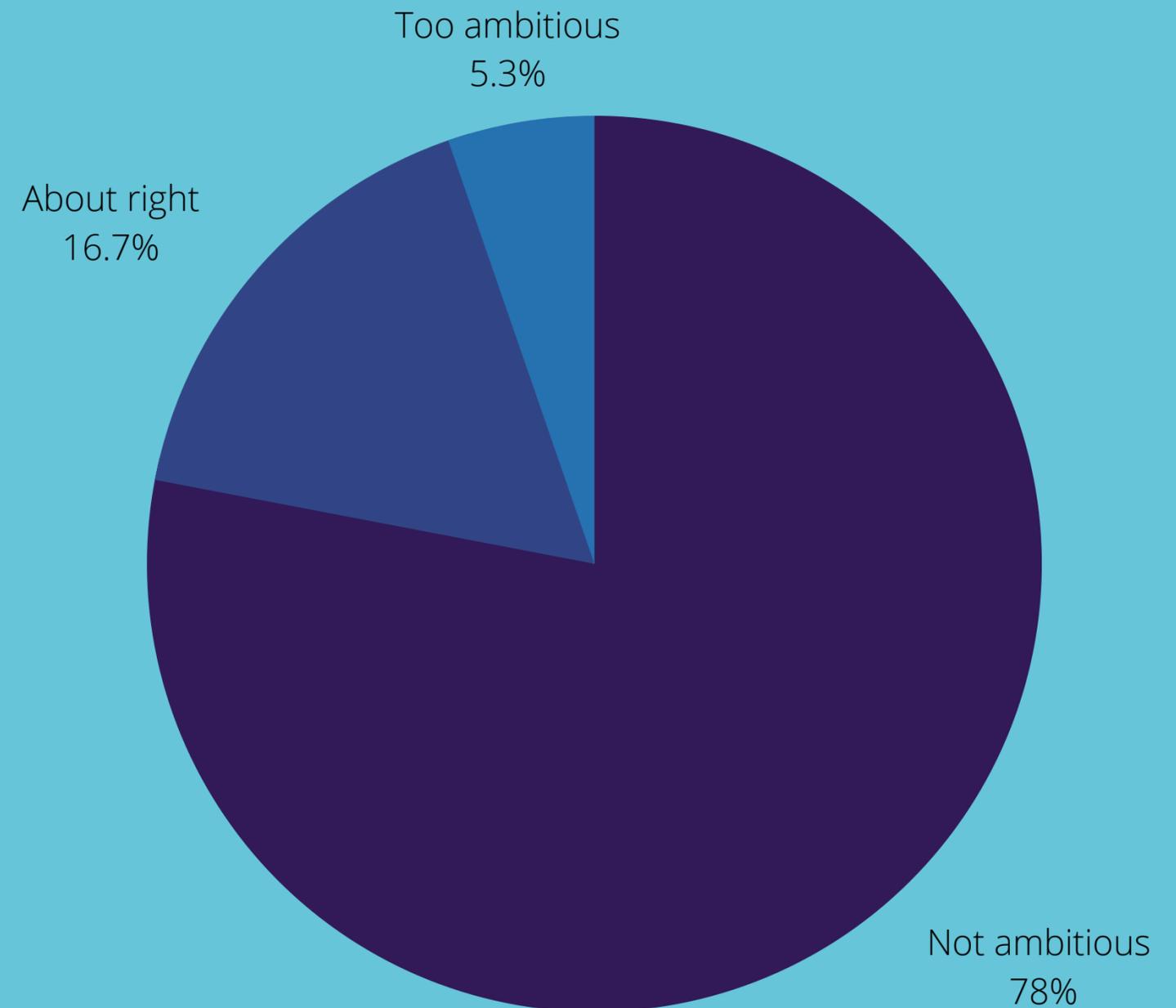
"There is a great potential to grow something unique in this country and an enabling approach in the strategy will facilitate that."

The UK's hydrogen production target

The Energy White Paper set a target of 1GW hydrogen production by 2025, and the PM's Ten Point Plan committed to 5GW by 2030.

78% of participants in the survey believe the 5GW hydrogen production target set out in the PM's Ten Point Plan is not ambitious enough.

The Hydrogen Taskforce, UK Hydrogen and Fuel Cell Association and RenewableUK have all called for the 5GW target to be scaled up, and industry clearly feels it can deliver beyond current Government ambitions.

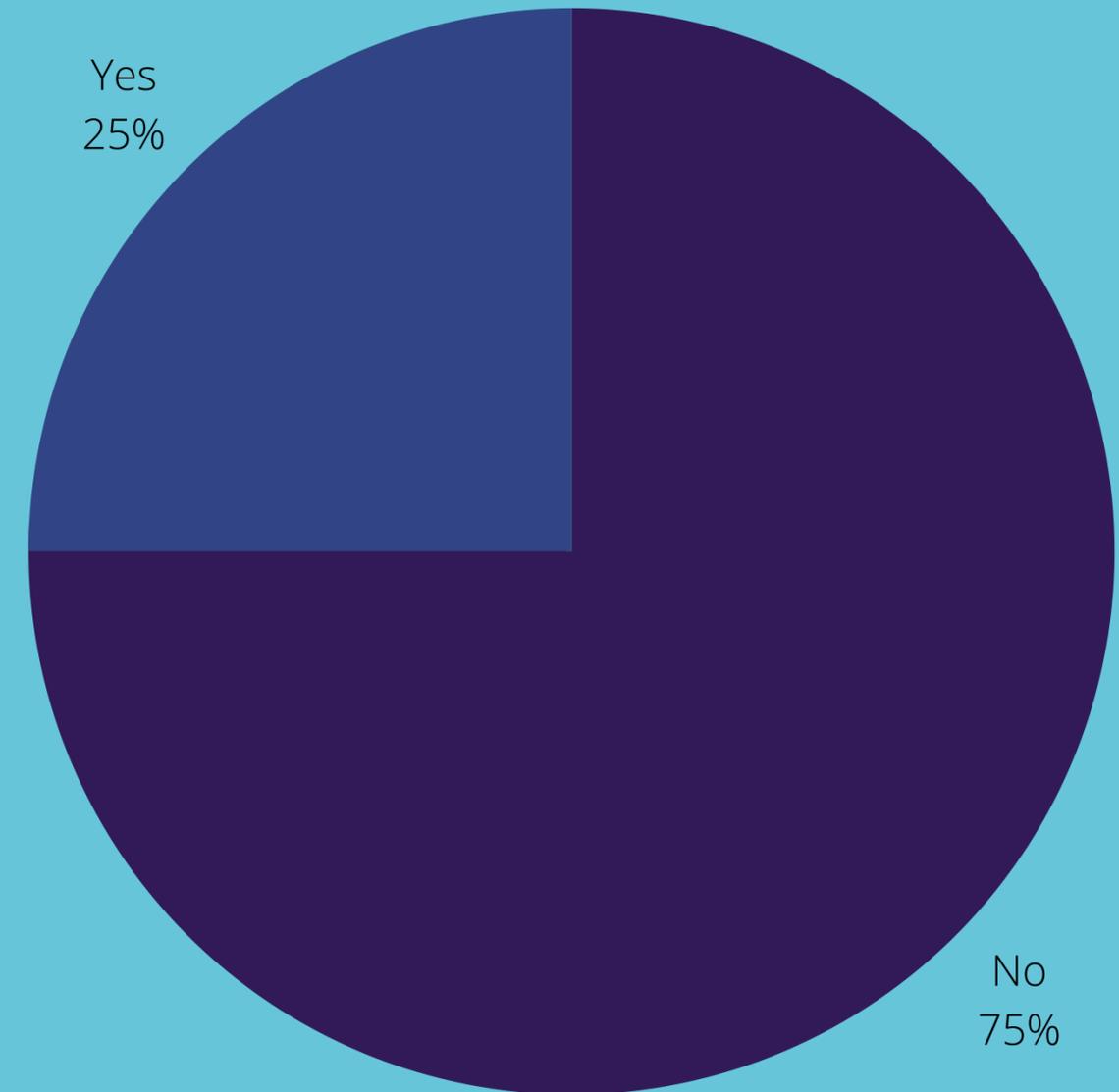


Do you think current hydrogen targets are ambitious enough?

Infrastructure

Three quarters of industry is not confident that the Government is giving sufficient focus to the development of hydrogen infrastructure, such as pipelines and storage, alongside increasing production and demand.

Three quarters (75%) gave a negative response to this question, with just a quarter (25%) responding positively.



Is the Government giving sufficient emphasis to the development of hydrogen infrastructure?

The global hydrogen race

The global hydrogen race is gathering speed. Last year, the EU and 15 other countries published hydrogen plans. At least \$300bn is expected to be invested globally over the next decade by the public and private sectors, with some even projecting that hydrogen could meet almost a fifth of global energy demand.

The potential reward is great. By strategically placing, in the PM's words, a "big bet" on hydrogen now, the UK can create thousands of highly skilled green jobs, attract investment and unlock large scale export opportunities, increase energy security and position itself world leader in a future \$2.5tr hydrogen economy.

However, many other nations are also alert to this Net Zero and economic opportunity and are moving fast to position themselves at the front of the global hydrogen race.

"We do think the UK is a laggard in comparison to other countries. It has been too slow in developing the necessary regulatory framework, with too low a target for hydrogen production and a lack of material investment and policy mechanisms in place to encourage sufficient private investment."

Investing in the UK

Over a third of respondents (38.4%) said that the UK is harder to invest in than other comparator countries like the EU, Japan and Australia. While more than half (57.6%) said that the UK offers worse incentives to invest in hydrogen than other countries.

Despite this, over a third of businesses who responded to the survey (36.8%) said they will be investing in the UK next year. This is compared to 31.6% who said they will be investing in Europe; 14.2% who said they will be investing in the USA; and 5.8% who said they will be investing in Japan.

But, almost half (49%) of respondents say that the lack of a UK Hydrogen Strategy has delayed or reduced their investments in UK hydrogen projects.

36.8%

will invest in the UK
next year

31.6%

will invest in the EU
next year

14.2%

will invest in the USA
next year

5.8%

will invest in Japan
next year

Political Engagement

Political interest in hydrogen is at an all time high because of its ability to deliver significant Net Zero, job creation and economic gains. The Prime Minister, Transport Secretary and Business Secretary have publicly stated their enthusiasm for hydrogen and in the 2019 - 2021 Parliament, hydrogen was mentioned 537 times by MPs and Peers from across the House, an increase of almost 200% from the 2017 - 2019 sitting.

At a local level, interest in hydrogen is also growing and a national race is beginning to emerge as local politicians compete to ensure that public and private investment into the UK hydrogen market brings economic and Net Zero benefits for their communities.

"Public tenders from local authorities have been relatively piecemeal. We would like to see local authorities develop more coherent approaches to their own hydrogen action plans and strategies"

Local political support for hydrogen

Ahead of elections in May 2021, local and regional politicians made significant manifesto commitments on hydrogen.

In Scotland, the SNP committed to at least 5GW of renewable and low-carbon hydrogen production capacity by 2030. At a Mayoral level, Tracy Brabin, the newly elected Metro Mayor of West Yorkshire described hydrogen as “one of the most exciting zero carbon solutions”.

In Liverpool, the Metro Mayor, Steve Rotheram wants hydrogen to “be produced in the Liverpool City region by 2023” and is investing in hydrogen buses. Andy Street, Mayor of the West Midlands, wants to roll out more hydrogen buses and launch a regional programme to improve the energy efficiency of homes including the installation of hydrogen-ready boilers.

“One of the most exciting zero carbon solutions.”

Tracy Brabin MP, Mayor of the West Yorkshire Combined Authority

Political engagement

Industry is engaging with politicians at all levels but this is mixed and could be improved.

- 41% of respondents have spoken to their MP about the policies required to enable them to invest in hydrogen in the UK.
- 47% have spoken to their local council.
- 47.6% have spoken to a Combined Authority.

The survey asked respondents which political party they think has the best approach to hydrogen. Over half (55%) think the Conservatives have the best policies or approach to hydrogen. 15% said the Green Party has the best approach, while only 6% said the Labour party does.

41%

have spoken to their
MP

47%

have spoken to their
local council

47.6%

have spoken to a
Combined Authority

UK-wide action on hydrogen

We asked industry which devolved administration it believes is doing the best job when it comes to supporting local and regional hydrogen projects.

Over three quarters (84.5%) think Scotland is doing the most on hydrogen compared to Wales and Northern Ireland, which is reflective of Scotland being the first devolved administration to set a clear target for hydrogen production, combined with a policy statement.

84.5%

think Scotland is doing
the most

8.7%

think Wales is doing
the most

6.8%

think Northern Ireland
is doing the most

Next steps

The imminent publication of the Hydrogen Strategy marks the beginning of the next phase of the Hydrogen Strategy Now campaign, not the end. Hydrogen is going to play an essential role in the world's future, low-carbon economy and stands to become a \$2.5tr industry by 2050 that supports 30m jobs.

The race to lead this industry has started, evidenced by the billions being invested into hydrogen by Governments across the world. As Baroness Brown, vice chair of the Committee on Climate Change, stated at the launch of the Hydrogen Strategy Now campaign, "the UK missed the boat on wind technology and missed the boat on batteries. We can't afford to miss the boat on hydrogen".

As this survey has shown, industry looks forward to working with the Government, devolved administrations and local authorities to deliver the Hydrogen Strategy, and stands ready to invest, create jobs and accelerate progress to Net Zero.