



# Ten Point Plan for a Green Industrial Revolution

26 November 2020





# 1. Introduction

Boris Johnson announced his 10-point plan for a green recovery at the start of last week, with the stated aim being to “create, support and protect hundreds of thousands of green jobs, while making strides towards net zero by 2050.” The following Wednesday, the UK government released a public policy document providing further detail on the “Green Industrial Revolution” and how it will turn the UK into the world’s number one centre for green technology and finance.

## Key points:

- Ambitious policies to mobilise £12 billion of public sector investment and also drive an estimated £42 billion of private sector investments by 2030 across energy, buildings, transport and innovative sectors.
- A 40GW pipeline of offshore wind by 2030, supporting 60,000 jobs.
- Targeting 5GW of low-carbon hydrogen production by 2030.
- Targeting new, advanced nuclear power, with the establishment of a £385 million Advanced Nuclear Fund.
- Ambitions to capture 10Mt of carbon dioxide a year by 2030.
- First UK sovereign Green Bond in 2021 of £1 billion, with £1 billion of matched funding and potentially up to £2.5 billion of private sector funding.
- Phasing out sales of new petrol and diesel cars and vans by 2030 to accelerate the transition to electric vehicles and investing in grants to help buy cars and charge point infrastructure.



## 2. Key Sectors

### 2.1 Offshore Wind



#### The Plan

By 2030, the UK government plans to quadruple current offshore wind capacity so as to generate more power than all our homes use today. As a sign of commitment to the industry, there will be a doubling in 2021 of renewables procured through the next Contract for Difference auction. If successful, this should result in 40GW of offshore wind (including 1GW of floating offshore wind), with the UK government expecting this to promote £20 billion of private investment, by 2030.

The plan also aims to make the UK a leading player in turbine manufacturing, coupling the investment of £160 million to support modern integrated ports and manufacturing infrastructure with the introduction of more stringent local content requirements for the offshore wind supply chain (up to 60%) in future Contract for Difference rounds. It is hoped that this will promote inward investment into turbine manufacturing in the UK and build global competitiveness and expertise in the offshore wind sector.

#### Target Milestones

2020	2021	2022
Competitive process launched to support modern, integrated portside infrastructure	Consult on the introduction of more stringent supply chain plan requirements, and support up to twice the capacity of renewable generation in the next CfD round, with onshore wind and solar projects eligible to bid for CfC contracts.	The Offshore Transmission Network Review will publish an update by the end of the year, with a view to providing clarity for an enduring approach in 2021.



## 2.2 Hydrogen



### The Plan

The UK aims to achieve, in partnership with industry, 5GW of low-carbon/“green” hydrogen production capacity by 2030. This will be supported by a £240 million hydrogen fund, hydrogen business models and a revenue mechanism encouraging private sector investment (of over £4 billion in the period to 2030) in this emerging global market. The production of low-carbon hydrogen at scale will be facilitated by carbon capture and storage infrastructure, referred to as “SuperPlaces” (see section 2.4, below), along with also maximising the UK’s wealth of offshore and renewable generation.

The UK government intends to further develop the UK’s position as a world leader in pioneering the use of hydrogen for heating. This initial investigation will come in the form of hydrogen-heating trials, starting with a Hydrogen Neighbourhood that will be scaled up to a potential Hydrogen Town before the end of the decade.

Taken together, these policies are intended to develop resilient supply chains, support jobs and position the UK as a market leader in an exciting growing global market, as well decarbonising industrial processes, industrial heat and power generation.

### Target Milestones

2021	2022	2023	2025
Publish the Hydrogen Strategy and begin consultation on government’s preferred business models for hydrogen.	Finalise hydrogen business models.	Work with industry to complete the testing necessary to allow up to 20% blending of hydrogen into the gas distribution grid for all homes on the gas grid.	1GW of hydrogen production capacity. Support industry to begin a large village hydrogen heating trial.

## 2.3 Nuclear



### The Plan

The UK government views new nuclear projects as playing a fundamental role in decarbonising the electricity system, while complimenting the growth of renewable electricity penetration and other nascent technologies. As part of this, it is pursuing large-scale new nuclear projects as a reliable source of low-carbon electricity by investing in next generation nuclear technology, including Small Modular Reactors (SMR) and Advanced Modular Reactors (AMR).

Such investment will take the form of a £385 million Advanced Nuclear Fund, enabling the investment of up to £215 million in SMR design development. A further £170 million will be committed to a research and development programme for AMRs that could unlock efficient production of hydrogen and synthetic fuels, complimenting the UK government’s other committed policy goals in CCUS, hydrogen and offshore wind.

The UK government is also investing an additional £40 million in developing the regulatory framework to allow for SMR and AMR to come online, while also supporting the UK nuclear supply chain.

We note here that the UK government has conditioned its nuclear investment policy goals on being subject to value for money, indicating a clear desire to focus on cost efficiency and to avoid new-build cost overruns, which has become uniquely associated with recent new nuclear development in the UK.

### Target Milestones

2020	2021	2030
Publication of the Energy White Paper.	Proposed launch of Phase 2 of UK SMR design development.	First SMRs and AMR demonstrator deployed in the UK.

## 2.4 Carbon Capture, Usage and Storage



### The Plan

The ambition is to capture 10Mt of carbon dioxide a year by 2030. The establishment of Carbon Capture, usage and storage (CCUS) will be supported by up to £1 billion of investment developing four industrial clusters, known as “SuperPlaces” (in areas such as the North East, the Humber, the North West, Scotland and Wales – where CCUS is already under development).

To encourage private sector investment, a revenue mechanism will also be proposed in 2021 to facilitate investment in carbon capture and hydrogen. While the UK government recognises that no country has yet been able to capture the market for CCUS, it identifies the opportunities presented by deep storage under the North Sea as a potential opportunity for the UK to be the first to do so. If successful, CCUS is viewed as a key driver for decarbonisation of our most carbon-heavy sectors, while making the UK a global leader in the net-zero economy.

CCUS will be established in two industrial clusters by the mid-2020s, with four expected by 2030 and capturing up to 10 Mt of carbon dioxide per year. The £1 billion CCUS Infrastructure Fund will provide the industry with the certainty required to deploy CCUS at pace and at scale.

### Target Milestones

2021	2022	2030
Execute a process for CCUS deployment, working in collaboration with industry and set out further details of a revenue mechanism for industrial carbon capture and hydrogen projects.	New CCUS business models finalised.	Two clusters operational by the mid-2020s (subject to value for money/affordability) and a further two clusters operational by 2030.

## 2.5 Green Finance and Innovation



### The Plan

The UK government acknowledges that innovation and developing new sources of finance are fundamental for further developing the green technologies that are essential for achieving net zero.

As such, the UK government has committed to raising total research and development investment to 2.4% GDP by 2027. While the importance of public sector investment comes through clearly in the plan, alongside well designed policy mechanisms – it is recognised that the UK's world-class innovators, entrepreneurs and finance institutions also need to be on board in developing new technology, which is high risk/high reward but which may create a step-change in the path to net zero.

A £1 billion Net Zero Innovation Portfolio will be launched, focussing on 10 priority areas that correspond with the 10-point plan. These include floating offshore wind, nuclear, energy storage, bioenergy, hydrogen, buildings and CCUS. The objective is to accelerate low-carbon, innovative, early stage technologies to achieve the UK's net-zero ambitions.

The initial £1 billion of government funding in net zero innovation is expected to be supported by £1 billion of matched funding and potentially £2.5 billion of follow-on funding from the private sector.

The first sovereign Green Bond will be issued by the UK government in 2021, subject to market conditions, with the aim of helping to finance sustainable projects. A series of issuances of further bonds will take place thereafter to meet demand.

### Target Milestones

2020	2021	2022
Publish priorities within the Net Zero Innovation Portfolio.	Remaining priority innovation challenges within the Net Zero Innovation Portfolio launched.	Announce the site for UK fusion power plant demonstrator.



## 3. Other Notable Developments

### 3.1 Accelerating the Shift to Zero Emission Vehicles

The UK government has imposed a ban on the sale of new petrol and diesel cars and vans by 2030, 10 years earlier than planned. Hybrid vehicles will continue manufacture and production until 2035.

Implementation of the ban will be supported by £1 billion of investment in the electrification of UK vehicles and their supply chains, including the development of “Gigafactories” to produce the batteries needed, at scale. The UK government is also investing an additional £1.3 billion to accelerate the rollout of charging infrastructure and £582 million to continue the plug-in car, van, taxi and motorcycle grants to 2022/23, keeping electric vehicle cost low and driving consumer buy-in and support. An additional £500 million of funding is committed during this Parliament to support jobs in the electrification of the UK automotive sector.

### 3.2 Greener Buildings

The UK government aims to replace fossil fuel boilers with low-carbon appliances over the next 15 years. By implementing the Future Home Standard in the shortest possible timeline, the aim is to avoid costly retrofit and to future proof existing buildings. The UK government will also consult on increased standards for non-domestic buildings so that new buildings have high levels of energy efficiency and low-carbon heating.

The target is to have 600,000 heat pump installations per year by 2028, achieved through partnership with industry, continuing to develop the growing UK heat pump manufacturing sector and well-designed market incentives. This has left open the possibility of whether the system will be hydrogen based, an electrified heating system or a mixture of both – but indications that all options are being piloted is positive and aligns with the UK government’s “holistic” approach.

An additional £1 billion of support has been committed to existing legislative schemes in place, including the Green Homes Grant, the Public Sector Decarbonisations Scheme, the Home Upgrade Grant and the Social Housing Decarbonisation Scheme.

### 3.3 Green Public Transport, Cycling and Walking

The UK government aims to invest tens of billions of pounds in enhancements and renewals of the rail network, with £4.2 billion in city public transport and £5 billion on buses, cycling and walking. More railway lines will be electrified and an integrated train and bus network put in place, with more frequent services to speed up journeys.

### 3.4 Jet Zero and Green Ships

The UK government aims to unlock the world of sustainable fuels, turning journeys traditionally intensive on fossil fuels into low-carbon routes of transportation. To achieve this, the Jet Zero Council has been established to accelerate the development and adoption of new technologies. The UK government will run a £15 million competition to support the production of Sustainable Aviation Fuels.

### 3.5 Protecting Our Natural Environment

The UK government aims to protect the natural environment through the creation of new National Parks and Areas of Outstanding Natural Beauty. New National Landscapes will play a key role in meeting the UK government’s commitment to protect 30% of UK land by 2030. Vital work needed to restore natural ecosystems will be accelerated with the establishment of 10 long-term Landscape Recovery projects over the next four years.



## 4. Our View

The UK was the first major economy to implement a legally binding obligation to reach net-zero by 2050. Positive publicity now aside, the UK government seems to have realised the magnitude of the task at hand.

To achieve the target, offshore wind will play the most significant role in increasing renewable capacity, supported by the advancement of, and developments in, hydrogen, nuclear and CCUS. We note with particular interest the plan's proposals for these sectors:

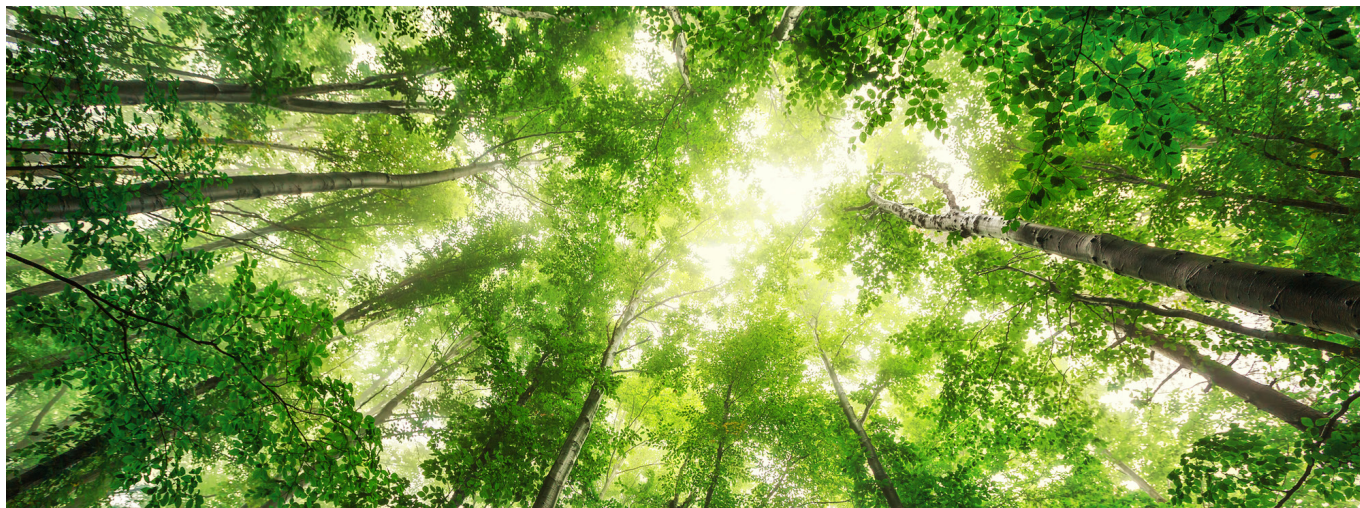
<b>Offshore wind</b>	40GW is an achievable aim, provided the market (and regulatory framework) can keep pace (although we note that the Department for Business, Energy and Industrial Strategy (BEIS) has already confirmed that the next Contracts for Difference (CfD) round, expected in 2021, is aiming to offer a capacity of 12GW to developers).
<b>Hydrogen</b>	The focus on "green hydrogen" through renewable energy, produced mainly by offshore wind. In our view, hydrogen and offshore wind are complementary technologies that will become increasingly interlinked, offering a host of benefits (storage of curtailed energy/grid balancing/market volatility hedging).
<b>Nuclear</b>	While there have been hints of government support for large new nuclear projects (direct investment in Wylfa Newydd/support for the RAB model to fund Sizewell C), until this announcement, we were getting no clear idea of where the UK government's focus was in terms of nuclear. The support, whilst now clearly stated, has been qualified with availability subject to a "value for money" test. The more immediate focus is on smaller-scale nuclear: SMR's and AMR's.
<b>CCUS</b>	The CCUS technology has been around for a while, not unlike the production of "green hydrogen" without ever achieving the meaningful scalability for it to play a key role in decarbonisation. CCUS has renewed government support under the plan, and it will be interesting to see if it is more successful than when last seriously considered on an industrial scale in the late 2000's, where concept-proofing/government commitment was the key barrier to private sector funding.

The UK government has made the initial steps to promote further development of green technology and new projects and with the correct support schemes and funding being made available from the public purse and also from the private sector, the plan could lay the foundation for success. Private sector finance "buy-in" in our view will be critical – and we welcome reports that the UK government immediately set up a virtual roundtable with leading investors following the plan's publication.

While the publication of the plan is welcome, we look forward to the detailed Energy White Paper, (which has again been promised by the end of this year) and the regulatory support mechanisms that are also signposted in the plan. In the absence of this detail, it is difficult to fully assess and understand the overarching strategy for implementation and achievement of the ambitious climate and sustainability goals, and how these measures will form part of the government's broader post-COVID-19 recovery and stimulus strategy.

The initial views from the market have been widely welcoming of the plans and ambition as a first step, but many "Green Economy" participants and commentators have indicated that the level of investment on offer is too low in comparison with green commitments from, for example, the French and German governments.

With a diverse practice group, our team is well placed to advise on all aspects of these investments and developments.





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