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The UK's Energy White Paper: Not many surprises, but 2021 will have to be a busy year

After postponing the paper's intended release in the autumn 2020, the UK government finally published the eagerly awaited Energy White Paper on 14 December 2020. The paper sets out the UK government's agenda for the energy sector and how it will work towards achieving its binding target to reach net zero carbon emissions by 2050.

The UK government last published an Energy White Paper in 2007. In 2008, the Climate Change Act UK came into force legislating for an 80% cut in emissions by 2050. A lot has changed since 2007, which is clear from the 165 pages setting out the government's latest plans. The newest Energy White Paper, however, ultimately lacks detail in a number of important areas and arguably identifies a "policy gap" between what the government has announced and where the emissions trajectory needs to be heading. The UK government's approach of drip-feeding energy and climate policy throughout 2020, including the Prime Minister's recent "10-point plan", meant that most of the big policy announcements in the paper have already been publicly announced. Nevertheless, the paper is another important milestone for all parties involved.

The below article provides a high-level review of the main talking points in relation to (1) nuclear power, (2) renewables, (3) hydrogen, (4) CCUS, and (5) the energy system more generally.

1) Nuclear Power

The main takeaway is that the UK government confirmed that nuclear energy is required within the UK's energy mix to meet the UK's commitment to decarbonisation. It goes on to confirm its intention to "*bring at least one large-scale nuclear project to the point of Final Investment Decision by the end of this Parliament*". While Sizewell C was not named in the paper, the paper's release was accompanied by the news that UK ministers will enter negotiations with EDF over Sizewell C.

The remaining issues can be broken into small-scale nuclear and large-scale nuclear.

Small-scale nuclear:

- UK government will provide up to £385m in an 'Advanced Nuclear Fund', which is aimed at developing Small Modular Reactor designs and building an Advanced Modular Reactor demonstrator in the UK by the early 2030s.
- UK government aims to build a commercially viable fusion power plant by 2040. It appears that the most likely candidate for this will be the Spherical Tokamak for Energy Production (STEP) programme in Oxfordshire, which is currently searching for a 100-hectare site. Discussions have already started between the UK government and the UK Atomic Energy Authority on how to build a regulatory landscape for fusion.

Large-scale nuclear:

- The UK government confirmed that it will:
  - Target getting at least one large-scale nuclear power project to Final Investment Decision (subject to a value-for-money analysis and relevant approvals) before the end of this Parliament;
  - Continue to consider a range of financing options, however it confirmed that the Regulated Asset Base ("RAB") model remains a credible funding model for

nuclear. A response[1] to the government's consultation on the RAB model concluded that the RAB model can encourage private investment in new nuclear generation. The RAB model has historically been used on other UK large-scale infrastructure projects such as the Thames Tideway Tunnel, and was used to incentivise private investment into public projects by providing a secure and reasonable return on investment for developers.[2]

- Regardless of the model ultimately used to finance such project(s), it will also consider the exact role and scope of government finance during the construction phase (again, subject to a value-for-money analysis).

2) Renewables[3]

The UK government is looking to include a large portion of renewable energy in its future energy mix. The paper makes it clear that the UK government is committed to significantly scaling up electrification. However, the UK government stated that it is "*not targeting a particular generation mix for 2050, nor would it be advisable to do so*".

The following points are also of particular interest:

- £160m scheme to develop offshore wind manufacturing infrastructure in the UK;
- The 2021 CfD auction will look to double the capacity achieved in the last round;
- A Ministerial Delivery Group will oversee the expansion of renewables; and
- Target 60% of UK content in all UK offshore wind projects by 2030. This will be reflected in more stringent supply chain requirements in future CfD allocations.

3) Hydrogen

The paper reiterates the government's previously stated desire that hydrogen will play a fundamental role in the UK achieving net zero. Most of the points in the paper in relation to hydrogen have already been publicly announced. We expect all interested parties will consider the paper with interest but will be cautiously awaiting the UK government's hydrogen strategy which is due to be published in early 2021.[4] The UK's hydrogen strategy will set out business models and the revenue mechanisms for private sector investment.

Interestingly, the paper's references to hydrogen appear primarily in the industrial energy section (Chapter 5). This may suggest that the UK government's thinking is currently more focussed on hydrogen 'production' than 'use'.

Nonetheless, the below points are of note:

- The aim is for the UK to have 1GW of low-carbon hydrogen production capacity by 2025 and 5GW by 2030;
- The UK government identifies the importance of the various production methods all playing a part in meeting this 5GW target. The paper specifically identifies methane reforming with CCUS, biomass with CCUS, and electrolysis powered by renewables or nuclear;
- The UK government will undertake a number of consultations with industry players in order to look at hydrogen's suitability to heat buildings and to develop a pilot hydrogen town; and
- A public consultation will be commenced in 2021 which will focus on the role of hydrogen-ready appliances. There will also be a consultation on the government's preferred business models for hydrogen in 2021 with the aim to finalise hydrogen business models in 2022.

Hydrogen financing

- The UK government will invest £1 billion in the 'Energy Innovation Programme' to develop technologies such as advanced nuclear and clean hydrogen; and
- £240 million is available through the Net Zero Hydrogen Fund up to 2024/2025.

[1] RAB Model for Nuclear: Government Response to Consultation: Nuclear_RAB_Consultation_Government_Response-.pdf (publishing.service.gov.uk)

[2] Sizewell C, *SZC Financing: The RAB Model* (November 2018), available at: https://www.niauk.org/wp-content/uploads/2018/11/Joe-Rippon-EDF.pdf

[3] What "renewables" exactly covers is not defined in the paper however the paper describes renewables as "*Energy that is collected from resources which are naturally replaced in human timescales such as sunlight, wind, rain, tides and waves*".

[4] As mentioned in the 10 Point Plan, The Ten Point Plan for a Green Industrial Revolution (HTML version) - GOV.UK (www.gov.uk)

4) CCUS

The government aims to capture 10Mt of carbon dioxide per year by 2030 – the equivalent of 4 million cars' worth of annual emissions.

- The government's aim is to have at least one CCUS project operational by 2030, within one of four low-carbon industrial clusters to be set up by 2030;
- The paper makes clear that the UK government will incentivise CCS deployment by updating the technology requirements and removing the 300MW planning threshold;
- The commercial framework will also be implemented, which will involve a business model based on the CfD framework; and
- A Net Zero Innovation Portfolio will be created, including £1 billion to accelerate the commercialisation of innovative low carbon technology such as CCUS, cryogenic energy storage, heat pumps, etc.

5) Transport and energy systems

The government will publish a National Bus Strategy in early 2021 which will set out plans to transform the bus sector and "*will support both battery electric buses and hydrogen buses where the market favours their use*".

- The government confirmed the following incentives around electric vehicles (EVs):
  - £582m in grants for those buying zero or ultra-low emission vehicles; and
  - Nearly half a billion pounds in the next four years for the development and mass-scale production of EV batteries.
- A Net Zero Council has been created to help net zero aviation; and
- A £20 million Clean Maritime Demonstration Competition will help to decarbonise marine transport, with a £15m equivalent for aviation fuels.

The UK government is also looking to support its proposed changes to the generation landscape through changes in the energy system and planning, for example allowing expansion of the electricity grid. The government confirmed that it will focus on:

- Establishing 18GW of interconnector capacity by 2030;
- New offshore wind capacity will be incentivised to be more coordinated (rather than each new project building its own connection to the mainland grid); and
- A new UK Emissions Trading Scheme will be established. The government aims for this to be "*the world's first net zero carbon cap and trade market*".

Conclusion

The paper is another step in the right direction that builds on the UK's 10 point plan for its green revolution[5]. It provides some further clarity on how the UK government will align energy-related policies from across a variety of sectors. It also considers important issues around governance, and provides the foundations for how systems and markets will have to adjust in order to achieve net zero.

However, despite the considerable amount of information within the paper, it is ultimately a missed opportunity for the UK Government to describe in detail how their policies will be implemented.

2021 will be (another) critically important year for the UK government as it undertakes its consultations and reviews before beginning to implement concrete measures to achieve net zero. As the UK prepares to co-host COP26, it is expected that the government will publish further information on all relevant sectors, their consultations, and the outcomes of such consultations.

The main theme running through all of the UK Government's energy announcements in 2020 and we expect 2021 is that there is an urgent need for major change, across all sectors, to achieve its net zero goals.

A copy of the paper is available at this link.

https://www.offshoreenergylaw.com/sites/default/files/pdf/The%20UK%20government%20has%20set%20out%20its%2010-point%20clean%20energy%20plan_what%20comes%20next.docx_.pdf

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