Supplementary written evidence from Drax Group plc - follow up to oral evidence session of 25th November 2021

Thank you for the opportunity to give oral evidence to the Committee's inquiry last month. During the session, I committed to follow up in writing on a number of items which are set out below. While I've sought to be as open and comprehensive as possible, as I stated in the session some of these matters are commerciality sensitive at this stage in the project development.

1. Rationale for Drax no longer being a member of S&P Global Clean Energy Index

During questioning Barry Gardiner MP stated "Drax was recently dropped from the green energy companies index because of what were called "uncertainties and poor practices"." In response, I stated these were not the reasons and committed to write to the Committee to clarify the position. To confirm, I am correct that Drax was not removed from the Index due to the reasons stated by Mr Gardiner. At the last rebalancing in October a number of companies were excluded from the index. Standard and Poors do not publish the precise reasons for each companies' exclusion, but they clearly state that biomass is considered within the scope of their taxonomy for inclusion within the index. Indeed, there are companies who generate power from biomass included in the index. We believe that Drax's exclusion reflects legacy thermal generation (gas and coal). As I set out in previous questions, we plan to shut our coal units in September 2022 when our capacity market contracts expire and hope to re-enter the Global Clean Energy Index in the future.

2. The efficiency of Drax Power Station with BECCS

In the session Dr Quiggin outlined his estimates of Drax Power Station's efficiency following the installation of carbon capture equipment at 21%, a drop from the current efficiency of 36%. I can confirm that both of these figures are inaccurate and below efficiencies we have seen in our real-world data through both the ongoing operation of the power station and our pilot BECCS projects.

We have worked hard over the years to increase the efficiency of the power station to reduce costs. Since 2008 we have invested in 3 major turbine upgrade programmes at a cost of £190m and as a result, our current biomass efficiency is circa 40%.

The exact reduction in the cyclic efficiency under BECCS will be determined as part of the detailed Front-End Engineering and Design (FEED) study to commence early next year. Our initial findings indicate that this could be reduced by circa 11%, but this will keep us far above the BECCS efficiency figure estimated by Dr Quiggin in his analysis.

However, as outlined during the session, this calculation simply looks at cyclic efficiency in the production of power and fails to account for the production of negative emissions. We view this change in efficiency as a diversion of some of the energy input into the power station to produce negative emissions alongside low carbon power, which will be vital if the UK is to achieve its decarbonisation targets.

3. Evidence of growth of the forests we source from

I was asked by Barry Gardiner MP to provide written evidence to the Committee to support his assertion that the forests we source from are growing. Drax is committed to sourcing sustainable biomass that contributes to the long-term maintenance of growing carbon stock and productivity. This response focusses on inventory data at 3 scales – the US South as a whole; individual states with particular detail on Louisiana (which was mentioned during the evidence session); and the specific areas around the mills that supply us.

Drax sources from 64% of its biomass from the USA[1], primarily from Southern states. Looking at the US South, the net volume of growing stock on timberland has continually increased since 1953[2]. The Forest Inventory and Analysis (FIA) RPA (Resource Planning Assessment) data[3] carried out by the US Department for Agriculture shows 10-year periodicity indicating a 34% increase over two decades from 104 billion cubic ft in 1997 to 141 billion cubic ft in 2017 (table 18). At a state level for the key states we operate in (Georgia, North Carolina, South Carolina, Virginia, Alabama, Arkansas, Louisiana, and Mississippi), growing stock has increased each decade since 1997.

Looking at data from the U.S. Department of Agriculture, Forest Service[3] annual data can be assessed. Specific mention of Louisiana was mentioned with regards to an anomaly year in 2011 being used as a baseline year. Data shows in fact that this is not the case. Table 188 shows carbon stocks from forest land remaining forest land which indicates an overall increase of 40.3% in above ground biomass from 1990 to 2020 with an average of 1.1% a year with an increase of 1.3% from 2010 to 2011 and again from 2011 to 2012.

In addition to our due diligence processes, Drax monitor a range of key metrics about the forests from which we source, to ensure that we are delivering a positive impact for the climate, environment and for the communities in each area we source our pellets from (i.e., catchment area). We have completed nine Catchment Area Analyses (CAA)[4] covering two thirds of Drax's supply. This includes the catchment around three mills in the Chesapeake region in Virginia, seven pellet mills in south east Georgia, and around Drax's own pellet mills – LaSalle, Morehouse, and Amite. We have also examined catchments in Latvia, Estonia and British Columbia.

Independent third parties with expert knowledge of each catchment area aggregate and analyse information from national inventories, and other publicly available data (e.g. prices). Data collected through the CAAs provide robust evidence on growth which shows that there has been an increase in growing stock of timber in all catchment areas in the US South over the last two decades. The Morehouse catchment area in Louisiana inventory has increased 23% since 2006[5]. Total timber inventory has also steadily increased by 1% a year from 2000 to 2018 (+19% total) in the Georgia catchment area[6]. In the LaSalle catchment area inventory increased 7.4% since 2008[7] and in Amite there has been a net increase of 14% from 2010 to 2017 (+1.9% a year)[8]. Figure 1 illustrates these trends for these US catchments.

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[1] https://www.drax.com/wp-content/uploads/2021/03/Drax_AR2020.pdf
[2] https://www.fia.fs.fed.us/program-features/rpa/docs/2017RPAFIATABLESFINAL_050918.pdf
[3] https://www.fs.fed.us/nrs/pubs/download/ru_fs307_Appendix1.pdf
[4] https://www.drax.com/sustainability/sustainable-bioenergy/catchment-area-analyses/
[5] https://www.drax.com/wp-content/uploads/2020/01/Drax_Morehouse_Market_Assessment_20190918.pdf
[6] https://www.drax.com/wp-content/uploads/2020/10/Drax-Georgia-CAA-Report_UK-Version_2020-09-08.pdf
[7] https://www.drax.com/wp-content/uploads/2020/07/Drax_LaSalle_Market-Assessment_20200612.pdf
[8] https://www.drax.com/wp-content/uploads/2019/12/Amite-BioEnergy-CAA-metric_2019-10-01.pdf

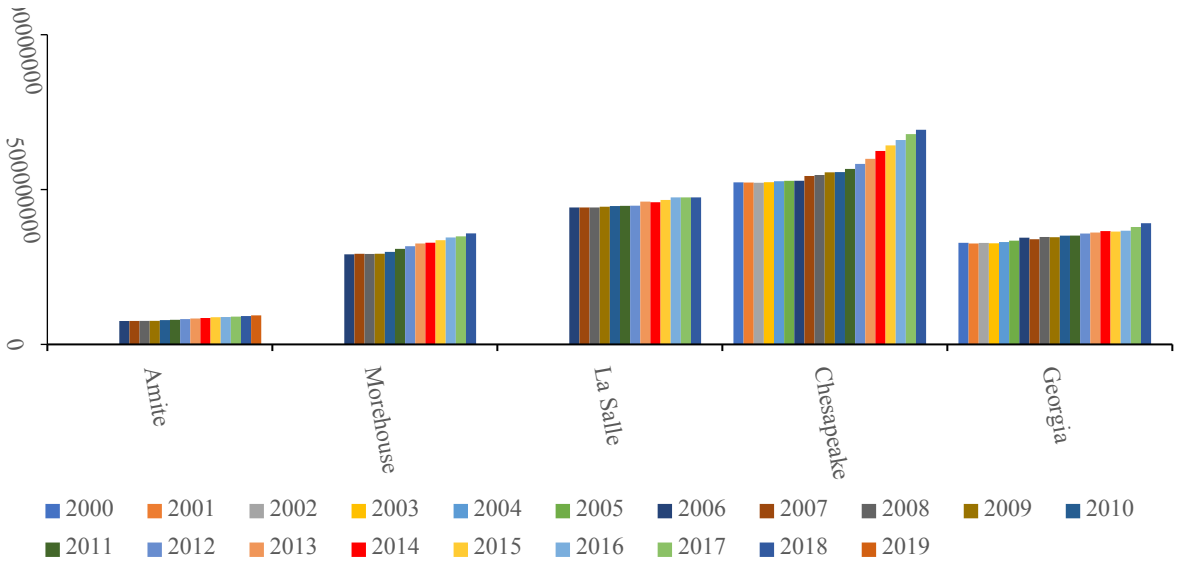

Figure 1 https://www.drax.com/sustainability/sustainable-bioenergy/catchment-area-analyses/

4. Potential subsidy required to develop BECCS

While noting commercial sensitivities and the early stage of business model development, the Chair asked us to provide estimates of the potential subsidy required to develop BECCS. Various estimates of the cost of the negative emissions produced by BECCS have been outlined ranging from £90-£225/tCO2 for BECCS power compared to DACCS £180-£255/tCO2[9]. If deployed at scale BECCS could be delivered for between £45-£145t/CO2 as cost learning curves take effect.

We believe we can deliver BECCS for a price of £100/tCO2 and are working to confirm this as part of the FEED study. For reference the current UK Emissions Trading Scheme price is approximately £70/tCO2.

The Government has committed to launch a detailed consultation on a business model to support Greenhouse Gas Removal technologies in Spring 2022[10]. This will consider different options for supporting BECCS and other GGRs, as well as the different ways in which a support scheme could be funded – for example through electricity bill payers, general taxation, or through carbon pricing revenues. We anticipate that the government will outline their minded-to position on this by the end of 2022.

Subject to a suitable investment framework, we stand ready to invest over £2 billon of private finance in the Drax Power Station BECCS project. Analysis by Baringa for Drax has indicated that in absence of BECCS at the Drax Power Station, the cost of reaching net zero by 2050 will be £26 billion more expensive[11].

[9] https://coalitionfornegativeemissions.org/wp-content/uploads/2021/06/The-Case-for-Negative-Emissions-Coalition-for-Negative-Emissions-report-FINAL-2021-06-30.pdf

[10] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1033990/net-zero-strategy-beis.pdf

[11] https://www.drax.com/wp-content/uploads/2021/09/Value-of-BECCS-to-the-UK-Decarbonisation-Pathway-Baringa-Report-Exec-Summary-FINAL-2021-2.pdf

5. Clarity on the strict rules regarding our former colleague Dr Rebecca Heaton's membership of the Climate Change Committee (CCC)

Towards the end of the evidence session, Barry Gardiner MP asked Dr Dan Quiggin about the Climate Change Committee (CCC) and the involvement of a director of Drax. This refers to Dr Rebecca Heaton who was a member of the Committee between 2017 and earlier this year while in her role as Head of Sustainability and Policy at Drax Group. To confirm, Dr Heaton has since left both the CCC and Drax Group. Dr Heaton was selected in 2017 following a transparent and highly competitive process conducted in accordance with the Office of the Commissioner for Public Appointments Code of Practice. Her appointment was based on her extensive knowledge and expertise in sustainability and in aligning climate policy with business practices. The CCC have strict protocols in place to prevent any conflicts of interests. Accordingly, to ensure there was no conflict of interest, Dr Heaton was not involved in any discussions at the CCC relating to biomass.

I hope these answers are helpful for the Committee and we would be happy to provide any further evidence should you have any further questions.

Yours sincerely,

Jason Shipstone

Chief Innovation Officer

Drax Group plc

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