1.1 Table 1.1 of Environmental Statement 3 Appendix 15.1 entitled Baseline Scenario GHG Emissions assumes each generating unit operates for 4,000 hours per year. This is less than six months.

1.2 During 2021, the four woody biomass fired generating units produced nearly 15 TWh. Assuming that each of those four units generated the same amount of electricity), this would imply that the biomass units operated for about 45% more hours than what the applicant assumes. Source: Drax Annual Report (2021)

1.3 During 2021, the "availability" of those biomass units was 91% - (4,000 hours per year is 45% of a year). Source: Drax Annual Report (2021)

1.4 1.1, 1.2 and 1.3 imply that the applicant underestimates the likely emissions by a very substantial margin, begging the question why?

2 The inefficiency with which Drax power station converts energy embodied in woody biomass to electricity is low – even if one ignores foregone sequestration and soil carbon. So low that it would not qualify for further subsidy (if available) under current eligibility criteria.

3 1 Security of supply of woody biomass for Drax power station should be a major concern.

3.2 Most of what is currently burned to generate electricity and subsidy derives from the Baltic States (which are vulnerable to aggression from Russia), Portugal (whose plantations are especially vulnerable to fire), British Columbia (the UK seems unable to compete against countries in Asia, primarily Japan as an export destination). The USA is much the leading source of supply but the price Drax would be obliged to pay may rise steeply for a number of reasons. Demand for wood pellets would surge if coal fired power station cofired with woody biomass or were converted to only burn biomass. Prices would rise when demand wood-based building and furnishing materials increase – to displace alternatives made from fossil fuel or made using fossil fuel – and when cascading use of the scarce resource – wood – becomes mandatory. Landowners and the USA (indeed all the applicant's pellet supplying countries) are not being compensated for the sequestration foregone by the clear cutting from which the applicant's pellets derive and neither are they being paid to sequester the CO2 emitted by the applicant's Drax power station combustion (and supply chain).

3.3 The applicant's business model is fundamentally flawed in its dependence on prices which do not reflect environmental and other costs (/ externalities),

4.1 Intermittent operation to ensure balanced CO2 supply in the downstream pipeline and in response to need for electricity will be a constraint – especially as 2035 approaches (when electricity is to cease being generated by unabated burning of – fossil - carbon). Units 3 and 4 would be withdrawn long before then – particularly if they have to compete against abated gas-fired power stations.

4.2 The applicant's CO2 – from a power station, not an industrial facility - would be last in the queue if injection proves problematic.

4.3 There may be a conflict between profit and minimising (i) potentially harmful post-combustion and post-capture emissions and (ii) the energy penalty. The applicant should not be given benefit of doubt in DCO (including concerning air quality monitoring).

5 Given the planetary significance of capturing and permanently storing CO2, provision should be made for international observers to check the amount of captured CO2 supplied to the downstream network. It will presumably be very difficult to identify leaks from stores beneath the sea (not least given the mixing and drift which will occur before release to the atmosphere).

6 Ideally, the CO should prescribe comprehensive testing before permitting any change in the solvent or capture process. It is not certain what solvent will be used if and when the facility is fully operational.

7 The following image illustrates the risk of flooding to the supply of pellets to (and therefore the operation) of Drax power station. Given the increasing risk of flooring, there may be a need for the applicant to build an additional storage dome at the power station site – if there is room.

8.1 An aim of the Zero Carbon Humber cluster is the production of hydrogen (for industries which might substantially contract in the near future given the imperative of decarbonising the economy as a whole). What they propose is such an energy inefficient and costly process that it is unlikely to be commercially viable, doing little more than sustain the discredited fossil fuel and woody biomass burning industry.

See for example Prof D Cebon (Cambridge University) contribution to House of Commons Science and Technology Committee oral evidence: "The role of hydrogen in achieving net zero, HC 1066" (3 March 2021) [redacted] and "Hydrogen's role in the energy transition to 2050—Three evidenced-based recommendations" D Cebon and J Whitmore (01 2023) [redacted]

[redacted]

8.2 The CO2 capture rate of the CCS unit of each of the world's two facilities which produce "blue" hydrogen from methane (natural / fossil gas) averages less than 50%. See for example: "What is hydrogen's role in the energy transition? FAQ" (02 2023) [redacted]

8.3 One of the very few facilities producing "blue" hydrogen (Shell's Quest, Canada) has a capture rate of around 45%.

9.1 The current rate at which CO2 captured from biogenic sources worldwide is being injected for permanent storage in geological formations is approximately one million tonnes per year"Bioenergy with Carbon Capture and Storage" (2022 09) International Energy Agency [redacted]

9.2 Consequently, it would seem that the proposed works alone would increase that rate by a factor of eight (if and when both units are fully operational).

9.3 Two of the world's largest such projects capture CO2 from facilities which make ethanol from corn. Neither has injected CO2 at rates greater than about one million tonnes per year. The first commenced in 2011. Together, they had injected 3.8 million tonnes by mid-2021 (and "more than 3.5 million tonnes" 14 months *later*). This reflects major uncertainties in the likely rates of injection. The lack of information concerning the two facilities and the measurement of leakage implies little continued interest.

See for example "Illinois Industrial Capture and Storage Project Details" [redacted] and

"ADM Announces Successful Completion of One Million Metric Ton Carbon Capture and Storage Project" (05 2021) [redacted] and

"ADM Carbon Capture and Storage Project Earns Top Honors from Environment + Energy Leader" (07 2022) [redacted]