

## Submission by Deadline 3 - Drax Bioenergy with Carbon Capture and Storage Project

James E Hewitt (Interested Party 20032086)

1.1 Pages 36 to 38 of the Committee on Climate Change report “Delivering a reliable decarbonised power system” (03 2023) explicitly recommends against allowing large scale biomass power station units to operate beyond 2027 – unless they are fully abated. The need to match the energy penalty (of the proposed works and downstream facilities) with additional generation makes full abatement impossible – even if the annual average carbon capture rate of the proposed works were 100% (two or more times the maximum achieved for rather less than a year at power stations world-wide to date) and there were no supply chain emissions.

1.2 Those pages express strong reservations against using imported biomass as fuel for BECCS in UK. Implicitly therefore at least two of the four biomass units at Drax power station should close in 2027.

2 Page 48 of “REP2-067 Drax Power Limited Deadline 2 Submission - 8.10.1 Applicant’s Responses to Issues Raised at Deadline 1 - Rev 1” refers to a paper by Gibbins J. and Lucquiaud, M. dated 2022.

2.1 That report does not endorse the performance data set out in the application – and does not set out to.

2.2 Separately, page 30 of that paper states that *“It cannot be too strongly emphasised that it is this long-term, equilibrium composition and solvent behaviour that will determine the solvent-related environmental performance of the plant, not the behaviour observed in tests starting with relatively fresh solvent and with little or no reclaiming or other solvent maintenance to remove impurities, as would be required in commercial operation.”*

That sentence is especially salient because the solvent proposed is not necessarily the one which will be used. The applicant part owns C-Capture, a company developing a radically different carbon capture technology using Drax power station for pilot trials. The applicant’s partial acquisition might serve either to block the sale of C-Capture’s carbon capture technology to Drax competitors or as a back-stop in case the performance of the solvent currently proposed proves unattractive (if and when the proposed works enter service. The latter might be a problem if the carbon capture facility requires fundamental redesign.

2.3 Page 32 of that paper highlights that the performance of solvents tend to undergo accelerated degradation as the run time of the carbon capture facility approaches 3,000 or 4,000 hours. The application suggests that the proposed works would operate for 4,000 hours per year. As such, for 25% of its run time, the performance of the proposed works – if they ever enter service - would be well below the implausibly great percentage of post-combustion carbon currently the applicant suggests. It also implies uncertainty about the facility’s emissions of degraded amines and their derivatives.

2.4 In contrast, a run-time of 8,000 hours is proposed for the Keadby 3 Carbon Capture Power Station – see Clause 4.14.29 of the Examining Authority’s Recommendation Report for that project. Clauses 4.12.47 and 4.12.48 of that report should not be regarded as setting a precedent – they imply acceptance of whatever solvent cocktail enters service, even in the absence of an accredited monitoring methodology.

3.1 The applicant's website has recently published an appeal for public support – through a sign-on letter addressed to government. This would be consistent with the applicant becoming increasingly anxious that the public lacks confidence in both the credentials of the proposal and the applicant's integrity.

3.2 The chief executive of the applicant's leading biomass pellet supplier, Enviva, gave a presentation about its annual results for 2022 on the day of their publication. The presentation was remarkably bullish. In contrast, since allegations of greenwash last year, Enviva's share price has tended to decline. Its share price fell by nearly 10% during the presentation and has since declined more rapidly than it previously was. This tends to confirm that the sector is losing the support and trust of the finance industry – as well as the general public and the government's own advisers.