Interested Party BIOFUELWATCH IP NO 20032287 submits the following comments on the representation by the Environment Agency on Drax's BECCS application.

1. It is concerning that the Environment Agency (EA) initially states that the environmental statement is satisfactory given that some issues, such as flooding and waste water, are noted to not be adequately addressed in the later parts of the representation. We also note that the original Drax submission to the Environment Agency had to be sent back.

2. In reference to 1.3.2 Volume 1 - Chapter 13 Materials and Waste; we are unclear as to why the EA needs to advise on the correct assessment of waste. This appears to imply that Drax Power is ignorant of the regulatory framework which further undermines our confidence in their Environmental Statement.

3. Flood Risk Assessment (in reference to 1.3.3. Volume 3 – Appendix 12.1 Flood Risk Assessment):

   We understand that the applicant is currently in discussions with the EA to resolve outstanding issues around flooding, however, there are some pertinent issues to be raised. Firstly, the latest Climate Change Risk Assessment policy paper (CCRA 2022) advises that climate change adaptation must be integrated effectively into all new infrastructure and that "the evidence shows that we must be prepared for warming up to 4°C" (CCRA 2022: 3). This means an increasing flood likelihood of 44% by 2050 and 75% by 2080. The 4°C global warming scenario is not taken into account by the Flood Risk Assessment document.

   Furthermore, the site is partially located in areas of high flood risk (3a and 3b, including a flood plain). The Sequential and Exception Test was applied to the decision making process, as per NPPF (2021) guidance on sites located in areas of higher flood risk. The justification for the approval despite inherent risks of flooding is based on the benefits outweighing the risks within the Needs and Benefits Statement (document reference 5.3).

   We also note that scientists have raised the near term warming projections this year, as well as the proximity to tipping points which include polar ice and glacier melt (impacting on sea levels). To provide a realistic Flood Risk Assessment, these additional factors should also now be taken into account.

   It is also important in this case to scope in the flood risk to the transport (rail) infrastructure as it lies on the Aire flood plain and has a history of flooding. This raises issues of risk surrounding the continued operation of Drax Power Station, and therefore the BECCS operation.

4. Section 2 ENVIRONMENTAL STATEMENT: 2.1 Volume 1 – chapter 12 Water Environment

   2.1.2 Within table 12.2 Elements Scoped Out of the Assessment it is stated that for Foul Water Treatment: No discharge to Yorkshire Water sewers during construction

and / or operational phases is proposed. As the EA notes, this is in conflict with document 3.1 Draft Development Consent Order Schedule 1 - Work No. 1 (f) (viii) Work No. 1D common supporting infrastructure including – (aa) a wastewater treatment plant. We agree with the EA that Drax should not be allowed to scope out the drains listed in 2.1.3.

In Section 12.7 Baseline Conditions, it is stated in paragraphs.12.7.11 and 12.7.12 that surface water run-off is managed by a drainage system and then discharged into Carr Dyke and the River Ouse. The potential for contaminants in particular silt and gravel during construction entering those waterbodies is concerning, and we agree with the EA that these features should not be scoped out. We also are asking for clarity regarding which drains are hydraulically connected to (i) each other and (ii) the river system and therefore require a risk assessment for the surface run-off into the river system. We believe the Planning Inspectorate and EA should seek clarification on whether the additional waste water treatment plant has sufficient capacity to manage emergencies to protect the drainage system.

5. In reference to 2.1.4 Table 12.6 Surface Water Features within the study area that have the Potential to be Affected by the Proposed Scheme:

   We echo concerns raised by the EA regarding the recorded presence of Great Crested Newt, a protected species and therefore a ‘sensitive receptor’ in contrast to Drax’s statement that these ponds are not considered ‘sensitive receptors’. We are concerned about this downgrading of habitat for protected species, and would welcome comments from the Wildlife Trust on this issue.

6. In reference to 2.1.5 Section 12.9 Preliminary Assessment of Likely Impacts and Effects should clarify why from the surface water receptors identified as ‘sensitive’, only three are assessed in relation to increased pollution from silt and sediments:

   We echo the EA in asking for clarity as to whether Drax is implying that none of the other waterbodies will be affected or because they have not been assessed. Moreover, the changing weather patterns already experienced through climate change mean that extreme rainfall events are more intense, more protracted and increasingly frequent. Risk assessment of the site run-off needs to model widely anticipated extreme weather events and flooding around the site. Prolonged heavy rain could easily carry toxic matter or contaminated water between drains. We are currently not confident that the site bunds are sufficient to isolate the site from flooding from the Ouse and Aire river systems between now and 2050.

7. In reference to 3. 6.10 BIODIVERSITY NET GAIN ASSESSMENT 3.1.1 The Biodiversity Net Gain (BNG) Assessment submitted records a baseline river unit value of 2.41 but fails to deliver any increase in river units:

   As the EA states BNG is meant for enhancement, not mitigation. Based upon the currently available information from the applicant, we are concerned it is not being

used correctly. We echo the EA's request for the full BNG metric assessment details, rather than just the headline figures, to be provided as part of the DCO application.

8. Given that the EA is currently reviewing the application to vary the existing environmental permit, we request that interested parties are notified every time a new stage in the permitting process is reached.

9. 6. Environmental permit in specific reference to Best Available Technology (BAT)

   Paras 6.1.6 and 6.1.7 reference environmental permitting. We note that permitting has not taken place and we enquire about the relationship (if any) between planning permission and operating licensing including environmental permitting. We have specific concerns about amine emissions and levels of toxic amine degradation products in the atmosphere, but also potentially in water courses. The data to query this is not publicly available because the applied for process uses a patented proprietary solvent. We need to be confident that the proxies used by the Environment Agency for permitting and regulatory frameworks are valid.

   Para 6.6.2 states 'The Operator has been made aware that BAT applies not only to the proposal but to the whole of the installation. The maximisation of energy recovery is explicit in both the 'Large Combustion plant Best Available Techniques Reference document' and the 'BAT Review for New-Build and Retrofit Post-Combustion Carbon Dioxide Capture Using Amine-Based Technologies for Power and CHP Plants Fuelled by Gas and Biomass as an Emerging Technology under the IED for the UK'.

   However, EASAC (2022: 11) suggests: *"IAMs generally assume a 90% or higher capture rate. However, on the basis of R&D trials at a UK facility, achieving this could reduce the overall efficiency of a BECCS-to-power facility from 36.2% without CCS to 20.9% with it, substantially lower than the efficiencies assumed"* (IAM – Integrated Assessment Model)

   The figures from EASAC, apparently based upon Drax's pilot study, indicate a far greater energy debt than the industry averages quoted in research. The industry average appears to be a 28% drop, from an estimated 38% efficiency of the unabated plant down to 27.4% efficiency for the two BECCS boiler-turbine combos. There is a significant discrepancy in these figures, and raises questions as to whether the use of BECCS is abiding by BAT rules.

10. Environmental permit in specific relation to amine emissions to water. In para 6.1.6 the EA mentions emissions to air and discharges to water, land and groundwater in general. However in Drax's documentation there appears to be no reference to the potential for emissions of amines and their degradation products to contaminate surrounding aquatic ecosystems, groundwater or drinking water. Studies have shown that amine-based scrubbing results in a 10-fold increase in toxic impact on freshwater ecosystems therefore we would ask that this is something that is looked at specifically.

Interested Party BIOFUELWATCH IP NO 20032287 submits the following comments on Representation RR-141 from UK Health Security Agency (UKHSA) and the Office for Health Improvement and Disparities (OHID).

1. We are concerned that the UKHSA / OHID appears to have chosen to opt out of involvement with this Examination and intends to take no further part in the scrutiny of this proposal (their closing comment in RR-141). The Drax Post-Combustion Carbon Capture (PCC) is a significant (and novel) development, the largest such BECCS system ever attempted - not just in the UK but globally. It will need considerable financial support from the public purse, and government policy currently envisages greater use of BECCS in the UK to support Net Zero, if Drax PCC is implemented and judged to be a success. With this in mind, our expectation is that the bodies charged with oversight of UK public health would apply the precautionary principle and would thoroughly scrutinise the proposals.

2. We further note the absence of proposals to monitor emissions from the proposed carbon capture facility in the vicinity of salient receptors over the short- and long-term and the absence of information about how that (necessarily independent) monitoring will be paid for. Those matters are particularly salient given the widely reported emasculation of the Environment Agency and the prospect of further austerity. Despite this, the UKHSA and OHID position appears to assume that monitoring and regulation will be satisfactory.

3. The explicit decision of UKHSA and OHID not to register an interest may serve to inhibit the Planning Inspectorate and others from questioning matters of public health summarised below.

4. There are two areas of concern: local emissions to air, and potentially groundwater, of toxic materials, and the degree to which the proposed development contributes to the urgent need to deal with the climate crisis.

5. The proposal is acknowledged to result in the emission to air of hazardous materials, (amines and their degradation products) known to be toxic to human health, capable of increasing the risk of cancer and disrupting endocrine systems.

6. Not enough is known about the degradation of amines in this ‘novel’ process to accurately assess the risks that may be presented in the short, middle and long term to human and environmental health. The applicant has advised that it is proposing to use newly developed chemicals in the Post Carbon Capture scrubbing process and has submitted an amended environmental permit application to cover their use. The EP application is currently deemed commercially confidential, and is not available to Biofuelwatch.

7. The proposal documentation indicates the following, which we believe ought to be major concerns for the organisations charged with securing and improving public health:

7.1. There are knowledge gaps or major problems with measuring, monitoring and analysing and hence assessing the exposures and risks from amine degradation products to be used in the proposal.

7.2. There are problems with non-disclosure of information and lack of open source information on what substances are being used in various products. Commercial interests are being privileged over community interests and public health. If there cannot be full disclosure and transparency, then it is simply not possible to demonstrate that adequate risk assessments of processes and materials have been carried out.

7.3. While the proposal documents do acknowledge that nitrosamines and nitramines generated by the PCC are possible carcinogens - NDMA is an IARC Group 2A carcinogen - "probably carcinogenic to humans", there is no mention of the endocrine disruptive effects of nitrosamines.

8. Biofuelwatch intends to submit further comments on the human health impacts of air emissions in our evidence to the Examination.

9. The proposal development is portrayed as a measure that would help the UK reduce carbon emissions and so slow climate change. But the technology of BECCS is far from proven. There are well-documented concerns about its overall efficacy and the feasibility of scaling it up to provide a meaningful level of emissions drawdown. Since the head of UKHSA has recently commented publicly that "*The climate crisis poses a significant and growing threat to health in the UK"* and that "*the threat to health should be considered as part of the UK's broader climate policy*", we consider it deeply concerning that the UKHSA is not willing to make any comment on whether or not this proposed development would be a good investment of public money compared with other proven and deployable measures to reduce climate-damaging emissions.

Interested Party BIOFUELWATCH IP NO 20032287 submits the following comments on the Representation by Natural England.

1. **Internationally and Nationally Designated sites**
   We would concur with the points made in Part 1 of the Natural England response. In particular the lack of certainty as to impacts on Internationally and Nationally Designated sites due to loss of functionally connected land and potential impacts due to traffic emissions.

2. **Biodiversity Net Gain**
   Confidence in the provision of BNG river units is required.

3. **Air quality**
   At 2.1.3 an updated comment/detailed advice from Natural England on aerial emissions does not appear to be available.

4. **Protected species - badgers**
   In Part II, table 1, point 9, it is concerning Natural England accepts the destruction of badger setts as part of the development, despite badgers being a protected species: " It should be noted that a licence to exclude badgers and the destructions of setts is unlikely to be granted between the months of December to June. Careful

consideration should be given to the timing of works to prevent delays should badgers be discovered prior to site clearance activities."

5. **Habitats of Principal Importance**
   We share Natural England's concerns about the risks to reedbed habitats from the proposed development: "it is noted from the Biodiversity Net Gain Report that reedbed habitats (a HPI), are present and to be lost within the order limits, with no adequate mitigation or net gain achieved under a worst-case scenario basis."