

EN010120: Drax Bioenergy with Carbon Capture and Storage Project
Development Consent Examination

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1. INCOMPLETE ENVIRONMENTAL IMPACT ASSESSMENT – ERRONEOUSLY RESTRICTED SCOPE.

At REP2-096 I submitted, “it is irrational to exclude from this examination the impacts of transport and storage of captured carbon outside the Carbon Dioxide Delivery Terminal Compound “.

I wish to reiterate and expand on this point.

The Environmental Statement for this development is flawed because it does not provide a complete and sufficient assessment of the proposed development in combination with the carbon dioxide transport and storage (T&S) infrastructure.

Without the T&S infrastructure, the proposed development at Drax is meaningless. It should more correctly be termed “Bioenergy with Carbon Capture” and not BECCS. The beneficial operational objectives claimed by the Applicant as part of this proposal (i.e. the amount of carbon captured per annum) are unachievable unless the T&S infrastructure itself is built and is functioning perfectly.

The proposed development at Drax and the T&S infrastructure are effectively one project, and treating them separately for development consenting means that the environmental impacts of the end-to-end system cannot be established accurately.

There is an absolute and unavoidable functional interdependence between the proposed development and the T&S infrastructure. They might reasonably be considered one project, since without T&S, the proposed development cannot function. And reciprocally, without BECC at Drax, the T&S infrastructure would be less effective, as the Applicant stated in the ES Consideration of Alternatives (Document Reference Number: 6.1.3):

“The location of the Drax Power Station Site in relation to the proposed National Grid Transport and Storage Infrastructure and also the amount of carbon dioxide available from the Drax Power Station Site provides operational advantages for the Zero Carbon Humber network as it enables the network to be purged from one end of the network with the large volume of carbon dioxide that is required.

Other carbon dioxide supply sites will not be able to do this as easily and as quickly as the Drax Power Station Site; “

and

“The large and consistent volume of carbon dioxide available from the Drax Power Station Site provides a continuous supply into the Zero Carbon Humber network and consequently alleviates the operational impacts from more fluctuating supplies from other carbon dioxide supply sites”

National Policy Statement for Energy (EN-1) made it clear that cumulative effects have to be properly considered:

“4.2.5 When considering cumulative effects, the ES should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence). The IPC may also have other evidence before it, for example from appraisals of sustainability of relevant NPSs or development plans, on such effects and potential interactions. Any such information may assist the IPC in reaching decisions on proposals and on mitigation measures that may be required.”

Interpreting this and the EIA Regulations, Natural England wrote in its consultation response to the Scoping Opinion for this development:

“8. Cumulative and in-combination effects

*A full consideration of the implications of the whole scheme should be included in the ES. **All supporting infrastructure should be included within the assessment.***

The ES should include an impact assessment to identify, describe and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment, (subject to available information):

- a. existing completed projects;*
- b. approved but uncompleted projects;*
- c. ongoing activities;*
- d. plans or projects for which an application has been made and which are under consideration by the consenting authorities; and*
- e. plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects”***

(emphasis added)

In my view it is clear that the T&S Infrastructure not only provides “supporting infrastructure” for the proposed development, but goes further and is in fact an essential component of the whole project.

In a relevant recent Court of Appeal judgement, the claimant (Ashchurch Rural Parish Council) successfully argued that a planning authority (Tewkesbury Borough Council) had acted irrationally in consenting a bridge when it took into account the benefits from a separate housing development proposal that would be facilitated by the bridge, but did not consider the harms of both. There are close similarities with this proposal.

In summary, ‘BECCS’ at Drax is not possible without transport and storage infrastructure, and it should not be consented until the environmental impacts of the two developments in combination can be considered. The Applicant cannot legitimately claim the benefits of the proposed development without its full impacts and possible harms being properly assessed.

2. INCOMPLETE ENVIRONMENTAL IMPACT ASSESSMENT – ERRONEOUS EXCLUSION OF DIRECT EFFECTS (GREENHOUSE GASES)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Schedule 5, requires that an EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following land, soil, water, air and climate.

In REP2-096 I submitted that the development would accelerate climate change by perpetuating and increasing the amount of woody biomass imported for burning at Drax. The Environmental Statement inaccurately states the climate impact of the proposal because it ignores, or rather treats as zero, a very significant direct effect – the ‘combustion’ emissions of carbon dioxide from burning biomass.

In this context, I endorse the arguments put forward by Climate Emergency Planning and Policy at Deadline 9 (REP9-032), a summary of which follows.

Unlawfulness of GHG gas emissions in the Environmental Statement (ES)

The ES is unlawful in its treatment of GHGs for the following reasons.

- 1. The applicant has not clearly distinguished Direct and Indirect impacts for the scheme. This error is made from the EIA Scoping report onwards.*
- 2. Critically the applicant has not fully, nor correctly, considered the likely significant effects and climate impacts of both the Direct and Indirect impacts with respect to GHGs which is required by the Infrastructure Planning*

(Environmental Impact Assessment) Regulations 2017 (the “2017 Regulations”), both at the scoping and environmental statement stages.

- 3. The application is a Schedule 1, paragraph 23 project under the 2017 Regulations – a carbon capture and storage (CCS) scheme - although the application in fact only addresses a carbon capture project. In particular, the Indirect impacts from the upstream biomass combustion emissions have not been estimated, nor assessed, in the ES (despite having been scoped-in in the EIA Scoping Report).*
- 4. There is a strong causal inter-dependence between the upstream biomass combustion emissions and the application project. The application project cannot take place without the upstream biomass combustion emissions first being generated to capture.*
- 5. Consideration of the likely significant effects and climate impacts of the upstream biomass combustion emissions requires those emissions, as strongly causal indirect effect of the project, to be estimated and assessed. The estimated quantity of emissions is not difficult to determine as the Applicant, itself, has provided it at the Table on PDF page 34 on REP-028. Whilst the figure given in REP-028 of 19,383,135tCO₂/yr is for all four Drax biomass burning units, the value for the two units which provide the upstream biomass combustion emissions generation for the project may be easily derived from it (ie: by halving the number).*
- 6. The error is that this known quantification of the combustion emissions is then abandoned by the applicant who instead estimates the emissions as zero in Table 15.11 in the ES. Table 15.11 is the key data table in the ES against which the likely significant effects and climate impacts of the project are assessed when the output values from Table 15.11 are taken forward to comparison with the UK carbon budgets in Table 15.13.*
- 7. The applicant, then, makes the false claim that the scheme has a “significant beneficial effect”. However, this may only be claimed because the zero estimate of the combustion emissions has been used instead of the real value, which is already known to the applicant as above. This results in the scheme being falsely reported by the applicant for EIA purposes as a net negative producer of GHG emissions.*
- 8. Climate Emergency Planning and Policy [REP9-032] has calculated using the applicant’s own data that the project is in fact a dangerous, and net positive, emitter producing over 2 million tonnes of CO₂ a year, even if CCS efficiency attained 90% (an optimistic assumption) when the upstream combustion emissions are quantified and assessed for EIA purposes on the estimate already known to and calculated by the Applicant.*

9. *The EIA assessment of the climate impacts of the project, for the factor of GHGs, is therefore not lawful as a zero estimate has been given for upstream combustion emissions rather than actual quantity for which the applicant already has an estimate.*
10. *The Applicant has claimed during the examination that the estimate of zero may be given for Environmental Impact Assessment (EIA) purposes because there are conventions and rules in other regimes (such as IPCC national GHG accounting procedures) that rate the biomass combustion emissions as zero. This is also an error of law. The EIA regime requires an Environmental Statement which estimates and assesses the likely significant impacts of the environmental factors (including GHGs and climate) impacted by the project. Nowhere does the EIA regime says that the likely significant impacts of the GHGs (Direct and Indirect) from the project may be estimated on the basis of such conventions from other regimes. EIA assessment is about realistic assessment of environmental impacts, not about arbitrary, and irrelevant, GHG accounting rules.*
11. *It is particularly disingenuous for the applicant to estimate the emissions as zero for EIA assessment purposes (ie at Table 15.11) when they have provided the real estimate elsewhere to examination (ie in REP-028).*
12. *A further related issue is that the applicant falsely conflates the upstream biomass combustion emissions with the downstream carbon payback process. The carbon payback after forest harvesting takes decades or centuries but has been conflated by the Applicant as happening instantly at the same time as the combustion. The EIA process requires the Direct and Indirect effects to carefully distinguished, and then the likely significant effects to be estimated and assessed. The correct way to treat the downstream carbon payback process is as a separate downstream Indirect effect. It may in time give rise to sequestration of carbon from the atmosphere although there is no guarantee of this, especially as climate breakdown advances: however, the recent science shows that the sequestration from forest regrowth is not likely to produce any significant sequestration in the 25-year project lifetime. Even if some sequestration might occur for wood burnt in the first years of the project in the latter years of the 25 year project, emissions from forest harvest of wood burnt in the latter years of the project will most likely see net positive GHGs as the impact of harvesting biomass fuel is to increase forest emissions for around 15 years (see REP9-032, 3.10).*
13. *Further the applicant claims that the upstream biomass combustion emissions would “happen anyway” and therefore do not need to be included in the EIA assessment for the project. This false because:*
 - a. *The continued biomass burning of Units 1 and 2 (without the CCS, the CC part being the project under consideration) is extremely unlikely to*

be financially viable for the applicant, and the applicant well knows this.

- b. The applicant, itself, includes the biomass combustion emissions in Table 15.11 which provides “Estimated Operational GHG Emissions from the Proposed Scheme”. So the Applicant, itself, considers the Indirect upstream emissions from the biomass combustion emissions to be part of the operation (and has scoped these emissions in the EIA Scoping report). This contradicts the Applicants claim that the emissions do not need to be counted as they would “happen anyway”.*
- c. The 2017 Regulations requires the assessment of the Direct and Indirect likely significant effects of the project on the climate and GHG (and also all the other EIA environmental factors). The relevant legal issue that the upstream biomass combustion emissions are strongly functionally inter-dependent with the project being considered under Schedule 1, paragraph 23, and are an Indirect effect which has been scoped in in the EIA Scoping. Hypotheticals about the existing operation are irrelevant.*

14. Climate Emergency Planning and Policy [REP9-032] has provided a more detailed analysis for the examination, and I concur with this. Further, I support CEPP in requesting that the ExA fully reproduces these points in the Examination Report and explicitly requests that the SoS considers them, him or herself, in his/her decision making. The Application is in error(s) of law from the EIA Scoping report onwards. The error(s) infect(s) all subsequent processes including the decision making.

3. BIOMASS POLICY (SUSTAINABILITY and AIR POLLUTION)

In its November 2021 biomass policy statement, government referred to specific biomass sustainability and air pollution requirements for BECCS . These I would argue are essential to inform the examination and recommendation of consent for the proposed development, which is by a considerable margin the biggest consumer of biomass in the UK.

I referred to the absence of these requirements in my written representation (REP2-096). It is now the case that the revised Biomass Policy that would most likely define such requirements is scheduled for publication on 20 July, i.e. past the date of this examination’s closing on 17 July. Interested parties are therefore denied the opportunity to comment on how the Applicant’s proposals fit with the new updated sustainability and air pollution requirements.

I submit that it would be helpful if the ExA would adjust the examination schedule so that it and interested parties could review the expected sustainability and air

pollution requirements for BECCS to inform the recommendation on granting consent.

4. DELAYS TO THE PROPOSED DEVELOPMENT SCHEDULE

It is of great concern that the Applicant has announced two delays to the schedule since the start of the examination. The earliest operational start date for equipping the first biomass unit has been put back to end 2029, and subsequently the Applicant has sought permission to extend to seven years the allowed period from consent to start of development. Worst case, it appears that construction work could start as late as 2031, with operation of just one biomass unit in late 2032.

My view remains that the proposed development will not deliver 'negative emissions' when seen from a global viewpoint, because of the flawed carbon accounting which treats biomass combustion emissions as zero. However, the delays announced by the Applicant could likely have other unhelpful consequences in diverting policy and funding away from proven and easier to implement climate interventions like energy efficiency, genuine (non-combustion) renewables and energy storage.

As climate scientist Kevin Anderson noted *"The allure of BECCS and other negative emission technologies is that they substitute immense political, economic and social challenges of mitigation today for highly speculative removal of CO2 from the atmosphere tomorrow. This proposed transfer of responsibility between generations has been one factor in weakening the pressure on policymakers to face mitigation challenges head on."*

5. EFFECTIVENESS OF LONG TERM GEOLOGICAL CARBON STORAGE

The scope of examination is restricted as discussed in section one of this submission, with no consideration of the transport and storage infrastructure. Nevertheless, I believe it is important for the ExA in making their recommendation to advise the Secretary of State of the deeply concerning analysis published recently by IEEFA (Institute for Energy Economics and Financial Analysis) entitled *"Norway's Sleipner and Snohvit: Industry models or cautionary tales?"*.

Their analysis raises doubts about the long-term security of geological storage. IEEFA wrote:

"Despite [more than 150] studies, experience and passage of time, the security and stability of the two fields have proven difficult to predict. In 1999, three years into Sleipner's storage operations, CO2 had already risen from its lower-level injection point to the top extent of the storage formation and into a previously unidentified shallow layer. Injected CO2 began to accumulate in this top layer in unexpectedly large quantities. Had this unknown layer not been fortunate enough to be geologically bounded, stored CO2 might have escaped."

At Snøhvit, problems surfaced merely 18 months into injection operations despite detailed preoperational field assessment and engineering. The targeted storage site demonstrated acute signs of rejecting the CO2. A geological structure thought to have 18 years' worth of CO2 storage capacity was indicating less than six months of further usage potential."

"Sleipner and Snøhvit, rather than serving as entirely successful models for CCS that should be emulated and expanded, instead call into question the long-term technical and financial viability of the concept of reliable underground carbon storage. They cast doubt on whether the world has the technical prowess, strength of regulatory oversight, and unwavering multi-decade commitment of capital and resources needed to keep CO2 sequestered below the sea – as the Earth needs – permanently."

6. CONCLUSION

The Applicant has failed to make a convincing case that BECCS at Drax is technically viable and is deliverable commercially. The proposal does environmental harm, is likely to affect human health and it delays meaningful action to tackle the climate crisis. The policies against which it should be assessed are in a state of flux. I ask that consent be refused.