

## **Closing submission (deadline 10) by Leeds Trades Union Council**

(2578 words)

In our Deadline 2 full submission we set out concerns relating to

- the misleading nature of the Applicant's claims for job creation;
- our reasons for believing that the sustainability of large-scale woody biomass burning itself was a relevant consideration for the carbon capture application;
- why we felt that the Application was in danger of being in breach of overarching Planning Policy, the legal requirements of the Climate Change Act and the UK's NDCs;
- the evidence that large-scale woody biomass burning does demonstrably lead to a loss of total carbon sequestration
- our reasons for believing it is highly unlikely that the proposed carbon capture would in practice achieve anything close to the cited capture rates
- concerns about the pipeline and storage
- our argument that the connections between the carbon capture and these other essential components of BECCS were such that it was inappropriate to examine at this stage an application intrinsically dependent upon those concerns being resolved.

In our response at Deadline 3 (response to the Applicant's responses to points made in our Full Submission) we discuss in detail why we find the Applicant's responses unsatisfactory and indeed dismissive, entirely failing to address points made by respondents arguing that the sustainability of large-scale woody biomass burning in itself, and the faulty assumption that CO<sub>2</sub> emissions at the stack could be counted as zero, were relevant to the evaluation of the BECCS proposal.

We further pointed to the weakness of the evidence advanced by the Applicant to support their claim about the likely capture rates; that is, it cites as successful precedent projects which by any standards must be judged to have failed, and scientific review papers which in fact point to the *absence* of successful real-world demonstration of the capture rates possible in theory or obtained at small scale under highly controlled conditions.

In following the progress of the Examination, we have found nothing to contradict or assuage our initial concerns, and indeed if anything the Applicant has tended to simply reiterate its starting position, rather than address itself convincingly to our concerns.

In addition, we have become aware of a number of concerns relating to the potential local and regional environmental and health impacts, which have been discussed in detail by several respondents with scientific backgrounds. Although our own knowledge of the behaviour of potential pollutants and their possible impact on human health and the ecology of the locality/region is insufficient for us to make our own evaluation, we would like it on record that we have seen insufficient convincing engagement with these concerns from the Applicant; indeed their approach seems to be that where particular outcomes are

unpredictable or beyond the scope of current evaluation technologies, we should assume that harm will not occur – contrary to the precautionary principle which would dictate the opposite approach to safeguarding human and ecological wellbeing.

### Timing of the examination

At the start of the Examination we expressed our concerns that examining the Application at this stage was premature, given that we were still awaiting the publication of the new Biomass Strategy. We argued that it was not acceptable for the ExA to be in the position of examining an application against policies more than a decade out of date – particularly in a case where the relevant scientific opinion, evidence base, and political debate around the technologies, is developing so rapidly. We are concerned that despite being expected in Q2 of this year, the Biomass Strategy has still not been published, so not allowing the ExA to make any necessary qualifications to her assessment. We understand that it will now be published on 20<sup>th</sup> July – 3 days after the close of the examination. Given the purported high importance of BECCS to national energy and emissions reduction policy, it may be assumed that delays to the publication of the Strategy result from doubts and disagreements on key aspects – which would be born out by the increasing number of MPs of all parties openly criticising the practice of large scale woody biomass importation and questioning its sustainability. We are bound to question whether publication has been deliberately delayed until this examination period is over, to pre-empt any new interrogation of the application.

In addition, we pointed out that the High Court had issued a judgement requiring the government to publish a revised Net Zero Strategy that is legally compliant by the end of March 2023. The new Strategy was required to quantify emissions reductions expected to derive from each sector, which we argued would require the ability to quantify the total change in sequestered carbon from the entire life-cycle of woody biomass burning with CCS, something which is currently impossible due, amongst other reasons, to the lack of adequate verification procedures relating to the sourcing of the fuel, and the uncertainties surrounding capture, transportation and storage. However, the new Net Zero Strategy clearly does not meet these requirements either, and the government is expected to face a further legal challenge. In these circumstances, it is clearer than ever that the relevant policy is in flux and highly contested, and it is impossible to see how the ExA can base a recommendation on such uncertain foundations.

Despite Drax's repeatedly declining to acknowledge its relevance to the current carbon capture application, we continue to maintain that it would be absurd not to take into account the fundamental question of whether Drax's current wood burning is sustainable, given that there would be no carbon to capture without the burning of the wood. Furthermore, Drax itself recognises that BECCS is now the only remaining rationale for continuing with large-scale biomass burning at all; the underlying (whole life) carbon intensity of its electricity product is too high for it to qualify for further subsidies under current rules, it is expensive and inefficient as a means of energy generation, and compares poorly on all counts with genuine renewables such as wind and solar.

This being so, BECCS must be evaluated as a whole technology or not at all – all the more so since there is an expectation that the “negative emissions” produced can be quantified, for

the purposes of CfD allocations, for possible trading under an ETS to offset residual emissions from fossil based industry and power, and *to meet the legal requirement to quantify the contribution made to the Net Zero target*. How can “negative emissions” be quantified without quantifying supply chain emissions *including* changes in forest/land carbon sequestration capacity – which must also be in relation to a reasonable counterfactual/comparison scenario which, in the context of climate emergency, must surely be not just a “business as usual” scenario, but a scenario where optimum measures are taken to reduce emissions globally, including afforestation, soil regeneration etc.

#### Delay to the expected schedule for BECCS

In addition to the announced two year delay to the schedule in the initial proposal, Drax has recently announced that it is “seeking that it has seven years within which to commence the authorised development and exercise its compulsory acquisition powers”. Such a delay adds very considerably to the absurdity of adjudicating the application now, when the next seven years are likely to bring very significant changes in both climate science and government energy policy. At the very least, there must be the possibility of revisiting any approvals made now, and for respondents participating in the Examination to be able to make further submissions in light of further developments in policy and indeed in the science and the relevant governance frameworks.

The UK Government has enshrined in law that by 2030, UK emissions must be cut by 68% from 1990 levels, to be followed by further cuts to 78% by 2035, just five years later. In these circumstances, any purported emissions reductions expected from BECCS will be irrelevant to meeting those targets. At the same time, the Climate Change Committee has found that the UK’s progress towards these goals is lacking on almost all fronts, implying that very rapid measures must now be implemented to meet those legal requirements. Alongside this, the very apparent acceleration of climate change, visible in dangerously rising global mean temperatures and frequency and severity of extreme weather events, underlines that action must be sooner rather than later. It is therefore clear that these urgent emissions cuts must come predominantly from measures that can be implemented within those seven years, particularly the rapid phasing out of fossil-based energy and industry to the maximum extent possible, as well as energy demand reduction across all sectors.

Given that CCS is not yet developed at a climate-relevant scale and efficiency, and even if it was, would take years to implement, this casts considerable doubt over the scenario envisaged by Drax, in which it plays a central role in the decarbonisation pathway based on low carbon industrial/energy clusters centred on CCS and blue hydrogen (in this case, the Humber hubs and by extension the East Coast Cluster as a whole). Indeed, unless it relinquishes this claim, we seem obliged to accept that the entire industrial strategy based on the clusters is an impossible one.

It may indeed be that within the seven years to 2030 quite different pathways will be prioritised, and it is vital that decisions are not made now that could lead to contractual and infrastructural lock-in of technologies that either pre-empt/foreclose on better alternatives or which may later be concluded to be impediments to decarbonisation. As a Trades Union Council it is also incumbent upon us to note the potential risk to jobs from relying on a

technological pathway that looks increasingly unconvincing, in comparison to the more reliable long-term jobs we know are needed in areas such as buildings retrofit, waste reclamation, sustainable land management and food production, public transport etc.

Even leaving aside these wider considerations, such a delay implies that Drax will be continuing to burn woody biomass unabated in these two burners, for potentially 14 years to come. If this is the case, then throughout that time its operations - according to an increasing volume of research and scientific opinion - will be contributing to a net increase in atmospheric CO<sub>2</sub>, whilst at the same time displacing a proportion of the genuinely low-carbon and renewable energy sources that can be developed in that time period. The delay will take us far beyond the time at which Drax's current subsidies run out, implying that in order to remain operational at all they will need to come to a special arrangement with the government to continue being subsidised even though their operations will not meet the relevant up-to-date criteria in terms of CO<sub>2</sub> emitted (including supply chain) per unit of electricity generated, and even if it is concluded within that time that these operations are in fact impeding the UK's ability to meet its legally binding emissions reduction targets.

#### Safety of Carbon Storage in Aquifers Under the Seabed

We note with alarm the recent study published by IEEFA (Institute for Energy Economics and Financial Analysis) entitled "Norway's Sleipner and Snøhvit: Industry models or cautionary tales?". Given that these two Norwegian projects are commonly taken as the (sole existing!) demonstration of effective carbon capture and storage, we feel that the findings are so important as to justify quoting extensively from its executive summary:

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, CO<sub>2</sub> 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 CO<sub>2</sub> began to accumulate in this top layer in unexpectedly large quantities. Had this unknown layer not been fortunate enough to be geologically bounded, stored CO<sub>2</sub> 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 CO<sub>2</sub>. A geological structure thought to have 18 years' worth of CO<sub>2</sub> storage capacity was indicating less than six months of further usage potential.

[.....] unpredicted deviations in how Sleipner's and Snøhvit's injected CO<sub>2</sub> was interacting with targeted strata underground, including unexpected behaviors that evolved years into operations, indicate that [an intense level of] monitoring is indeed required. What the Norwegian projects demonstrate is that each CCS project has unique geology; that geologic storage performance for each site can change over time; and that a high-quality monitoring and engineering response

is a constant, ongoing requirement. Every proposed project needs to budget and equip itself for contingencies both during and long after operations have ceased.

[.....]

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 CO<sub>2</sub> sequestered below the sea – as the Earth needs – permanently.

It is surely reckless to assume that a carbon management strategy can be based on such uncertain foundations, when so much is at stake, and the absurdity of being asked to consent an operation (carbon capture at Drax) which is entirely dependent on the viability and safety of the ultimate storage, before the latter has been subject to the same rigorous examination, must surely be plain.

### Summary

In summary, we have seen nothing to contradict our belief that the large-scale burning of biomass for energy is unsustainable and leads to increased total atmospheric carbon over the critical next few decades, and that this also negates the basis for assuming that the BECCS technology is sound as a means of producing “negative emissions” – let alone quantifying them as would be required legally in the terms of the Net Zero Strategy. The significant delays to the schedule envisaged for the BECCS project makes these issues all the more pertinent, and indeed leaves us with a situation that a polluting industry is provided with very substantial public subsidy, not on its current merits as a renewable energy source, but based merely on the Applicant’s assertion that one day in the future it will produce negative emissions.

Doubts about the viability of carbon capture and storage, other than for relatively marginal industrial applications, have increased rather than diminished in the intervening period, and there is certainly still no reason to think that the capture rate envisaged by the Applicant is realistic. Even if it did work at the claimed efficiency, there is no provision for suspending wood burning during periods of outages and maintenance – indeed, this may be technologically problematic given the requirements of the proposed pipeline for a consistent input of CO<sub>2</sub> with known concentrations, known levels of various contaminants etc. There is also no certainty as to what will happen with the remaining non-mitigated wood burners, whether subsidy will apply to their electricity output despite its high life-cycle carbon intensity, and whether their emissions will be taken into account in quantifying any “negative emissions” supposed to be produced at the site. Beyond all this, we feel that the emerging uncertainties around security of long-term storage of captured CO<sub>2</sub> cannot be ignored.

In summary, then, we feel that even after a detailed examination there are far too many unanswered questions and uncertainties surrounding this application, and we remain strongly opposed to the granting of consent.

