

<b>Drax BECCS Project Planning Examination 2022-2023</b>	<b>Deadline 9 (D9), July 6th 2023 Submission</b>
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## **DEADLINE D9 SUBMISSION SUMMARY**

The key principle area of difference between Climate Emergency Planning and Policy (CEPP), and the Applicant, remains the estimation of the biomass combustion GHG emissions as being zero from the development **in the Environmental Impact Assessment**. I respond to the Applicant's response on my previous submission on this matter.

I clarify that the development is under Schedule 1, Paragraph 23 of the 2017 Regulations – that is a carbon capture and storage facility, although only carbon capture is covered in the Application. The 2017 Regulations require the assessment of both Direct and Indirect likely significant effects. The Direct effects relate to the Schedule 1, paragraph 23 development. The indirect effects for environmental impact assessment arise from the functionally inter-dependent developments which are causally required for the development to operate. The GHG emissions from the upstream combustion plant are causally connected and are an indirect effect of the development. Therefore estimation (ie quantifying) and assessment of their likely significant effects is required under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the “2017 Regulations”).

This is in fact consistent with the fact that the Applicant scoped-in the biomass combustion emissions in the EIA scoping report, although the Applicant did not make clear that these emissions are an indirect effect. The Applicant did not address properly what is a Direct effect and what is an Indirect effect as I explain in the main submission.

This has caused confusion which I have resolved, as far as I can, in this submission by providing an analysis of what the Direct and Indirect effects for GHGs are from the development. Estimating the biomass combustion emissions as zero under the 2017 Regulations remains an issue, and the applicant has provided no legitimate reason why the combustion emissions should be estimated as zero when the 2017 Regulations requires identification of the likely significant effects of both direct and indirect sources of emissions, and in any case the Applicant also provides an estimate of the same emissions source which is non zero, and in fact extremely large. Conventions from other regimes such as national GHG accounting have nothing to do with environmental impact assessment, and the 2017 Regulations (and the 2014 Directive<sup>1</sup>) do not recognise these other conventions as my submission at REP4-038 elaborated. (I further respond these points as a detailed rebuttal of the Applicant's response to my previous submission).

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<sup>1</sup> The EIA Directive - DIRECTIVE 2014/52/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014

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The Environmental Statement is unlawful as the likely significant indirect effects of the GHGs associated with the development have not correctly estimated, reported or assessed.

I mistakenly referred to the upstream combustion emissions as a Direct effect in REP4-038. This is because of the Applicant's confusing presentation which I have unravelled in this submission. The upstream combustion emissions are an indirect effect of the development, and they are a likely significant effect, and they should be correctly estimated for environmental impact assessment purposes.

Further I provide an updated aggregated table of all the information including the quantification of net CO2 balances when the combustion emissions are correctly rated, EIA scoping status, PAS 2080 status, and references to the sources for the figures. This shows that the scheme is not net negative as claimed by the Applicant but it is net positive for GHGs. It is in fact a dangerous emitter producing over 2 million tonnes of CO2 a year, even if CCS efficiency attained 90%. This is a high-level of emissions. It is dangerous to the safety of the planet and the future, and I note I write this submission in the week that previous temperature records are being broken around the globe.

Further, the development itself, when upstream and downstream emissions are properly quantified and assessed consumes 26% of the residual emission allocation for the Power sector in the 6<sup>th</sup> carbon budget from the Carbon Budget Delivery Plan (CBDP). This is a very high proportion and seriously risks jeopardising the delivery of the 6<sup>th</sup> carbon budget.

The scheme should not be consented. First because the Environmental Assessment does not comply with the 2017 Regulations for indirect effects. The indirect effects from upstream combustion have not been properly quantified – instead there has been an attempt to hide them by estimating them as zero. The 2017 Directive requires genuine estimates to be made with a description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment. The likely significant indirect effects have not been assessed as a result, and the ES is consequentially unlawful.

Second, because the Drax facility, with or without the proposed development seriously risks jeopardising the delivery of the 6<sup>th</sup> carbon budget by consuming a large proportion of the residual emissions allocated to the 6<sup>th</sup> carbon budget in the CBDP.

The Applicant should reply to the full submission, not just this summary.

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## 1 INTRODUCTION

1 This submission:

- Provides background on the Carbon Budget Delivery Plan (CBDP) and the recent Climate Change Committee progress report;
- Explains the EIA Process for the development, identifying clearly from where Direct and Indirect effects arise;
- responds to REP5-028 “Applicant’s responses to issues raised at Deadline 4” which responded to my Deadline 4 submission [REP4-038];
- respectfully makes comments relevant to the Secretary of State’s decision making and ask the ExA that these are fully reproduced in its recommendation report to the SoS.

## 2 CARBON BUDGET DELIVERY PLAN (CBDP)

- 2 As background, the Government laid the Net Zero Strategy (NZS) before Parliament on 19 October 2021 as a report under section 14 of the Climate Change Act (CCA) 2008. The strategy was intended to fulfil the duty, at section 13 of CCA 2008, to “prepare such proposals and policies” that will enable the carbon budgets under the CCA 2008 to be met. The NZS was subsequently found to be unlawful in July 2022, and the Government were ordered to lay before Parliament a fresh report under section 14 before the end of March 2023.
- 3 As a result, a major Climate Change policy update has been the publication by the Government of a revised Net Zero Strategy (NZS) – with the overarching title “Powering Up Britain” (PUB), and the Carbon Budget Delivery Plan (CBDP) within it. These documents comprised nearly 3000 pages and came on March 31<sup>st</sup> 2023.
- 4 In relation to securing the Net Zero Strategy, and why the new publications were required, I highlight here what the Court said in the NZS judgment<sup>2</sup> on delivery risk and policy gap. Holgate J. recorded the NZS’s acknowledgement that the delivery pathways to achieve the 6th Carbon Budget are highly ambitious and face considerable delivery challenges and recorded that achievement was subject to a wide uncertainty range. The judge noted at paragraphs 204 and 211 that in approving the Net Zero Strategy, “*one obviously material consideration which the Secretary of State must take into account is risk to the delivery of individual proposals and policies and to the achievement of the carbon budgets and the 2050 net zero target.*” In finding the NZS unlawful, the judge described risk to delivery as the critical issue when concluding that the information provided to the Minister when reporting on the NZS was insufficient to

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<sup>2</sup> R (Friends of the Earth) v Secretary of State for Business Energy and Industrial Strategy [2022] EWHC 1841 (Admin)

enable him to discharge his reporting obligations under section 14 of the Climate Change Act 2008.

- 5 I will return to delivery risk for the NZS/PUB/CBDP later.

## **2.1 Sectoral residual emissions in the CBDP**

- 6 The CBDP published a table of “Summary of sectoral residual emissions across carbon budgets (MtCO<sub>2</sub>e)” which is reproduced on a subsequent page.
- 7 The important figure for the discussions in this document is the residual emissions for the Power sector in the 6<sup>th</sup> carbon budget. This is 42 MtCO<sub>2</sub> for the five-year period 2033-2037, or an average of 8.4MtCO<sub>2</sub>e per year. The meaning of this figure in the CBDP is that net GHG emissions from the Power sector are required to fall to this level for these years, along with the residual emissions in all other sectors, for the 6<sup>th</sup> carbon budget to be met. In fact, the Government already acknowledge that there is a 32MtCO<sub>2</sub>e shortfall for the 6<sup>th</sup> carbon budget – in other words, we already not on track, on the basis of largely theoretical policy, to meet it.
- 8 To achieve this planned level of residual emissions means that all operations within entire UK Power sector must fit within this “emissions space”. Whilst this is not a legally binding sectorial target, failure of the sector to fit within this emissions space, inevitably means that other sectors will need to make deeper cuts (or fit within smaller residual emissions that planned) for the carbon budgets to be delivered. And the 32 MtCO<sub>2</sub>e shortfall also need to be made up by deeper cuts across sectors.

**Table 2 - Summary of sectoral residual emissions across carbon budgets (MtCO<sub>2</sub>e)**

<b>Sector</b>	<b>Current (2021, pa)</b>	<b>CB4 5-yr (average pa)</b>	<b>CB5 5-yr (average pa)</b>	<b>CB6 5-yr (average pa)</b>
Agriculture and LULUCF	49	231 (46)	207 (41)	183 (37)
Buildings	88	350 (70)	320 (64)	217 (43)
Domestic transport	109	546 (109)	422 (84)	254 (51)
Fuel supply	20	93 (19)	69 (14)	48 (10)
Industry	76	340 (68)	207 (41)	111 (22)
Power	54	143 (29)	63 (13)	42 (8)
Waste and F-gases	30	125 (25)	96 (19)	75 (15)
Greenhouse Gas Removals	N/A	0 (0)	-32 (-6)	-117 (-23)
Intl aviation and shipping (IAS)	20	217 (43)	210 (42)	184 (37)
<b>Total excluding including IAS</b>	<b>426</b>	<b>1829 (366)</b>	<b>1353 (271)</b>	<b>813 (163)</b>
<b>Total including IAS</b>	<b>446</b>	<b>2046 (409)</b>	<b>1563 (313)</b>	<b>997 (199)</b>

(Reproduced from Carbon Budget Delivery Plan)

- 9 Further, the modelling of the Power sector for PUB and CBDP is based on the complex Dynamic Despatch Model (DDM) which is effectively a black box. This means that no risk assessment of the delivery of the Power sector in the CBDP can be made on a project basis, as all the projects are combined into a single model. There is an urgent need to review the residual emissions for the 6CB against all the planned projects for power CCUS, power BECCS and blue hydrogen, including Drax.

## 2.2 2023 Progress Report, the Climate Change Committee

11 In its recent Progress Report, the Climate Change Committee<sup>3</sup> stated that “*However, our confidence in the UK meeting the 2030 NDC<sup>4</sup> and the Sixth Carbon Budget (2033-2037) has decreased since last year*”<sup>5</sup> and “*The Government’s decarbonisation framework is currently missing coherent plans to mitigate the delivery risks to meeting the UK’s 2030 NDC and the Sixth Carbon Budget. The current strategy has considerable delivery risks due to its over-reliance on specific technological solutions, some of which have not yet been deployed at scale. This lack of balance carries considerable and increasing risks to meeting the emissions targets.*”<sup>6</sup>

12 This demonstrates how critical it is that each sector is able to deliver its residual emissions allocation in the CBDP. I will investigate this for the development later.

13 It should also be noted that the Progress Report states:

*“Large-scale unabated biomass power plants should be converted to bioenergy with carbon capture and storage (BECCS) as early as feasible and should not be given extended contracts to operate unabated at high load factors beyond 2027 (recommendation R2023-124)”.*

Whilst I do not agree with converting unabated biomass plants to BECCS for the reasons in my submission (it is not net negative, but is net positive on GHG emissions as shown later when the EIA assessment is done correctly), the statement strongly suggests that there is viable future after 2027 for the existing biomass burning at the Drax site. The Applicant appears to be denying that in various responses to me and other interested parties where they have claimed that the existing biomass operation means that no new combustion emissions are added through the development. If unabated biomass burning ceases in 2027 at the Drax site, as it almost certainly must, then the development does introduce new biomass combustion emissions from 2027.

14 Whilst this is an important argument, it is not the primary argument on why the biomass combustion emissions should be properly estimated and assessed. The primary argument is that those emissions are a likely significant indirect effect of the Schedule 1, paragraph 13 development, and the 2017 Regulations require their proper assessment. This will be expanded later.

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<sup>3</sup> “Progress in reducing emissions”, 2023, Report to Parliament, Climate Change Committee, June 2023

<sup>4</sup> Nationally Determined Contribution under the Paris Agreement

<sup>5</sup> Page 22 of CCC report

<sup>6</sup> Page 25 of CCC report

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### 3 THE EIA PROCESS OF THE DEVELOPMENT

#### 3.1 *The development under the 2017 Regulations*

15 The Applicant has submitted that the Drax BECCS project is a development which falls under Schedule 1, paragraph 23 of the 2017 Regulations [APP-115, 1.4.1] as follows:

*“The Proposed Scheme falls under Schedule 1, paragraph 23 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (“EIA Regulations”) as ‘Installations for the capture of carbon dioxide streams for the purposes of geological storage pursuant to Directive 2009/31/EC from installations referred to in this Schedule, or where the total yearly capture of carbon dioxide is 1.5 megatonnes or more.’. The Proposed Scheme will capture 4.1 megatonnes of carbon dioxide per annum per biomass unit and is therefore classified as ‘EIA development’ and as such the DCO Application will be supported by an EIA.”*

16 This is also stated by the Applicant at Chapter 1 of the Environmental Statement [APP-037,1.3.1].

17 The development is therefore defined for EIA purposes as a carbon capture and storage facility.

18 I draw the ExA’s and SoS’s attention to the fact that the Application does not address the transport of captured carbon from the site, nor the geological storage part. So the development would be best termed a carbon capture (“CC”) facility with carbon transport and storage to be dealt with by a separate upstream development, or developments. Meaning the development under application would be better termed Drax BECC (no S). No substantive information appears to have been provided for the functionally inter-dependent downstream developments, despite these being directly causally related to the development, and it cannot function without them. These should have been included for cumulative assessment even if the precise details are not known at this stage: **this in itself is a breach of the 2017 regulations.**

#### 3.2 *Likely significant effects of the development*

19 The Applicant states in the Scoping Report that the ES “will contain the information specified in Regulation 14(2)(a)-(f) and Schedule 4 of the EIA Regulations 2017” [APP-115, 3.1.2].

20 Regulation 14(2)(b) requires “a description of the likely significant effects of the proposed development on the environment” and Regulation 14(2)(f) requires “any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.”



21 In turn, paragraph 5 of Schedule 4 to the 2017 Regulations requires the environmental statement to include:

*“A description of the likely significant effects of the development on the environment resulting from, inter alia:*

*[...]*

*(e) the cumulation of effects with other existing and/or approved projects [...]*

*(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change.*

*[...]*

*The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development ...”.*

22 Determining the “likely significant effects” and whether they are “direct effects” or “indirect effects” or “cumulative effects” is an important step at the scoping stage to determine what effects are then quantitatively estimated (where possible) and assessed for significance in the Environmental Statement stage.

23 Further, paragraph 6 of Schedule 4 to the 2017 Regulations requires the methodologies, forecasting methods and their shortcomings in making estimates and assessments of effects to be reported in the environmental statement:

*“A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.”*

24 I submit that the Applicant has confused a number of issues at the Scoping Report stage, and this confusion has then infected the Environmental Statement and all subsequent stages. If not corrected, these issues will fatally infect the legitimacy of the decision process. The issues make the ES unlawful meaning that any subsequent decision will also be unlawful. In overview:

(A) despite identifying which part of Schedule 1, the application fell under, the Applicant then did not stick to a clear definition of what the development which was consistent with that;

(B) elements of the existing Drax operation have been conflated and confused with the development under application;

- (C) this has resulted in no clear description of the likely significant effects of the development;
- (D) crucially what were direct effects and what were indirect effects for the EIA process have not been correctly identified;
- (E) cumulative effects such as the downstream transport and storage of CO<sub>2</sub> have not been identified, or even reported in outline form (if the details are currently unknown);
- (F) rather than properly estimate, quantify and assess the combustion emissions, they have been estimated and reported as zero for the assessment stage of the development's operation (ie Table 15.11 in the ES) even though the Applicant knows the quantity of the CO<sub>2</sub> produced by the combustion operation and provides a figure for it after being requested to do at the ISH1 (the combustion emissions are estimated as 19,383,135tCO<sub>2</sub>/yr at the Table on PDF page 34 on REP-028);
- (G) the Applicant has provided no description of forecasting methods or evidence used to determine its estimate of the combustion emissions, contrary to Schedule 4, paragraph 6 of the 2017 regulations. Instead, it estimates the emissions as zero and says it justifies this estimation method because other regimes, totally disconnected and not material to the EIA Regulations and 2014 Directive<sup>7</sup>, “zero rates” the emissions. This is contradictory, and unlawful, when the applicant does estimate the combustion emissions as 19,383,135tCO<sub>2</sub>/yr at the Table on PDF page 34 on REP-028 but fails to explain (under Schedule 4, Paragraph 6) why the emissions (a likely indirect significant effect, see below) are then estimated as zero in Table 15.11 in the ES.

### 3.3 *Confusion about environmental baselines*

- 25 The Applicant has confused what the baseline is in its ES Chapter 15.
- 26 Table 15-8 of the ES provides the operation baseline, and includes “Operational Energy Use, B6” (with the biomass combustion stage emissions estimated at zero). This line is also repeated in the Table 15-11 on the operational emissions from the scheme. Table 15-8 also includes “Biomass supply chain GHG Emissions (Operational) – D” and this is also in Table 15-11. The Applicants thinking is extremely confused here:
  - (a) First, the figures given for the biomass supply chain are significantly different (558,778 tCO<sub>2</sub>/yr vs 1,223,723 tCO<sub>2</sub>/yr) because the baseline figures are assuming 4000 hours of annual operation whilst the scheme emissions are assuming 8,760 hours of annual operation. This is just one

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<sup>7</sup> The EIA Directive - DIRECTIVE 2014/52/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014

example of discrepancies (the largest one). the key point is that the same assumptions should be used for baseline and “Do Something” scenarios, and the Applicant has not done so.

- (b) On page 36 of REP-028, the Applicant claims that “*This is because GHG assessments for EIA are required to quantify the impact of the proposed development through a Baseline vs Do-Something comparison*”. However, this is not what the Applicant is doing. The Applicant has included the biomass supply emissions and the combustion emissions in both the “Baseline” and the “Do Something” scenarios. So these cannot be genuinely “Baseline” and “Do-Something” scenarios.
- (c) This is important when we come to consider the likely significant effects because it must be clear where each of the supply chain emissions and combustion emissions fall (ie: in the baseline or the “Do Something”?). By including them in both, the Applicant fails to clearly define what the emissions are, baseline or “Do Something”, for the EIA assessment.
- (d) Further, the Applicant has used the argument (in additional to estimating the combustion emissions as zero) that the combustion emissions need not be considered because they arise from an existing operation. The Applicant appears to be playing it all ways. Below, I explain that the correct approach to the likely significant effects is to determine which are direct and which are indirect under the 2017 Regulations. Both the direct and the functionally inter-dependent indirect effects are part of the operation of the Schedule 1, paragraph 23 development.
- (e) When the Applicant uses the argument that the combustion emissions arise from an existing operation and because of this do not need to be considered, it is:
  - i. Falsely preloading the combustion emissions into the baseline which then effectively renders them zero if a genuine “Do Something” – Baseline quantification were to be undertaken;
  - ii. Breaching the EIA Regulations and the correct approach to identifying the likely indirect significant effects of the development (Schedule 1, paragraph 23);
  - iii. Contradicting itself, as the Applicant has listed the combustion emissions (albeit estimated at zero) in Table 15.11., and, in any case, has scoped-in the biomass combustion emissions.

27 I now return to the likely significant effects and explain this further: first, it is necessary to examine the project under development, and the other functionally inter-dependent developments which causally related to it.

### 3.4 *The functional inter-dependence of upstream and downstream operations*

- 28 The analysis which follows examines the operational side of the development. The Application is of course for the construction and operation of the development, and the EIA process and ES must, of course, also consider the construction phase of the development. However, the construction part of the development is well understood: my analysis focusses on the operational part.
- 29 The application is being made under Schedule 1, paragraph 23 of the 2017 Regulations, and as above comprises a CC facility. The operation of the development is therefore carbon capture.
- 30 There are **other, distinct** operations or processes which must be present for the carbon capture development to operate, but these are not part of the development itself as defined by Schedule 1, paragraph 23. However, these other developments do give rise to environmental effects which must be assessed as likely significant indirect effects under the 2017 Regulations. I define these at a high-level by simple codes ( Up(-2) etc) which will be explained below. At a high-level, these include:

(A) On the upstream side:

**Up(-2):** Two stages upstream from the CC operation defined by Schedule 1, paragraph 23. A supply chain of fuel, in this case woody biomass, to arrive at the Drax site;

**Up(-1):** One stage upstream from the operation defined by Schedule 1, paragraph 23. Combustion of the biomass, in this case in the existing Units 1 and 2 of the Drax site;

(U) On the downstream side:

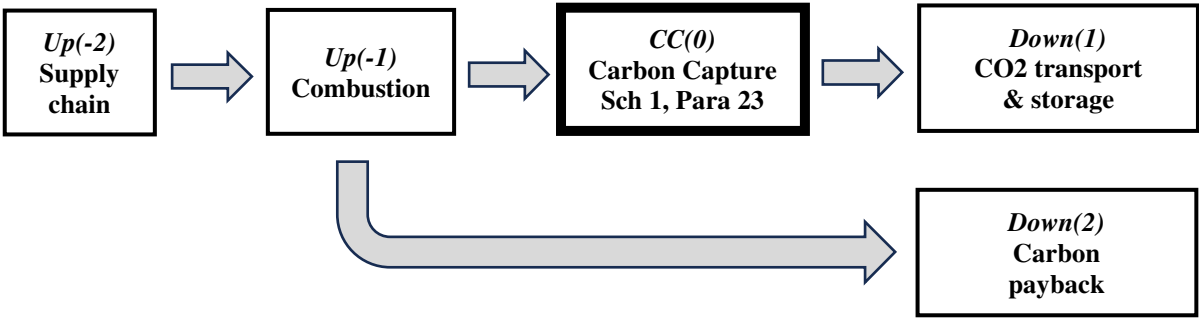
**Down(1):** One stage downstream from the operation defined by Schedule 1, paragraph 23. Transport and storage of the capture CO2.

**Down (2):** Causally, this is one stage downstream of the combustion process, as shown below. This is the long-term carbon payback processes for biomass combusted which may, or even may not, occur by proposed forest regrowth over decades. The applicant has failed to properly address these emissions at all – for all intents and purposes the Applicant considers this process or operation to happen instantly when in fact the emerging science shows that it takes decades or centuries. I explain their inclusion in my analysis in [REP4-038<sup>8</sup>].

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<sup>8</sup> [REP4-038], Deadline D4 submission, Climate Emergency Policy and Planning (CEPP), see section 3.2.

31 For the proposed development to operate, then, there is a causal relationship between these different operations and processes. The functional inter-dependence of the different operations is sequential and identified is as follows. The output of Up(-2) is the input to Up(-1). The output of Up(-1) is the input to the development itself which I’ll refer to as “CC(0)”. The output of CC(0) is the input to Down(1). The output of Up(-1) is Down(2). The numbers indicate a time causality ie: -1 happens before 0 etc. At a high-level, causal relationship of the operations is:



**Figure CEPP.Drax.Fig-1 :**  
*The functional inter-dependence of upstream and downstream operations*

**3.5 Applicant’s problem with EIA Scoping and subsequent ES**

32 The Applicant’s problem is that they have conflated operations Up(-2) and Up(-1) with CC to different extents in the EIA Scoping Report. As the distinction between the operations is blurred (conflated), the Applicant’s Scoping Report on GHGs (Chapter 15 of [APP-115]) does not properly distinguish between likely significant “direct effects” and “indirect effects” for the purposes of EIA: in fact, for GHGs, it does not even identify direct and indirect effects. The scoping report analysis appears to have been focussed on “PAS 2080” typology assignments, but failed to clearly determine which effects are “direct” and which are “indirect”. The PAS 2080 typology of GHGs types is a helpful tool but it does not substitute for correct EIA assignment, and assessment, between direct and indirect effects under the 2017 Regulations.

33 Critically, CC(0) is the only operation which comprises the development under this planning examination. However, critically, the Applicant uses the word operation in an umbrella sense which conflates the upstream operations with the CC operation itself. As noted, the Applicant’s umbrella use of operation also does not correctly identify the downstream operations, CO2 transport and storage, and the carbon payback process for EIA purposes.

34 However, the operation of the development, CC(0), is functionally inter-dependent with the upstream and downstream operations. The carbon capture operation cannot take place (or functionally exist) without the upstream and downstream operations. The upstream and downstream operations have likely significant environmental effects associated with them. In the proper understanding of the 2017 Regulations, these are

indirect effects. They are likely to cause very significant effects and, therefore, should be scoped-in to the ES.

- 35 The Applicant has not addressed the Down(1) operations and Down(2) processes at all.
- 36 The outline above, of identifying direct effects (from the development itself), and indirect effects (for function inter-dependent development with a strong causal relationship) is a general principle which applies to all environmental factors under the 2017 Regulations. There is no Greenhouse Gas exceptionalism: the proper understanding is that each environmental factor (as listed at Regulation 5(2); Schedule 4, para 4; and Schedule 4, para 5(f)) is treated in the same way.
- 37 Therefore what I describe below for GHGs may also apply to other environmental factors under the regulations such as air quality and noise meaning that the 2017 regulations may have been breached in the ES for these factors too.
- 38 However, I now explain the confused approach of the Applicant in terms of GHGs, only, and the different operations and processes.

### 3.6 *Likely significant effects for upstream biomass supply chain GHG emissions [UP(-2)]*

- 39 EIA Scoping Report, APP-115, Table 15.4 “*Key Emissions Sources During the Operation and End of Life Phase*” does not identify “Biomass supply chain Emissions” (PAS 2080 Lifecycle Stage D) as a likely significant effect. **This is incorrect and appears never to have been corrected in the Scoping Report.**
- 40 However, ES Chapter 15 [APP-051], Table 15.4 does identify (correctly) Biomass supply chain Emissions” (PAS 2080 Lifecycle Stage D) under elements scoped into the Assessment. However, the justification provided – “*following the GHG Protocol Corporate Value Chain (Scope 3) Standard and the UK government Biomass policy statement (BEIS, 2021) recommendations to include the whole-life cycle of biomass procurement*” - is not fully correct. The more relevant reason is that the biomass supply chain is a functionally inter-dependent operation with a strong causal relationship to the CC(0) operation, and therefore generates likely significant effects which are required to be reported and assessed as indirect effects of the scheme under the EIA process. Indirect as they do not arise directly from the development itself as defined by Schedule 1, paragraph 23. The GHG emissions from the biomass supply chain are one such likely indirect (very) significant effect requiring assessment.

### 3.7 *Likely significant effects for upstream biomass combustion GHG emissions [UP(-1)]*

- 41 EIA Scoping Report, APP-115, Table 15.4 “*Key Emissions Sources During the Operation and End of Life Phase*” identifies “Operational energy use” (PAS 2080 Lifecycle Stage B6) as a likely significant effect but does not make clear if it is a direct or indirect effect. “Operational energy use B6” is specified by the Applicant as “*Emissions from the combustion of fuel on site for electricity generation required for the parasitic load as well as for the production and supply of those fuels.*”

- 42 ES Chapter 15 [APP-051], Table 15.4 does identify (correctly) “Operational energy use” (PAS 2080 Lifecycle Stage B6) under elements scoped into the Assessment. The Applicant later estimates these emissions as zero (when in fact they are very large) for the assessment at ES Table 15.11 which I submit is false for EIA assessment and address elsewhere<sup>9</sup>.
- 43 The relevant reason for these emissions (essentially the “combustion” emissions) being scoped into the Assessment is they arise from a functional inter-dependent operation with a strong causal relationship to the CC(0) operation, and therefore provide likely (very) significant effects which are required to be reported and assessed as indirect effects of the scheme under the EIA process.
- 44 The combustion of the biomass ( Up(-1) ) is one stage closer to the operation under EIA, the CC(0) operation itself, than the biomass supply chain ( Up(-2) ). As the Up(-2) operation is scoped in the ES, it is completely rational that this intervening stage (ie between the Up(-2) and CC(0) stages) should also be scoped in as an indirect effect<sup>10</sup>.
- 45 Further without the combustion of biomass, the Up(-1) operation, the operation under EIA assessment, namely the CC(0) operation, cannot functionally exist. So although the Up(-1) operation is distinct from the CC(0) operation, it is an essential functional precursor for it to occur. In the same way, the Up(-2) operation is an essential precursor on the Up(-1) operation.

### 3.8 *Forecasting requirement for upstream biomass combustion GHG emissions [UP(-1)]*

- 46 The Applicant has provided no description of forecasting methods or evidence used to determine its estimate of the combustion emissions, contrary to Schedule 4, paragraph 6 of the 2017 regulations. Instead, it estimates the emissions as zero and says it justifies this estimation method because other regimes, totally disconnected and not material to the EIA Regulations and 2014 Directive<sup>11</sup>, “zero rates” emissions of this type. This is contradictory, and unlawful, when the Applicant does estimate the combustion emissions as 19,383,135tCO<sub>2</sub>/yr<sup>12</sup> at the Table on PDF page 34 on REP-028 but then fails to explain (under Schedule 4, Paragraph 6) why the emissions (a likely indirect significant effect, see below) are then estimated as zero in Table 15.11 in the ES.

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<sup>9</sup> [REP4-038], Deadline D4 submission, Climate Emergency Policy and Planning (CEPP) – “The key principle area of difference between Climate Emergency Planning and Policy (CEPP), and the Applicant, is the zero rating of the biomass combustion GHG emissions from the scheme in the Environmental Impact Assessment.”

<sup>10</sup> In [REP4-038], I mistakenly considered it to be direct effect due to the confusion caused by the Applicant’s presentation of material, as being discussed here.

<sup>11</sup> The EIA Directive - DIRECTIVE 2014/52/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014

<sup>12</sup> For the whole Drax plant with 4 biomass units. The figure for the 2 units on which the development functionally depends can be obtained by halving the number.

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**3.9 *Likely significance effects for downstream CO2 transport and storage GHG emissions [DOWN(1)]***

47 The applicant has not provided any details. Although this operation may be dealt with a later planning application, the Applicant should provide information on the indirect significant effects, as they are known at this stage, and it has not done so. The transport and storage of CO2 requires significant energy input which itself would have a carbon footprint. Although it may not be precisely calculated at this stage, estimates of the GHG impacts should have been provided and assessed as a likely significant downstream indirect effect. This is a further flaw in the Applicant’s ES.

**3.10 *Likely significance effects for downstream forest regrowth and carbon payback GHG emissions [DOWN(2)]***

48 The applicant has not provided any details. As the applicant falsely estimates the combustion emissions as zero for EIA purposes, implicitly the carbon payback on the combustion has also been effectively estimated as zero, or not even considered, by it. The Applicant appears to implicitly consider this process/operation takes place instantly. However, scientific papers already submitted to the examination (Sterman et al (2022) reproduced in my written submission [REP2-075/Appendix C]) show that the impact of harvesting biomass fuel is to increase forest emissions for around 15 years, and there is no net carbon payback for around 25 years. Thereafter, full carbon payback takes decades and/or centuries.



### 3.11 Aggregating the information so far

49 The following table aggregates the information and narrative above into one place for easy reference. Table CEPP.Drax.Tab-1-D9 is an update to the Table CEPP.Drax.Tab-1 previously provided at [REP4-038] as follows:

- (A) Consistent with the development only the Scheme (Units 1 and 2) are now displayed.
- (B) Critically the Table shows the figures with the combustion emissions from the Up(-1) operation when they are estimated as zero (as in the assessment Table 15.11) and when they are estimated by the application in REP-028. The latter calculation reflecting the real-world environmental impact of the GHGs associated with combustion.
- (C) The rows under “Emissions generated” have been sorted in terms of causal sequence (“Up(-2)” etc), and a new column specifies each emission type as Indirect or Direct. Only the emissions associated with the carbon capture CC(0) operation under Schedule 1, Paragraph 23 are specified as Direct effects.
- (D) A new row “Y” has been added for emissions (unknown) from the missing CO2 transport and Storage operation (Down (1)). As well as being indirect, as these result from a separate operation yet to be environmental assessed, a cumulative assessment should have been provided for these emissions under Schedule 4, Para 5(e) (“*the cumulation of effects with other existing and/or approved projects*” even if the full details are not yet known.
- (E) 0% CO2 capture has been calculated at rows Q to S (corresponding the development not proceeding) including the carbon intensity for the case where the development does not proceed, with the estimates for biomass combustion provided by the Applicant in REP-028. This is for comparative purposes.
- (F) 25-year net emissions generated from Direct and Indirect effects are calculated for 90% CCS and 0% CCS efficiencies with the estimates for biomass combustion provided by the Applicant in REP-028.
- (G) The new added rows (since REP4-038) are coloured in brown.
- (H) A column referencing the data to locations in the ES is provided.
- (I) The “Zero rated” column under ① just reproduces the Applicant’s data (although somewhat more clearly)
- (J) The “non-Zero rated” column under ② changes the calculation only in respect of Up(-1) combustion emissions which are provided from the estimates for biomass combustion provided by the Applicant in REP-028. I submit this is the correct estimate of the indirect effects of the biomass combustion for EIA purposes.

tCO2e/yr	Scheme: Units 1 and 2					①	②	
	Emissions generated	PAS 2080	Operation/process	Scoped-in	In/Direct	Zero-rated	Not zero-rated	Reference in ES
H	Biomass supply chain GHG Emissions (Operational)	D	Up(-2)	<input checked="" type="checkbox"/> /√ <sup>13</sup>	Indirect	1,223,723	1,223,723	ES, Table 15.12
E	Combustion = Operation energy use	B6	Up(-1)	✓	Indirect	0	9,691,567	See footnote <sup>14</sup>
A	CH4 and N2O combustion emissions (not included)		Up(-1)	✓	Indirect	24,474	24,474	ES, App 15.2, PI 1.1
B	Additional Scope 1 and 2 emissions from operation		-	<input checked="" type="checkbox"/>	-			REP1-028, PDF p35
C	104,700 tCO2e annualised over 25 years: Construction	A1-A5	CC(0) - construction	✓	Direct	4,188	4,188	ES, Table 15.12
D	Replacement and Refurbishment Emissions	B2-5	CC(0)	✓	Direct	0	0	ES, Table 15.12
F	Solvent used for the Carbon Capture process	B8	CC(0)	✓	Direct	6,939	6,939	ES, Table 15.12
G	707 tC annualised over 25 years LULUCF (tC)* <sup>15</sup>	B8	CC(0)	✓	Direct	28	28	ES, Table 15.12
Y	CO2 Transport and Storage		Down (1)	<input checked="" type="checkbox"/>	Indirect	Missing from ES	Missing from ES	
	<b>Emissions captured</b>							
Z	Forest regrowth in harvested forest** <sup>16</sup>		Down(2)	<input checked="" type="checkbox"/>	Indirect	(Assumed instant*** <sup>17</sup> )	0	
I	95% CO2 captured through the Carbon Capture process	B1	CC(0)	<input checked="" type="checkbox"/>	Direct	-9,206,989	-9,206,989	ES, Table 15.12
J= B+C+D+E+F+G+H+I+Z	<b>Net total tCO2 @95%CCS</b>					<b>-7,972,111</b>	<b>1,719,456</b>	
K=J/P	Carbon intensity @95% CCS	gCO2/kWh				-978	211	
L	90% CO2 captured through the Carbon Capture process		CC(0)	<input checked="" type="checkbox"/>	Direct	-8,722,410	-8,722,410	
M= B+C+D+E+F+G+H+L+Z	<b>Net total tCO2 @90%CCS</b>					<b>-7,487,532</b>	<b>2,204,035</b>	
N=M/P	Carbon intensity @90% CCS	gCO2/kWh				-918	270	
Q	0% CO2 captured through the Carbon Capture process						0	
R= B+C+D+E+F+G+H+Q+Z	<b>Net total tCO2 @0%CCS</b>						10,926,445	
S=R/P	Carbon intensity @0% CCS	gCO2/kWh					1,340	
T	25-year net emissions generated ( <b>not zero-rated</b> , power plant) 90% CCS						55,100,868	
U	25-year net emissions generated ( <b>not zero-rated</b> , power plant) 0% CCS						273,161,125	
P	Total Proposed Scheme electricity generated (net)	kWh				8,153,523,609		

**Table CEPP.Drax.Tab-1-D9 – Aggregated emissions in the Environmental Statement**

<sup>13</sup> As explained in the section “Likely significant effects for upstream biomass supply chain GHG emissions [UP(-2)]”, the Applicant missed these emissions from the scoping report, but later scoped them in in the ES.

<sup>14</sup> The Application is not consistent on this. REP-028, PDFp34 give combustion emissions as 19,383,135 tCO2 across Unit 1-4 operating at 8760 hours. 9,691,567 tCO2 is half this for Units 1 &2. However, ES Appendix 15.1 gives combustion emissions as 4,425,373 tCO2 at 4000 hours across 2 units. However, Table ES 15.11 claim carbon capture benefits at 8760 hours/yr, see footnote on the table.

<sup>15</sup> \* LULUCF emissions are expressed as tC whereas all other figures are tCO2e. As noted on the next page, this is an error by the Applicant. I have reproduced the error as it provides consistency in the data presentations.

<sup>16</sup> \*\*See REP3-048, section 3.2 – **zero** over 25 years

<sup>17</sup> \*Forest regrowth assumed instant by Applicant in its “zero rated” scenarios

### 3.12 Discussion on scoping and EIA Effects

- 50 The applicant scoped in the upstream UP(-2) biomass supply chain GHG emissions at ES Chapter 15 [APP-051], Table 15.4 and included them in the estimated in-scope operational phase GHG emissions at Table 15.11. Whilst the Scoping Report was in error to omit these emissions, the ES correctly reports them, but does not clearly identify these emissions as being an indirect effect.
- 51 The applicant scoped in the upstream UP(-1) biomass combustion GHG emissions at EIA Scoping Report, APP-115, Table 15.4 and ES Chapter 15 [APP-051], Table 15.4, and included them in the estimated in-scope operational phase GHG emissions at Table 15.11. The ES does not clearly identify these emissions as being an indirect effect.
- 52 The key difference between Climate Emergency Planning and Policy (CEPP), and the Applicant, remains estimating the indirect effects of the biomass combustion GHG emissions to be zero **in the Environmental Impact Assessment** (and as previously elaborated in REP4-038). This is the difference in the numbers shown under columns ① and ②.

### 3.13 Discussion on quantified effects

- 53 When the combustion GHG emissions are quantified for their real environmental effect on climate change (ie as in under columns ②):
- The net total (full lifecycle) carbon footprint of the development at 90% CCS is 2,204,035 tCO<sub>2</sub>/yr ie: over 2 million tonnes of CO<sub>2</sub> a year over the 25-year assessment period. This includes the Direct and Indirect effects identified by figures in the Table, but still excludes the Indirect and cumulative GHGs from Down(1) transport and storage of CO<sub>2</sub> operation so is an underestimate. The Down(2) carbon payback is treated as zero although the forest harvesting emissions are expected to be positive for around 15 years before carbon sequestration (and negative emissions) from forest regrowth start after 25 years, as explained above.
  - The Direct and Indirect emissions from the development at 90% CCS sum to over 55 MtCO<sub>2</sub> (millions of tonnes of CO<sub>2</sub>) over the 25-year project period at 90% CCS. The resulting carbon intensity is 270 gCO<sub>2</sub>/kWh which is extremely high for a new power facility opening late this decade.
  - If no CCS (0% case) is achieved then the annual net total is 10,926,445 tCO<sub>2</sub>/yr, and 273,161,125 tCO<sub>2</sub> over 25 years. The Climate Change Committee have advised that such a case should be ruled out by 2027 at the latest, see above.

The above is just for Units 1 and 2. When the whole site (although this goes beyond the development under question) is considered, the figures previously reported in Table CEPP.Drax.Tab-1 in REP4-038 estimate:

- A net whole site tCO<sub>2</sub> at 90% CCS of 13,279,326tCO<sub>2</sub>: over 13 million tonnes CO<sub>2</sub> a year. And 25-year total 331,983,143 tCO<sub>2</sub>.

54 These figures amount to extremely large likely significant effects when both the Indirect and Direct effects of the Schedule 1, paragraph 23 development are considered applying the 2017 Regulations correctly.

### 3.14 Assessment against climate targets and budgets

55 Earlier I identified that the residual emissions for the Power sector in the CBDP for the 6th carbon budget are an average of 8.4MtCO<sub>2</sub>/yr.

56 The Table below shows the net total annual CO<sub>2</sub> emissions at 90% CCS on Units 1 and 2 for the development itself. This is with the biomass combustion non-zero rated as is correct for EIA assessment.

Annual tCO <sub>2</sub>	Net total @90% CCS	Percentage for CB6 residual emissions
<b>Scheme Units 1 &amp;2</b>	2,204,035	26%
<b>Whole plant</b>	13,279,326	158%

**Table CEPP.Drax.Tab-2 :**

#### **Drax share of 6<sup>th</sup> carbon budget residual emission space (CBDP Power sector)**

57 The Table shows that the development - the Schedule1, paragraph 23 carbon capture facility - would consume 26% of the residual emissions budget at 90% CCS efficiency and with the upstream indirect combustion emissions correctly estimate (using the figures which the Applicant has estimated but not included in the assessment. This is a large proportion of the 6<sup>th</sup> carbon budget residual emissions for the Power sector. Given that the Government also plans new gas facilities and blue hydrogen plants which themselves have a net carbon footprint (from less than 100% carbon capture and upstream methane leakage emissions in the supply chain), it is extremely unlikely that the 6th carbon budget residual emissions target from the CBDP could be met.

58 If Units 3 and 4 were to continue to combust biomass and remained unabated (ie no CCS) which appears to be the plan, then the whole plant consumes over 100% of the residual emissions budget at 90% CCS efficiency and with the upstream indirect combustion emissions correctly quantified. This clearly blows the residual emissions allocation to the Power sector in the CBDP, even before any new gas or blue hydrogen plants, and other energy generation, may be considered.

#### 4 RESPONSE TO REP5-028

59 These are provided sequentially below as a tabular presentation would become too unwieldy.

##### 4.1 5.1 (Page 1)

60 The key point here is about the false zero estimate of the combustion emissions (Up(-1)) made at the assessment Table 15.11 when the Applicant knows the real combustions emissions and has provided an estimate of them at REP-028. The Applicant appears to be under the impression that conventions from other reporting regimes can just be imported into the ES under the 2017 Regulations. However, this is completely false, the 2017 Regulations require a different approach, which starts “from scratch” in its own right, as below.

61 The 2017 Regulations require the likely significant environmental impacts of each factor (at as listed at Regulation 5(2); Schedule 4, para 4; and Schedule 4, para 5(f) ) to be first of all assessed for scoping, and then estimated or quantified, reported and assessed with the Environmental Statement. This applies to Direct and Indirect effects. The applicant has in fact correctly scoped-in the combustion emissions from Up(-1) as explained above. However, the error is in how the emissions from Up(-1) have then been estimated or quantified for assessment at Table 15.11. Although estimates of these emissions are known to the Applicant, and I reproduce the in Table CEPP.Drax.Tab-1-D9 above, the application instead estimates the emissions as zero.

62 Nothing in the Applicant’s response at 5.1 justifies or explains the Applicant’s error. How things are approached by the (scientifically outdated) IPPC guidance, the UK Renewables Obligation Order 2015 (as amended), UK Emissions Trading Scheme (UK ETS) and the UK Environmental Reporting Guidelines is not material as these are not guidelines or regulations about how to estimate and quantify GHGs for the purposes of environmental impact assessment under the 2017 regulations.

63 Carbon accounting rules and conventions from other regimes provide no basis for the assessment of the likely significant indirect impacts of the development, described by Schedule 1, paragraph 23. No does the IEMA guidance or the 2016 PAS 2080 typography. I have no dispute about how the PAS 2080 guidance has been applied; however, it provides no basis for assessing the quantified likely significant indirect impact of the Schedule 1, paragraph 23 development which is the issue before the ExA and the SoS.

64 The applicant has thrown an array of guidance from other regimes at the ExA. The purpose of the Applicant’s scatter gun approach is to hope that at least one thing will stick to support the approach of assessing a very large likely significant effect as zero. It doesn’t stick.

65 The Applicant states:

*“Fundamentally, CEPP fail to recognise that the Application is not for the combustion of biomass, which is already consented and operational, but for the addition of carbon capture technology to the existing plant. The Proposed Scheme does not seek to consent the continuation of biomass operation.”*

I have clarified above in Figure CEPP.Drax.Fig-1 and the surrounding narrative that the development (CC(0)) is a carbon capture development under Schedule 1, paragraph 23. However, in terms of the 2017 Regulations, the likely significant indirect impacts of the functional inter-dependent upstream and downstream operations are required to be estimated and assessed. It is not relevant if the combustion has already been consented and is in operation: the emissions from the combustion are strongly causally related to the carbon capture. Simply, the carbon capture operation cannot happen without the operation of the combustion. Therefore, for EIA purposes the combustion (Up(-1)) process is an Indirect effect of the CC(0), the development being considered under the 2017 regulations.

66 The Applicant says:

*“As such, there can be no realistic or legal argument to state that biomass combustion emissions are a direct effect generated by the Proposed Scheme.”*

The presentation of the Applicant’s ES, which I explained above conflated processes and operations and did not distinguish between Direct and Indirect effects. This previously confused me when I drafted REP4-038. I have now presented the direct and indirect effect clearly above. The combustion emission (Up(1)) are Indirect emissions of the proposed scheme as explained above. There are, therefore, realistic and legal arguments that biomass combustion emissions are an indirect effect generated by the Proposed Scheme, and that they are required to be estimated and assessed as likely significant effects.

67 At the Supreme Court hearing of the Finch case both upstream and downstream indirect effects were considered (although the original planning decision under challenge in Finch related to downstream effects), and the Finch case remains very relevant to the Proposed Scheme.

**4.2 5.2**

68 No para 5.2 is given, assumed to be typographical error.

**4.3 5.3 (Para 4 to 10); 5.4 (Para 11 to 15); and 5.5 (Para 16 to 18)**

69 The applicant merges its responses here.

70 The applicant repeats the scatter gun approach of listing an array of guidance under other regimes which is not relevant, nor material, to assessing the likely indirect

significant effects of the Schedule 1, paragraph 23 development under the 2017 regulations. The rebuttal is given above, and also previously in REP4-038.

#### **4.4 5.6 (Para 19 to 20)**

71 The Applicant repeats that “combustion of biomass is rated as zero for CO<sub>2</sub> at the point of combustion” but does not address the fact that other regimes which zero rate biomass are not materially relevant to assessing the likely indirect significant effects of the Schedule 1, paragraph 23 development under the 2017 regulations.

#### **4.5 5.7 (Para 22 to 24)**

72 For point (1) on “zero rating” biomass combustion, see above.

73 Point (2) is on CCS efficiency. I take the precautionary approach that 95% is unproven, and ridiculously optimistic. 90% is also unproven for full production levels of operation, but I base my calculation on it.

#### **4.6 5.8 (Para 25 to 36)**

74 The Applicant again raises the false argument that because there is already a biomass combustion operation in progress, the emissions are not relevant for environmental impact assessment. As above, the combustion emissions are from the separate operation (Up(-1)). The carbon capture development under consideration depends entirely upon the combustion process happening, and the combustion process is a likely significant indirect impact of it for the purposes of the 2017 regulations.

75 The Finch case was heard at the Supreme Court on June 21<sup>st</sup> and 22<sup>nd</sup> 2023. Therefore any conclusions about how upstream and downstream effects are lawfully approached under the 2017 Regulations and the 2014 EIA Directive await the Supreme Court judgement.

#### **4.7 5.9 (Para 37 to 41)**

76 It is agreed that the development under question is a Schedule 1, paragraph 23 development. The development has direct and indirect effects. As explained above, for EIA purposes, the combustion emissions are from an upstream operation (Up(-1)) and are an indirect effect of the development. The development cannot operate without the combustion process and its emissions: they are the input into the carbon capture operation. The Applicant itself scoped in the combustion emissions. The applicant’s error is to estimate them as zero when they already have provided a genuine estimate in REP-028, and then try to justify the breach of the 2017 regulations on the basis of irrelevant and immaterial guidance and regimes outside of the 2017 regulations.

77 The fact that the combustion operation is already happening is irrelevant. The relevant fact is that the combustion emissions give rise to a likely significant indirect effect of the carbon capture operation for the 25-year project lifetime. The impact of the effect

is in fact huge, and known to the Applicant, and estimating it as zero for environmental impact assessment is false, and unlawful.

78 The applicant states that greenhouse gas removal is “needed at some time”. It is true that genuine greenhouse gas removal is required as atmospheric levels of GHGs, particularly carbon dioxide and methane, are at unprecedented levels. The Drax facility itself has made, and continues to make, considerable a very considerable contribution to these very high levels of atmospheric GHGS. This will continue into the future if the scheme is consented, as when the combustion emissions are properly assessed as an indirect effect of the Drax BECC carbon capture development, the scheme actually produces over 55 MtCO<sub>2</sub> (millions of tonnes of CO<sub>2</sub>) over the 25-year period (at 90% CCS). When the whole site is considered, with data provided by the Applicant, the Drax facility would produce 331MtCO<sub>2</sub> over 25 years with the carbon capture development in place at 90% efficiency (see Table CEPP.Drax.Tab-1-D9 and explanatory text above).

79 These are massive amounts of carbon emissions and go in the opposite direction to the deep emissions reductions, facilitated by genuine greenhouse gas removal, that the UN, CCC and IPCC advocate.

#### **4.8 5.10 (Para 42 to 49)**

80 The Applicant makes the false claim that the development “will be delivering a huge amount of GHG savings to the UK which ensures that it is able to meet its net zero commitments”. In fact, I have shown that when the upstream combustion emissions are correctly quantified and assessed for EIA purposes that the development overall becomes a net positive contributor of GHGs (over 2 million tonnes CO<sub>2</sub> year with 90% CCS efficiency).

#### **4.9 5.11 (Para 50 to 51)**

81 Re point (A). I acknowledge the applicant’s explanation and note that they provided different figures with the development operating at 4000 hours/year and 8760 hours/year which is very confusing. As noted above the Applicant has used these different assumptions for the baseline and “Do Something” estimates and assessment Tables.

82 I acknowledge the applicant’s agreement with me in their explanations on Points (B), (C) and (D).

#### **4.10 5.12 (Para 52 to 56)**

83 The applicant fails to grasp that “international guidance, UK Guidelines or UK policy with regards to the zero rating of biomass” are not guidance, or regimes, which are materially relevant to the assessment of likely significant (indirect and direct) impacts under the 2017 regulations.



84 It is agreed that the development under question is a Schedule 1, paragraph 23 development. The development has direct and indirect effects. As explained above, for EIA purposes, the biomass combustion emissions are from an upstream operation (Up(-1)) and are an indirect effect of the development. The development cannot operate without the combustion process and its emissions: they are the input into the carbon capture operation. The Applicant itself scoped in the combustion emissions. The applicant's error is to "zero rate" them on the basis of irrelevant and immaterial guidance and regimes outside to the 2017 regulations. The fact that the combustion is already occurring does not alter the fact that the emissions from it are an indirect effect of the development, and subject to assessment under the 2017 regulations.

#### ***4.11 Further point on upstream biomass combustion GHG emissions [UP(-1)]***

85 The applicant makes the irrelevant point that the biomass combustion is "already consented". As explained, this does not mean that it is not an indirect effect of the Schedule 1, paragraph 23 operation.

86 However, it should be noted that the 2014 EIA Directive introduced the assessment of greenhouse gas emissions into the Directive for the first time. Although climatic factors had been in previous EIA Directive versions, GHG assessment was explicitly introduced in the 2014 Directive, and subsequently in the 2017 regulations in the UK. For example, at Schedule 4, Paragraph 5(f) "*the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change*" is a new clause in the regulations.

87 The obligation to assess GHG emissions, therefore, did not reach UK statute until 2017. I believe that the GHG emissions of the existing Drax facility have never been assessed under the 2014 Directive, or the 2017 regulations. It would be helpful for the Applicant to provide the examination with details of the previous consenting process and any environmental impact assessment carried out so that this point is clear.

88 The upshot, if this is the case, would be that combustion emissions from the Drax facility have never previously been assessed under the EIA regime (at any version of the Directive, or Regulations). No doubt, the Applicant would have falsely estimated the combustion emissions at zero if a previous EIA process was undertaken, but this is not the point. The point is that Applicant itself scoped in the combustion emissions for this development application, and I believe that it is the first time that the combustion emissions are being considered under an EIA assessment. This is a further logical reason why the emissions should be assessed now, although the legal reasons why this should be done are supreme in any case.

89 The key error remains that despite the scoping in the biomass combustion emissions, which should be correctly considered as a likely significant upstream indirect effect, the applicant has estimated the emissions as zero for the purposes of environmental impact assessment. Given the huge emissions footprint from the combustion, the whole environmental impact assessment is rendered flawed, and the legal reasons have been clearly presented in this submission.

## 5 DECISION MAKING FOR THE DRAX BECC (not BECCS) DEVELOPMENT

90 I now, respectfully, write as if directly to the Secretary of State although through the ExA and examination process. I respectfully request that the ExA fully reproduces these points in the Examination Report and requests that the SoS considers them, him or herself, in his/her decision making.

- (A) I have analysed the development - a Schedule 1, paragraph 23 development under the 2017 regulations – and shown how the likely significant (direct and indirect) effects should be classified for the EIA purpose. The Applicant failed to do this process correctly, or even at all. The Application is in error of law from the EIA Scoping report onwards. The error infects all subsequent processes including the decision.
- (B) Where the Applicant did classify GHGs and their effects, they made mistakes (for example, not scoping supply chain emissions in the Scoping Report and then later scoping them in in the ES) and created confusion. I have disentangled this as much as I can and reported it in this submission.
- (C) The Applicant did scope in the biomass combustion emissions although it put these and other emissions in both the baseline and the development scenarios which is a further confusion/error. However, biomass combustion emissions should be scoped in, and into the development scenario, as they are a downstream likely significant indirect effect of the Schedule 1, paragraph 13 development.
- (D) Having scoped in biomass combustion emissions, the application then failed to estimate them correctly. Having estimated them outside [in REP-028] the EIA Assessment table at Table 15.11 as over 19MtCO<sub>2</sub>/yr from the whole site (or over 9 MtCO<sub>2</sub>/yr from the Units 1 and 2 which are the functionally inter-dependent units with the Schedule 1, paragraph 23 carbon capture development), the Applicant then estimated the emissions as zero in the assessment table (ie Table 15.11). This is not just contradictory, but it is an error of law.
- (E) The Applicant provided no reasoning under Schedule 4, Paragraph 6 of the 2017 Regulations as to why the estimated figures, between REP-028 and Table 15.11 varied so much. This is a further breach of the 2017 Regulations.
- (F) The Applicant has relied upon conventions from other regimes, and outside the EIA regulations, and not material to the EIA Regulations, to support estimating the emissions as zero (in the applicant’s terminology “zero rating”). The Applicant’s justifications for estimating the biomass combustion emissions as zero cannot lawfully apply to reporting the likely significant indirect effects of the development.

- (G) The Secretary of State cannot give consent to the scheme without also infecting him/herself with these legal errors.
- (H) Further, the Secretary of State must give consideration as to whether the development is consistent with securing the delivery of his/her own Net Zero Strategy (now Powering Up Britain, and Carbon Budget Delivery Plan(CBDP)).
- (I) The SoS must be aware that risking the secure delivery of the Net Zero Strategy, should be considered alongside section 104 of the Planning Act 2008, as it may:
- i. lead to the UK being in breach of its international obligations (s104(4));
  - ii. be in breach of any statutory duty (s104(5));
  - iii. be unlawful (s104(6));
- (J) It should be noted that the development is for 25 years. When the likely significant (direct and indirect) effects of the development are considered in a full life-cycle analysis, as I have done in this submission, then the GHG effects of the development are not net negative but net positive.
- (K) The development produces a net positive GHG footprint of over 2 MtCO<sub>2</sub>/yr. The development consumes 26% of the residual emissions specified for the Power sector in the CBDP for the 6<sup>th</sup> carbon budget. The Secretary of State must also consider if in using one quarter of the allocated residual emissions space for the Drax BECC (not BECCS) facility, there is sufficient emission pace left for the other carbon intensive Power schemes that the Secretary of State envisages – for example, gas power plants and blue hydrogen plants which even with CCS consume GHGs from the residual emissions space from both CO<sub>2</sub> generation and downstream methane leakage in natural gas supply.
- (L) The Secretary of State has made no risk assessment of the delivery of the Power sector in the CBDP on a project/development basis. Therefore the issue above is difficult to determine. The Applicant has provided no information to help with this either. Therefore, it is not possible to provide a risk assessment of the development and its effect on the security of delivering the residual emissions allocation to the Power sector in the CBDP. However, at 26% of the allocation, it is inconceivable that the chances of implementing the development and meeting the residual emissions allocation, and the 6<sup>th</sup> carbon budget, are anything but a remote possibility.
- (M) Overall, I submit that the Secretary of State cannot lawfully approve the Drax BECCS development given (i) the unlawfulness of the ES which infects his/her decision too, and (2) the high risk that the large net positive GHG footprint of the development will blow the allocated residual emissions in the Power sector in the 6<sup>th</sup> carbon budget, and risks the security of delivering the 6<sup>th</sup> carbon budget (legally binding under the Climate Change Act 2008) and the whole Net Zero Strategy (PUB/CBDP).

<b>Drax BECCS Project Planning Examination 2022-2023</b>	<b>Deadline 9 (D9), July 6th 2023 Submission</b>
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**Dr Andrew Boswell, 6<sup>th</sup> July 2023**