TOWN AND COUNTRY PLANNING ACT 1990

Application by West Cumbria Mining Ltd

Development of a new underground metallurgical coal mine and associated development at Former Marchon Site, Pow Beck Valley and area from Marchon Site to St Bees Coast

Planning Inspectorate Reference:	**APP/H0900/V/21/3271069**
Local Planning Authority Reference:	**4/17/9007**
Date of Inquiry:	**7th September 2021**

STATEMENT OF CASE
of
SOUTH LAKES ACTION ON CLIMATE CHANGE *TOWARDS TRANSITION* (SLACC)

7 May 2021

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1. Introduction

1.1 South Lakes Action on Climate Change - Towards Transition ("SLACC") is a registered community-based charity, of 92 Windermere Road, Kendal, LA9 5EZ. SLACC brings together people who want to act to address the climate and ecological crisis and promote a more sustainable lifestyle.

1.2 SLACC is part of the global Transition Town Network, and our aim is to decrease the dependence of the South Lakes community on fossil fuels, reduce carbon emissions and help build local resilience in key areas such as economics, energy, transport and food. SLACC also campaigns and raises awareness on local, national and international climate change issues.

1.3 SLACC made objections to the application and also to the Secretary of State, examples being the following letters:

- Letter from Richard Buxton Solicitors 6th December 2019;
- Letter dated 21st June 2020, together with appendices;
- Letter dated 1st October 2020, together with appendices;
- Letter from Richard Buxton Solicitors 7th January 2021; and
- Letter from Richard Buxton Solicitors 29th January 2021 with appendix.

1.4 A full list of objections submitted to the Council by SLACC and related representations from SLACC to the Secretary of State requesting that he call in the application for his determination includes:

- 2018-02-18 SLACC objection to Whitehaven COAL mine
- 2019-03-12 SLACC objection to Whitehaven COAL mine 2
- 2019-03-31 4179007 SLACC call-in request to SoS MHCLG
- 2019-09-11 4179007 2nd letter from SLACCtt to SoS
    - 2019-09-11 SLACCtt 2nd Letter to SoS_Appendix A
    - 2019-09-11 SLACCtt 2nd Letter to SoS_Appendix B
- 2019-12-06 SLACC - R Buxton letter to Cumbria CC
    - 2019-12-06 -Supporting evidence sent to CCC by SLACC
- 2020-06-21 SLACC objection to application 4_17_9007 Final v2
    - Appendix 1 - Professor Ekins letter_5-12-2019
    - Appendix 2 - MPI Report 11-06-2020
    - Appendix 3 - Statement on the future need for coal in the steel industry June 2020

        - Appendix 4 - WMS on Clean Steel Fund and Low Carbon Hydrogen Production Fund - 3 Sep 2019
    - 2020-10-01 Oct 20 SLACC further objection to 4-17-9007
        - 2020-10-01 SLACC further objection Appendix - Academics letter_to_ministers
        - 2020-10-01 SLACC further objection to 4-17-9007 Appendix_ P Ekins
    - 2020-10-09 SLACC Call in Request SoS MHCLG Woodhouse Colliery v2
    - 2021-01-07 letter to CCC (out) from R Buxtons
    - 2021-01-14 R Buxton email to DHCLG PCU re call in reconsideration
    - 2021-01-21 Email from RBS requesting holding direction
    - 2021-01-29 R Buxtons Letter to Cumbria CC
    - 2021-01-29 CCC letter Appendix 1 Lord Deben
    - 2021-02-02 letter to NPCU (out) from R Buxton Solicitors
    - 2021-02-25 Pre-Action Letter to SoS MHCLG

1.5 SLACC was granted Rule 6 status on 9th April 2021.

2. Lack of clarity about the proposal that WCM will promote at the Inquiry

2.1 The amended Application as made by West Cumbria Mining ("**the Applicant**" or "**WCM**") in April 2020 was for:

- Extraction of 2.78 million tonnes per annum ("Mtpa") of coal until 2070
- Amended processing facility, no sale of "middlings coal"
- A request to amend the definition of metallurgical coal to a maximum sulphur content of 2%
- Addition of chapter 19 to the ES, and amended Planning Statement
- ES otherwise as submitted in 2017 and amended in November 2018

2.2 The amended application made to the Council in April 2020 is hereinafter referred to as the "**Application**" and the proposal which it represents the "**Application Proposal**".

2.3 The Proposal as considered by Cumbria County Council ("**the Council**") on the 2nd October 2020[1] was subject to the completion of an extensive legal agreement and also 101 proposed planning conditions.[2] Three of these, in particular, significantly amended the development. Relevant extracts are set out below:

Proposed Condition 1 (part):

> **High Vol A Coking Coal** - Coal with particular physical and chemical characteristics that makes it suitable for use in the production of coke for steel-making and separated from reject material during processing at the Coal Handling and Processing Plant. For the avoidance of doubt 'High Vol A Coking Coal' shall be defined as having a maximum ash content of 8% and a maximum sulphur content of 1.6% and an average (mean) sulphur content of no more than 1.4%.

[1] Cumbria CC Planning Officers Report of 2nd October 2020.
[2] Ibid Appendix 1 Proposed Planning Conditions.

Proposed Condition 4:

> The permission authorises the Winning and Working of High Vol A Coking Coal suitable for use in steel manufacture only. (*See above for definition and proposed Condition 77 for the recording and monitoring as to the sulphur content of coal*)

Proposed Condition 5:

> Mining operations to cease by no later than 31 December 2049 and the site shall be fully restored in accordance with an approved scheme within 24 months.

2.4 The application, as amended by the Council's proposed planning conditions, as recommended to the Council's Development Control and Regulation Committee is hereinafter referred to as the ("**DC&R Proposal**").

2.5 SLACC is aware that Friends of the Earth wrote to WCM on 9th April 2021 requesting that WCM clarify whether it would accept the conditions recommended by Cumbria County Council or would seek to promote the Application Proposal at the Inquiry. However, WCM's response declined to clarify the matter, merely saying that they would expect conditions "will be explored and canvassed at the public inquiry in the usual way." SLACC also sought informal advice from the Council, but no information was yet available from the Applicant and the Council could not assist. In light of this, SLACC prepared its Statement of Case to address both potential proposals.

2.6 At 16h33 on 6th May 2021, WCM circulated its Statement of Case, which appears to indicate that WCM will promote the DC&R Proposal at the inquiry, although there remains a caveat to WCM's acceptance of the Council's proposed planning conditions (see §131). SLACC is concerned that the scheme remains unclear and, given the imminence of the deadline for submission of this Statement of Case, has retained references to both potential proposals. SLACC reserves its right to expand or amend its Statement of Case and/or make further submissions in light of the scheme that WCM actually promotes at the inquiry.

3. Planning Policy

3.1 SLACC will rely on the relevant provisions of the adopted Development Plan, which comprises:

- Cumbria Minerals and Waste Local Plan ("**CMWLP**") – September 2017
- Copeland Local Plan 2013 -2028 - Core Strategy and Development Management Policies Development Plan Document ("**CLP**") – December 2013

3.2 In respect of the CMWLP we shall refer to at least the following policies of relevance to these proposals:

SP13 Climate change;
SP14 Economic benefits;
SP15 Environmental assets;
SP16 Restoration and aftercare;
DC1 Traffic and transport;
DC2 General criteria;
DC6 Cumulative environmental impacts;
DC13 Criteria for energy minerals;
DC16 Biodiversity and geodiversity;
DC17 Historic environment;
DC18 Landscape and visual;
DC20 The water environment; and
DC22 Restoration and aftercare.

3.3 In respect of the CLP we shall refer to at least the following policies of relevance to these proposals from the Copeland Local Plan 2013-2028:

ST1 Strategic Development Principles;
ST2 Spatial Development Strategy;
ST3 Strategic Development Priorities;
ST4 Providing Infrastructure;
ER10 Renaissance through Tourism;
ER11 Developing Enterprise and Skills;
ENV3 Biodiversity and Geodiversity;
ENV4 Heritage Assets;
ENV5 Protecting and Enhancing the Borough's Landscapes;
ENV6 Access to the Countryside;
DM25 Protecting Nature Conservation Sites, Habitats and Species;

DM26 Landscaping;
DM27 Built Heritage and Archaeology; and
Saved Policy EMP3 from the Copeland Local Plan 2001-2016 'Saved' Policies

3.4 Copeland Council has started work on the review of its local plan. That review has only at the time of writing reached Preferred Options stage – September 2020. The wording of these policies however shows the direction of travel of the revised policies and we may therefore refer to relevant policies in relation to Strategic Objectives, Climate Change, Biodiversity, Landscape and Built Heritage in our evidence.

3.5 In addition to the policies within the Development Plan referred to above, there is policy and guidance set out within the NPPF and PPG that is relevant. In this respect we will specifically refer to the NPPF, Chapter 14 - Meeting the challenge of climate change, flooding and coastal change; Chapter 15 - Conserving and enhancing the historic environment; and Chapter 17 - Facilitating the sustainable use of minerals. We shall also refer to complementary parts of the PPG.

3.6 SLACC will also rely on applicable international, national and local policies and relevant statutory duties, including:

3.6.1 The Paris Agreement (ratified November 2016)

3.6.2 Climate Change Act 2008 (as amended in 2019)

3.6.3 Planning and Compulsory Purchase Act 2004

3.6.4 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017

3.6.5 Ancient woodland, ancient trees and veteran trees; protecting them from development (Natural England and Forestry Commission guidance – standing advice) November 2018

3.6.6 DBEIS: UK enshrines new target in law to slash emissions by 78% by 2035 and The Carbon Budget Order 2021 (currently in draft form).

3.7 SLACC's case is that the "Application Proposal" as submitted, extracting coal until 2070, would be contrary to the Development Plan and to the National Planning Policy Framework and material planning considerations weigh against the Application Proposal, so the statutory presumption against the grant of planning permission is not overcome.

3.8 SLACC's case is that the DC&R Proposal is also contrary to the Development Plan and to the National Planning Policy Framework and that material planning considerations weigh against the Proposal. Whilst certain impacts would be mitigated to a degree by the Council's proposed conditions and the

draft section 106 agreement presented to the Council's DC&R Committee, significant policy conflicts and harms remain.

3.9 SLACC does not consider that the conditions proposed mitigate the harms of the development or make the development conform to the Development Plan and to the National Planning Policy Framework, and nor does the proposed Section 106 Legal Agreement make the proposed development acceptable.

4. SLACC's Case: Current and Future Need for Coking Coal in UK and Europe

a. Current Need for coking coal for the UK and EU steel industry

4.1 SLACC will present evidence to show that there is little or no need for the WCM Coal in the UK at present, and that it would not replace a significant proportion of the current imports of metallurgical coal (also known as "coking coal") for use in the UK steel industry. Although some public statements from politicians in support of the Applicant have claimed that WCM coal would replace UK imports of metallurgical coal for steel making, this has not been established and is contrary to the evidence, including statements from the UK's steel industry.

4.2 The Applicant referred to "an opportunity to supply a proportion of British steel making with British metallurgical coal" (e.g. in WCM Planning Statement December 2018 para 1.2.1). However, it is clear that even the Applicant accepts that the vast majority of the coal will be exported.[3]

4.3 SLACC notes that the Council (Oct 2020 committee report, para 7.17) referred to 360,000 tonnes per annum (**"tpa"**) of WCM coal, representing 13% of the 2.78Mtpa annual output at full production being used in the two main steel works in the UK, being 180,000 tpa by each of Tata Steel at Port Talbot and British Steel at Scunthorpe. It is understood that this is because steel makers need to blend a mix of metallurgical coals and further WCM coal would not be appropriate for use in UK steelmakers' mix given its properties. The Applicant echoed those figures in their Amended Application in May 2020 (Revised ES, Ch. 19, Para 7.1).

4.4 However, following investigations in an attempt to ascertain whether the sulphur content of the coal would likely affect UK steel makers' use of the coal, Wardell Armstrong, which acted as a consultant to the County Council, concluded that the sulphur content of the coal would make the use of WCM Coal for British Steel "currently unviable" (WA, Sept 2020, Review of the Use of Coking Coal in the

[3] See, e.g., WCM ES Ch 5, Project Description, December 2018, table 5.4 (showing the destination of the vast majority of the metallurgical coal as the Redcar Bulk Terminal); Id. 5.4.67 ("Metallurgical coal will primarily be moved to the port of Redcar, for onward shipping to steel producers in mainland Europe. The remainder of the metallurgical coal will be moved by train to British steel plants in Scunthorpe and Port Talbot").

UK, para 5.1.6)[4] and the County Council therefore considered that it had to assume that British Steel would not actually be able to use the WCM coal. (October 2020 OR at 7.328).

4.5 If this is the case, as little as approximately 6.5% of the WCM coal might end up being used in the UK.

4.6 SLACC's case is thus that very little weight can be given to what the Council called an "indigenous supply of coking coal to the UK Steel industry" (October 2020 OR para 7.328).

4.7 SLACC will present evidence that will support the conclusion that the WCM coal is unlikely to be suitable for British Steel, which is constrained on sulphur input, and will also limit its use at Tata Steel Port Talbot. These being the only two UK customers, WCM would therefore have to find export markets. However, it should also be noted that most of the steel plants in Europe operate under similar constraints, with respect to sulphur, as do the UK plants.

4.8 SLACC's case is therefore that there is little to no need for WCM coal in the UK. WCM coal would not, even at the start of the project, provide the UK with a significant percentage of the coal needed, or prevent the need to import the majority of coal currently used for making steel. SLACC's case is further that the need in Europe is limited and the evidence indicates a likelihood that the ultimate destination of a significant portion of the WCM coal may be outside the UK and Europe. This lack of need for the coal is relevant to a number of planning matters, as set out below.

b. Future need for coking coal in the UK and EU steel industry

4.9 In addition to the question marks over the suitability of WCM coal for UK and European steel making at the specification proposed under the DC&R Proposal (and even more so under the Application Proposal), SLACC will present evidence that commercial steel production without the use of coking coal is likely to become widespread during the life of the mine and that it will represent a meaningful proportion of the overall market in the UK and Europe at a significantly earlier point in time than argued by the Applicant.

[4] Though the reference is to an unnamed producer, the other references, and the carrying through of this advice into the officer's conclusions in the OR, make clear that the reference is to British Steel.

4.10 SLACC will demonstrate that steel making in the UK and Europe is rapidly moving towards alternatives to the Blast Furnace/Basic Oxygen Furnace ("**BF/BOF**") method which do not use metallurgical coal.

4.11 SLACC's case is that the rise of lower-carbon[5] steelmaking methods which require no metallurgical coal means that there is not, in fact, a need for the coal from the proposed mine in the UK or in Europe, either for a 28-year or a 50-year period. Further, the supply of coking coal produced by WCM would provide a long-term supply to BF/BOF steel producers and compete directly with lower-carbon steelmaking.

4.12 Following the Amended Application submission in May 2020 the Council employed Wardell Armstrong (WA) to advise on the matter. WA apparently concluded that "if nothing else changes" the demand for coking coal in the UK and EU in 2050 will be the same as 2025.[6] SLACC will present expert evidence to refute that position, showing the timeline of industry plans to increase capacity of direct reduction technology in Europe, using both natural gas (NG-DR) and hydrogen (H-DR) instead of metallurgical coal. Preliminary estimates are for 9 Mtpa of steel production without metallurgical coal in Europe by 2025, 18 Mtpa by 2030, and 23 Mtpa by 2035. In particular, the HYBRIT plant is expected to open in 2025 (the pilot started in 2020), H2GS by 2024, Arcellor Mittal in 2026 and Thyssenkrupp in 2025.

4.13 In the UK, the Committee on Climate Change has set out in its 6th Carbon Budget that UK steel making could be net zero carbon by 2035, which will be achieved by relying primarily on increased recycling of steel via electric arc furnace ("EAF") in conjunction with a shift to H-DR.

4.14 SLACC's case against the mine is made out no matter what the source of hydrogen may be used in any H-DR (e.g. whether it is "blue hydrogen" from natural gas with CCS at the hydrogen production "Hubs" already being developed, or "green hydrogen" etc). Coking coal is not required in any event.

4.15 SLACC's evidence will be that the progress on steel making without use of metallurgical coal, in the UK and EU markets that the Applicant indicates it is targeting, is much more advanced than argued by WCM (and the Council). In fact, evidence from the steel industry itself indicates that the UK and

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[5] Lower-carbon and low-carbon as used in this statement refers to a lower carbon footprint and does not refer to the carbon content of the steel.

[6] WA Report: "Woodhouse Colliery Project: Review of the Use of Coking Coal in the UK (Sept 2020). It may be noted that this conclusion appears to rely on their assumption that EU coking coal use will rise in line with global coking coal use predicted by a 2017 OECD report. See para 6.1.18-20. See also Cumbria CC POR 2-10-2020 at para 7.27.

European markets for coking coal in general will decline from 2025, and this reduction would be significant by 2035. Both the Application Proposal and the DC&R Proposal would retain permission to extract coal long after the need for coking coal has passed.

4.16 The implication of this is that granting permission for extraction, even if limited to December 2049, would end up either (1) supplying BF/BOF steel producers in the UK and Europe that are in direct competition with lower-carbon steelmaking facilities, or (2) end up being exported further afield. In either scenario, the supply of coal from the Woodhouse Colliery does not meet a UK/EU need for coal and would result in additional carbon emissions compared with the “do nothing” scenario of not permitting the coal mine.

5. SLACC's Case: Climate Change Impacts

a. Current Climate Science & Policies: The Implications for Coal Extraction

5.1 Evidence shows that the risks associated with climate change, such as extreme weather events (e.g., floods, droughts, and hurricanes), risks to unique and threatened systems (e.g., coral reefs), and large-scale discontinuities (collapse of the Greenland and Antarctic ice sheets), are generally higher than previously understood. Urgent action is needed to limit climate change. The goal of the Paris climate agreement is to limit the global temperature increase this century to well below 2°C, relative to pre-industrial levels, while pursuing means to limit the increase even further to 1.5°C. The Paris target of limiting the global mean temperature increase to 1.5°C above pre-industrial levels will be passed between 2030 and 2052 unless all countries in the world commit to significantly reduce their emissions of greenhouse gases immediately. To be on a pathway to 1.5°C requires current global emissions to be reduced by about 50% by 2030.

5.2 Taken together, the sum of national climate mitigation pledges (known as Nationally Determined Contributions) made thus far fall far short of the emissions reductions needed to achieve the targets agreed under the Paris Agreement. Even if all of the current pledges are achieved the world is on a pathway to warming of 3-4°C by 2100. There are two clear implications for the proposed Woodhouse Colliery:

5.2.1 First, no new sites for fossil fuel extraction should be opened to be consistent with the goals of the Paris Agreement. The fossil fuel reserves at existing sites, if burned, would overshoot the targets agreed. The removal of carbon dioxide from the atmosphere is unproven at scale and cannot be relied upon to achieve the Paris goals. Thus, there is no case for opening new sites such as Woodhouse Colliery.

5.2.2 Second, the year 2050 is often seen as a goal or end-point for emissions reduction – for example, the UK's statutory target is to achieve net zero emissions of greenhouse gases by 2050. However, greenhouse gas emissions are cumulative – they remain in the atmosphere for several decades to centuries. Therefore, emissions must be reduced as rapidly as possible, and the years between 2021 and 2049 are crucial in this regard, and in particular between now and 2030. This is why the UK's Climate Change Act mandates year-on-year reductions in emissions, following a steep downward trajectory, rather than an abrupt halt in

2050. The proposal by Cumbria County Council to impose an end date of 2050 for Woodhouse Colliery does not mean its operation complies with the Climate Change Act. It does not take account of the Climate Change Committee's advice as to what is required to comply with the Climate Change Act 2008. It is also contrary to the science of climate change, which demonstrates that an earlier end date fails to mitigate the serious climate harm which would be caused.

b. The Extent of Emissions from the Mine

5.3 The GHG emissions which will be produced by the mine are clearly a material planning consideration. The Council and SLACC agree that the Applicant must consider not only the construction and operational GHG emissions of the mine, but also the end use GHG emissions, as specified in the 2016 Scoping Opinion. However, the Council accepted the Applicant's case that the GHG emissions from the end use of the coal would be zero due to the "perfect substitution" assumption. The Council also accepted the Applicant's claim that there would be 'savings' in relation to transport emissions, making the mine carbon negative.[7]

5.4 SLACC's view on the extent of the emissions is as follows:

5.4.1 End use GHG emissions for coking coal can be adequately estimated using BEIS Greenhouse Gas Reporting conversion factors.

5.4.2 The current (2020) BEIS conversion factor for coking coal is: 3,222.04 kg CO_2e per tonne.[8] 2.78 million tpa of coking coal therefore releases 8.96 million tonnes of CO2e per annum.

5.4.3 The Council accepted an earlier figure of 8.6 Mt CO2e per annum as the theoretical likely GHG emissions (Oct 2020 POR para 7.107).

5.4.4 The Applicant, also using BEIS conversion factors, claimed that the mine, by transporting the coal from the UK to Europe, rather than the US would bring a GHG emissions reduction of 107,340 thousand tonnes pa (WCM Planning Statement Dec 2018 Para 2.2.21).

5.4.5 SLACC refers to its submissions, where it has argued, since February 2018, that end use emissions were many orders of magnitude larger than any potential reductions in GHG emissions from transportation of the coal from the UK to Europe, rather than the USA.

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[7] At least insofar as it relates to High Vol A coal per the condition proposed by the Council limiting the sulphur content of the coal at its October 2020 Committee meeting; see para 5.10 below.

[8] https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020. See Conversion factors 2020: condensed set; "Fuels" tab, Solid Fuels, Coking Coal.

5.5 SLACC contends that the GHG emissions generated by the mine will be significant and must weigh heavily against approval of the mine.[9]

c. International Implications of Permitting the Mine

5.6 SLACC will present evidence that there are potential significant international implications of permitting the mine. The UK is a developed country Party to the Paris Agreement and is therefore subject to the responsibility (imposed in Article 4 and elsewhere) to "take the lead" in achieving climate actions. The UK is in fact seen as a climate leader; it will host the COP 26 Summit in November 2021, and its climate legislation, in the form of the Climate Change Act, provides a model for many countries to follow. If the UK were to consent this new coal mine, SLACC's evidence will show that this would send a signal that the UK is not serious about its climate ambition or about complying with the responsibility to take the lead under the Paris framework. This would have material consequences in the form of reduced ambition and therefore increased GHG emissions.

d. Climate Change Impacts and the "Perfect Substitution" Assumption

5.7 The Applicant argued in the Application that GHG emissions from the "end use" of the coal need not be considered because no additional GHG emissions would result. This argument was founded on the 'perfect substitution assumption' – i.e. that UK and EU steel producers would replace coal produced overseas with the coal produced by the proposed development on a perfect one-to-one tonne basis, resulting in a saving in transport carbon emissions, but resulting in no additional GHGs from the end use of the coal.

5.8 Put another way, WCM's claim is founded on the supposition that other coal mines elsewhere in the world would reduce their output by an amount precisely matching the coal production at the proposed mine. No such mines have been identified.

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[9] SLACC has set out in detail in prior submissions to the Council how the mine is likely to lead to large GHG emissions that completely overwhelm the claimed 'savings' from transportation emissions and why the applicant's proposed significance criterion, whereby GHG emissions are considered to be of low magnitude unless they equate to at least 1% of the UK carbon budget, is, frankly, laughable. See, e.g., SLACC's 21 June 2020 submissions at pages 15-16, 20-26.

5.9 SLACC will present evidence that perfect substitution runs contrary to basic economic theory and that the outcome of a grant of planning permission will be an increase in coal production and consequently increased GHG emissions.

5.10 The Council's October 2020 planning officer's report concluded that WCM coal would substitute for coal that would otherwise be extracted in other countries IF;

a) the coal sold from the mine was limited by condition to High Volatility A Coking coal (with a sulphur content no higher than 1.6% and an annual average sulphur content of no more than 1.4%); and

b) extraction ceasing no later than 31 December 2049.

5.11 SLACC will present evidence that the perfect substitution assumption is incorrect, regardless of the specific type of coal produced. SLACC's case is that, even with the Council's proposed conditions on coal quality in place, little weight can be given to the claim of "perfect substitution". Neither condition addresses the fundamental flaws in the substitution assumption.[10]

5.12 Furthermore, SLACC contends that:

5.12.1 Even at the reduced sulphur content in the planning condition of 2nd October 2020, the evidence does not indicate that this coal will be of the correct specification to qualify as High Volatility A Coking coal or that it will substitute for US or Australian coking coals currently in use in the UK;

5.12.2 There is no evidence that coal from the proposed new mine would result in equivalent reductions in coal presently extracted from mines overseas;

5.12.3 Due to the large initial investment needed to open the mine, even if there comes a point when the mine would not have been economic to open *ex ante*, the WCM coal is likely to continue to be sold as long as the price covers the marginal cost of mining each additional tonne. It is therefore not safe to assume that if the coal is no longer needed for use in the UK and Europe that the mine will close. The effect of the economic incentive to sell coal at anything above the marginal cost of extraction will mean that even if it would not make economic sense to open the mine, significant volumes of coal are likely to be sold wherever a market can be found, resulting in GHG emissions impacts.

[10] See, e.g., SLACC's letter to Cumbria County Council of 21 June 2020; Dr Ekins' Letters of 5 December 2019 and 1 October 2020.

5.12.4 The mine will therefore result in considerable additional carbon emissions compared with the "do nothing scenario" where permission for the mine is refused.

5.12.5 The GHG impact of the mine will be exacerbated because the coal produced by the mine will hamper the development and deployment of low-carbon technologies in the steel industry thereby supporting the continuance of high-carbon steel and its very significant carbon footprint.

e. Operational Emissions and the S106 Agreement

5.13 The Applicant has presented information on the operational GHG emissions from the mine. Although the Applicant has argued these would substitute for operational emissions generated by a mine elsewhere (which the applicant argues will reduce coal production on a one-for-one tonne basis) and therefore could be considered as zero, the Applicant has provided an assessment which it describes as setting out a "worst case scenario" for the GHG and climate impacts of the mine.

5.14 SLACC submitted information to both Secretary of State Jenrick and to the Council in respect of the 6th Carbon Budget, which showed that the annual operational emissions of the mine (i.e. not including the end use emissions) will exceed the Climate Change Committee's projections for the total emissions from all open coal mines in the UK when the mine opens[11] and by 2026 would be approximately 3.7 times the expected emissions from all open coal mines. This information mirrors points made in Lord Deben's letter to Secretary Jenrick of 29th January 2021 and will form part of our Case.

5.15 SLACC does not consider that the operational emissions are a "worst case scenario" and will show that the end-use emissions are of a far greater order of magnitude than the operational emissions, whether with or without the proposed mitigation, and the claimed "savings" in GHG from transportation of the coal. SLACC's case is that the order of magnitude of any "savings" (107,000 tCO2e pa) claimed from reduced transportation distances are insignificant in comparison with the GHG from the construction, operational and end-use emissions of the coal mine. The "savings" should be given no weight, and the construction, operational and end-use emissions should be given great weight, as set out in the Planning Balance section below.

[11] See, e.g., Richard Buxton Solicitors to Cumbria CC, 7 January 2021.

5.16 SLACC's case is further that the proposed Section 106 Agreement will not adequately address the operational emissions from the mine and so the S106 Agreement will not make the proposal acceptable in this regard, as set out in previous submissions to the Council.

6. SLACC's Case: Environmental & Amenity Impacts

a. Ecological Impacts

6.1 All the parties acknowledge that the proposed development, and particularly the construction of the conveyor link from the Main Mine Site ("MMS") to the Rail Loading Facility ("RLF"), would lead to the loss of designated Ancient Woodland at Bellhouse Gill Woods.

6.2 There is still no evidence as to how many trees and ground flora are present in the area of irreplaceable habitat that would be lost. Further the Applicant suggests in several documents that the resulting loss of trees is small as it is only "along a 7m wide route".[12] No justification is given for characterising this as "small", given the lack of data as to the ecological value of the area to be lost and given its potential impact on irreplaceable habitat. It is also notable that this is in addition to the route passing through the Roska Park LWS with a greater loss of mature woodland trees and ground flora.

6.3 The ES suggests that the cutting of the conveyor route through the deciduous broadleaf woodland and the Ancient Woodland will not affect the "overall integrity of the woodland habitats present" (para 11.10.10). However, this is despite the fact that it will bisect the Ancient Woodland area[13] and will introduce a mechanical element into both the broadleaf woodland and the Ancient Woodland. Further, the deep 7m-wide trench (and any wider trenched areas which border the edges of the Ancient Woodland) may damage or kill a much more significant area of trees and plants due to root damage/disturbance.

6.4 There is no evidence that any proposed 'compensation strategy' is suitable and SLACC's case is that it is not. The proposed strategy apparently involves planting of 'at least twice the area of loss.' However, ancient woodland is considered irreplaceable precisely because of its age and the fact that the habitat it provides is not capable of easy replication. No consideration appears to have been given as to whether new planting (even if it is many times the area of the ancient woodland that will be lost) will in fact compensate for the loss of habitat.

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[12] See e.g. the ES Chapter 11 para 11.8.103.

[13] Plan 869/AC/02; RLF Conveyor Culvert, Proposed Plan Rev. F.

6.5 NPPF para 175(c) requires that "development resulting in the loss or deterioration of irreplaceable habitats such as ancient woodland should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists." (emphasis added) Wholly exceptional reasons is a very high standard – it may be noted that the only other place that the NPPF uses a "wholly exceptional" standard is where there would be "substantial harm to or a loss" of a heritage asset "of the highest significance" which includes registered battlefields, grade I listed buildings and World Heritage Sites, among others.

6.6 Neither the Applicant nor any other party has identified anything which truly qualifies as "wholly exceptional reasons" and SLACC's case is that none exist.

6.7 The Council has also acknowledged that there will be loss of wetland habitats, of hedgerows, potentially harm to protected species not yet adequately surveyed, and no net gain in biodiversity. SLACC will seek to ensure all these aspects will be correctly weighed in the planning balance.

6.8 SLACC wrote to solicitors for the Applicant to request access to the route of the proposed conveyor and the site of the proposed Rail Loading Facility so that an instructed ecologist could perform a site visit. The ecologist instructed by SLACC considers that a visit is necessary in order to consider the ecological values of the site and the potential impacts of the proposed development and to evaluate the information set out in the Applicant's Environmental Statement. However, after referral of the request to the land agents, access has been refused in respect of all areas of the site.

6.9 This situation is highly unsatisfactory and imperils the fairness of the inquiry. If this situation is not promptly addressed, SLACC will argue that the failure to allow access to an independent ecologist should give rise to an adverse inference that the information in the ES in respect of ecology cannot be relied upon. SLACC is seeking to resolve the situation, it is hoped with the assistance of the Applicant, and will update the Inspector at the Case Management Conference, or before, on this issue.

6.10 As SLACC has been prevented from fully considering the ecological position to date because of this refusal, SLACC reserves its right to update its case to include other/additional issues.

b. Public Rights of Way and Amenity Impacts

6.11 SLACC has previously referred to unacceptable impacts from the proposed development to public rights of way, including to the coastal fringe "strip", the Heritage Coast, and the well-known 'Wainwright' Coast to Coast Path from St. Bees to Robin Hoods Bay.[14]

6.12 The Coast to Coast Path presently passes beneath the railway line at the proposed location of the Rail Loading Facility (RLF).[15] New sidings are proposed that require the existing RLF underpass to be extended, and approximately 3m depth of fill (and other works) are to be imported adjacent to, and over the top of, the route of the current Coast to Coast path. The Council concluded that the introduction of an additional length of underpass and the presence of the RLF would inevitably detract from the experience of footpath users on the Coast to Coast Path (March 2019 OR, para 6.272) and that the processing building would become a major feature in the landscape in views from the path, and also that the measures currently proposed in the application would not be an acceptable way to manage this. (March 2019 OR, para 6.273).

6.13 The Council also concluded that acceptable diversion routes for PROWs 422011 and 422009, which pass through the RLF site, had not been identified. Further, the proposal involves escorting users of the Coast to Coast path through the work site (March 2019 OR, para 6.291). However, it was acknowledged that this may not be possible at all times and that users may be forced to use alternative routes (acknowledged to be unacceptable) due to construction activities that are incompatible with safe passage across the site.

6.14 The Officer's report of 2 October 2020 concluded there would be unavoidable harm to users of the Coast to Coast Path (October 2020 OR, para 7.327) and upon the local tourism industry, but considered that the harm would not be so significant as to justify refusal of the planning application on those grounds alone (October 2020 OR, para 7.263). A scheme for minimising the impacts on Public Rights of Way is required to be submitted by way of recommended condition 37.

6.15 SLACC also notes that the Council considers that provision of a new footpath / cycleway along the full length of the access route from Mirehouse Road to the RLF, together with new paths from High Road into the Marchon site, would provide some compensation for impacts on the public rights of way

[14] It is notable that the Government considers this should become a National Trail: see Conservative Party Manifesto 2019, page 43.

[15] SLACC objection of 21 June 2020.

network, and that such improvements were considered necessary and justified (March 2019 OR, para 6.295).

6.16 However, it was later acknowledged (October 2020 OR, para 7.264) that landowner agreement could not be secured to deliver the full set of improvements originally proposed. As a result only the southern section of the RLF access can be secured, and the Section 106 Agreement has been amended accordingly. The Council considers that the proposal (which includes a contribution to half the cost of a possible alternative route) provides a reasonable contribution (October 2020 OR, para 7.267).

6.17 SLACC will contend that the reduced provision should not be seen as an adequate solution to safety issues raised by the Highway Authority (March 2019 OR, para 6.275) and that, together with the lack of any satisfactory solution to diversion of public rights of way (or to even identify such solution), or satisfactory compensation for the harm, significant residual impacts from the proposal (particularly as a result of the RLF's location in the landscape of the Pow Beck Valley) must be considered against relevant planning policies and weighed in the planning balance.

6.18 The full RLF access pedestrian/cycle route was intended to enable implementation of a link from Whitehaven to St Bees, via part of National Cycle Route 72 (part of the popular Sea2Sea Route), that would have also linked to the new National Coastal Path. Even though the option potentially remains open, if another route to Mirehouse Road can be found, the new connection had been considered a benefit of WCMs proposal that would compensate for adverse impacts on the public rights of way network and disruption to the Tourist economy, but is now in doubt. This is considered in Section 7 below.

c. Environmental Impact Assessment

6.19 The Application Proposal, submitted in April 2020, involved significant changes to the scope of operations associated with the proposed development, particularly in relation to the Coal Handling and Processing Plant (CHHP) and paste and backfill processes. SLACC does not consider that the environmental impacts of the Application Proposal have been adequately described or assessed in a number of respects.

6.20 The DC&R Proposal necessitates further changes to the assessment of operations and subsequent impacts and introduced mitigation measures (through the proposed conditions/s106) which have also not been assessed. Agreement concerning conditions does not negate the duty to assess the likely

environmental impacts of the application - quite the opposite. An important function of environmental impact assessment is to subject proposed mitigation measures to assessment, so that the decision-maker can be satisfied that those measures will address the likely significant impacts of the proposed development. This is especially so where, as here, certain conditions may themselves give rise to different or additional environmental impacts. A full assessment of the environmental impacts of the DC&R Proposal has never been prepared.

6.21 As set out above, SLACC's instructed ecologist has been denied access to the site in order to consider the ecological values of the site and the potential impacts of the proposed development and to evaluate the information set out in the Applicant's Environmental Statement.

6.22 SLACC has previously set out why it considers that the environmental impact assessment in relation to GHG emissions is inadequate.[16]

6.23 In light of the above, SLACC reserves its right to challenge the lawfulness of the Environmental Impact Assessment associated with the proposed mine.

d. Other Impacts

6.24 The Council has acknowledged three other important areas of adverse impact and harm that will be caused by the DC&R Proposal: landscape impact (including harm to visual amenity); other amenity harm and heritage harm. SLACC will address these impacts as part of the assessment of the planning balance.

6.25 **Landscape Harm**: There would be wide-ranging impacts on the landscape both in terms of the construction of the proposed Main Mine site, the conveyor connection and the proposed RLF, but also from their operation, for local residents and for those who come to enjoy, walk and cycle the Cumbria Heritage Coast. The Council considers that the Applicant's LVIA under-estimates the impact of the proposals as it dilutes any impact by looking at a wider character area, rather than the local landscape context of the Pow Beck valley (Oct 2020 OR para 7.314). The Council also considers that there will be significant visual impacts from the RLF, and the sidings and trains parked on them, affecting residents, users of the Coast to Coast Path and other local walking routes that extend across the area (see, e.g., October 2020 OR, para 7.195). The Council attributes considerable weight

[16] See, e.g., SLACC letter to Cumbria County Council of 21 June 2020.

to landscape and visual harm in the planning balance and concludes that these impacts would be unacceptable environmentally in respect of the policy test in DC13 (October 2020 OR, para 7.316).

6.26 SLACC notes that Friends of the Earth will present expert evidence on landscape and visual impact and endorses the arguments made in Section 6 of Friends of the Earth's Statement of Case.

6.27 **Harm to local amenity**: The Council has determined that there will be "unavoidable harm to local amenity during the life of the project and to users of the Coast to Coast path."[17] This includes impacts from lighting,[18] and noise[19] from the operation of the railway, conveyor and coal loading facility, all of which will have an impact on the amenity of residents and footpath users and on the tranquillity of the Pow Beck Valley.

6.28 **Heritage**: The Council concluded that the proposal, in either form, would "*lead to less than substantial harm to the significance of a designated heritage asset*".[20] It considers, however, that the wider public benefits are sufficient for the development to meet the tests in the development plan and the NPPF.

6.29 SLACC will address these impacts as part of the planning balance, as it disagrees with the Council's analysis of the alleged benefits and the weight that should be given to them. SLACC therefore disagrees that the alleged benefits are sufficient to outweigh the heritage harm that would arise from the proposals in this respect (thereby triggering the presumption against the grant of planning permission). SLACC also considers that the alleged benefits do not outweigh the landscape and amenity harms which will be caused.

[17] Oct 2020 OR para 7.327.
[18] March 2019 OR para 6.233.
[19] March 2019 OR paras 6.351, 6.359-360.
[20] March 2019 OR paras 6.383, 6.386.

7. SLACC's Case: Economic Impacts

7.1 SLACC's case on economic impacts will have two elements. First, SLACC will address the impacts on the tourism economy, including conflicts with the Renaissance through Tourism Strategy within the Development Plan, which were referred to in our June 2020 and October 2020 objections to the application. Second, SLACC will address the alleged economic benefits that the Applicant claims will be generated by the development. SLACC will present expert evidence on these matters.

a. Impact on Tourism

7.2 Under the Development Plan Strategy the linkages between the Coast to Coast path, the Coastal Path Heritage Trail and Colourful Coast would have been improved, in particular to encourage tourists out of the National Park and into Whitehaven and St Bees. One element of this was the March 2021 extension of the English Coast Path (ECP) National Trail from Whitehaven to Silecroft, linkages to Wainwright's Coast to Coast path, together with a new Cycle and Pedestrian Path linking Whitehaven and St Bees via the Pow Beck Valley and Route 72 were all part of a joint strategy for Tourism in Cumbria.

7.3 There is evidence that such linked routes bring significant economic benefits into the area, especially when routes are improved and promoted by adoption as a National Trail. As noted above, the Coast to Coast Path is intended for National Trail Designation under the Conservative Party Manifesto.

7.4 SLACC considers that although the Council acknowledged some economic impacts in the March 2019 OR, and the conflict with Copeland LP Policy ER10, the October 2020 OR underestimated the impact, and failed to consider the relevant CLP Strategic Policies (see, e.g. October 2020 OR, para 7.263).

7.5 SLACC's case will be that this issue is not just a matter of temporary disruption during construction. There will be permanent adverse impacts on the long distance walking and cycling path network, compared to the progress and development of the local network that would occur in the "do nothing scenario".

7.6 Even if the mine were to close before the Council's proposed end date of December 2049, there would be longer-term losses in jobs and income (in addition to landscape and amenity harm, etc) that need to be balanced against any local economic benefit from job increases due to the mine.

7.7 SLACC contends that these identified harms represent a further reason for refusal (though SLACC does not contend that the harm in relation to economic issues is so significant that it would require refusal taken alone).

b. Economic Benefits

7.8 WCM claims that the mine will create:

7.8.1 120 jobs during construction (WCM ES Chapter 7 Socio Economic Assessment para 7.4.27), and

7.8.2 518 jobs during operation of the mine, the majority with salaries of over £40,000, and 80% to go to local residents. (WCM ES Chapter 7, Tbl 7.14 & Tbl. 7.16 [top of p 26])

7.9 SLACC's case is that the evidence provided by the Applicant does not support these figures. The Applicant provides no justification for the projected employment numbers and this does not follow a standard methodology, which would be expected to set out calculations showing how the figures were arrived at for each role. This would be normal practice for an analysis of the employment impacts of a development of this size, and the failure to do so here means that the projected jobs numbers cannot be properly scrutinised.

7.10 SLACC's expert evidence will echo concerns raised by the Council's own Economic Development Team, including that:

7.10.1 Local skills shortages and other information indicate that a large majority of recruits to the mine are likely to either not be local or to move from existing jobs; and

7.10.2 Existing local businesses are likely to be impacted by "poaching" high-skilled employees.

7.10.3 SLACC will also contend that if recruits are largely from outside the area or poached from existing employers, this has implications for the purported impacts on local spending, presumed multiplier effects, and indirect jobs that will purportedly be created.

7.10.4 SLACC will contend that by recruiting from a relatively small pool of people with technical, construction and professional services skills, WCM would also be competing for employees with projects which are much more aligned to Cumbria's plans for a Net Zero future. It may be noted in this regard that recent research indicates that workforce and skills shortages are likely to be one of the key obstacles to meeting Cumbria's climate targets.[21]

7.11 SLACC will also refer to its previous submissions on this matter, and will also note that no assessment of the employment impacts of the DC&R Proposal has been undertaken. In relation to the DC&R proposal, SLACC's case is that investing in skills attached to one particular site with a lifetime considerably shorter than the average career (if the mine is operational until 2049) would be at odds with regional and national growth strategies and would risk stranding the mine workers and the communities that rely on them.

7.12 SLACC therefore considers that the purported economic benefits of the proposed mine are much less than claimed by the Applicant and should be viewed in the context of adverse impacts on existing businesses, including the local tourist industry. It is accepted by all parties that the location of the RLF effectively astride the Coast to Coast footpath and the wider visual impacts of the proposed Main Mine site buildings will be highly visible and will affect the nature of why walkers and others visit the Lake District and the Cumbrian Heritage Coast.

[21] Chapman et al, The Potential for Green Jobs in Cumbria (March 2021).

8. SLACC's Case: The Planning Balance

8.1 SLACC's case is that neither the Application Proposal nor the DC&R Proposal comply with the Development Plan, in particular Policy DC13. Focusing on the DC&R Proposal, it will have unacceptable environmental impacts (in particular GHG impacts; ecological impacts; the loss of ancient woodland and landscape impacts) and enviro-social impacts (in particular, climate change, the resultant negative impacts on people and communities from that change, local amenity impacts, and the negative economic impacts). It cannot be made acceptable by planning condition or obligation.

8.2 Turning to the second stage of the assessment in Policy DC13, the proposal does not provide national, local or community benefits which clearly outweigh the likely impacts of granting planning permission, in particular because there is no need for coking coal to be mined until 2049; the purported economic benefits have been overstated and harmful economic impacts under-stated.

8.3 Nor is the test in NPPF paragraph 211 met. SLACC is in agreement with the County Council that the proposal cannot be considered 'environmentally acceptable' under the first test and cannot be made so by conditions or planning obligations. In relation to the second test, any benefit that would arise from allowing the application proposals would be significantly outweighed by the harm that would result. Certainly it cannot be said that the national, local or community benefits of the proposal would clearly outweigh the likely impacts.

8.4 Further, many of the harms identified will start to arise from construction and initial operation of the mine. Should the mine close prior to the expected end date, this would leave the area with significant residual harms.

8.5 Under NPPF paragraph 175(c), the loss of ancient woodland means that there is a strong presumption against the grant of planning permission. That presumption can only be displaced by wholly exceptional reasons justifying the loss. Given the assessment of the need for the mine and of the purported benefits, set out above, SLACC's case is that the strong presumption has not been displaced.

8.6 The significant GHG impact of the mine means that it would not be consistent with the UK government's carbon reduction obligations under the Climate Change Act 2008 or the Paris

Agreement and would clearly be contrary to paragraph 148 of the NPPF, all of which are key material considerations.

8.7 There are many other impacts, as well, which give rise to harms which must be given weight by the Inspector, including (but not necessarily limited to): other ecological and environmental impacts; heritage harm, impacts on local amenity; landscape harm, impact on the users of the Coast to Coast path and other walking routes; and the wide ranging impacts associated with the Rail Loading Facility in the Pow Beck Valley, which is identified as open countryside in the development plan. Many of these impacts also cause conflict with local development plan policies and with the NPPF.

8.8 SLACC's case is that neither the Application Proposal nor the DC&R Proposal complies overall with the Development Plan. Therefore, planning permission should be refused, unless material considerations indicate otherwise. They do not, because material considerations (for example lack of compliance with the NPPF) weigh against the grant of planning permission or material considerations in favour (such as economic benefits) have been overstated.

8.9 SLACC will therefore conclude that harm arising from the application is real and measurable, would outweigh any alleged benefits, and will respectfully request that planning permission should therefore be refused.

9. List of Documents

9.1 SLACC will refer to the documents provided by the Applicant and other parties including, in particular:

9.1.1 Documents submitted by the applicant in support of the application;

9.1.2 Documents prepared by or for the County Council, including committee documents, reports prepared for the Council, and

9.1.3 Consultation responses of other parties, including statutory, internal, and other consultees and members of the public, and documents appended thereto.

9.2 SLACC will also refer to and rely on its prior objections (listed at Para 1.4 above) and will additionally rely on at least the following documents (long documents will be extracted):

No	Document Name
1.	Agora Energiewende and Wuppertal Institute, *Breakthrough Strategies for Climate-Neutral Industry in Europe: Policy and Technology Pathways for Raising EU Climate Ambition* (2021)
2.	Allwood Julian M, 'Transitions to material efficiency in the UK steel economy' Phil. Trans. R. Soc. A. 371: 20110577 (2013)
3.	Allwood J, *Steel arising: opportunities for the UK in a transforming global steel industry* University of Cambridge (2019)
4.	Argus International (July 2013) Specifications internationally for metallurgical coal. https://www.argusmedia.com/russian/coal/~/media/50485743b6b04c6b84dd2be29e438ea5.ashx
5.	Argus International (April 2021) Methodology and reference listing. Argus coal daily. https://www.argusmedia.com/en/methodology/methodology-listing?market=Coal
6.	Arsentyev, V.A., Vaisberg, L.A., Ustinov, I.D. and Gerasimov, A.M., Perspectives of Reduced Water Consumption in Coal Cleaning. In *XVIII International Coal Preparation Congress* (pp. 1075-1081). Springer, Cham. (2016)
7.	Casagrande, D.J., Sulphur in peat and coal. *Geological Society, London, Special Publications*, *32*(1), pp.87-105 (1987)
8.	Chapman et al, The Potential for Green Jobs in Cumbria (March 2021)
9.	Climate Change Committee (CCC) *The Sixth Carbon Budget: The UK's Path to Net Zero* (December 2020)

10.	CCC *Local Authorities and the Sixth Carbon Budget* (December 2020)
11.	CCC *Reducing UK emissions, Progress Report to Parliament* (June 2020)
12.	*CCC Net Zero – The UK's contribution to stopping global warming* (May 2019)
13.	Cumbria Local Enterprise Partnership, Local Skills Report 2021
14.	Deben L, Chair, CCC, to Secretary of State for Housing, Communities and Local Government Robert Jenrick, 'Deep Coal Mining in the UK' (29 Jan 2021)
15.	Department for Business, Energy & Industrial Strategy (DBEIS), Greenhouse gas reporting: conversion factors 2020 (Last updated: July 2020)
16.	DBEIS, Digest of United Kingdom Energy Statistics (DUKES); Chapter 2, Solid fuels and derived gases (2020)
17.	DBEIS, Press Release: UK enshrines new target in law to slash emissions by 78% by 2035 (20 Apr 2021)
18.	DBEIS, *UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2018* (2020)
19.	DBEIS, *Summary of Responses to the Clean Steel Fund Call for Evidence: Putting the steel sector on a path consistent with net zero* (2020)
20.	Dıez, M.A., Alvarez, R. and Barriocanal, C., 2002. Coal for metallurgical coke production: predictions of coke quality and future requirements for cokemaking. *International Journal of Coal Geology*, *50*(1-4), pp.389-412
21.	Energy Transitions Commission, *Reaching zero carbon emissions from steel,* consultation paper (July 2018)
22.	Gulyaev, V.M., Barskii, V.D. and Rudnitskii, A.G., 2012. European quality requirements on blast-furnace coke. *Coke and Chemistry*, *55*(10), pp. 372-376
23.	Hatcher A, Cumbria Cty Council, Sr Mgr Economic Development & Infrastructure Planning to Perigo S et al (email) (14 June 2017)
24.	IEMA, *Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance* (2017)
25.	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) *Global Assessment Report* (2019)
26.	Intergovernmental Panel on Climate Change (IPCC) Special Report: *Climate Change and Land* (2019)
27.	IPCC Special Report: *The Ocean and Cryosphere in a Changing Climate* (2019)
28.	IPCC Special Report: *Global Warming of 1.5 °C* (October 2018)
29.	Lorenczik S & Panke T, *Assessing market structures in resource markets — An empirical analysis of the market for metallurgical coal using various equilibrium models*, Energy Economics 59, 179-187 (Sept 2016)

30.	Mankiw, N G, *Principles of Microeconomics*, 9th Ed. (2020)
31.	Material Economics, *Industrial Transformation 2050: Pathways To Net-Zero Emissions From EU Heavy Industry* (2019)
32.	Material Economics, *The Circular Economy: A Powerful Force for Climate Mitigation* (2018)
33.	McGlade C and Ekins P, 'The geographical distribution of fossil fuels unused when limiting global warming to 2°C', Nature 517, 187–190 (2015)
34.	ONS, Business Register and Employment Survey 2018 & 2019
35.	Paris Agreement (ratified 2016)
36.	Stockholm Environment Institute, *Carbon lock-in from fossil fuel supply infrastructure* (2015)
37.	Turner, B.R. and Richardson, D., 2004. Geological controls on the sulphur content of coal seams in the Northumberland Coalfield, Northeast England. *International Journal of Coal Geology*, *60*(2-4), pp.169-196
38.	UN Environment Programme (UNEP) *Making Peace with Nature: A scientific blueprint to tackle the climate, biodiversity and pollution emergencies*. (2021)
39.	UNEP *Emissions Gap Report 2020* (2020)
40.	UNEP *The Production Gap: The discrepancy between countries' planned fossil fuel production and global production levels consistent with limiting warming to 1.5°C or 2°C* (2019)
41.	Vogl V, Åhman M & Nilsson LJ, 'The making of green steel in the EU: a policy evaluation for the early commercialization phase' Climate Policy (2020)
42.	Vogl, V, Sanchez, F, Gerres, T, Lettow, F, Bhaskar, A, Swalec, C, Mete, G, Åhman, M, Lehne, J, Schenk, S, Witecka, W, Olsson, O, Rootzén, J 2021, Green Steel Tracker, Version 04/2021, Dataset, www.industrytransition.org/green-steel-tracker
43.	Vogl, V, Åhman, M & Nilsson, LJ, 'Assessment of hydrogen direct reduction for fossil-free steelmaking' Journal of Cleaner Production, vol. 203, pp. 736-45 (2018).
44.	Winning M, Price J, Ekins P, Pye S, Glynn J, Watson J & McGlade C, 'Nationally Determined Contributions under the Paris Agreement and the costs of delayed action' Climate Policy, 19:8, 947-958 (2019)

9.3 SLACC may review or add to the documents list in due course.