Cumbria County Council Planning Application 4/17/9007: Woodhouse Colliery

Response from Scientists for Global Responsibility (SGR)
[main text]

I am writing on behalf of Scientists for Global Responsibility to strongly object to the above application.

1. About myself

1.1 I am an environmentalist scientist, with 30 years' experience of research and advocacy work on climate change and energy issues. My scientific background includes: a PhD in climate change science from Lancaster University; five years as a post-doctoral research fellow in climate and energy policy at Surrey University; a year as an expert reviewer for the United Nations advisory body, the Intergovernmental Panel on Climate Change; and 17 years as executive director of Scientists for Global Responsibility. In particular, my work at Surrey University involved assessing the greenhouse gas emissions of energy and industrial projects, and critiquing the methodologies used. This work was undertaken in collaboration with UK government departments, the European Commission, energy corporations, and civil society organisations – and has particular relevance for this submission, as discussed later.

2. About Scientists for Global Responsibility (SGR)

2.1 SGR is an independent UK membership organisation promoting ethical concerns related to science and technology, including related to energy and environmental issues. Our membership currently includes approximately 600 science, design and technology practitioners, as well as additional supporters. We were formed in 1992, and our main office is in Lancaster. Further information about the organisation and the professional background of the staff, national co-ordinating committee and patrons can be found on our website.[1]

3. Grounds for objection

3.1 The main grounds on which we object to WCM's planning application for Woodhouse Colliery is that it will fuel global climate change, including undermining the UK's commitments under the 2008 Climate Change Act (CCA) and international commitments under the 2015 Paris Climate Agreement to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels" and pursue "efforts to limit the temperature increase to 1.5°C above pre-industrial levels".[2] Specifically, our concerns are as follows.

3.2 The application states that a total of nearly 2.8 million tonnes of coal will be extracted per year during the main production phase (which is due to be reached in the fifth year after the coal mine opens). It is aimed that the lifetime of the mine will be 50 years. Coal is a highly polluting fuel, especially in terms of greenhouse gas (GHG) emissions. Each tonne of coal used for steel production currently emits approximately 3 tonnes of carbon dioxide (CO2). Based on official figures for emission factors, we estimate that the combustion of the coal from this mine will lead to emissions of about 8.5 million tonnes

[1] http://www.sgr.org.uk/
[2] United Nations (2015). Paris Agreement. https://unfccc.int/sites/default/files/english_paris_agreement.pdf

of CO2 equivalent each year during the main production phase[3] – or a total over the lifetime of the mine of at least 380 million tonnes.[4] The figure of 8.5 million tonnes is currently similar to the annual GHG emissions of over 1.2 million British citizens or approximately 1.9% of UK's territorial emissions[5] – and the latter figures will rise over the lifetime of the mine as UK emissions fall in line with national targets. As the applicant notes,[6] GHG emissions above the 1% threshold are officially regarded as having a 'high' magnitude of significance. However, because it is planned to export much of the coal, most of the associated emissions will appear in the 'environmental accounts' of other European countries, not the UK – although the WCM mine, the county of Cumbria, and the UK would bear a considerable level of ethical responsibility. For these reasons, we argue that the GHG emissions of the coal use are a material planning consideration.

3.3 The application concedes that the coal mine – in common with all coal mines – will emit significant levels of methane, a GHG with a much stronger heating effect than CO2. Such emissions are notoriously hard to control. The applicant proposes using 'methane capture and drainage' to deal with this problem, but does not specify how effective it might be or provide evidence that it has been used effectively elsewhere. The application estimates that the average annual GHG emissions from the unabated methane would be approximately 0.3 million tonnes of CO_2 equivalent[7] (nearly 3 times the size of any claimed emission reductions from reduced shipping of the coal from the USA). This would add approximately 3% to the figure for total annual GHG emissions calculated in point 3.2 above.

3.4 The application argues that GHG emissions from the use of the coal in steel-making can be disregarded because this coal will directly and completely substitute for coal imported to the UK and mainland Europe from the USA.[8] It argues that this displaced US coal will not be used in steel-making elsewhere because there are currently no other proven export markets for it (e.g. in Asia), mainly due to the travel distances involved. Furthermore, it implies that the displaced coal will not be used elsewhere during the entire lifetime of the coal mine. In short, the application argues that extraction and use of an equivalent amount of US coal would completely cease for at least 50 years solely due to this project. We do not regard this as a strong argument for the following reasons:

- The coal would still be available for use within the US steel-making industry and – with the current weakening of environmental regulations in that country, including the nation's planned withdrawal from the Paris Climate Agreement – it could be used to help fuel an expansion in high-carbon steel production. Indeed, without strong and long-lasting environmental regulation of the US coal and steel industries, it is hard to see how the currently unfavourable economic situation alone would prevent future use of this coal.
- Other export markets may become viable for the US coking coal in the future – not least in geographically closer nations in Latin America – if stronger international efforts are not pursued to reach the Paris climate goals.

When I was a research fellow at Surrey University, my work involved developing and critiquing GHG assessment methodologies such as those used in this study – especially the use of baseline or 'do nothing' projections. The view we formed during our work was that the use of baselines could never be objective,

[3] The application states that 2.78 million tonnes (Mt) of metallurgical coal for iron and steel production would be extracted per year during the main production phase. Each tonne of metallurgical coal emits 3.06 tonnes of carbon dioxide equivalent (tCO2e) during its use. Hence the use of the coal from this mine would lead to emissions of approximately 8.51MtCO2e each year. GHG conversion factors can be found in: BEIS (2018). 2018 Government GHG Conversion Factors for Company Reporting. Department for Business, Energy and Industrial Strategy. https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2018

[4] Assuming that the main production phase lasts for 45 out of the 50 year lifetime.

[5] The latest official figures for UK territorial GHG emissions are for 2018, when they were 451.5 MtCO2e, with a corresponding population of 67.14 million. Data sources: Department for Business, Energy and Industrial Strategy (2020). Final UK greenhouse gas emissions national statistics: 1990-2018. https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2018 and Worldometers (2020). UK population. http://www.worldometers.info/world-population/uk-population/ (data is extrapolated from official national statistics)

[6] P.16 of: West Cumbria Mining (2020). Woodhouse Colliery Planning Application 4/17/9007 Environmental Statement: Chapter 19 - Greenhouse Gas Emissions.

[7] P.55 of: West Cumbria Mining (2020) – as note f.

[8] Appendix 1 of: West Cumbria Mining (2020) – as note f.

that their use was subject to gaming behaviour by the project developer and any consultants it engaged, and no baseline could be considered credible for more than 10 years.[9] The need to use a 50-year baseline for this project demonstrates the major flaws in the application of this methodology.

3.5 The application is based on an assumption that the demand for coking coal within the UK and/or the EU will not be significantly disadvantaged by changes in policy, technology or economics over the lifetime of the coal mine. There are major reasons to doubt this.

- Even before the COVID-19 crisis, steel production in the EU and UK had been struggling, first due to the 2008 financial crisis and then due to international competition. In the EU (28 countries), crude steel production fell from 199 Mt in 2008 to 168 Mt in 2018 (16% decrease). In the UK, it fell from 13.5 Mt to 7.3 Mt (46% decrease) during the same period.[10]
- UK steel production using blast (basic oxygen) furnaces – fed by coking coal – is especially under pressure. There remain only two steel plants using blast furnaces in the UK, at Port Talbot and Scunthorpe, and both were financially precarious even before COVID-19. There is little doubt that their future is far more in doubt now.
- There are several existing and emerging technologies which reduce or eliminate the need for coking coal. These include: improving the process efficiency of the standard blast furnace; direct reduced iron using natural (fossil) gas; recycling steel using electric arc furnaces (EAFs); and hydrogen direct reduction. Examples of innovation include the Hybrit project, Sweden, which uses hydrogen in place of coal,[11] and a UK research programme aimed at making iron and steelmaking carbon neutral.[12]
- The level of steel recycling (using coal-free EAFs) has the potential to rise markedly, driven by environmental concerns and economic pressures. The EU has been an above average performer in this field, and its rate is increasing.[13] Indeed, the UK exported 9.4Mt of scrap steel in 2017,[14] which could have been recycled here, had British industry invested more in this technology.
- In addition to the CCA in the UK, there are major policy initiatives in the EU and more broadly which are highly likely to drive down coal use in steel-making – and accelerate the use of the low-/ zero-carbon technologies listed above. Most significantly, the European Green Deal[15] – published in December 2019 – sets out a strategy to reduce the EU's GHG emissions to net zero by 2050. The specific policies relating to the steel industry have yet to be agreed, but it is already clear that major reductions in coal use will need to be pursued as it is a high-emissions sector. Examples of how such policies can be put into practice are given by the Science Based Targets initiative,[16] which has developed a decarbonisation pathway for the international steel industry. This pathway is related to a target of limiting global temperature change to 2°C. Applying a target of 1.5°C – which is actively under consideration due its specification in the Paris Climate Agreement – would lead to a much larger cut in coal use. Further arguments are that new, low carbon materials will increasingly be substituted for steel in certain circumstances – and that overall consumption of energy-intensive materials will also need to fall.
- The COVID-19 crisis is causing considerable economic damage to major users of steel products, not least the aviation sector – and some of this demand may not recover if climate targets are seriously pursued.

Hence, we think it highly unlikely that this mine would be economically viable for anything close to its claimed 50-year lifespan. It would therefore become a 'stranded asset'.

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[9] See, for example: Jackson T, Begg K, Parkinson S (2001). Flexibility in Climate Policy: Making the Kyoto Mechanisms Work. Earthscan.

[10] World Steel Association (2018/9). Steel Statistical Yearbooks 2018 (full) and 2019 (concise). https://www.worldsteel.org/steel-by-topic/statistics/steel-statistical-yearbook.html

[11] http://www.hybritdevelopment.com/

[12] The Chemical Engineer (2019). https://www.thechemicalengineer.com/news/20m-boost-for-uk-steel-and-biotech/

[13] World Steel Association (2019) – as note j.

[14] World Steel Association (2018) – as note j.

[15] European Commission (2019). A European Green Deal. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

[16] https://sciencebasedtargets.org/

3.6 The applicants – in common with many in industry and government – markedly underestimate the speed and scale of GHG emissions reduction that would be necessary to meet the Paris targets. For example, Prof Kevin Anderson of the world-renowned Tyndall Centre at Manchester University has estimated[17] that the UK will only meet its share of these targets with a much faster transition than currently envisaged by the Committee on Climate Change, the UK government's advisory body. A key focus within this is major cuts in consumption of energy and materials across the whole economy – including coal and steel – not merely, as the application implies, steady technological change over many decades. Hence, our view is that this coal mine would further undermine UK and international action, increasing the risk of 'dangerous' climate change, including extreme storm and flood events of the type of which Cumbria has experienced in recent years.

4. Summary

4.1 In summary, approval of this application for a large coal mine would be a major step backwards for efforts to tackle global climate change (and other environmental problems). From an investment perspective, there are many more promising options involving the development and use of low- and zero-carbon steel production processes. From a policy perspective, this application exploits loopholes in local, national, and international environmental regulations to avoid responsibility for a nationally-significant source of GHG emissions, namely the coal it would produce for combustion in steel production. Scientists for Global Responsibility therefore strongly urges Cumbria County Council's planning committee to reject it.

Sincerely

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http://www.sgr.org.uk/

[written response submitted 14/06/20; oral summary given at CCC DCRC meeting, 02/10/20]

[17] See, for example: Anderson K (2019). Hope from despair: transforming delusion into action on climate change. Presentation at SGR conference, November. https://www.sgr.org.uk/resources/hope-despair-transforming-delusion-action-climate-change