

Sue Brett  
Cumbria Minerals and Waste Plan  
C/O Cumbria Council  
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LA9 4RQ

Via email only: [mwlp@cumbria.gov.uk](mailto:mwlp@cumbria.gov.uk)

5<sup>th</sup> May 2017

Dear Ms Brett,

**Consultation on the draft Cumbria Minerals and Waste Local Plan Main Modifications and Sustainability Appraisal Update**

Following attendance of Examination in Public on Wednesday 30<sup>th</sup> November 2016, Friends of the Earth England, Wales and Northern Ireland both **supports** and **objects** to different parts of MM53 & 54 of the main modifications table – which is subject to this consultation.

**Matter 1 – Support: Additional Climate Change wording**

**Matter 2 – Object: Coal policy lacks any reference to consultation on coal phase-out**

**Matter 3 – Object: Underground Coal Gasification and DBIES announcement**

**Matter 1 – Support: Additional Climate Change wording (*consultation reference number MM54*)**

Our principal concern before the examination linked to the lack of any reference to climate change mitigation within Policy DC13 Criteria for Energy Minerals. We have previously provided our rationale for this, principally linked to the Sc19 Duty of the Planning and Compulsory Purchase Act 2004 (as included by the Planning Act 2008). This states:

*“Development plan documents must (taken as a whole) include policies designed to secure that the development and use of land in the local planning authority’s area contribute to the mitigation of, and adaptation to, climate change.”*

Such an approach is underpinned by Section 39(2) of the 2004 Act:

*“The person or body must exercise the function with the objective of contributing to the achievement of sustainable development.”*

We welcome and **support** the inclusion of climate change impact and mitigation considerations within the policy wording for DC13, especially within the exploration, appraisal and commercial exploitation stages for hydrocarbons. In addition, we would further support any accompanying policy detail to reflect this important change, although appreciate this is outside of the very specific focus of this consultation. Nonetheless, our recommendations are made at the end of this letter.

**Matter 2 – Object: Coal policy lacks any reference to recent government announcements and consultations or reference to carbon budgets (consultation reference number MM54)**

Recent Government Consultations

Policy DC13 addresses new coal developments that might arise over the course of the plan period. We note that the policy approach has embraced the NPPF's approach to coal extraction. We would advise however that both recent government announcements and consultations on coal phase-out should be taken into account within the council's reasoning and the final policy wording.

In her speech on UK Energy Policy (Nov 2015), Amber Rudd stated that; *"Unabated coal is simply not sustainable in the longer term"*. The government then began consultation in 2016, setting out proposals to *"...close coal by 2025 - and restrict its use from 2023"*. Its aim is for the UK to be *"one of the first developed countries take coal off the system"*.<sup>1</sup> The resultant consultation document stated:

*"One of the biggest contributions we can make to reducing power sector emissions is to replace coal power stations with lower-carbon alternatives"*<sup>2</sup>

The future of coal as an energy source is therefore in doubt and relevant wording within the Cumbria Minerals and Waste Plan should surely reflect these aims.

Carbon Budgets

Coal is also described by the Committee on Climate Change as one of the highest carbon intensity fuels<sup>3</sup> and so its extraction and combustion must be minimised on a national and global scale in order to comply with current and future climate budgets<sup>4</sup>. Coal power generation emits around 700-1000g CO<sub>2</sub> p/Kwh and is therefore incompatible with the recommended Committee on Climate Change (CCC) target of 100g CO<sub>2</sub> p/Kwh for electricity power generation by 2030.

It is clear from government's most recent coal phase out consultation document that they are looking to set a limit to coal-fired power generation going forward, linking this explicitly to the need to reduce climate changing emissions (which are historically in part to down to burning fossil fuels). Inevitably, the need for coal extraction should decline, as the demand for coal fired power generation is reduced at the national level. While we understand the council's approach to adopting the NPPF's wording in terms of soundness within the modifications, we would ask that the council's final wording will only be fully 'justified' in light of all available evidence (which should also include consideration of strategic government national energy policy going forward). Please note our recommended changes to coal within **Appendix 1**.

**Matter 3 – Object: Underground Coal Gasification and DBIES announcement (consultation reference number MM54)**

Coal Gasification is an unproven technology within the UK. On Thursday 8<sup>th</sup> December 2016, a report<sup>5</sup> into Underground Coal Gasification and global warming potential was released in the public domain. The report, commissioned by the Department for Business, Energy and Industrial Strategy (DBEIS), was initially finalised in November 2015 (albeit almost a year before its release into the public domain). Its findings demonstrate the comparable greenhouse gas emissions (CO<sub>2</sub>) in respect of burning UCG gas compared to Natural Gas to

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1 Amber Rudd's speech <https://www.gov.uk/government/speeches/amber-rudds-speech-on-a-new-direction-for-uk-energy-policy>

2 Page 3 - Coal Generation in Great Britain – the pathway to a low-carbon future consultation:

<https://www.gov.uk/government/consultations/coal-generation-in-great-britain-the-pathway-to-a-low-carbon-future>

3 Onshore Petroleum - The compatibility of UK onshore petroleum with meeting the UK's carbon budgets

Committee on Climate Change – March 2016

4 The current 2nd Climate Change budget runs until the end of 2017 and requires a 29% reduction below 1990 levels. This will increase to 25% in the 3rd budget (2018-2022). According to the CCC, we are not however on track to meet the 4th budget (i.e. 2023 to 2027) and so more action is needed to reduce carbon emissions going forward.

<https://www.theccc.org.uk/tackling-climate-change/reducing-carbon-emissions/carbon-budgets-and-targets/>

5 Underground Coal Gasification - Evidence Statement of Global Warming Potential - Atkins – November 2015

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/575940/Underground\\_Coal\\_Gasification\\_Evidence\\_Statement\\_of\\_Global\\_Warming\\_Potential.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/575940/Underground_Coal_Gasification_Evidence_Statement_of_Global_Warming_Potential.pdf)

make electricity. Resultant emissions were 570-785g CO<sub>2</sub> equivalent per kilowatt hour, compared to 400g CO<sub>2</sub> equivalent per kilowatt hour for natural gas. **Appendix 2** provides a summary of the report.

On 8<sup>th</sup> December 2016, the DBIES then announced that based on findings of the above report, Government was minded *“not to support the development of this technology in the UK”*<sup>6</sup>.

While we still await a formal written Government statement on this change of direction in energy policy, we would like to bring this important government announcement to the attention of both the planning policy team and Inspector. It appears that any potential repercussions have not been considered and again the gasification policy wording will not be justified unless such evidence is taken into account. Please note proposed policy amendments within **Appendix 1**

Please do not hesitate to get in touch if you have any queries with regards to the above.

Yours sincerely,

**Magnus Gallie**  
Planner

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<sup>6</sup> [https://www.theguardian.com/environment/2016/dec/08/underground-coal-gasification-uk-gas-coal?CMP=tw\\_t\\_a-environment\\_b-gdneco](https://www.theguardian.com/environment/2016/dec/08/underground-coal-gasification-uk-gas-coal?CMP=tw_t_a-environment_b-gdneco)

## Appendix 1

### Proposed Wording: Coal and Coal Gasification

#### Coal

**Planning applications permission coal extraction will only be granted where not be given for the extraction of coal unless:**

- ~~the proposal would not have any unacceptable social or environmental impacts; or,~~
- ***it has been demonstrated that any risk of adverse impacts has been eliminated; or***
- ~~it **objective evidence demonstrates** these can be made acceptable by planning conditions or obligations; or, if not~~
- it provides national, local or community benefits which clearly outweigh the likely impacts to justify the grant of planning permission; **and**
- ***the proposal is compatible with the phase out of coal in power generation by 2023, 2025***

For underground coal mining, potential impacts to be considered and mitigated for will include the effects of subsidence including: the potential hazard of old mine workings; the treatment and pumping of underground water; monitoring and preventative measures for potential gas emissions; and the disposal of colliery spoil. Provision of sustainable transport will be encouraged, as will Coal Mine Methane capture and utilisation.

#### Underground Coal Gasification

~~The criteria set out above in this policy, for exploration and appraisal and commercial production, will also apply to proposals for onshore surface works or ancillary development to support offshore Underground Coal Gasification (UCG). Where a UCG proposal follows a planning permission for coal extraction only, a separate planning application will be required for development related to UCG.~~

***Underground coal gasification is unproven technology and any proposal must demonstrate by appropriate evidence and assessment that reasonable doubt can be excluded as to adverse impacts of the proposed development alone or in combination with other developments.***

# Underground Coal Gasification - Evidence Statement of Global Warming Potential<sup>7</sup>

## **“6. Summary of Global Warming Potential**

*In summary, it is feasible to compare the GHG emissions from UCG against ‘conventional’ sources that are currently used to produce the same outcome. Based on the available evidence, the following comparisons have been drawn:*

### **– Power generation:**

- The most likely option for power generation from UCG syngas is based on co-firing with natural gas within a CCGT, as this is the most economic and carbon efficient option. There is a large range of uncertainty associated with the GHG emissions as a result of uncertainties over syngas composition and combustion efficiency. However, it is estimated that the UCG syngas component would result in emissions that are between 40% and 100% higher than the natural gas fed component in a combined feed power station.*
- If simple post combustion CCS is used, then the emissions comparisons quoted above remain valid as a percentage range (i.e. UCG syngas emissions are still around 40% to 100% higher than natural gas). However, it may also be possible to carry out a water-gas shift reaction on the UCG syngas prior to combustion, which would allow pre-combustion CCS to be carried out. This could, theoretically, reduce the emissions associated with UCG syngas to very low values (as low as 30 g CO<sub>2</sub>e/KWh, compared with around 55 CO<sub>2</sub>e/KWh for natural gas). However, it is important to note that at this level of CO<sub>2</sub> efficiency, the amount of power, raw materials and disposal routes for the CO<sub>2</sub> capture and storage become significant, and the levels of hydrogen involved are likely to require a dedicated (rather than co-fired) CCGT plant. Economic feasibility also reduces as more processes are added to the UCG syngas power generation stream. A much more detailed life cycle accounting calculation would therefore be required to meaningfully compare UCG and natural gas under such scenarios.*
- Based on the above, and assuming 5 billion tonnes of potential coal reserves, the total unabated GHG emission due to UCG is in the order of 12 billion tonnes of CO<sub>2</sub>e, reducing to something in the order of 0.6 to 1.8 billion tonnes CO<sub>2</sub>e if CCS is incorporated as part of power generation from the UCG syngas. An unabated, carbon efficient, commercially viable UCG development is likely to emit something in the order of 4.4 MMTPA CO<sub>2</sub>e, reducing to something in the order of 0.5 to 0.9 MMTPA for UCG that incorporated CCS.*

### **– Heating**

- Use of UCG syngas for heating would generally require the use of hydrogen, which means the comparison is therefore largely the same as for hydrogen feedstocks below. Direct thermal heating may be possible in larger facilities, but it is noted that UCG syngas has less than 1/3 the calorific value of natural gas.*

### **– Chemical Feedstocks**

- For methanol production, the unabated GWP of UCG syngas is likely to be more carbon intensive than natural gas, at between 1.1 to 2.2 tonnes CO<sub>2</sub>e per tonne of methanol produced, compared with 0.75 tonnes CO<sub>2</sub>e per tonne of methanol produced for natural gas. For hydrogen the comparison is around 12 and 17 tonnes CO<sub>2</sub>e per tonne of hydrogen (H<sub>2</sub>) produced for UCG, compared with around 9 tonnes CO<sub>2</sub>e per tonne of hydrogen from natural gas. It is noted that the opportunities for CCS associated with chemical production are very good, potentially achieving carbon removal of greater than 90%.*