

[REDACTED]
Team: Coal Liabilities Unit

[REDACTED]
Date: 14 October 2013

(The above is redacted under Reg 12(3) EIR)

To: Michael Fallon

UNDERGROUND COAL GASIFICATION

Issue Establishing a robust, transparent and sustainable policy framework for the licensing of Underground Coal Gasification (UCG) in the broader context of the development of unconventional gas resources.

Timing By 28 October 2013. This will allow the Coal Authority to take account of your views in decisions on a number of pending UCG licence applications currently in process with them.

Decision That you:

[REDACTED]
[REDACTED]

Redact Out of scope

- consider establishing a joint DECC/ Coal Authority working group to assess whether further clarification or our approach or a more formal review is necessary; and.

[REDACTED]
[REDACTED]

(The above is redacted as it is Out of scope of this FOI request)

Context / Consideration

Technology

1. Underground Coal Gasification (UCG) involves the in-situ gasification of coal by drilling boreholes into the seam, injecting a mixture of water and oxygen, igniting and partially combusting the coal and extracting the gasification products (known as syngas). It produces a mixture of gases (mostly carbon monoxide, carbon dioxide, hydrogen and methane) that can be processed to provide fuels for power generation, vehicle use and chemical feed-stocks. It has the potential to unlock coal reserves which are currently deemed too deep, inaccessible or thin to mine economically with conventional deep mining techniques. UCG does not require human access to the coal seam and, therefore, avoids many of the immediate risks to personnel associated with conventional deep mining. In contrast to Shale Gas exploitation and Coal Bed Methane (CBM) recovery.

14 October 2013

2. However, unlike shale and CBM, UCG is yet to be proven on a commercial scale basis. There is a working project in Uzbekistan but there is only limited information available on which to base commercial decisions. The technology is therefore at an earlier stage than CBM/shale.
3. Not surprisingly significant environmental concerns have been raised in relation to the technology around, for example, the controllability of the gasification process; the potential for contamination to land and water resources; and atmospheric emission consequences. The current interest in these issues in the context of shale gas has clearly heightened concerns and recent media coverage of potential UCG licence applications reflects a confusion about the different approaches involved.

Policy

4. In June 1999 a review of cleaner coal technology undertaken by the then DTI included examination of the potential of UCG and other technologies like coal bed methane in the UK. The Review identified a series of "technology targets" for UCG and suggested they be addressed over a six year period. These comprised:
 - Improving the accuracy of in-seam drilling
 - Examining the implications of burning UCG syngas in gas turbines
 - Estimating the landward coal reserves for UCG
 - Identifying a semi-commercial site
 - Establishing cost parameters for the process to be competitive
 - Carrying out a pre-feasibility study of offshore exploitation of UCG
 - The aim was to achieve these goals, in association with industry, over the next six years (ie by around 2005).
5. The Coal Authority was involved in the early stages of the work programme which followed the Review and subsequently in October 2004 DTI published a further report, "Review of the feasibility of Underground Coal Gasification in the UK" A (a copy can be provided if required) which concluded that UCG:

"has reached a stage where, ideally, an industry consortium should lead the future development of the technology, and there is probably a range of service providers (drilling, process design, mineral and hydrocarbon extraction) and equipment manufacturers (plant, power generation) which would benefit from the successful development of UCG. "
6. DECC's subsequent involvement with the sector since the Department was created in 2008 has mainly been monitoring a) the emerging interest from prospective operators and, simultaneously, b) our own Coal Authority's conditional licensing of coal reserves for potential exploitation. In the latter context, the licensing function conferred upon the Authority by the 1994 Coal Industry Act 1994 does not differentiate as to the manner in which coal as a resource is exploited.

7. 

[REDACTED]

(The above is redacted under Reg 12(5)(e) EIR)

8. The Licences are for underground coal gasification only which is regulated by the Coal Authority and does not involve the process of hydraulic fracturing. A Coal Authority licence does not permit shale gas or any other hydrocarbon extraction.
9. As the licences are conditional **no** underground coal gasification operations can take place until the Licensee has satisfied a range of pre-conditions which include the acquisition of all other rights and permissions necessary to carry out the operations such as planning consent for any installations from the relevant authority; environmental permissions from the Environment Agency (or equivalent relevant body) and the consent of the Health & Safety Executive. The licensee will also have to secure the consent of any relevant landowner for any surface installation and satisfy the Coal Authority that the finance is in place to carry out the operations.
10. Before any exploration operations can take place the licensee has to secure a supplemental exploration agreement from the Coal Authority having addressed site specific issues and demonstrated that all the other rights to sink the borehole(s) are in place. These rights will include any environmental permits and Health and Safety permits. It is also envisaged that UCG operators would, in due course, require some form of very light touch license issued by DECC under the Petroleum Act 1998 to cater for the likelihood that their activity would incidentally capture small amounts of native methane.

[REDACTED]

[REDACTED]

[REDACTED]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

(The above is redacted under Reg 12(4)(e) EIR)

Next Steps and Options

- 15. There are two possible options open to the Department:
 - 1. Maintain the status quo for handling UCG applications; or
 - 2. Implement a revised licensing process.

[Redacted]

(The above is redacted under Reg 12(4)(e) EIR)

- 17. In relation to Option 2, we would look to establish a time limited internal Working Group involving both DECC and the Coal Authority to look at the current licensing processes and the interaction between the different technologies and make recommendations for changes. The Group would have formal terms of reference and would look at developing a formal policy which would then be issued for consultation with the industry. We expect the initial work of the Group to take some 6 months and this would be followed a consultation

process of some 2-3 months. At this stage we think discussions on a working group basis is the best way to proceed to make sure the implications of any change in policy have been considered before making specific recommendations for changes.

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

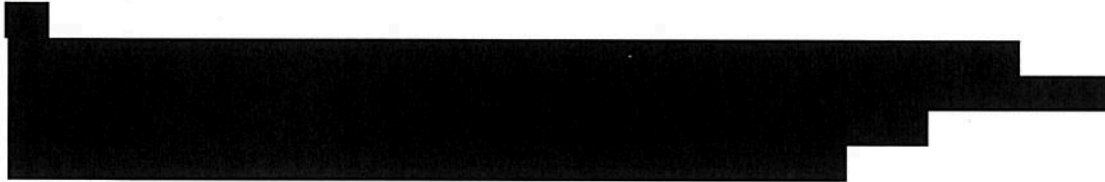
[Redacted]

[Redacted]

(The above is redacted as it is Out of Scope of this FOI request)

Clearance

22. This submission has been cleared by Ian McKenzie (acting Director of EDU), OUGO and Special Advisers.



(The above is redacted under Reg 12(3) EIR)