

David Rutland
BERR
1 Victoria Street
London SW1H 0ET

19th September 2008

Dear Mr Rutland,

Towards Carbon Capture and Storage – A Consultation Document

I am pleased to respond to the BERR Consultation on Carbon Capture and Storage on behalf of CoalImp – the Association of UK Coal Importers.

CoalImp represents major coal users (including all of the coal-fired generators in Great Britain), rail companies, ports and other infrastructure operators in the coal supply chain. The twenty two members (listed in the attached Appendix) account for the handling, transportation and use of the majority of imported supplies into the country, in turn accounting for around a quarter of electricity produced last year.

Carbon Capture and Storage – Consultation Sections 1 and 2

The international use of coal is set to grow dramatically, especially in fast-growing economies such as China. It is therefore essential that cleaner coal technologies and 'sustainable coal' with carbon capture and storage (CCS) are deployed as quickly as possible. Without an appropriate level of commitment from the West, including the UK, it is unlikely that this will happen extensively in developing nations. Proven world coal reserves amount to around 850 billion tonnes¹, equivalent to over 130 years supply at current rates of usage and it is likely that this coal will be used – with or without CCS. There is no doubt that CCS will be required in a global context if there is to be any chance of limiting carbon emissions globally, without which Europe and the UK's own efforts will be irrelevant.

CoalImp is therefore concerned that European and UK energy policy, and all associated detailed policy instruments, are structured to help bring forward investment in clean coal with CCS, alongside other solutions – such as nuclear power and renewables. In the absence of such suitable instruments, in the period of time before a significant tranche of new nuclear capacity can be brought on line, the default option is likely to be a further 'dash for gas'. This

¹ BP Statistical Review of World Energy June 2008

would have major implications for the security/price of energy supply but would not produce deep cuts in carbon emissions.

Question 1: We would welcome views on what more the Government might do to promote the development and deployment of CCS technologies in the UK, EU and globally.

It is disappointing that the Government's competition is restricted to a single plant and a single technology. A range of capture, transport and storage options needs to be demonstrated. CoalImp recognises the restrictions on Government expenditure but considers that other financing mechanisms are available. The importance of storage opportunities in both depleted oil and gas fields and aquifers in the North Sea may be crucial for the widespread application of CCS not just for the UK but for Europe as a whole. The UK therefore has a leading role to play in Europe; that role would have been far more significant if more than one demonstration plant were sited in the UK as part of the European programme for about twelve such plants.

It is understood that the Government is in discussion with its European counterparts on devising a financing mechanism for the programme of development plants, but there needs to be greater urgency in reaching a satisfactory conclusion.

Carbon Capture Ready – Consultation Section 3

CoalImp is involved in the Future Generation Sub-Group of the UK Coal Forum and the following comments on the 'capture ready' part of the consultation are closely modelled on their response.

The following general principles should be followed in discussions with the EU Commission and in the development of regulations in this area.

Principles

- The arising regulations on capture ready have to be flexible and relatively easily adaptable as circumstances and technologies change and also as many of the current uncertainties are removed or reduced. There is a real possibility that current technologies will be displaced by better techniques as R&D now underway comes to fruition. This could mean different configurations of capture plant and integration with the existing power plant.
- Following the point above, the emphasis in future capture ready regulation should be on dealing with how to overcome barriers based on the four elements of the definition given in the BERR consultation document. It is understood that, at this time, the intention is to build "capture ready" considerations into Guidance Notes for regulators and inspectors rather than into the CCS regulations themselves. This is entirely appropriate as it will facilitate change and flexibility of approach.
- The temptation to require new coal fired plant but not gas fired plant to be built capture ready should be resisted. Any such proposition will encourage

more gas fired plant than would otherwise have been the case resulting in adverse implications for a balanced portfolio of affordable power generation plant. Fitting CCS to gas fired power plant is expensive, relative to the unabated plant's capital cost, and would help to encourage the balanced portfolio that both Government and generators see as sensible.

- Regulation on "capture ready" should not be expressed in such detail that, the unabated plant performs more poorly because of the compromises required to facilitate later introduction of a capture process. Such decisions should be left to the operators and their investors.

Question 2: Do you agree that developers should have suitable space on site or adjacent to it to accommodate future carbon capture and processing plant?

YES; this is the minimum contribution to satisfying a "capture ready" condition. It allows the power station to operate in the period up to installation of capture plant at optimal conditions without prejudicing later addition of CCS.

Question 3: What do you see as the appropriate space requirements to accommodate different types of capture technologies and why? How might these vary in relation to different sizes of plant?

For the purposes of illustration, the 6 hectare example provides helpful guidance and is consistent with figures from other studies. In reality, the amount of land used for CCS will be different for each plant and the CCS technology deployed.

Question 4: Should developers be required to assess the feasibility of retrofitting carbon capture technology to their combustion plant?

YES; feasibility studies of retrofitting, for the purposes of regulation and permitting, should consider current known technologies. Consideration of more advanced technologies is a matter for the operator and the investors – given the associated technical and commercial risks – and should not form a part of any regulatory requirements.

Question 5: Do you know of other evidence that provides a more appropriate benchmark (in respect of post capture amine technology or for oxy-fuel) than the IEA document as to what issues need to be considered for the power station design?

No.

Question 6: Do you know of other documents for other capture technologies we should be considering as reference documents?

There are many published studies on CO₂ capture, but very few which are free of the influence of vested interests. The IEA report used to support this consultation is a good source, covering a range of technologies.

Taking the first of the principles set out above, flexibility to adapt regulation in future is important to allow adoption of state-of-the-art technologies as they become available for demonstration and later for commercial deployment.

It would be expected that with time other reference documents become available to complement or supersede the IEA report; such reference documents should be used if/when available.

Question 7: Should a developer have to identify a potential storage area or areas when it develops new combustion plant? If so, do you think that identifying a potential area by reference to the DTI study is appropriate or can you identify other studies on storage sites that might be relevant?

The DTI study is regarded as an adequate basis for selecting a storage area and suggesting alternative options, given what could be a significant interim period before CCS is added. To be clear this approach would define an area for storage but not a specific oil or gas field or aqueous saline aquifer.

Question 8: Is a feasibility study for each application the appropriate means of addressing the transport component of CCR?

YES; a number of potential pipeline corridors or another similar broad approach to meeting the CCR criteria could pose less of a barrier to the later establishment of a particular route. Otherwise speculative land purchase or obstruction by third parties could prejudice the chance of least-cost addition of CCS.

The first 10 kilometres or thereabouts are probably the most critical part of any CO₂ pipeline. Generally, if a satisfactory "way out" from the power plant can be established there will be sufficient alternative routes thereafter to ensure that the CO₂ can get to the coast for further sea bed transportation.

Question 9: Should this transport assessment address the three issues set out in paragraph 3.25?

YES; conceptual routes and pipeline corridors, listing of barriers and how they might be tackled are all necessary if the route is to be credible.

Question 10: Are there any other factor(s) you believe should be included in Article 32? If so, why?

YES; Article 32 needs to emphasise that CCS has to be considered in the light of energy security as well as mitigation of climate change. Amendments currently proposed by the EU Parliament's rapporteur would require coal fired power plant to meet an emission concentration of not more than 350 gCO₂/kWh. This could be met by gas fired plant without installation of CCS.

Developers would be driven to install gas plant and no coal plant. There is a serious risk of locking in CO₂ emissions from CCGTs for a long period while discarding plans to develop coal-fired plants that would be subject to CCR and CCS requirements and which would emit less CO₂ than CCGTs. This could be a perverse result of any short-term discrimination in favour of gas over coal.

Question 11: Should the UK support a 300MWe threshold or should we be arguing for a higher or lower threshold? Why?

For power only plant 300MWe is a good choice as a starting point. Around 60% of EU coal fired unit sizes are bigger than 300MWe and most new plant will be bigger. The number should be kept under review in case there is any evidence of significant development of plants just below the threshold.

Question 12: Should the coverage of CCR extend to all fossil fuel power plants with a capacity of 300MWe or more?

Yes; it would be pointless restricting new regulations to just new coal plants as operators would then build gas fired plant and security of supply would be seriously compromised – see answer to Question 10. Therefore, regulations should also apply to new gas fired power plant.

Question 13: What impact might a CCR requirement have on the likelihood of new build, whether for a 300MWe or more standalone CHP or Good Quality CHP plan attached to coal and gas generating stations?

Large CHP schemes at bigger than 300MWe (or equivalent) should be included since there is always a possibility that they may lose heat load and operate as power only plants. Large scale CHP linked to CCS would provide an excellent low carbon footprint and should be encouraged.

Question 14: Should the Government explore with the Commission and other Member States the possible disincentive effect on proposed “Good Quality” CHP plants which might otherwise be caught by a CCR requirement? If not, why not?

No; see answer to Question 13. Good quality CHP would suffer a loss in efficiency were CCS to be added, so the definition of “Good Quality CHP” may need revising.

Question 15: What might be the impact of the potential costs of CCR for 100% biomass power plants and so the implications for their future build? Should the Government explore excluding 100% Biomass schemes from the proposed Article 32?

All biomass plants fall under current renewables regulations of the Renewable Obligation, and so double regulating is probably not appropriate. In practical terms it is unlikely that many biomass units over 300MWe would be built due to the sheer logistics and expense of collecting the fuel. It may be simplest to exempt biomass plants from CCR and CCS requirements, but such a derogation should not be extended to partial biomass use.

Question 16: In EU negotiations do you agree that the UK Government should support the proposals in Article 32 relating to carbon capture ready?

In principle, YES, but as the final outcome of the Commission’s proposals in this respect is not finalised, it is not possible to express unequivocal support. In

examining any variations and/or development of article 32 the principles that enumerated at the start of this response should be firmly borne in mind.

Question 17: If, following the negotiations, the adopted EU Directive does not contain Article 32, should UK Government take steps domestically to introduce requirements equivalent to Article 32 in England and Wales? Why do you think this would be justified?

Yes; but this would need to be in the expectation that a global agreement on CO2 emissions will ultimately be achieved or that such an EU position would have some real prospect of being reversed in the near future. This would have the advantage of allowing applications to proceed through the planning process whilst the EU failure was being reversed.

To proceed beyond this to mandatory installation of CCS when others are not doing so, or intending to do so, would however be inadvisable.

Question 18: Do you envisage any difficulties with using the consent regime under section 36 Electricity Act 1989 to implement Article 32?

NOT regarding the power plant itself; it appears that this is already happening with the consents for gas fired plant referred to in para 3.44 being conditional on being built "capture ready". However, it is not clear that the capture ready provisions for these plants covered the feasibility of transmission and storage as suggested in the consultation document. These are the areas more likely to cause difficulties.

Question 19: Is the Environment Agency (EA) the appropriate agency to advise the consenting body on whether the proposed plant could be built CCR? If not, who might be better placed to do so?

Noting that the new Infrastructure and Planning arrangements would come under BERR and set the terms under which new plant would be permitted it is considered that the EA would be a good lead on advising whether CCR conditions had been met. Presumably this would mean building up the capacity of the EA in an area in which they have not been prominent hitherto.

It is noted that consent to proceed with a new plant "capture ready" will not provide a license to go ahead and build the subsequent CCS add on. This will require a new and separate permit as it constitutes a substantial plant modification (cf addition of FGD). Presumably the EA would also be the advisory body.

Question 20: Are there any of the proposed factors another body might be better placed to advise on and why?

Whilst there are many other organisations which will necessarily have an input to regulation and to the permitting of particular facilities, none appear better placed than the EA to lead.

Question 21: Should a plant only be consented if the studies and assessments carried out demonstrate that it could be capable of being built CCR?

Not in every case; there may be exceptions. – see answer to next question

Question 22: Do you agree that the CCR factors might have the consequences described in paragraphs 3.71-2? Would such consequences cause concern and if so why?

There may be circumstances where CCR need not be mandated. Energy security issues are probably the main ones which might so suggest, but only in specific cases. For instance, rapid start up and shut down capacity aimed at peak lopping, which would only operate intermittently and which has to be very responsive to demand surges would be an obvious potential exception. It is possible that peak lopping plant at 300MWe or more will be needed particularly as the proportion of renewable energy increases on the system. Some form of derogation or cap on operating hours needs to be considered. Such uncertainty illustrates why the principle of having an evolutionary approach over a rigid prescriptive set of conditions applies.

Hence, CCR should be a feature of new fossil-fuelled power station applications provided the system is able to provide some degree of freedom for developers to consider every power station that is fit-for-purpose and appropriate for location and function, as well as meeting the overall objective of the government in reducing CO2 and encouraging energy security.

Question 23: Do you agree that in certain circumstances Government should be permitted to consent to power stations that do not meet all the four factors that underpin the CCR criterion? If yes, what might such circumstances be?

The intention should be that all fossil fuel plant be treated the same in order to maintain a fair market situation. So, the four factors should almost always apply, but not necessarily to the same degree due to the issues of site specific uniqueness for almost every power station site in the country. This reinforces the need for a flexible evolutionary approach to CCR that adapts as the situation for technical and regulatory aspects changes through learning by doing.

In particular, as already indicated in earlier answers considerations of peak power provisions and grid stability may throw up a very few exceptions.

Yours sincerely

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Managing Director

CoalImp Membership

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British Energy Trading and Sales
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