

# Draft Supplementary Guidance for Section 36 Electricity Act 1989 Consent Applicants for Coal Power Stations:

A Consultation

**Why is DECC conducting this consultation?**

This consultation seeks views on the clarity and coverage of draft guidance on complying with the Government's new policy to require carbon capture and storage on new coal power stations, or on existing power stations where consent is sought for the installation of super-critical coal-fired boilers in England and Wales (Annex 1).

The guidance is designed for applicants seeking consent under Section 36 of the Electricity Act 1989 (and in due course under the Planning Act 2008), to construct and operate a coal-fired power generating station in England and Wales. This policy applies to new coal plants with a generating capacity of greater than 50MWe and was introduced by Government with effect from 9 November 2009 following a consultation on a proposed framework for the development clean coal (17 June 2009 to 9 September 2009).

The guidance document will be publicly available. It will supplement the existing guidance on Carbon Capture Readiness (CCR) for Section 36 Electricity Act (1989) Consent Applicants .

In line with normal practice, applications for Section 36 consent for combustion plants over 50MWe will continue to be processed during this consultation on the guidance, provided that the applications comply with the new policy on carbon capture and storage which is effective from 9 November 2009.

Issued:	9 November 2009
Respond by:	1 February 2010
Enquiries to :	Paul Dyer, Area 4E, DECC, 3 Whitehall Place, London SW1A 2AW. 0300 060 4000 coalandccsconsultation@decc.gsi.gov.uk

This consultation is relevant to the power generation sector, its advisory bodies, relevant trade associations, planning authorities and those non-governmental organisations interested in climate change and wider environmental issues.

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## **How to Respond**

We are asking you to respond by **Monday 1 February 2010** at the latest.

When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of an organisation, please make it clear whom the organisation represents and, where applicable, how the views of members were assembled.

A response can be submitted by e-mail or letter to:

E-mail: [coalandccsconsultation@decc.gsi.gov.uk](mailto:coalandccsconsultation@decc.gsi.gov.uk)

Letter to:

Paul Dyer  
DECC  
Are 4E  
3 Whitehall Place  
London SW1A 2AW.

This draft guidance document on implementing carbon capture and storage demonstration policy for new coal power stations only applies to section 36 Electricity Act (and, in due course, Planning Act 2008) applications in England and Wales. Implementation of planning policy is devolved for Scotland and Northern Ireland to both the Scottish Executive and the Northern Ireland government.

A list of those organisations and individuals being consulted is at **Annex 2**. We would welcome suggestions as to others who may wish to be involved in this consultation process.

You may make copies of this document without seeking permission. Electronic copies of the consultation document are available at:

<http://www.decc.gov.uk/en/content/cms/consultations/open/open.aspx>

### **What happens next?**

This consultation seeks views on whether the assessments described in the attached draft guidance are expressed as clearly as possible and are at the appropriate level of detail given the current stage of development of carbon capture and storage (CCS) technologies.

We intend to respond as soon as possible after the close of the consultation. A final version of the guidance will be published as part of the Government's response.

## **Confidentiality and Data Protection**

Information provided in response to this consultation, including personal information, may be subject to publication or release to other parties or to disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004. If you want information, including personal data that you provide to be treated as confidential, please be aware that, under FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations in confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, then we will take full account of your information, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

### **Help with queries**

Questions about the content of this document can be addressed to:

E-mail: [coalandccsconsultation@decc.gsi.gov.uk](mailto:coalandccsconsultation@decc.gsi.gov.uk)

A copy of the key principles from the Code of Practice on consultations is reproduced at **Annex 3**, along with a link to the full document.

## **Consultation Question**

The information provided in this document is neither definitive nor exhaustive. It sets out general guidance on how an applicant verifies that their plans would meet the CCS demonstration criteria, rather than a mandatory application process to be followed in order to obtain the required consent. It is up to applicants, in preparing their assessments, to decide which parts of this advice are relevant to the particular circumstances of their proposed new coal plant.

In view of this, we would be grateful if you could answer the following question:

- |           |  |
|-----------|--|
|           |  |
| <b>1.</b> | Taking into account the current state of the development of CCS technologies and policy to require CCS on new coal power stations, or existing power stations where an application for development consent is made to allow for the installation of super-critical coal-fired boilers, does the draft guidance document for applicants for Section 36 Electricity Act 1989 consents (Annex 1) provide sufficient clarity and ask for the appropriate level of detail for the required assessments? |

# Annex 1

## Draft Supplementary Guidance for Section 36 Electricity Act 1989 Consent Applicants for Coal Power Stations

### Preface

This guidance applies to applicants seeking consent to construct a new coal-fired power station of over 50MWe, or applying for consent to upgrade an existing power station to allow for the installation of super-critical coal-fired boilers in England and Wales under section 36 of the 1989 Electricity Act, or in due course under the Planning Act 2008.

This guidance is intended to explain how Government plans to implement the new policy requirement which came into effect on 9 November to construct and operate CCS technology on new coal power stations, or existing power-stations upgrading to super-critical technology, and to give practical advice for developers seeking development consent.

The requirements described within this guidance are supplementary to those contained within the CCR guidance<sup>1</sup> for applications to build power stations at or over 300MWe and of a type covered by the EU Large Combustion Plant Directive.

It is Government's intention to ensure that guidance on compliance with CCS policy is reviewed regularly to reflect future technical and regulatory developments.

It is likely that these updates to the guidance will not require any further consultation, but will be incorporated into the master texts of the guidance which will remain available on the DECC website. Applicants are advised to check the website for the latest version of the guidance and the advisory checklist annexes on the different capture methodologies.

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<sup>1</sup> Guidance for s. 36 EA applicants is available via:  
[www.decc.gov.uk/en/content/cms/what\\_we\\_do/uk\\_supply/consents\\_planning/consents\\_planning.aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/consents_planning/consents_planning.aspx)

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# 1. The Purpose of the Guidance Document

The Government is committed under Article 6 of the Electricity Market Directive<sup>2</sup> to publishing the criteria against which applications to construct and operate generating stations are considered. This guidance has been produced to explain the implementation of the Government's policy to require CCS construction and operation for new coal power stations and existing power stations upgrading from sub-critical to super-critical technology. It is supplementary to the assessments required for CCR policy<sup>3</sup>.

## To whom does the guidance apply?

This guidance applies to applicants:

- (i) Who submitted before 9<sup>th</sup> November 2009 a Section 36 Electricity Act (1989) consent application for a new coal power station of a type covered by the EU's Large Combustion Plant Directive but on which a decision has not yet been taken by the Secretary of State;
- (ii) Submitting after 9th November 2009 a Section 36 Electricity Act (1989) [or Planning Act 2008] consent application for a new coal power station of a type covered by the EU's Large Combustion Plant Directive;
- (iii) Submitting after 9th November 2009 a Section 36 Electricity Act (1989) [or Planning Act 2008] consent application to upgrade an existing power station of a type covered by the EU's Large Combustion Plant Directive to allow for the installation of super-critical coal-fired boilers.

Applicants should submit the required documentation showing how their plans represent a technically feasible approach to demonstrating CCS at the required scale. These documents should be included as part of the initial Section 36 Electricity Act consent application with its supporting documentation and may not be considered supplementary information which can be submitted at a later stage. Together with the rest of the Section 36 Electricity Act application material these assessments will be public documents.

This guidance also explains the level of information which applicants can reasonably be asked to submit when applying for Section 36 Electricity Act consent. Therefore it is intended to be useful to local planning authorities and other statutory and non-statutory bodies with a role to play in the development consent process (e.g. including the relevant nature, environment, countryside, aviation, heritage and health and safety bodies), in explaining the type of information which can be submitted by applicants.

We expect the guidance to be of use primarily to prospective applicants, local planning authorities and other statutory and non-statutory bodies (e.g. including the relevant nature, environment, countryside, aviation, heritage and health and safety bodies), but it may also be of use to members of the public and other interested parties.

<sup>2</sup> EU Directive 2003/54/EC on common rules for the internal market in electricity.

<sup>3</sup> Guidance for section 36 Electricity Act 1989 applicants is available via:

[http://www.decc.gov.uk/en/content/cms/what\\_we\\_do/uk\\_supply/consents\\_planning/guidance/guidance.aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/consents_planning/guidance/guidance.aspx).

## England and Wales

This guidance covers the consenting process in England and Wales.

DECC's Planning Reform and Developments Consents team handle applications for Section 36 consents for generating stations above 50MWe that fall to be determined by the Secretary of State for Energy and Climate Change. They receive representations on behalf of the Secretary of State and assess applications on his behalf. They also aim to make sure that the procedures are carried out fairly and transparently. A site visit may be carried out with the relevant planning authorities and applicant in attendance in order to familiarise the case officer with the development site and surrounding area (usually after the consultation period has closed).

However, neither the Secretary of State nor officials acting on his behalf can discuss the merits of individual cases or give an indication of what the Secretary of State's decision might be.

Any queries on the Section 36 Electricity Act process should be addressed to:

The Onshore Consents Team  
Energy Markets and Infrastructure Group,  
Department of Energy and Climate Change  
Area 3A, 3 Whitehall Place  
London SW1A 2AW  
Tel: 0300 060 4000 (switchboard)

E-mail:  
Gareth.Leigh@decc.gsi.gov.uk

The information provided in this document is neither definitive nor exhaustive. It sets out general guidance on how an applicant verifies that their plans would meet the CCS demonstration criteria, rather than a mandatory application process to be followed in order to obtain the required consent under Section 36 Electricity Act. It is up to applicants, in preparing their assessments, to decide which parts of this advice are relevant to the particular circumstances of their proposed new coal plant.

This guidance should be read in conjunction with the legislation to which it refers and other legislative guidance or advice where available. All applications made under section 36 Electricity Act or any other statutory regime will be considered on their merits and nothing in this guidance will prejudice the outcome of any such decision.

This guidance is available in English and on request in Welsh.

This Guidance is available on the DECC web site for downloading at:  
[http://decc.gov.uk/en/content/cms/what\\_we\\_do/uk\\_supply/consents\\_planning/guidance/guidance.aspx](http://decc.gov.uk/en/content/cms/what_we_do/uk_supply/consents_planning/guidance/guidance.aspx).

## **Relevance of this Guidance to Consent Applications made to the Infrastructure Planning Commission**

The Infrastructure Planning Commission (IPC) will become responsible for accepting and examining applications for development consent in respect of new power stations upon commencement of section 15 of the Planning Act 2008. The IPC will then become responsible for consenting applications for new power stations following designation of the relevant National Policy Statements (NPS).

The IPC has been directed, in the [draft] Overarching Energy National Policy Statement, that it should follow this guidance, or any successor to it produced by the Department of Energy and Climate Change, when considering applications for combustion generating stations. Where the guidance is applied in the context of the Planning Act 2008, references to the Secretary of State, or DECC, and Section 36, will often need to be construed as referring to the Planning Act and the IPC.

## 2. Introduction

1. The Government's response to the consultation on a framework for the development of clean coal was published on 9 November 2009<sup>4</sup>. From that date, any applicant who applies for (or who has sought but not yet obtained) Section 36 Electricity Act consent to construct a new coal-fired power station of over 50MWe will have to produce evidence that the plant will be capable of demonstrating CCS on at least 300MWe net of its capacity from the outset. The same rule will apply to applicants for consent to upgrade existing power stations to allow for the installation of super-critical coal-fired boilers: references in what follows to new coal power stations should be read as including such upgrades unless otherwise stated. If the proposed new coal-fired power station is of less than 300MWe capacity, it will need to be capable of demonstrating CCS on its entire capacity.
2. The Government will maintain a rolling review of progress of CCS technologies, with demonstration projects in the UK, EU and globally providing a vital source of evidence on the performance of CCS across technical, economic, environmental and safety matters. By 2018 the Government plans to publish a report that will consider the status of CCS technologies in the light of progress with the demonstration projects in the UK and globally, drawing on expert advice from the Environment Agency, the Committee on Climate Change and others; and consider the appropriate regulatory and financial framework to drive the move to clean coal within the context of wider progress on the move to a decarbonised electricity system.
3. As part of this work, the question of CCS retrofit to demonstration projects will be considered: while the speed at which CCS technology will develop is uncertain, based on the need for and global commitment to CCS it is the Government's expectation that new conventional coal-fired generating stations consented under the policy framework described here will retrofit CCS to their full capacity by 2025. The review will also consider the framework within which new coal-fired generating stations would be constructed beyond the CCS demonstration phase: it is the Government's expectation that new coal-fired generating stations will be fully CCS from day one once CCS has been shown to be economically and technically viable, and that this will be possible from 2020. In the event that CCS is not on track to become technically or economically viable, preventing retrofit, an appropriate regulatory approach for managing emissions will be needed. The review will consider what additional measures, consistent with and complementary to the EU ETS and any other market interventions that are in place, are necessary - for example an emissions performance standard by way of a plant level cap. All of this work will be developed in the light of continuing advice from the independent Climate Change Committee and in a way that is consistent with the need for a clear UK emissions reduction pathway through to 2030 and beyond to 2050.
4. This document is primarily concerned with the requirement for any new coal power station to demonstrate CCS on at least 300MWe net of its capacity. Specifically, it describes the requirements on applicants to gain development consent to construct coal power stations in England and Wales.

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<sup>4</sup> <http://decc.gov.uk/en/content/cms/consultations/consultations.aspx>

5. This document also outlines Government's intentions to make secondary legislation providing for the issuing of CCS operating permits in respect of these power stations which will be granted and enforced by the Environment Agency.

### 3. Implementation of CCS demonstration requirements for new / upgraded coal power stations

6. The CCS demonstration requirements will have implications for applicants when applying for consent to construct the power station, and, during operation, by requiring compliance with operating permit conditions.
7. In considering an application for Section 36 Electricity Act (1989) consent the Secretary of State will be drawing on advice from the Environment Agency in assessing whether the application meets the CCS demonstration requirements. The Government plans for this role to be primarily to make recommendations on whether the submitted capture unit plans represent technically feasible solutions to meeting the minimum size requirements for CCS demonstration.
8. In addition, all the statutory advisors and other bodies who normally consider section 36 applications<sup>5</sup> will be able to comment on the CCR and CCS assessments submitted.

#### 3.1 Applying for Section 36 Electricity Act 1989 consent (and in due course, consent through Infrastructure Planning Commission)

- Any applicant seeking Section 36 Electricity Act 1989 consent (and in due course consent from the Infrastructure Planning Commission under the Planning Act 2008) in respect of a new coal-fired power station will be required to submit with their application;
  - Technically feasible plans for a capture unit covering the minimum size requirement of at least 300MWe net capacity of the power station. Applicants proposing to build a power station of 300MWe or less will be required to submit plans for a capture unit on the power station's entire capacity. DECC will be advised by the Environment Agency whether the submitted plan is technically feasible. Annexes B, C and D provide checklists to show applicants the type of information and level of detail required to be regarded as "feasible" at the application stage for post-combustion, pre-combustion and oxyfuel capture technologies respectively.
  - An Environmental Statement for the power station, including the impacts of the proposed capture facilities compliant with the Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2000 (as amended)<sup>6</sup>. In due course applications will

<sup>5</sup> Statutory and non-statutory consultees for Section 36 applications include: the relevant local planning authorities, the Environment Agency (or the Environment Agency Wales), Natural England (or the Countryside Council for Wales), the Civil Aviation Authority, National Air Traffic Services, the Health and Safety Executive, the Ministry of Defence, the Welsh Assembly Government (if applicable), the Greater London Authority (if applicable) and other Government Departments and the relevant Government Office.

<sup>6</sup> The Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2000: <https://www.hms.gov.uk/si/si2000/20001927.htm>

be made to the IPC, in which case an Environmental Statement should comply with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009<sup>7</sup>.

- Documentation to ensure compliance with all other existing policy including that the entire plant's capacity is CCR (to be approved by Secretary of State for Energy and Climate Change, in line with CCR guidance<sup>8</sup>).
9. It is possible that operational CCS will bring onto combustion plant sites chemicals and gases which are not currently present (or not present in such quantities) on such sites so as to require Hazardous Substance Consent (HSC) under the Planning (Hazardous Substances) Regulations 1992<sup>9</sup>. Therefore applicants are encouraged to discuss their plans with the Health and Safety Executive and the relevant Local Planning Authority at an early stage of the project.
10. If HSC is found to be necessary the Government considers that the application for HSC should be determined in parallel with the initial Section 36 application. Therefore Government requires that the applicant should apply to the Secretary of State<sup>10</sup> for a direction that Hazardous Substances Consent (HSC)<sup>11</sup> be deemed to be granted at the same time as applying for Section 36 consent if the applicant's proposals for operational CCS involve the storage or use on site of hazardous substances currently classified as such under the Planning (Hazardous Substances) Regulations 1992.
11. Where consent is given, it will be conditional on the developer submitting to the Secretary of State for Energy and Climate Change, prior to commencement of construction<sup>12</sup>, clear evidence of the following:
- A valid CO<sub>2</sub> Storage Permit, issued by DECC under the Energy Act 2008, or a contract with a third party to provide storage services who themselves are in possession of a Storage Permit<sup>13</sup>;
  - Valid consents and / or arrangements for transport of CO<sub>2</sub> to the proposed storage site. This may include consents for onshore and offshore pipelines (as necessary) for the transport of CO<sub>2</sub>, or evidence of a contract with a third party to provide transport services who themselves are in possession of necessary pipeline consents, or, if the CO<sub>2</sub> is to be transported via ship, evidence of arrangements for carbon dioxide shipping. (Annex A provides a summary of the consents that may be required);

<sup>7</sup> The Infrastructure Planning (Environmental Impact Assessment) Regulations 2009: [http://www.uk-legislation.hmsso.gov.uk/si/si2009/uksi\\_20092263\\_en\\_1](http://www.uk-legislation.hmsso.gov.uk/si/si2009/uksi_20092263_en_1)

<sup>8</sup> Guidance documents for planning consent under Section 36 of Electricity Act (1989) [http://www.decc.gov.uk/en/content/cms/what\\_we\\_do/uk\\_supply/consents\\_planning/guidance/guidance.aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/consents_planning/guidance/guidance.aspx)

<sup>9</sup> These regulations came into force on 11<sup>th</sup> March 1992 and were amended in 1999 and 2009

<sup>10</sup> Under section 12 (2) of the Planning (Hazardous Substances) Act 1990 it is possible for the Secretary of State to direct that HSC be deemed to be granted at the same time as considering an application for Section 36 consent. Schedule 2 (para. 45) to the Planning Act amends the Planning (Hazardous Substances) Act 1990 so that the IPC can grant deemed hazardous substances consent in parallel with their planning consent for a combustion station once the IPC takes over planning consents for such stations.

<sup>11</sup> The legislative framework for Hazardous Substances Consent is set out in the Planning (Hazardous Substances) Act 1990 and The Planning (Hazardous Substances) Regulations 1992, as amended in 1999 and 2005.

<sup>12</sup> Construction is deemed to commence at the point a developer lays the foundations for the power station. Pre-construction activities will be permitted as agreed with the relevant local authority and may include access works, site clearance, levelling and fencing, for example.

<sup>13</sup> DECC is currently consulting on the proposed offshore carbon dioxide storage licensing regime. Please see <http://www.decc.gov.uk> for information.

- In addition, an environmental permit will be required from the Environment Agency which incorporates conditions for operation of the CCS chain. Applications for and compliance with these permits will be governed by regulations made under the Pollution Prevention and Control Act 1999.
12. Once it has been ascertained that all necessary consents and permits are in place, operators will be sent written permission from the Secretary of State for DECC to allow construction of the power station.

### 3.2 Operation of power station and CCS facilities

13. Government intends to make regulations under the Pollution Prevention and Control Act (1999)<sup>14</sup> to require the operators of power stations which are covered by this guidance to hold a permit regulating their operation of the CCS chain. Power stations to which the regulations apply would not be allowed to operate (i.e. generate electricity) unless they have a valid permit from the Environment Agency issued under the regulations and will be required to operate in accordance with the conditions of that permit. The new regulations will be consulted on in early 2010.
14. The new permit will contain conditions setting out the amount of generating capacity to be fitted with carbon capture equipment, the minimum carbon dioxide storage requirements for the power station and a requirement to be connected by suitable and functioning transport links to a storage site licensed under the Energy Act 2008.
15. Processes for monitoring and enforcement of the progress towards meeting the storage target will be agreed between the operators and the Environment Agency and described in the permit.

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<sup>14</sup> [http://www.opsi.gov.uk/Acts/acts1999/ukpga\\_19990024\\_en\\_1](http://www.opsi.gov.uk/Acts/acts1999/ukpga_19990024_en_1)

# ANNEXES

Annex A: Principal consents required before operation of ccs facilities.

Annex B: Environment Agency verification of ccs technical feasibility: new pulverised coal fired power station using post-combustion solvent scrubbing

Annex C: Environment Agency verification of ccs technical feasibility: new integrated gasification combined cycle power station using pre-combustion CO<sub>2</sub> capture (including coal gasification) and Hydrogen-rich fuel gas combustion

Annex D: Environment Agency verification of ccs technical feasibility: new oxyfuel coal-fired power station with CO<sub>2</sub> capture



## Annex A : Principal consents required before operation of CCS facilities.

**Table 1: Additional Consents Required for Construction of CCS Demonstration Chain**

<b>Consent Type</b>	<b>Description</b>	<b>Issuing body</b>	<b>Time Required</b>
<b>Storage Permit</b> <i>Energy Act 2008</i>	Allows storage of CO <sub>2</sub> in manner set out in permit	DECC	~ 2 years depending on length of time required for exploration
<b>Storage Lease</b> <i>Energy Act 2008</i>	Grants property rights to storage area	Crown Estates	None
<b>Onshore CO<sub>2</sub> pipelines</b> <i>1962 Pipeline Act</i> <i>Subsequently 2008 Planning Act for &gt;10miles</i>	Transport of CO <sub>2</sub> to container or to low level water line for connection to offshore pipeline to storage area	DECC(over 10 miles) LPA (under 10 miles)	6 months – 2years
<b>Offshore CO<sub>2</sub> pipelines</b> <i>Pipeline Works Authorisation (PWA) under 1998</i> <i>Petroleum act &amp; consent under 1949 Coast Protection Act</i>	Offshore transport of CO <sub>2</sub> to storage area	DECC or Scottish Executive	6 months
<b>Hazardous Substances Consent</b>	To handle substances deemed hazardous by HSE	The Hazardous Substances Authority (HSA).	variable

In order to operate (and export electricity to the grid) operators will also need to obtain an operating permit from the Environment Agency.

## **Annex B: Environment Agency verification of ccs technical feasibility: new pulverised coal fired power station including a 300mw (net) Post-Combustion capture demonstration plant**

### **B1: Design, Planning Permissions and Approvals**

A feasibility-level Design Concept Report (DCR) for the Power Plant with carbon dioxide (CO<sub>2</sub>) capture should be supplied for assessment, showing how the proposed post-combustion capture plant is technically feasible. The DCR should include a preliminary plot plan (as detailed in section B3).

The DCR should also provide details of the list of consents and licenses required for successful implementation of the Project, in addition to a Project Programme outlining the anticipated dates of Front End Engineering Design (FEED), Engineering Procurement Construction (EPC), commissioning and commercial operation.

The findings of the Environmental Statement (ES) should be summarised and details of the main environmental impacts due to the Power Plant with CCS should be provided.

### **B2: Power Plant Location**

A description of the proposed site location and ownership is required.

This should include details on the geotechnical conditions of the site (referencing any geotechnical studies where appropriate) and any known contamination, in addition to providing details on the proposed site access during construction and operation.

Additionally, this should provide details on the necessary site preparation which will be required, including details of site drainage, foundation design and building design.

The exit point of any emission and effluent stream from the curtilage of the plant and how this affects the configuration of the capture equipment is the important aspect for the Environment Agency.

Health and Safety items in this section are outside the Environment Agency remit.

### **B3: Space Requirements and Preliminary Plot Plan**

A preliminary Plot Plan is required clearly identifying unit block sizes for the capture, regeneration, compression, dehydration (if required), associated utilities (including vent stack) and storage equipment. Flue gas clean up systems should also be indicated.

The Plot Plan should identify how the Capture Plant integrates with the Power Plant.

The Plot Plan should identify unit block sizes for the Power Plant including size and number of generators.

The unit block sizes and spacing should be engineered to suit the facility's capacity, operating conditions, construction and maintenance philosophies and storage requirements.

The following features are identified as being critical to the layout of the capture plant:

- Relative location of units and equipment to satisfy process pipe work requirements and minimise lengths of large diameter lines.
- Location and orientation of air-coolers, cooling towers, effluent treatment, buildings and the vent stack to take account of the direction of the prevailing wind.
- The Administration Area (main office building, laboratory, workshop and maintenance buildings) should be arranged in a comparatively clean area to avoid dust from other process units and should be located away from both the capture process and from high pressure CO<sub>2</sub>.

Applicants should be prepared to submit plans and supporting documents to demonstrate that sufficient space is available to accommodate carbon capture equipment (sized so as to be capable of processing emissions from entire power station). Requirements are in defined Guidance on Carbon Capture Readiness for Section 36 Electricity Act 1989 Consents Application.

## **B4: Process Overview of Capture Plant**

A process description of the overall Capture Plant is required. This should include, but is not limited to:

### **B4.1: Capture Process**

An overview of the Capture Process covering CO<sub>2</sub> capture, regeneration of solvent and any associated on site storage requirements. This overview should include the following:

- Expected configuration and anticipated performance of the capture and regeneration equipment.
- Reasons for selection of post combustion capture and for chosen capture technology.
- The feedstock and product specifications throughout the capture process including a typical flue gas analysis prior to the CO<sub>2</sub> separation process.
- Where heat and / or power are to be provided from the Power Plant, a description of the integration between the Power Plant and the capture process is required. If this is not the case, this should be justified and a description of the source provided.
- A discussion of the impacts of the scale-up of the capture technology (where capture technology has not yet been implemented at this scale) in the design proposed to be used for the 300MW (net) capture. This should include a description of where the scale-up involves a change in design, construction methods or materials and should focus on the main risks that this presents and how these risks are to be mitigated.

- A statement describing the CO<sub>2</sub> extraction point in terms of whether the full 300 MW (net) of CO<sub>2</sub> capture will come from one or more generators and if so, how this will be managed.

#### **B4.2: Flue Gas Clean-Up**

An overview of the Flue Gas Clean-Up process is required including:

- Predicted performance of the NO<sub>x</sub> reduction equipment and its compatibility with the relevant solvent mixtures for CO<sub>2</sub> capture.
- Expected configuration and anticipated performance of the particulate removal equipment (to maintain effective capture process operation) is required.
- Expected configuration and anticipated performance of the DeSO<sub>x</sub> equipment (to maintain effective capture process operation) is required.
- Extent to which this is additional to the clean up levels required to comply with emissions regulations.
- A statement describing how the flue gas leaving the Absorber will be reheated (or otherwise) to aid dispersion.

#### **B4.3: Compression and Dehydration Unit**

An overview of the Compression and Dehydration (if required) unit is required and should include:

- Expected configuration and anticipated performance of the compression and dehydration (if required) units is required.
- Product specifications including predicted water content, phase and purity of the CO<sub>2</sub> stream to be stored.

### **B5: Overview of Utility Requirements**

A description of overall Utility Requirements is required. This should include, but is not limited to:

#### **B5.1: Steam Turbine Generator and Auxiliaries**

A statement is required giving the steam pressure at the steam turbine IP/LP crossover (or other steam extraction point). It should be demonstrated that the turbine could be operated with capture using the steam requirement of the proposed capture process, for both the initial 300MW (net) capture plant and capture of CO<sub>2</sub> from the entire power plant. The energy penalty involved in such steam extraction should be estimated.

A statement concerning the steam turbine design basis is required. This should state whether the design point i.e. the maximum efficiency of the turbine occurs when the plant is operated without capture, with capture from 300MW (net), with capture from the entire power plant, or at some other point. Justification for the chosen design point should also be given. If steam is to be provided from another source, justification for this should also be given.

#### **B5.2: Water - Steam - Condensate Cycle**

Description of the arrangements made to facilitate low grade heat recovered from the capture and compression equipment being used in the water-steam-condensate cycle. Where potentially-useful options have not been facilitated this should be justified.

### **B5.3: Cooling Water System**

A statement is required of the estimated cooling water demands (flows and temperatures) of the Capture Plant and how these will be met. A description of how cooling water will be supplied to the Capture Plant should be included.

Cooling systems (including once through cooling, cooling towers and air cooling) should be discussed and the proposed selection justified.

### **B5.4: Compressed Air System**

A statement is required of estimated compressed air requirements to the Capture Plant together with a description of how these will be accommodated.

### **B5.5: Raw Water Pre-treatment Plant**

A statement is required of estimated treated raw water requirements (hourly and annual quantities) from the Capture Plant together with a description of how these will be accommodated.

### **B5.6: Demineralisation | Desalination Plant**

A statement is required of estimated demineralised water requirements during start-up and during normal operation of the Capture Plant and how these will be accommodated.

### **B5.7: Waste Water Treatment Plant**

A statement is required giving estimated waste water treatment needs and stating how the necessary space and any other provisions will be provided to meet expected demands of the Capture Plant. Expected post-treatment effluent quantity and composition should be discussed.

### **B5.8: Electrical**

A statement is required listing the estimated electrical requirements and describing space allocation in suitable locations for items such as transformers, switching gear and cabling.

### **B5.9: Nitrogen System**

A statement is required giving estimated nitrogen requirements and stating how the necessary space and any other provisions will be provided to meet expected demands of the Capture Plant.

### **B5.10: Chemical Dosing Systems**

A statement is required listing the estimated Capture Plant chemical injection requirements and describing how these will be accommodated.

### **B5.11: Waste Separation and Disposal Facilities**

A statement is required identifying by-product streams from the Capture Plant and describing the appropriate handling and disposal provisions that would be implemented.

The estimated amounts of waste products produced and the proposed method of disposal.

### **B6: Block Flow Diagram of Capture Plant**

A Block Flow Diagram of the Capture Plant is required and should include:

- Capture process;
- Associated on site storage for capture plant operation;
- CO<sub>2</sub> compression and dehydration;
- Flue gas clean up processes including DeNox, Particulate Removal Unit (ESP/ Bag Filter) and DeSO<sub>x</sub> equipment;
- Associated utilities;
- Power Plant clearly indicating where CO<sub>2</sub> is extracted from and where any integration occurs between the Power and Capture Plant i.e. heat and / or power.

### **B7: Heat & Material Balance of Capture Plant**

A heat and material balance should be provided for the Block Flow Diagram for maximum / rated CO<sub>2</sub> flow rate through the Capture process.

For each stream number identified on the Block Flow Diagram, the following information is expected:

- Fluid description;
- Mass and / or volumetric flow rate;
- Phase;
- Temperature;
- Pressure;

### **B8 Interfaces**

An interface register detailing the key interfaces between sub-systems and sections within the Capture Plant should be provided. The interface register should also detail the key interfaces between the sub-systems and sections of the Capture Plant with the Power Plant.

The register should be supported with high level illustrative diagrams where necessary.

This should also include interfaces with systems such as electricity, water, gas connections and other utilities as required.

### **B9 Full Scale Carbon Capture**

A statement is required describing the upgrade from 300 MW (net) to full capacity of the Power Plant. Consideration should be given to space requirements, utility and storage requirements.

## **Annex C: Environment Agency verification of ccs technical feasibility: new integrated gasification combined cycle power station using pre-combustion co2 capture (coal gasification) and hydrogen-rich fuel gas combustion**

### **C1: Design, Planning Permissions and Approvals**

A feasibility-level Design Concept Report (DCR) for the Power Plant with carbon dioxide (CO<sub>2</sub>) capture should be supplied for assessment, showing how the proposed pre-combustion capture plant is technically feasible. The DCR should include a preliminary plot plan (as detailed in section C3).

The DCR should also provide details of the list of consents and licenses required for successful implementation of the Project, in addition to a Project Programme outlining the anticipated dates of Front End Engineering Design (FEED), Engineering Procurement Construction (EPC), commissioning and commercial operation.

The findings of the Environmental Statement (ES) should be summarised and details of the main environmental impacts due to the Power Plant with CCS should be provided.

### **C2: Power Plant Location**

A description of the proposed site location and ownership is required.

This should include details on the geotechnical conditions of the site (referencing any geotechnical studies where appropriate) and any known contamination, in addition to providing details on the proposed site access during construction and operation.

Additionally, this should provide details on the necessary site preparation which will be required, including details of site drainage, foundation design and building design.

The exit point of any emission and effluent stream from the curtilage of the plant and how this affects the configuration of the capture equipment is the important aspect for the Environment Agency.

Health and Safety items in this section are outside the Environment Agency remit.

### **C3: Space Requirements and Preliminary Plot Plan**

A preliminary Plot Plan is required clearly identifying unit block sizes for the coal storage and preparation, coal gasification, CO shift, cooling and condensation, Air Separation Unit (ASU) (if applicable), CO<sub>2</sub> capture, solvent regeneration, sulphur recovery, compression, dehydration (if



required), associated utilities (including vent stack), and storage equipment. Heat Recovery Steam Generator (HRSG) and fuel gas conditioning systems should also be indicated.

The Plot Plan should identify how the Capture Plant integrates with the Power Plant.

The Plot Plan should identify unit block sizes for the Power Plant including size and number of generators.

The unit block sizes and spacing should be engineered to suit the facility's capacity, operating conditions, construction and maintenance philosophies and storage requirements.

The following features are identified as being critical to the layout of the capture plant:

- Relative location of units and equipment to satisfy process pipe work requirements and minimise lengths of large diameter lines;
- Location and orientation of air-coolers, cooling towers, effluent treatment, buildings and the vent stack to take account of the direction of the prevailing wind;
- The Administration Area (main office building, laboratory, workshop and maintenance buildings) should be arranged in a comparatively clean area to avoid dust from other process units and should be located away from the coal gasification units, capture process and from high pressure CO<sub>2</sub>.

Applicants should be prepared to submit plans and supporting documents to demonstrate that sufficient space is available to accommodate carbon capture equipment (sized so as to be capable of processing emissions from entire power station). Requirements are defined in Guidance on Carbon Capture Readiness for Section 36 Electricity Act 1989 Consents Application.

#### **C4: Process Overview of Capture Plant**

A process description of the overall Capture Plant is required. This should include, but is not limited to:

##### **C4.1: Capture Process**

An overview of the Capture Plant including coal preparation, coal gasification, CO shift, cooling and condensation, ASU (if applicable), capture of CO<sub>2</sub>, regeneration of solvent, sulphur recovery and any associated storage requirements. This overview should include the following:

- Expected configuration and anticipated performance of the coal preparation, coal gasification, CO shift, cooling and condensation, ASU, CO<sub>2</sub> capture, solvent regeneration and sulphur recovery equipment;
- Reasons for selection of pre-combustion capture and for chosen capture technology;
- The product specifications including a typical fuel gas composition (in particular the concentration of hydrogen) to the gas turbine from the Capture Plant;
- A statement concerning the range of acceptable fuel gas compositions to the gas turbine and their corresponding impact on gas turbine performance;
- Where flue gas conditioning is required (e.g. selective catalytic reduction equipment to further reduce NO<sub>x</sub>), details should be provided;

- Where heat and / or power are to be provided from the Power Plant, a description of the integration between the Power Plant and the capture process is required. If this is not the case, this should be justified and a description of the source provided;
- A discussion of the impacts of the scale-up of the capture technology (where capture technology has not yet been implemented at this scale) in the proposed design. This should include a description of where the scale-up involves a change in design, construction methods or materials and should focus on the main risks that this presents and how these risks are to be mitigated;
- A statement describing how it will be determined that the amount of CO<sub>2</sub> being captured complies with the 300MW (net) requirement.

#### **C4.2: Compression and Dehydration Unit**

An overview of the Compression and Dehydration (if required) unit is required and should include:

- Expected configuration and anticipated performance of the compression and dehydration (if required) units is required.
- Product specifications including predicted water content, phase and purity of the CO<sub>2</sub> stream to be stored
- A statement describing how much of the captured CO<sub>2</sub> will be compressed, dehydrated (if required) and sent to storage.

#### **C5: Overview of Utility Requirements**

A description of overall Utility Requirements is required. This should include, but is not limited to:

##### **C5.1: Heat Recovery Steam Generator (HRSG) and Plant Steam Cycle**

A statement is required describing the expected configuration and anticipated performance of the HRSG and plant steam cycle. Details should be provided concerning how the plant steam cycle is designed to accommodate the needs of the hydrogen production facility, both for providing any additional steam supplies to that facility and for the use of any additional steam production in the hydrogen production facility to allow reasonable thermal integration and hence overall plant efficiency.

##### **C5.2: Water - Steam - Condensate Cycle**

Description of the arrangements made to facilitate low grade heat recovered from the capture and compression equipment being used in the water-steam-condensate cycle. Where potentially-useful options have not been facilitated this should be justified.

##### **C5.3: Fuel gas conditioning system**

A statement is required describing the expected configuration and anticipated performance of the fuel gas conditioning system.

##### **C5.4: Cooling Water System**

A statement is required of estimated cooling water demands (flows and temperatures) of the Capture Plant and how these will be met. A description of how cooling water will be supplied to the Capture Plant should be included.

Cooling systems (including once through cooling, cooling towers and air cooling) should be discussed and the proposed selection justified.

#### **C5.5: Compressed Air System**

A statement is required of estimated compressed air requirements to the Capture Plant together with a description of how these will be accommodated.

#### **C5.6: Raw Water Pre-treatment Plant**

A statement is required of estimated treated raw water requirements (hourly and annual quantities) from the Capture Plant together with a description of how these will be accommodated.

#### **C5.7: Demineralisation | Desalination Plant**

A statement is required of estimated demineralised water requirements during start-up and during normal operation of the Capture Plant and how these will be accommodated.

#### **C5.8: Waste Water Treatment Plant**

A statement is required giving estimated waste water treatment needs and stating how the necessary space and any other provisions will be provided to meet expected demands of the Capture Plant. Expected post-treatment effluent quantity and composition should be discussed.

#### **C5.9: Electrical**

A statement is required listing the estimated electrical requirements and describing space allocation in suitable locations for items such as transformers, switching gear and cabling.

#### **C5.10: Nitrogen System**

A statement is required giving estimated nitrogen requirements and stating how the necessary space and any other provisions will be provided to meet expected demands of the Capture Plant.

#### **C5.11: Chemical Dosing Systems**

A statement is required listing the estimated Capture Plant chemical injection requirements and describing how these will be accommodated.

#### **C5.12: Waste Separation and Disposal Facilities**

A statement is required identifying by-product streams from the Capture Plant and describing the appropriate handling and disposal provisions that would be implemented.

The estimated amounts of waste products produced and the proposed method of disposal (e.g. sulphur).

## **C6: Block Flow Diagram of Capture Plant**

A Block Flow Diagram of the Capture Plant is required and should include:

- Coal preparation, coal gasification, CO shift, cooling and condensation, ASU, CO<sub>2</sub> capture, solvent regeneration and sulphur recovery equipment;
- Associated on site storage for capture plant operation;
- CO<sub>2</sub> compression and dehydration (if required);
- Associated utilities including HRSG and fuel gas conditioning systems;
- Power Plant clearly indicating where CO<sub>2</sub> is extracted from and where any integration occurs between the Power and Capture Plant i.e. heat and / or power.

## **C7: Heat & Material Balance of Capture Plant**

A heat and material balance should be provided for the Block Flow Diagram for maximum / rated CO<sub>2</sub> flow rate through the Capture process.

For each stream number identified on the Block Flow Diagram, the following information is expected:

- Fluid description
- Mass and / or volumetric flow rate
- Phase
- Temperature
- Pressure

## **C8: Interfaces**

An interface register detailing the key interfaces between sub-systems and sections within the Capture Plant should be provided. The interface register should also detail the key interfaces between the sub-systems and sections of the Capture Plant with the Power Plant. The register should be supported with high level illustrative diagrams where necessary. This should also include interfaces with systems such as electricity, water, gas connections and other utilities as required.

## **C9: Full Scale Carbon Capture**

A statement is required describing the upgrade from 300MW (net) to full capacity of the Power Plant. Consideration should be given to space requirements, utility and storage requirements.

## **Annex D: Environment Agency verification of ccs technical feasibility: new oxyfuel coal fired power station with CO<sub>2</sub> capture**

### **D1: Design, Planning Permissions and Approvals**

A feasibility-level Design Concept Report (DCR) for the Power Plant with carbon dioxide (CO<sub>2</sub>) capture should be supplied for assessment, showing how the proposed oxyfuel capture plant is technically feasible. The DCR should include a preliminary plot plan (as detailed in section D3).

The DCR should also provide details of the list of consents and licenses required for successful implementation of the Project, in addition to a Project Programme outlining the anticipated dates of Front End Engineering Design (FEED), Engineering Procurement Construction (EPC), commissioning and commercial operation.

The findings of the Environmental Statement (ES) should be summarised and details of the main environmental impacts due to the Power Plant with CCS should be provided.

### **D2: Power Plant Location**

A description of the proposed site location and ownership is required.

This should include details on the geotechnical conditions of the site (referencing any geotechnical studies where appropriate) and any known contamination, in addition to providing details on the proposed site access during construction and operation.

Additionally, this should provide details on the necessary site preparation which will be required, including details of site drainage, foundation design and building design.

The exit point of any emission and effluent stream from the curtilage of the plant and how this affects the configuration of the capture equipment is the important aspect for the Environment Agency.

Health and Safety items in this section are outside the Environment Agency remit.

### **D3: Space Requirements and Preliminary Plot Plan**

A preliminary Plot Plan is required clearly identifying unit block sizes for the coal storage and preparation, Air Separation Unit (ASU), flue gas ducting including recirculation duct, flue gas cooling, CO<sub>2</sub> capture, compression, dehydration (if required), associated utilities (including vent stack) and storage equipment. Flue gas conditioning systems should also be indicated.

The Plot Plan should identify how the Capture Plant integrates with the Power Plant.

The Plot Plan should identify unit block sizes for the Power Plant including size and number of generators.

The unit block sizes and spacing should be engineered to suit the facility's capacity, operating conditions, construction and maintenance philosophies and storage requirements.

The following features are identified as being critical to the layout of the capture plant:

- Relative location of units and equipment to satisfy process pipe work requirements and minimise lengths of large diameter lines.
- Location and orientation of air-coolers, cooling towers, effluent treatment, buildings and the vent stack to take account of the direction of the prevailing wind.
- The Administration Area (main office building, laboratory, workshop and maintenance buildings) should be arranged in a comparatively clean area to avoid dust from other process units and should be located away from high pressure CO<sub>2</sub>.

Applicants should be prepared to submit plans and supporting documents to demonstrate that sufficient space is available to accommodate carbon capture equipment (sized so as to be capable of processing emissions from entire power station). Requirements are defined in Guidance on Carbon Capture Readiness for Section 36 Electricity Act 1989 Consents Application.

#### **D4: Process Overview of Capture Plant**

A process description of the overall Capture Plant is required. This should include, but is not limited to:

##### **D4.1: Capture Process**

An overview of the Capture Plant including coal preparation, ASU, flue gas ducting including recirculation duct, flue gas cooling, CO<sub>2</sub> capture, flue gas conditioning and any associated storage requirements. This overview should include the following:

- Expected configuration and anticipated performance of the coal preparation, ASU, flue gas ducting including recirculation duct, flue gas cooling, CO<sub>2</sub> capture and flue gas conditioning equipment;
- Reasons for selection of oxyfuel capture plant;
- Where heat and / or power are to be provided from the Power Plant, a description of the integration between the Power Plant and the capture process is required (in particular the boiler). If this is not the case, this should be justified and a description of the source provided;
- A discussion of the impacts of the scale-up of the oxyfuel capture technology (where oxyfuel capture technology has not yet been implemented at this scale) in the proposed design. This should include a description of where the scale-up involves a change in design, construction methods or materials and should focus on the main risks that this presents and how these risks are to be mitigated;
- A statement describing how it will be determined that the amount of CO<sub>2</sub> being captured complies with the 300MW (net) requirement;

## **D4.2: Flue Gas Clean-Up**

An overview of the Flue Gas Clean-Up process is required including:

- Expected configuration and anticipated performance of the particulate removal equipment is required.
- Expected configuration and anticipated performance of the flue gas sulphur polishing equipment is required.
- Extent to which this is additional to the clean up levels required to comply with emissions regulations.

## **D4.3: Compression and Dehydration Unit**

An overview of the Compression and Dehydration (if required) unit is required and should include:

- Expected configuration and anticipated performance of the compression and dehydration (if required) units is required;
- Product specifications including predicted water content, phase and purity of the CO<sub>2</sub> stream to be stored;
- A statement describing how much of the captured CO<sub>2</sub> will be compressed, dehydrated (if required) and sent to storage.

## **D5: Overview of Utility Requirements**

A description of overall Utility Requirements is required. This should include, but is not limited to:

### **D5.1: Boiler**

Expected configuration and anticipated performance of the boiler unit is required. This should include a description of combustion process.

### **D5.2: Water - Steam - Condensate Cycle**

Description of the arrangements made to facilitate low grade heat recovered from the oxyfuel capture and compression equipment being used in the water-steam-condensate cycle. Where potentially-useful options have not been facilitated this should be justified.

### **D5.3: Cooling Water System**

A statement is required of the estimated cooling water demands (flows and temperatures) of the Capture Plant and how these will be met. A description of how cooling water will be supplied to the Capture Plant should be included.

Cooling systems (including once through cooling, cooling towers and air cooling) should be discussed and the proposed selection justified.

#### **D5.4: Compressed Air System**

A statement is required of estimated compressed air requirements to the Capture Plant together with a description of how these will be accommodated.

#### **D5.5: Raw Water Pre-treatment Plant**

A statement is required of estimated treated raw water requirements (hourly and annual quantities) from the Capture Plant together with a description of how these will be accommodated.

#### **D5.6: Demineralisation | Desalination Plant**

A statement is required of estimated demineralised water requirements during start-up and during normal operation of the Capture Plant and how these will be accommodated.

#### **D5.7: Waste Water Treatment Plant**

A statement is required giving estimated waste water treatment needs and stating how the necessary space and any other provisions will be provided to meet expected demands of the Capture Plant. Expected post-treatment effluent quantity and composition should be discussed.

#### **D5.8: Electrical**

A statement is required listing the estimated electrical requirements and describing space allocation in suitable locations for items such as transformers, switching gear and cabling.

#### **D5.9: Nitrogen System**

A statement is required giving estimated nitrogen requirements and stating how the necessary space and any other provisions will be provided to meet expected demands of the Capture Plant.

#### **D5.10: Chemical Dosing Systems**

A statement is required listing the estimated Capture Plant chemical injection requirements and describing how these will be accommodated.

#### **D5.11: Waste Separation and Disposal Facilities**

A statement is required identifying by-product streams from the Capture Plant and describing the appropriate handling and disposal provisions that would be implemented.

The estimated amounts of waste products produced and the proposed method of disposal e.g. sulphur.

#### **D6: Air / Gas Side Equipment**

A statement is required identifying if all air / gas side equipment is capable of operation in both air and oxy mode and which modes they are optimised for.



## **D7: Block Flow Diagram of Capture Plant**

A Block Flow Diagram of the Capture Plant is required and should include:

- Coal preparation, ASU, flue gas ducting including recirculation duct, flue gas cooling, CO<sub>2</sub> capture and flue gas conditioning equipment.
- Associated on site storage for Capture Plant operation.
- CO<sub>2</sub> compression and dehydration (if required)
- Associated utilities
- Power Plant clearly indicating where CO<sub>2</sub> is extracted from and where any integration occurs between the Power and Capture Plant i.e. heat and / or power.

## **D8: Heat & Material Balance of Capture Plant**

A heat and material balance should be provided for the Block Flow Diagram for maximum / rated CO<sub>2</sub> flow rate through the Capture process.

For each stream number identified on the Block Flow Diagram, the following information is expected:

- Fluid description
- Mass and / or volumetric flow rate
- Phase
- Temperature
- Pressure

## **D9: Interfaces**

An interface register detailing the key interfaces between sub-systems and sections within the Capture Plant should be provided. The interface register should also detail the key interfaces between the sub-systems and sections of the Capture Plant with the Power Plant.

The register should be supported with high level illustrative diagrams where necessary.

This should also include interfaces with systems such as electricity, water, gas connections and other utilities as required.

## **D10: Full Scale Carbon Capture**

A statement is required describing the upgrade from 300MW (net) to full capacity of the Power Plant. Consideration should be given to space requirements, utility and storage requirements.

## Annex 2

# List of bodies invited to respond this consultation document

Advanced Power UK  
Advisory Committee on Carbon Abatement Technologies  
Alstom  
AMEC  
Association for UK Coal Importers  
Association of Electricity Producers

BCG Energy Limited  
BG Group  
BP Alternative Energy  
British Aggregates Association  
British Cement Association  
British Energy  
British Geological Survey

Carbon Capture and Storage Association  
Combined Heat and Power Association  
Confederation of British Industry  
Centrica  
Client Earth  
CO2 Deepstore  
Coal Authority  
Coal Forum  
Confederation of UK Coal Producers  
ConocoPhillips  
Crown Estate Commissioners

DCA Consultants  
Doosan Babcock  
Drax Power Ltd  
Durham County Council

Ecofin Research Foundation  
EDF  
EEF  
Energy Industries Council  
Energy Institute  
Energy Research Partnership  
Environment Agency  
E.ON UK

Friends of the Earth

GE Infrastructure  
Greenpeace

Health and Safety Executive  
Hydrogen Energy

Institute of Biology, Institute of Physics, and the Royal Society of Chemistry  
Institution of Engineering and Technology  
International Power

Marathon Oil  
Microbial Dolomites Global Ltd

National Grid  
National Oceanography Centre, Southampton  
Newcastle University, Sir Joseph Swan Institute

Oil & Gas UK

Parliamentary Office of Science and Technology  
Peel Energy Ltd  
Planning Inspectorate  
Plymouth Marine Laboratory  
Powerfuels Power Ltd  
Powergen plc  
Progressive Energy

RSPB  
RWE npower

Schlumberger  
Scottish and Southern Energy  
Scottish National Heritage  
ScottishPower  
Scottish Environment Protection Agency  
Shell  
Sussex Energy Group

Total Holdings UK Ltd  
Trades Union Congress  
Trades Union Congress Clean Coal Task Group  
Tullow Oil Plc

UK Advanced Power Generation Technology Forum  
UK Carbon Capture and Storage Consortium  
UK Energy Research Centre

Welsh Assembly Sustainable Energy and Industry  
Welsh Power  
Worldwide Development Movement  
World Wildlife Fund UK

## Annex 3

# Better Regulation Executive Code of Practice on Consultation

The complete code is available on the Better Regulation Executive's web site, at: <http://bre.berr.gov.uk/regulation/consultation/code/>

The six consultation criteria which we seek to follow throughout this consultation process are:

- 1. Consult widely throughout the process, allowing a minimum of 12 weeks for written consultation at least once during the development of the policy.**
- 2. Be clear about what your proposals are, who may be affected, what questions are being asked and the timescale for responses.**
- 3. Ensure that your consultation is clear, concise and widely accessible.**
- 4. Give feedback regarding the responses received and how the consultation process influenced the policy.**
- 5. Monitor your department's effectiveness at consultation, including through the use of a designated consultation co-ordinator.**
- 6. Ensure your consultation follows better regulation best practice, including carrying out a Regulatory Impact Assessment if appropriate.**

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