

Carbon Capture Readiness

Government's response to the consultation responses

CCR Guidance Consultation Response

Chapter 1	3
Introduction	3
Responses to the Consultation on “Guidance on Carbon Capture Readiness and Applications under Section 36 of the Electricity Act 1989”	4
Summary of Government’s Response to the Consultation	4
Coal Power Stations and CCR	5
Relevance of the CCR Guidance to Consent Applications made to the Infrastructure Planning Commission	6
Chapter 2	7
Government Response to Question 1	7
Preface and introductory sections of the guidance	8
Guidance on the allocation of sufficient space.....	9
Guidance on assessment of the technical feasibility of CCS retrofit	11
Guidance on the identification of a suitable offshore CO ₂ storage area..	13
Guidance on assessment of the technical feasibility of CO ₂ transport...	16
Guidance of assessment of the economic feasibility of CCS retrofit and CO ₂ transport.....	18
Guidance on the interaction of Hazardous Substances Consent and CCR	20
Guidance of the requirements of the review of CCR following Section 36 consent	21
Assessment of CCR in Section 36 applications by the consenting authority.....	23
Government Response to Question 2	24
Annex A	28
Annex B	29

Chapter 1

Introduction

- 1.1 The consultation on “Guidance on Carbon Capture Readiness and Applications under Section 36 of the Electricity Act 1989” was launched on 23 April 2009 and sought views on the clarity and content of the draft guidance from the UK Government to applicants on how to demonstrate that a proposed power station in England and Wales would be Carbon Capture Ready (CCR)¹.
- 1.2 In this context, the term “CCR”, used in the respect of an individual power station, refers to the fact that the consenting authority has concluded at the time the consent was granted that it will be technically and economically feasible (giving to those terms the meaning outlined below) to retrofit CCS to that power station in the future, and references to retrofitting CCS to a power station should be understood to include linking it by way of suitable means of transport to an offshore site of deep geological storage as well as the retrofitting of carbon capture (and CO₂ compression) equipment to the power station itself.
- 1.3 The CCR policy applies to new combustion power stations in England and Wales² with a generating capacity at or over 300 MWe and of a type covered by the Large Combustion Plant Directive (LCPD). It was introduced by Government with effect from 23 April 2009 following a consultation³ on the role CCR should play in the Section 36 consent process. Government policy is that to receive Section 36 consent, amongst other requirements, all such new combustion power stations must be CCR and must therefore set space aside to accommodate future carbon capture equipment.
- 1.4 The CCR policy implements Article 33 of the EU Directive on the Geological Storage of Carbon Dioxide (Directive 2009/31/EC), which requires a number of assessments to be carried out to determine whether it is, or at some future stage will be, feasible to capture, transport and store the CO₂ emitted by any proposed power station with a generating capacity at or over 300 MWe and of a type covered by the LCPD⁴. If it is judged to be feasible, the Directive requires

¹ The original consultation document “Guidance on Carbon Capture Readiness and Applications under Section 36 of the Electricity Act 1989” is available via the DECC website: <http://decc.gov.uk/en/content/cms/consultations/closed/closed.aspx>

² The Scottish Executive is responsible for determining Section 36 consents in Scotland and the Northern Ireland Executive for those in Northern Ireland.

³ The consultation “Towards Carbon Capture and Storage” and the Government’s response to it which sets out CCR policy are available via the DECC website: http://decc.gov.uk/en/content/cms/consultations/towards_ccs/towards_ccs.aspx

⁴ Article 33 of Directive 2009/31 inserts a new Article 9a into the LCPD. For convenience, this document refers to Article 33, although strictly, the operative provision will be the new Article 9a.

space to be set aside to accommodate future carbon capture equipment.

Responses to the Consultation on “Guidance on Carbon Capture Readiness and Applications under Section 36 of the Electricity Act 1989”

- 1.5 The consultation document was made available online and a list of those invited to respond was in Annex 2 of the consultation document, while Annex B here lists those bodies and individuals who responded. We are grateful for the time and thought put into these responses by all concerned.
- 1.6 A total of 30 responses to the consultation were received, many responding to both consultation questions (listed at Annex A) either before the deadline of 22 June 2009 or shortly thereafter.
- 1.7 Responses ranged from general comments on some aspects of energy policy to detailed considerations of the questions posed in the consultation document. Table 1 below gives a breakdown of the responses by type of organisation or individuals.

Table 1: Total Responses to the Consultation

Category	Number	% of Total responses
Business	6	20
Operators	12	40
Professional bodies	2	7
Trade associations	3	10
Academic institutions	1	3
NGOs	1	3
Individuals	0	0
Other	5	17
Total	30	100

- 1.8 A summary of the responses to each question and the Government's views in response are detailed in Chapter 2. A copy of the final guidance was published alongside this document and is available via the DECC website⁵.

Summary of Government's Response to the Consultation

- 1.9 The Government welcomes the detailed comments on the clarity and content of CCR guidance made by respondents.

⁵ The final guidance is available on the DECC website via:
http://decc.gov.uk/en/content/cms/what_we_do/uk_supply/consents_planning/guidance/guidance.aspx

- 1.10 The guidance has been amended to clarify the requirements of the economic assessments of retrofitting and CO₂ transport. Government considers that applicants should provide a single economic assessment covering the full CCS chain, from retrofit through transport to storage, providing a meaningful assessment that takes account of all the relevant costs and benefits which will be relevant to future investment decisions.
- 1.11 The guidance has been amended to clarify the requirements of the 2 yearly review of the CCR assessments, required as a condition of Section 36 consent. In addition the final guidance now also includes a set of model conditions on CCR, of the sort which would now be included in Section 36 consents.
- 1.12 The final guidance has also been amended to take account of minor clarifications on the other assessments following useful suggestions from respondents. After consideration of the responses to Question 2 of the consultation, the Government has concluded that no other issues need to be addressed in the final version of the guidance.

Coal Power Stations and CCR

- 1.13 Coal emits more CO₂ per unit of electricity produced than any other form of generation and, with the global use of coal as a fuel for electricity generation expected to increase over the coming decades, there is an urgent need to develop technologies that tackle emissions. The Government published the consultation “A Framework for the Development of Clean Coal” on 17 June 09⁶, asking for responses by 9 September 2009.
- 1.14 The Government response⁷ is published alongside this consultation and confirms the following new policy for new coal power stations:
- **No new coal without CCS.** A programme of up to four commercial-scale CCS demonstrations, funded by a new financial support mechanism (CCS Incentive), and a requirement for any new coal power station to demonstrate the full CCS chain (capture, transport and storage) at commercial scale;
 - **A long term transition to clean coal.** A rolling review process, which is planned to report in 2018, will consider the case for new regulatory and financial measures to further drive the move to clean coal. Government ambition is to see CCS ready for wider deployment from 2020. Government expects demonstration plant will retrofit CCS to their full capacity by

⁶ The consultation on a framework for the development of clean coal is available via the DECC website:

http://decc.gov.uk/en/content/cms/consultations/clean_coal/clean_coal.aspx

⁷ <http://www.decc.gov.uk/en/content/cms/consultations/closed/closed.aspx>

2025, with the CCS Incentive able to provide financial support if the technology is not commercially viable under the EU ETS at that point.

- 1.15 In order to receive Section 36 consent for coal power stations at or over 300 MWe, applicants would need to demonstrate that, in addition to fulfilling any requirements to demonstrate CCS on a portion of the power station arising from the Government's response to the coal consultation, the remainder of the power station could be considered CCR.

Relevance of the CCR Guidance to Consent Applications made to the Infrastructure Planning Commission

- 1.16 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 s.15 of the Planning Act 2008 under s.104 of that Act. The IPC will then become responsible for consenting applications for new power stations following designation of the relevant national policy statements (NPS).
- 1.17 The IPC has been directed, in the Overarching Energy National Policy Statement, to follow the CCR guidance, or any successor to it produced by the Department of Energy and Climate Change, when considering applications in respect of combustion generating stations (which are at or over 300 MWe and of a type covered by the LCPD). The IPC has also been directed to have regard to advice from the Environment Agency as to the suitability of the space set aside on or near site for carbon capture equipment and the technical feasibility of the retrofitting carbon capture equipment.

Chapter 2

Government Response to Question 1

Question 1: Taking into account the current state of the development of CCS technologies, and of related regulation, does the draft guidance document for applicants for Section 36 Electricity Act 1989 consents provide sufficient clarity on the level of detail required in the assessments necessary to demonstrate carbon capture readiness?

2. 1 Some respondents used their response to this consultation to reiterate their views on why CCR was not necessary, because they felt industry did not need to be regulated to make these preparations and it should be a commercial decision for developers, or because they felt that CCR did not go far enough and that Government should implement mandatory CCS for any new coal stations.
2. 2 Arguments were raised in favour of making biomass power stations exempt from the requirement to be CCR. Gas fired power stations were also highlighted as worthy of exemption from the requirement to be CCR: given their lower emissions compared to coal, applicants for consent to construct new gas power stations should not face the same requirements which could delay or prevent the construction of new gas power stations. Other respondents felt that the Government should not go beyond the requirements of the Directive 2009/31/EC by requiring all new power stations at or over 300 MWe and of a type covered by the LCPD (hereinafter referred to as the CCR threshold) to be CCR.
2. 3 All of the above viewpoints were carefully considered and discussed in the Government's response to the "Towards Carbon Capture and Storage" consultation³ and as such are not dealt with further in this consultation response.
2. 4 The majority of respondents agreed that the correct issues had been covered within the CCR guidance. However, while some respondents felt that it provided clear and useful information for industry, many felt that the degree of clarity on the level of detail required for each of the CCR assessments was not sufficient to enable section 36 applicants to demonstrate that a proposed power station could be considered CCR.
2. 5 Respondents' views on each section of the guidance, including the separate CCR assessments, together with the Government's response to these viewpoints are summarised below. Responses on the assessment of the economic feasibility of retrofitting CCS equipment and those on the assessment of the economic feasibility of CO₂ transport have been dealt with together. Final guidance on the demonstration of CCR in Section 36 applications is published alongside this document and is available via the DECC website⁵.

Preface and introductory sections of the guidance

2. 6 Many respondents commented that the purpose of the guidance should be extended to include its relevance to statutory advisors. They considered the guidance should explain the nature of the CCR assessments and the level of information which Government considers sufficient to demonstrate that the proposed power station will be CCR. Respondents felt strongly that the guidance should be used to explain to statutory advisors what level of information can reasonably be asked for as part of the CCR assessments.
2. 7 Some respondents expressed views that the guidance should acknowledge that Government policy on CCR goes further than the EU policy set out within the Directive for the Geological Storage of Carbon Dioxide. Respondents also questioned whether the guidance could state that no consent for new power stations covered by the CCR threshold could be given without demonstrating that the power station will be CCR or whether this pre-determines the Secretary of State's decision on a consent application.
2. 8 The CCR threshold was also discussed by some respondents who requested that the guidance clarify whether this threshold applied to new individual units with dedicated chimney stacks or to the overall combined capacity of the new installations on site. During the consultation queries were also raised on how applications for mixed energy from waste and biomass power stations and combined applications for open-cycle and combined cycle power stations on the same site would be treated.

Government response

2. 9 The preface and introductory sections of the guidance clearly explain how Government policy on CCR implements Article 33 of the Directive 2009/31/EC and set out the rationale for going beyond this Directive by requiring CCR as a consent condition for all new combustion power stations at the CCR threshold.
2. 10 Government believes that the guidance does have a useful role to play in explaining to all parties involved in the Section 36 consent process what the requirements are for a proposed development to be judged CCR and what level of detail can be provided at the stage of a Section 36 consent application. The guidance has been amended to reflect this.
2. 11 The introductory section of the finalised CCR guidance has also been amended to reflect the expectation that it is not sufficient for applicants simply to provide an assessment of the available options and that instead applicants must make clear which option is considered the most suitable for their proposed development. Assessments of other options could be included if this assists applicants in justifying their preferred approach.

2. 12 The Government explained in paragraph 3.153 of its response to the “Towards Carbon Capture and Storage” consultation³ that the CCR requirements apply to capacity of the consented power station as a whole rather than the capacity of each individual unit which makes up the power station. For example three separate 100 MW generation units (each with their own chimney) of the same generation type and applied for as part of a single Section 36 application on the same site would be treated as single installation for the purposes of CCR. Where an application is submitted covering differing generation types, the CCR requirements are applied to the combined capacity of units of the same type. For example in an application for 900MW of combined-cycle gas generation (CCGT) with 100MW of open-cycle generation (OGCT), the CCR requirements would apply to the CCGT as its capacity is greater than the 300 MWe threshold for CCR but would not apply to the OCGT as its capacity is below 300 MWe. This has been made clear in the guidance document.
2. 13 Energy from waste power stations are not covered by the LCPD and are therefore not subject to the CCR requirements because their primary function is classified as waste disposal rather than energy production. Mixed energy from waste and biomass plants are also not covered by the LCPD, and therefore not subject to the CCR requirements, and are instead regulated under the EU Directive on Waste.

Guidance on the allocation of sufficient space

2. 14 Many respondents asked for clarity on what was meant by “on or near the site” with regard to the allocation of space for future CCS retrofit. This was thought especially relevant to applicants proposing pre-combustion capture processes involving gasification and production of hydrogen as a fuel from either coal or natural gas, where respondents considered that these processes could be carried out at some distance from the power station. The issue of whether applicants had to own the site or whether an option to obtain the land in the future would be sufficient was also raised.
2. 15 Regarding the amount of land which should be set aside, respondents welcomed the suggestion that it was the responsibility of applicants to justify the amount of space necessary for their chosen capture technology, but questioned the value of the figures quoted in the guidance on the approximate land footprint of different types of capture fitted to various types of power station. The figures were thought to be outdated and not particularly helpful to applicants as the table did not specify the capacity of power station that these figures applied to.
2. 16 The interim use of the land to be set aside was also raised in some consultation responses. Views were expressed that this land should not be considered available for environmental mitigation. During the consultation period DECC was also asked for clarification on use of

land for CCR where the land had previously been allocated in a local authority's spatial plans as employment or industrial land.

2. 17 Several respondents commented that it was not possible for applicants at the Section 36 consent application stage to provide even indicative diagrams of the power station layout as part of their justification of the amount of land allocated for CCR because no form of detailed engineering design would have been carried out prior to the successful receipt of a Section 36 consent.

Government response

2. 18 Government considers that applicants must be able to demonstrate suitably located land will be available for them to use for the capture element of the CCS chain at the point of retrofit. Evidence that such land is owned by the applicant (either freehold, or on a lease whose term matches or exceeds the expected lifetime of the power station) would obviously fulfil this criterion. Whether lesser interests in the land, such as options, will fulfil it will have to be determined on a case by case basis, by reference to the specific contractual arrangements in each case (relevant factors will include whether retrofitting is likely to occur after the latest date at which it is legally possible to provide for the option to be exercised⁸). The key consideration is that the ownership or use of the land before the applicant decides or is required to retrofit should not present any foreseeable obstacle to retrofitting at that time.
2. 19 On the location of the space set aside for carbon capture equipment, Government considers it preferable for the space to be on the power station site but recognises that in some cases this arrangement may not be available to applicants. In such circumstances the space adjacent to this site or at a short distance could also be considered sufficient, provided there are no obstacles to establishing the necessary connections between the two sites.
2. 20 This is of particular importance to applicants considering switching to the use of hydrogen as a fuel. As stated in the draft guidance, uncertainties over whether the volume of hydrogen needed would be commercially available at the unknown point in the future when it might be required mean that applicants cannot propose switching to hydrogen as an alternative to allowing space on or near to the site for the retrofit of carbon capture equipment (this could include the retrofit of integrated gasification and CO₂ capture equipment on land on or near to the power station site).
2. 21 Government considers that (in keeping with a light touch approach to CCR) it is preferable to allow applicants to justify the amount of space needed for individual projects rather than to set prescriptive targets on how much land should be set aside for particular types of projects.

⁸ See the Perpetuities and Accumulations Act 1964,

Applicants could feasibly provide this justification using calculations on the sizes of vessels needed to process either the input fuel for pre-combustion capture or to process the CO₂ present in the flue gases for post combustion capture. However, the table from the recent IEA report⁹ (which has been amended to reflect the capacity of the power station this capture equipment may be appropriate for) does provide applicants, local authorities and statutory advisors with an approximate indication of the scale of carbon capture equipment which may be necessary and therefore it has been retained in the final guidance to applicants. The Environment Agency will consider all information presented by applicants (in addition to that from other sources) before making a recommendation to the Secretary of State, on the basis of current knowledge, as to whether an applicant's proposals include sufficient space for the future retrofit of carbon capture equipment.

2. 22 The interim use and categorisation in regional spatial plans of land set aside for CCR are topics addressed in the final version of the guidance. The Government agrees that it would not be appropriate for this land to be considered as environmental mitigation space to compensate for loss of habit due to the power station development. This is because the purpose of the land is as a site which would in the future be for carbon capture equipment and therefore it would not be available for long term mitigation. It is also important that the site is not allowed to become a wildlife reserve (through neglect or mismanagement) such that it would not be available for retrofit in the future. Government does not intend that land set aside for CCR should be categorised in the future for purposes other than industrial use in regional spatial plans of land use.
2. 23 Government does not agree that applicants are unable at the CCR stage to provide outline plans showing how the land set aside for carbon capture equipment will be used. This is because information on the main components necessary for a capture plant is widely available (further details on some capture technologies are also included in the guidance) and basic calculations can be carried out to estimate the size of the vessels, for example using known amine performance factors for post-combustion capture processes. Without this information it would not be possible for the Environment Agency to make a reasoned recommendation to the Secretary of State as to whether the amount of space set aside and its location were suitable for CCR.

Guidance on assessment of the technical feasibility of CCS retrofit

2. 24 Many respondents commented that while the principle of ensuring no foreseeable barriers existed to CCS retrofit was clearly expressed in the guidance, the checklists proposed to aid applicants' assessments were overly detailed and included information which could not be

⁹ CO₂ capture as a factor in power plant investment decisions. 2006/8. IEA, Greenhouse Gas Report

known at the time of application for Section 36 consent which would be prior to any detailed tender negotiations.

2. 25 Some respondents were also anxious to ensure that the guidance did not exclude the option to raise the steam necessary for post-combustion capture processes from additional boilers rather than extracting steam directly from the generating cycle. Respondents considered that because this arrangement would require no modifications to the power station prior to CCS retrofit, the power station would therefore operate in the most efficient manner prior to retrofit. In addition because capture would not involve extracting steam from the generating cycle, operational CCS would not result in a loss of output from the power station.
2. 26 Respondents argued that provided provision was made to capture the emissions from the entire system (including the separate stream of CO₂ emissions from the standalone boilers), the power station design and choice of steam source for post-combustion capture should be left to the applicants. Other respondents felt that if provision of a separate steam source was considered an acceptable part of proposals for CCS retrofit, then this steam should be provided by a dedicated standalone CHP plant or stand-alone boiler.

Government response

2. 27 Government intends to consider applicants' CCR assessments with a "no barriers" approach. The guidance now explains to applicants that they are asked to demonstrate that there are no known technical or economic barriers which would prevent the installation and operation of their chosen CCS technologies. Government does not intend to prescribe the detail of how CCS technology is applied in individual cases, but does expect that applicants will follow best practice as far as this knowledge is available and provide a reasoned justification of their preferred choice.
2. 28 The concept of best practice is particularly relevant to post-combustion capture, which is considered to be particularly suitable for retrofit. The process requires steam in order to regenerate the CO₂ saturated amines, providing clean amines which can be recycled back into the system and a high concentration stream of CO₂ ready for compression, transport and eventual storage. Standalone boilers are not considered as efficient a method of providing steam for regeneration of the amines as an integrated capture system in which steam is extracted from within the combined cycle gas turbine (CCGT) or coal power station itself. While Government agrees that the guidance on CCR should not in principle rule in or out particular technologies, it is important to bear in mind that the purpose of CCR is to ensure the potential for cost-effective and efficient emission reductions in the future. Clearly the more cost-effective the process, the earlier it will be economically feasible to retrofit CCS and the sooner the emission reduction potential can be realised.

2. 29 If applicants choose a standalone boiler as part of their proposals for the retrofit of carbon capture equipment, they must justify this choice and demonstrate that it could be considered comparable to an integrated system once carbon capture is operational. For example this could be by providing evidence that the standalone system for the provision of steam for post-combustion capture was as thermally efficient per unit of CO₂ as an integrated system once carbon capture is operational for their particular power station. By asking applicants to provide a justification of their choice rather than stating applications of this type will not be considered suitable, the Government has not ruled out the possibility that such options for standalone steam provision will be considered. Applicants are only asked to compare the efficiencies of the power stations once capture is operational rather than before because there are not thought to be significant differences¹⁰ in plant efficiencies prior to retrofit between modified (needed for integrated capture) and unmodified (for use with standalone steam provision capture) generating turbines.
2. 30 In order for the Secretary of State to be confident that a proposed power station is CCR, applicants must include in their CCR assessment a clear statement on what type of technology is considered most appropriate for their power station. Applicants may wish to include a discussion of other technology options to justify their choice, but must make clear which option is considered most appropriate for their power station. This option should then be the one assessed when considering the economic feasibility of retrofitting carbon capture equipment to the power station. The guidance has been amended to reflect this.
2. 31 The guidance has also been clarified to ensure applicants understand that the proposals for retrofit need to be sufficient for the entire capacity of the proposed power station rather than simply a portion of it.

Guidance on the identification of a suitable offshore CO₂ storage area

2. 32 Much of the discussion on identification of suitable storage areas focused on the limitation placed on the number of viable power station sites by availability of storage areas. Respondents argued that onshore storage sites as well as offshore sites should be considered suitable by Government for CO₂ storage and asked that the guidance be amended to make clear whether onshore storage proposals could be submitted in CCR assessments. It was thought this would ensure inland as well as coastal sites for power stations would be utilised by applicants.

¹⁰ **Lucquiaud M., Patel P., Chalmers H. and Gibbins J.** Retrofitting CO₂ capture ready fossil fuel plants with post combustion capture. Part 2: requirements for natural gas combined cycle plants using solvent-based flue gas scrubbing. *Proc. IMechE, Part A: J. Power and Energy*, 2009, **223**(A3), 227-238

2. 33 Other respondents considered that applicants should not be required to choose any specific storage area as part of their CCR assessments because no assurance could be given that that particular storage area would be available for the applicant to use at the time of CCS retrofit and operation.
2. 34 Respondents also asked for clarity on what would happen if more than one applicant proposed using the same area for storage and on situations where there were competing uses for the same sub-surface storage area offshore, for example for natural gas storage versus CO₂ storage.
2. 35 Some respondents also used the consultation as an opportunity to question the status of the current regulations surrounding the transboundary movement of CO₂ and to ask how the Marine Management Organisation (MMO) proposed in the Marine Bill would consider storage proposals situated within Marine Conservation Zones (MCZ).

Government response

2. 36 Whilst the Energy Act 2008 only applies to the UK offshore area, Directive 2009/31/EC permits the licensing of storage in any part of a Member State's territory that has been determined as suitable for a storage site, including the onshore area. The Directive also modifies existing European legislation that would otherwise prohibit onshore storage. The "Towards Carbon Capture and Storage" consultation³ carried out in 2008 asked for views on the Government's assessment that the offshore area should be the UK priority for storage in the first instance.
2. 37 The vast majority of those responding to that consultation supported this assessment, since in practice the offshore area was likely to provide the first opportunities to demonstrate this technology. However, most of the responses also cautioned that this did not mean that storage opportunities onshore should be ignored. Onshore storage had a number of potential advantages, including cost, ease of monitoring and the fact that it would eliminate or significantly reduce the distance that CO₂ would have to be transported. The Government's approach is therefore to continue to enable offshore storage of CO₂ and review the case for enabling onshore storage as and when warranted by any interest that might be expressed in onshore storage in the future. However, for the moment, because the current legislation in the Energy Act 2008 only permits the offshore storage of CO₂, applicants must identify an offshore area of CO₂ storage and proposals for onshore storage will not be considered suitable.
2. 38 In addition, the Government considers it essential that applicants identify a suitable area offshore for the storage of CO₂ to be emitted by

the proposed power station because without this information the viability of the proposed transport route cannot be assessed.

2. 39 The guidance directs applicants to include information on the amount of CO₂ that would be produced and stored as part of their CCR storage assessment. This data will be used to determine whether the proposed storage area has sufficient capacity for any later additional applicants who proposed using the same storage area as an earlier applicant. Any applicant who proposes to use a storage area which is not expected to contain sufficient available capacity to store that applicant's CO₂ will be asked to propose an alternative storage area.
2. 40 It should be noted that applicants will be required to obtain a permit from DECC and a lease from the Crown Estate in order to store CO₂ offshore when CCS is operational. Like the other information provided in CCR assessments, an applicant's choice of storage area at the CCR stage will not be binding. It therefore follows that an applicant's choice of storage area at the CCR stage will not confer priority on that applicant for use of that storage area when CCS is deployed on their power station.
2. 41 If applicants wish to apply for the storage permit and lease at the CCR stage to ensure that a storage area will be available for their use, that will be a commercial decision for applicants.
2. 42 The Government's views on competing uses of potential storage areas were set out in its response to the "Towards carbon capture and storage" consultation and further information is available in the current consultation on the proposed offshore carbon dioxide storage licensing regime¹¹. Where there are potential alternative uses of sub-surface space and where these alternate uses are not compatible with CO₂ storage, the Government intends to give priority to safeguarding security of energy supply over CO₂ storage interests.
2. 43 The OSPAR convention governing the transboundary transport of CO₂ has been agreed but has yet to be ratified. Until this convention is ratified the transboundary transport of CO₂ is prohibited.
2. 44 The Marine and Coastal Access Bill currently before Parliament aims to provide a new, more strategic and coherent approach to the management of marine activities and the protection of marine resources. DECC is supportive of this new approach, and proposals to develop and operate carbon storage facilities will have to take account of relevant marine policy documents. The MMO will accordingly be fully consulted on all issues concerning offshore carbon storage and all storage projects relevant to its area of jurisdiction.

¹¹ The consultation on the proposed offshore carbon dioxide storage licensing regime is available on the DECC website via:
http://decc.gov.uk/en/content/cms/consultations/co2_storage/co2_storage.aspx

Guidance on assessment of the technical feasibility of CO₂ transport

2. 45 Many respondents questioned the value of assessing a CO₂ transport method and route at this early stage in the development of CCS since respondents thought it likely that a CCS industry and network of CO₂ pipelines would develop rather than a system where each individual power station had its own dedicated pipeline or alternative transport method.
2. 46 Respondents also argued that the Government should be able to ensure that, once an applicant had identified a route for a CO₂ pipeline, this route should be protected, for example from development which would prevent the installation of the pipeline on safety grounds or from speculative land purchases. Such purchases were thought likely following a Section 36 consent application in which all submitted CCR assessments, including information on transport options, would be public documents. One alternative method to protect the route suggested was that the applicant should become a statutory consultee for any development along that route following successful receipt of a Section 36 consent.
2. 47 Some respondents who agreed that the transport assessment should remain a component of the CCR assessments asked for a clearer definition within the guidance of pipeline route requirements, for example did the width of the corridor also indicate the degree of clearance which must exist between the pipeline and an identified obstacle?
2. 48 The hazard classification of CO₂ pipelines was discussed by some respondents, many of whom urged the Government to clarify how CO₂ pipelines would be classified under the Pipeline Safety Regulations¹². Respondents considered this essential in order that a viable route for CO₂ transport could be proposed as part a CCR assessment which would not then be ruled out at a later stage due to the imposition of new safety regulations.
2. 49 The degree of environmental assessment required for an applicant's chosen transport option was also mentioned by many respondents to the consultation. The beach crossing to the offshore stage of a pipeline and the "way-out" from the power station for a pipeline were highlighted as critical and while respondents acknowledged that these were mentioned in the draft guidance, a greater level of detail about exactly what should be included in the CCR assessment was thought necessary.
2. 50 Much of the analysis of this section of the guidance focused on proposals for the transport of CO₂ via pipelines. However during the consultation, views were expressed that transport by ship may be

¹² Further details on the regulations are available via the HSE website at:
<http://www.hse.gov.uk/pipelines/index.htm>

preferable, especially during the early stages of CCS deployment. Further information on the safety regulations surrounding shipping and in particular on the harbour orders which may be necessary for the loading of CO₂ onto ships were suggested for inclusion in the guidance.

Government response

2. 51 The Government considers it essential that applicants identify a technically feasible CO₂ transport method and route from the power station to the proposed storage area. However, Government agrees that, in time, CCS clusters may develop where transport facilities would be shared. Where applicants consider that they have firm proposals for shared transport facilities, these should be submitted as part of the applicant's CCR report on the technical feasibility of CO₂ transport. The same level of information would be required as for an individual point to point transport assessment from the power station directly to the storage area. The Secretary of State would need to be satisfied of a sufficient degree of certainty in these proposals.
2. 52 The transport routes identified by applicants will not be protected by Government, because of the evolving nature of the CCS industry. In general, outside the immediate surroundings of a power station, there is a range of possible routes which pipelines could follow to reach suitable storage sites (or to connect with other, larger pipelines leading to such sites). Given the current uncertainty over when the majority of the power stations which are built subject to CCR requirements will actually require connections to storage sites (since they will not be coal plants, which will require some form of connection from the outset), the Government does not consider that at this stage the potential adverse consequences of taking action to protect a series of essentially hypothetical transport routes, in terms of, for example, long-term planning blight, would be justified. Applicants are asked to identify major pre-existing obstacles (arising because of safety or environmental concerns) within a 10km radius of the station in order that the degree of flexibility that may exist over the eventual pipeline route (if, for example, it turns out at a later stage that subsequent development has made the originally favoured route impracticable) can be ascertained.
2. 53 In this context it is important to emphasise that applicants will not be required to use the transport option identified at the CCR stage if a more viable option exists at the time of CCS deployment. It is also important that applicants inform the local planning authorities in the areas surrounding the power station of the likelihood that a CO₂ pipeline will be needed in the future to ensure this is taken into account in local planning decisions. The 2 yearly reviews of a power station's CCR assessments (see paragraphs 2. 77 to 2. 81) will also provide information to allow Government to monitor the need for any changes to this policy, such as whether CO₂ transport routes need to be protected in the future.

2. 54 Respondents to the consultation asked for clarity on the definition of the route corridor for onshore and offshore CO₂ pipelines. The guidance has been amended to make clear that the corridor widths are not the degree of clearance which must exist between the pipeline and other forms of development. The Government understands that the HSE intend to consult on the classification of dense phase CO₂ pipelines under the Pipeline Safety Regulations¹². This may assist applicants in the future in determining a suitable corridor for onshore CO₂ pipelines.
2. 55 The guidance document details the requirements on applicants regarding the assessments of the impacts of their proposed transport infrastructure. Applicants are not required to carry out a full EIA for the proposed transport route (see paragraph 2. 86) but are instead required to identify and include in their CCR transport assessment potential barriers to their proposed transport method, particularly regarding beach crossings for CO₂ pipelines, and to suggest ways in which the impacts of the infrastructure could be mitigated. It is important to emphasise that CCR does not equate to consent for CCS deployment and further consent would be required (either from DECC [or, in due course, the IPC] or the local authority, depending on the length of the pipeline for the onshore portion, and from DECC for the offshore portion) before any CO₂ pipeline could be constructed. The guidance also includes sources of information for the regulations surrounding the shipping of chemicals.

Guidance of assessment of the economic feasibility of CCS retrofit and CO₂ transport

2. 56 Most respondents commented that the Government's intention, to give applicants a wide choice over how these economic assessments were approached, was reasonable. However the majority of respondents also commented that the draft guidance did not give sufficient clarity on the type of information that was required from applicants in order to demonstrate the economic feasibility of their proposals for CCS retrofit and CO₂ transport or how the information submitted in a Section 36 application would be evaluated.
2. 57 Some respondents questioned what value these assessments added to the concept of CCR, given the uncertainties surrounding future projections of the inputs to these economic assessments such as the carbon price and equipment costs. Respondents were also concerned that this uncertainty could leave a consent condition open to challenge on the basis that the economic feasibility of CCS retrofit and transport had not been adequately demonstrated.
2. 58 Suggestions made by respondents to improve the guidance on the economic assessments included the provision by Government of a suitable set of input parameters, for example a range of equipment or transport costs, and estimates of future carbon prices in order to assist applicants in their assessments.

2. 59 Respondents also suggested additional sources of information which applicants could be directed to, including “A Blue Print for a Safer Planet” by Lord Stern, published in 2009.

Government’s response

2. 60 Economic assessments for the feasibility of retrofitting and CO₂ transport are required by Article 33 of Directive 2009/31/EC. Therefore Government is required to ensure that these assessments are carried out as part of the consenting process for any new power station which is within the CCR threshold. In addition to the requirements of the Directive, the Government has made clear in its response to the “Towards Carbon Capture and Storage” consultation that in England and Wales (the Scottish Executive is responsible for Section 36 consents in Scotland) only applications for such new power stations which demonstrate that proposed development is CCR will receive Section 36 consent.
2. 61 Article 33 of Directive 2009/31/EC only makes explicit reference to economic feasibility in connection with capture and transport facilities. However, it is clear that from a commercial point of view, an operator will always want to have some idea of the costs associated with storage as well as those of the other links in the CCS chain before making a commitment to retrofit CCS. After thorough consideration of the consultation responses, the Government considers that in order to ensure that these assessments are a meaningful part of the CCR process, they should encompass retrofitting of capture equipment, CO₂ transport and the storage of CO₂. This will allow applicants to demonstrate the full range of costs and benefits associated with the deployment of CCS to any given plant, thereby fulfilling one of the underlying aims of the Government’s CCR policy (identifying, and not granting development consent to, those plants where it is unlikely that there will ever be a reasonable business case for CCS) in a manner which takes full account of all relevant technical and economic factors and is not inconsistent with EU policy as represented in the Directive.
2. 62 The Government recognises that to the extent that these assessments are (inevitably) based on assumptions and estimates, any conclusions which are reached in them, either by developers or by the consenting authority, will necessarily be matters of probability rather than certainty. But that does not detract from their validity. As in other areas of regulatory activity in which administrative decisions have to be made on the basis of economic conjecture, the fact that some of the inputs are less than certain need not mean that the conclusion is in any sense legally unsound, provided that it has been properly reasoned, taking due account of the nature of the evidence and the decision which has to be reached (which, in this case, as noted above, is fundamentally about predicting what is likely to happen, not providing a guarantee that something will happen). Moreover, it is to be expected that, over time, increased experience of both the technical and economic contexts will increase the precision of the assessments.

2. 63 Applicants will be required to provide evidence of reasonable scenarios, taking into account the cost of the capture technology and transport option chosen for the technical CCR assessments and the estimated costs of CO₂ storage, which make operational CCS economically feasible for the proposed development. The final guidance has been amended to provide applicants with a template on which this assessment could be based. The guidance emphasises that this is not the only way in which the assessment could be addressed and that it is the responsibility of applicants to justify the preferred capture, transport and storage options set out in their development proposals.
2. 64 The Government does not consider it appropriate to provide applicants with the input parameters for their economic assessments as this would not lead to the assessment being specifically relevant to the proposed development. The Government considers that applicants will be best informed about their own particular power station's situation to make estimates of these parameters and to explain why they are appropriate for the power station in question.
2. 65 The Government has not attempted to provide an exhaustive list of reference sources in the guidance in order to assist applicants with the preparation of this economic assessment. The limited references suggested are those from DECC's own website or work carried out for Government. Applicants are free to draw on all sources that they consider relevant in the preparation of this assessment.

Guidance on the interaction of Hazardous Substances Consent and CCR

2. 66 The draft guidance stated that Hazardous Substances Consent (HSC) was considered necessary at the CCR stage if any of the chemicals proposed for use within the applicant's chosen capture method were currently classified as hazardous under the Planning (Hazardous Substances) Regulations 1992¹³. However, applicants questioned whether the degree of the information necessary to obtain HSC could be provided at the CCR stage to the Hazardous Substances Authority (which in this case could be the Secretary of State if HSC was applied for at the same time as Section 36 consent¹⁴). This would need to include information on the vessel specifications and the temperatures and pressures to which the chemicals would be exposed during the capture process.

¹³ These regulations came into force on 11th March 1992 and were amended in 1999 and 2009

¹⁴ 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.

2. 67 Some respondents also requested clarity on the circumstances in which HSC was required, most particularly on whether dense phase CO₂ would trigger the requirement for HSC.

Government response

2. 68 The guidance makes clear that only applicants who propose using substances classified as hazardous under the Planning (Hazardous Substances) Regulations 1992¹³ need to apply for HSC in parallel with the Section 36 consent application in which they demonstrate CCR.
2. 69 Government recognises that the degree of detail necessary to obtain HSC may be difficult to acquire accurately at the CCR stage and because of this HSE have committed to provide applicants with guidance to assist them in completing their application given the uncertainties which may exist over the exact nature of the vessels and processes which may be involved in operational CCS.
2. 70 This is a pragmatic approach which takes account of the evolving nature of CCS technologies and the safety regulations surrounding CCS. Government considers that it is important for the application for HSC, referred to above, to be determined in parallel with the initial Section 36 application. Otherwise it is possible that there could be a conflict between the LPA's wish for future developments in the area immediately adjacent to the combustion station and the applicant's subsequent introduction of hazardous substances required for the carbon capture process.
2. 71 Government understands that the HSE intend to consult on the classification of dense phase CO₂ pipelines under the Pipeline Safety Regulations. This may assist applicants in the future in determining a suitable corridor for onshore CO₂ pipelines.

Guidance of the requirements of the review of CCR following Section 36 consent

2. 72 Opinion was divided among respondents on the benefits of the CCR review required every two years after successful receipt of a Section 36 consent and, if a review should be required, on what should be encompassed by the review. Some considered that it was unnecessary under any circumstances, others that it should only be required once CCS is mandatory for new power stations of the same fuel type as it is only at that stage that information on progress towards retrofitting existing CCR power stations would be useful. Others again felt that the review should be expanded to cover more elements of the original CCR assessments than stated in the draft guidance, for example to encompass applicants' storage proposals and assessments of the economic feasibility of operational CCS.
2. 73 Some respondents thought that the purpose of the reviews should be made clearer in the guidance and should be to assure the consenting

authority of the continuing absence of known barriers to retrofit rather than review of all possible new technical options. This would be particularly important if the guidance on retrofitting was updated. In that case applicants should only be expected to take account of material changes which would present a barrier to the original proposals.

2. 74 Respondents suggested that the requirement for these reviews should commence 3 months from the recognised commercial operation date rather than the date on which the power station begins to supply electricity to the grid (as this could occur during the commissioning phase).
2. 75 Many respondents thought it was important that the guidance should be clear on what form of sanction would be imposed if the Secretary of State was not satisfied with the content of the review report. Respondents asked whether, in such cases, the applicant would then be in breach of their Section 36 consent condition.
2. 76 Some respondents also highlighted a number of situations where factors beyond an applicant's control could mean that the options chosen at the time of the initial consent application were no longer available. These situations included development along the proposed transport route or use of an applicant's proposed storage area by another party.

Government response

2. 77 CCR is an interim measure, designed to widen the pool of power stations to which in time CCS may be retrofitted. Given the evolving state both of CCS technologies and of relevant safety regulation in particular, the Government considers it prudent to retain, through a Section 36 consent condition, the requirement for applicants to submit a regular review of the technical aspects of their CCR assessments of the feasibility of retrofitting and CO₂ transport and storage. Applicants will also be required through an additional Section 36 condition to retain an appropriate degree of control over the ownership and use of the additional space on or near to site set aside for the carbon capture equipment, so as to ensure that they continue to present no foreseeable barrier to retrofitting (as required by Article 33 of Directive 2009/31), and to report in the reviews on their ongoing compliance with this condition.
2. 78 If applicants fail to ensure that sufficient suitably located land remains available for the carbon capture equipment, they will be considered in breach of their original Section 36 consent and may be subject to legal action as a result.
2. 79 The Government considers that the purpose of review of a consented power station's CCR assessments should be to let Government know whether circumstances have changed such that there is any reason

why an applicant's original proposals cannot now be implemented. It will be a condition of an applicant's Section 36 consent that this information is supplied but (except as regards the maintenance of control over the space set aside for carbon capture equipment) the outcome of the review will not lead to an applicant being in breach of their Section 36 consent. The information gathered in such reviews will inform Government policy making, for example on the possible need for protected routes for CO₂ pipelines in the future¹⁵. The guidance has been amended to reflect these changes.

2. 80 The information gathered in the reviews will also be used to:
- inform future updated versions of the CCR guidance document to the benefit of all operators of CCR plants;
 - inform the UK's input to the EU's mandatory regular reviews of the Directive.
2. 81 The CCR reviews required following receipt of a section 36 consent will commence within 3 months of the commercial operation date of the power station and will be required every two years thereafter. These reports will need to continue only until such time as the applicant retrofits CCS to the full capacity of their power station.
2. 82 It is possible, if not likely, that some of the assumptions on which the economic assessment rests will need to be revisited over time in order to determine whether or not it has or will become economically feasible to fit CCS when the assessment predicted that it would be feasible. However, it would not be appropriate for the Government to require that the economic assessment be reviewed and possibly updated as part of the ongoing reporting requirements on CCR. This is partly because most, if not all, of the parameters which will determine economic feasibility are not in any way controlled by developers, and partly because information on matters such as exchange rates and predictions of future carbon prices are readily available to Government, if it wishes to consider the impact which changes in them may have on the feasibility of fitting CCS to particular power stations.

Assessment of CCR in Section 36 applications by the consenting authority

2. 83 Respondents asked that the guidance should make clear how the various elements within a CCR report will be assessed by DECC during consideration of a Section 36 application.

Government response

¹⁵ If appropriate, these policy changes will also be reflected in the National Policy Statements used by the Infrastructure Planning Commission.

2. 84 Details on how CCR reports within Section 36 applications will be assessed are already included in the guidance and the Government does not consider any further explanation necessary.

Government Response to Question 2

Question 2: Taking into account the Government's policy on CCR¹⁶ does the draft guidance document for applicants for section 36 Electricity Act 1989 consents cover all the issues that applicants might usefully seek to address to demonstrate they are CCR? If not, what might these be?

- 2.85 Respondents to the consultation suggested a range of additional issues for inclusion within the guidance on CCR. These issues are summarised below:
- A requirement that power stations (within the CCR threshold) consented, with a capture ready condition to set aside space for future retrofit, in the years prior to the introduction of the Government's CCR policy on 23 April 2009, should now be required to carry out the other technical and economic CCR assessments on retrofitting, transport and storage.
 - The guidance should also include provision for applicants to be "underground coal gasification" ready rather than carbon capture ready. Underground coal gasification can be used on coal seams which could not be mined economically. The coal is ignited, part combusted and the product gas recovered. The product gas is under pressure, considered to make it possible to capture the CO₂ via physical absorbents and regenerate it still at high pressure, avoiding the energy penalty which would otherwise be associated with recompression of the CO₂ for transport.
 - The guidance should contain illustrative examples of how to approach each assessment in addition to sections on the key information which must be included in each assessment.
 - The guidance should allow for applicants to include proposals for the use of CO₂ in industrial process in their CCR assessments and, in such cases, should not require applicants to identify an offshore storage area.
 - The guidance should explain what, if any, interaction exists between the CCR requirements and the Environmental Permitting Regulations.

¹⁶ The Government's response to the "Towards Carbon Capture and Storage" consultation which sets out CCR policy, is available on the DECC website at:
<http://www.decc.gov.uk/en/contents/cms/consultations/closed/closed.aspx>

- The guidance should explain how Directive 2009/31/EC's requirement in Section 2 of Article 33 will be implemented, with the effect that:

“The competent authority shall determine whether the conditions are met on the basis of the assessment referred to in paragraph 1 and other available information, particularly concerning the protection of the environment and human health.”¹⁷

Some respondents considered this would be best done by explaining which elements of the CCR proposals would be investigated in the Environmental Impact Assessment (EIA) for the proposed power station. Other respondents suggested that the EIA should include an outline assessment of the carbon capture.

- The guidance should include a section on CCR and its impact on the public perception of CCS.

Government's response

2. 86 Each of the points suggested by respondents to the consultation for inclusion in the guidance have been addressed below.
2. 87 Some power stations which received Section 36 consent prior to the introduction of the Government's policy on CCR voluntarily agreed to set aside space on site which may be suitable in the future for the retrofit of carbon capture equipment. The Government does not agree that these power stations should now be subject to a requirement to carry out all of the CCR assessments announced on 23 April since the policy change is not applied retrospectively.
2. 88 Regarding underground coal gasification, the CCR assessment requirements in the guidance would be equally applicable to an applicant proposing this method of fuel production. The Government recognises that a different capture technology to those listed in the technical annexes of the guidance may be appropriate for use with underground coal gasification. However this technology, involving physical absorbents, was not explicitly discussed in the guidance because of its relatively lower level of maturity compared to those capture methods listed in the guidance. Therefore the Government does not consider it necessary to amend the guidance and introduce a concept of “underground coal gasification” readiness. The Government has stated that the guidance will be regularly updated, and as progress allows, in time further advisory checklists for different capture technologies may be added.
2. 89 The Government does not think it necessary to provide illustrative examples in addition to the key information sections on each of the CCR assessments as applicants are best able to judge how the

¹⁷ Section 2 of Article 33 of the EU Directive on the Geological Storage of Carbon Dioxide.

necessary information should be presented for their particular development. In response to specific concerns regarding the assessments of the economic feasibility of retrofitting and transport, the Government has provided in the guidance an outline of how this assessment could be approached. It should be stressed that this is not the only manner in which this assessment could be carried out.

2. 90 Government is not aware of any commercially applicable industrial processes which could utilise the volume of CO₂ produced annually by a typical power station and therefore considers proposals for the storage of CO₂ to be an essential component of the CCR assessments.
2. 91 The Environmental Permitting Regulations¹⁸ (EPR) are enforced by the Environment Agency and Section 36 consents do not duplicate the purpose of these regulations. Therefore there is no connection between the CCR report submitted for a Section 36 application and those documents required by the Environment Agency under the EPR. It is proposed that power stations which fit CCS will be regulated by the EA under regulations similar to, but distinct from the EPR, which will be consulted on in early 2010.
2. 92 The Government does not consider it appropriate at the CCR stage to require an applicant's EIA for the proposed development to include the impacts of its proposals for CCS for a number of reasons. CCR does not impose any additional physical impacts (the setting aside of land is not considered to impose an environmental impact) beyond those of the proposed power station. The impacts of the proposed power station are fully assessed in the EIA required as part of the Section 36 application. The uncertainty surrounding the nature of CCS operation at the power station and the CO₂ transport method mean that it is not possible to conduct a meaningful EIA of those factors at the CCR stage. Applicants are, however, required to identify potential obstacles to their proposed transport method, for example along the route of a CO₂ pipeline, and suggest measures which could be used to mitigate the impacts of the infrastructure.
2. 93 In order to retrofit CCS, Government has made clear that a further Section 36 application¹⁹ will be required, in addition to the separate consents and licences necessary for CO₂ transport and storage. At this point an EIA covering the impacts arising from CCS at the power station will be conducted and an Environmental Statement (ES) included in the application. If consent for the transport method, for example a CO₂ pipeline, is included in the application to retrofit carbon capture to the plant, the ES would also need to cover its impacts: if not, then the impacts of CO₂ transport will be assessed as part of a separate consent application. The detailed arrangements surrounding the licensing of CO₂ storage are currently under consultation¹¹ but will

¹⁸ The Environmental Permitting (England and Wales) Regulations 2007.

¹⁹ or its successor under the Planning Act 2008.

include a full environmental assessment of the impacts of storage as required by the Directive 2009/31/EC. The Department of Energy and Climate Change, and its predecessors, have conducted a series of Strategic Environmental Assessments (SEAs) covering its plans and programmes for energy developments on the UK Continental Shelf (UKCS). The Department is planning to update the latest assessment to take account, among other things, of its plans to licence carbon storage projects on the UKCS²⁰. No licences will be issued for carbon storage or related appraisal activities until that consultation has been completed.

2. 94 The Government therefore considers that it has met the requirements of Directive 2009/31/EC concerning the protection of the environment and human health.
2. 95 The Low Carbon Transition Plan²¹ and the recent consultation on a framework for the development of clean coal⁶ explained how the Government is driving momentum in the development of CCS technologies and raising public awareness of this method of emission reduction. The Government intends to publish its strategy on CCS later this year and the Department of Energy and Climate Change will host the new Office of Carbon Capture and Storage. These measures, among others, will help to increase public awareness of CCS.

²⁰ Please consult www.offshore-sea.org.uk for details of the timing of this update and of related public consultation.

²¹ The Low Carbon Transition Plan was published on the 15th July 2009 and is available on the DECC website via:
http://decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx

Annex A

Consultation Questions

- 1. Taking into account the current state of the development of CCS technologies, and of related regulation, does the draft guidance document for applicants for section 36 Electricity Act 1989 consents provide sufficient clarity on the level of detail required in the assessments necessary to demonstrate carbon capture readiness?**
- 2. Taking into account the Government's policy on CCR²², does the draft guidance document for applicants for section 36 Electricity Act 1989 consents cover all the issues that applicants might usefully seek to address to demonstrate they are CCR? If not, what might these be?**

²² The Government's response to the "Towards Carbon Capture and Storage" consultation which sets out CCR policy, is available on the DECC website at:
<http://www.decc.gov.uk/en/contents/cms/consultations/closed/closed.aspx>

Annex B

List of Respondents

Association of Electricity Producers
Barmoor Environmental Consultants
BG Group
BGS
Carbon Capture and Storage Association
Client Earth
DCA Consultants
Drax Power Ltd
E.On
Edf
Environment Agency
ESBI
Health and Safety Executive
Hydrogen Energy
Institute of Theoretical Physics
Institution of Civil Engineers
Intergen
International Power plc
J R Power
MGT Power
National Grid
RTPI
RWE npower
Scottish and Southern Energy
Scottish Power
SEPA
Siemens
Underground Coal Gasification Partnership
Welsh Assembly Government
Welsh Power

© Crown copyright 2009

Department of Energy & Climate Change
3 Whitehall Place
London SW1A 2AW
www.decc.gov.uk