

Response to the HM Treasury Consultation

COMMERCIAL BARRIERS TO CARBON CAPTURE AND STORAGE

SUMMARY

Commercial uptake of Carbon Capture and Storage (CCS) is currently prevented by a number of uncertainties that make investment in the technology high risk. The basic cost-effectiveness of CCS as a means of reducing carbon emissions has yet to be established and compared with alternatives. The 'energy balance' and practicality for CCS will depend on the generation technology used (for example the inclusion of coal gasification) and the proximity of the power plant to a suitable disposal site. Uncertainties also exist around the nature of future environmental and health and safety standards for CCS processes, the legal and contractual arrangements concerning liability for long term storage, and the implications for carbon accounting for carbon should leakage to the atmosphere occur. These issues are the most closely related to our regulatory role, and are the areas we offer most comment on. Specific points that we raise include:

- The market framework provided to reward the advantages of CCS will determine its commercial viability. There are generally two reasons to give support to a technology beyond the market price – firstly to reward low-carbon generation, secondly as part of an innovation strategy for near-market technologies. Support given to low carbon options such as CCS should generally be 'technology neutral' (for example through emissions trading). The most efficient and effective way to support low carbon technologies is to create a long-term price signal for carbon. In the shorter term 'carbon contracts' may be a useful way of providing the required certainty. As a new technology, there may be a case to provide innovation funding that goes beyond rewarding carbon abatement, but this should not warrant excessive fossil fuel burn at the expense of more cost effective low carbon options such as efficiency measures.
- It is vital that early demonstration projects are used as an opportunity to build the evidence base around the advantages and potential environmental impacts and safety characteristics of CCS activities. In particular work is needed to inform environmental impact assessments for storage in saline aquifers. As the energy balance of CCS plants could vary significantly, each project should be judged on a case by case basis to determine life-cycle emissions savings, and overall costs and benefits.

- New build power stations should be built with regard to possible future requirements of CCS. It is important that a robust definition for 'capture readiness' is decided on as soon as possible. This should consider the spatial requirements within plants, technological options and locational issues relating to the proximity of possible storage sites. Retrofitting of CCS technology to existing coal-fired power stations is unlikely to be an attractive option, both from a financial and environmental perspective (as this may extend the life of inefficient plants). The Environment Agency is currently assessing the 'Best Available Techniques' and CO₂ capture options for new and retrofitted coal-fired power plants. The advice will be available from 1st June.
- Effective regulation of CCS activities should ensure their environmental integrity without imposing undue burdens on operators and government bodies. Early definition of regulatory standards for all elements of the CCS process will help establish investor confidence and prevent unnecessary commercial barriers to future project developers. While regulation covering the storage of CO₂ offshore is being considered more needs to be done to assess the need for regulatory reform for onshore storage.

1.0 INTRODUCTION

1.1 The Environment Agency recognise that Carbon Capture and Storage (CCS) could potentially make a significant contribution to stabilising CO₂ emissions and preventing climate change. At the same time it is important that the potential of CCS is placed in context, and recognised as one of a number of options that need to be utilised and supported. There are also significant risks and uncertainties surrounding CCS. Before the technology can be seen as safe and made commercially attractive these concerns must be dealt with by learning lessons from demonstration projects, and a well designed regulatory and legislative framework.

1.2 If developed CCS is likely to be relevant to our role in a number of areas:

- As the Competent Authority for Pollution Prevention and Control (PPC) and the EU Emissions Trading Scheme (EU ETS) in England and Wales, we regulate large power plants and industrial installations most likely to adopt CCS technologies.
- We may also be called on to regulate carbon storage where it is sited on land in England and Wales.
- As a statutory body we are consulted on planning applications with associated environmental impact assessments for new power plants or industrial installations. This responsibility is

likely to be extended to planning applications for carbon storage sites within our jurisdiction.

- We support the delivery of Government targets for green house gas emissions through our roles as a regulator, a statutory consultee on planning applications, and on an advisor on environmental matters.

1.3 Our focus in this response will reflect our roles as outlined above. As such we offer advice for areas where we have an active interest and where we have particular experience. This especially includes the subsections of the consultation document on carbon savings, regulation liability and public acceptance, and government support.

2.0 POTENTIAL CARBON REDUCTIONS

The scale of CO₂ savings required in the UK

2.1 The 2003 Energy White Paper committed the UK to a 60% cut in CO₂ emissions by 2050, with 'significant progress' by 2020. In the shorter term the UK has a target of a 20% reduction in CO₂ emissions by 2010. The latest projections for the UK show that on the basis of current policies (including the revised 2006 climate change programme), CO₂ emissions will be 15 – 18% below 1990 levels¹.

2.2 At the same time developments in climate change science indicate that in order to have a high chance of avoiding dangerous climate change, larger, long term emission reductions may be necessary. To have a reasonable chance of limiting greenhouse gas concentrations to 450 ppm, CO₂ industrialised countries will be required to reduce their emissions in 2020 by at least 25% to 35% below 1990 levels, with continued reductions to 80-90% in 2050².

2.3 We therefore believe a firm 2020 target in the region of a 30% reduction in CO₂ emissions from 1990 levels should be adopted. This equates to reductions of between 21 and 26 MtC beyond what is expected to be delivered from current policies (including the revised 2006 climate change programme).

¹ Our Energy Challenge – Securing clean, affordable energy for the long term, DTI, January 2006.

² Den Elzen and Meinhausen (2006) Multi-gas emission pathways for meeting the EU 2°C climate target. In *Avoiding Dangerous Climate Change*, Schellnhuber (ed), Cambridge University Press, Cambridge, UK, pp 299-309.

The potential for CCS savings in the UK

- 2.4 Achieving such a high level of cuts will be extremely difficult and will require the use of as wide a range of policy tools and technologies as possible. CCS could make a significant contribution to stabilising global emissions of greenhouse gases and preventing dangerous climate change. In 2004, around 170 million tonnes of CO₂ was produced from large point source power generation alone (equivalent to 30% of all UK emissions)³. If you also consider the emissions produced from fixed point large scale industrial processes such as cement and glass production, the amount of UK CO₂ emissions suitable for CCS options is clearly very significant. Available technology is capable of capturing 85-95% of the CO₂ produced by a power plant. Although this is done at a cost to efficiency⁴, the net CO₂ emission reductions are still within the region of 80-90%⁵. The lifetime carbon savings however will vary substantially between individual projects. Energy intensive CCS projects that require the transportation of CO₂ over long distances, and injection to large depths, may have diminished carbon savings. A thorough case by case assessment of each CCS project's carbon lifetime savings must be factored into planning decisions to help determine if the project is worthwhile.
- 2.5 The UK is also endowed with a large amount of geological storage capacity. The British Geological Society estimate that the theoretical storage potential of the UK's offshore oil and gas fields is equivalent to at least 4.7 Gigatonnes (Gt) of CO₂. This represents approximately 20 years' worth of all present day power generation emissions. Furthermore, UK natural aquifers have enough capacity for 250 Gt of CO₂, which would clearly provide more than enough storage for the UK well in to the long term⁶. However while oil and gas fields are generally well characterised, little is known about the suitability of the UK's aquifers for CO₂ storage. More research will be needed to map out and assess the integrity of such aquifers, and to determine the extent to which they offer a feasible storage option.

The potential for CCS savings internationally

- 2.6 The impact of CCS could be greater still if the technology is rapidly utilised internationally. Fast developing countries such as China and India are unlikely to reverse their growing dependence on fossil fuels in the short to

³ DTI (2005) Digest of United Kingdom Energy Statistics, Annex E; <http://www.dti.gov.uk/energy/inform/dukes/dukes2005/annexe.pdf>

⁴ plants using CCS require 10-40% more energy than an equivalent plant without CCS.

⁵ IPCC (2005) Carbon Dioxide Capture and Storage; http://arch.rivm.nl/env/int/ipcc/pages_media/SRCCS-final/IPCCSpecialReportonCarbondioxideCaptureandStorage.htm

⁶ Select Committee on Science and Technology (2006) First Report in to Carbon Dioxide Capture and Storage; <http://www.publications.parliament.uk/pa/cm200506/cmsselect/cmsstech/578/57802.htm>

medium term. Current forecasts predict that by 2030, coal-fired power in India and China will add 3,000 million extra tonnes of CO₂ to the atmosphere every year- equivalent to around 13 times the UK's current total CO₂ emissions from power generation.⁷ The IPCC study demonstrates that it will be technically possible for CCS to reduce a large proportion of the world's CO₂ emissions. By 2050 20-40% of all fossil fuel CO₂ emissions could be suitable for capture (including 30-60% of emissions from electricity generation *and* 30-40% of those from industry). Although there are significant regional variations, work done by the IEA (and supported by the IPCC) shows that global storage capacity is expected to be sufficient to allow CCS to play a major role in reducing global CO₂ emissions.⁸

- 2.7 The demonstration and trial of CCS technology in the UK, could foreseeably aid the development and uptake of CCS globally. However, the types of technology and power stations in operation across the world vary considerably. The true extent of technical 'cross over' needs to be assessed, and measures should be taken to ensure that lessons learned in the UK can be applied elsewhere.

CCS potential in perspective

- 2.8 While CCS technology clearly has the potential to contribute to climate change mitigation, there are also many environmental risks and uncertainties which are considered in more detail in the regulation sections below. If it can be demonstrated that these risks are manageable, there is a case for exploring the development of CCS technology. However this should not be done at the expense of efforts to improve energy efficiency and develop renewable sources of energy. CCS is only applicable to roughly a third of our CO₂ emissions, and efficiency measures offer by far the greatest available source of carbon savings, typically at the least cost. Analysis in the recent Energy Efficiency Innovation Review has identified nearly 21 MtC of cost-effective savings possible by 2020⁹. Renewable energy sources of energy have far lower CO₂ emissions per kWh than would be produced by fossil fuel power plants with CCS. For example a coal fired plant produces around 950g CO₂/kWh, and an IGCC gas fired plant produces around 430g CO₂/kWh¹⁰. Even if these figures are reduced by 80-90% through CCS, the resulting emissions will remain significantly higher than that from renewables such

⁷ Greg Cook and Paul Zakkour, "The new face of King Coal", Environmental Finance, August 2005

⁸ IEA Greenhouse Gas R&D Programme Reports - Number PH3/22, February 2000; SR3, June 1994 and PH3/3, August 1998.

⁹ Energy Efficiency Innovation Review: Summary Report, Defra, December 2005

¹⁰ IEA, Renewable Energy Working Group(2002), Renewable Energy in to the Mainstream, http://www.iea.org/textbase/nppdf/free/2000/Renew_main2003.pdf

as onshore wind that is estimated to be around 8/9g CO₂ per kWh¹¹. Additionally, the UK has plentiful and diverse renewable energy resources which if exploited can have significant energy security gains as well as lower local environmental impacts than burning fossil fuels, and from the by-products of the CCS process. In this respect, CCS may prove to be a useful bridging option that could support a transition to a more sustainable energy system.

3.0 TECHNOLOGY

- 3.1 It is important that future new build coal and gas fired power stations are built with due consideration to CCS compatibility. The option to apply capture technology at a later date must be kept open through regard to the spatial requirements of capture and compression technologies on plant sites. The Government must decide as soon as possible what 'capture readiness' should entail. Any workable definition must take in to account onsite spatial requirements, overall plant design, and the proximity of plants to feasible storage sites (as well as the implications of this to overall energy/ carbon balances). At a later date it may be necessary to set firmer flue gas and technological requirements in order to facilitate CCS uptake.
- 3.2 Currently Pollution Prevention Control (PPC) is not the principle policy for reducing carbon emissions, as the relevant sectors fall under the EU Emissions Trading Scheme and are subject to Climate Change Agreements. It may be appropriate for PPC to play a greater role in the future for major investments with a lifetime of 40-60 years such as new fossil fuel power stations. The Government needs to clarify the relationship between CCS, carbon abatement and PPC.
- 3.3 We are currently undertaking a study reviewing options for coal-fired power generation Best Available Technique (BAT¹²) new build and retrofit specifications, which will help inform any future Government decision. The Environment Agency tracks developments in BAT for industries that are regulated under PPC legislation. The study is based on a notional 2 GWe scale coal-fired power station and will provide a better understanding of the environmental and economical pros and cons of various options for SO₂, NO_x, and CO₂ abatement. In relation to CO₂ capture the study will consider the costs and benefits of the following scenarios:

a) Refurbish existing coal-fired power plant to extend life by adding increased SO₂, NO_x and CO₂ abatement.

¹¹ see as above, or: <http://www.dti.gov.uk/renewables/publications/pdfs/windfs14.pdf>

¹² The Integrated Pollution Prevention and Control Directive gives specific factors to consider in determining BAT. In general terms, BAT is determined based on the costs and benefits of preventing and minimising pollution. It is used as the basis for setting emission limit values in permits.

- b) As above but based it on a supercritical or advanced supercritical steam cycle boiler.
 - c) Replace with supercritical or advanced supercritical fluidised bed boiler plus abatement.
 - d) Replace with integrated gasification combined cycle (IGCC) plant.
- 3.4 The work includes financial and economic assessment and is expected to be complete by 1st June, when we will provide Government with a copy.
- 3.5 Retro-fitting of capture technology to the UK's existing coal fire power stations without additional upgrades of combustion technology, is unlikely to be desirable from both a financial and environmental perspective. At the very least, it should be fitted to supercritical steam cycle plants featuring boiler feedwater heating (to boost efficiency) and with biomass co-firing producing a major part of the energy input. We should be moving on to IGCC as soon as it is proven, i.e. 'available' in terms of Best Available Technology.

4.0 REGULATION, LIABILITY AND PUBLIC ACCEPTANCE

- 4.1 The regulatory frameworks that may apply to CCS were not drawn up with CCS in mind. Consequently there is uncertainty over exactly which regulations apply and their effectiveness at protecting the environment and human health. This lack of clarity over current and future regulatory standards presents a significant barrier to development and use of CCS. Much of this uncertainty could be reduced by Government reviewing and if necessary reforming regulation of the sector. Regulations covering CCS must ensure a high degree of safety and tough environmental standards in order to gain public acceptance and guarantee confidence in CCS technology.
- 4.2 Under current legislation the capture phase of CCS would fall under the Pollution Prevention and Control regime and would be regulated by the Environment Agency. The regulatory situation in respect of the storage facilities and any associated infrastructure differs according to whether the facility is located onshore or offshore. We would not have a role in regulating offshore facilities but would expect to be involved in regulating onshore CCS. While it may be tempting to take a responsive approach to regulatory reform, and focus only on issues relating to offshore storage, delaying important decisions will reduce investor confidence and could form a barrier to CCS uptake.

- 4.3 In order for CCS to develop without undue barriers it will be important for a number of issues to be resolved:

Environmental impacts of CCS and regulatory standards

- 4.4 High concentrations of CO₂ can be highly toxic to plant and animal life, and potentially fatal to humans. Such concentrations could occur from sudden or slow releases at any stage of the CCS process. CO₂ is heavier than air when cooled and will concentrate at low points such as along valley floors. There is a risk of such occurrence in the transportation and injection phases where it is likely to be desirable to use supercritical CO₂, which is kept under high pressure. Compression raises the danger of explosive leaks, as compressed CO₂ will expand in volume dramatically when exposed to normal climate conditions. If releases occur the CO₂ will also cool very rapidly as it expands, posing risks of both flying debris and burns from direct contact with the CO₂. These risks can be managed through careful monitoring and a well designed regulatory framework that ensures high environmental, and health and safety standards.
- 4.5 Strict standards and a risk based framework will also be necessary for setting monitoring requirements, to ensure quick identification and remediation of any leaks. Monitoring systems for CO₂ under transportation and storage will need to be highly robust and reliable. However, there is currently a lack of experience dealing with the transportation of large volumes of CO₂ in the UK, which would make risk assessments for health and safety and planning purposes difficult to perform. The expertise and experience from existing practices such as the gas storage industry can and should be utilised, but the high pressures and volumes that will be used in transportation, the corrosive nature of supercritical CO₂, and gaps in understanding the behaviour of stored CO₂, makes the direct transfer of knowledge impossible.
- 4.6 There are also many considerable uncertainties surrounding the environmental risks of CCS storage. However, at present the state of knowledge concerning the environmental impacts of CO₂ storage, is not sufficiently developed to enable a comprehensive Environmental Impact Assessment (EIA) to occur. There is currently little understanding of the interactions that can occur between injected carbon dioxide and other chemicals/pollutants in the surrounding material. Little is also understood over the geological suitability and integrity of aquifers, and the impacts on water bodies, ecology, and wildlife.
- 4.7 Due to these uncertainties and the limited experience with CCS processes it will be necessary to closely monitor demonstration projects. This experience will help to define what minimum standards and regulatory arrangements are necessary in advance of any possible large scale

uptake of CCS, and will help inform future EIAs and CCS planning decisions. Such research requires adequate funding and support. As any demonstration CCS plant is likely to use offshore oil and gas field storage, it will be necessary to undertake complementary research projects at storage studies in onshore saline aquifers. This would secure a sound knowledge base for consideration of future CCS projects proposals with onshore storage, if and when that occurs. Broadening the knowledge base in respect to the environmental impacts of both onshore and offshore storage will help in site suitability appraisals, will inform design and planning decisions, and will prevent unnecessary delays to projects in future. Early definition of regulatory requirements will also enable companies to estimate costs more accurately, plan effectively and have greater confidence in investment decisions.

Liabilities

- 4.7 The 'lifetime' of storage facilities i.e. the period over which they present potential risks to health and the environment, could extend to hundreds or even thousands of years. It is important that responsibility for ensuring safe management of the facilities is clearly defined at all times throughout this period. The time scales being considered may outlast the lifetime of private sector operators so it seems likely that the Government or an independent third party will need to underwrite these risks in some way. We would envisage something akin to the nuclear model with a body set up to monitor facilities in the long term, with a central fund paid for by contributions from private operators.

Accounting for carbon reductions

- 4.8 If companies, the government, and the public are to have confidence in CCS projects, it is vital that the carbon saving integrity of schemes is guaranteed. A robust method for measuring the amount of CO₂ saved must be devised. This will require a reliable monitoring of CO₂ throughout the entire process from capture to injection, and there after. If leakage does occur it is important that it is identified and that it is reflected in the National Inventory. We need to consider whether changes in data collection protocols are necessary to adhere to international inventory guidelines being developed by the IPCC¹³.
- 4.9 Accounting procedures for individual projects need to be developed in parallel to ensure the environmental integrity of activities where they occur under the EU ETS. This would need to include verification that CO₂ that is

¹³ IPCC (2005) Carbon Dioxide Capture and Storage, Chapter 9: implications of carbon dioxide capture and storage for greenhouse gas inventories and accounting;
http://arch.rivm.nl/env/int/ipcc/pages_media/SRCCS-final/IPCCSpecialReportonCarbondioxideCaptureandStorage.htm

taken offsite from an installation covered by the scheme is being stored and that any leakage is accounted for.

Amendments to current waste legislation

- 4.10 Current CCS plans concentrate on using North Sea oil and gas fields. Currently, CCS with Enhanced Oil Recovery (EOR) is permitted but injection for storage purposes only is precluded. To allow CCS without EOR amendments to the London and OSPAR Conventions will be required. These changes are already being pursued, and the Government has indicated that it is confident that existing regulatory barriers will be removed¹⁴.
- 4.11 In future the use of onshore saline aquifers may become commercially attractive. This would have the potential advantages of shorter transport distances and reduced infrastructure costs, compared to offshore oil and gas fields. Onshore storage would not sit easily within the existing regulatory framework. The practice was not envisaged when current European and domestic legislation was drawn up. Currently, it appears that onshore storage of CO₂ would be classified as a waste management activity that would require a permit under the Waste Framework Directive. This Directive is transposed into UK law through a number of regulations. It should be noted that the Directive is currently being reviewed and that delivery of waste permitting is currently the subject of a review by Defra under its Environmental Permitting Programme (EPP).
- 4.12 We would recommend a detailed analysis of the current and likely future waste regulation framework to establish the extent to which regulations apply and the extent to which they may need amending to effectively regulate onshore CCS. In particular, consideration needs to be given to the following Directives and the domestic regulations that implement them:
- Waste Framework Directive
 - IPPC Directive
 - Landfill Directive
 - Water Framework Directive
 - Groundwater Directive
- 4.13 Onshore storage seems likely to be pursued only after successful offshore demonstration projects and so may be some way in the future. Nevertheless, given the long lead times for investment and the consequent need for certainty over the future regulatory environment, it would be advisable to give early consideration to the regulatory framework

¹⁴ Gov (2006) Meeting UK Energy and Climate Needs: The role of Carbon Dioxide Capture and Storage: Government Response to the Committee's First Report of Session 2006-06; <http://www.publications.parliament.uk/pa/cm/cmsctech.htm>

that should apply to onshore CCS. This is especially true if it becomes necessary to amend legislation at the EU level.

Regulatory bodies

- 4.14 It is important that the roles of different regulatory bodies relevant to CCS are clearly defined as early as possible. This must be done to avoid any regulatory gaps, and to ensure that there is sufficient time to undertake scoping studies and devise the best regulatory system possible. As different elements of the CCS process are likely to be subject to different regulating bodies, it is vital that the various regulators involved work closely in partnership. To avoid oversights it must be clear where one body's jurisdiction ends and another's begins.
- 4.15 Saline aquifers can be very large structures that often transcend the sea/land divide. If such structures were used for storage purposes in future it would be important to ensure that the regulatory frameworks and regulating bodies for both on and offshore are compatible. If we are to be required to perform regulatory roles, then it will be necessary to consider the technical skills and capacity that we would need to draw on to deliver this function. Any expansion of our remit will require additional resources.
- 4.16 We welcome the setting up of the CCS Regulatory Taskforce, which is a good first step to ensuring that many of these issues are considered. It will be important that this group maintains a long-term view of regulatory requirements which includes consideration of environmental regulatory issues, for both off *and* onshore storage.

5.0 THE CASE FOR GOVERNMENT INTERVENTION AND ECONOMIC INCENTIVES

- 5.1 The biggest barrier to CCS is the lack of a credible long-term policy framework that provides a reliable price signal for carbon. If this can be addressed then the market can be expected to deliver necessary carbon reductions through investments in CCS or other low carbon options, depending on what option makes most economic sense.
- 5.2 It has been estimated by the IPCC that a carbon price of between 25–30 US\$/tCO₂ would result in significant deployment of CCS¹⁵. However, this figure is likely to depend on national circumstances. In evidence to the Science and Technology Committee E.ON said the price would need to be more like £20-40/ tCO₂. BP thought that the price would have to be higher

¹⁵ IPCC (2005) Carbon Dioxide Capture and Storage; http://arch.rivm.nl/env/int/ipcc/pages_media/SRCCS-final/IPCCSpecialReportonCarbondioxideCaptureandStorage.htm

with £40/tCO₂ being at the lower end of possibilities¹⁶. The EU ETS is a strong mechanism for creating a price for carbon, and could incentivise uptake of CCS if the rules concerning monitoring and verification, and entrance to the EUETS can be assured. The UK should also continue to push for longer-term certainty within the EU ETS including early announcements on future caps, allocation methodologies and coverage of the scheme. However, given the short time horizon of the EUETS, and the uncertainties about future post Kyoto international agreements, it is unlikely that enough certainty over the future price of carbon can be provided by the EU ETS alone.

- 5.3 As the market price for carbon is currently entirely determined by Government policies, there is a strong case for the Government to agree to bear some of the future policy risk, to induce the private sector to invest in low carbon technologies now. There are many imaginative ideas in the literature about what type of mechanism might perform this role¹⁷. One mechanism that would allow Government to underwrite future risk in carbon prices and provide the much needed investment signal is the auctioning of long term carbon reduction contracts¹⁸. These would effectively guarantee investors a minimum price for carbon reduction. The mechanism would be 'technology neutral' and open to all sectors that would be able to bid into confidential auctions setting out what carbon emission reductions they could achieve, by when and at what price. The Government then having contracted with a range of parties to achieve future carbon savings would recoup their costs through future policy initiatives that will put a price on carbon such as future rounds of the EU ETS and future domestic and commercial trading schemes. Once CCS schemes were proven in terms of carbon savings and environment and safety standards they could be eligible to compete against other ways of reducing carbon for these contracts.
- 5.4 If a case can be made for CCS to be classified as an immature, developing technology then there may be a case additional innovation support. Government will need to make this case as part of its energy innovation strategy. Under a model which adopted carbon contracts additional support could be in the form of the creation of a 'ring fenced' category of carbon contracts that would be available to all 'market immature' technologies or up front capital grants.

¹⁶ Select Committee on Science and Technology (2006) First Report in to Carbon Dioxide Capture and Storage; <http://www.publications.parliament.uk/pa/cm200506/cmselect/cmsctech/578/57802.htm>

¹⁷ See for example D Helm (2005) A new British Energy Policy, Social Market Foundation, or P Ekins (2005) An alternative to Carbon Contracts, Policy Studies Institute.

¹⁸ D Helm (2005) A new British Energy Policy, Social Market Foundation.

FURTHER INFORMATION

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