



DEBATE PACK

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UK decarbonisation and carbon capture and storage

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This Debate pack has been prepared for the debate on **UK decarbonisation and carbon capture and storage** to take place in Westminster Hall on Tuesday 24 January 2017 at 2:30pm. The subject for debate has been chosen by Philip Boswell, MP for Coatbridge, Chryston and Bellshill.

The House of Commons Library prepares a briefing in hard copy and/or online for most non-legislative debates in the Chamber and Westminster Hall other than half-hour debates. Debate Packs are produced quickly after the announcement of parliamentary business. They are intended to provide a summary or overview of the issue being debated and identify relevant briefings and useful documents, including press and parliamentary material. More detailed briefing can be prepared for Members on request to the Library.

1. Summary

1.1 Carbon capture and storage – a definition

Carbon capture and storage (CCS) is a way of 'decarbonising' fossil fuel power generation, through capturing and storing the carbon dioxide (CO₂) produced.

CCS involves three steps;

- Capturing carbon dioxide (CO₂) from power plants or industry, and compressing it to a liquid state
- Transporting the CO₂ (usually via pipelines) to deep geological storage points such as depleted oil and gas fields or deep saline aquifers; and
- Storing the CO₂ in these sites.

CO₂ can be captured pre- or post-combustion;

- Post-combustion removes CO₂ from flue gases. **This can be retro-fitted.**
- Pre-combustion reacts the fuel with oxygen, air, or steam, and after a further catalytic process removes the CO₂ and uses the hydrogen left over as fuel in a combined cycle gas turbine generating station. **Only new fossil fuel power plants can be equipped with this.**
- Oxyfuel technology burns fossil fuels with nearly pure oxygen producing a flue gas of CO₂ and steam; the water condenses leaving flue gas of almost pure CO₂. **This can be applied to new and existing fossil fuel stations.**¹

The ideal site for CCS generation is therefore close to a storage reservoir like depleted oil and gas fields and saline aquifers. A network of onshore and offshore pipelines to transport the captured CO₂ is also required.² This could perhaps even be on a scale equivalent to the North Sea oil and gas industry.³

CCS is regulated through a licensing regime laid out in the *Energy Act 2008* (section 1(5)). The Secretary of State for Business, Energy and Industrial Strategy (BEIS) is the licensing authority for offshore storage except within the territorial sea adjacent to Scotland.⁴

¹ A good description of CCS technology is available on the archived Office of Carbon Capture and Storage (OCCS) [website](#).

² Overarching National Policy Statement for Energy (EN-1) DECC July 2011 p.54

³ Royal Academy of Engineering, *Generating the Future: UK energy systems fit for 2050*, 18 March 2010, p14

⁴ Oil and Gas Authority, *Licensing and consents – UK carbon capture and storage*

1.2 The role of CCS in meeting UK carbon targets

The [2008 Climate Change Act](#) requires the Government to set five-yearly carbon budgets at least 12 years in advance after taking the independent advice of the [Committee on Climate Change](#).⁵

The [first three budgets](#) were approved in 2009 by the Government following the advice of the CCC. The fourth budget, agreed in 2011 and covering 2023-27, set an emissions reduction target in the UK of 50% by 2025 compared to 1990 levels. The advice on the fifth budget from the CCC, [The fifth carbon budget: The next step towards a low-carbon economy](#), proposed the budget should be set at 1,765 MtCO₂e for 2028-2032, which would equate to a 57% reduction in emissions compared to 1990 levels. This included the following recommendation on the carbon intensity (amount of carbon dioxide emitted per unit of power) for the power sector and the role of CCS:

The Government should develop policy approaches consistent with reducing carbon intensity of the power sector to below 100 gCO₂/kWh in 2030 (compared to 450 gCO₂/kWh in 2014 and 200-250 gCO₂/kWh expected by 2020).

This reduction could be delivered by a range of different mixes of low-carbon generation (i.e. renewables, nuclear and plants fitted with carbon capture and storage – CCS) to reach a total share of around 75% of generation by 2030.

It is important that the low-carbon portfolio includes roll-out in the 2020s of offshore wind and CCS given their long-term importance and the role of UK deployment in driving down costs.⁶

In 2015, the then Secretary of State for Energy and Climate Change Amber Rudd [pledged](#) ahead of the Paris UN Climate Change conference to phase out unabated coal – that is coal that cannot be captured and stored through [carbon capture storage](#) – by 2025. The pledge was not unconditional: it is contingent on a shift to gas within that timescale.

To decarbonise to the extent that the CCC has recommended would require CCS to also be applied to gas electricity generation. The CCC's view is that "the period to 2032 will be vital to the development of carbon capture and storage, which has the potential to almost halve the cost of meeting the UK's 2050 target".⁷ The Government accepted the advice of the CCC for the fifth carbon budget and in June 2016 Lord Dearden, Chair of the CCC welcomed the decision:

The Government's commitment to reduce UK emissions by 57% by 2030 will open up opportunities for UK businesses both at home and abroad. It also demonstrates the continued broad

⁵ The CCC was set up by the 2008 Act as an independent body to advise the Government on targets, and to report yearly to Parliament on whether those targets will be met.

⁶ Committee on Climate Change, [The Fifth Carbon Budget: The next step towards a low-carbon economy](#), November 2015

⁷ Ibid., p.28

political consensus to tackle the serious risks posed by climate change.⁸

1.3 The second carbon capture and storage competition

The UK has ambitions to be at the forefront of CCS development,⁹ given access to depleted oil and gas fields where carbon could be stored, and the potential rewards, such as up to 60,000 jobs by 2030.¹⁰

However, CCS generation is not yet proven on a large scale in the UK, and nor is long-term storage, despite a series of UK Government and EU initiatives aimed at incentivising its development. It has been argued that CCS technology is too expensive to be commercially viable for private developers without government support in the shape of a strike price.¹¹ However, a review by the Parliamentary Advisory Group on CCS argued that good design could make CCS affordable.¹²

In March 2013 Peterhead (Aberdeenshire)¹³ and the White Rose Project (Yorkshire)¹⁴ were named as the two preferred bidders in the second UK [CCS Commercialisation Competition](#). Both these projects were subsequently called off when one of the bidders (Drax) [pulled out](#) of the project and when the Government [cancelled](#) the £1 billion CCS Competition in the 2015 Spending Review.¹⁵

This was the second CCS competition to be cancelled following the first one running 2007-2011. In a report published on 20 January 2017, the National Audit Office calculated that £168 million (in 2015-16 prices) were spent by BEIS on these two CCS competitions.¹⁶

Planning permission for the Yorkshire Humber CCS Trunkline – a 75-kilometre pipeline between Drax in North Yorkshire and Barmston in the East Riding of Yorkshire that was linked to the White Rose Project – was also formally [rejected](#) by Greg Clark on 12 January 2017.

⁸ The CCC, [CCC welcomes Government backing for fifth carbon budget and continued ambition to meet 2050 target](#), 30 June 2016

⁹ Department for Energy and Climate Change, [Clean coal: an industrial strategy for the development of carbon capture and storage across the UK](#), March 2010, p16

¹⁰ HC Deb 28 January 2010 c 343WH

¹¹ See for instance Carbon Capture and Storage Association, [Lessons Learned – Lessons and evidence derived from UK CCS programmes, 2008-2015](#), 29 June 2016

¹² 'There is a widespread view that CCS has to be expensive. On the contrary, the high costs revealed by the earlier UK approaches reflected the design of these competitions, rather than the underlying costs of CCS itself', [Lowest Cost Decarbonisation for the UK: The Critical Role of CCS](#), Report of the Parliamentary Advisory Group on CCS, September 2016, p.5

¹³ The Peterhead CCS Project involved capturing around 85% of the CO₂ from the gas-fired power plant at Peterhead, before transporting and storing it offshore in a depleted gas field beneath the North Sea. (See BEIS, [Guidance: UK carbon capture and storage: government funding and support](#))

¹⁴ The White Rose CCS Project in North Yorkshire proposed to capture around 90% of the CO₂ from a new coal-fired power plant at Drax before transporting and storing it offshore in a saline rock formation beneath the North Sea. (See BEIS, [Guidance: UK carbon capture and storage: government funding and support](#))

¹⁵ DECC, [HM Government Statement Re Carbon Capture, Storage](#), RNS Number: 9664G, 25 November 2015

¹⁶ National Audit Office, [Carbon Capture and Storage: the second competition for government support](#), 20 January 2017

1.4 What next for CCS in the UK?

There are currently no CCS projects left open for consideration in the UK. The [Oxburgh Review](#), commissioned by the Government, and [the Committee on Climate Change](#), both came out in 2016 in favour of reviving CCS in the UK:

Oxburgh Review: The group agrees carbon capture and storage is an essential component in delivering lowest cost decarbonisation across the whole UK economy. [...]

UK action on CCS now will deliver lowest cost to the consumer. There is no justification for delay. Heavy costs will be imposed on current and future UK consumers by a continued failure to enact an effective CCS policy¹⁷

Committee on Climate Change: Carbon capture and storage is of critical importance to meet the UK's carbon targets at least cost and to fulfil the ambition of the Paris Agreement.¹⁸

However, as part of its obligations under the *Climate Change Act*, the Government is due to publish its Emissions Reductions Plan – expected in March 2016 - setting out policies aimed at meeting the UK's decarbonisation targets. It is widely expected to provide clarity on CCS.

This was confirmed by the Minister for Nick Hurd in [evidence](#) to the Business, Energy and Industrial Strategy Committee in January 2017. He told the Committee that the issue of CCS would be revisited and that the upcoming Emissions Reduction Plan and Industrial Strategy will provide information on the Government's thinking. He summarised the position as follows

I know, because of the cancellation of the competition, that we may have given the impression that we are not interested in CCS, but that is not true at all. We are interested in finding a smarter path forward to see whether we can reduce the cost of it, which is too high, and give ourselves some intelligent optionality on it, in the future. [...]

The problem we have is that the taxpayer has spent quite a lot of money in the past, running to hundreds of millions, to achieve not very much. I think it was the right decision to cancel the competition. Actually, the advice I have received says that that probably was the right decision; it was not set up in the right way. We now have to find a smart path forward and we have to engage with industry to get its buy-in. We have to engage with places. The Secretary of State has made it clear that the industrial strategy is going to be heavily rooted in place. There are places in the country that are very keen to develop CCS, and part of my priority is to work through this with them and the industry. The past is the past; this could play a very important part in the future.

¹⁷ 'Oxburgh Review': [Lowest Cost Decarbonisation for the UK: The Critical Role of CCS](#), Report of the Parliamentary Advisory Group on CCS, September 2016, p.4

¹⁸ Committee on Climate Change, [Letter to Rt Hon Amber Rudd: A strategic approach to Carbon Capture and Storage](#), 6 July 2016

What is the smartest route forward to give ourselves some optionality on this?¹⁹

The Minister also identified the overriding problems with CCS as “the cost of it, the question of who pays, the incentive structures and the investment and regulatory framework around it” and that because of it the Government “has had to think again”.²⁰ The Government later confirmed in a written answer that it was studying the recommendations from the Oxburgh review and that it would ‘set out its approach to CCS in due course.’²¹

1.5 CCS and Brexit

The EU supports CCS research and demonstration projects through the research framework programmes [Framework Programme 7](#) and [Horizon 2020](#), the [NER 300](#) scheme and the [European Energy Programme for Recovery](#) (EEPR).

As set out by the Government in 2015, the UK benefitted from some of these programmes for two CCS projects:

“In 2009 the Don Valley Project was awarded a €180m European Energy Programme for Recovery grant which contributes towards the feasibility and design phase of the project’s development. The award is still in place and ~€125m has so far been claimed. In 2013 the White Rose CCS project was awarded up to €300m in potential NER300 funding. This award, which remains available, is subject to the project being able to successfully store carbon dioxide before the end of June 2020”.²²

Since the UK voted to leave the EU, questions have been asked regarding the future of these funding allocations:

Diana Johnson (Kingston upon Hull North): To ask the Secretary of State for Business, Energy and Industrial Strategy, what assessment he has made of when the UK will lose EU funding previously allocated to the UK for carbon capture and storage programmes.

Jesse Norman: Two UK carbon capture and storage (CCS) projects have been allocated funding by the European Commission (Don Valley and White Rose); the status of this funding is subject to further discussions with the European Commission. The UK is also participating in a European Research Area Network (ERA-NET) on CCS under the Horizon 2020 programme. On 13 August 2016, the Secretary of State for Business, Energy and Industrial Strategy (BEIS) confirmed that the Government will underwrite certain EU funding, including approved Horizon 2020 research and development and innovation projects, regardless of the UK’s relationship with the EU.²³

¹⁹ BEIS Committee, [Oral evidence: Outcomes of Marrakesh COP22](#), HC 923, 10 January 2017, Q28

²⁰ Ibid Q30

²¹ [PWQ 58702](#), Carbon Emissions, 13 January 2017

²² [PWQ 18630](#), Carbon Sequestration: EU Grants and Loans, 14 December 2015

²³ [PWQ 43539](#), Carbon Sequestration: EU Grants and Loans, 5 September 2016

The Government also restated recently that it was still supporting research and development projects into CCS and was committed to continue to do so.²⁴

²⁴ See for instance [PWQ 54710](#) further in this publication.

2. Press Articles

The following is a selection of recent press and media articles relevant to this debate. Please note: the Library is not responsible for the views expressed in, nor the accuracy of, external content.

Business Green
20 January 2017

National Audit Office slams £100m cost of flawed CCS competition

<http://www.businessgreen.com/bg/news/3002924/national-audit-office-slams-gbp100m-cost-of-flawed-ccs-competition>

Financial Times [subscription required]
January 11, 2017

Largest carbon gas capture project kicks off on schedule

<https://www.ft.com/content/eee0d5d6-d700-11e6-944b-e7eb37a6aa8e>

The Guardian
November 17, 2016

UK ratifies Paris climate agreement

<https://www.theguardian.com/environment/2016/nov/17/uk-boris-johnson-ratifies-paris-climate-agreement>

The Guardian
November 3, 2016

UK climate targets at risk without government support for windfarms

<https://www.theguardian.com/environment/2016/nov/03/uk-climate-targets-at-risk-without-government-support-for-windfarms-says-energy-boss>

The Guardian
October 13, 2016

UK must focus on carbon removal to meet Paris goals, climate advisers urge

<https://www.theguardian.com/environment/2016/oct/13/focus-carbon-removal-meet-paris-goals-uk-committee-climate-change>

Financial Times [subscription required]
October 10, 2016

UK's climate policy must be based on an evolutionary strategy

<https://www.ft.com/content/94dcb96a-8e12-11e6-a72e-b428cb934b78>

telegraph.co.uk

September 28, 2016

Energy policy overhaul 'needed to cut costs and keep lights on'

<http://www.telegraph.co.uk/business/2016/09/28/energy-policy-overhaul-needed-to-cut-costs-and-keep-lights-on/>

The Daily Telegraph

August 22, 2016

Carbon capture can drive a 21st century revival of British industry

<http://www.telegraph.co.uk/business/2016/08/21/carbon-capture-can-drive-a-21st-century-revival-of-british-indus/>

The Guardian

July 20, 2016

Treasury cut to carbon capture will cost UK £30bn, says watchdog;

<https://www.theguardian.com/environment/2016/jul/20/treasury-cut-carbon-capture-storage-cost-uk-30bn>

The Guardian

June 30, 2016

UK lacks policies to meet more than half its carbon emissions cuts - report;

<https://www.theguardian.com/environment/2016/jun/30/uk-lacks-policies-to-meet-more-than-half-its-carbon-emissions-cuts-report>

telegraph.co.uk

June 30, 2016

UK sets tough new climate targets... but lacks policies to meet them

<http://www.telegraph.co.uk/business/2016/06/30/uk-sets-tough-new-climate-targets-but-lacks-policies-to-meet-the/>

The Guardian

June 29, 2016

UK ministers to approve world-leading carbon emissions target;

<https://www.theguardian.com/environment/2016/jun/28/uk-ministers-world-leading-carbon-emissions-reduction-target-climate-change>

The Guardian

June 19, 2016

Carbon capture: UK pays firms £30m despite scrapping projects

<https://www.theguardian.com/environment/2016/jun/19/carbon-capture-and-storage-uk-government-shell-drax>

3. Press releases

Department for Business, Energy & Industrial Strategy

11 Nov 2016

[Greg Clark's speech at the annual Energy UK Conference yesterday \(10 November 2016\).](#)

[Extracts]

[]

The creation of the new department places action on climate change where it belongs; as central to Britain's economic future.

In the run up to Copenhagen, and before the Climate Change Act, the creation of DECC reflected the need to bring climate change action to the top of the political agenda.

But now the debate about whether to reduce emissions is over. The question, post the remarkable Paris agreement, is how you make it happen and in so doing, how to capture the huge economic opportunity of climate change action for UK businesses.

That is why bringing together climate, energy, business and industrial strategy is so important. Indeed, the imperative to act on the low carbon economy will underpin our industrial strategy.

Cutting pollution and protecting consumers are often set up in opposition.

But the two objectives do not have to be at odds. Indeed, we can only achieve the kind of transformation of our, and the global energy system, needed if it is economic to do so.

Things have to be done differently from what was being done in the past. We need to nurture technologies which are both cheap and clean. We need the cheap option to be the clean option.

How do we do that? Through innovation. The kind of innovation we are seeing across our energy system.

We need energy which is cheaper than and as reliable as coal and carbon free. Despite the progress of many low carbon technologies, we do not yet have the complete answer. We need to ensure all of our innovation is driving toward that goal of cheap, clean energy.

That is why today I am announcing the establishment of the Energy Innovation Board. Chaired by Sir Mark Walport, the Government's Chief Scientific Adviser, and reporting to the Prime Minister, the Board will bring together all the different parts of Government funding energy innovation and ensure they are working together

[]

We released our consultation yesterday on how to close unabated coal-fired power stations, while ensuring we retain our high levels of reliability.

As the Climate talks in Marrakech get under way, there can be no stronger signal of our commitment to set a compelling example to the rest of the world of how to cut carbon pollution.

Over the coming weeks and months, I will be setting out in more detail how we will develop and work together with you on the Industrial Strategy to ensure we have an economy that works for all.

Energy and clean technology will be central to our vision of a future economy.

The global challenge to decarbonise, reinforced by the success of the Paris climate talks last year, is also an enormous economic opportunity for our companies, scientists and engineers.

We have much to be proud of in the UK. We have seen emissions fall by 38% since 1990. This is substantially more than both Germany and Denmark. We will have around 35% of our electricity from renewables by 2020. We are revitalising our nuclear industry, with the decision on Hinkley a crucial first step.

But we know we have much more to do – particularly in how we heat our homes and business and how we travel.

The upcoming Emissions Reduction Plan will be an important statement of our seriousness to reduce carbon emissions and a crucial plank in our wider Industrial Strategy.

We cannot yet know all the technological solutions that will get us to our 80% goal. But we know we need to lay the groundwork during this Parliament and the next for the technological transformation we need to see in the late 2020s and 2030s.

Carbon Capture and Storage Association

6th October 2016

[Norway Plans to Put CCS in Europe Back on Track](#)

The Carbon Capture and Storage Association (CCSA) welcomes today's announcement by the Norwegian Government to move forward with a number of CCS projects. Norway will spend approximately NOK 1,314 million on building their CCS portfolio.

This includes NOK 360 million towards a project to realise full-scale CCS in Norway. The three industrial emitters involved in the project are Yara (ammonia production), Norcem (cement production) and Klemetsrud (waste management and energy recovery). If all three were to successfully reach a final investment decision, the project would reduce Norway's carbon dioxide emissions by 5% and significantly help to achieve Norway's contribution to meeting the global 1.5°C target agreed at the Paris COP21 conference.

The Norwegian Government also announced a three-year extension to the Technology Center Mongstad (TCM), a CCS test facility jointly owned by Gassnova, Statoil, Sasol and Shell. A new agreement on the

ownership and operation of the Center will be agreed by the end of 2016.

Dr. Luke Warren, Chief Executive of the CCSA, commented:

"This is a hugely encouraging announcement by the Norwegian Government and could once again place Europe amongst the leading regions developing CCS around the world.

The fact that Norway has chosen to develop CCS on three very different industrial sites demonstrates the massive importance of CCS to sectors such as steel, cement, chemicals and refining. Industrial CCS projects such as these are important not only in terms of their contribution to emissions reductions, but also to ensuring a long-term sustainable future for these vital industries – retaining their tremendous contribution to job creation and GVA.

For too long people have only considered CCS in the context of the power sector. Other countries need to follow Norway's example and broaden their approach to CCS by encompassing industry, heat and power.

In the UK we are now looking to the Government to follow Norway's lead and develop a new approach to CCS that recognises its tremendous value right across the UK economy".

Notes to Editors:

1. On Thursday 6th September 2016, the Norwegian Government announced their decision to proceed with three CO₂ capture projects following a feasibility study. The Government also agreed to extend the work of the Technology Center Mongstad (TCM), initially for three years. The announcement can be found [here](#).

2. CCS has a vital role to play in meeting the UK's climate change targets at least cost. The Committee on Climate Change has concluded that CCS "*could almost halve the cost of meeting the 2050 target in the Climate Change Act*". CCS is also the only technology available that allows deep decarbonisation in energy intensive industries, and is therefore crucial in enabling a long-term sustainable future for these important industries. CCS is currently the best option for producing large-scale, low-cost, green hydrogen which can then be used to decarbonise other sectors such as heat and transport

Committee on Climate Change (CCC)

30 June 2016

[CCC welcomes Government backing for fifth carbon budget and continued ambition to meet 2050 target](#)

In November 2015, the Committee on Climate Change (CCC) advised Government to set the fifth carbon budget to reduce UK greenhouse gas emissions in 2030 by 57% relative to 1990 levels. Today, the Government has accepted that advice.

The Committee welcomes the clear signal this sends about UK ambition to continue reducing emissions into the 2030s across the economy, including from power, transport and buildings. This is particularly important given the uncertainty following the recent vote to leave the EU. The announcement shows that the UK remains committed to its climate targets and is open for low-carbon business.

The CCC's advice aimed to identify the best course for the UK, following a full assessment of the domestic impacts of meeting the proposed carbon budget. This included analysis of the benefits and the costs to households and businesses of the action required, and an assessment of international action to reduce emissions.

Global commitment to tackling climate change has never been greater, nor has the speed of innovation in low-carbon technologies, which is resulting in reduced costs and new opportunities. The Government's acceptance of the fifth carbon budget places the UK in a position to take full advantage of an emerging world where low-carbon power, vehicles, buildings, industry and agriculture are in demand.

The Committee notes that, in accepting the advice, the Government has rejected formal inclusion of emissions from international shipping within the fifth carbon budget. The Committee reiterates that the evidence it considered suggested that conditions for including emissions from international shipping in the fifth carbon budget have now been met. We will examine the Government's reasoning in detail.

The UK continues to reduce its emissions. Provisional figures for 2015 show that UK emissions are 38% below 1990 levels. Acceptance of the fifth carbon budget demonstrates the Government's commitment to continuing along the cost-effective path towards the legal requirement to reduce emissions by at least 80% by 2050 compared to 1990 levels.

The Committee has also laid its annual progress report before Parliament today. That report emphasised the need to now bring forward policies and proposals that will achieve the levels of reduction set out in the fifth carbon budget. The Government has recognised that new policies are required and has committed to set out how it will strengthen efforts to meet the carbon budgets by the end of the year.

Lord Deben, Chairman of the Committee on Climate Change, said: "I warmly welcome the Government's acceptance of the CCC's advice on the fifth carbon budget. Amidst many competing demands it is to their credit that they continue to prioritise efforts to tackle climate change in the UK and internationally. The Government's commitment to reduce UK emissions by 57% by 2030 will open up opportunities for UK businesses both at home and abroad. It also demonstrates the continued broad political consensus to tackle the serious risks posed by climate change."

Notes

- The *Committee on Climate Change* is the independent statutory body established under the *Climate Change Act 2008* to advise the UK Government on setting carbon budgets, and to report to

Parliament on progress made in reducing greenhouse gas emissions and preparing for climate change.

- The CCC's [fifth carbon budget](#) advice was delivered to the Secretary of State for Energy and Climate Change and published on the CCC website on 26 November 2015.
- The fifth carbon budget advice takes into account criteria set out in the Climate Change Act 2008. This includes ensuring that carbon budgets are in keeping with climate science and international circumstances, that budgets are affordable, do not adversely affect the UK's competitiveness, are consistent with energy policy, particularly security of supply, and that potential impacts on fuel poverty are manageable. The Climate Change Act (2008) commits the UK to reduce its greenhouse gas emissions by at least 80% by 2050 (on 1990 levels) with international aviation and shipping emissions "taken into account". For this reason, carbon budgets are set to ensure the UK is on track to meet its 2050 obligation including emissions from international aviation and shipping.
- The fifth carbon budget advice recommends an emissions limit of 1,765 MtCO₂e over the period 2028-2032 including emissions from international shipping. This is an emissions reduction of 57% on 1990 levels. The Committee recommended that international shipping emissions were included in the fifth carbon budget, as there are no longer any strong practical reasons which prevent their inclusion. These emissions should be included on the basis of international policy agreed at the International Maritime Organisation, and does not therefore imply a unilateral UK approach. The Committee also said that if international shipping emissions were excluded then an emission limit of 1,725 MtCO₂e would be appropriate over the period 2028-2032. The Government is legislating this latter number and excluding international shipping from the formal total for the budget.
- The Government has also chosen to set a limit of 55 MtCO₂e on the number of carbon units, outside the EU ETS, that may be used to meet the third carbon budget (2018-2022). The Committee had recommended a zero limit. UK emissions are already below the level of the third budget. What is important is that the Government should plan to meet the third and subsequent carbon budgets without the use of credits. This seems to be in line with the Government's rationale for setting a positive MtCO₂e limit, as it has for previous budgets, only to reflect uncertainty about projected emissions.
- The Committee's advice on the fifth carbon budget applies to emissions for the whole of the UK. It takes into account the differences in circumstances between England, Wales, Scotland and Northern Ireland and [follows widespread consultation and discussion](#) with stakeholders, and detailed discussion with governments in Scotland, Wales and Northern Ireland, as well as the UK Government.
- Any future changes to the fifth carbon budget, including the use of international credits ("offsets") or borrowing from other budget periods, would require the Government to request the advice of the Committee to assess whether conditions allowing a change to the fifth carbon budget have been met.

- The Committee published its 2016 Progress Report to Parliament on 30 June 2016, assessing UK-wide progress on reducing emissions and meeting carbon budgets. The UK Government has committed to set out how it will meet the fourth and fifth carbon budgets [by the end of 2016](#).

Department of Energy and Climate Change

04 Mar 2016

[What the Government is doing to secure investment in clean, secure and affordable energy](#)

Yesterday the Energy and Climate Change Committee has [published their report on investor confidence](#). Amber Rudd set out the Government's position on [what course energy policy will take over this Parliament](#) in a speech late last year.

The government's priority is clear – to ensure our families and businesses have access to the secure, affordable and clean energy supplies they can rely on now and in the future.

To deliver this, long-term decisions are being taken to tackle a legacy of under-investment in the UK's energy system – creating the right environment for businesses to invest in clean, affordable energy and building an energy infrastructure fit for the 21st century. At the same time action is being taken to keep bills as low as possible to protect consumers and ensure they get value for money, including by being tough on subsidies so that technologies stand on their own two feet.

The top 10 things the government is doing to secure investment in clean secure energy:

- Reforming the Capacity Market, which sends a clear signal to investors that will encourage the secure and clean energy sources we need to come forward – such as gas and interconnectors – as part of our long-term plan to build a system of energy infrastructure fit for the 21st century.
- Committed to the first new nuclear plant for a generation at Hinkley Point C. It will power 6 million homes for 60 years and also provide 25,000 jobs giving the UK economy a huge boost.
- Boosting innovation funding to over £500m, including £250m for nuclear innovation and Small Modular Reactors.
- Confirmed we could support up to 10GW of new offshore wind projects in the 2020s, with a further three auctions in this Parliament if the Government's conditions on cost reduction are met.
- Set out world leading plans to close all unabated coal-fired power stations by 2025 if we're confident that the shift to new gas can be achieved within the necessary timescales.
- Allocated £295 million to invest in energy efficiency measures in schools, hospitals and other local public services.

- Introduced a new energy efficiency supplier obligation for 5 years from April 2017 set at £640 million a year - helping more than 1 million homes cut carbon emissions and keep their bills low.
- Committed to more than double the support we give to households and businesses to decarbonise their heating supply in this Parliament (from £430 million to £1.15 billion).
- Allocated over £300 million to deliver up to 200 heat networks in communities, leveraging up to £2 billion in private investment.
- Announced a 50% increase in the UK climate finance commitment to a total of £5.8 billion over the next five years to help the poorest countries cut carbon emissions and adapt to climate change.

Carbon Capture and Storage Association

25th November 2015

[Chancellor Deals Devastating Blow to CCS Industry](#)

The Carbon Capture and Storage Association (CCSA) responded to today's Spending Review and Autumn Statement by stating its shock that the £1bn for the CCS competition has been cut.

Dr Luke Warren, Chief Executive of the CCSA, commented:

"Today's announcement that the funding for CCS will be cut is devastating. Only six months ago the Government's manifesto committed £1 billion of funding for CCS. Moving the goalposts just at the time when a four year competition is about to conclude is an appalling way to do business.

This announcement is a real blow to confidence for companies investing in CCS. We call on the Government to come forward - as a matter of urgency - with their plans for CCS as this technology is critical for the UK's economic, industrial and climate policies. Without concrete Government support for CCS the UK will lose the opportunity for cost-effective decarbonisation".

Notes to Editors:

1. The Chancellor announced the Spending Review 2015 on the 25th November 2015. Details of the Spending Review can be found [here](#).

HM Government

Carbon Capture and Storage Competition

25 November 2015

[Statement to Markets](#)

Today, following the Chancellor's Autumn Statement, HM Government confirms that the £1 billion ring-fenced capital budget for the Carbon Capture and Storage (CCS) Competition is no longer available.

This decision means that the CCS Competition cannot proceed on its current basis. We will engage closely with the bidders on the implications of this decision for them.

4. Parliamentary materials

Parliamentary Questions

[Greenhouse Gas Emissions](#)

Asked by: Gardiner, Barry

To ask the Secretary of State for Business, Energy and Industrial Strategy, when he will report progress against actions as set out in the 2011 Carbon Plan and publish it on the Number 10 website; and for what reason no such progress has been reported since 2012.

Answering member: Mr Nick Hurd | Department for Business, Energy and Industrial Strategy

We report progress against carbon budgets through the annual statement of emissions, our energy and emissions projections, and the Government's response to annual progress reports from the Committee on Climate Change, fulfilling our statutory requirement. Taken together these documents set out an assessment of the actions Government is taking to meet carbon budgets, independent advice on potential further action and the Government's response to that advice.

We are now looking ahead to our emissions reduction plan, which will set out how we will decarbonise all sectors of the UK through the 2020s.

17 Jan 2017 | Written questions | House of Commons | 59376

[Carbon Emissions](#)

Asked by: McCaig, Callum

To ask the Secretary of State for Business, Energy and Industrial Strategy, if he will publish a response to the report published by the Parliamentary Advisory Group on Carbon Capture and Storage prior to the publication of the Government's emissions reduction plan.

Answering member: Jesse Norman | Department for Business, Energy and Industrial Strategy

The Government is considering the findings and recommendations made in the report 'Lowest Cost Decarbonisation for the UK: the critical role of carbon capture and storage', published by Parliamentary Advisory Group on Carbon Capture and Storage, and will set out its approach to carbon capture and storage in due course.

13 Jan 2017 | Written questions | House of Commons | 58702

[Carbon Sequestration](#)**Asked by: Jones, Helen**

To ask the Secretary of State for Business, Energy and Industrial Strategy, what representations he has received on the Government's decision to cancel the carbon capture and storage competition.

Answering member: Jesse Norman | Department: Department for Business, Energy and Industrial Strategy

The Department has received a number of representations on the future of carbon capture and storage (CCS). This includes carefully considering the findings and recommendations made in the report 'Lowest Cost Decarbonisation for the UK: the critical role of carbon capture and storage', published in September 2016 by the Parliamentary Advisory Group on CCS, chaired by the noble Lord, Lord Oxburgh. We are considering the options for CCS in the UK, and will set out our approach in due course.

15 Dec 2016 | Written questions | House of Commons | 57067

[Science and Innovation](#)**Asked by: Alan Brown (Kilmarnock and Loudoun)**

The Government talk about promoting science and innovation, but this Government pulled the plug on funding for carbon capture and storage. How much of the additional £4.7 billion R and D money announced in the autumn statement will be allocated for carbon capture and storage?

Answering member: Joseph Johnson | Business, Energy and Industrial Strategy

We will consult the sector and the science community very carefully as part of our development of the industrial strategy, in a discussion paper that we will launch in the weeks to come.

13 Dec 2016 | Oral answers | House of Commons | 618 c600

[Carbon Sequestration](#)**Asked by: Bruce, Fiona**

To ask the Secretary of State for Business, Energy and Industrial Strategy, what research the Government is conducting on carbon capture and the energy-making process.

Answering member: Jesse Norman | Department for Business, Energy and Industrial Strategy

Since 2015, Government has spent approximately £11 million on a range of carbon capture projects supporting research and development in CO₂ storage, carbon capture technologies and CCS feasibility studies.

The Department has also commissioned research into the potential of carbon capture and utilisation in the UK and the next generation UK based carbon capture technologies. These will complete in 2017. Additionally, the Government Energy Entrepreneurs Fund has funded

approximately £1.6 million in support to innovative carbon capture technologies.

Phase 5 of this Fund opened on 30 October 2016. This is an additional £9 million of funding which is available for CCS innovation projects.

Further information can be found at:

<https://www.gov.uk/government/publications/energy-entrepreneurs-fund-phase-5>.

29 Nov 2016 | Written questions | House of Commons | 54710

[Climate Change Convention](#)

Asked by: Sheerman, Mr Barry

To ask the Secretary of State for Business, Energy and Industrial Strategy, what steps the Government is taking to ensure the UK meets its commitments in the Paris Agreement on Climate Change (a) nationally and (b) globally.

Answering member: Mr Nick Hurd | Department for Business, Energy and Industrial Strategy

The UK has ratified the Paris Agreement. The UK is already playing its part in delivering the Paris Agreement through our ambitious domestic climate framework. We have shown our commitment to the UK's Climate Change Act by setting the Fifth Carbon Budget in law. This budget is set in line with the recommendation of the Committee on Climate Change and has been widely welcomed by the business community for the certainty it gives in our move to a low carbon economy. The creation of the new Department for Business, Energy and Industrial Strategy will enable a whole economy approach to delivering our climate change ambitions.

I attended COP22 in Marrakech this year. The UK played a significant role in driving forward negotiations and discussions – particularly on mobilising climate finance. At these negotiations, progress was made on how to implement Paris Agreement, setting a clear deadline of 2018 for its finalisation. The UK also announced participation in a number of initiatives, including: supporting developing countries to implement their Paris commitments, tackling air pollution and investing further in research and development. For the first time at a COP, the UK had a Green is GREAT pavilion, showcasing British public and private sector strengths in responding to the challenges of climate change, including innovative commercial solutions and financial expertise.

The UK is supporting vulnerable countries to take action against climate change. The UK will provide at least £5.8bn from the UK aid budget between 2016 and 2020 as climate finance which will continue to provide strong support to help vulnerable developing countries adapt to climate change and take up sustainable, low carbon, resilient and inclusive development. This includes technical assistance and capacity building to help countries implement their national plans under the Paris Agreement. UK climate finance to date has already directly supported 21 million people to cope with the effects of climate change, and

improved access to energy for 6.6 million people. The finance has also helped prevent 4.9 million tonnes of CO₂, this is roughly equivalent to emissions from 1 million vehicles driven for one year.

We have also recently seen two significant global climate deals that – although separate from the UNFCCC process – will be important steps towards meeting the Paris goals. The UK played a key role in securing a major deal to combat aviation emissions, the first worldwide scheme to address emissions in any single sector, and also in securing a historic deal to phase down the production and use of hydrofluorocarbons (HFCs) by 2047, which will avoid 0.5 degrees of global warming by the end of this century. The UK is already phasing down the use of HFCs by 80% by 2030 and now the rest of the world will be following our lead.

23 Nov 2016 | Written questions | House of Commons | 53564

[Greenhouse Gas Emissions: Standards](#)

Asked by: Reed, Mr Jamie |

To ask the Secretary of State for Business, Energy and Industrial Strategy, whether his Department is on track to meet the UK target under the Climate Change Act 2008 to reduce greenhouse gas emissions by at least 80 per cent from the 1990 baseline by 2050.

Answering member: Mr Nick Hurd | Department for Business, Energy and Industrial Strategy

The Government remains committed to tackling climate change and to the UK's Climate Change Act. Climate change remains one of the most serious long-term risks to our economic and national security. We have already made good progress towards our goal, with the first carbon budget covering 2008 to 2012 being met. Provisional statistics indicate that UK emissions in 2015 were 38% lower than in 1990, and 3% below those in 2014.

We are looking ahead to our emissions reduction plan which will set out how we will reduce emissions through the 2020s, keeping us on track for our 2050 target.

01 Nov 2016 | Written questions | House of Commons | 50798

[Carbon Emissions](#)

Asked by: Lucas, Caroline

To ask the Secretary of State for Business, Energy and Industrial Strategy, when he plans to publish the next Carbon Plan.

Answering member: Mr Nick Hurd | Department for Business, Energy and Industrial Strategy

We are engaging with a wide range of stakeholders and other government departments in order to meet the shared challenge of moving to a low carbon economy. The Emissions Reduction Plan will set out how we will meet our carbon budgets through the 2020s (the period covering the fourth and fifth carbon budgets).

13 Oct 2016 | Written questions | House of Commons | 46843

[Engagements](#)

Asked by: Alex Cunningham (Stockton North)

On Monday, the parliamentary advisory group on carbon capture and storage published a report about the potential of CCS to create thousands of jobs, save the country billions of pounds, and play a major role in meeting the UK's emission reduction targets. CCS is critical to

Teesside, so will the Prime Minister tell the House when the Government will publish their long-awaited new strategy?

Answered by: The Prime Minister

The issues of climate change, reducing emissions, and our energy policy are very important to this Government. We have a fine record in this area, and we will be continuing with that. The issue of carbon capture and storage has been looked at carefully in the past. One of the key issues is the cost. We will continue to invest in the development of CCS. We are investing over £130 million to develop the technology, through innovation support, with the aim of reducing its costs, and so we will continue to look at the role that it can play.

14 Sep 2016 | Prime Minister's questions | 614 c894

[Carbon Sequestration: EU Grants and Loans](#)

Asked by: Johnson, Diana

To ask the Secretary of State for Business, Energy and Industrial Strategy, what assessment he has made of when the UK will lose EU funding previously allocated to the UK for carbon capture and storage programmes.

Answering member: Jesse Norman | Department: Department for Business, Energy and Industrial Strategy

Two UK carbon capture and storage (CCS) projects have been allocated funding by the European Commission (Don Valley and White Rose); the status of this funding is subject to further discussions with the European Commission. The UK is also participating in a European Research Area Network (ERA-NET) on CCS under the Horizon 2020 programme. On 13 August 2016, the Secretary of State for Business, Energy and Industrial Strategy (BEIS) confirmed that the Government will underwrite certain EU funding, including approved Horizon 2020 research and development and innovation projects, regardless of the UK's relationship with the EU.

05 Sep 2016 | Written questions | House of Commons | 43539

Climate Change

Asked by: Cunningham, Mr Jim

To ask the Secretary of State for Business, Energy and Industrial Strategy, whether his Department plans to set new climate targets as a result of the outcome of the EU referendum; and if he will make a statement.

Answering member: Mr Nick Hurd | Department for Business, Energy and Industrial Strategy

The Government remains committed to meeting its commitments under its existing domestic climate framework, the Climate Change Act (CCA). Climate change remains one of the most serious long-term risks to our economic and national security.

Under the CCA, the Government has now set the fifth carbon budget (2028-2032) at an equivalent 57% reduction on a 1990 baseline. This is in line with the recommendations of our independent Committee on Climate Change. The referendum does not affect this domestic decision, or our commitment to meet our emission targets cost effectively.

05 Sep 2016 | Written questions | House of Commons | 43621

Energy

Asked by: Shannon, Jim

To ask the Secretary of State for Business, Energy and Industrial Strategy, what steps his Department is taking to encourage decarbonisation of the UK energy market.

Answering member: Jesse Norman | Department for Business, Energy and Industrial Strategy

The Department for Business, Energy and Industrial Strategy will now hold responsibility for climate change issues.

We are taking action across the economy to encourage the decarbonisation of energy and last month we set the fifth carbon budget in law in line with the recommendations of the independent Committee on Climate Change.

01 Aug 2016 | Written questions | House of Commons | 42834

Carbon Sequestration: Tees Valley

Asked by: Blenkinsop, Tom

To ask the Secretary of State for Energy and Climate Change, what steps her Department has taken to support the Teesside Carbon Capture Storage Collective since the announcement of the reduction in government funds in that sector.

Answering member: Andrea Leadsom | Department: Department for Energy and Climate Change

The Department of Energy and Climate Change continues to work closely with Teesside, including through providing funding to the Collective for further work on how Carbon Capture and Storage (CCS), carbon usage, hydrogen production and other technologies could reduce carbon emissions from industrial processes.

This support follows £1m previously awarded to Teesside as part of the 2013 Tees Valley City Deal, to undertake engineering and commercial studies into the scope for industrial CCS for the Tees Valley industrial cluster, and the October 2015 Tees Valley Devolution Deal, which committed DECC to work with Tees Valley to explore how it can continue to develop its industrial CCS proposals.

Lord Heseltine's recent report "Tees Valley: Opportunity Unlimited" welcomed the support that the Government is continuing to provide on industrial CCS in the Tees Valley area.

16 Jun 2016 | Written questions | House of Commons | 40079

[EU Referendum: Investment in Power Sector](#)

Asked by: Mary Creagh

As one former leadership contender to another, I commiserate with the Minister over the events of the past week and wish her well in the reshuffle today.

The manufacturers organisation the EEF told the Environmental Audit Committee, which I chair, that the decision to cancel the carbon capture and storage competition in the autumn statement came as a huge shock and damaged investor confidence in the industry. We also heard from Siemens, which has invested £160 million in the wind industry in Yorkshire, that the referendum result means it is facing a whole new set of unanswered questions. What steps is the Minister taking to bring confidence to investors in low-carbon industries?

Answered by: Andrea Leadsom | Energy and Climate Change

In fact Siemens has recommitted to its investment in Hull, which is great news for that area. I had a meeting a few days ago—it seems like a year ago—with the Offshore Wind Industry Council to talk about confidence in investment. Its members all remain committed to the UK, and EDF has reconfirmed its commitment to the UK.

Specifically on CCS, as I have said many times in this Chamber, we remain committed to looking at what our future strategy for CCS will be. The fact that the competition did not make the cut in terms of taxpayer value for money at the last spending round does not mean that we are ruling out CCS. We believe that it continues to play an important role in the future of our decarbonisation strategy.

14 Jul 2016 | Oral questions | House of Commons | 613 cc418-9

Carbon Sequestration

Asked by: Lewis, Clive

To ask the Secretary of State for Energy and Climate Change, whether the bidders for the carbon capture and storage competition have (a) sought and (b) been offered compensation from her Department for costs they incurred prior to that competition's cancellation.

Answering member: Andrea Leadsom | Department for Energy and Climate Change

The carbon capture and storage competition document stated that the Department would not meet bidders' costs other than those shared with the Department through the Front End Engineering and Design (FEED) contract, and that payments to bidders since November 2015 have been consistent with the terms and conditions in those FEED contracts agreed between Government and each bidder.

08 Jun 2016 | Written questions | House of Commons | 39016

Carbon Emissions

Asked by: Cunningham, Alex

To ask the Secretary of State for Energy and Climate Change, with reference to the Energy Technologies Institute report, published on 12 May 2016, what assessment she has made of the implications for her policy of carbon capture and storage technology contributing to meeting the UK's commitments to reduce carbon dioxide emissions.

Answering member: Andrea Leadsom | Department for Energy and Climate Change

The Government views Carbon Capture and Storage (CCS) as having a potentially important role in the long-term decarbonisation of the UK's economy. The Government will set out its approach to CCS in due course, and the recent Energy Technologies Institute report, funded by DECC, will inform the Government's thinking.

01 Jun 2016 | Written questions | House of Commons | 37854

Green Research and Development

Asked by: Barry Gardiner

The Government's emissions reduction plan has been promised by the end of this year, and the Secretary of State has said that it will address the current 10% shortfall for the fourth carbon budget, which was set back in June 2011. Section 14 of the Climate Change Act 2008 stipulates that the Government must lay before Parliament a report setting out how they will meet each carbon budget

"as soon as is reasonably practicable"

after setting it. Five years later, does the Secretary of State consider that she is now in breach of the Act, or does she have an unusually elastic definition of the phrase "as soon as is reasonably practicable"?

Answered by: Amber Rudd | Energy and Climate Change

It is always a pleasure to receive such detailed questions from the hon. Gentleman. I can reassure him that I am fully aware of section 14 and the sections either side of it. I am clear that we will have an emissions reduction plan by the end of the year, as we have said, and that we have an obligation to come forward with our response to the fifth carbon budget. It is because we take these matters so seriously, and because this is a big, realistic and important challenge for the UK, that we are not rushing it.

12 May 2016 | Oral answers | House of Commons | 609 c709

[CCS Funding \(Peterhead\)](#)

Asked by: Wayne David (Caerphilly)

I am reluctant to refer to the Budget because we cannot be absolutely sure what is in and what is out. For example, the Chancellor's support for the oil and gas industry is welcome, but it does not take us very far forward. Unfortunately, it appears that the Government here in London are taking their cue from the Government in Holyrood. There the SNP Government recently axed £10 million of tax breaks for renewable firms, yet they like to see themselves as a green Administration. Are we not seeing two Governments who are confused, pursuing contradictory policies, and not knowing whether they coming or going?

Answering member: David Mundell | Scotland

I can point out one distinct difference between this Government and any Labour Scottish Government, or indeed SNP Scottish Government—and that is that we are not putting up the tax for ordinary people as both those parties propose. We have made it very clear that the door is not closed on CCS, but the costs must come down.

23 Mar 2016 | Oral answers | House of Commons | 607 c1560

[Carbon Sequestration](#)

Asked by: Pennycook, Matthew

To ask the Secretary of State for Energy and Climate Change, pursuant to the Answer of 29 January 2016 to Question 23417, whether she plans to issue a direction to hold a Contracts for Difference round for carbon capture and storage.

Answering member: Andrea Leadsom | Department for Energy and Climate Change

The Government believes CCS could play a potentially important role in the long-term decarbonisation of the UK. Under the Contracts for Difference (Definition of Eligible Generator) Regulations 2014, Contract for Difference allocation rounds are limited to renewable technologies. My rt. hon. Friend the Secretary of State can direct the award of a Contract for Difference to a CCS project. Whether or not she would do so would be subject to circumstances at the time, including factors such

as value for money, affordability and competing demands on available budgets.

18 Mar 2016 | Written questions | House of Commons | 30856

[Electricity Generation: Carbon Sequestration](#)

Asked by: Pennycook, Matthew

To ask the Secretary of State for Energy and Climate Change, what steps she is taking to ensure that all new electricity generation facilities that emit greenhouse gases are prepared for carbon capture and storage.

Answering member: Andrea Leadsom | Department for Energy and Climate Change

Planning controls already ensure that new electricity generation facilities that emit greenhouse gases are prepared for Carbon Capture and Storage (CCS). Currently most new thermal plants larger than 300 MWe must be constructed 'carbon capture ready', which means they must demonstrate that it would be technically and economically feasible to retrofit CCS. Any new coal plants must be constructed with CCS fitted to at least 300 MW of their proposed generating capacity.

25 Feb 2016 | Written questions | House of Commons | 26722

[Topical Questions](#)

Asked by: Diana Johnson (Kingston upon Hull North)

The Select Committee has found that scrapping the Government's support for carbon capture and storage technology puts at risk the UK's international commitments on tackling climate change and makes it more expensive to do this. We have also lost out on about £250 million-worth of EU investment. Can the Minister just explain to me how this makes sense?

Answered by: Andrea Leadsom | Energy and Climate Change

Our view is that CCS has a potentially important role to play in long-term decarbonisation. We continue to invest in the development of CCS; we are investing more than £130 million to develop the technology through innovation support. My Department is looking at what our new policy is to develop this important technology.

11 Feb 2016 | Topical questions | 605 c1734

[Energy: Carbon Capture and Storage](#)

Asked by: Lord Broers (CB)

My Lords, getting back to the cost of CCS, I think at the moment the strike price for it is about three times the reference price, which means that if we went that way, the cost would increase three times. We are hoping the price may come down in the 2020s to only twice the cost, but should we not get on with anything we can to understand that

situation and the costs more? As the noble Lord, Lord Howell, said, it may not be feasible at all. It is a surprise to most of us that this competition was cancelled.

Answered by: Lord Bourne of Aberystwyth

My Lords, I agree with most of what the noble Lord said, except about the cancellation. The cancellation was of an extremely expensive project. He is absolutely right that our role, along with others, is vital. We are a leading part of the Carbon Sequestration Leadership Forum internationally and, as I indicated previously, we are talking with key allies about what to do in this area.

02 Feb 2016 | Oral questions | House of Lords | 768 c1716

[Carbon Sequestration: Yorkshire and the Humber](#)

Asked by: Harpham, Harry

To ask the Secretary of State for Energy and Climate Change, what the cost to the public purse was of developing proposals for a new carbon capture and storage project in Yorkshire.

Answering member: Andrea Leadsom | Department for Energy and Climate Change

The Government continues to view CCS as having a potential role in the long-term decarbonisation of the UK's power and industrial sectors and we are engaging closely with the White Rose developer and wider CCS industry. The Department has paid around £31 million between 2011/12 and November 2015 on developing proposals for the White Rose carbon capture and storage project in Yorkshire. This included the investment in Front End Engineering and Design to determine the cost and feasibility of the project, independent professional technical, legal, financial and commercial advice and civil service staff.

28 Jan 2016 | Written questions | House of Commons | 21791

[Paris Climate Conference](#)

Asked by: Callum McCaig (Aberdeen South)

On the decision to pull £1 billion from carbon capture and storage, the Prime Minister said to me at Prime Minister's questions:

"You have to make decisions about technology that works and technology that is not working."—[Official Report, 16 December 2015; Vol. 603, c. 1548.]

How was that assessment made given that the competition had not yet been completed?

Answering member: Amber Rudd | Energy and Climate Change

We do not rule out carbon capture and storage in the future. This Government have made substantial investments through our entrepreneur fund in early-start carbon capture and storage. We have industrialised carbon capture and storage projects operating and testing

in Teesside. The fact is that the decision was made not to have a £1 billion investment. It was a difficult decision made in a difficult spending round. None the less, we recognise that carbon capture and storage will still have an important future in a low carbon economy.

07 Jan 2016 | Oral answers | House of Commons | 604 c416

Carbon Sequestration: Industry

Asked by: Cunningham, Alex

To ask the Secretary of State for Energy and Climate Change, whether support for energy-intensive industries is part of the Northern Powerhouse agenda; and what assessment the Government has made of the importance of carbon capture and storage for the future of those industries.

Answering member: Andrea Leadsom | Department for Energy and Climate Change

The provision of ring-fenced capital support for Carbon Capture and Storage (CCS) was judged against other Government funding priorities as part of the Spending Review. Government has not taken the Spending Review decision lightly. The Government continues to view CCS as having a potential role in the long-term decarbonisation of the UK's power and industrial sectors. Neither CCS Competition project proposed to capture CO₂ from energy intensive industries.

The detailed design and implementation of CCS policy changes have yet to be determined. The Industrial 2050 Decarbonisation and Energy Efficiency Roadmaps reports published in March 2015 identified a potential role for industrial CCS technologies in decarbonising the steel, oil refining, chemicals and cement sectors. DECC and BIS continue to engage with the energy intensive industries and academics to develop decarbonisation Action Plans by the end of 2016 as the second phase of this process.

The Government remains committed to working with energy intensive industries including those in the Northern Powerhouse area. DECC provided £1million funding to Tees Valley Unlimited as part of the 2013 City Deal agreement to undertake an Industrial CCS feasibility study based on the chemicals and steel industry in the Teesside cluster and we continue to support that work. The devolution deal for Tees Valley, published in October this year, also included a commitment to explore how it can continue to develop its industrial CCS proposals.

16 Dec 2015 | Written questions | House of Commons | 19749

Carbon Sequestration

Asked by: MacNeil, Angus Brendan

To ask the Secretary of State for Energy and Climate Change, what bids her Department received for the carbon capture and storage technology completion which the Government is no longer funding.

Answering member: Andrea Leadsom | Department for Energy and Climate Change

The CCS Competition opened in April 2012, with bids invited by July 2012. Eight bids were submitted: North East Oxyfuel Project, Peterhead CCS, Teesside Low Carbon, White Rose (Capture Power), Captain Clean Energy Limited, Don Valley CCS, National Grid Humber Cluster and National Grid Teesside Cluster.

Four full chain projects were shortlisted in October 2012.

On 14 January 2013, shortlisted bidders submitted revised proposals and later that year the Government announced two preferred bidders, Capture Power Ltd' White Rose Project and Shell's Peterhead Project, who were later awarded contracts to undertake Front End Engineering and Design (FEED) studies.

Captain Clean Energy and Teesside Low Carbon, the remaining two shortlisted bidders, were appointed as reserve projects until such time as FEED contracts were signed.

10 Dec 2015 | Written questions | House of Commons | 18629

[Carbon Sequestration](#)

Asked by: Flynn, Paul | **Party:** Labour Party

To ask Mr Chancellor of the Exchequer, for what reasons the closure of the competition for carbon capture and storage projects was announced on a Stock Market news website on 25 November 2015, in advance of the Autumn Statement and Spending Review 2015.

Answering member: Damian Hinds | **Party:** Conservative Party |
Department: HM Treasury

Following the Chancellor's Autumn Statement, it was announced on the London Stock Exchange at 2:57pm on 25 November 2015 that HMG is not providing £1bn capital grant funding.

We have not taken this decision lightly. However, this was a tight financial settlement and difficult decisions have had to be made. Support for the CCS competition projects has always been conditional on affordability and value for money.

This decision means that the CCS Competition cannot proceed on its current basis. CCS has a potential role in the long-term decarbonisation of the UK and the government is engaging closely with the bidders on the implications of this decision for them.

03 Dec 2015 | Written questions | House of Commons | 17999

[Topical Questions](#)

Asked by: Mr Angus Brendan MacNeil (Na h-Eileanan an Iar)

The Chancellor promised twice—at the Scottish referendum and in his manifesto—to have carbon capture and storage at Peterhead. Why has he broken that promise?

Answered by: Mr Osborne | Treasury

As I have said, investment in renewables will double over the next five years, and much of that investment will go into Scotland—
[Interruption.] Look, the Scottish nationalists have a choice now. They have got some extra money and increased capital spending, and if they want to invest in carbon capture and storage in Scotland they can do so. It is called devolution.

01 Dec 2015 | Topical questions | House of Commons | 603 c154**Carbon Sequestration****Asked by: Elliott, Julie**

To ask the Secretary of State for Energy and Climate Change, what recent steps she has taken to support carbon capture and storage technology to achieve commercial deployment; and if she will make a statement.

Answering member: Andrea Leadsom | Department for Energy and Climate Change

Carbon Capture and Storage (CCS) play an important role in meeting our 2050 emissions reduction target.

The CCS Commercialisation Programme could provide capital and operating support for up to two commercial scale projects, subject to value for money. As part of our support for CCS, we are investing up to £100 million to support detailed engineering studies at the proposed Peterhead and White Rose CCS projects to enable Final Investment Decisions.

Together with the Scottish Government we have committed, in principle, to provide £4.2 million to support Summit Power to undertake industrial research and development at their proposed CCS Caledonia Clean Energy Plant in Grangemouth, Scotland.

We have also invested over £130 million since 2011 to support research and development and innovation to foster the next generation of CCS technologies.

05 Nov 2015 | Written questions | House of Commons | 13940

5. Further reading and Useful links

Carbon Budgets

HM Government

October 2016

[*Government response to the Committee on Climate Change: Progress on meeting carbon budgets*](#)

Committee on Climate Change

June 2016

[*Meeting Carbon Budgets – 2016 Progress Report to Parliament*](#)

Carbon Capture and Storage

National Audit Office

January 2017

[*Carbon Capture and Storage: the second competition for government support*](#)

Department for Business, Energy and Industrial Strategy (BEIS)

[*Developing a modern industrial strategy*](#), 23 January 2017

Department for Business, Energy and Industrial Strategy (BEIS)

November 2016

[*Coal Generation in Great Britain: The pathway to a low-carbon future: consultation document*](#)

Parliamentary Advisory Group on Carbon Capture and Storage (CCS)

Report to the Secretary of State for Business, Energy and Industrial Strategy, September 2016

[*Lowest Cost Decarbonisation for the UK: The Critical Role of CCS*](#)

Committee on Climate Change

6 July 2016

[*A strategic approach to Carbon Capture and Storage: Letter to Secretary of State*](#)

Department for Energy and Climate Change (DECC)

Capture Power Limited: White Rose Carbon Capture and Storage Project

13 April 2016

[*The Secretary of State refusal of development consent for this application*](#)

Carbon Capture and Storage Association

29 June 2016

[*Lessons Learned - Lessons and Evidence Derived from UK CCS Programmes, 2008 – 2015*](#)

[Website](#)

The Peterhead Carbon Capture and Storage Project

[Website](#)

Global Carbon Capture and Storage Institute

[*The Global Status of CCS: 2016*](#), November 2016

Global Carbon Capture and Storage Institute

[Large Scale CCS Projects world wide](#)

DEBATE PACK

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