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SCCS Policy Briefing and Recommendations for European Council

Carbon Capture and Storage in the EU's 2030 climate and energy framework

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Why is Carbon Capture and Storage (CCS) important?

- CCS is a set of technologies that can reduce emissions of carbon dioxide (CO_2) at source to prevent increased atmospheric concentrations of the gas, which cause climate change.
- The capture, transportation and storage of CO_2 already takes place commercially, for example, in the drinks industry, fire extinguishers and reinjection into oil fields. CCS will deploy this knowledge at large scale for the purposes of climate mitigation.
- CCS is the only option that would enable deep emissions reductions for many energy-intensive and process industries, such as steel, cement, chemicals and refineries. It will thereby enable innovation and the retention of high-value jobs within Europe's high-carbon manufacturing industries.
- When CCS is used with sustainable biomass or air capture technology, it can provide "negative emissions", which actively reduce the stock of harmful CO_2 in the atmosphere.
- The deployment of CCS at commercial scale will reduce the overall costs of decarbonisation, and enable faster emissions reductions in line with scientific advice on the risks of climate change.
- European technological leadership on CCS is at risk, as other countries move more rapidly to construct and operate CCS projects. Europe is now "lagging behind" and must address failings in its policy framework.

> **"If the world is to have a reasonable chance of limiting the global average temperature increase to 2°C … less than one-third of proven reserves of fossil fuels can be consumed prior to 2050, unless CCS is widely deployed."**
> *World Energy Outlook 2012, International Energy Agency (IEA)*

About SCCS and our partners

SCCS is a research partnership of British Geological Survey (BGS), Heriot-Watt University, University of Aberdeen and the University of Edinburgh. It is the largest carbon capture and storage research group in the UK. With internationally renowned researchers and state-of-the-art facilities, it is unique in its connected strength across the full CCS chain, providing a single point of coordination for all aspects of CCS research, ranging from capture engineering and geoscience to public engagement, policy and economics. SCCS is predominantly funded by the Scottish Funding Council, with contributions from the Natural Environment Research Council, BGS, Heriot-Watt University and the University of Edinburgh.

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Recommendations for European Council

The European Commission has published proposals for European Union climate and energy policy out to 2030.[1] The Communication includes some positive references to Carbon Capture and Storage (CCS) but does not propose any policy instruments or funding mechanisms that would support Member States seeking to bring forward investment. This should be addressed if Europe is to achieve the cost-effective decarbonisation of the electricity generation sector and industrial sources of carbon dioxide emissions.

During 2014, the EC will undertake a review of the EU CCS Directive.[2] We recommend that the European Council requests the EC to include three further elements as part of this process:

- Request that the EC **identifies and proposes specific quantifiable milestone(s) for CCS in 2030**, in line with the identified need for large-scale deployment of CCS on industrial sources of CO_2 and power generation through to 2050.
    - *SCCS comment:* The proposal for an EU-wide renewables target for 2030 should be complemented by the inclusion of practical and quantifiable milestones for CCS. These should define progress required by 2030 in the capture, transport and storage of CO_2 en route to deep emissions reductions by 2050. Member States would remain free to determine whether to deploy CCS under national plans as part of the proposed new governance structure.
- Request that the EC **identifies and proposes funding instruments** applicable to the construction and operation of CCS projects on both industrial emissions sources and electricity generation, in support of Member State policies.
    - *SCCS comment:* Experience shows that a combination of carbon pricing via the Emissions Trading Scheme (EU ETS) and capital grants is not sufficient to provide a financial case for CCS deployment.[3] A funding mechanism linked to the extraction and import of fossil fuels could target incentives onto upstream suppliers while equitably sharing costs between Member States and across sectors. The European Parliament has already requested similar analysis.[4]
- Request that the EC **identifies opportunities for high-value and low-cost CO_2 projects on industry and power** that help to accelerate the development of strategic CO2 transport and storage infrastructures. This may include an option for a limited number of enhanced oil recovery (CO_2-EOR) projects.
    - *SCCS comment:* The EC is already analysing CO_2 storage options, and this should be expanded in scope to include an analysis of easily accessible CO_2 sources. This will enable the identification of "quick wins" available prior to 2030, including via the integration of CO_2-EOR operations as a means of CO_2 storage evaluation and infrastructure development. This analysis would inform the development of CO_2 infrastructure via Projects of Common Interest and priorities for future R&D efforts under the Horizon 2020 funding programme.

Additionally, we recommend that the European Council request that **the review of the CCS Directive and accompanying analyses be completed prior to consideration of the EU offer to the UNFCCC climate negotiations in March 2015**. This would enable the European Council to agree specific additional measures on CCS as part of its international efforts and domestic 2030 decarbonisation strategy.

Introduction

Europe was at one time the world leader in supporting CCS. In 2007, the European Council called for 12 demonstration projects to be in operation by 2015: not one has been delivered to date.

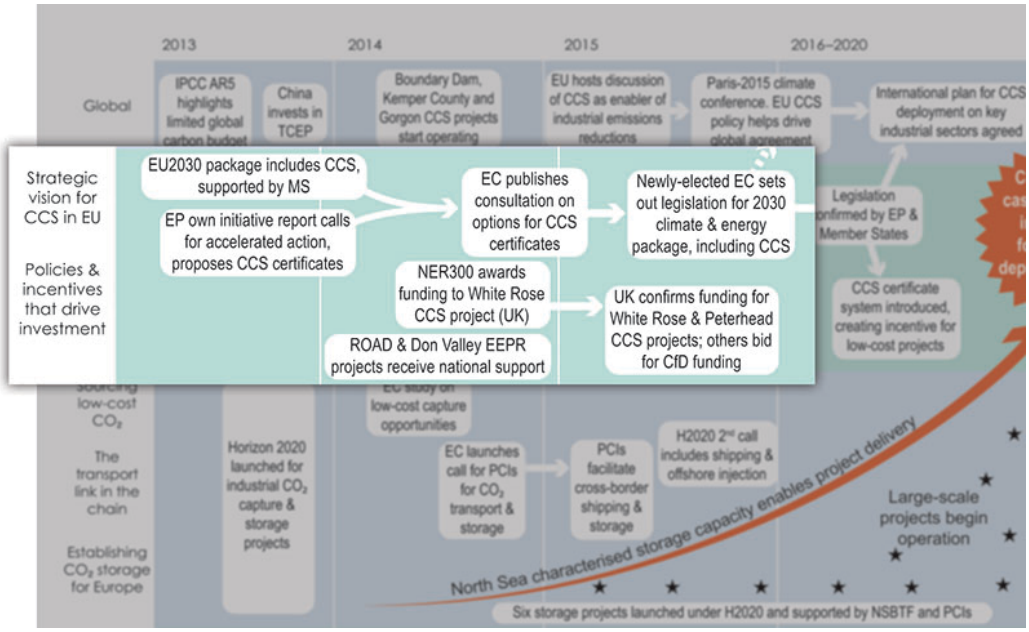
In the light of the economic crisis, EU CCS policy has failed to deliver a sufficiently bankable business case for individual CCS projects, and has not provided credible long-term signals to stimulate the development of supply chains, CO_2 infrastructure investments or the proactive characterisation of geological CO_2 storage. Previous European technological leadership on CCS is now at risk as commercial-scale projects for power generation and industrial sources of emissions enter into operation and construction in Canada, USA, Australia, China and the United Arab Emirates.

The Global CCS Institute warns that Europe is now "lagging behind".[5] Without explicit actions to address the weaknesses of EU CCS policy, the new EU2030 framework on climate and energy will also fail to deliver. This would leave Europe facing higher costs of decarbonisation and increased risk of employment loss from carbon intensive and process industries from energy intensive and process industries.

In November 2013, SCCS published *Unlocking North Sea CO_2 Storage for Europe: Practical actions for the next five years*.[6] Our report identified how decisions to improve the policy context and undertake practical enabling actions could combine to rebuild momentum for CCS deployment in the EU. We set these out as a five-year framework (*Figure 1*) and highlighted key elements on the critical path to deploying CCS in the EU, focusing on the North Sea as the prime location in Europe for the geological storage of CO_2.

This briefing follows on from that analysis and identifies decisions that the European Council can take in March 2014 to accelerate progress on CCS. The recommendations above relate closely to the headline findings from our report, which included calls for: a strategic vision for CCS in 2030; policies and incentives that drive investment; and the sourcing of low-cost CO_2.[7]

Figure 1: The five-year framework and recommendations from the SCCS report, *Unlocking North Sea CO_2 Storage for Europe*



CCS in the 2030 Communication

The EC's Communication, *A policy framework for climate and energy in the period from 2020 to 2030*, does include CCS, with a brief reference made to the potential inclusion of CCS in national decarbonisation plans as part of the proposed new governance framework.

CCS is then directly addressed in section 4.3 as part of the discussion of "key complementary policies", but only following consideration of transport and agriculture and land use. This reinforces the current low prioritisation given to CCS within EU climate and energy policy.

The importance of CCS

Positively, the Communication recognises that:

> "CCS may be the only option available to reduce direct emission[s] from industrial processes at the large scale needed in the longer term."

And

> "In the power sector, CCS could be a key technology for fossil fuel-based generation that can provide both baseload and balancing capacity in an electricity system with increasing shares of variable renewable energy."

However, the Communication fails to adequately address the risks of unburnable carbon and stranded assets from high carbon investments and the mitigating role that CCS should play. It is also silent on the potential combination of CCS with sustainable biomass to provide "negative emissions" as a means of accelerating the stabilisation of atmospheric CO_2 emissions.

Timescale for CCS

The Communication reiterates that CCS will need to be available for commercial deployment by the mid-2020s, and that "this must include the development of an adequate CO_2 storage and transport infrastructure". This practical focus is extremely welcome, and should be further supported by the provision of funding for Projects of Common Interest for CO_2 infrastructure.

Incentives for CCS?

The Communication is weak in respect to policy measures and financial incentives. This is a missed opportunity, given that it recognises that the EU ETS "is not driving investments in low-carbon technologies sufficiently well".

It goes on to suggest that "increased R&D efforts and commercial demonstration of CCS are, therefore, essential over the next decade so that it can be deployed in the 2030 timeframe". However, it then timidly suggests that "a supportive EU framework will be necessary through continued and strengthened use of auctioning revenues".

Instead of proposing any EU-level policy instruments, the Communication also pushes away responsibility by suggesting that "Member States with fossil reserves and/or high shares of fossil fuels in their energy mix should support CCS through the pre-commercialisation stage".

We consider each of these suggestions in turn:

- While increased R&D is, of course, necessary and valuable, Horizon 2020 is already making a positive contribution with the first funding call focusing on key gaps around industrial CO_2 capture and geological storage. A lesson learnt from the past five years is that R&D and demonstration

need to be connected to a broader commercial framework and durable business case for the lifetime of CCS projects that may span decades.

- Similarly, the experience of the use of auction revenues and economic stimulus grants under the NER300 and EEPR (European Energy Programme for Recovery) schemes has shown them to have been insufficient to secure investment in CCS projects.[8 9] In particular, CCS projects incur increased operating costs as well as higher initial capital costs, and this needs to be addressed directly[10] – as is being proposed in the UK via Contracts for Difference, which would reward low-carbon electricity generation.

- At present, the UK is alone in developing proposals to integrate CCS into the electricity market but to date has no framework to support industrial CCS projects. A huge gap exists in Member State engagement and expertise that would be able to develop and implement national-level support schemes for CCS. It is clear that differing resources in Member States, and the impact of the recent financial crisis, means that there are vastly different economic capacities to support the commercialisation of CCS. An EU-level CCS funding instrument is, therefore, an appropriate means of sharing costs equitably while recognising that some Member States have greater capacity to deploy CCS for shared European benefit.

While the Communication notes that CCS is needed at commercial scale by the mid-2020s, and recognises that additional supportive policies are required, it has failed to set out a credible pathway to the deployment of CCS at scale by 2030 en route to deep reductions in CO_2 emissions by 2050. Additional efforts will address this failure, and should be requested by European Council.

"CCS is vital for meeting the EU's greenhouse gas reduction targets and it offers potential for a low-carbon re-industrialisation of [its] declining industries."
European Commission Communication on Future of CCS in Europe, 2013

"Any new fossil resources brought to market … risk taking us further away from the trajectory we need to be on, unless there is a firm CCS requirement … or governments are prepared to risk writing off large amounts of invested capital."
Angel Gurría, OECD Secretary-General

"If CCS is removed from the list of emissions reduction options in the electricity sector [worldwide], the capital investment needed to meet the same emissions constraint is increased by 40%." *Energy Technology Perspectives 2012, IEA*

"Abundant CO_2 storage capacity, clusters of CO_2 sources, world-class research institutes and commercial stakeholders … makes the North Sea countries natural leaders for the development and deployment of CCS technology in Europe."
One North Sea, 2010, Element Energy

"CCS is currently the only large-scale mitigation option available to make deep reductions in the emissions from industrial sectors such as cement, iron and steel, chemicals and refining."
Tracking Clean Energy Progress 2013, OECD/IEA

"Successfully deploying [CCS] would be a huge economic prize for the UK in its low carbon transition, cutting the annual cost of meeting our carbon targets by up to 1% of GDP by 2050."
CCS: Mobilising private sector finance for CCS in the UK, ETI and Ecofin

Policy drivers and the CCS business case

Unlike other low-carbon energy technologies that can be added incrementally to existing energy systems, CCS requires the co-development of new infrastructures for the transportation and geological storage of CO_2. This not only increases costs (including capital) but also complicates the business model for individual projects by requiring skills sets that span industry sectors.

The absence of CO_2 infrastructure represents both a disincentive for potential first movers, who would face increased costs, and a general barrier to smaller sources of CO_2 emissions, which would not have sufficient scale to fund associated infrastructure provision. The UK CCS Cost Reduction Taskforce found that significant cost savings could be achieved through early attention to transport and storage infrastructures.[11] Similarly, "Roadmap 2050" studies developed by industrial sectors – including chemicals, cement and steel[12] – point to the need for the anticipatory provision of CO_2 infrastructure in order to reduce costs and investment risks.

The challenge for EU CCS policy is therefore twofold: it has to stimulate a new industrial sector that can develop infrastructure, geological CO_2 storage and technology supply chains as a means of reducing costs while in parallel providing bankable incentives for individual CCS projects on both power and industry. The EC will need to use initial projects to both demonstrate CCS practicality and commercialise by innovation and driving down costs. Experience of major technology innovations shows the importance of both cost reduction and clear regulatory direction in enabling deployment. The closer alignment of Horizon 2020 and Projects of Common Interest/Connecting Europe Facility will provide opportunities for infrastructure development targeted at the early deployment of CCS, particularly around the North Sea. But these practical actions will need to be supported by a credible policy framework that provides longer time horizons for investment.

Learning from other policies

Lessons can be learned from the experience of EU and Member State support for the development of renewable energy technologies. Dr Graeme Sweeney, chairman of ZEP,[13] has highlighted that there are three key tests for policy makers in order to provide a business case:

1. How much [renewables/CCS] do you want?
2. How are you going to pay for it?
3. If it is built, will it run? [i.e. will it be able to dispatch in the electricity market, or produce industrial output cost-effectively?]

For renewables, these questions have been answered via a combination of EU and Member State-level deployment targets, together with dedicated incentive mechanisms (such as feed-in tariffs or certificate schemes) and priority access to the electricity grid. No similar approach has yet been provided for CCS, and the 2030 Communication does not propose one. This will need to be addressed.

Notwithstanding efforts to improve the functioning of the EU ETS and reduce subsidies, it is still recognised by policy makers that the carbon price alone is not sufficient to incentivise the deployment of renewables. Similarly, for CCS, the carbon price is an unbankable incentive instrument that operates principally as an avoided cost rather than as a project revenue. Industrial sources of CO_2 emissions also face the risk that carbon prices would increase to the point of making them internationally uncompetitive **prior** to the point that the carbon price would be enough to incentivise CCS deployment. This would be detrimental to the retention of high-value manufacturing and jobs within the European economy.[14] (See *Industry's need for CCS*, below)

Industry's need for CCS

- Direct CO_2 emissions from industry make up one quarter of total EU emissions
- 60% of the EU's industrial emissions come from four key sectors: iron and steel; chemical industry; petroleum refining; and cement and lime production
- 25% of EU emissions are inherent to the process chemistry of key materials: steel (blast furnace, reduction of iron ore); cement (calcination, lime from limestone); and hydrogen (steam reforming, for fuel upgrading, methanol and ammonia/ fertiliser production)

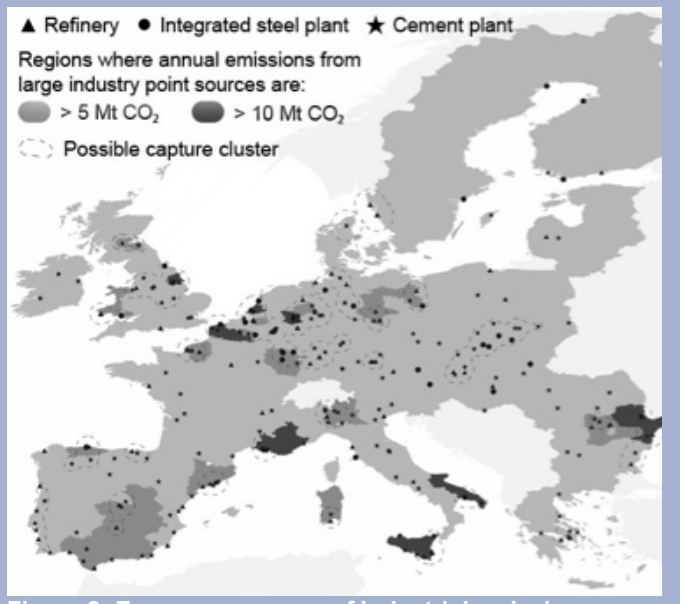


Figure 2: European sources of industrial emissions
P Brownsort, 2013 (adapted from Rootzén, et al, 2011)

- Iron and steel, cement, refineries and chemicals combined have a turnover of €900 billion – around 7% of the EU's GDP, and representing 25% of EU industry
- These sectors directly employ a workforce of 1.75 million, 0.7% of the EU's labour force and 2.9% of EU industry employment

Source: SCCS Briefing: *CCS for Industrial Sources of CO_2 in Europe*, P Brownsort, 2013

Accelerating CCS development: using CO_2-EOR

Two practical barriers facing CCS as it moves towards deployment at significant scale are the limited availability of pipelines for offshore and onshore transport of CO_2, and the small number of commercially proven storage reservoirs currently available. Work by the UK CCS Cost Reduction Taskforce has underlined the importance of addressing these barriers as a means of reducing project integration challenges and investment costs. The ready availability of CO_2 infrastructure and storage options would offer radically improved opportunities for multiple projects to follow on at reduced cost.

In some Member States, although by no means all, it is possible to examine the option of licensing CO_2 injection to be used in the "enhanced recovery" of oil, as has been undertaken in the USA over the past four decades. SCCS assesses that there are a limited number of such projects plausible in the North Sea (fewer than 20), which could be considered for development. This type of CCS application can attract investment and valuable expertise in secure offshore operations from global hydrocarbon companies – which could construct many hundreds of kilometres of CO_2 transport pipeline, and make evaluations of ten major storage reservoirs, at no direct cost to public funds. This would represent a saving of several billion euros, and would enable more rapid investments that can overtake the slow speed of state-funded projects.

SCCS calculations show that the additional carbon produced as oil from CO_2-EOR operations can be offset by maintaining CO_2 storage operations for a longer duration post-production. As a consequence, the embedded emissions in "enhanced" oil compare favourably against imported oil, and would be much lower than imports from unconventional oil sands. CO_2-EOR projects can produce

tax revenue, build CO_2 pipelines, and make available additional CO_2 storage options, rapidly, at low public cost while providing increased indigenous fuel supplies for a limited period.

The application of CO_2-EOR should be examined more closely by the EC as a CCS acceleration option. The SCCS report, *Unlocking North Sea CO_2 Storage for Europe*, recommended that a combination of tax incentives and penalties targeted at fossil fuel producers would provide a commercial framework that accelerates the transition from oil production to carbon storage.

European Parliament proposals on CCS

Two recent reports from the European Parliament have highlighted the important role that CCS can play in Europe's transition to a low-carbon economy. In its report on the 2030 framework for climate and energy policies[15], the Parliament concluded that:

> "CCS could play an important role in reducing greenhouse gas emissions…at least for a transitional period, [and] especially for energy-intensive industries".

It therefore called on the EC to "propose appropriate measures within the 2030 framework in order to mobilise stakeholders and the necessary funding" and stressed that "both renewables and CCS have a role to play in the future EU energy mix and should not be regarded as being in competition with one another".

In parallel, the Parliament agreed a report, *Developing and applying carbon capture and storage technology in Europe*,[16] which concluded that "the EU is losing its technological lead in CCS and … now has no effective policy to promote development of CCS flagship projects". The report further underlined the importance of CCS for industrial sources of CO_2 emissions, a position that was also supported by Green Party MEPs, who remain concerned about the deployment of CCS on fossil fuels for electricity generation.[17]

Therefore, it proposed that CCS should be incorporated more closely into EU climate and energy policy, stating: "Both renewable and CCS have roles to play in the future EU energy mix and that the latter should not be to the detriment of achieving the EU's mandatory renewables development target; calls for measures to promote the use of both technologies to be proposed within the 2030 climate and energy framework."

The report added: "The Commission [is asked] to analyse and submit a report on the level of CCS which would need to be deployed by certain key dates, for example 2030, in order for CCS to make a significant contribution to 2050 emissions reduction targets."

In addition, the Parliament addressed the challenge of financing and requested that "the Commission should facilitate debate on possible options by carrying out an analysis of systems requiring the purchase of CCS certificates proving the CO_2 emissions avoided, through storage or treatment, in proportion to the CO_2 embedded within the fossil fuels placed on the market".

Together with other conclusions on the need for accelerated investment in the characterisation of CO2 storage, these reports provide helpful guidance as to how CCS can be effectively integrated into Europe's 2030 climate and energy policy framework.

Policy options for CCS within the 2030 framework

Given the diverse range of political views on CCS across Europe, any EU policy approach to CCS has to find ways to encourage CCS without requiring it of any individual member state.[18] In addition, the

nature of CCS as an infrastructure system lends itself to consideration of practical milestones en route to a low-carbon economy rather than as a binding target.

It has been suggested that CCS could be included within a renewables target as an alternative means of providing low-carbon electricity generation. A strong case could be made for this in respect to the use of CCS on biomass, as it is already classified as a renewable fuel source. Clarification would be required as to how such projects are credited, given that they would be providing the additional benefits of negative emissions reductions. Sustainable low-carbon biomass is a scarce resource, particularly when land-use impacts are considered. Its use in combination with CCS – rather than for unabated heat or electricity generation – would provide additional climate benefits.

However, it would be more difficult to justify the inclusion of CCS on fossil fuel underneath a renewables target.[19] A focus on electricity generation would also exclude high-value-added industrial CCS projects and risk opening up political disputes and perceived competition between renewables and CCS, rather than the pursuit of complementary outcomes. In order for any CCS milestone to be applicable to industrial sources of CO_2, it would be better expressed as being "additional" to the renewables target. This suggests that the EC should consider options relating CCS to the overall greenhouse gas target and/or the physical investments required in the enabling infrastructure for CO_2 transport and storage. Options for milestone indicators include: millions of tonnes of CO_2 abated;[20] gigawatts of CCS electricity generated; or gigatonnes of CO_2 storage or transportation capacity available.

Conclusions

The EC's proposals for the 2030 climate and energy framework foresee that CCS must become commercially deployable by the mid-2020s for both power generation and industrial sources of emissions. Progress on CCS in North America, China, Australia and the Middle East shows that this goal is achievable.

Unfortunately, the current European policy framework and the limited incentives provided to date have failed to secure any commercial-scale CCS projects. A continuation along the same lines will similarly fail to deliver the necessary scale and pace of infrastructure development and private sector investment over the coming decades. Europe is now trailing its international competitors on deploying the technology. To reverse this trend, CCS must be strongly integrated into the EU2030 policy framework.

The EC has proposed a revised approach for renewables that combines EU-wide targets with a new governance structure to support actions by Member States. A similar framework would assist the development of CCS, particularly if accompanied by early strategic analysis of opportunities for low-cost and high-value projects linked to CO_2 storage and, potentially, to acceleration by a limited number of CO_2-EOR projects in the North Sea. Further attention to EU-wide funding mechanisms for CCS is also required to address the needs of CCS projects across the single market and share the costs of CCS equitably.

The European Council should request further analysis from the EC in order for these questions to be considered in early 2015. Concerted action on CCS would reduce costs and strengthen Europe's ability to deliver effective carbon emissions reductions. It would also be an attractive element of Europe's offer to the international climate negotiations due to take place in Paris in December 2015.

References and Footnotes

[1] *European Commission Communication COM(2014) 15: A policy framework for climate and energy in the period from 2020 to 2030*, http://ec.europa.eu/clima/policies/2030/docs/com_2014_15_en.pdf

[2] Paragraph 48 of CCS Directive states "The Commission should, by 30 June 2015, conduct a review of this Directive in the light of the experience gained in the early phase of its implementation and make proposals for its revision as appropriate." Article 38 states that a report should be submitted by 31 March 2015, considering a range of issues primarily linked to the geological storage of CO_2.

[3] Projects outside the EU have moved forward where they have been able to access revenue streams and/or been required to incorporate CCS through financial penalties or regulatory measures.

[4] *European Parliament resolution of 14 January 2014 on implementation report 2013: developing and applying carbon capture and storage technology in Europe (2013/2079(INI)),* http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2014-0009

[5] Global Carbon Capture and Storage Institute (GCCSI), *Global Status of CCS Report*, February 2014, http://www.globalccsinstitute.com/get-involved/in-focus/2014/02/global-status-ccs-february-2014

[6] Scottish Carbon Capture and Storage (SCCS), *Unlocking North Sea CO_2 Storage for Europe: Practical actions for the next five years*, November 2013, http://www.sccs.org.uk/unlocking-north-sea

[7] Existing initiatives under Horizon 2020, Projects of Common Interest and the North Sea Basin Taskforce are already taking forward other elements of the recommendations set out in our previous report.

[8] Activities are currently underway to try to identify means of closing the funding gap faced by the ROAD project (Rotterdam, NL) which was recipient of EEPR funding. The White Rose project (Yorkshire, UK) is the sole bidder for phase 2 of the NER300 funding mechanism, after no CCS projects were funded in phase 1.

[9] Ian Temperton, Climate Change Capital, *Who should finance CCS?,* article in Environmental Finance, September 2013, http://www.environmental-finance.com/content/analysis/who-should-finance-ccs.html

[10] ZEP, Market Economics Study, *CO_2 Capture and Storage: Recommendations for transitional measures to drive deployment in Europe*, November 2013, http://www.zeroemissionsplatform.eu/library/publication/240-me2.html

[11] Report of UK CCS Cost Reduction Taskforce, May 2013, http://snurl.com/28liu9w (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/201021/CCS_Cost_Reduction_Taskforce_-_Final_Report_-_May_2013.pdf)

[12] See 2050 Roadmap reports by Cefic: *European Chemistry for growth*, April 2013, http://www.cefic.org/Documents/PolicyCentre/Energy-Roadmap-The%20Report-European-chemistry-for-growth.pdf; *Mineral Products Association – Cement, 2030 Strategy*, February 2013, http://cement.mineralproducts.org/documents/MPA_Cement_2050_Strategy.pdf *EUROFER Steel Roadmap for a low-carbon Europe 2050*, July 2013, http://www.eurofer.org/News%26Media/PublicationsLinksList/2013-Roadmap.pdf

[13] Full disclosure: Graeme Sweeney is also chair of the SCCS advisory board

[14] ZEP, *Carbon Capture and Storage in EU Energy Intensive Industries*, June 2013, http://www.zeroemissionsplatform.eu/downloads/1343.html

[15] European Parliament resolution of 5 February 2014 on a 2030 framework for climate and energy policies (2013/2135(INI)), http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2014-0094

[16] European Parliament resolution of 14 January 2014 on implementation report 2013: developing and applying carbon capture and storage technology in Europe (2013/2079(INI)), http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2014-0009

[17] Bas Eickhout MEP, article in The Parliament Magazine, 30 October 2013, http://snurl.com/28lirfs (http://www.theparliament.com/latest-news/article/newsarticle/policymakers-must-rethink-application-of-ccs-says-mep/#.UwNTT4Wh6vk)

[18] It would however be appropriate for Member States to be asked to identify alternatives to CCS if they are of the view that they do not wish to allow its deployment.

[19] Some member states have voiced concern around continued binding renewables targets at the national level, and the Commission's approach to making the target applicable at EU level may yet prove acceptable. If this is still not accepted, one option would be to provide an option to member states to set out a fuller decarbonisation strategy incorporating a range of low-carbon technologies.

[20] Note that CO_2 abated is not the same as CO_2 stored, and should be reflected in incentive mechanisms to encourage investment in the most efficient technologies rather than the most carbon intensive.