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Project Manager
Energy Market Investigation
Competition and Markets Authority
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Dear Sir/Madam,

The Competition & Markets Authority Energy Market Investigation: Updated Issues Statement

1. The Carbon Capture and Storage Association (CCSA) welcomes the opportunity to respond to the Updated issues statement published by the Competition & Markets Authority (CMA) on 18 February 2015 as part of its ongoing investigation into the energy market.
2. The CCSA brings together a wide range of specialist companies across the spectrum of Carbon Capture & Storage (CCS) technology, as well as a variety of support services to the energy sector. The Association exists to represent the interests of its members in promoting the business of CCS and to assist policy developments in the UK and the EU towards a long term regulatory framework for CCS, as a means of abating carbon dioxide emissions.

Summary of response

3. The CCSA is supportive of the on-going investigation into the energy market and the depth in which the CMA is interrogating aspects of the EMR framework such as Contracts for Difference (CfDs) and the Capacity Market (CM). In response to the Updated issues statement, the CCSA makes the following points:
 - The CCSA is highly supportive of the principles of EMR; in particular that Government will provide support (through the CfD regime) to the full range of low-carbon technologies, including CCS. For multiple reasons, the CCSA believes the CfD regime will be a significant improvement on the previous ROC regime, in particular in terms of value for money for consumers.
 - The CCSA strongly supports competition being integrated into the allocation framework for CfDs but notes that the value of a CCS project to the broader energy system cannot be determined purely on the basis of its Strike Price or on its levelised cost of electricity. For this reason, it would be inappropriate and potentially counterproductive for CCS projects to be allocated CfDs via auctions.
 - The CCSA considers that tendering – a form of bilateral negotiation – will be the most effective mechanism for incorporating competition into the allocation framework for early CCS CfDs and ensuring value for money for energy consumers.

Government progress on delivering cost competitive CCS in the UK

1. In 2012, Government launched its CCS Commercialisation Programme comprising various interventions designed to deliver widespread, cost-competitive deployment of CCS by the mid-2020s¹. As part of this programme, a Competition was initiated to support delivery of the Commercialisation Outcome:

*"As a result of the intervention, private sector electricity companies can take investment decisions to build CCS equipped fossil fuel power stations, in the early 2020s, without Government capital subsidy, at an agreed CfD Strike Price that is competitive with the strike prices for other low carbon generation technologies"*².

2. Government awarded multi-million pound contracts to two CCS projects³ – the White Rose project in Yorkshire and the Peterhead project in Scotland – in late 2013/early 2014 to undertake Front End Engineering and Design (FEED) studies and to finalise and de-risk aspects of their proposals ahead of taking final investment decisions (FID). These projects are currently progressing through FEED and aim to take FID in late 2015/early 2016.
3. Government also entered into discussions with a number of other CCS projects through the FID-enabling process before inexplicably abandoning negotiations around potential CfD availability and terms.
4. Government has more recently committed to putting in place a “suite of enabling architecture” for follow-on CCS projects comprising a CfD allocation methodology and CCS-specific set of CfD Standard Terms “by 2016”⁴. This should enable a second phase of CCS projects to come forward and take FID potentially on a similar timeline to those projects progressing under the Competition.
5. Analysis undertaken by Poyry and Element Energy for the ETI suggests that a further three CCS projects will be need to take FID before the two Competition projects begin operating (expected 2018-2020) if the UK is to remain on its least cost decarbonisation pathway⁵. This would entail Government allocating CfDs to 5 projects over the life of the next Parliament.

Updated theory of harm 1 and the allocation of Contracts for Difference to CCS projects

1. The CCSA strongly supports the overarching conclusion laid out in paragraph 63 of the Updated issues statement in which the CMA recognises the strong arguments in favour of reforms to the electricity market and welcomes the replacement of ROCs with CfDs. The 2011 Electricity Market Reform (EMR) White Paper Impact Assessment clearly demonstrates that CfDs deliver significant value for money benefits of CfDs compared with ROCs. CfDs still require generators to sell their output into the market via contractual offtake agreements, forward trading, the balancing mechanism or imbalance⁶, meaning that market forces will continue to drive down the costs of CfD low carbon generation and consumers will ultimately receive better value for money.

¹ CCS Roadmap, DECC, 2012

² Carbon Capture & Storage Commercialisation Programme Invitation to Participate in Discussions, DECC, 2012

³ UK carbon capture and storage: government funding and support (available online).

⁴ Next steps for CCS: Policy Scoping Document, DECC, 2014

⁵ CCS sector development scenarios in the UK, ETI, 2015

⁶ Electricity Market Reform White Paper, DECC, 2011

2. The CCSA has been highly supportive of the principles of the UK's EMR programme, in particular that support through Feed-in Tariffs with Contracts for Difference (CfDs) should be available to all low-carbon technologies and that EMR should promote competition between technologies in order to deliver a cost-effective and robust electricity sector.
3. The CMA states in paragraph 64 that 'there may be a risk that a lack of competition in the CfD allocation mechanism may mean that CfDs are not allocated to the most efficient projects or at least cost to energy consumers'. Whilst the CCSA supports the principle of competitive allocation of CfDs, this statement implies an assumption that auctions are the best and/or only mechanism for delivering value for money to consumers, and that the CMA is considering near terms costs of technologies as the basis for assessing value for money rather than taking a longer-term view on the future costs of economy-wide decarbonisation.
4. The long term value of CCS is supported by analysis which shows that it is worth well in excess of £200bn to the UK energy system⁷ and that CCS could reduce the cost of UK decarbonisation by more than £30 billion per year in 2050⁸. From a consumer perspective, CCS is expected to result in cost savings to electricity prices in the order of 15% by 2030 relative to scenarios where CCS is not able to contribute to decarbonisation goals⁹ therefore it is critical that early CCS projects are supported and that the technology is commercialised over the 2020s in order to realise these savings for consumers.
5. Analysis undertaken for industry and Government through the CCS Cost Reduction Task Force has shown that CCS has clear potential to become cost-competitive with the other low-carbon technologies by the 2020s and deliver electricity below £100/MWh¹⁰. However, the value proposition of CCS is not limited to the energy system alone, it can also be applied to a range of energy intensive industries, including steel, cement, refineries and chemicals, and for many of these industries CCS is the only technology able to deliver significant emissions reductions. In combination with CO₂-Enhanced Oil Recovery (CO₂-EOR), CCS could deliver benefits including over £13 billion in tax receipts, an additional 1 billion barrels of oil recovered from the UKCS, and up to 550 Mton CO₂ stored through EOR-related operations¹¹. For this reason, it is important to recognise that CO₂ transport and storage infrastructure put in place through CCS deployment in the energy system will also carry significant auxiliary benefits for a multitude of other industrial sectors and the wider UK economy.
6. The CCSA strongly believes that CfD Strike Price should not be the only measure for comparing the value of different CCS projects competing for CfDs. For this reason, constrained allocation via auctions will not be appropriate for CCS and may not deliver value for money for consumers and therefore supports the decision of Government to retain the powers for the Secretary of State to instruct the CfD Counterparty to enter into a CfD with a generator outside of the generic allocation process. This is currently the only legislative route by which a CCS developer can access a CfD under the Contracts for Difference (Allocation) Regulations 2014¹².

⁷ Targets, technologies, infrastructure and investments – preparing the UK for the energy transition, ETI, 2015

⁸ Carbon Capture and Storage: Potential for CCS in the UK, ETI, 2013

⁹ The Economic Benefits of Carbon Capture and Storage, CCSA and TUC, February 2014

¹⁰ CCS Cost Reduction Task Force Final Report, May 2013

¹¹ CO₂-EOR in the UK: Analysis of fiscal incentives, 2CO Energy, Scottish Government, Scottish Enterprise, SCCS, Nexen, 2014

¹² Contracts for Difference (Allocation) Regulations (2014)

7. The European Commission confirmed in its 2014 revised Guidelines for energy and environmental aid that CCS contributes towards the common objective of environmental protection, that a market failure exists for CCS and that CCS projects should be eligible for State aid for up to 100% of eligible costs¹³. In the UK Government support for CCS will take the form of capital grants (for Competition projects) and CfDs (for Competition and future projects). In terms of the allocation of CfDs, the CCSA believes that tenders (a form of bilateral negotiation) will be the most appropriate mechanism for introducing competition. The ability to hold bilateral negotiations allows Government to assess a wider range of project evaluation criteria and allows project specific factors to be addressed during negotiations.
8. It is important to consider that the term CCS refers to a suite of technologies across three separate processes, CO₂ capture, transport and storage. Within the power sector alone there are various options for CO₂ capture including pre-combustion, post-combustion and oxyfuel techniques applied to a variety of fuel sources, e.g. gas, coal, biomass. Given the divergent portfolios and interests of CCS developers (including utilities, oil and gas companies, pipeline operators, etc.), each CCS project is likely to have different characteristics in terms of its capture, transport and storage profile. For example, a phase 2 CCS project tapping into an existing CO₂ transport and storage network that has been developed and financed through one of the two Competition projects could have a significantly different cost and risk profile to one intending to put in place new infrastructure. On this basis, competitive allocation for CfDs via an auction would be entirely inappropriate as the value of the projects would not be necessarily reflected by their Strike Price bids; both could have fundamentally different cost profiles based on capture technology, fuel choice, end use of CO₂ (i.e. whether the CO₂ will be used for pure storage or for enhanced oil recovery purposes) and regional aspects such as availability of infrastructure and proximity to other emitters.
9. A tendering and bilateral negotiation process could additionally provide Government with the ability to manage risks in a flexible manner and ensure that an appropriate risk/reward balance is struck between Government, tax payers and industry. As an example, retaining the ability to adjust the Strike Price as costs are discovered over the project development process has been shown to deliver cost benefits to consumers in the case of the Hinkley Point C nuclear project¹⁴. If all of the capital cost risk of CCS projects are borne by the project developer and passed into the Strike Price the likely response will be to take a conservative view on required levels of contingency in the Strike Price. A bilateral negotiation process would allow the Government to work with developers to identify and define the emerging cost elements relating to CCS risk that are accommodated in the Strike Price and apply outturn cost reconciliation (i.e. adjust the Strike Price depending on the project's outturn costs). This could help ensure that the final Strike Price awarded to a project accurately reflects the capital cost of the project rather than the estimate at the point of FID and has the potential to deliver savings to the UK Government and therefore consumers.
10. Despite holding the conviction that auctions will not be an appropriate form of allocation for CCS projects, the CCSA supports the high level objectives of the generic allocation methodology that has been developed for renewables, namely timely development of generation capacity and prevention of CfD bed-blocking. An analogous system, based on the same principles, needs to be developed for early CCS projects to ensure that real projects are delivered and cost reductions are achieved. While it should be possible to retain many of the elements contained within

¹³ [Communication from the European Commission — Guidelines on State aid for environmental protection and energy 2014-2020 \(2014\)](#)

¹⁴ [DECC press release: State aid approval for Hinkley Point C nuclear power plant \(available online\)](#)

the generic allocation methodology it will need to be tailored to reflect the current nascent state of CCS. Over time it is expected that the allocation methodologies for different technologies should be able to converge as CCS moves towards full commercialisation.

11. The CCSA recognises concerns raised by the CMA around the lack of transparency associated with decisions to split CfD budget between technology pots. This will become an even greater issue as existing thermal generation capacity retires and Government is required to split the CfD budget further amongst additional nuclear and CCS projects of a larger nature than many renewable schemes. It is essential that when taking these decisions Government utilises all credible and available evidence to ensure that the UK remains on the least cost decarbonisation pathway to 2050 and beyond, and does not restrict itself to a short-term focus on the current LCF or EMR Delivery Plan period.

Comments with respect to the updated theory of harm 3a: opaque prices and low liquidity in wholesale electricity markets distort competition in retail and generation

12. The CCSA is encouraged by the initial view that near-term liquidity appears to be strong and that availability of baseload products was very good for more than two years ahead of delivery. It does however remain clear that liquidity is a cause for concern for some smaller and/or independent utilities. For an independent CCS generator, project finance and route to market will be contingent on CfD Strike Price being indexed to the relative input fuel price and subsequent access to long-term PPA products. The CCSA would therefore welcome further consideration from the CMA as to whether and how liquidity of the market can be further improved, or how additional measures such as the Offtaker of Last Resort mechanism can be extended to non-renewable generators.

Concluding remarks

13. The CCSA considers that the update to theory of harm 1 – “the market rules and regulatory framework distort competition and lead to inefficiencies in wholesale electricity markets” – is not fully justified on the basis that its assessment of risk to consumers from non-competitive allocation of CfDs is superficial and not based on substantiated evidence. The CCSA would go further to contest that bilateral negotiation of CfDs for early CCS projects will, in fact, be a critical element of ensuring best value for money for consumers of energy and delivering least cost decarbonisation in the UK.
14. The CCSA remains committed to supporting the CMA in its on-going investigation into the energy market and would be very happy to provide further evidence in support of this response if necessary.

Yours sincerely,

Carbon Capture and Storage Association