

Response to:

Consultation on the draft Electricity Market Reform Delivery Plan

Background

This response to DECC's *Consultation on the draft Electricity Market Reform Delivery Plan* is informed by discussions with the UK CCS Commercial Development Group.

The CCS Commercial Development Group is one of three national leadership groups established following recommendations by the CCS Cost Reduction Taskforce. The taskforce was commissioned by DECC in 2012 and delivered its final report to the Energy Minister in May 2013. The CCS Commercial Development Group recognises the role CCS has in abating carbon dioxide emissions and aims to secure ways, together with the UK Government, of making UK CCS projects bankable, and reducing the cost of capital of CCS projects. The CCS Commercial Development Group brings together a range of key CCS stakeholders including potential financiers, insurers and project developers. It is led by the Ecofin Research Foundation with the support of the Energy Technologies Institute.

While DECC's Consultation does not focus on CCS, we believe that it is essential that the unique characteristics of CCS are given full consideration to avoid the generic framework being developed for renewable energy technologies under EMR becoming a barrier to CCS investment. Barriers to deploying CCS at scale may negatively impact the EMR aim of supporting investment in all low carbon technologies at least cost to consumers.

The CCS Commercial Development Group is committed to continue supporting DECC to successfully deliver EMR and would welcome the opportunity to further discuss and provide input to this issue as the Government engages with CCS stakeholders in developing CCS specific EMR details.

We have set out below some CCS specific issues that we believe need to be considered when developing the general EMR framework.

1. *Allocation of CfD and eligibility for CfD*

- An approach to CfD allocation that gives clear signals to the market that the UK is committed to CCS as part of its low carbon future is needed to give confidence in a CCS industry. Providing a clearer signal on the market for CCS will increase confidence among investors, leading to greater interest and investment in CCS.
- There needs to be clarity on how CfDs are allocated for CCS in relation to other technologies including nuclear. Allocation according to technology with a minimum level of allocation for CCS would help provide confidence that the Government is committed to developing a CCS industry.
- The need for application eligibility criteria to prevent bed blocking is important for CCS project developers and the criteria need to be suitable for CCS projects. The requirements of planning permission and a Grid Connection Offer as currently described are unsuitable for CCS projects due to the scale and lead times involved. CCS FEED costs are a very significant investment in their own right amounting to several £10s of millions. As such, for CCS project developers to make the large

investments needed for FEED, developers would need at least an “amber light” (a meaningful form of commitment) to know that the CfDs have been earmarked for the project.

- The CCS Cost Reduction Task Force report (May 2013) showed that starting to invest in the learning curve, could lead to CCS being cost competitive with other low carbon technologies in the UK, whilst retaining the reliability of fossil fuels generated electricity. Multiple CCS projects would enable cost reductions from transport and storage infrastructure, improved engineering and supply chain and improved financing. Without clarity on the CfD allocation process, multiple CCS projects making use of shared infrastructure are unlikely to be achieved.
- Strategic allocation of CfD resources to projects which offer greatest potential to the development of a cost competitive CCS sector is needed to contribute to a lower cost electricity sector.

2. *Strike Price*

- CCS is a technology with variable applications e.g. it can be used on gas or coal, baseload and flexible energy, and to decarbonise new and existing plant. Each of these CCS market segments are likely to have a different cost and would require a different Strike Price.
- The assumption that Strike Prices will reduce may not be true for successive CCS projects. The required Strike Price will be influenced by the transport and storage infrastructure required. The need for new transport and storage infrastructure, which may be important in establishing new CCS clusters, may lead to a higher Strike Price requirement due to the added costs for establishing transport and storage infrastructure. While these kinds of considerations may be some way into the future, it would be useful for the government to signal at this stage that it understands these CCS-specific considerations.
- The exact efficiency of a gas or coal plant with CCS will only be known for certain after commissioning. As such, it needs to be clear that the Strike Price can be adjusted. This will give early investors confidence that they will be able to achieve an appropriate rate of return on the substantial investments they will be expected to make in early CCS projects. This principle should be extended to other early CCS projects, beyond the DECC commercialisation programme.
- Project developers will need clarity and comfort around the Strike Price and arrangements around rebasing, as well as the potential CfD allocation mentioned above before they are able to commit the large investments required to develop the project.

3. *Availability of finance*

- Capital providers believe that the broad CfD structure will be the same for all technologies. It is the details of how the Reference Price and Strike Price are set that will determine if CCS projects are viewed as investible. There is likely to be too much variation in cost and risk structures in initial CCS projects for full standardisation of terms. As such, setting of the Strike Price will need to be made on a project by project basis for the foreseeable future until the sector achieves some maturity.
- Financing will only be available for the length of the CfD revenue stream. The large investment needed for CCS may require the involvement of capital markets (bonds, pension funds, Export Credit Agencies etc). These tend to work on longer times scales e.g. 20 years and the proposed CfD contract length of 15 years will not enable long-term funding to be obtained from these sources. Additionally a short term CfD (15 years or less) is also unlikely to enable the rating agencies to rate a project as investment grade, effectively shutting off the public bond market.

4. Fossil fuel indexation

- CCS is fundamentally different from renewables and nuclear. It has the advantages of reliability of fossil fuels, but it is also subject to the price variation of coal and gas.
- As global fossil fuel price risk is a key concern, some indexation of fossil fuel prices is essential for CCS.
- Without fuel price indexation CCS projects may not be viewed as investible projects.

5. Power Purchase Agreements

- Generators will need to enter into PPAs with a third party in order to sell their power. The Purchase Price of the PPAs will be expected to be at a discount to the Reference Price. The generator will then receive the difference between the Reference Price and Strike Price, not the Purchase Price and Strike Price, and so will earn less than the Strike Price.
- Recent experience shows that obtaining bankable PPAs from the market has become very difficult. The Energy Bill contains the proposal for a “Backstop PPA” in the event that the generator is unable to obtain a suitable PPA from the market. The Purchase Price for these is intended to be set at a level which should enable the generator to meet its debt services obligations but will not provide any return on equity. This is to allow projects to raise debt on the back of the Backstop PPA and then enter into short term PPAs with third parties at a Purchase Price which would provide an equity return. This means that if commercial PPAs are not available then a utility group would be forced to enter into a Backstop PPA with the generator. This raises the following issues:
 - There is no incentive for a utility to offer a PPA at a price which is higher than the Backstop PPA price if it knows that it will be forced to enter into a Backstop PPA at a lower price.
 - Lack of clarity on what happens to the supply obligation of the generator under the Backstop PPA in the event that it enters into a commercial PPA and therefore sells power to that third party. This leaves the Backstop PPA provider exposed to not knowing whether it will be required to purchase the power under the Backstop PPA.
 - Reduced incentive for equity investment. As the Backstop PPA will be used to size debt facilities, equity is exposed to additional risk in terms of securing a return on investment which is uncertain, and therefore likely need to be higher than it would otherwise have been to reflect the additional risk.
- Additionally CCS may have other requirements as it has different characteristics to intermittent Renewables energy generation projects.

6. Follow on projects

- Terms for the first projects will need to be worked out for each CCS project according to its specific characteristics, with a view to its particular risk properties and its value in developing the broader CCS sector.
- There are currently 2 projects in the CCS Commercialisation Competition and at least a further 3 projects that are at an advanced stage with some under the FID-enabling programme. FID-enabling projects and other advanced projects are developing on a similar time frame as the Competition projects and so should be treated similar to the Competition Projects.
- Early CCS projects will contribute towards creating a CCS industry which is likely to be essential if the UK is to decarbonise its electricity sector at least cost, so it is essential that early follow on projects outside of the Competition go ahead.

- As above, some of the special measures for the Competition projects such as the ability to rebase the Strike Price at set points, will need to persist beyond the Competition. This is necessary as some of the commercial and technical risks will persist in the early years of EMR before CCS projects can be supported solely on standardised CfD contracts.

7. Flexibility of key framework elements

- Unlike some renewable technologies that have received very large funding support over several decades, CCS is at an early stage of demonstration. CCS also has various complex and integrated technologies, and has various applications in the energy market. Each of these types of CCS projects will have its own cost and risk profiles. Additionally, CCS project development has a much larger cost and timescale than most established renewables technologies, and may require third parties for storage and transport infrastructure. Given the important differences between renewables and CCS, enough flexibility to meet the special requirements of CCS needs to be ensured in key elements of the CfD framework such as the Eligibility Criteria, Target Commissioning Window, Long Stop Date, and Milestones evidencing substantive financial commitment.

8. Policy signals

- CCS is often compared to renewables in EMR discussions, though a comparison with nuclear is viewed as more appropriate. Like nuclear, CCS is also a complex technology with high capital costs though it has the potential for much greater flexibility.
- DECC's CCS policy goal of developing a CCS industry, and not just successful Competition projects needs to be clearer. An updated CCS Roadmap that showed how the CCS Competition projects and early follow on projects can lead to an Enduring CCS regime would send a strong positive signal to the market.
- The Enduring Regime projects are too far in the future to contemplate though it is essential that any legislation has the flexibility to accommodate the Enduring CCS Regime.
- We note that the level of ambition for CCS suggested in the scenarios published in the draft Delivery Plan is comparatively low compared to scenarios produced by the Energy Technologies Institute (ETI) or the Committee on Climate Change in its advice on the next steps in EMR. For example, the ETI's latest energy system modelling deploys around 14 GW of CCS capacity in the electricity sector (as well as significant applications beyond the electricity sector). The low levels of CCS deployment in most of the scenarios in the draft Delivery Plan will not give the market a sense of direction and commitment to CCS. This and the slow progress in CCS policy and the Competition is leading to a loss of credibility. Some project developers and financiers are questioning the commitment of DECC to a CCS industry.

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