TG & CCS Industry Advisory Group --- EMR Summary Paper

Response of Scottish Industrial Advisory Group on Thermal Generation and CCS to DECC EMR Consultation

The IAG is a group of representatives of industry, academe, and government bodies interested in Thermal Generation and CCS. It acts as an Advisory group to Scottish Enterprise and is represented at the Scottish Energy Advisory Board by its Industry Co-Chair. This paper summarises the views and the conclusions of the non-government members of the group (excluding Wood Mackenzie).

Introduction

The deployment of clean coal with CCS within the UK is important to ensure security and diversity of energy supply, to maximise the use of economically advantageous indigenous resources and to reduce the risks of over-dependence on imported gas. These objectives will only be achieved if:

- CCS is successfully demonstrated as early as possible and then widely deployed in the UK and abroad
- The infrastructure and skills for coal production and coal-fired generation are preserved at adequate scale

Key points on the Electricity Market Reform:

Carbon Price Support: The proposals could have a negative impact on generation from coal, major consequences for the coal industry and will not provide certainty for investment in CCS unless greater clarity is provided. Redpoint's modelling has non-CCS coal capacity reducing to 18 GW in 2020 and 5 GW in 2030. However the reduction could be faster – currently only one power plant has committed to Selective Catalytic Reduction (SCR).

The consultation is not sufficiently clear that Carbon dioxide not emitted due to CCS will be exempt from the new CCL. There is a suggestion that this does not need to be addressed until after the Demonstrations are up and running. If "Carbon Price Support" is a tax on emissions of CO_2, not a tax on using fossil fuel, then it should be levied only on emissions. Potential investors in CCS projects need clarity *now* when projects are being formulated.

Proposal for Feed in Tariff (FIT): Broadly supportive of a Feed-in tariff for all low carbon electricity generation based on a contract for difference with the wholesale electricity price, if necessary premiums can be envisaged for specific technologies or characteristics e.g. flexible low carbon generation (including CCS) or new, more expensive higher risk technologies such as offshore wind, wave and tide.

Generators will only build new coal power plant with CCS if they are confident of the financial business case for the plant capacity for 20 years when measured against gas-fired power plant, especially if gas plant has no CCS retrofit obligation.

Emission Performance Standard: The current proposals for an Emissions Performance Standard (EPS) have a very negative focus on coal and fail to send any signals in the direction of reducing carbon emissions from gas fired power stations. The combination of the EPS levels and the policy on grandfathering at the point of consent appears to weaken the intent of the current government policy of requiring CCGTs to be designed to be CCR.

Capacity Payments: Capacity payments will be needed for three types of capacity shortfall which require different solutions. It is necessary to consider separately three types of capacity shortfall which need different solutions:

1. the capacity shortage that could occur at the relatively short teatime peak of demand. Such shortage would be for just a few hours, and a few GW maximum.
    a. Solutions could be more interconnection, pumped storage, demand side reduction, OCGT.

2. the capacity shortage that could occur due to the difference in demand between day and night in winter lasting, each day for about eight hours and measured around 20 GW
    a. Currently this capacity is provided by older less efficient coal power plant and gas CCTGs, running at modest load factors (30- 35%), which are acceptable commercially because the capital investments in these plants have been written off. It is technically feasible for coal with CCS to provide flexible, low carbon capacity but this would require capacity payments.

3. the capacity shortage that could occur at periods of low wind across the whole generation system, sometimes lasting several days and up to 25 GW if wind targets are met.
    a. It is feasible for coal with CCS to provide this backup, but again there would need to be capacity payments to compensate for the low load factors.

Further consideration should be given to the relative economics of different mixes in the whole system. As described above, it is technically feasible for coal with CCS to provide flexible, low carbon capacity to back up gaps in wind generation, but there would need to be capacity payments to compensate for the low load factors.

We would suggest the following combination of EMR policies to avoid premature closure of existing thermal power plants before clean CCS plants are built and to avoid investment being diverted from low carbon generation (nuclear, renewables and CCS) to unabated gas:

Carbon floor price: adopt Scenario 1 trajectory with lower initial carbon price target (£20/tCO2 in 2020) but retain £70/t for 2030 and confirm CCS exempt from the fossil fuel levy
Emission Performance Standard (EPS): establish an EPS for 2025 that will require CCS on gas as well as coal.
Feed-In Tariffs: confirm that FITs will apply for early CCS projects (coal and gas)
Capacity payments: offer capacity payments for low carbon, flexible power plant (coal and gas) with CCS to compensate for less than optimum load factors.

We also urge that the funding arrangements for CCS Demonstation projects 2-4 be clarified quickly and not delayed until the Electricity market reforms are implemented.

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[redacted]
Tel: [redacted]
email: [redacted]