
TUC Clean Coal Task Group
Submission to DECC on 'A call for
evidence on the role of gas in the
electricity market.'
June 2012

1. Introduction

The Clean Coal Task Group (CCTG) is a joint TUC/energy industry body formed to promote clean coal technologies within the UK. Its members are drawn from industry, the TUC and its affiliated trade unions in the energy and coal mining industries. Its terms of reference are: "To identify an appropriate policy framework and supporting economic instruments and regulatory framework that would take forward the research, development and promotion and initiation of clean coal burn and carbon capture and storage technologies."

We welcome the opportunity to respond to the call for evidence on the role of gas in the electricity market, as any decisions made to support the gas sector will directly impact on the role of coal in future years.

In brief, we believe that the government should complement its gas strategy with a similar review of the role of coal in the energy mix in order to develop a comprehensive fossil fuel strategy to 2030 and beyond, in which CCS plays an integral part.

The CCTG believes in a balanced and diverse energy mix with all fuels playing their part. However, we are concerned that the UK Government's gas strategy will lead to another dash for gas to the detriment of any investment in other fuel sectors and technologies.

2. Role of coal

Coal it appears has become the forgotten fuel.

In 2011 coal generation supplied 30% of the UK's electricity and in peak times during last winter this level rose to well over 50%. Whilst we therefore welcome an

assessment of the appropriate role for gas in the energy mix, coal provides a vital component of UK energy supply, with the UK mining industry directly providing just over 6,000 jobs and supporting a similar number in coal power stations, combined with the rail and transport infrastructure.

In recent months we have seen generators switching between fuels within their portfolio to keep generation costs down. This has resulted in fuel switching from gas to coal and the UK consumer has benefitted as a result.

The UK has plentiful coal reserves currently estimated to be at least 3.1 billion tonnes which is enough for around 60 years at current production levels. This is far more than our gas reserves which are 13 years maximum at current production levels.

Coal, it appears, has become the forgotten fuel. The UK has policies to develop renewables, nuclear and now gas generation but nothing to ensure that the UK's coal reserves are exploited to the benefit of the nation.

The UK has become a net energy importer of both coal and gas and it is important that it uses all of its energy reserves to protect energy security and provide a hedge against price volatility.

The CCTG agrees that carbon capture and storage (CCS) is necessary for coal to remain part of the long term energy mix. The CCS competition, whilst to be welcomed, is also open to gas fired schemes and makes no stipulation that any coal project must be technically capable of burning indigenous coal. The omission of this simple requirement means that CCS projects supported by the UK electricity consumer could be directly supporting imported coals.

3. Gas generation

Gas generation accounted for 41% of UK electricity generation in 2011. In 2010 gas generation was as high as 47% of the generation market. It is currently the dominant fuel source within the UK market and is the only type of fossil fuel plant currently being built or that has been built since 1991.

Latest figures show that gas generation is already the largest capacity on the system, with a significant volume also within the planning system. There is a real risk that if further preferential treatment is given to gas, the UK will become too reliant on this fuel to the detriment of its fuel security and price competitiveness.

Gas already has several advantages which makes it the default fuel of choice for new generation. It has lower capital costs, is quicker to build, assumes less stringent environmental constraints and is a low risk technology. At present no one outside the current CCS competition (where the outcome is uncertain) is seriously considering building any other type of large fossil fuel plant.

Even with the above advantages new gas generation is not coming forward. The consultation document highlights the 15GW of gas generation schemes with permission, but it is not yet known if they will commence construction.

The fact that investment in gas generation is not happening is due to several factors:

- i) Investment constraints in an economic downturn.
- ii) Investors are looking to other markets with greater regulatory certainty and returns.
- iii) Uncertainty over carbon legislation especially the UK's unilateral carbon price floor.
- iv) Uncertainty over long term running regimes of new power plant.
- v) Low 'spark spreads' - 'spark spread' is the difference between the market price of electricity and its cost of production.

Three of the above reasons are regulatory and are a result of recent Government intervention in the electricity market. Investors in the UK power market are now multinational entities which are making investments all across the world. These companies are looking for low risk, high return investments and at present the UK is not perceived as such a market.

Gas generation is also a fossil fuel emitter albeit at a lower level than coal. However the Committee for Climate

Change (CCC) has stated that in order to meet the UK Government's greenhouse gas (GHG) target of an 80% reduction by 2050 from 1990 levels, the electricity industry must be largely decarbonised by 2030.

The CCC has presented "an illustrative least-cost investment path for the power sector over the next two decades, suggesting that the aim under new electricity market arrangements should be to reduce average emissions intensity to around 50 gCO₂/kWh by 2030."

This effectively means that **coal and gas plant running in 2030** must have carbon capture and storage (CCS) fitted.

The Government's proposal to grandfather emission performance standards (EPS) out to 2045, to encourage new gas generation to come forward, will make the fitting of CCS far less likely before this date. This concession will allow a plant consented under the current EPS level of 450g/kWh to operate for 30 years at this standard of CO₂ emissions, at a time when power generation will be expected to radically decarbonise. As a result the UK Government is jeopardising these interim targets, whilst its 2050 target is also in question.

Allowing grandfathering of the EPS for 30 years will jeopardise the possibility of investment in clean coal plant. Given the choice of abated coal or unabated gas, investors will prefer the less risky option - gas.

A key element of the Government's CCS strategy is to ensure cost competitiveness by the mid 2020s. The drive to unabated gas will remove investment from the second phase of CCS projects, vitally needed take the technology further down the cost curve. This lack of subsequent investment is likely to severely hamper the development of cost competitive CCS within the UK.

Gas prices

Low spark spreads (profit margins) are a direct result of high gas prices in comparison to the electricity price. DECC is forecasting that the electricity price will rise as a result of plant retirements over the coming decade which will improve the gas investment case. However the growing dependence on imported gas means the UK is becoming more exposed to price volatility on the international market

with the result that gas prices are likely to rise, negating this benefit.

The UK became a net importer of gas in 2004 and in 2010 imported 581GWh - over three times more than exports. Prices of fuels delivered to power stations show coal has been the cheapest option over the last 10 years even taking account of generation efficiencies.

Already Centrica are indicating this winter they expect to increase domestic gas prices by 15% because of increasing prices on the wholesale market. The likelihood of gas prices rising out to 2015 then falling to 2020 and remaining constant for the next 10 years (as shown in the DECC October 2011 energy projections) seems remote. The growing dependence on imported gas will inevitably mean increases in price.

The growing use of unconventional gas in the USA has had no knock on effect on UK gas prices. In fact it has caused international coal prices to plummet as gas generation in the US has pushed coal down the merit order and as a result, this surplus coal has been exported into Europe and the Far East. Unconventional gas sources in Europe and the UK are far from proven and it certainly cannot be assumed that they will have any deflationary effect on gas prices or alleviate investment risk.

UK coal production

UK coal output has been increasing in recent years with a commensurate increase in employment, one of the few industrial sectors to do so.

As the Clean Coal Task Group (CCTG) showed in its *Roadmap for coal* (2012), in 2010 the UK produced 18.4Mt of coal in response to a total UK market demand of 51.4Mt. High levels of imports are required to satisfy demand, and coal imports have exceeded UK coal production every year since 2003. The UK mining industry directly provides just over 6,000 jobs and supports a similar number in coal power stations combined with the rail and transport infrastructure.

The *Roadmap for coal* estimates that the effect on coal prices of the carbon price floor (CPF) will be to add £11.88/t in 2013 rising to 23.69/t in 2015. This is an increase on current coal prices of 15% and 30%

respectively. The knock on effect on coal generation costs is to add £4.95/MWh in 2013 rising to £9.86/MWh in 2015 and is estimated to be around £37 /MWh in 2020. (For comparison the current marginal cost of electricity generation is circa £77/MWh).


The introduction of CPF will result in a change of operation of existing coal and gas plants resulting in greater switching from coal to gas. The policy will also impact the relative attractiveness of investment in new coal and gas power stations, as well as accelerating decisions to retire existing fossil-fuel power stations.

The policy also severely harms the concept of coal plant fitted with partial CCS, since the non-CCS portion will be subject to CPS, jeopardising the economics of the overall plant.

The impact of Government policies is likely to drive UK coal burn down to a level below that of UK coal production capacity. Output will inevitably have to be reduced and there will be premature closure of mining capacity. A thriving UK industry will be, in part, replaced by imported gas.

Summary

1. In the overall energy mix, coal has become the forgotten fuel.
2. Gas can play a part in a diverse energy mix but the UK must not develop policies which will drive investment in unabated gas at the expense of other technologies and fuels. The UK currently has a diverse energy mix which benefits the UK consumer.
3. The proposals will decimate the investment case for building new coal and mean a total reliance on gas going forward. Gas as the dominant fuel will leave the UK hugely exposed to imported supplies, with consumers having to pick up the cost.
4. A future where unabated gas is the default fuel is also likely to impede the development of cost competitive CCS, a key component of the UK's long term low carbon mix.

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5. Finally, the government should complement its gas strategy with a similar review of the role of coal in the energy mix in order to develop a **comprehensive fossil fuel strategy to 2030** and beyond. CCS must play a central and integral part in fossil fuel deployment for the strategy to be wholly consistent with our climate change targets, including the near-decarbonisation of electricity supply by 2030.