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Solid Fuel Association Submission - Call for Evidence on the Role of Gas in the Electricity Market

The coal mining industry is worth around £1 billion to the UK economy and around 7,000 British people are employed directly in the coal industry, many in economically disadvantaged areas.

The Solid Fuel Association is the organisation which represents the producers, distributors, retailers and manufacturers that makeup the domestic solid fuel sector. The association acts as a centre of expertise for the sector and provides technical support for both professionals and the general public.

The SFA administer the Approved Coal Merchant Scheme in accordance with the requirements of trading standards and work very closely with the Coal Merchants Federation.

Summary

In our submission, we cover the following areas; security of supply, future availability of gas, gas price volatility, viability of unconventional gas sources, impacts of gas proliferation on the consumer, environmental impacts of gas proliferation.

The thrust of our argument is that an energy policy that ignores coal and causes a proliferation of unabated gas will produce an unbalanced, expensive and dangerously unstable UK energy market Furthermore, it will have no impact whatsoever on reducing greenhouse gas emissions.

Introduction

Conventional wisdom suggests that energy supplies can only be truly secured by maintaining a diverse portfolio of sources. This approach has always been the cornerstone of UK energy policy. That is until the last ten years during which period, political dogma appears to have rapidly overtaken pragmatism.

At the SFA, we are becoming increasingly concerned that the UK's most reliable and inexpensive natural energy resource, coal is deliberately being squeezed out of the mix.

Moreover, our assertion is that this policy is a fatal mistake and in order to meet the challenges of future energy demand, capacity from all fossil fuel options including coal must be retained. Coal is uniquely placed to provide the most secure base load generation and proves this every winter in Britain when coal generation ramps up from around 30% of energy production to over 50%. Unfortunately, if this base load coal capacity was replaced by gas, the UK energy consumer would be put at the mercy of winter gas price volatility. During cold snaps in Europe, the gas price rises steeply along with demand from both domestic and power markets.

Globally, coal is the most rapidly growing fuel. According to "Energy Facts Weekly", a website run by emeritus professor Dr Frank Clemente of Penn State University, there was a 50% increase in coal use worldwide between 2000 and 2010. Coal now accounts for 40% of power generation which is double its nearest rival natural gas.

Production of steel and cement are also largely dependent on coal – these along with energy are the basic building blocks of progress.

Security of Supply

Any proliferation of gas generation must fully take into account the following factors:-

1. Terrorism impacts– Gas supply lines from Norway and France and LNG storage terminals in the UK are obvious targets for terrorism.

2. Political impacts – Supplies from abroad could be interrupted for arbitrary political reasons (Due to an international dispute, Russian company Gazprom cut off millions of customers in the Ukraine in January 2006 leaving them without heat).

3. Temporary shortage – During periods of shortage, domestic supplies in gas producing countries will take precedence over exports.

Spurious Estimates of Future Natural Gas Availability

Any estimate of potential gas reserves should take into account the following factors:-

1. The inevitable increase in demand specifically generated by current government policies both in the domestic heating market and wider energy market.

2. The peak of world production, after which availability diminishes rapidly leading to shortage in a saturated market. e.g. the North Sea fields reached peak production in 2000 and output is now falling dramatically year on year.

3. Access to foreign supplies could be compromised by unforeseen future geopolitical conditions. The risk is exacerbated by the vast distances involved and the number of national boundaries that supply lines must cross.

4. There is an inference in the news media that shale gas could herald a period of gas energy self-sufficiency for Britain. This inference is based on the American experience and is entirely spurious (see below).

Unconventional Gas Sources – Shale Gas

According to a report from the European Commission published in September 2011 (http://ec.europa.eu/environment/integration/research/newsalert/pdf/251na1.pdf), the supposed global warming potential of “fracked” gas over a 100 year timeframe is actually greater than both coal and oil. This is mainly due to the uncontrollable release of methane from gas bearing shale during the fracking process. Methane has twenty three times the global warming potential of carbon dioxide.

When this is added to potential geological problems, short lifespan of shale gas wells, legitimate public health concerns and planning issues, it is clear that shale gas is not likely to be an energy silver bullet for the UK energy market.

Gas price volatility

The gas price is consistently higher than coal and more subject to rapid fluctuations in response to global demand but could also be set to rise dramatically subsequent to a “dash for gas”. With “all our eggs in one basket”, this would have a catastrophic effect on UK plc.

Lessons from Abroad – the USA

According to a recent article which appeared on Fox News' website (http://www.foxnews.com/opinion/2012/05/22/obamas-war-on-coal-hits-your-electric-bill/?intcmp=trending), President Obama's "war on coal" via EPA regulation is already having a devastating national impact in terms of energy prices. Coal fired generation in the USA has been reduced from 44.6% of the total to 36% in just one year.

Coincidentally, this year's generating capacity auction (for 2015) has seen prices rocket to an average $136/megawatt compared to $16/megawatt in 2012. In the individual areas most hit by coal fired closures, the prices were even higher. Obviously, this cost will be passed directly on to the consumer, plunging many American families into fuel poverty.

Other Impacts on the UK of a "dash for gas"

UK Fuel Poverty

The cost of turning power generation currently covered by coal over to gas, renewables and nuclear will punish business and private consumers alike making the UK an expensive place to live and do business. This could well compromise the urgently needed economic recovery.

Loss of economic coal reserves

Economically recoverable coal reserves in the UK are estimated to be in excess of a billion tonnes.

At the moment, the UK produces 19 Mt of coal per year which could be increased by further investment if the energy market was not being rigged against coal by government policy. Investment can only be made in coal mining where there is future market confidence. If consumption of coal drops below the level of domestic output, mines may become uneconomic and close prematurely. The situation is exacerbated by the introduction of tighter sulphur content limits which may make it impossible to burn purely the British product (British coals hover around the threshold of 1.4% sulphur).

The tragedy of the above scenario is that the remaining coal reserves are effectively sterilised and mining will not necessarily be able to recommence if the market improves. These resources are for all intents and purposes lost forever – a grim legacy for energy-hungry future generations.

Missed Opportunities for British CCS

Despite the projected global growth in coal use, investment in coal fired CCS has been substantially lacking in the UK and this country risks being left behind by other countries such as Norway in this important field.

What is absolutely certain is that CCS has by far the greatest potential worldwide for mitigation of carbon dioxide emissions.

Due to methane leaks, natural gas is no better as a bridge to low carbon than coal

A recent study by the American National Center for Atmospheric Research (NCAR) has largely exploded the myth that natural gas is "greener" than coal

The study considers a scenario where a fraction of coal usage is replaced by natural gas (methane) over a given time period and where a percentage of the gas production is assumed to leak into the atmosphere. While coal use is alleged to cause warming through emission of carbon dioxide, it also releases comparatively large amounts of sulphates and other particles that cool the planet by blocking incoming sunlight.

The situation is further complicated by uncertainty over the amount of methane that leaks from natural gas operations. Methane is an especially potent greenhouse gas (23 times the global warming potential of carbon dioxide).

Computer simulations indicate that a worldwide, partial shift from coal to natural gas would slightly accelerate climate change as far into the future as 2140.

In summary, the results show that if climate change theory is to be believed at all, the substitution of gas for coal as an energy source results in increased rather than decreased global warming for many decades.

For the UK, the fact that hundreds of miles of pipeline are used to deliver the fuel will further increase the potential for enormous greenhouse gas emissions.

If we accept the findings of the NCAR study, the EPS limit of 450 g/kwh for new power stations looks completely arbitrary and merely a contrivance to exclude coal from our energy future**. When all the factors are taken into account, there is no more a case for unabated gas until 2045 than there is for unabated coal until this date.**

Conclusion – the overwhelming case for coal

The overwhelming case for coal has been vividly illustrated by DECC's own figures for Q.1 2012 which showed that coal-fired plants boosted output by 20.2 percent, or 6.5 terawatt hours in the first quarter, to reach the highest contribution since 2006. (source Reuters May 31st)

Over the same period, supply from gas-fired power stations fell to its lowest share in 14 years at 25 percent!!

The above statistics speak for themselves. We believe that natural gas should have a place in the UK energy market but this should be as a complement to and alongside reliable and cost effective coal. The aim should be to add to the diversity of the energy mix and to balance the contribution from different energy sources including nuclear and renewables rather than a dangerous narrowing of our options.

Coal is unarguably superior to gas in terms of availability, security of supply and cost effectiveness. Moreover, indigenous coal is a national strategic resource which could be lost to future generations by the application of entirely artificial constraints on its use.

In terms of the theoretical impacts of coal on climate change, studies have revealed that there is *no* difference in projected impact between coal and natural gas and thus no convincing argument exists for the proliferation of gas and removal of coal. Presenting natural gas as a "green" fuel compared to coal is completely disingenuous.

Indeed, when coal is co-fired with biomass, it is actually the "greener" fuel so a proliferation of dual fired coal stations may be more sensible than a dash for gas

In conclusion, we believe that the increase in the use of power-intensive technologies like heat pumps and electric vehicles will increase the burden on the national grid well into the future. Therefore, there is a cast iron case for increases in capacity for all currently available fuels including gas.

However, the UK cannot afford to ignore coal as an over-reliance on gas would be a high cost, high risk and high carbon strategy.