

Introduction.

These comments are submitted from the **Scottish Resources Group (SRG)** which is the parent company of **The Scottish Coal Company Limited** (Scottish Coal) – both based at **Castlebridge Business Park, Gartlove, Alloa. FK10 3PZ.**

Scottish Coal is Scotland's largest producer of coal and the UK's largest producer of surface mined coal. Current employment is approx 930 persons, predominantly in relatively deprived rural communities in the Central Belt of Scotland and extending into South Lanarkshire and East Ayrshire.

Whilst the National Grid consultation document is believed to be primarily aimed at those directly involved in the generation and distribution of electricity, Scottish Coal considers that there a number of points which are relevant. As a major producer of indigenous energy, being supplied direct into large domestic coal fired power stations, Scottish Coal suggests that not only is the coal industry a key stakeholder in the process but the security of supply concerns ensure that home-produced coal should continue to be seen as a priority.

Scottish Coal does not feel that it is appropriate to answer the questions set as these relate to more detailed aspects of the grid transmission system. However, we set out below a number of points on the role of coal and Government policy (Part A), followed by some specifics (Part B) which we would ask to be taken into consideration. (For the record, we have no objection to this response being placed on your website.)

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Part A. Role of Coal in Future Generation and Government Policy

Background.

Contrary to the impression given in the consultation document, there is strong policy comment from the Government that coal is increasingly seen as an essential energy source to maintain electricity supplies. Indigenous coal is also recognised, by those countries which are lucky enough to have their own resources, to be a vital insurance against increasing costs and security of supply risks associated with dependence on politically unstable countries.

John Hutton (as Secretary of State for Business, Enterprise and Regulatory Reform) recently said, *"no nuclear plus no coal equals no lights"*. This continuing theme is underwritten by the Government's statements on the investment into Clean Coal and Carbon Capture technology with the promise of Government funding for the most appropriate proposal made via the competition process.

The continuing focus on coal and the need for large scale, long term investment to be made, means that the entire coal industry (and associated coal fired generation industry) is focussing on future plans to increase levels of confidence and certainty and, to underwrite its long term investments.

It is suggested that this must be better reflected in the National Grid's vision of future needs.

Role of Coal in Future Market

There has been a worldwide awakening to the value of coal as a long term secure source of energy – not just in emerging, but also mature, economies. The only real difference is the level of concern and investment in dealing with the emissions. Countries such as the UK do not see this as a long term constraint – it may be short term constraint whilst the technologies are developed but is then of long term value as it can be applied to plants in the emerging economies.

Amount of Coal Used in UK.

UK burnt 58.2mt in 2008 with approx 49mt for electricity.

In winter months, coal = 50% of our electricity needs.

On average in summer, coal produces 25% - 30% with gas at 45% whereas wind is <1%

Electricity Generation

By far the most important issue likely to affect the electricity industry over the 2009 - 2014 period is the emerging threat to security of supply posed by the closure of a significant proportion of the UK's generating capacity over the next few years and its likely replacement, by default, with gas-fired capacity. (See below)

Whilst the market may find a solution to this problem, indications are that dependence on gas-fired generation will rise to over 50% by 2016-18 and up to 75% on a cold, still winter's day. The market solution may thus be one of extremely high and volatile prices.

Increasing reliance on gas is seen throughout the industry as the 'default' position and the most likely reaction to the planned reduction in coal and nuclear output (until clean coal and new nuclear build gain momentum). It is considered that the National Grid's scenario that wind power will increase by 1125% before 2020/21 is highly optimistic given the planning difficulties which are increasing at a rapid rate.

Security of Supply for Coal

Coal is now widely seen as a vital worldwide energy source for the long term and a major economic advantage for those countries which have sizeable reserves.

Russia, which has been supplying over 50% of the UK coal imports can already ship its coal as easily to the Asian markets as to European. The Baltic ports are over 4000kms from its main coalfields. Russia is also retaining more of its own coal for domestic markets in order to free up more gas for export. This gas can be easily controlled and priced as the Government will only send it down the pipes to the customers that it wants to. It can therefore exert a huge amount of economic and political power, with very little effort.

In summary, those countries (including UK and Scotland) that have their own coal, are increasingly seeing it as a vital security of supply protection and an opportunity to trade it into a market which is increasingly hungry and volatile. The Generating and transmission systems should take full account of the reliability of coal fired generation – both in terms of “international” security of supply and in terms of base load capability, unaffected by climate variation.

Strategic Value of Indigenous Coal

The UK Government has formally identified that security of supply is one the greatest issues facing the country and, after 2 decades of antipathy towards coal, there is now a realisation of its essential worth and the advantages of an indigenous industry.

Both the Energy Review and the Energy White Paper confirmed that a **Coal Forum** would be set up to specifically examine the issues in great detail with the following conclusions:

- ***a need to bring forward ways of strengthening the industry, and working to ensure that the UK has the right framework to secure the long-term future of coal-fired power generation; optimise the use of our coal reserves....***
- ***it is right to make the best use of UK energy resources, including coal reserves, where it is economically viable and environmentally acceptable to do so.***
- ***England, Wales and Scotland still have significant recoverable coal reserves. These reserves have the potential not only to help to meet our national demand for coal and to reduce our dependence on imported primary fuels, but also to contribute to the economic vitality and skills base of the regions where they are found.***

The Coal Forum’s 2nd Overview Report (Sep 2008) - Key Conclusions:

- A third of UK existing generation capacity (coal and nuclear) would be closed by 2015 and that nuclear had no prospect of closing this “gap” within the next 8 years.
- Even with the enhanced build programme for renewables there will be a need for significant new fossil fuel fired plant – coal or gas.
- Impending closures of coal and nuclear plant could bring the nation perilously close to winter brown outs and/or restrictive power management in only a few years

- The most *optimistic* case for coal shows 60% dependence on gas during a cold still spell in winter in 2016 (cf 36% now).
- The *pessimistic* case, with no new coal generation, shows 75% dependence on gas during a cold still spell in winter in 2016 (cf 36% now) with a real possibility of a shortages in electricity supply from around 2012. This brings major risks to security of supplies, electricity costs, and no improvement in CO2 emissions.
- Workable and accessible reserves of coal are an increasingly valuable resource for this country for economic reasons and to ensure diversity of supply.
- Substantial reserves of indigenous coal are available, given investment levels commensurate with the Forum's "reasonable" expectation of some 20m tonnes/annum.
- This output must be underwritten by the ability of operators to maintain investment at appropriate levels, (i.e. a confidence in Government policy and availability of transmission capacity.)

Latest UK Government Policy Position

The previous Secretary of State for Business, Enterprise and Regulatory Reform, John Hutton, made a defining speech in Dec 2007 when he stated *"I believe that over the coming half century it will be essential for the United Kingdom to strive for energy independence. (We need to be) maximising economic domestic energy production. A strong market based approach to domestic production to help ensure a diverse supply of competitively priced energy should be our aim."*

On 22 September 2008 John Hutton also stated:

- *"Because energy security is a first thought, not an afterthought, I will not turn my back on another critical energy source for the UK: coal.*
- *Coal is a critically important fuel for the UK. Flexible. Available. Reducing our reliance on imported gas.*
- *Some people claim that new coal fired power stations would make our climate change targets unachievable. Additional emissions have to be offset by reductions elsewhere.*
- *So stopping the building of new coal fire power stations would make no difference to the UK's total carbon emissions, but it would, I believe, damage our energy security.*
- *So there is no sense in our turning our backs on coal. Let's keep cleaning it up, not ruling it out.*
- *No coal plus no nuclear equals no lights. No power. No future!"*

The present Secretary of State, Ed Milliband confirmed to the Coal Forum at its meeting on 31st March 2009 that *"he welcomed the use of indigenous coal in the energy mix and that clean coal could play an important role in the future both in the UK and internationally. Overall, indigenous coal has a potentially very significant place in the domestic energy mix and the Government is supportive of this."*

Mr Milliband also announced on 23rd April 2009 that *“In order to ensure that we maintain a diverse energy mix, including maximising our domestic fuel supply, we need new coal-fired power stations but only if they can be part of a low carbon future. “The government intended to deliver up to four CCS demonstration projects, including both pre and post combustion coal projects.”*

New Technology for Coal?

Combustion: Technology exists for high efficiency, low carbon combustion plants to be installed in new and existing power stations. For example, Doosan Babcock of Renfrew has world leading technology. Vattenfall’s new clean coal and carbon capture Schwarze Pumpe power station in Germany, uses this technology. The Oxyfuel method removes nitrogen from the air and then burns the coal in the pure Oxygen. This produces water and carbon dioxide which can be compressed and liquefied to be stored in geological formations.

Carbon Capture: Again, the technology exists to capture and dispose of the carbon. The most commonly known option is to extract the CO₂ from the flue gases and pipe it to abandoned hydrocarbon reservoirs where it should be contained by the same geological structures that trapped the oil and gas in the first place.

There are other technologies, which involve putting flue gas into coal seams near the power station where the carbon molecules would chemically attach themselves to the coal. CO₂ can also be stored in saline aquifers.

Conclusions.

- As a result of the huge quantities of accessible coal being available in the UK to ensure that we are never overly reliant on foreign sources of oil, gas, coal and uranium, this warrants it being given serious consideration by the Government as a fuel which will underwrite the Nation’s long term energy needs.
- The Government, via the Energy White Paper, Coal Forum and Ministerial statements has confirmed that coal has a major role to play in both in terms of generation capacity and ensuring security of supply.
- The only caveat is that clean coal and carbon capture technologies must be installed on new generation plants
- Government expenditure is being channelled into clean combustion; carbon capture and finding a means of extending the life of opted-out power stations.
- **This confirms the Governments position on the future of coal and, as a result, it is suggested that coal fired generation should be given greater prominence in National Grid’s strategy – not just the ‘Gone Green’ scenario.**

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Part B. Some Specific Issues Arising from the Consultation Document.

Managing Intermittency

Scottish Coal and SRG are fully supportive of wind power and is actively pursuing a number of windfarm projects. However, being in the heartland of many major existing windfarms it is difficult to avoid the conclusion that for large periods of time, the turbines do not turn at all. If there is minimal wind in one part of Scotland, it is usually the same in most parts.

It is considered that the consultation document plays down the intermittency risks associated with a heavy reliance on wind power. It is accepted that in the Gone Green scenario, extensive reference is made to alternative sources of power although it is suggested that with an 1125% increase in wind power to the point where 30% of generation capacity by 2020/21 will be wind power, the interruption risks will be far higher than are being suggested.

Also, it is dangerous to assume that intermittency will be reduced by greater geographic spread of windfarms – even after 10 years of intensive development, 63% of the 2.4GW of wind capacity is in Scotland with its high wind and low population. In terms of onshore contribution, it seems unlikely that intermittency will be reduced by assuming greater development in England and Wales – if anything it will be the opposite. (5.18 and 6.8)

On this basis, greater emphasis must be placed on non-interruptible sources either as base load power or as back-up. Para 6.60 does refer to the declining surplus and greater influence of wind from 2015.

Clean Coal Development

Government policy is very clear about the ongoing role for coal and the importance of clean coal technology – as confirmed by the Secretary of State on various occasions recently. Paragraph 5.3 states “Some clean coal development is also assumed”. This is an example of the dismissive stance towards coal which will mis-inform the reader.

Gas Fired Generation.

There is an implied comment in para 5.42 that as the Gone Green scenario features 34GW of gas generation, then gas is ‘green’. This is not the case – gas is a carbon producing fossil fuel like oil and coal.

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Overall Conclusions

- We are some time from renewables being able to contribute anywhere near 50% of the nations’ needs.
- Until renewables catch up, there is a need for locally produced coal that isn’t travelling great distances and is then used in a green way through technologies such as CCS.
- The priority needs to be keeping our homes and businesses supplied with energy whilst keeping bills as low as possible.

- Whether we like it or not, until a volume alternative is available, reliable and non-interruptible, coal is essential and without it being burnt in our power stations, the lights will go out.
- As a result, our view is that coal fired generation (in its current form) is essential now and that coal fired generation (in a new reduced carbon form) will be essential in the future. The only question is how we manage the transition from one to the other.
- **The Governments position on the future of coal is clear and it is suggested that coal fired generation should be given greater prominence in National Grid's strategy – not just that indicated in the 'Gone Green' scenario.**

I hope that the above comments are of interest.

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