

# Electricity Market Reform - Comments of Scottish Coal

## PART A. General Comments

### Introduction

Scottish Coal is part of the Scottish Resources Group (SRG) which is the largest surface miner and the second largest producer of coal (underground and surface mined) in the UK. We employ over 1000 personnel, mainly in relatively deprived rural areas where few other job opportunities exist, and where the substantial wage levels associated with the skills, make a substantial contribution to both local community and the Exchequer. SRG Renewables Limited is part of the SRG Group and has submitted separate comments on the EMR for consideration.

Scottish Coal is a member of The Confederation of UK Coal Producers (CoalPro) and supports the separate submission made in relation to this consultation. Scottish Coal supports the premise that coal is a source of safe and reliable energy, available in bulk when needed and reasonably immune from outside influences.

We have concentrated on general comments which we believe are vitally important if the UK is to maintain a safe, secure, reliable and diverse portfolio of fuels to ensure that its electricity supplies are consistently available and reasonably immune from interruption (e.g. weather variation and political intervention on piped gas supplies). Answers to the individual questions in the consultation document are set out later in this response.

### Importance of Coal

Whilst unfashionable to refer to the importance of coal, it is nevertheless a fact that in 2009, 49 million tonnes of coal were used to generate electricity for the Nation's needs and in 2010, 45 million tonnes were consumed to the end of November 2010, i.e. still about 49 or 50mt for the full year. Consistently throughout the winter months, coal has been responsible for between 40% and 50% of the UK's electricity needs. By way of example, at the time of writing (2<sup>nd</sup> March) **45.0%** of UK electricity is being generated from coal and 1.8% from wind.

The Renewable Energy Foundation recently (February 2011) referred to the low load factors on wind turbines across Europe and apart from commenting on such variability, stated that "Such figures confirm theoretical arguments that regardless of the size of the wind fleet the United Kingdom will never be able to reduce its conventional generation fleet below peak load plus a margin of approximately 10%."

As will be noted below, it is suggested that coal **must** be part of a balanced portfolio of fuels and particularly in the baseload sector. Relying exclusively on gas as the single hydrocarbon choice is both inappropriate and risky. Recent events in the Arab world highlight just how risky it is to rely on a fuel that will be increasingly sourced from that area – plus the added vulnerabilities of both pipeline and shipped supplies.

### Importance of Indigenous Coal Production

Indigenous coal production is vital for security and stability of supply and is key to ensuring that the Nation not only has a reliable source of heat and power but is reasonably well insured



against the risks of disruption. The ability to reliably generate electricity, free from threat of interruption from industrial action, political intervention, transport breaks, terrorism, and adverse weather conditions, is an essential element for economic and social stability. See above for comments on the risk of reliance on gas imports.

Coal extraction is effectively a growth industry in that output has increased by some 8% over the last three years with a commensurate increase in employment and investment. All this has been at a time when most other industries have shed jobs and slashed investment. The results are in the maintenance of highly skilled and well paid jobs, often in otherwise deprived areas.

### **Effect of EMR on Coal Production**

The introduction of carbon-price support, skewed Feed in Tariffs and Emission Performance Standards weighted towards gas at the expense of coal will have a major effect. These measures, with the currently proposed thresholds and timescales, will bring this growth to a halt, and then reverse it, perhaps dramatically so. Investment will largely cease. It will lead to premature closures, loss of jobs and loss of other economic benefits. UK produced coal will be replaced by imported gas – if it is available. In the short term, it is likely to increase the imports of coal as investment will not be available to indigenous producers with a consequent effect on those businesses and the jobs within.

### **Security of Supply Risks**

Currently the UK has an energy mix that allows no fuel to hold a monopoly position on the generation of electricity. The position on coal is dictated by need and by the closure of power plants resulting from the LCPD and the ratification of the IED.

Investment in new coal fired generation and low carbon technologies will be driven by electricity generators having certainty of return on investment made. The measures set out in the EMR clearly discriminate against coal and the generation of electricity from coal. This switch away from coal, which is currently taking place via the LCPD will be accelerated by the carbon price floor and other mechanisms set out in the EMR.

The acceleration away from coal will dramatically add to risk in price and availability of imported gas as the main alternative. This will expose the market to the price of gas coming from long distance suppliers (including the politically unstable Arab and former Soviet countries) who have the rest of an energy hungry Europe competing for vital supplies. This has a clear effect on 'security of supply'.

### **Affordability and Fuel Poverty**

The electricity market is competition-driven, managed primarily by the spread difference in the cost of electricity generation, cost of gas and the electricity generation cost of coal. The positive encouragement of gas at the expense of coal, being promoted by the EMR proposals, will reduce availability in coal plant and reduce the key tool in competition, i.e. between gas and coal.

This lack of competition and increasing reliance on imported gas will drive up the retail price of electricity and the retail price of gas, which will affect affordability and ultimately be felt most by those least able to afford the rising electricity price. They have no protection from the



increasing price volatility of gas which directly relates to the geographic locations of the supply sources.

### **Effect on Investment in Fossil Fuel Generation**

These proposals, as drafted, will initiate a renewed dash for unabated gas. This may result in earlier carbon reductions but will emphatically not lead to a decarbonised electricity supply. On the contrary, it will lead to long-term carbon lock-in with a large volume of unabated gas-fired plant being available in 2030 and for many years beyond.

These measures will be a major disincentive to investment in existing coal-fired plant to meet the requirements of the Industrial Emissions Directive (IED). This plant is likely either to have closed by the early 2020s or be operating on very low load factors. This will exacerbate the risks of being dependent on intermittent renewable and imported gas for base load energy production.

### **Decarbonisation**

The policy objective of decarbonising of the electricity industry and giving certainty in electricity price being generated via renewable is recognised. However, whilst increasing renewable electricity (mainly wind) production brings clear benefits in carbon reduction, this can only be secured by maintaining embedded power plants which are immune from the factors which restrict renewable output.

Thermal generation is therefore essential and this must include fossil fuels (gas and coal) plus nuclear if deemed acceptable. This dash for renewable energy can only consolidate the need for thermal generation – the ‘easy fix’ for which being to accelerate the build of gas plant albeit – but at a security of supply cost.

This ‘easy fix’ does NOT decarbonise electricity production, as gas still produces substantial CO<sub>2</sub> emissions. In very general terms, coal produces twice as much carbon as gas, yet by 2016-17, gas will be producing twice as much electricity as coal. Therefore, policies which encourage the growth of gas generation are exacerbating the problem and forcing the country into additional security of supply risks.

Thermal generation is, and will continue to be, essential, and the carbon issue should be managed by clean burn technologies and CCS (on all fuels), which will allow a diverse range of fuels to be used and minimise the security and political risks associated with concentration on a single fuel such as imported gas.

### **Effect on CCS Demonstration Programme**

Carbon-price support and other EMR measures will act as a major disincentive to the participation of coal-fired plant in the CCS demonstration programme. Relief from CCL in respect of carbon abatement at such plants (and any subsequent CCS plants) is essential. However, continuing to charge CCL on the unabated proportion of such plants will be a major disincentive for the participation of coal-fired plant in the demonstration programme. The lowest cost option for a generator will always be to construct unabated gas-fired plant.

The advantages of early carbon reduction on fossil fuelled plants would be lost as will the widely recognised economic benefits of capitalising on the UK's academic and skill base in demonstrating and promoting CCS to the rest of the world.

### **Imports of Electricity?**

The closure of coal fired generation as a result of the Generators not being encouraged to invest in new technologies to meet IED limits will place huge demands on interconnector capacity, which is just not available.

As a hypothetical example, if Longannet closes in say 2021, the only real source of power to Scotland on a calm day will be via the N-S interconnector. It is understood that major upgrading would be required at a cost which would not be affordable for the private sector and, it must be borne in mind that it took in excess of 10 years for planning approval for the last major powerline upgrade.

Interconnectors are likely to be used more at peak periods, precisely when coal-fired generation, in the UK or Europe, will be providing marginal supply. Imported electricity, including that generated from coal, will displace electricity generated from UK coal production. This represents a perverse effect. Imports of electricity would effectively be subsidised.

### **Existing Risks to Generation Capacity**

The EUETS allowances for fossil fuel generation are to be removed by 2013 and amount to £1.8bn or 30mt of coal. This will increase costs for generators who will close their opted-out coal stations well before the end of 2015 – with or without using their allowable hours. The 8GW of capacity forecast by the Government to be lost by the end of 2015 could well be lost by the end of 2012 with a consequent effect on capacity and security of supply.

The IED requires declarations by the end of 2013 and this could hasten the Generators' decisions to close coal fired plant. There are significant risks to the availability of energy for the consumer and the security of supply. It is suggested that the Government may not have adequately factored in the criticality of the situation and the major effects which will result from earlier closure of coal fired plant. (Such closures will be hastened by both existing measures and those in the EMR.)

### **Undue Complexity**

EUETS, Climate Change Levy and CRC all inter-relate in the most complex of ways and effectively constitute 3 overlapping taxes. They are difficult to understand, difficult to administer and will encourage the exploitation of loopholes by the minority. The tax and administrative burden on business and jobs will be substantial. Every effort should be made to simplify the whole process and effects.



## PART B. Specific EMR Comments.

### Introduction

Scottish Coal recognises the need for reform of the electricity market if the necessary investment is to be forthcoming to achieve near zero carbon electricity generation by the early 2030s whilst ensuring security of supply and affordability.

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.

This will also support renewable energy development by ensuring that base load energy is readily available to offset the uncertainties of intermittency.

### 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<sub>2</sub>, 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):** We are 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.

We can see no reason for carbon price support in addition to Feed-in Tariffs (FITs) for low carbon technologies. It is the FITs that provide both the price and the certainty to enable these technologies to develop. Carbon price support adds nothing to this.



**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.

Scottish Coal therefore sees no merit in the proposal for an Emissions Performance Standard (EPS) as set out in the consultation document. The EPS proposal would have merit if it contained a strong signal that it will be applied at a reduced rate of 100g CO<sub>2</sub>/kWh by, say, 2025 to all new and carbon capture ready (CCR) fossil fuel plant once carbon capture and storage (CCS) is technically proven and commercially available.

An EPS that does not give a very strong signal that CCS will be required to be fitted to new and CCR gas plant at some time in the 2020s also acts as a driver for the construction of unabated gas plant.

**Carbon price support:** This will do nothing for the development of low carbon technology that FITs will not do. It will, however, drive gas-fired generation at the expense of coal-fired generation. Whilst this may result in earlier carbon reductions it will result in long-term carbon lock-in at unabated gas plant which will make the achievement of longer term reductions in carbon emissions much more difficult to achieve.

**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, often 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.*

Capacity payments may provide an incentive for some existing coal-fired plant to invest to meet the requirements of the Industrial Emissions Directive (IED) and hence continue beyond 2023. However, early investment decisions are required and the availability of capacity payments must be signalled sufficiently early (i.e. a decade in advance) if those decisions are to be influenced



## **Scottish Coal Suggestion**

We 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 Clean Coal/CCS) to unabated gas:

- **Carbon floor price:** adopt Scenario 1 with lower initial carbon price target (£20/t CO<sub>2</sub> 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. This could be to reduce to 100g CO<sub>2</sub>/kWh for all new and CCR plant by 2025 once CCS has been technically proven and is commercially available;
- **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 Capacity payments to be signalled sufficiently early to enable investment decisions to be made to meet the requirements of the IED.

In addition:

- The package should not cause the early closure of coal stations as this will seriously exacerbate the existing security of supply risks. (See comments on EUETS and IED);
- Funding arrangements for CCS Demonstration projects 2-4 should be clarified quickly and not delayed until the Electricity market reforms are implemented. 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.

## **Role of Coal and Impact on UK Coal Industry**

UK coal production is a growth industry and there is potential for output to be increased further and, with further investment, to be maintained at a level of some 20mtpa throughout the 2020s. Investment decisions to maintain output are required at all of the UK's surface and underground mines in the next few years, in some case imminently.

Scottish Coal is concerned that the EMR package will result in a market that is insufficient to support indigenous coal production of 20mtpa, and is in any event uncertain. Against that background, coal producers will find it extremely difficult to take the investment decisions required to increase and maintain output. The package as it stands therefore risks this essential investment in existing and new mines. Scottish Coal urges the Government when finalising the EMR package to carefully consider how this wholly unnecessary outcome is to be avoided.

Scottish Coal is extremely concerned that the preferred package will result in a very low level of coal-fired generating capacity in the mid 2020s and a market for coal that will not be sufficient to sustain potential UK coal production at that time. As a result, there is a real risk that at peak periods on cold, still winter days, there may be a massive overdependence on gas in the mid 2020s. This poses severe security of supply and price risks and Scottish Coal urges the Government to carefully consider how this can be avoided and ensure that adequate and reliable generating capacity is maintained with the consequent effect on the skilled jobs within the industry.



## PART C. Response to Individual Questions

### Current Market Arrangements

1. **Do you agree with the Government's assessment of the ability of the current market to support the investment in low-carbon generation needed to meet environmental targets?**

Yes.

2. **Do you agree with the Government's assessment of the future risks to the UK's security of electricity supplies?**

No. We believe that the EUETS and IED will hasten the closure of at least 8GW of coal plant to the end of 2012 – well before the Government's forecast of 2015 with a direct effect on production capacity and security of supply. We do not believe that the Government has adequately factored in these risks to an already marginal situation. We are also very concerned about the risk of reliance on highly intermittent, renewable energy sources and the increasing reliance on imported gas from politically unstable Arab and former Soviet countries including pipeline and shipping risks.

The risks to UK coal production are set out elsewhere in this response, but if there is perceived to be a risk that the market for coal in the mid 2020s may be inadequate to support an output of 20 mtpa, then investment in coal production will be stifled and output will fall. This will be replaced by imported gas or imported coal with an overall increase in security of supply risks.

### Options for Decarbonisation

#### Feed-in Tariffs

3. **Do you agree with the Government's assessment of the pros and cons of each of the models of feed-in tariff (FIT)?**

Scottish Coal considers the assessment between a CfD FIT and a premium FIT to be very finely balanced. It may be necessary to consider a linkage to fuel prices for low carbon fossil fuel (i.e. CCS) and biomass generation, the competition for which would be unabated gas-fired plant. Gas-fired generation (plus the carbon price) sets the wholesale electricity price. As a result, the FIT must be designed to provide a benefit for coal or gas with CCS and biomass c.f. unabated gas, which is maintained in the light of changing coal and gas prices.

4. **Do you agree with the Government's preferred policy of introducing a contract for difference based feed-in tariff (FIT with CfD) ?**

Yes, provided there is some linkage to fossil fuel prices. If not, a Premium FIT is preferable.

5. **What do you see as the advantages and disadvantages of transferring different risks from the generator or the supplier to the Government? In particular, what are the implications of removing the (long-term) electricity price risk from generators under the CfD model?**

Scottish Coal has no comment.

6. **What are the efficient operational decisions that the price signal incentivises? How important are these for the market to function properly? How would they be affected by the proposed policy?**



Scottish Coal has no comment.

- 7. Do you agree with the Government's assessment of the impact of the different models of FITs on the cost of capital for low-carbon generators?**

Scottish Coal has no comment.

- 8. What impact do you think the different models of FITs will have on the availability of finance for low-carbon electricity generation investments from both new investors and the existing investor base?**

This depends on the relationship between the FIT and fossil fuel prices (see Q.3 above). The difference between low carbon coal or gas generation with CCS and biomass generation on the one hand, which are exposed to fuel prices, and other forms of low carbon generation without such exposure on the other, which are not exposed to fuel prices, must be recognised and taken into account in the FIT design if investment is to be bankable.

Setting the level of FITs appears to take no account of the investment cost of the various low carbon options. The interaction between the support level and the investment cost will be fundamental. The cost of capital is only one component of this and is unlikely to be the most important component.

- 9. What impact do you think the different models of FITs will have on different types of generators (e.g. vertically integrated utilities, existing independent gas, wind or biomass generators and new entrant generators)? How would the different models impact on contract negotiations/relationships with electricity suppliers?**

Scottish Coal has no comment.

- 10. How important do you think greater liquidity in the wholesale market is to the effective operation of the FIT with CfD model? What reference price or index should be used?**

Scottish Coal has no comment.

- 11. Should FIT be paid on availability or output?**

Output. Availability issues should be addressed via the capacity payment mechanism.

#### Emissions Performance Standards

- 12. Do you agree with the Government's assessment of the impact of an emission performance standard on the decarbonisation of the electricity sector and on security of supply risk?**

No. It will not incentivise the construction of new fossil fuel plant with CCS; it will merely disincentivise the construction of new coal-fired plant compared to the alternative of unabated gas and just produce more carbon from unabated gas. A single, non fuel-specific EPS will always disadvantage coal-fired generation and, as such, will reduce diversity and hence increase security of supply risks.

There must be a much clearer signal, than that contained in the EMR package, that the EPS will be lowered at some point such that new gas-fired plant will need to be equipped with CCS.

Clarification is also required on how the proposed EMS relates to the funding rules for CCS demonstrations and exemption from carbon price support for the carbon abated.



Overall, the EPS as proposed gives a free ride to new unabated gas-fired plant and seriously discriminates against new coal-fired plant. In addition to carbon price support, this represents a major incentive to switch from coal to gas-fired plant when considering new investment. As such, it will reduce diversity and increase security of supply risks. Whilst it may achieve earlier reductions in carbon emissions, it will result in long-term carbon lock-in because of the large amount of unabated gas plant that it will incentivise and thus make longer term carbon reduction ambitions much more difficult to achieve.

- 13. Which option do you consider most appropriate for the level of the EPS? What considerations should the Government take into account in designing derogations for projects forming part of the UK or EU demonstration programme?**

Neither, except in the short term. Scottish Coal is not opposed to the lower EPS option provided there is an exemption for the CCS demonstration programme. However, once CCS is technically proven and commercially available, which Scottish Coal expects to have been accomplished by 2020, an EPS of 100g CO<sub>2</sub>/kWh should be introduced no later than 2025 and, the EMR package should give a clear signal to this effect. It may be appropriate to have a slightly higher longer term EPS, say 150g CO<sub>2</sub>/kWh, for CCS demonstration plants to recognise that they are 'first of a kind' and may not apply what eventually is proven to be the most efficient and effective technology.

- 14. Do you agree that the EPS should be aimed at new plant, and 'grandfathered' at the point of consent? How should the Government determine the economic life of a power station for the purposes of grandfathering?**

No. Grandfathering should only apply to old plant not required to be constructed Carbon Capture Ready. All plant, including existing plant and plant now under construction that is, or was, required at the point of consent to be built CCR should have to apply the lower EPS level of 100g CO<sub>2</sub>/kWh (or 150g CO<sub>2</sub>/kWh for CCS demonstrators) from c2025 once CCS is technically proven and commercially available. The argument that this would be a disincentive to new build is not accepted. Investors will know that, by definition, plant built with the requirement to be CCR would be, or will be, expected to fit, or retrofit, CCS at some point in time.

- 15. Do you agree that the EPS should be extended to cover existing plant in the event they undergo significant life extensions or upgrades? How could the Government implement such an approach in practice?**

Only after the CCS Review shows that CCS is technically proven and commercially available. In any event, the EPS should apply only to upgrades. It would be wholly unreasonable to require an existing plant to comply with an EPS in the event that it chooses, for example, to invest in NO<sub>x</sub> abatement to meet the requirements of the IED and hence extend its life beyond what it would otherwise have been. If there is no such exemption for life extensions in such circumstances, there will be no investment to meet the IED requirements and virtually the whole of the existing fleet of coal-fired plant will close.

The policy of both the previous and present governments completely ignores the higher efficiency route to lower carbon emissions that is being followed virtually everywhere else in the world. Allowing higher efficiency upgrades, without the need to comply with the EPS initially, at existing plant will (i) lower carbon emissions in the short term and (ii) facilitate later CCS retrofit because of the energy penalty associated with CCS. The backstop would be the requirement to comply with an EPS of 100g CO<sub>2</sub>/kWh once CCS has been proved to be technically proven and commercially available.



**16. Do you agree with the proposed review of the EPS, incorporated into the progress reports required under the Energy Act 2010?**

Yes, but there should be a much clearer signal that plant will be expected to comply with an EPS of 100g CO<sub>2</sub>/kWh (150g CO<sub>2</sub>/kWh for CCS demonstration plant) from, say, 2025. This should apply not only to new plant but to all plant required to be CCR at the point of consent. Only by applying this requirement can long-term carbon lock-in associated with a large amount of unabated gas plant be avoided.

**17. How should biomass be treated for the purposes of meeting the EPS? What additional considerations should the Government take into account?**

Bearing in mind that burning biomass in coal-fired power plant represents by far the most cost-effective and by far the largest opportunity for biomass generation, the same EPS rules should apply to biomass as to coal-fired plant, including a requirement to meet an EPS of 100g CO<sub>2</sub>/kWh from 2025.

The Government should, however, set up a mechanism to certify biomass sources to ensure that they are genuinely low carbon on the one hand and do not have adverse consequences, e.g. on food production, on the other.

**18. Do you agree the principle of exceptions to the EPS in the long-term or short-term energy shortfalls?**

Yes, although this provision should apply only in the short to medium term. In the longer term, beyond 2030, CCS can be expected to be near universal and there should be no ongoing need for such a provision.

**Options for Market Efficiency and Security of Supply**

**19. Do you agree with our assessment of the pros and cons of introducing a capacity mechanism?**

Scottish Coal has no strong feelings to introducing a capacity mechanism.

With respect to the advantages, it is necessary to consider three types of capacity shortfall:-

- (i) At periods of peak demand, for a few hours and for a few GW.
- (ii) A shortfall that could exist between day and night in winter lasting for up to 12 hours a day and amounting to 10-15 GW.
- (iii) The capacity shortfall that will undoubtedly occur from time to time when climatic conditions result in minimal wind generation across the whole country. This problem will increase substantially as the amount of wind generation capacity increases. Such conditions occur regularly every winter and can last for a considerable period.

Different solutions, or different mixes of solutions, may be necessary for the different types of capacity shortfall.

It should be recognised that the existing fleet of coal-fired power plant does an excellent job of covering for output shortfalls elsewhere and ensuring that power remains available at all times. This also ensures political stability which is rapidly affected by even minor power shortfalls. Within the EMR package as a whole, including the impact of carbon price support, care should be taken to ensure that a reasonable amount of such plant continues to have sufficient incentive to invest to meet the requirements of the IED and thus be able to continue to provide this essential role, albeit



gradually diminishing, throughout the 2020s when the problems associated with the intermittency and unreliability of wind generation, and the inflexibility of nuclear generation will be increasing.

Capacity payments represent an ideal mechanism to provide this incentive but must be signalled sufficiently early to incentivise the necessary investment decisions which will need to be taken well before the end of the present decade.

Scottish Coal expects coal-fired CCS plant to be able to fulfil this role for capacity shortfalls in categories (i) and (ii) above but, in view of the high level of investment required, capacity payments will be required as such plant may be operating on load factors that are less than optimum.

For capacity shortfalls in category (i), either new peaking plant, or older existing plant operating on low load factors can meet the requirement. Total costs will be lower if existing plant continues in operation, thus avoiding the investment cost of constructing new peaking plant.

It is imperative that the availability and level of capacity payments is signalled well in advance, i.e. ten years or more. Much existing plant will need to take investment decisions in the near future if it is to meet the requirements of the IED. Capacity payments will provide a stream of revenue that will help to justify that investment for a reasonable amount of such plant, but will be of no use if it is not known that they will be available at the time the investment decision has to be made.

The analysis in the EMR consultation document points to 3GW of plant “that would otherwise have closed” attracting capacity payments in the mid-2020s. It is not much use, for example, offering a capacity payment in 2024 for 2025-2026 if the plant has closed in 2023.

Scottish Coal understands that there are precedents for such long-term signalling. For example, National Grid has recently contracted for 800 MW of short-term reserve up to ten years in advance.

**20. Do you agree with the Government’s preferred policy of introducing a capacity mechanism in addition to the improvement to the current market?**

Yes.

**21. What do you think the impacts of introducing a targeted capacity mechanism will be on prices in the wholesale electricity market?**

Minimal. The wholesale price at the margin will continue to be determined by fossil fuel plant based on fuel prices plus the carbon price.

**22. Do you agree with Government’s preference for the design of a capacity mechanism:**

- a central body holding the responsibility;

Yes

- volume based, not price based; and

Yes. This would seem to be essential to ensure a guaranteed margin.

- a targeted mechanism, rather than market wide.

Yes, and targeted on those forms of generation that can meet the need. There can be no argument, for example, that intermittent and unreliable wind generation, or inflexible nuclear



generation, should not attract capacity payments. However, within the identified forms of generation, the capacity payments should be market wide.

- 23. What do you think the impact of introducing a capacity mechanism would be on incentives to invest in demand-side response, storage, interconnection and energy efficiency? Will the preferred package of options allow these technologies to play more of a role?**

Scottish Coal has no comment.

- 24. Which of the two models of targeted capacity mechanism would you prefer to see implemented:**

- Last-resort dispatch; or
- Economic dispatch.

Scottish Coal has no comment.

- 25. Do you think there should be a locational element to capacity pricing?**

Yes, if there is an identified need but any additional payment for a particular zone should not exceed the value of transmission losses associated with supplying from other zones.

### **Analysis of Packages**

- 26. Do you agree with the Government's preferred package of options (carbon price support, feed-in tariff (CfD or premium), emission performance standard, peak capacity tender)? Why?**

No. Scottish Coal can see no need for carbon price support in addition to FITs. FITs will provide both the price and the certainty for low-carbon generation. Carbon price support cannot add to this.

Carbon price support will incentivise switching from coal to gas with all the security of supply and price risks that will entail. Whilst this may result in earlier carbon reductions, it will lock in carbon emissions in the longer term because of the amount of unabated gas plant that will be constructed as a result. This will make it more difficult to meet longer-term carbon reduction ambitions.

Carbon price support could result in a windfall gain for existing nuclear power stations which would be wholly unjustifiable. There also needs to be clarification of the mechanism whereby carbon price support increases the overall carbon price in conjunction with the EU ETS price. Scottish Coal considers there is great potential here for confusion and unintentional consequences.

One further consequence of carbon price support is that it will drive the overall market for coal in the mid 2020s to quite low and, in any event, uncertain levels. Investment decisions are necessary for all of the UK's mines on a regular basis if their production capacities are to be maintained. Against the market background, these investment decisions will be challenging for both surface and underground mine operators. Scottish Coal urges the Government to carefully consider the EMR package in general, and carbon price support in particular, to ensure that investment decisions can be taken with confidence and this wholly unnecessary outcome avoided.

- 27. What are your views on the alternative package that Government has described?**

Scottish Coal can see no reason for the inclusion of both FITs and carbon price support. The EPS is wholly redundant unless it signals that it will be reduced to require new and CCR gas capacity to fit



or retrofit CCS, as well as new coal-fired capacity, once CCS has been technically proven and is commercially available. See above re. Unjustifiable windfall gains for existing nuclear stations.

**28. Will the proposed package of options have wider impacts on the electricity system that have not been identified in this document, for example on electricity networks?**

Scottish Coal has no comment.

**29. How do you see the different elements of the preferred package interacting? Are these interactions different for other packages?**

If the Government considers that the reform package has to include carbon price support, then the preferred package is as follows:-

- (i) carbon price support which should avoid, as far as possible, enforcing a switch from coal to gas that damages diversity and security of supply, risks high and volatile prices, and threatens the survival of the UK's deep mining capacity. Scottish Coal therefore supports Scenario1.
- (ii) An EPS that reduces the 100g CO<sub>2</sub>/kWh by 2025 for all new and CCR plant (150g CO<sub>2</sub>/kWh for CCS demonstration plants) once CCS has been technically proven and is commercially available. Without such a reduction, the EPS is redundant.
- (iii) Capacity payments targeted to plant that can provide what is required, but is market wide within such categories, and signalled sufficiently early to enable investment decisions to be made to meet the requirements of the IED.
- (iv) Feed-in tariffs to encourage CCS for both coal and gas, as well as other low carbon generation, with the level determined to cover costs and provide a reasonable return on investment. The FIT may be appropriately lower for CCS demonstration plants, subject to separate funding arrangements.

**Implementation Issues**

**30. What do you think are the main implementation risks for the Government's preferred package? Are these risks different for the other packages being considered?**

Scottish Coal considers that the main risk arises from the complexity of the package with a high potential for unexpected interactions and unintended consequences. In particular, Scottish Coal is concerned that, at peak periods on cold, still winter days; there may be a massive overdependence on gas in the mid 2020s. (See comments above about the risks of reliance on imported gas from Arab and former Soviet countries.) This gas plant will be unabated and result in long-term carbon lock-in making the achievement of longer term emissions reductions more difficult.

Scottish Coal urges the Government to carefully consider how the package will interact with the impact of the Industrial Emissions Directive and any potential related revisions to the National Emissions Ceilings Directive and the Best Available Technology Reference Documents for Large Combustion Plant. Given these complex interactions, it would be all too easy to lose existing capacity inadvertently too quickly as operators take the low risk option and close plant. In particular, the need to purchase allowances under the EU ETS from 2013 may result in plant opted-out under the LCPD closing prematurely.

Scottish Coal wishes to re-emphasise the risk to investment in UK mine capacity and the potential for premature closures.



**31. Do you have views on the role that auctions or tenders can play in setting the price for a feed-in tariff, compared to administratively determined support levels?**

Scottish Coal is not opposed in principle to FIT auctions but considers that they will be extremely difficult to design against a background of constantly developing and improving technology. Different projects will not reach given stages of development simultaneously with the potential for auctions to result in large-scale inefficiencies. Certainly in the initial states, FITs need to be administratively determined. Auctions might be introduced from, say, the mid 2020s as new technologies mature.

- **Can auctions or tenders deliver competitive market prices that appropriately reflect the risks and uncertainties of new or emerging technologies?**

Scottish Coal considers this to be unlikely

- **Should auctions, tenders or the administrative approach to setting levels be technology neutral or technology specific?**

Scottish Coal cannot see how these can be anything other than technology specific, certainly for FITs. Technological neutrality might be considered for capacity payments. It is also important to ensure that a mix of technologies emerges and that an over-dependence on any one technology, or group of technologies, does not arise.

- **How should the different costs of each technology be reflected? Should there be a single contract for difference on the electricity price for all low-carbon and a series of technology different premiums on top?**

Scottish Coal considers this proposal has merit.

- **Are there other models government should consider?**

As with the CCS demonstration project, there could be individual project negotiation, at least for larger projects and in the early stages of the development of a technology.

- **Should prices be set for individual projects or for technologies?**

For early, large projects (e.g. early CCS projects), prices may need to be set for individual projects. As technologies mature, technology based projects may then become appropriate.

- **Do you think there is sufficient competition amongst potential developers/sites to run effective auctions?**

Not in the early stages of the development of a technology (e.g. the CCS demonstration programme). Locational and other elements may be significant (e.g. length and size of CCS pipelines, 'first mover' issues).

- **Could an auction contribute to preventing the feed-in tariff policy from incentivising an unsustainable level of deployment of any one particular technology? Are there other ways to mitigate against this risk?**

No. Scottish Coal considers that an auction process is more likely to incentivise particular technologies.



- 32. What changes do you think would be necessary to the institutional arrangements in the electricity sector to support these market reforms?**

Scottish Coal has no comment.

- 33. Do you have view on how market distortion and any other unintended consequences of a FIT or a targeted capacity mechanism can be minimised?**

Scottish Coal has no comment.

- 34. Do you agree with the Government's assessment of the risks of delays to planned investments while the preferred package is implemented?**

It is imperative that the CCS demonstration is not delayed. To this end, there needs to be immediate clarification that carbon abated from CCS plants WILL receive relief from carbon price support and, that some relief applies to the unabated proportions of such plant. With respect to the latter, Scottish Coal cannot see any commercial argument for investing in a CCS demonstration plant (even if the CCS is fully funded) as opposed to an unabated gas plant.

- 35. Do you agree with the principles underpinning the transition of the Renewables Obligation into the new arrangements? Are there other strategies which you think could be used to avoid delays to planned investments?**

Scottish Coal has no comment.

- 36. We propose that accreditation under the RO would remain open until 31 March 2017. The Government's ambition is to introduce the new feed-in tariff for low-carbon in 2013/14 (subject to Parliamentary time). Which of these options do you favour:**

- All new renewable electricity capacity accrediting before 1 April 2017 accredits under the RO;
- All new renewable electricity capacity accrediting after the introduction of the low-carbon support mechanism but before 1 April 2017 should have a choice between accrediting under the RO or the new mechanism.

Scottish Coal has no comment.

- 37. Some technologies are not currently grandfathered under the RO. If the Government chooses not to grandfather some or all of these technologies, should we:**

- Carry out scheduled banding reviews (either separately or as part of the tariff setting for the new scheme)? How frequently should these be carried out?
- Carry out an "early review" if evidence is provided of significant change in costs or other criteria as in legislation?
- Should we move them out of the "vintaged" RO and into the new scheme, removing the potential need for scheduled banding reviews under the RO?

Scottish Coal has no comment.

- 38. Which option for calculating the Obligation post 2017 do you favour?**



- Continue using both target and headroom
- Use Calculation B (Headroom) only from 2017
- Fix the price of a ROC for existing and new generation

Scottish Coal has no comment.



