[redacted]

Dear Mr Shaw,

Re Carbon price floor consultation

Thank you for the opportunity to comment on your proposed carbon price floor.

We agree that an appropriately high and sufficiently certain carbon price is one of the necessary foundations upon which the UK can build its low carbon economy.

We have two points to make.

1. A strong carbon price signal is to be welcomed. The proposed CCL Carbon Price Support Rates could strengthen the currently weak carbon price signal provided by the EU Emissions Trading Scheme. In so doing, it could encourage low carbon power generation in the UK.

   By making this change now, the government can ensure that the large forthcoming programme of capital investment in the power generation is delivered in line with its carbon reduction targets. This policy avoids otherwise potentially significant costs from inappropriate asset formation.

2. The proposal leaves gaps in the coverage of carbon prices. The proposal leaves important sectors still lacking a comprehensive carbon price incentive. One of these is waste.

   The absence of a carbon price covering emissions embedded in waste is a major omission. We know of significant low-cost abatement opportunities in the waste sector which, in the absence of a carbon price, have not and will not be taken up.

   Like power generation, the waste sector has a large forthcoming programme of capital

investment. Unlike the power sector, there are incomplete incentives to design these new assets to meet low carbon targets. As a result, there could be significant costs in the form of carbon inefficient assets which, before too long, will become stranded. Many of these assets will be owned by or under contract to local authorities.

A carbon price would have a transformative effect in the waste sector. Here are two examples from our own portfolio.

Example one Landfill gas currently escapes from around 11,000 landfill sites that are unregulated in relation to their greenhouse gas emissions. We place a gas-impermeable cap, rich in pulverised fly ash (a waste from the combustion of coal), over the unregulated site. This contains the methane, which we collect and use to generate power and heat, reducing its global warming impact to zero (considering also the benefits from displacing fossil energy sources). There is no carbon price on fugitive methane to encourage this mitigation. Without it, the scheme is commercially viable at far fewer sites.

Example two We take green waste as a fuel and generate renewable power and heat. Instead of releasing carbon dioxide in the process, we can retain it in the form of biochar, a stable charcoal-like compound which locks up the carbon for hundreds of years. In this way, we can absorb carbon dioxide from the atmosphere while generating useful energy. There is no carbon price to encourage this carbon capture.

In both cases since the fuel is a waste, it is cheap, and offers a low-cost abatement opportunity. Yet carbon prices to encourage mitigation of these greenhouse gas emissions are missing.

We would be happy to share with you with further analysis of the effects of the introduction of a carbon price in the waste sector. I would also be grateful if you would acknowledge receipt of this email.

Yours sincerely,

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Martin Shaw
Environmental Taxes Team
HM Revenue and Customs
By e-mail to: Environmentaltaxes.consultation@hmrc.gsi.gov.uk 11 February 2011

Dear Mr. Shaw

Carbon price floor: support and certainty for low-carbon investment

Thank you for the opportunity to provide comments on the above consultation paper.

Responses to the consultation questions on which we are able to comment are set out below. By way of background, it is London School of Business and Finance's mission to become the first choice for business education in Europe. Through educating the world's most creative, talented and ambitious students, London School of Business and Finance aims to bridge international boundaries and provide individuals around the globe with an opportunity to achieve academic, personal and professional success. LSBF attract over 15 000 quality candidates from over 140 countries worldwide, and continues to experience exponential growth, both on-campus and online, all around the world, while continuing to develop corporate training, partnerships and associations with best-practice organisations globally.

In partnership with established and globally renowned academic partners, LSBF deliver two accredited MBA programmes and a suite of postgraduate and undergraduate business degrees (in partnership with University of Wales and Grenoble Graduate School of Business, triple accredited by AMBA, EQUIS and AACSB). LSBF is also a well established provider of professional programmes such as the ACCA, CIMA, CFA® and CIM, and operate best practices school-wide.

The school continues to expand rapidly in response to demand from UK domestic and international students for globally accredited business qualifications and currently operates four campuses across the UK; London (Holborn and Marble Arch), Birmingham and Manchester as well as international offices in Prague (Czech Republic), Toronto (Canada), Moscow (Russia), Hong Kong (China), Johannesburg (South Africa), Port Luis (Mauritius), Bogota (Colombia) and Almaty (Kazakhstan).

The school recognises its responsibility to the next generation of business and finance leaders in terms of equipping that generation with the knowledge, skills and experience to manage the necessary transition to a low carbon economy and society. As part of this effort we are in the process of designing and validating an MBA programme in Carbon Entrepreneurship. We are pleased to know that we are not alone in this endeavour and that other business schools are already delivering similar programmes, or are working towards them. What has become very clear over the last three years is that business as usual is no longer an option. A banking crisis that nearly destroyed the heart of capitalism, an economic recession, and continued rebalancing

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of the global economy have convinced us that carbon is no longer a luxury about which it is fashionable to be sceptical. The placing of carbon at the centre of economy and society is a wake-up call to a world of significant population growth, ensuing resource scarcity, chronic fossil fuel dependency, fishery depletion, and for the UK, as with many other jurisdictions, short term energy dependency.

We therefore welcome the proposals set down in this consultation and would urge speed and decisiveness in their implementation.

A small but perhaps important definitional point is the need to clarify whether the consultation is referring to Carbon Dioxide or Carbon Dioxide Equivalent throughout. There is a significant difference and much confusion of the two terms throughout the technical and academic literature.

3.A1: What are your expectations about the carbon price in 2020 and 2030? And how important a factor will it be when considering investment in low-carbon generation?

Classical economic theory would predict a steadily increasing carbon price between now and 2030. However the "learning-by-doing" nature of the regulatory framework associated with the EU ETS has pinpointed significant flaws in the legislation and its implementation. The most recent hacking into and stealing carbon credits from the Czechoslovak registry is one in a series of scandals and miscalculations that have led to a poorly regulated market and therefore a subdued and volatile carbon price. Addressing and correcting these flaws should be an urgent political priority at both EU and member-state level.

Carbon price expectation for the medium to long-term is absolutely fundamental for the potential investor in low-carbon infrastructure. As the consultation notes the capital expenditure investment is considerable with very long payback periods. Therefore any factor which can be given greater certainty in the investment appraisal decision is critical to a successful behavioural shift.

3.A3: How much certainty would investors attribute to a carbon price support mechanism if it were delivered through the tax system?

Despite frequent criticism, we agree with Sir James Mirrlees ("Reforming the tax system for the 21st century" – Institute for Fiscal Studies, 2010) that the UK tax system is "not, on the whole, a dreadfully bad one". For example, the taxation of savings is much improved. The taxation of owner-occupied housing has been rationalised. And the UK system has fewer loopholes and opportunities than some others. However, the authors' balanced assessment is tested to the limit in Chapter 11 of that publication on 'Tax and Climate Change'. Here the authors conclude that we are a long way from having anything like a coherent approach to the pricing of greenhouse gases, as in most countries. And this is a result of overlapping policies, poorly designed, and on the basis of, apparently, the flimsiest of evidence. The Climate Change Levy (CCL), for

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example, introduced in April 2001teaches us several lessons about the design and implementation of an environmental tax or fiscal incentive:-

- It is closer to a tax on energy consumption rather than a tax on greenhouse gas emissions. It is in fact a tax on the supply of energy to business, applied at the same rate whether generated by gas, coal or nuclear power, despite their very different emission profiles
- It was a tax that was intended to be revenue neutral. The neutrality was intended to be achieved by a 0.3% reduction in Employers National Insurance Contributions (NIC). In fact, the employer has benefited significantly from this measure, since the saving in NIC quickly outstripped the revenue raised by CCL
- It was applied only to businesses, exempting households all together. Households in the UK are reckoned to be responsible for approximately 40% of the UK's GHG emissions
- Alongside CCL was granted the ability to form Climate Change Agreements (CCA) for those organisations in the energy intensive industrial sectors whereby they would receive 80% exemption from CCL in exchange for agreeing to meet energy efficiency targets

Given that CCL was forecast to raise only £0.7bn of revenue in 2010/11 out of a total tax take of £540.8bn for that year, one queries its rationale and its effectiveness.

We believe that the CCL is but one example which has dented confidence in the transparency, certainty, stability and longevity that should be at the heart of the UK's tax system and thereby ease investor anxiety. This is a broader issue than simply allaying uncertainty about the future price of carbon but is nonetheless vital to engendering longer term thinking in public policy and regulation.

Box 4.B: Questions on administration

We would make the plea that the provision of carbon price floor support does not become an issue that is restricted to registered suppliers of energy which HMRC calculate as 255 organisations in the consultation document. This initiative is intended to support the long term transition from fossil fuel dependency to a plurality of renewable technologies and energy security. The transition requires widespread acceptance and awareness of consumers of energy – both corporations, but also, importantly, individual households. One essential factor by which an 80% reduction in GHG emissions can be achieved across the EU by 2050 is by energy efficiency improvements of 2% per annum *year on year*. To achieve this requires a public service consciousness raising campaign on a par with the great improvements in public health in Victorian Britain or the significant reduction in the smoking population following definitive epidemiological studies linking cancer to smoking in the 1960's.

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Specifically there is much more that could be done by registered suppliers of energy products to label utility bills for corporations and individual households in terms of directly linking GHG emissions to units of electricity to the cost of energy.

4.C3: Do you agree that tax relief should be considered for power stations with CCS? If so, what are the practical issues in designing a relief; what operational standards should a CCS plant meet in order to be eligible; and how might these issues differ for demonstration projects?

While we are certainly not qualified to remark on operational standards at a CCS plant we do feel that the existing Research and Development tax credit regime should be wholly appropriate to CCS development. Self- evidently the design and construction of CCS capability is about the 'resolution of technological uncertainty' and should therefore sit comfortably within this regime. The weaknesses of the current R&D tax regime are well known and need to be addressed but we see little value in adding in a new relief.

We note that the use of the R&D Tax Credit has additional economic benefit for the investor, whereas the Enhanced Capital Allowance scheme promises only improvement in cash flow and the paying of tax. Anecdotal evidence is that the ECA regime suffers from uncertainty in terms of assets which may or may not come within the scope of the scheme.

4.E1: How should the carbon price support rates be set in order to increase certainty for investors, in particular over the medium and long term?

We agree with the Government's proposal as set out at 4.40. This would include a rate escalator. The UK's experience of such an escalator in the case of the Landfill Tax is instructive. There, despite cross Party support, the original price per tonne was set at such a low level that it is only in recent years that there is evidence of significant behaviour change in the supply chain. By comparison the Danish experience was to set the price per tonne at an initial swingeing level, together with the necessary investment in recycling facilities. The result was a significant reduction in construction and demolition waste to landfill in a very short time.

It is vital, therefore, that the Government set the initial rate for carbon price floor support at an appropriate and challenging level. One of the lessons that should have been learned from our experience of the UK ETS, the EU ETS and the Carbon Reduction Commitment is that the price of carbon, and therefore the level of support required from the government must be set at a level which will lead to behaviour change. In the past too much store has been placed with economic analysis which, while relevant and valuable, has tended towards a wide range of values from zero to several hundred pounds per tonne of emission. We would encourage the government to engage directly with the business sector, and particularly with those individuals in the CFO role, when setting the price level. Such engagement should be robust and critical to draw out that which is material from the CFO's perspective in the individual business. Materiality and

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attention to revenue maximisation and cost reduction is after all what drives financial performance over the long term. In short there needs to be a shift of regulatory focus from the macro- economic to the practice of accounting.

We hope you find these brief observations of value. We reiterate that this measure is potentially of great value in setting the UK on the path to a low carbon economy and society and that the benefits which will be realised go far beyond the technicalities of carbon pricing.

If you would like further clarification to the points raised here, or if we can help further in progressing this important cross-disciplinary initiative, please do not hesitate to contact the signatory below.

Best regards,

[redacted]


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RENEWABLE
POWER

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11 February 2011

Carbon Price Support Consultation

Mainstream Renewable Power is a leading renewable energy company developing renewable energy projects across several continents. The company expects to be a major provider of renewable capacity for the UK and has a development pipeline in excess of 5,000MW.

We are developing onshore wind projects in North America, South America, and South Africa. In the German North Sea, we are developing the 1000 MW Horizont project.

In the UK, we are developing two large offshore wind projects. In Scottish territorial waters we are developing the 450 MW Neart Na Gaoithe project. Additionally, through the SMart Wind consortium, we are developing the 4000MW Hornsea Round 3 zone with our partners, Siemens Project Ventures.

We welcome the considerable and detailed amount of work which has been put into the Electricity Market Reform (EMR) process as a whole as well as this carbon price support consultation specifically.

We support the proposals for carbon floor price support. However, we believe that it can only be successful in inducing investment in low carbon generation if it is implemented in a coordinated fashion with the other elements of EMR; an Emissions Performance Standard (EPS), a capacity mechanism, and most importantly, the new financial support mechanism, (either a contract for difference or premium FIT). Our responses to the questions below lay out how we feel that can best be achieved.

Investment

3.A1: What are your expectations about the carbon price in 2020 and 2030? And how important a factor will it be when considering investment in low-carbon generation?

We do not make specific forecasts of carbon prices. Rather, we rely on accepted industry forecasts. The current primary determinant of carbon prices is the EU ETS. Experience so far has shown the price path set by the EU ETS to be difficult to forecast and insufficiently robust to be used as a reliable investment variable. As such we welcome the government's intention to strengthen both the level and trajectory of carbon prices via this proposal. We still consider power price forecasts to be very uncertain in the 2020-2030 timeframe, partly due to uncertainty surrounding the future price of carbon.

3.A2: If investors have greater certainty in the future long-term price of carbon, would this increase investment in low-carbon electricity generation in the UK? If so, please explain why.

Yes, increased certainty surrounding the future levels and trajectory of carbon prices would further incentivise investment in low carbon investment. Reducing the uncertainty surrounding the price of carbon acts to reduce uncertainty surrounding both the prospects for low carbon generation and the level of future power prices. This decrease in uncertainty will allow improve project economics.

3.A3: How much certainty would investors attribute to a carbon price support mechanism if it were delivered through the tax system?

Certainty is increased where the tax system is clearly used as an instrument of specific policy, rather than trying to achieve multiple objectives. As such, it is important that the linkage between the carbon price support mechanism, energy policy and support for low carbon generation is maintained and clearly defined. We believe the tax system is the best mechanism to implement a carbon floor price. There are a number of measures government could take to increase the credibility of this particular tax measure:

- Consistency with the ongoing development of the EU Emissions Trading Scheme (ETS). This is necessary to ensure that as the EU ETS evolves and becomes more effective in delivering its objectives, the carbon price support mechanism recognises this and ensures that UK plc is not disadvantaged by effectively double taxing the energy industry.

- Setting a clear timeline for both the review process and the trajectory of carbon price tax rates over time. The consultation envisages the carbon price increasing over time. More detail is required with regard to the path of escalation, the parameters and variables which will be taken into account in any revision, consultation processes [e.g. potential advisory roles for the Committee on Climate Change] and the timetable for review. The carbon floor price will work in close conjunction with the proposed FIT/CFD mechanism to incentivise low carbon generation. In setting the CFD/FIT support level, the carbon floor price and its future path should form a key part of the exercise such that any change to the carbon floor price is incorporated into the final adjustments made to the FIT/CFD. This will protect investment in low carbon generation from uncoordinated changes to the carbon floor price.

3.A4: In addition to carbon price support, is further reform of the electricity market necessary to decarbonise the power sector in the UK?

Yes, the other key planks of Electricity Market Reform (ERM) will all work in conjunction to deliver decarbonisation of the UK's power sector.

- The Emissions Performance Standard (EPS) provides a sufficient hurdle to ensure that high carbon generation does undermine the overall policy intent, but allows plant to be built which can contribute to providing the necessary reserve and balancing capacity required in the future low carbon electricity mix.

- The Capacity mechanism will ensure there is adequate reserve to balance a low carbon electricity system.
- The CFD/FIT will ensure that low carbon generation is adequately supported to deliver the necessary investment.

Furthermore, given the amount of new investment needed in the low carbon sector, significant changes to the electricity market need to be undertaken to open the market to new entrants. Although some potential measures are discussed in EMR, (e.g., amending the cash out rules), these are unlikely to be sufficient. Ofgem is currently investigating electricity market liquidity and is expected to propose potential solutions to the ongoing lack of liquidity. In assessing these proposals, their impact on attracting low carbon investment should be considered.

Finally, all low carbon generation projects face significant transmission and planning obstacles during the development phase. Although not strictly part of the electricity market framework, resolving these issues is an absolutely necessary first step in bringing low carbon generation online.

Administration

4.B1: What changes would you need to make to your procedures and accounting systems to ensure you correctly account for CCL on supplies to electricity generators?

NA

4.B2: How long would you need to make the necessary changes to your systems to account for CCL on supplies to electricity generators?

NA

4.B3: Please provide an estimate of how much the system changes would cost, both one-off and continuing?

NA

Types of generator

4.C1: Do you agree that all types of electricity generators should be treated equally under the proposed changes? If not, please explain why.

Yes, the tax should be based on the carbon content of the input fuel, not the type of generation.

4.C2: Is there a case for providing additional or more preferential treatment for CHP? If so, what is the best way of achieving this?

We have no comment on this.

4.C3: Do you agree that tax relief should be considered for power stations with CCS? If so, what are the practical issues in designing a relief; what operational standards should a CCS plant meet in order to be eligible; and how might these issues differ for demonstration projects?

No, we do not agree. The value in a carbon tax is that it applies equally across all sectors and maintains, to the greatest extent possible, the free market structure of the electricity system. Any relief for CCS should only come after the technology has been proven and then only to the extent that it limits carbon emissions.

Imports and exports

4.D1: What impact would the Government's proposals have on electricity generators and suppliers that export or import electricity?

We agree that the competitiveness of UK industry needs to be included in any consideration of a carbon tax. However, given that the UK's electricity trading partners are also likely to implement some kind of carbon price support, and given the limited current capacity for trading electricity, we suggest that no specific measures be taken immediately to address this issue. The government needs to incorporate domestic policy priorities as it proactively pursues its vision of the Single Market in energy with our European partners. By promoting a clear vision for the way in which electricity is transmitted and traded across Europe, this will enable the UK to maximise the benefits of both our renewable and other low carbon resources.

4.D2: What impact might the proposals have on trading arrangements for electricity?

NA

4.D3: What impact might the proposals have on electricity generation, trading and supply in the single electricity market in Northern Ireland and Ireland?

NA

Carbon price support mechanism

4.E1: How should the carbon price support rates be set in order to increase certainty for investors, in particular over the medium and long term?

Carbon price support rates should be set for as long a period as possible. In addition, any change to the rates should be made according to a clear, transparent, and agreed methodology so they can provide confidence to all relevant parties.

Furthermore, any change in carbon tax rates must be made in a consistent manner with the CFD/FIT mechanism for low carbon generation. If not, effectiveness of the CFD/FIT in delivering low carbon generation will be seriously compromised.

4.E2: Which mechanism, or alternative approach, would you most support and why?

Of the options presented, we prefer the "rate escalator" option as it provides the most certainty. However, we would propose that instead of rates being set for the life of a parliament, that rates be set to at least 2020. This is the best way to ensure investor confidence.

4.E3: What impact would the proposals have on your carbon trading arrangements?

NA

Future price of carbon

4.F1: Should the Government target a certain carbon price a) for 2020 and b) for 2030? If so, at what level?

Yes, government should target both a 2020 and 2030 carbon price and also set out a trajectory to achieve it. As the carbon price support mechanism is primarily designed to assist decarbonisation, then a primary input to both the levels and trajectory should be formal guidance from the Committee on Climate Change. This will ensure that as developments occur, they are assessed against both progress to date and the likely measures required over the medium to long term, to achieve policy objectives.

4F2: What is the most appropriate carbon price for the UK to meet its emissions reduction targets in the power generation sector? How would this be affected by changes in the structure of the electricity market?

See above 4 F1. The most appropriate carbon price is the one which delivers the policy objectives with regard to long term decarbonisation of the economy, whilst ensuring that the competiveness of

UK plc is maximised. This will depend on a myriad of factors and as yet unforeseen developments, As such, it is important that an appropriate, timely and effective review mechanism is in place, such that required adjustments can be made in the light of actual performance and prospective developments.

4.F3: When would be the most appropriate time for introducing a carbon price support mechanism and what would be the most appropriate level?

A carbon price support mechanism should be introduced as soon as practically possible. Prior to this, in order to build confidence, the mechanism for determining and reviewing the price should be published, along with the initial proposed level. At the very latest however, the carbon price needs to be in place before the first CFD/FIT support levels are in place. Although the Renewables Obligation (RO) will not be phased out till 2017, EMR may result in low carbon projects having the option of taking the CFD/FIT earlier.

Electricity investment

5.B1: What impact would you expect the carbon price support mechanism to have on investment in low-carbon electricity generation?

Increased certainty surrounding the future levels and trajectory of carbon prices will incentivise investment in low carbon investment. Reducing the uncertainty surrounding the price of carbon acts to reduce uncertainty surrounding both the prospects for low carbon generation and the level of future power prices. This decrease in uncertainty will improve project economics.

5.B2: What other impacts would you expect carbon price support to have on investment decisions in the electricity market?

In conjunction with the EPS, carbon price support should prevent any new baseload coal generation. Also, although new gas generation plant will still be viable, it should be restricted to a peaking role.

5.B3: How should carbon price support be structured to support investment in electricity generation whilst limiting impacts on the wholesale electricity price?

The primary purpose of the carbon floor price is to reduce the carbon intensity of the UK power sector. If this is done effectively, the power sector is substantially decarbonised, consumers will not pay significant total amounts of carbon tax, even though the rates themselves may be high.

Furthermore, the carbon tax forms part of a wider suite of EMR measures that will decarbonise the UK power sector. The most cost efficient way to incentivise low carbon generation is for the carbon price to be consistent with and complement the other measures contained in EMR, particularly the CFD/FIT.

Existing low-carbon generators

5.C1: Can you provide an assessment of the impact of the proposals on your generation portfolio and overall profitability?

We cannot provide a quantitative assessment. Mainstream Renewable Power only develops renewable projects so these measures will have no effect on the composition of our portfolio. However, a well designed carbon price support mechanism tax will enhance the ability of Mainstream to deliver projects in the UK.

5.C2: What would be the implications of supporting the carbon price for existing electricity generators and how should the Government take this into account?

The minimum carbon price should be applied to all generators, existing and prospective. Otherwise, existing generators would benefit from windfall profits as a result of the increase in prices but no corresponding carbon tax on their inputs.

Although a minimum carbon price applied to all generation may benefit existing relatively low carbon generation over high carbon generation, this is an acceptable outcome. Although, the carbon support mechanism is a new instrument, general government policy at both the UK and EU level has always supported increasing the cost of carbon somehow. Therefore, we do not believe this new measure can be characterised as unexpected.

Electricity price impacts

5.D1: How do you currently manage fluctuations in the wholesale electricity price?

Offshore wind projects have relatively high capital costs and low operating costs. Both capital and operating costs are fixed. In order to make an investment decision in this type of project where a large capital commitment is made up front, certainty of future revenues over the life of the project is of paramount importance.

Independent generators like Mainstream currently manage this risk by entering into long term Power Purchase Agreements (PPAs) with utilities. However given the lack of liquidity in the market for such PPAs, independent developers must accept significant discounts to the market price of power in return for these guaranteed prices. This is a significant cost to independent developers which is reflected into the level of renewable support (currently through the RO), and ultimately paid by consumers.

In order to guarantee a minimum future electricity prices,

5.D2: What difference will supporting the carbon price make to your business?

Along with the other elements of EMR, supporting the carbon price will improve the economics of offshore wind and allow us to deliver more offshore wind projects.

5.D3: As an electricity generator or supplier, how much of the cost of the carbon price support would you pass on to consumers?

None. Offshore wind is currently supported by the RO and soon to be proposed by a CFD/FIT. With either a CFD/FIT/RO, the level of support is set at such a level as to make investment in renewable/low carbon projects just viable. Any increase in power prices due to a minimum carbon price would therefore be offset by a reduction in the CFD/FIT/RO level.

5.D4: As a business, how much of the cost of energy bills do you pass on to customers?

NA

5.D5: How might your company or sector be affected and would be there any impact on your profit margins?

As explained above, a minimum carbon price of carbon would allow Mainstream to deliver more renewable projects, however, profit margins would be unaffected.

5.D6: Do you have any comments on the assessment of equality and other impacts in the evidence base of the Impact Assessment, included at Annex D?
NA

I hope that you find this response useful. Please do not hesitate to contact me if you require further information or clarification.

Yours faithfully,

[redacted]

[redacted]

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MCCG
Manufacturers' Climate Change Group

Manufacturers' Climate Change Group
Response to

HM Treasury Consultation:
Carbon Price Floor: support and certainty for low-carbon investment

The Manufacturers' Climate Change Group (MCCG) represents key UK manufacturing sectors affected by the EU Emissions Trading Scheme and other Climate Change instruments, and comprises: Aluminium, Asphalt, Cement, Ceramics, Chemicals, Food and Drink, Foundries, Glass, Gypsum, Lime, Metalforming, Mineral Wool, Motor Manufacturers, Non Ferrous Alliance, Paper, Quarry Products and Steel. Collectively our members employ approximately two million people with an annual turnover totalling more than £200 billion.

MCCG welcomes government's stated intention to rebalance the economy towards manufacturing, and support the objective of moving to a low carbon baseload generation mix.

However, while appreciating that the Government's carbon price support (CPS) proposals are designed to bring long term certainty to investors in new nuclear generating capacity, CPS will also significantly increase our member's costs on a unilateral basis. We are concerned that our members should enjoy a similar level of certainty to support their long term business decisions on UK investments up to 2020.

We therefore find it difficult to support the Government's CPS proposals in the absence of measures to fully mitigate the cumulative impact of the UK and EU's climate change and energy policies on our energy costs.

Our key proposals are:

1. Cumulative impact assessment / carbon leakage risks - We urge the Government to progress its assessment of the cumulative impacts of its energy and climate change policies on manufacturing sectors that are vulnerable to competitive pressures or carbon leakage. In the absence of a full cumulative assessment, the RIA's generalised statements about impacts on profits and competition cannot be taken to reflect the impacts on manufacturers or to satisfactorily identify those sectors at risk of carbon leakage. We ask that these cumulative impacts are fully mitigated.

2. Either CPS or CfD could drive low carbon investment - we cannot see the need for both a carbon price support (CPS) tax and "contract for a difference" to drive a low carbon generation mix. There is no need for either measure to take full effect until new nuclear capacity comes on stream.

3. We need early long term certainty over the future of the Climate Change Agreements and participants entitlement to relief from downstream CCL - The last Government imposed a larger than needed reduction in relief on the downstream rates of relief for CCA participants, and we are currently engaged in an extended debate about the future of the CCAs. We would like to see a new Phase of the CCAs and relief from CCL maximised. However, this will fall far short of compensating for the impact of CPS, so Government will need to consider wider mitigation options as part of its cumulative assessment (item 1).

MCCG would be pleased to participate in further discussions to contribute to constructive solutions.

10th February 2011

Via email to:
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Dear Mr Shaw

Carbon Price Floor

The Mineral Products Association (MPA) is the trade association for the aggregates, asphalt, cement, ready-mixed concrete, lime, mortar and silica sand industries. With a growing membership of 272 companies, it is the largest UK trade association in the sector and represents the majority of independent companies, as well as the 9 major international and global companies. The MPA represents 100% of GB cement production, 90% of aggregates production and 95% of asphalt and ready-mixed concrete production. Each year the industry supplies £5 billion of materials to the £110 billion construction and other sectors. Industry production represents the largest materials flow in the UK economy. The members of the MPA consume around 70 PJ of energy of which around 58 PJ is direct heat where biomass and mixed biomass use represents around 5% of thermal energy.

MPA is disappointed that the HM Treasury Carbon Price Floor consultation is not looking at alternatives to a carbon price floor. The proposal will add direct cost to our members operations and provide additional pressure on the MPA products groups that have been identified as the most vulnerable to carbon leakage, namely cement and lime production. MPA supports a low carbon electricity supply but this should not mean that production costs in the UK are appreciably higher than other European Member States and trading partners because this would restrict UK manufacturing growth.

Added cost

One of the key principles of emissions trading is to target emissions reduction at the point of lowest cost. The carbon price floor (CPF) interferes with this principle by increasing costs for energy consumers. Moreover, it is unclear from the consultation how the CPF may affect the EU allowance (EUA) price and its market liquidity, further impacting the production of commodity products.

Energy intensive industries already pay a climate change levy rate that is higher than the EU minimum set in the taxation of energy products directive. At the full CC Levy rate UK electricity is taxed at 10 times the EU minimum. The CPF aims to provide the necessary investment certainty for low carbon power generation and because of this there is an opportunity to reduce the overall tax burden on industry by reducing the climate change levy rate for electricity to the EU minimum level for industries that are vulnerable to carbon leakage, given that all possible opportunities will be given to electricity investors by the CPF.

CPF uncertainty

Whilst the CPF is designed to increase certainty for investors in generation projects it may decrease certainty for energy consumers and affect security of supply. This may depend on how the 'CCL Carbon Price Support Rates' are calculated, how frequently they are updated and crucially, what will be the future energy technology mix. It is crucial that the UK does not add unnecessary cost to UK business and therefore the carbon price support rate should be capped at the level required for low carbon investment. The carbon price support should not be incrementally increased as another revenue stream for the Treasury because the impact on UK manufacturing would be counterproductive for the economy. Without hypothecation of the tax revenues there is no transparency or guarantee of how the revenues will be allocated and this does nothing for certainty or confidence that the CPF is the correct method for driving a low carbon energy supply. Furthermore, it appears that the 'Contracts for Difference' proposals, in the forthcoming electricity market reform, provide a clearer and firmer signal to energy investors than the CPF, this raises the question whether both policy measures are needed.

There is already a considerable uncertainty over CCA/CCL and other climate change policies. CPF adds further uncertainty of the costs of doing business in the UK, which is important to note as many of the headquarters of the major cement and lime businesses are overseas and investment decisions are taken outside of the UK.

Scope

The CPF proposals appear to affect all electricity production. MPA has members that often require small scale generation, not for onward supply and not grid connected, to cover supply interruptions, operate in remote areas and use as safety back-up. MPA calls on the Government to exclude any activities that are not grid connected from the CPF. Furthermore, industry opportunities to counteract the impact of the CPF by using autogeneration will also be damaged by the introduction of the CPF. Autogeneration should be encouraged and not disincentivised by the application of the CPF.

Consequences for industry

The proposal to tax fossil fuels used for electricity generation by removing the CCL exemption will have consequences for the waste fuel market. The likely cost increase of waste derived fuels will make it more difficult for the cement and lime operators to utilise the full potential of these fuels because the added cost of fossil fuels will make waste derived fuels more attractive to large scale power generation. This is exacerbated by the incentives provided by ROCs for power generators and planned Renewable Heat Incentive (RHI) payments for non-ROC heat both of which are currently unavailable to cement and lime operators. These market interventions disadvantage the cement and lime operators in using alternative waste derived fuels when they are already competing in the waste fuel market with incinerators that are outside the scope of the EU ETS and therefore do not pay to emit CO_2.

Whilst the CPF consultation document recognises that the profits of the cement and lime sectors will be adversely affected by the CPF, it does not acknowledge the cumulative impact from the range of energy and climate change policies that are impacting our sectors and the role that the CPF will play in making the situation worse.

The Regulatory impact assessment (para 83) acknowledges that cement and lime production will be two of the sectors hardest hit by the CPF. The assumption (para 84) that companies are likely to pass on the cost of the CPF is overly simplistic. Cement and Lime production in Europe has been designated as highly vulnerable to carbon leakage. The CPF not only adds to the pressure to source these materials from outside of Europe but when applied to low cost products such as these, the CPF adds further pressure and encourages other EU member states to supply the UK market. Therefore, the RIA(p2) is incorrect there will be no significant impact on competition.

The regulatory impact assessment accompanying the CPF proposals is deficient and does not take full account of the potential consequences for business. There is a real danger that, like Phase I EU ETS, that the electricity supply industry will attract windfall profits by passing on the cost of the CPF without having to make investments in the short term.

MPA's request to Government

1. Energy Intensive Industries that are recognised as vulnerable to carbon leakage should be protected from any cost pass through of the 'CCL Carbon Price Support Rates'.
2. Energy Intensive Industries that are recognised as vulnerable to carbon leakage should be provided with compensation for increased electricity prices. The UK Government should adopt the option given in the EU ETS directive Article 10a(6) that allows for increases in electricity prices due to EU ETS to be compensated. Given that the CPF proposal is to go beyond the EUA price then there is a strong case to protect industries vulnerable to carbon leakage.
3. The UK Climate Change Levy rate for sectors which are vulnerable to carbon leakage should be returned to 20% of the full levy rate paid by those not in a Climate Change Agreement.
4. To offset some of the impact of the CPF Government should extend the incentive tariff of the RHI to include directly fired operations that have the potential to use biomass fuels.
5. Annual setting of CCL Carbon Price Support rates so that the estimated cost is closest to the actual cost.
6. Government should recognise energy intensive industries as part of the solution to providing a low carbon economy, the basic construction and other vital materials provided by MPA members will form a significant part of a low carbon economy.
7. Government should revisit its regulatory impact assessment to properly assess the impact on manufacturing by looking at the impact of CPF in the context of the cumulative burden on operators and sectors rather than an oversimplified macroeconomic assessment.

I hope that you find these comments useful. MPA is available to provide any further information that you may require.

[redacted]

MINESCO

Martin Shaw
Environmental Taxes Team,
HM Revenue and Customs
HM Treasury
1 Horse Guards Road
London
SW1A 2HQ

31st January 2011

Dear Sirs,

RE: Carbon Floor Price Consultation

We refer to the above consultation covering Government proposals for the introduction of a Carbon floor price to provide support and certainty for low carbon investment. The Mineral Wool Energy Savings Company represents all UK manufacturers of Mineral Wool insulation for the purposes of the Climate Change Agreements and EU Emissions Trading Scheme. Although the consultation states that it is aimed at electricity generators, we believe that there are important impacts for our sector which we have addressed in this response.

By way of introduction, although in use insulation saves many more times the carbon than is emitted during manufacture, the production of mineral wool insulation is energy intensive. Consequently the sector is already regulated by IPPC, covered under a CCA and captured by the EU ETS. Yet the products manufactured are central to the delivery of the many Government policies aimed at alleviating fuel poverty and combating Climate Change. For example, a minimum of 68% of savings to be delivered under the extended "Carbon Emissions Reduction Target" (CERT) obligation placed on energy suppliers must be delivered by insulation measures. Similarly the flagship "Green Deal" proposition and CERT successor "ECO" obligation will also be heavily dependent on insulation measures. However, it must be recognised that "Green Deal" is an untested proposition, and as such already introduces significant new risks for expansion of manufacturing investment that will be required to support delivery. Our first point therefore concerns the policy intentions behind the proposals.

1) Low Carbon Investments

We believe that we can justifiably claim to be one of the low carbon industries that will support the creation of Green Jobs. Yet we struggle to see how the CFP proposals will provide *support and certainty* for capacity investment already made by the sector to deliver successive increases of activity under CERT, or encourage new investment in R&D and capacity to support the roll out of Solid Wall insulation that is central to delivery of the Green Deal. On the contrary, the introduction of an additional cost on electricity over and above the

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[redacted]

CCL can only serve to introduce additional project risk and disincentives to new investment. Additionally, the sector has participated in the CCA's and EUETS for many years, and has made significant improvements in energy efficiency as a result. Consequently, any additional costs will have to be passed on to consumers, and will serve to increase overall delivery costs under these energy efficiency programmes.

Whilst para 100 purports to address these concerns and states that "*Analysis is needed to assess the interaction of supporting the carbon price with other policies and reforms that are also seeking to improve the investment case for low-carbon energy technologies, as well as those aimed at improving energy efficiency and also security of supply."* we are not aware of any proposals that would offset or compensate the sector for the impacts of the CFP. For example, based on commoditising the value of energy and carbon savings achieved by Mineral Wool products in use.

2) Intended Outcomes

We note the intention of the proposed policy, but have concerns regarding the timing and level of *certainty* that the targeted low carbon investments will actually take place. If one accepts the price projections included in the RIA, then in the long run there are clearly potential benefits compared with "Business As Usual" arising from the de-carbonisation of generation. But, these are predicated on the assumption that the necessary low carbon investments will actually proceed, which is by no means certain. Therefore in the event that the market did not respond as intended, manufacturers such as Mineral Wool would be burdened with additional Carbon costs over our European competitors in the short term, and still face yet higher bills in future.

3) Competitive Impacts

With regards to the risks of introducing competitive distortions, we note that the RIA concludes, based on assessments of leakage made in relation to the EUETS, that there are likely to be competitive impacts for a limited number of sectors in the traded sector. However, we believe that this analysis is fundamentally flawed for a number of reasons. Firstly, the analysis carried out under the EUETS was based on leakage as a narrow proxy for far wider competitive impacts, and a crude quantitative analysis that focused on international trade. Whilst 'leakage' remains a valid concern, in the case of policies introduced in the UK that lead to a more hostile investment environment than found in other Member States, it is intra EC competition that is particularly relevant.

Therefore we find the statement that "*all businesses in the sector have the same opportunities to reduce the impact of the proposal on their costs*[1]" bizarre, as competitors in the EU will not have to invest to reduce the impact.

4) Establishing the Floor Price

We believe that a consequence of the CFP will be to provide greater certainty over the quantum of carbon revenues for Government, but suggest that it might also similarly be used to aid industry through acting as a carbon stabiliser. Therefore the CPSR should be established according to a transparent mechanism, for example based on the average price in the year preceding the price setting. Secondly the regulation should contemplate that if for any year the EAU price exceeds the Carbon Floor Price then the CPSR should become negative.

5) Combined Heat & Power

Although for fundamental technical reasons Combined Heat and Power is not currently used by the Mineral Wool sector, to the extent that these issues could be addressed then it remains a potential abatement technology. We therefore feel that the inclusion of both heat and electrical output from CHP plants within the CFP inequitable as it reduces abatement options available to the sector.

6) Concluding Remarks

We do believe that reducing energy demand and de carbonising production are important goals. To this end establishing a fair value for carbon emitted or saved is a positive step, but in terms of the current CFP proposals we believe that:

a) There needs to be clarity over an equivalent mechanism to incentivise and provide certainty for investments in demand side energy efficiency technologies rather than just generation.

b) Investment in low carbon generation will not be driven by energy prices, but by the carbon price, and the correct price signals can be provided independently of the wider taxation framework without increasing the burden on industry. For example, in the event that the CFP was introduced then it should be accompanied by a corresponding cut in the rate of Climate Change levy applied to electricity. This would serve to create the necessary cost differential for low carbon generation without increasing prices by introducing a dual tax on electricity, CCL and CFP. To the extent that the CFP legislation specified that it should be separately identified as a charge

[1] Impact Assessment of proposals to amend the climate change levy and fuel duty to support incentives for low-carbon electricty generation. P.24

per MWh on electricity bills would, we believe, be consistent with the requirements of Art. 4 of the Energy Products Directive[2].

c) In the wider policy context this proposal would also be consistent with a simplification achieved by providing CCL rebates to Energy Intensive industries participating in the EUETS, hence obviating the need for continuation of the CCA's.

We hope that the above comments are constructive, and would be happy to expand on any particular points if helpful.

[2] Council Directive 2003/96/EC

Campaigning for Warm Homes

HM Treasury consultation *"Carbon price floor: support and certainty for low-carbon investment"*

National Energy Action (NEA)'s response

Introduction:

National Energy Action (NEA) is a national charity with a primary objective of eradicating fuel poverty. Fuel poverty results from a combination of low household incomes, unaffordable energy prices and poor standards of heating and insulation. Current estimates indicate that there are more than 4 million fuel-poor households in England and 5.5 million fuel-poor households in the UK.

Whilst NEA recognises the need for sufficient electricity capacity, the joint announcement on the Energy Market Reform (EMR) poses a number of potential threats to vulnerable consumers. Despite the Secretary of State's welcome reassurances when the EMR was released, the Carbon Price Support (CPS) proposals alone could substantially increase the cost of generation and could cost well in excess of the £16bn quoted within the CPS Impact Assessment[1]. Added to this, there seems to be a significant doubt within the energy industry that the CPS, in isolation or in conjunction with other forms of incentive within the EMR, would have a significant impact in encouraging new forms of generation.

As discussed later in this document there is significant risk that, unless remedial action is taken, this mechanism could simply act as a windfall for existing generators to the detriment of low-income and vulnerable consumers. NEA therefore welcomes the opportunity to respond to this consultation and seeks to highlight a number of areas that must be taken into consideration before this policy can be implemented. NEA is concerned however that this consultation could be irrelevant given that the draft primary legislation for the CPS has already been completed and is being reviewed by external stakeholders.

The structure of this response:

NEA's response has four main components:

1. An overview of the growth of fuel poverty and relevant context that should inform future policy developments
2. A section highlighting that further analysis of the costs of this proposal (and the EMR proposals as a whole) needs to be undertaken and that the medium and long-term benefits need to be further quantified
3. A commentary about the practical impact of current consumer levies on domestic energy bills and the need to introduce mitigating policies
4. Answers to the consultation questions, these are limited to those areas with implications for consumers and/or wider social issues.

[1] Impact Assessment of proposals to amend the climate change levy and fuel duty to support incentives for low-carbon electricty generation, HMT, 16 December 2010.

Fuel Poverty Overview:

The table below illustrates how initial progress in reducing fuel poverty has been halted and reversed by a series of unprecedented increases in energy prices. During much of the period post-2000 there were modest improvements in domestic energy efficiency standards and Government policies also improved economic circumstances for many vulnerable households including pensioners and families with children. It should be noted that when the New Electricity Trading Arrangements (NETA) were introduced in England and Wales in March 2001, there was a quantified prediction about how substantial falls in the wholesale price would be and competitive energy markets were initially successful in effecting price reductions for many households. However, since 2004 increases in both domestic gas and electricity bills have increased fuel poverty significantly. NEA estimates that since 2003 domestic gas bills have risen 148% and electricity by 82%.

	Number of fuel-poor households[2]	
	England	United Kingdom
1996	5.1 million	6.5 million
1998	3.4 million	4.75 million
2001	1.7 million	2.5 million
2002	1.4 million	2.25 million
2003	1.2 million	2.0 million
2004	1.2 million	2.0 million
2005	1.5 million	2.5 million
2006	2.4 million	3.5 million
2007	2.8 million	4.0 million
2008	3.3 million	4.5 million

Clearly energy price rises hit the poorest hardest as a result of their low incomes and the generally poor heating and insulation standards of their homes. NEA recognises that, to some extent, energy price rises are an inevitable consequence of increased demand as Europe and the world move out of recession and continue to develop. However, of increasing concern is the extent to which price rises are also currently being driven by the UK Government's policy decisions (discussed below under consumer levies on energy bills and elsewhere throughout the response) and in the future by poorly aligned incentives to encourage low carbon generation. These concerns are exacerbated because of the recent decline in Exchequer-funded resources targeted at fuel poverty eradication.

In the context of fuel poverty, energy efficiency (relating to both demand and supply) is universally recognised as the most sustainable way to help mitigate the impact of energy price increases. Over the period 2008-2011 total funding for Warm Front reached £1.1 billion and the programme was assisting some 230,000 households each year. Since the scheme's inception more than £2.5 billion has been expended on assisting more than 2 million households. In the year 2000-2001, the first year of the scheme, expenditure totalled £172 million. Currently, at a point when energy prices are at an unprecedented level, and when all projections indicate a continued upwards trend, funding is to be reduced to £110 million in 2011-2012 and to £100 million in the following year.

[2] Annual Report on Fuel Poverty Statistics 2010, DECC 2010.

Without necessary intervention, post-2013, direct Government funding for domestic energy efficiency is to cease. In contrast to the claim within the CPS impact assessment that "the Spending Review committed the Government to a substantial and coherent set of measures to address fuel poverty"[3], these spending decisions will represent the first time in more than three decades that there is no Exchequer-funded support for energy efficiency improvements. NEA would argue strongly that this reduction is not indicative of the 'greenest Government ever' and nor is it indicative of a Government commitment to eradicate fuel poverty as required by the Warm Homes and Energy Conservation Act 2000.

NEA is also concerned that this decision is short sighted given the wider benefits that result from tackling fuel poverty. Living in a cold, damp home is detrimental to the health of the occupant(s) and both causes and exacerbates respiratory and coronary problems which can be fatal. The true cost of this cannot easily be quantified. This would require a bottom-up analysis for every vulnerable household, doctor's surgery and hospital in the country. However, it is reasonable to state with certainty that the most rational and sustainable solution to these health issues is pre-emptive action. When assessing the funding implications for fuel poverty programmes, HM Treasury and other relevant departments should take a wider view of the financial savings and benefits that can be achieved. This analysis should consider the potential health benefits/savings but also the ensuing social, economic and employment benefits.

Analysis of the costs of this proposal and the lack of tangible medium and long term benefits for consumers:

NEA believes there is a significant risk that the CPS will not encourage sufficient investment in low carbon generation (the stated policy objective) while limiting the impact on wholesale electricity prices; indeed the aim of carbon price support appears to be to increase the cost of wholesale power from fossil-fired generation in order to make low carbon investments comparatively attractive. In the case of power, these additional costs will be pushed down directly to consumers. This will have a hugely negative impact on the incidence of fuel poverty within the UK.

Modelling carried out within the CPS impact assessment indicates that, under scenario 3, the impact of the CPS proposals would severely impact on the poorest households, in particular those pensioners living on their own, and could push 100,000 – 200,000 households into fuel poverty[4]. In themselves, these figures are hugely alarming but given the timeframe for the introduction of the CPS mechanism they provide the starkest illustration that the Government commitment to eradicate fuel poverty, as required by the Warm Homes and Energy Conservation Act 2000, will not be met. NEA also believes that the fuel poverty projections err on the side of optimistic caution.

Because of these concerns, NEA has been keen to engage with a number of representative groups, NGOs and individuals in order to share our interpretation of the EMR policy proposals; introduce a more frank discussion into the current debate about the costs;; and ensure that the medium and long-term benefits of moving to a low carbon (and as it stands, a high cost) energy future are rigorously quantified. HM Treasury will be aware that many within the energy industry have commented that, in isolation, CPS would have little impact in encouraging new forms of generation. Indeed, the consultation makes this clear in stating that CPS is "*likely to be insufficient on its own to encourage the total amount of low-carbon investment required to decarbonise the power sector*"[5].

[3] Impact Assessment of proposals to amend the climate change levy and fuel duty to support incentives for low-carbon electricty generation, HMT, 16 December 2010.
[4] Ibid
[5] Ibid, p4.

As a result of our consultation with representative groups, NEA is concerned that these negative impacts will be sustained for little benefit. Moreover, fears have been expressed that, even if the CPS proposals were to be assessed in conjunction with other incentives proposed within the EMR, the CPS consultation understates the extent to which this policy will fail to lever investment in new low-carbon investment. This is particularly the case where, in the future, CPS could integrate with plant supported through a Contract for Difference or Low Carbon Feed in Tariff. CfD and FiTs would seem to work at odds with the proposed CPS as a recipient of the CfD/FiT (renewables, new nuclear or CCS) would be largely unaffected by the wholesale market price and carbon signals. The interaction between the CPS and other proposals within the EMR need further examination, especially given the overall cost to the consumer and the evident impact this will have on fuel poverty.

The consultation document makes clear that by helping to encourage new generation this policy should reduce the wholesale price over the medium and longer term. Theoretically this should benefit the consumer through resulting reductions in retail prices, but this is not currently guaranteed and it will depend on a wide range of additional factors. Whilst it is welcome that the Secretary of State for DECC believes the EMR proposals would, in the long term, "result in bills lower than they would otherwise be"[6], the degree of uncertainty regarding the impact these proposals will have in the short, medium or long term on consumer bills provides no reassurance to NEA. There is significant risk that, unless remedial action is taken, this mechanism could also simply act as a windfall for existing generators to the detriment of low-income and vulnerable consumers.

If this policy is to be accepted, HMT and DECC need to further quantify what benefits accrue as a result of the policy and be frank about the uncertainties surrounding them. As discussed below, this must be reinforced by compensatory policies to protect low-income and vulnerable groups.

The impact of current consumer levies on energy bills and the importance of mitigating policies:

As noted in the introduction, NEA estimates that since 2003 domestic gas bills have risen by 148% and electricity bills by 82%. NEA welcomed the encouraging announcement last year that the Renewable Heat Incentive and the Carbon Capture and Storage (CCS) demonstration projects would be funded through taxation. However, an unacceptable number of levies and additional costs are still being loaded on to consumers' bills as a result of a range of government policies and initiatives to tackle climate change, enhance energy security, secure investment in new infrastructure, and improve social welfare through targeted energy efficiency measures.

Many levies simply place an additional burden on consumers without these individuals or households being able to benefit. Due to the regressive nature of this funding mechanism, the negative impact of levies falls disproportionally on financially disadvantaged households. Last year, DECC estimated that existing levies currently add £88 to average domestic energy prices, and by 2020, these charges will have increased by 81% to £160. These estimates do not currently take account of the pass-through of other costs as a result of EMR policies.

As highlighted above, modelling carried out within the CPS impact assessment indicates that, under Scenario 3, the negative impact of the CPS proposals would most affect the poorest households including single pensioner households and could push 100,000 – 200,000 households into fuel poverty. NEA believes these are cautious estimates. Taken as a whole, the cost of the proposals within the EMR will mean that, without major remedial intervention, there is virtually no possibility of the UK Government achieving its goal to eradicate fuel poverty by 2016.

[6] DECC Press Release: Coalition announces transformation of power market reforms, 16 December 2010.

The public's acceptance of the CPS policy (as part of EMR policies) and higher energy prices more generally is conditional on providing a range of energy consumers (generators, energy intensive users, affluent households and those that are fuel poor) with ways of mitigating the impact. At present, the proposed funding allocation for fuel poverty alleviation will barely cover existing demand, far less provide assistance to new applicants who may be driven into fuel poverty as a direct result of the EMR policies.

The Coalition Government intends to bring forward a new obligation on energy companies, the ECO, from 2012, when existing programmes are complete. The ECO will focus on providing energy efficiency measures to low-income and vulnerable consumers and those living in 'hard-to-treat' properties.

Whilst the targeting of low-income and vulnerable consumers is welcome, the Government has indicated that from 2012/13 all Government-mandated programmes to address fuel poverty will be funded through levies on consumer bills. The ECO will be paid for in this way. In the context of fuel poverty this approach is demonstrably both regressive and perverse. For example the Impact Assessment published alongside the Consultation on the Extension of the Carbon Emissions Reduction Target (DECC, 2009), indicates that, in the short term at least, between 70,000 and 150,000 households will be driven into fuel poverty as a result of additional charges on domestic bills whilst between 21,000 and 31,000 households will be removed from fuel poverty. Because the scale of funding for the ECO is not yet known, the impact on disadvantaged energy consumers is not clear; but NEA believes that, on the basis of equity alone, all of the resources derived from the Energy Company Obligation should be dedicated to fuel poverty programmes.

This position is enhanced because there is a real danger that the ECO's limited resources will be dissipated in supporting the Green Deal Finance Mechanism where the cost of measures (most notably solid wall insulation) significantly exceeds financial savings meaning that the 'golden rule' principle cannot be met. The Energy Bill[7] as currently drafted allows for a potentially open-ended disbursement of ECO resources to able-to-pay householders occupying hard to treat homes. This would represent an unacceptable situation where disadvantaged households would subsidise comparatively affluent households while themselves being excluded from any assistance. These issues could be countered if the new obligation wer to be fully committed to a well structured and coordinated fuel poverty programme that can address both social and environmental priorities.

NEA is calling for HMT to provide a clear statement in the Budget 2011 confirming that:

- Company contributions to the ECO will be set at no less than the current CERT and CESP levels
- ECO resources will be devoted entirely to fuel poverty programmes
- ECO resources will not subsidise 'able to pay' consumers utilising the Green Deal finance mechanism
- The ECO should be delivered primarily through an area-based approach, complemented by non-area specific provision for individual households
- Policy should aim to limit the contribution low-income consumers make towards the ECO through their energy bills
- Given the difficulty of identifying fuel-poor consumers, the ECO should use an effective form of proxy, similar to that for the Department for Work and Pensions' Cold Weather Payment scheme

[7] The Government introduced the Energy Bill to Parliament on 8 December 2010, the Bill makes provision for a new "Green Deal". It is intended to revolutionise the energy efficiency of British properties. The Government is establishing a framework to enable private firms to offer consumers energy efficiency improvements to their homes, community spaces and businesses at no upfront cost, and to recoup payments through a charge in instalments on the energy bill.

As indicated above, because of their profound understanding of their local areas, their duty of care to residents and the fact that many are already engaged in affordable warmth strategies, local authorities should be at the heart of delivery of energy efficiency programmes. An optimal framework would comprise a systematic bottom-up "area-based" roll-out of energy efficiency measures involving both local authorities and their private commercial and/or voluntary partners. This approach could leverage funds and energy services expertise from voluntary organisations, utilities and local contractors. This could also provide additional benefits through increasing disposable income within local communities and increasing local job creation opportunities. This approach would need to be complemented by non-area specific programmes to make sure that those consumers who are clearly in need, but outside the geographical area or overly narrow eligibility criteria, could receive support.

In addition, and despite current fiscal constraints, Government should continue to demonstrate commitment to fuel poverty eradication by funding programmes through HM Treasury. A combination of Exchequer-funded and Government-mandated programmes could ensure the appropriate level of resources needed to address fuel poverty. Currently, in the approach to Budget 2011, the Department of Energy and Climate Change should be having detailed discussion with HM Treasury about hypothecated revenue such as auction receipts from the EU Emissions Trading Scheme and revenue that might be generated by a carbon price support. Any Treasury statement at the time of the Budget 2011 should also make it clear that a predetermined percentage of CPS revenue will help fund future fuel poverty programmes.

NEA also believes that within the CPS and wider EMR proposals, there is a unique opportunity to incentivise a form of community-wide demand-side response. By aggregating community energy savings (demand and supply-side energy efficiency) it is possible to relieve stress on the gas and electricity distribution and transmission networks. The practice of being rewarded for reducing demand in the energy intensive sectors is now well established. NEA would like to discuss with HMT and DECC how community energy savings could be similarly rewarded and the feasibility of this approach within the context of the EMR.

Without clarity in relation to any of these points, NEA is unable to determine whether the Government appreciates the scale of, or even the need for, effective programmes to mitigate the EMR policies in order to protect low-income and vulnerable groups. NEA will be submitting a pre-Budget submission reinforcing these points.

NEA comments in response to the consultation questions are limited to those with implications for consumers and/or wider social issues.

Questions on investment:

3.A1: What are your expectations about the carbon price in 2020 and 2030?

NEA claims no expertise in predicting the carbon price to 2020 or 2030. Even for experts in the field this is highly challenging given the extent to which the EU Emissions Trading Scheme (ETS) has been subject to change since its inception, and further changes that will be introduced in Phase III, from 2013. This uncertainty further undermines attempts to provide an accurate assessment of the true cost to consumers of this policy measure. This therefore impacts on the ability to accurately model the impact CPS may have on fuel poverty within the UK.

3.A2: If investors have greater certainty in the long-term price of carbon, would this increase investment in low-carbon electricity generation in the UK? If so, please explain why.

Whilst long-term "certainty" in the carbon price may facilitate new investment in low-carbon generation, the price needs to be punitively high for such a mechanism to achieve such investment on its own. NEA would also emphasise that clarity about the direction of the UK Government's medium and long-term approach to how carbon is valued and traded in Europe would result in less risk being associated with low carbon investments. This would in turn reduce the internal rates of return that investors would demand. In contrast to clarity, "certainty" is not a function of a competitive market or the role of Government.

3.A3: How much certainty would investors attribute to a carbon price support mechanism if it were delivered through the tax system?

It may be expected that if the level of CPS is allowed to be amended each year through the Finance Act, this will cause investors to discount its value significantly at the end of each Parliament. This is because there will be a political risk associated with its retention. NEA believes the effects of this will once again be negative and impact the fuel poor. Given the Government's current propensity for investor certainty the effect of this discounting is likely to be adjusted by the Government by compensating energy companies through other mechanisms.

3.A4: In addition to carbon price support, is further reform of the electricity market necessary to decarbonise the power sector in the UK?

NEA will respond to this broad question within the more comprehensive DECC consultation on EMR.

Questions on types of generator:

4.C2: Is there a case for providing additional or more preferential treatment for CHP? If so, what is the best way of achieving this?

NEA believes that if the UK has to decarbonise the power sector (over and above other sectors of the economy, *e.g.* transport), the focus must be on supporting cost-effective carbon abatement. Combined Heat and Power (CHP) and District Heating (DH), whether within or outside of the traded sector, are regarded as some of the most cost-effective carbon abatement options. CHP also tends to achieve an appropriate balance between the demands of affordability, energy security and carbon saving. It is therefore wholly inappropriate that the CPS policy should penalise this technology or the customers/consumers that rely upon its competitive energy services (heat and power).

Questions on carbon price support mechanism:

4.E1: How should the carbon price support rates be set in order to increase certainty for investors, in particular over the medium and long term?

See response to 3.A2.

It is unknown what effect the changes that will be introduced in Phase III of the EU ETS (from 2013) will have on the carbon price. It would not be reasonable at this stage to establish what support rates should be over the medium and long term, if at all.

4.E2: Which mechanism (outlined above), or alternative approach, would you most support and why?

As noted above, there seems to be a significant doubt within the energy industry that the CPS, in isolation or in conjunction with other forms of incentive within the EMR, would have a significant impact in encouraging new forms of generation. There is significant risk that, unless remedial action is taken, this mechanism could simply act as a windfall for existing generators to the detriment of low-income and vulnerable consumers.

In terms of an alternative approach, see section on importance of mitigating policies and call for Government to demonstrate a commitment to fuel poverty eradication by funding programmes through HM Treasury.

4.F3: When would be the most appropriate time for introducing a carbon price support mechanism and what would be the most appropriate level?

Not now! Currently the UK is at a point when:

- All sectors of the economy are struggling with their energy costs
- Energy prices are at an unprecedented level and all projections indicate a continued upwards trend
- Energy debt Is soaring
- Fuel poverty is at an all time high and the Government is on course to miss its legal commitments
- The quality of the UK housing stock (social housing and private) is still appallingly low, especially for some of the most vulnerable and low-income consumers
- Further analysis of the costs of this proposal (and the EMR proposals as a whole) need to be undertaken
- The medium and long-term benefits need to be further quantified
- The changes that will be introduced in Phase III of the ETS, from 2013, are not understood
- By 2012/13, for the first time in more than three decades there is no Exchequer-funded support for domestic energy efficiency improvements
- The need to introduce ambitious mitigating policies to diminish the risks to vulnerable consumers is not even part of the policy debate

These issues present compelling reasons why, at a minimum, the policy should be delayed until further analysis of the costs of this proposal (and the interaction with other EMR policies) is complete. NEA believes the CPS policy should not be included within the Budget 2011. These issues are magnified when there is currently so much doubt within the energy industry that the CPS, in isolation or in conjunction with other forms of incentive within the EMR, would have a significant impact in encouraging new forms of generation.

Questions on electricity investment:

5.B1: What impact would you expect the carbon price support mechanism to have on investment in low-carbon electricity generation?

As indicated above, as a result of our stakeholder engagement NEA is concerned that investor certainty is being prioritised over any negative impact that will be sustained, and for minimal benefit. Moreover, fears have been expressed that, even if the CPS proposals were to be assessed in conjunction with other incentives proposed within the EMR, the CPS consultation understates the extent to which this policy will fail to lever investment in new low carbon investment. This is particularly the case where, in the future, CPS could integrate with plant supported through a Contract for Difference or Low Carbon Feed in Tariff. CfD and FiTs would seem to work at odds with the proposed CPS as a recipient of the CfD/FiT (renewables, new nuclear or CCS) would be largely unaffected by the wholesale market price and carbon signals. The interaction between the CPS and other proposals within the EMR need further examination, especially given the overall cost to the consumer and the evident impact this will have on fuel poverty.

The consultation document makes clear that by helping to encourage new generation this policy should reduce the wholesale price over the medium and longer term. Theoretically this should benefit the consumer through resulting reductions in retail prices, but this is not currently guaranteed and is dependent on a wide range of factors. NEA notes the Secretary of State's belief that the EMR proposals would, in the long term, "result in bills lower than they would otherwise be", but considers that the degree of uncertainty regarding the impact of these proposals in the short, medium or long term on consumer bills means that we do not share his confidence. There is also a significant risk that, unless remedial actions are taken, this mechanism could also simply act as a windfall for existing generators to the detriment of low-income and vulnerable consumers.

If this policy is to be accepted, HMT and DECC need to further quantify what benefits accrue as a result of the policy and be frank about the uncertainty surrounding them. As discussed below, this must be reinforced by mitigating policies to protect low income and vulnerable groups.

5.B2: What other impacts would you expect carbon price support to have on investment decisions in the electricity market?

In general, the proposals under the EMR will create unprecedented subsidy dependence in the UK Energy Market which will be to the detriment of UK consumers in general and to financially disadvantaged consumers in particular. Portfolio generators will no longer invest in plant on the basis of rational, market-led investment criteria.

Questions on existing low-carbon generators:

5.C2: What would be the implications of supporting the carbon price for existing electricity generators and how should the Government take this into account?

The proposals could provide a significant windfall to existing low-carbon generators. This will be socially and, potentially, politically unacceptable at a time when:

- All sectors of the economy are struggling with their energy costs
- Energy prices are at an unprecedented level and all projections indicate a continued upwards trend
- Energy debt is soaring
- Fuel poverty is at an all time high and the Government is on course to miss its legal commitments
- The quality of the UK housing stock is still appallingly low, especially for some of the most vulnerable and financially disadvantaged households
- There is a compelling need for further analysis of the costs of this proposal (and the EMR proposals as a whole) to be undertaken
- The medium and long-term benefits have not been adequately quantified
- The termination of the Warm Front programme in 2013 will mean that for the first time in more than three decades there is no Exchequer-funded support for energy efficiency improvements
- The need to introduce ambitious mitigating policies to minimise the risks to vulnerable consumers does not even feature in the policy discourse

NEA also notes that the Government has not published the costs of this potential windfall.

Questions on electricity price impacts:

5.D3: As an electricity generator or supplier, how much of the cost of the carbon price support would you pass on to consumers?

Whilst NEA is not the intended consultee in relation to this particular question we would nevertheless offer a view. NEA believes that there is a significant risk that the CPS will not encourage the investment in low carbon generation (the stated policy objective) while simultaneously limiting the impact on the wholesale electricity price. Indeed the rationale of carbon price support appears to be to increase the cost of wholesale power from fossil-fired generation in order to make low-carbon investments comparatively attractive. In the case of power, it is inevitable that these additional costs will be pushed down directly to consumers. This will have a hugely negative impact on fuel poverty within the UK.

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11th February 2011

Dear Martin

Carbon Floor Price

Thank you for the opportunity to provide comments on your proposed changes to the climate change levy (CCL) and fuel duty to support and give certainty to the price of carbon in the UK electricity generating sector.

This response is provided on behalf of National Grid which owns and operates the high voltage electricity transmission system in England and Wales and, as National Electricity Transmission System Operator (NETSO), operates the Scottish high voltage and offshore transmission system. National Grid also owns and operates the gas transmission system throughout Great Britain and through our low pressure gas distribution business we distribute gas in the heart of England to approximately eleven million offices, schools and homes. In addition, National Grid owns and operates significant electricity and gas assets in the US, operating in the states of New England and New York.

In the UK, our primary duties under the Electricity and Gas Acts are to develop and maintain efficient coordinated and economical systems and also facilitate competition in the generation and supply of electricity and the supply of gas. Our activities include the residual balancing in close to real time of the electricity and gas markets.

Through our subsidiaries, National Grid also owns and maintains around 18 million domestic and commercial meters, the electricity Interconnector between England and France, and a Liquefied Natural Gas importation terminal at the Isle of Grain. We have also formed National Grid Carbon Limited which is a wholly owned subsidiary advancing the transportation and storage elements of the Carbon Capture and Storage (CCS) supply chain.

National Grid is supportive of the principles of a carbon floor price support mechanism and, more generally, of the objectives of electricity market reform (EMR), although we are presently unconvinced of the need for targeted capacity payments. In order to assist in the decarbonisation of other sectors, early large scale investment in low-carbon electricity generation infrastructure will be a priority. EMR and, as part of this, a carbon floor price support mechanism has the potential to promote the necessary investment in appropriate, low-carbon technologies is made in an affordable, secure and sustainable manner.

The aim of the carbon floor price support mechanism should be to deliver a stable floor to the EU ETS price to give investor certainty against a crash in the price of carbon similar to that seen at the end of the first phase of the scheme. This would allow the future price of carbon to be fully accounted for as part of investment decisions. However, we are concerned that the carbon price support mechanism could create an incentive to import electricity to GB to the extent it creates a price materially above the EU ETS price. This may lead to higher carbon-based flexible generation plant in the UK closing earlier whilst similar generation plant in neighbouring member states enjoy a longer operating life. Such flexible generation plant is important in the short-term, for security of supply, until lower carbon flexible generation investment can be made to replace this plant. We therefore feel the purpose of a carbon price support mechanism should be to give certainty of the EU ETS price trajectory, as agreed at a European level, but that it should not be set substantially above this level. We also feel that there should be a continued push to reform the EU ETS such that it can provide a stable, predictable price, thereby making a carbon price support mechanism redundant.

It is also not obvious that underpinning the carbon prices materially above the EU ETS level is necessary given that EMR sets out a package of changes one of which is Feed in Tariffs. It is important to note that the decarbonisation of UK generation is not about the amount of higher carbon capacity generation in existence, but about how much of it is used. As more low carbon, low marginal cost plant is built, supported by Feed in Tariffs, the resulting wholesale spot prices will reduce the utilisation of higher carbon generation plant. The optimal result is decarbonisation with security of supply in that more low carbon plant is built but that flexible higher carbon plant stays available to generate at progressively lower levels of utilisation.

Finally, in order to maintain security of supply, it is crucial that all of the proposed EMR initiatives are considered and evaluated as a package and that EMR is carried out in a coordinated way with other energy policy and planning policy development. If EMR is to drive GB down a certain “energy path”, then it must be consistent with other policy, legislation and regulatory initiatives.

We have addressed the detailed response to the consultation questions in an appendix to this letter. [redacted]

Yours sincerely

[By e-mail]

[redacted]

Appendix 1

Investment

3.A1: What are your expectations about the carbon price in 2020 and 2030? And how important a factor will it be when considering investment in low-carbon generation?

The structure of the EU ETS with provision of free allowances coupled with the lack of long-term commitment to CO_2 markets has resulted in unstable prices, often reaching very low levels which do not reflect the true cost of carbon. The extent to which future carbon prices in the EU ETS reflect the true cost of carbon and follow the desired trajectory is dependent on further agreement on changes to the EU ETS scheme.

At present, there is too much dependence on judgements about political, as well as economic, developments to enable reliable prediction and, whilst it should be an important factor for investment in low-carbon generation, price expectations are likely to be heavily discounted. For this reason, it is likely that more importance will be placed (by prospective investors in low-carbon generation) on the FIT scheme rather than on the carbon price support mechanism.

The aim of the carbon floor price support mechanism should be to deliver a stable floor to the EU ETS price to give investor certainty against a crash in the price of carbon similar to that seen at the end of the first phase of the scheme. This would allow the future carbon price to be fully accounted for as part of investment decisions.

3.A2: If investors have greater certainty in the future long-term price of carbon, would this increase investment in low-carbon electricity generation in the UK? If so, please explain why.

Greater certainty over the long term price of carbon would remove the present discount, leading to low-carbon electricity generation becoming more attractive. This is because, as the carbon price increases, the costs to generate electricity from gas (or coal) also increase. As the wholesale electricity price is currently based on future forecast of the marginal fossil-fuel plant, this increased cost would be passed on meaning that margins would increase for low-carbon generators.

If the cost of carbon was the only measure to support low carbon technologies then it may need to rise substantially to incentivise new build and the risk is that at such a level the carbon price, if unilaterally applied in the UK, could result in industry “carbon leakage” to Europe or elsewhere in the world. Hence, it’s important that any action on carbon price is considered within the wider European context and takes account of the potential impact in non power generation sectors.

3.A3: How much certainty would investors attribute to a carbon price support mechanism if it were delivered through the tax system?

Taxation rates are always subject to uncertainty and change and, as such, it is questionable that a carbon floor price support mechanism deliverable through the tax system would deliver the necessary certainty. Some form of contract, similar to that proposed via a Feed in Tariff, which tracks the difference of the EU ETS price to a desired price trajectory would deliver a greater certainty and remove the risk that the consumer simply faces additional cost with no added benefit of investment in low carbon generation. Noting a contract may be difficult to implement, then cross party support for a carbon floor price support mechanism may deliver the necessary investor certainty if delivered through the tax system.

3.A4: In addition to carbon price support, is further reform of the electricity market necessary to decarbonise the power sector in the UK?

Yes, carbon price support will not of itself deliver decarbonisation and be considered as part of a package of measures. There is the need for some form of feed in tariff to provide certainty on the revenues for low-carbon generation, greater market liquidity especially in the medium to long-term trading periods, improved market mechanisms to ensure sufficient generation capacity margins,

further planning policy development and improved investment signals for electricity transportation infrastructure.

Administration

4.B1: What changes would you need to make to your procedures and accounting systems to ensure you correctly account for CCL on supplies to electricity generators?

This question is not applicable to National Grid.

4.B2: How long would you need to make the necessary changes to your systems to account for CCL on supplies to electricity generators?

This question is not applicable to National Grid.

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4.B3: Please provide an estimate of how much the system changes would cost, both one-off and continuing?

This question is not applicable to National Grid.

Types of generator

4.C1: Do you agree that all types of electricity generators should be treated equally under the proposed changes? If not, please explain why.

All types of generation should be treated equally in relation to the level of carbon dioxide emissions that they produce.

4.C2: Is there a case for providing additional or more preferential treatment for CHP? If so, what is the best way of achieving this?

We feel there would need to be a very compelling case in order to justify differentiating the treatment of particular types of generation. In order to maintain a level playing field, all types of generation should be treated equally in relation to the level of carbon dioxide emissions that they produce. In particular, any such differentiation must not be designed in such a manner that it cut across, for example, the need to give priority system access to renewable generators under EU law.

4.C3: Do you agree that tax relief should be considered for power stations with CCS? If so, what are the practical issues in designing a relief; what operational standards should a CCS plant meet in order to be eligible; and how might these issues differ for demonstration projects?

Tax relief should be considered for power stations with CCS since the purpose of the tax is to incentivise lower carbon generation. In terms of operational standards it would seem sensible to relate the relief to the proportion of carbon that is removed for storage rather than applying arbitrary standards.

Imports and exports

4.D1: What impact would the Government's proposals have on electricity generators and suppliers that export or import electricity?

We are concerned that the carbon price support mechanism could create an incentive to import electricity to GB to the extent it creates a price materially above the EU ETS price. This may lead to higher carbon based flexible generation plant in the UK closing earlier whilst similar generation plant in neighbouring member states enjoy a longer operating life. It is important that we do not institute measures that are costly for GB consumers and have little or no impact in meeting carbon reduction at a European or broader global level. Furthermore, such flexible generation plant is important in the

short-term, for security of supply, until lower carbon flexible generation investment can be made to replace this plant. The market needs time to respond to any market signals and any investment will have, at the very least, a three year lead time.

4.D2: What impact might the proposals have on trading arrangements for electricity?

A carbon price support mechanism that does deliver investor certainty and is set marginally above the EU ETS price could lead to a situation whereby GB wholesale prices are largely unaffected but gives additional investment certainty in lower carbon generation in the UK (i.e. removes any investor discount of the present EU ETS price due to uncertainty).

However, a carbon price support mechanism that does not deliver investor certainty and is set materially above the EU ETS price could lead to a situation whereby higher carbon based flexible generation plant in the UK closes earlier whilst similar generation plant in neighbouring member states enjoy a longer operating life, with the offset being transferred via interconnection. This would see an increase to GB wholesale prices with no benefit from lower carbon generation at a European level.

4.D3: What impact might the proposals have on electricity generation, trading and supply in the single electricity market in Northern Ireland and Ireland?

A carbon price support mechanism that does deliver investor certainty and is set marginally above the EU ETS price could lead to a situation whereby there is little or no impact.

However, a carbon price support mechanism that does not deliver investor certainty and is set materially above the EU ETS price could lead to a situation whereby there is an increased cost to exports to Ireland, promoting generation investment in Ireland.

Carbon price support mechanism

4.E1: How should the carbon price support rates be set in order to increase certainty for investors, in particular over the medium and long term?

The purpose of carbon price support mechanism should be to give certainty of the EU ETS price trajectory but should not be set substantially above this level. We also feel that there should be a continued efforts to reform the EU ETS such it can provide a stable, predictable price, thereby making a carbon price support mechanism redundant.

4.E2: Which mechanism, or alternative approach, would you most support and why?

Rates set annually against a trajectory laid out in advance offer more certainty although there would remain short term carbon market risk. Some form of contract, similar to that proposed via a Feed in Tariff, which tracks the difference of the EU ETS price to a desired price trajectory would deliver greater certainty and remove the risk that the consumer simply faces additional cost with no added benefit of investment in low carbon generation.

4.E3: What impact would the proposals have on you carbon trading arrangements?

This question is not applicable to National Grid.

Future price of carbon

4.F1: Should the Government target a certain carbon price a) for 2020 and b) for 2030? If so, at what level?

We feel the carbon price support mechanism should be set marginally above the EU ETS price trajectory agreed at a European level. We note the EU is considering tightening the emissions reduction target by increasing the greenhouse gas target from a 20 per cent reduction to a 30 per cent reduction, based on 1990 levels.

4.F2: What is the most appropriate carbon price for the UK to meet its emissions reduction targets in the power generation sector? How would this be affected by changes in the structure of the electricity market?

As stated earlier, it is important that we do not institute measures that are costly for GB consumers and have little or no impact for meeting carbon reduction at a European level. As such, we question whether it is appropriate to set a carbon price for the UK without reference to the EU ETS price.

4.F3: When would be the most appropriate time for introducing a carbon price support mechanism and what would be the most appropriate level?

Carbon price support should be implemented with sufficient lead time to allow the market signal sufficient time to influence investment decisions and, at a level marginally above agreed EU ETS price trajectory. The rate of increase in the price in the early years should be low enough to avoid unintended consequences of flexible plant closing too early. For example, if a large amount of unabated coal generation was to close earlier than planned as a result of a large increase in the carbon price at the beginning of the scheme (such as described in Scenario 3 in the consultation) it is likely that this would need to be replaced by gas-fired plant due to the short (3 year) build-times. This could have implications on both the gas and electricity transmission systems as any major reinforcements could take longer than the 3 years needed to build the plant (e.g. planning permission for overhead lines).

Electricity investment

5.B1: What impact would you expect the carbon price support mechanism to have on investment in low-carbon electricity generation?

The primary instrument to low carbon investment in the power generation sector is via Feed in Tariffs. The objective of the carbon price support mechanism should be to provide price stability and certainty of the EU ETS (i.e. mitigate risk of price collapse) so that it can be relied upon as part of investment decisions and to give a clear signal to existing plant.

5.B2: What other impacts would you expect carbon price support to have on investment decisions in the electricity market?

Carbon price support will clearly act against high carbon fuels, and discourage investment in unabated coal.

5.B3: How should carbon price support be structured to support investment in electricity generation whilst limiting impacts on the wholesale electricity price?

A carbon price support mechanism that does deliver investor certainty and is set marginally above the EU ETS price could lead to a situation whereby GB wholesale prices are largely unaffected but gives additional investment certainty in lower carbon generation in the UK. Although investor certainty via a tax regime may be difficult to achieve without cross party support.

Existing low-carbon generators

5.C1: Can you provide an assessment of the impact of the proposals on your generation portfolio and overall profitability?

National Grid is not in a position to comment on this question as it does not have a generation portfolio.

5.C2: What would be the implications of supporting the carbon price for existing electricity generators and how should the Government take this into account?

Existing coal generators will be most impacted by the measure dependent on the level and how progressively the tax is introduced. To the extent wholesale prices are impacted then existing renewables and nuclear generators will benefit the most.

Higher carbon prices will lead to lower output from existing coal plant and probably result in plant opting out of the Industrial Emissions Directive (IED) and closing by 2023 at the latest. Consequently, if by then no new nuclear or CCS plant are in operation then the only baseload plant that will be built to fill the gap will be CCGTs and the UK will then face diversity of supply concerns.

Electricity price impacts

5.D1: How do you currently manage fluctuations in the wholesale electricity price?

As system operator, National Grid does not purchase electricity on wholesale markets except to balance the electricity system and, as such, does not manage fluctuations in the wholesale electricity price.

5.D2: What difference will supporting the carbon price make to your business?

National Grid would expect that this would have relatively little impact on its business, due to its unique position as system operator, except to the extent that any such mechanism might lead to the closure of flexible carbon plant, which might increase the costs and difficulty of managing the electricity system.

5.D3: As an electricity generator or supplier, how much of the cost of the carbon price support would you pass on to consumers?

National Grid does not have a generation or supply business, and therefore cannot comment on this question.

5.D4: As a business, how much of the cost of energy bills do you pass on to customers?

To the extent that a carbon price support mechanism impacts fuel prices then costs are also likely increase to balance the system which in turn will be reflected in the level of Balancing and Use of System (BSUoS) Charge. BSUoS is charged to all generators and suppliers.

5.D5: How might your company or sector be affected and would be there any impact on your profit margins?

As stated above, a carbon price support mechanism may increase the costs of balancing the system. However, it is likely the impact of carbon price support mechanism on balancing costs would be small.

5.D6: Do you have any comments on the assessment of equality and other impacts in the evidence base of the Impact Assessment, included at Annex D?

National Grid has no comments on these matters.

NIE Energy Limited
Power Procurement Business (PPB)

Carbon Price Floor: support and certainty for low-carbon investment

HM Treasury Consultation Paper

Response by NIE Energy (PPB)

11 February 2011.

NIE energy
Power Procurement Business

Introduction

NIE Energy – Power Procurement Business ("PPB") welcomes the opportunity to respond to the consultation by HM Treasury on the Government's proposals to implement a carbon price floor to provide support and certainty for low-carbon investment.

PPB is a participant in the Single Electricity Market (SEM) which is the all-island, cross jurisdictional, wholesale electricity market within which all generators in Northern Ireland and the Republic of Ireland (RoI) with capacity in excess of 10MW must participate. The SEM is a gross mandatory pool into which all generators must sell their output and are required to bid to generate on the basis of their short run marginal costs. These bids enable the Transmission System Operators (TSOs) to establish a merit order which they then use to schedule generation on a least cost basis to meet customer demand on the Island of Ireland. The obligations to make bids into the SEM are set out in the relevant Licence documents, further supplemented by a Bidding code of Practice. All suppliers must buy their electricity out of the pool at a common clearing price (System Marginal Price – SMP). Northern Ireland generation and demand represents c25% of the all-island wholesale market.

PPB is not a generator but was established as part of the 1992 privatisation arrangements in Northern Ireland as the counter-party to long term power purchase agreements (PPAs) with the power stations that were sold by the UK Government by way of a trade sale. While some of the original generating units have retired or are no longer under contract, PPB continues to contract with eight generating units amounting to c1,000MW and pays for capacity and energy in accordance with the contract terms. PPB is a regulated business and its obligations are set out in the NIE Energy Supply Licence.

PPB manages the PPAs on behalf of Northern Ireland customers and as well as managing the portfolio of contracts, is responsible for trading the generating units in the SEM. The effect of this arrangement is that the contracted generators continue to enjoy the rights and obligations as set out in the PPAs and PPB bears all market risks on behalf of Northern Ireland customers. The PPAs were established by Government in 1992 and include provisions in respect of Changes in Law that allow any change in a generator's costs, arising from any change in law, to be passed through to PPB under the terms of the contract such as to hold the generator financially neutral. The implementation of the EU ETS was one such change in law and the Government's proposals in relation to a Carbon Price Floor

are likely to also be a change in law and hence any additional costs will be passed through by the generators under the PPAs to PPB and will ultimately be borne by Northern Ireland customers.

It is also important to take cognisance of the carbon reductions that have already been realised in the electricity industry in Northern Ireland. It is important that these significant reductions, which have been the result of considerable investment, are recognised.

Year	CO_2 Emissions	Reduction	Source
1990/91	5.98 mtes		*PPB estimate based on fuel consumed*
2006	5.745 mtes	4%	*Verified emissions published on the EU Website*
2008	4.831 mtes	19.2%	
2009	3.702 mtes	38.1%	

It is within this context and from this perspective that PPB provides comments on the Government's carbon price floor proposals.

Specific Comments

Q4.C1 : Do you agree that all types of electricity generator should be treated equally under the proposed changes? If not, please explain why.

PPB agrees that at a macro level, all types of generators should be treated equally. There will naturally be benefits for more efficient generators because they consume less fuel and this will incentivise investment in more efficient and hence less polluting technology. Administratively, it would also be very difficult, to apply different CCL rates on individual fuels depending on the type of generating unit consuming the fuel.

PPB believes that there must be a CCL exemption for generators in Northern Ireland, who are competing directly in the SEM with generators in RoI and who would suffer discrimination and losses if CCL rates are levied on them. Such an additional cost would reduce the relative competitiveness of Northern Ireland generators against similar generating units located in RoI, but operating in the same wholesale market. There would be little administrative burden from retaining an exemption for supply of fuel to generators located in Northern Ireland and it would not be dissimilar to the current CCL exemption in relation to the supply of gas in Northern Ireland that has operated since 2001.

Q4.C2 : Is there a case for providing additional or more preferential treatment for CHP? If so, what is the best way of achieving this?

CHP will naturally benefit when a CCL or fuel duty charge is levied on fuels because of its efficiency benefits which will mean its costs, relative to those of other forms of generation, will increase proportionally less. We do not consider there to be any requirement for further support.

Q4.C3 : Do you agree that a tax relief should be considered for power stations with CCS? If so, what are the practical issues in designing a relief; what operational standards should a CCS plant meet in order to be eligible; and how might these issues differ for demonstration projects?

We agree that there are good environmental grounds for introducing some degree of relief where CCS is used to abate CO_2 emissions. The need for such relief to assist the economic case for CCS, once the technology is proven and commercial, is unknown and it will depend on many factors including relative commodity prices. We believe it may be sensible to make provisions for a mechanism that would allow relief to be given should it be required in future, which would provide the flexibility to offer support should that prove necessary.

Q4.D1 : What impact would the Government's proposals have on electricity generators and suppliers that export or import electricity?

Any CCL cost will increase the cost of wholesale electricity in the UK relative to interconnected regions with the natural consequence of exports reducing and/or imports increasing. This will effectively transfer and increase generation in the interconnected markets and reduce the demand to be met by indigenous generators in GB (and Northern Ireland if no CCL exemption is provided).

The consultation paper implies in paragraph 4.35 that such effects would remain small, even with increased interconnection, compared to overall UK generation. This may be true for the UK and similarly is likely to be true for the markets in France and the Netherlands. However, the Irish market is much smaller than any of these markets and interconnector capacity with GB of 1,000MW represents c15% of the peak demand and 45% of the minimum demand in the Irish market. Hence the impact of the proposals on Northern Ireland Generators and on the energy flows on the interconnectors between Ireland and GB will be more extensive.

If the CCL is applied to Northern Ireland generators, their relative position in the all-island merit order will reduce and they will be scheduled less frequently in the SEM. Initial analysis for 2013/14, using a carbon price floor level set at €5/tonne and €10/tonne above the current forward prices, results in the scheduling of Northern Ireland fossil fuel generation being reduced from 4.5TWh to 2.5TWh and to 1.2TWh respectively Such an extensive reduction in scheduling will reduce the profitability of Northern Ireland generators in the SEM to an unsustainable level. In addition when any Northern Ireland generator is the marginal generator, it will set the clearing price in the market and the additional CCL cost will result in higher electricity prices for all customers in Ireland. Similarly, any reduction in imports from or increase in exports to GB, due to cheaper relative generation costs in RoI, will significantly increase demand and effectively result in additional, higher cost, generation being scheduled in the SEM, which will set a higher SMP and therefore higher prices for all customers in the All-Ireland market.

Q4.D2 : What impact might the proposals have on trading arrangements for electricity?

As we outlined in our response to the previous question, and as noted in the consultation paper, any carbon price support will tend to incentivise imports and increase the transfer of funds to external interconnected parties.

Q4.D3 : What impact might the proposals have on electricity generation, trading and supply in the single electricity market in Northern Ireland and Ireland?

As we have already described, the SEM is a unique “regional” market that operates across two separate legal jurisdictions with generators in Northern Ireland directly competing with generators in RoI. The proposal to impose CCL and fuel duty on fossil fuels effectively increases the fuel costs for Northern Ireland generators relative to their RoI counterparts (assuming that the CCL and fuel duty costs are deemed a short run marginal cost and can be included in generator bids[1]). This will weaken their competitive position in the market and, as a consequence, their profitability. As we explained in our response to question Q4.D1, it will also increase electricity prices for the whole of Ireland.

A further likely impact of the distorting effect on the relative avoidable costs of generators in Northern Ireland compared to RoI, is the inevitable skew to

[1] The SEM Committee, who oversee the operation of the SEM, recently directed that a carbon levy introduced by the RoI Government should not be included in commercial offers (bids) by RoI based generators and have proposed to modify the Bidding Code of Practice to require generators to exclude this levy cost from their determination of SRMC based commercial offers.

investment decisions for potential new generators who would most likely choose to locate in RoI rather than Northern Ireland. This has implications both for security of supply in Northern Ireland, and to the wider Northern Ireland economy, for example through loss of employment (including during construction) and general wealth creation in the region (and which is at odds with the desire to expand the private sector in Northern Ireland).

Q4.E1 : How should the carbon price support rates be set in order to increase certainty for investors, in particular over the medium to long term?

In order to minimise the cost for customers, the rates must be capable of responding to movements in the underlying market cost of carbon permits, which may vary significantly depending on many wider EU and UK Government policy decisions, such that the rates reflect the difference between the market price and the pre-determined floor price. Hence it is the floor price that provides the certainty for investors and the profile of such prices can be set in advance, subject somehow to mitigating political risk of change to those floor prices. The principles for determining the actual CCL rates to apply in any year can then be established such that they reflect the difference between the pre-determined floor price for the year and the market prices.

Q4.E2 : Which mechanism (outlined above), or alternative approach would you most support and why?

If it is agreed that the objective is to ensure the aggregate cost of carbon (market plus CCL) is to target the floor price then it would seem rational that the approach should be to work backwards from the target carbon floor price by deducting the market price thereby leaving the residual as the basis of the determination of the individual CCL rates for each fuel. One issue with such an approach may be that if the market price were simply determined on a particular day, that could have significant implication for the forward/derivative markets if market participants were all to seek to hedge on that day (to effectively fix their aggregate carbon cost at the carbon floor price). Hence it may be better to use a market index over an extended period (e.g. a number of months prior to setting the rates for the upcoming year) to spread the window.

Q4.E3 : What impact would the proposals have on your carbon trading arrangements?

We would undoubtedly need to reconsider and revise our risk management strategy and trading arrangements to reflect the final support arrangements but the precise impact would depend on the mechanism chosen to set the CCL rates and the risk of significant deviation of aggregate costs from the floor price.

Q4.F : Questions on the future price of carbon?

It is difficult to state what an appropriate target price of carbon should be. The rationale for the arrangement is to provide support for low carbon investment. Given that the impact will be higher costs for customers, the target should be a price that will deliver the investment and the environmental objectives at the lowest possible cost for customers, taking UK business competitiveness and any impacts on households into full consideration.

Q5.B1 : What impact would you expect the carbon price support mechanism to have on investment in low-carbon electricity generation?

A carbon price floor will provide higher earnings for both low carbon generation and also the most efficient (and hence lower carbon emitting) fossil fuel generators. The question to be answered is whether such revenue streams are “bankable” to facilitate financing of new investments.

Q5.B2 : What other impacts would you expect the carbon price support to have on investment decisions in the electricity market?

As we noted in our answer to Q4.D3 earlier, unless there is an exemption for fuel consumed for the purposes of electricity generation in Northern Ireland, all new investment (other than perhaps renewables) will choose to invest and locate in RoI. It is unlikely that a nuclear power station will be constructed in Northern Ireland in the near future and there is a requirement, as noted in the DECC consultation, for flexible capacity to support wind generation and to provide an adequate safety margin to ensure security of supply. There are a number of generating units in Northern Ireland that are scheduled to close over the next four to seven years and which will need to be replaced. The impact of CCL on investment decisions will encourage that investment to locate in RoI. While the SEM ignores constraints in the market scheduling, there is an interconnector limitation between Northern Ireland and RoI and therefore generation is currently physically required to be located in Northern Ireland. A consequence of carbon price support for Northern Ireland is therefore a major risk to security of supply.

We would also highlight that such outcomes on investment are not adequately considered in the impact analysis shown in Annex D of the consultation paper.

The Centre for Strategic and International Studies note that one of the key characteristics of a secure energy system is a diverse mix of different energy sources and fuels, with the capability to switch between these when necessary. Northern Ireland has three major power stations, comprising two CCGTs (circa 1,000MW) and two coal/oil fired units (476MW). It has 403 MW of installed renewable capacity (predominantly on-shore wind). The continued presence of thermal generating units is therefore very important for ongoing security of supply in Northern Ireland which could be compromised by the investment skew associated with the imposition of a carbon price floor in Northern Ireland.

Q5.B3 : How should carbon price support be structured to support investment in electricity generation while limiting impacts on the wholesale electricity price?

Notwithstanding our belief that Northern Ireland should be exempt, it is clear that any level of support will increase wholesale electricity prices and therefore retail prices paid by electricity consumers. As we have already noted, the first action to minimise the impact is to ensure the level of the carbon price floor is not set too high which would only serve to provide higher returns to investors than is necessary. A balance must therefore be struck to find a level that ensures investment with the lowest level of support.

The second requirement to minimise the impact on electricity prices is to ensure all revenues collected through the CCL carbon price support (and fuel duty) rates are recycled across the electricity sector to offset the increase in wholesale prices for consumers. If this is not the case, and the CCL revenues are to be retained by Government with perhaps some utilised to support Carbon Capture and Storage trial projects, then Northern Ireland is unlikely to be a recipient of such funds and therefore would receive no offsetting benefit against their contributions through the CCL carbon price support mechanism. Such disparity adds additional weight to the case for an exemption for Northern Ireland.

Q5.C1 : Can you provide an assessment of the impact of the proposals on your generation portfolio and overall profitability?

PPB currently has no renewable generation in its portfolio of contracts. However, as outlined earlier, unless Northern Ireland generators are exempt from the proposals, the scheduling of PPB's capacity in the SEM will reduce as a consequence of the increase in its short run marginal cost which will reduce PPB's profitability in the SEM and that will ultimately result in higher costs for Northern Ireland customers.

Q5.C2 : What would be the implications of supporting the carbon price for existing electricity generators and how should the Government take this into account?

Existing low carbon generators are already supported through various schemes (e.g. ROCs, LECs, etc.) and presumably those generators are already earning sufficient return on their investment, particularly as a result of higher fuel prices. The implications of further support through the proposed carbon price support would be to provide a windfall gain at the expense of customers and some arrangement should be implemented, e.g. via a reduction in ROCs, to maintain the same financial status for existing investments and minimising the cost for consumers.

Q5.D1 : How do you currently manage fluctuations in the wholesale electricity price?

We operate in the SEM which is a mandatory spot priced pool where prices vary in every half hour. This price volatility is managed to an extent between generators and suppliers through entry into Contracts for Differences (CfDs). When generators enter into CfDs they also typically hedge their underlying commodity price exposure (gas, coal, CO_2) to align with the duration of the CfD, thereby securing their margin.

Q5.D2 : What difference will supporting the carbon price make to your business?

As we have already indicated in responses to earlier questions, if the carbon price support is applied to Northern Ireland generators, our generators will become more expensive relative to other RoI based generators operating in the same wholesale market, thereby resulting in lower scheduling and lower profitability from our market operations. As PPB manages its portfolio of contracts on behalf

of Northern Ireland customers, any reduction in the contribution to the costs of the PPAs will be recovered as an additional charge to Northern Ireland customers (and hence resulting in higher retail tariffs) in accordance with the terms of PPB's licence.

Q5.D3 : As an electricity generator or supplier, how much of the cost of the carbon price support would you pass on to consumers?

The full cost of the carbon support will be included as part of PPB's commercial offers into the SEM and therefore all of it will be passed on to consumers. We would also highlight that the inclusion of all such marginal costs is a licence obligation.

Q5.D5 : How might your company or sector be affected and would there be any impact on your profit margins?

As we have previously outlined, all non-renewable generators in Northern Ireland would be significantly disadvantaged by the imposition of carbon price support through CCL or Oil Duty charges because they are all competing directly for scheduling in the single all-island wholesale electricity market that operates across the two jurisdictions in Ireland. Any such reduction in scheduling will inevitably result in reduced profit margins, which as explained in relation to how PPB is regulated, means higher charges to all Northern Ireland customers.

Q5.D6 : Do you have any comments on the assessment of equality and other impacts in the evidence base of the Impact Assessment, included in Annex D?

As we have highlighted in response to a number of previous questions, there is an inequality of impact for Northern Ireland generators because they are operating in direct competition with generators located in RoI on a half-hourly basis in the wholesale electricity pool that operates in Ireland. We therefore disagree with the analysis in Annex D that indicates the proposals have no significant impact on competition as the impact clearly creates a major distortion on the operation of the SEM.

Paragraph 89 in Annex D notes that a consequence of the arrangement is to incentivise importing electricity into the UK but then states that Government do not envisage that any such increase would have significant implications for the operation of the UK electricity market. This may be true for the GB market, but for the reasons previously outlined, this is not true for Northern Ireland given that the electricity market in Northern Ireland operates as part of a single all-island electricity market for Ireland.

Similarly, paragraph 109 states that imports may become more competitive but the impact is unlikely to be significant due to the modest share of the market these are likely to represent. Again while this may be true for GB, as we have already explained, it is not the case for Northern Ireland or the Irish market generally where interconnector capacity represents a much higher proportion of installed generation capacity and peak customer demand.

Impact on the Northern Ireland economy

Northern Ireland has additional costs arising from its location on the periphery of the EU and historically the region has had higher energy charges than elsewhere in the UK and most other EU countries. It is therefore important to consider the effect of the carbon floor price on the costs faced by local businesses. This is also set against the context of the Northern Ireland having the highest level of fuel poverty (at c34%) in the United Kingdom and the economy being materially impacted by the cut in its government budget by £1.6bn over the next four years. With Northern Ireland depending on public spending on a reported 77% of economic activity, the carbon support proposals would have a further damaging effect on local business who are already struggling to compete in the global markets.

Furthermore, the UK Government is currently reviewing ways to rebalance the Northern Ireland economy, including the possibilities of a variation in corporation tax, and therefore it would be counter-productive to apply the burden of carbon price support in Northern Ireland with its negative impact on the economy.

The Department of Enterprise, Trade and Investment in Northern Ireland (DETI) recently published its Strategic Energy Framework (SEF) for Northern Ireland which has set a target of the level of installed renewable generation to be well in excess of 40% of electricity energy consumed by 2020. The impact assessment indicated that such a target could add £99 per annum to customer bills. This is a significant difference to the 1% reduction which has been estimated by the DECC for GB domestic electricity prices in 2020 in targeting a 32% renewable electricity target and the introduction of a carbon price floor will further reduce the competitiveness of Northern Ireland. It is extremely important that all related policy decisions are taken into account in the assessment of the impact of any single policy, such as the carbon support mechanism, on customers and the local economy.

Conclusions

The Northern Ireland wholesale electricity market is very different to the rest of the UK electricity market as a consequence of it being part of a cross jurisdictional All-Ireland market. The size of both the Northern Ireland and All Ireland markets is small in comparison to the GB and European markets and the capacity of interconnectors is such that, while small in a UK context, it equates to a significant proportion of peak demand in Ireland (for example the maximum change of flow on the interconnectors will be c2,000MW, compared to a peak demand of c6,500MW).

The impact of the carbon price support proposals applying to Northern Ireland generation will be to increase its costs in the SEM relative to RoI based generators, thereby distorting the functioning of the SEM on an ongoing basis and also discouraging any medium to long term investment in new generation in Northern Ireland which will naturally seek to locate in RoI, creating risks to the long term security of supply in Northern Ireland. The knock-on effect of reduced scheduling in respect of the generating capacity contracted to PPB will be to increase costs for Northern Ireland customers to offset the reduced contribution from sales to the SEM.

The only way to avoid distorting the ongoing functioning and competition in the SEM is to provide an exemption for generation in Northern Ireland from the CCL and oil duty rates, thereby enabling Northern Ireland generators to continue to compete on a equitable basis in the All-Ireland market. This would also create a more level playing field in the competition for new generation investment in Ireland.

11 February 2011

Mr Martin Shaw
Environmental Taxes
HM Revenue and Customs
3rd Floor West - Ralli Quays
3 Stanley Street
Salford
M60 9LA

Dear Mr Shaw

Carbon Price Floor: Support and Certainty for Low Carbon Investment

I write to set out the North East Chamber of Commerce's (NECC's) views on the above consultation. NECC is the North East's leading business membership organisation and the only regional chamber of commerce in the country. We represent more than 4,000 businesses located throughout the Tees Valley, County Durham, Tyne and Wear and Northumberland. Our members are drawn from all sizes of business across all sectors and employ about 30% of the region's workforce.

NECC welcomes the opportunity to respond to the Government's consultation - Carbon Price Floor: Support and Certainty for Low Carbon Investment. NECC is the North East's leading business membership organisation and the only regional chamber of commerce in the country. We represent more than 4,000 businesses located throughout the Tees Valley, County Durham, Tyne and Wear and Northumberland. Our members are drawn from all sizes of business across all sectors and employ about 30% of the region's workforce.

From as early as the 18th century North East coal and steel helped to fuel and build the British economy. The North East has been home to private sector enterprise and innovation related to its unique geographical and mineral assets since the industrial revolution, with Sir Joseph Swan pioneering the first electric light bulb and Parsons contributing to the development of the turbine generator.

Today the North East is home to innovation across the energy sector in areas as diverse as Combined Heat and Power (CHP), wind turbines, tidal and wave energy, energy derived from waste, and biofuels. North East businesses have also pioneered products that help us to save energy and carbon with the region hosting a low carbon economic area for electric vehicles as well as expertise related to low carbon lighting, biofuels and micro-generation.

NECC has estimated that, taking into account the broad range of opportunities that exist for investment in the North East's energy sector, there is an opportunity for the creation of over 40,000 jobs and £6 billion of inward investment between now and 2030. It is clear that, wherever possible, steps must be taken to ensure that investor confidence is

continually fostered with innovative and proactive Government policy that enables the private sector to meet its carbon reduction commitments while securing jobs and wealth creation along the way.

A carbon price floor, implemented both efficiently and without increasing the general level of taxation on businesses, is a necessary and worthwhile step that will help to underline investor confidence in the UK energy market.

At present the notional price of carbon has been proved, via the European Emissions Trading Scheme (EU ETS) to be helpful for investors and energy producers in that it has provided a pricing signal, albeit one that changes frequently and is at present too low to help incentivise major investment in energy infrastructure. A floor price for carbon, which could be set in time periods similar to the trading periods used for the ETS, will help investors to calculate risk and, potentially, increase certainty.

There are two equally important elements that the Government must consider as it considers setting a pricing floor for carbon. Taken on its own, such a pricing signal will impact on the investment intentions of prospective energy generators, yet also on investors seeking to exploit opportunities in household and private sector efforts to mitigate the amount of carbon they use for heat, transportation and power.

Any changes to the current range of mechanisms that exist to spur both carbon abatement and investment must be carried out quickly and with close consideration given to the impact and burden that the administrative and bureaucratic changes will place upon business. Furthermore, recent GDP data, as well as NECC's own economic survey of membership, illustrate starkly that there is an enduring fragility in the UK economy. There is also uncertainty related to policy changes implemented by the new Government, for example around the abolition of regional development agencies and changes to planning policy for large scale infrastructure projects.

There is an acute danger that this enduring lack of both clarity and support for investors in the energy sector will impede the UK's chances of meeting our carbon reduction commitments and securing a sustainable and affordable range of energy sources for the future. If the UK is serious about meeting these commitments, yet also about capturing market share for energy sector related manufacturing opportunities, it is critical that uncertainties are tackled and regulatory/administrative burdens reduced. To this extent a carbon pricing floor must be clear, simple and consistent.

I hope these comments have been helpful and look forward to discussing these issues with you and your colleagues further. Please do not hesitate to contact me if you require more information.

Yours sincerely

[redacted]

NEPIC response to the Carbon Floor Price Consultation Feb 2011

On behalf of the members of the Northeast of England Process Industry Cluster. For a list of our 550 members see www.nepic.co.uk

Background

NEPIC, the North East Process Industry Cluster is an active group of over 500 companies and educational establishments involved in this most successful part of UK manufacturing industry, covering chemical, pharmaceutical, biotechnology and biorefining activities.
NEPIC is working with the regional Local Enterprise partnerships Tees Valley Unlimited to find ways to further improve the growth prospects for their members and hence the economy of the region and the UK.

Such is NEPIC"s concern to ensure the process sector contributes to and benefits from the development of a low carbon economy in the UK, it has taken a leading role with the National Innovation Centre CPI in developing a regional low carbon development plan (NEE Business Opportunities from Biomass Dec 2010) and supported its members in forming PICCSI, the Process Industry CCS Initiative, which exists to promote the NEE as a preferred location for one of the UK"s first demonstrations of the technology

Our response to this consultation is based on the views of our members especially those with more energy intensive operations and is supported by our partner organisation such as TVU who are submitting their own response with our endorsement.

NEPIC have responded to individual questions as attached, but wish to make some more general comments on the outcomes of the proposal as it currently stands on their members and by extension on the UK economy and the need for growth and rebalancing which are at the heart of what the government is trying to achieve.

Introduction

In summary NEPIC"s response is

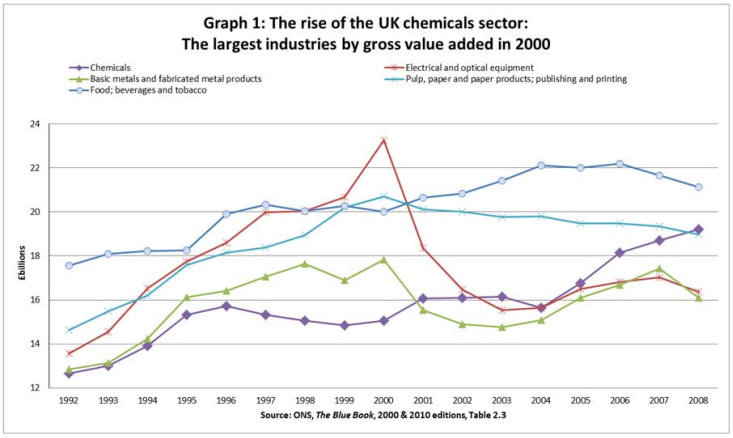
- The Process Manufacturing Sector is committed to a low carbon future irrespective of additional taxation burdens
- A sustained Process Manufacturing Sector is essential to any rebalancing of the economy towards low carbon manufacturing
- The proposals are likely to lead to increased costs which cannot be passed on in the face of international competition and will result in inevitable carbon leakage
- The result of the proposal will be reduced investment leading to significant threats to the energy intensive manufacturing base over the medium to long term.

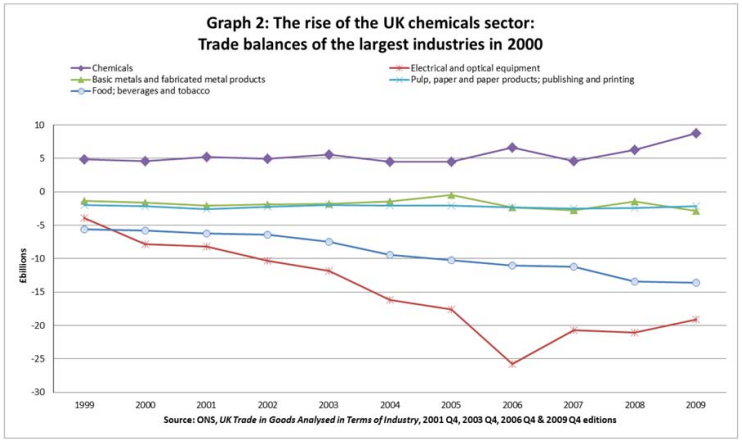
1 The Low Carbon future is already part of the Process Industry agenda

Following recent shocks, the future of the UK economy is reliant on a building a larger and growing manufacturing sector. The BIS growth review in Dec 2010 emphasised the importance of energy intensive sectors such as chemicals to achieving this objective.

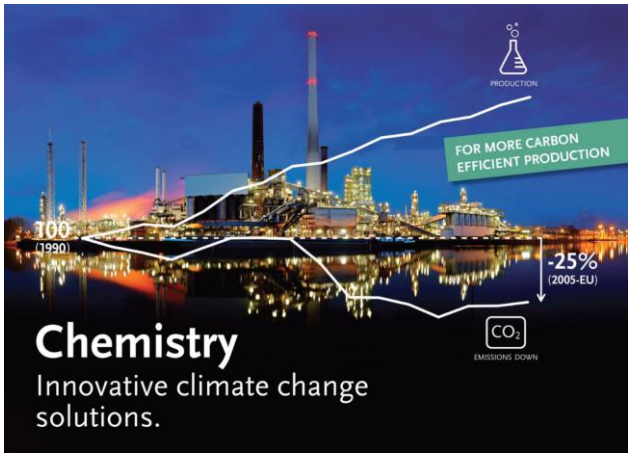
"Many UK Advanced Manufacturing firms are within or closely related to energy intensive industries that depend on manageable energy costs and security of supply to remain globally competitive"

The commitment to tackle the man-made element of climate change by reduce carbon emissions to 20% current levels by 2050 is clearly an opportunity, confirmed by the Stern report to develop new industries and growth. The process sector which is now the UK's 2nd largest industry by GVA and the only manufacturing sector operating a trade surplus (see figures)





has been taking this opportunity consistently over decades as a result of its own focus on energy (i.e. carbon) efficiency driven by inexorable business logic. Clearly this has been influenced by more recently introduced measures such as EU ETS, CCL etc. There is no sign of this process stopping any time soon as the industry continually takes new ideas on resource efficiency, renewable feedstocks and process improvement on board, many of which are being developed and adopted by NEPIC members.



The industry is concerned that high usage of energy – implicit in the making the products we need to drive down overall emissions e.g. renewable fuels and chemicals, fertilisers, polymers – is confused with low efficiency and comparatively high emissions. This difference needs to be corrected and policies set appropriately before we see further migration of an industry to other regions where policy is more supportive.

2 Policy Impact

The proposal to support a floor price would at first sight drive the emissions improvement process more rapidly. However this approach if pursued by the UK alone threatens a significant contraction in the process sector in the NE which both produces many of the products and supports a major technical service industry. Both of these are essential to creating the low carbon economy we need. The global nature of this very competitive industry – ownership of the significant companies is largely outside the UK – enables movement over medium term of production and technology to regions with the most favourable environment. The recent closure of the Teesside Cast Products, Artenius PTA, Dow Ethylene Oxide, Croda and Invista operations in the Tees Valley region alone bear testimony to this.

The contribution of the UK chemical industry UK CO2 emissions is in absolute terms a modest fraction at 10.8 Mt CO2eq/yr against a total of some 275 Mt CO2eq/yr (See DECC website EUETS Phase II National Allocation Plan Table IV). That is only some 3.9% of our energy related emission. Further reductions in the sector emissions, whilst worthwhile are not likely to secure the UK Targets.

The establishing of a carbon price floor at the levels forecast to make the transfer to low carbon energy unavoidable will in a number of years cause further restructuring in the sector. This will lead to significant reductions in trade surplus and GVA. Unfortunately Government assessments of the impact on industry which show a marginal effect are misleading, based it would appear on less Energy Intensive ones.

3 Innovation & Investment

A carbon price floor will not materially improve innovation in the sector, driven as it is by competition. Substantial investments are happening now even over the recession with e.g. Growhow spending some £35m to reduce CO2 emissions by 1.2Mtpa, driven by energy efficiency gains.

In a high carbon price environment these developments are less rather than more likely to happen as the economics of the industry become unattractive.

Biorefining, Energy from Waste & Biogas

Increasing consumer acceptance and demand for natural products, along with increasing demonstration of improved performance against fossil fuel derived products is seeing rapid growth in biomassed based materials. Coupled with the role of biomass products in contributing to greenhouse gas (GHG) emissions targets NEPIC has seen an expansion of the biomass using industry in recent years without further additional penalty being required.

The UK"s first wheat based biorefinery is now operating in the NE, and others are being constructed. The industry is developing new products based on renewable or recycled raw materials increasingly quickly - examples in the region include Biffa/Greenstar polymers, PYReco

and INEOS Bio. Other NEPIC members are actively considering the use of such renewable or waste elements in their manufacturing processes to produce energy and materials. A more expensive energy supply or range of products will reduce the UK attractiveness for such investments and the carbon savings will be made elsewhere at our expense. A particular concern shared with the REA is the potential impact of the CPS scheme on Energy from Waste (EfW) or renewables including the treatment of biogas produced by anaerobic digestion or gasification. It would be perverse if the CPS levy were to discourage these initial steps towards a lower carbon manufacturing base and these inputs need to be exempted

4 The Strategy for growth and the Energy Intensive sector

NEPIC members support the calls by the CBI both for a growth strategy which is focussed on sectors where the UK is strong and adds real value, and more particularly their call for consultation on the ways to protect the energy intensive industry which is exposed to international competition. This review, mentioned in the consultation, needs to be completed to inform any decision of the floor price. The sector knows it is vital that the objective of a low carbon UK economy is best met by retaining and developing a low carbon supply chain in the UK including the efficient but energy intensive elements present particularly in the NE. The science & engineering expertise which serves this sector is also a significant wealth generator. Retaining and developing this will be much easier alongside a sustainable manufacturing base.

5 Electricity Distribution

In a related area NEPIC would support TVU in their response on the impact of differential grid transmission charges. This is affecting opportunities for cluster members who are seeking to develop low carbon electricity projects with significant industrial integration. These projects which would secure both UK energy and advanced manufacturing operations are significantly less attractive as a result.

Detailed Responses

3.A1: What are your expectations about the carbon price in 2020 and 2030? And how important a factor will it be when considering investment in low-carbon generation?

NEPIC members were all involved in the creation and implementation of the successful Tees Valley Industrial Programme (TVIP) which looked at a number of options for lowering industrial emissions in the Tees Valley because of the concentration of energy intensive production.

Studies were carried out by AMEC and Element Energy/Carbon Counts looking at the economics for Industrial CCS schemes and the Carbon Price regime that would be likely to make this happen. In the course of this work no consensus emerged on likely carbon price for the future – regulatory uncertainty was a factor. However the studies did make it clear that for CCS to work for industry a price of more than £48/te CO2 would have to apply to reward the abatement costs.

ETS price forecasts show Carbon prices up by a factor of 3 from today – i.e. around 45 Euros/teCO2. This would not support an industrial CCS scheme but could lead to emitters with high capture investment costs (in the Tees Valley case this is almost all) considering the future of their operations rather than mitigation.

It is also clear from the study work carried out as part of the TVIP that the principal issues on CCS relate to offshore costs and risks and liabilities from the storage phase. Without the government providing certainty to investors it is difficult to see a CCS scheme taking off, particularly where oversizing for the addition of industrial emissions is also needed.

The importance of the price level is highlighted by the Element Energy report "Developing a CCS network in the Tees Valley Region" which illustrates that over £300 million turnover per annum is potentially at risk at £20/te CO2 over the duration of Phase III. Additional work by TVU shows that there would be an additional annual cost burden of over €123 million on Tees Valley emitters in the EU ETS if the carbon price rose to €50 per tonne, even if 85% allowances were allocated free. This would create unsustainable pressure on the sector and there would be inevitable leakage of emissions elsewhere.

Whilst the Phase III may allow some sectors and operators to benefit from 100% allowances, these will based on benchmarked performance and it is likely that only the top 10% will receive sufficient allowances to cover their total emissions. (Ends Report Jan 2011) This will affect the process industries in the region significantly because in many cases the assets are relatively old and despite significant investment, are inevitably not technically capable of achieving the levels of efficiency enjoyed by more modern investments elsewhere in Europe. Whilst they continue to improve performance, additional cost pressures will increase the likelihood that the inevitable re-investment in new assets will be elsewhere, reducing UK manufacturing employment without affecting emissions in toto.

Indirect & CHP effects

It is a concern to members that electricity prices paid by industry could be significantly increased as a result of generators being themselves affected by CPS in addition to other levies such as FIT, ROCs and EUETS costs. One member has estimated that CPS alone could treble the CCL rate.

The sector has always made extensive use of CHP to maximise energy efficiency. However the proposal to remove the differential treatment for CHP schemes will have the effect of making electrical import with on purpose steam generation a cheaper option, with a penalty of some 10% on actual efficiency. CHP power for the sector should receive preferential treatment to meet previous government targets and be treated similarly to domestic CHP.

3.A2: If investors have greater certainty in the long-term price of carbon, would this increase investment in low-carbon electricity generation in the UK? If so, please explain why.

Whilst our members would welcome certainty in pricing, and this might assist delivery of the pipeline of low carbon investments identified for the region, including Biomass and Waste to Liquid Fuels and Chemicals, we cannot see UK prices rise above competitive locations elsewhere in EU or beyond.

The possibility of a varying tax rate by future governments will also affect decisions about making investments in low carbon generation

3.A3: How much certainty would investors attribute to a carbon price support mechanism if it were delivered through the tax system?

This will depend on Government providing stability and what is happening in other markets around the world. We must not be first movers. This can only work when applied to large discreet geographic market areas e.g. across the EU. Investors would then have no other option across a significant market. The risk is that the UK in taking the lead will see current & potential investors leave to other locations within competing economies.

3.A4: In addition to carbon price support, is further reform of the electricity market necessary to decarbonise the power sector in the UK?

NEPIC members consider that we do not need the complexity of a carbon price support (CPS) tax and "contract for a difference" as well as other measures to drive a low carbon generation mix. It is unfortunate that there is a relatively short period for CPS and EMR consultation to run in parallel which would have allowed a fuller discussion consideration of impacts.

We also support the point made by TVU in their submission that changes to the transmission cost regime are needed in order to overcome a significant hurdle placed in front of further investment in power generation both CHP and renewable based in the region.

The proposals are focussed on electricity generation, and need to consider the implications for industry where for example the further application of CHP can abate carbon emissions but is undermined by the proposals as they stand.

4.B1: What changes would you need to make to your procedures and accounting systems to ensure you correctly account for CCL on supplies to electricity generators?

4.B2: How long would you need to make the necessary changes to your systems to account for CCL on supplies to electricity generators?

4.B3: Please provide an estimate of how much the system changes would cost, both one-off and continuing?

No Comments

4.C1: Do you agree that all types of electricity generators should be treated equally under the proposed changes? If not, please explain why.

No. As mentioned above existing industrial CHP schemes would become uneconomic compared to the current alternative of sourcing power from the grid and heat from on-site boilers despite a 10% better efficiency. CPS should not be applied to inputs for heat from CHP which currently represents the most cost effective way of decarbonising energy intensive industrial production.

4.C2: Is there a case for providing additional or more preferential treatment for CHP? If so, what is the best way of achieving this?

As mentioned above, CHP needs to be treated as the preferable option for energy & heat applications. The proposals would increase industry costs on integrated and stand alone complexes exacerbating competitive pressures.

It is important to ensure existing CHP plants are not encouraged to maximise electricity production leaving heat production to less efficient means. Fuel use for heat generation needs to be treated separately from that for power production in order to ensure that CHP can play its part in reducing emissions.

Integration with industrial and commercial/domestic applications needs to be encouraged as this has not yet occurred in the UK on a scale comparable with Europe. The proposals would not make this more likely.

4.C3: Do you agree that tax relief should be considered for power stations with CCS? If so, what are the practical issues in designing a relief; what operational standards should a CCS plant meet in order to be eligible; and how might these issues differ for demonstration projects?
NEPIC members involved with our industrial CCS initiative are supportive of mechanisms which will lead to a better chance of CCS being implemented at a low enough cost to allow industrial emitters the option protect themselves from higher carbon prices. The operational standards should be set to encourage integration with industrial emitters.

4. D1: What impact would the Government's proposals have on electricity generators and suppliers that export or import electricity?

No Comment

4.D2: What impact might the proposals have on trading arrangements for electricity?

No Comment

4.D3: What impact might the proposals have on electricity generation, trading and supply in the single electricity market in Northern Ireland and Ireland?

No Comment

4.E1: How should the carbon price support rates be set in order to increase certainty for investors, in particular over the medium and long term?
Given the investment lead times in the energy intensive sector the greatest certainty in forward prices would be desirable. Of concern to members is the possibility that future changes to the mechanism will be made, which effectively lead to additional price uncertainty. Of the options quoted as examples the annual adjustment options are likely to be less conducive to investment although all suffer from the uncertainty of the EUA value and hence the actual level of tax.

NEPIC members support the objective of moving to a low carbon baseload generation mix, but too complex a set of measures are being proposed. The urgent need is for DECC to analyse the impact of these measures specifically on the energy costs of the UK‟s profitable and export orientated energy intensive industries. The EU already has the highest energy costs and these proposals would push the UK„s even further ahead: this is not a sustainable environment for energy intensive industries.

4.E2: Which mechanism (outlined above), or alternative approach, would you most support and why?
The sector‟s main concern is the complexity of measures. As mentioned above, CPS and aspects of the Electricity Market reform proposal are aimed at achieving the same objective and if implemented will add additional complexity to investment complexity barriers in the UK.

4.E.3: What impact would the proposals have on your carbon trading arrangements?
No Comment

4.F1: Should the Government target a certain carbon price a) for 2020 and b) for 2030? If so, at what level?
See response to 3A1 and 3A4.

4.F2: What is the most appropriate carbon price for the UK to meet its emissions reduction targets in the power generation sector? How would this be affected by changes in the structure of the electricity market?
See response to 3A1 and 3A4.

4.F3: When would be the most appropriate time for introducing a carbon price support mechanism and what would be the most appropriate level?
From the industrial perspective the introduction of any CPS mechanism needs to be linked to developments in the carbon tax regimes across the markets served. Moving early without consideration of these impacts will risk achieving reductions through disinvestment.

5.B1: What impact would you expect the carbon price support mechanism to have on investment in low carbon electricity generation?
As outlined above, the impact on investment in low carbon manufacturing is the main concern of NEPIC and its members. Whilst it may drive electricity production in a low carbon direction, it will, unless implemented recognising the sector issues, lead to disinvestment in manufacturing over medium term.

5.B2 What other impacts would you expect carbon price support to have on investment decisions in the electricity market
Members who are operators of industrial CHP schemes are certain that the proposals will lead to perverse incentives to operate stand alone boilers/maximise electricity production with resultant increases in emissions overall.

5.B3: How should carbon price support be structured to support investment in electricity generation whilst limiting impacts on the wholesale electricity price?

Given that the increase in price is a means to incentivise carbon reduction, members doubt this can be achieved or that the investment climate will be favourable enough to low carbon producers.

5.C1: Can you provide an assessment of the impact of the proposals on your generation portfolio and overall profitability?

NEPIC could provide an industry wide assessment that would ascertain the actual impact across the process sector including related generators. However such a study would need to be resourced.

5.C2: What would be the implications of supporting the carbon price for existing electricity generators and how should the Government take this into account?
No Comment

5.D1: How do you currently manage fluctuations in the wholesale electricity price?
No Comment

5.D2: What difference will supporting the carbon price make to your business?

No Comment

5.D3: As an electricity generator or supplier, how much of the cost of the carbon price support would you pass on to consumers?

No Comment

5.D4: As a business, how much of the cost of energy bills do you pass on to customers?

This will clearly vary from industry to industry but ultimately every penny will be passed on to consumers. Ultimately every business is linked to a consumer.

5.D5: How might your company or sector be affected and would be there any impact on your profit margins?

See initial comments

5.D6: Do you have any comments on the assessment of equality and other impacts in the evidence base of the Impact Assessment, included at Annex D?

In annex D it is of concern to the cluster and its energy intensive members that the carbon leakage issue is recognised (p18 Para 81). The joint project mentioned in Para 82 must be completed urgently in consultation with the sector and NEPIC is willing to assist this in any way it can. It is naive to conclude (Para 84) that impacts of price rises will be small. This sector is dominated by global commodity producers operating at relatively lower margin but compensated by high volume. It is inevitably capital intensive and very sensitive to input prices, of which energy is first or second in importance.

Any UK policy which significantly affects manufacturing costs in a globally exposed will add to already severe pressures which have seen the closures identified in the introduction and lead to reduced operating margins and investment moving elsewhere over time. The scope for reducing emissions via applying CPS to the sector is limited and carbon reduction is already being driven by global competition and existing regulations.

[redacted]

I respond on behalf of Northumbrian Water to the consultation on the carbon price floor. Northumbrian Water is a water company providing water and waste water services to 2.6 million in the north east of England and water services only to a further 1.8 million customers in Essex and Suffolk. We are a major user of energy in our work, in a typical year using around 600GWh in treating and pumping water and sewage, mainly in the form of electricity. Collectively the water industry accounts for around 3% of all electricity use in the UK.

I understand that the trade association representing water companies, Water UK, has provided a separate response to the consultation. We endorse the position set out by Water UK and do not want to repeat answers to the specific questions put forward in the consultation document. We do, though, want to expand on some of the key messages in their letter.

Like Water UK, we support the Government's ambition to strengthen support for investment in low carbon energy production that the proposed tax will bring. We believe that taxation on the basis of the use of energy makes sense. The direction of travel in linking tax more closely to carbon emissions we believe to be the right one. Losing support for exemptions from CCL for fossil fuel use in good quality CHP will affect us, and Water UK has made this point in its response. Similarly, there are dangers to the security of electricity supply if it discourages businesses from engaging in STOR through which we contribute to managing demand for electricity by burning fossil fuels in our standby generation apparatus.

Despite these reservations we support the approach because we believe that the proposed change has the potential to, and should, replace completely the Carbon Reduction Commitment Energy Efficiency Scheme (CRC). I want to expand on the points made in the Water UK response in this regard.

Point 1 – Both the CRC and the proposed change to the Climate Change Levy share the same ambition, encouraging energy efficiency. This is the primary aim of the CRC. Modifying the CCL as proposed in the discussion document takes nothing away from the similar ambitions of the CCL, made clear in section 2.2: -
"CCL is an environmental tax levied on taxable commodities supplied to businesses and the public sector. The taxable commodities are electricity, gas, solid fuels and liquefied petroleum gas (LPG). The levy encourages energy efficiency to help the UK meet targets for cutting greenhouse gases, including CO2 emissions. More efficient energy consumption reduces energy costs and can make businesses less vulnerable to energy price volatility."

Point 2 - It applies to all businesses and the public sector and not just those meeting the threshold for qualification for the CRC. As such it is not discriminatory. One of the reasons behind targeting the CRC at the larger users is because the administrative cost in reporting emissions and buying allowances is significant. Restricting it to what is now between 2000 and 3000 organisations does though mean that these are clearly discriminated against and, with the inclusion of the additional costs of supporting a carbon price floor, paying a carbon tax twice over. This is clearly unfair.

Point 3 – The CCL has the merit of being administratively efficient, in stark contrast to the CRC. Using an extended CCL to replace the CRC would remove the administrative burden of the CRC in its entirety, to the benefit of all. Within the private sector this would avoid costs that would otherwise be passed on to customers. For the many organisations involved in the CRC supported by public funds, from the Environment Agency as administrators to local government, health and educational organisations within the scheme, this would remove a burden from the public purse at a time when funds are under particular pressure.

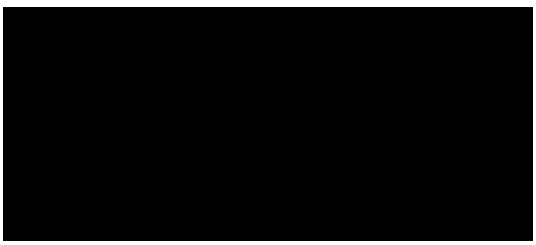
Point 4 – Whilst the incentive for more efficient use of energy is maintained with the proposed carbon price floor, it is also intended to encourage renewable energy development. Again the contrast with the CRC could not be more stark. The CRC does not only fail to incentivise the displacement of grid with renewable energy, it actually penalises it where development of renewable energy is supported by incentives such as ROCs and FiTs. In effect it retains a tax on the energy derived from renewable sources. Using the revised CCL to replace the CRC would result in a balance between the 'stick' of the rising tax level and the 'carrot' of investing in renewable energy to reducing the burden. In contrast, the CRC in its latest form is all stick.

Point 5 - It could be structured to ensure no loss of revenue to the Treasury. One of the reasons behind the change to the CRC announced at the time of the October Spending Review was to retain the revenues from the sale of allowances to support the public finances, including spending on the environment. To replace the CRC with the modified CCL would potentially result in a loss of anticipated revenue from allowance sales, estimated to total £1 billion a year by 2014-15. However, we feel that setting the right level and trajectory of the carbon price floor could readily be structured to bridge this gap.

In summary, we repeat our overall, albeit conditional, support for the proposals. The proposals will provide greater certainty that will encourage investment in renewable energy as well as strengthening the incentives to improve energy efficiency across all businesses. We believe that, with its introduction, a separate CRC is no longer needed, removing an unnecessary cost to the nation as well as the organisations involved, without loss of the benefits in improved energy efficiency. Although there will be some negative impacts on our organisation, the price of these is worth paying if the CRC is replaced as a result. We will make similar points in response to the consultation on simplification of the CRC currently being led by DECC.

If anything in the above response should be unclear, please feel free to contact me via email or using the telephone number below.

Kind regards



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Response by the Nuclear Industry Association to the HM Treasury and HM Revenue and Customs consultation on the Carbon price floor

The Nuclear Industry Association (NIA) welcomes this opportunity to comment on the Government's proposals for supporting the price for carbon in the UK electricity generating sector.

NIA is the trade association and information and representative body for the civil nuclear industry in the UK. It represents over 250 companies operating in all aspects of the nuclear fuel cycle, including the current and prospective operators of the nuclear power stations, the international designers and vendors of nuclear power stations, and those engaged in decommissioning, waste management and nuclear liabilities management. Members also include nuclear equipment suppliers, engineering and construction firms, nuclear research organisations, and legal, financial and consultancy companies. Several of these companies will be making their own detailed responses to this consultation. The purpose of this NIA response is to make some higher level points.

The NIA strongly agrees with Government that the UK needs credible plans to decarbonise the power sector if it is to meet its energy security and climate change targets. Over the next decade and a half all but one of our existing nuclear stations could close, along with much of our coal fired capacity. It is therefore vital that a start is made soon on building low carbon technology – new nuclear, renewables and coal with CCS. Delays in taking decisions now could result in the UK becoming locked into a high carbon scenario.

In terms of nuclear we are already seeing a substantial commitment to new UK build, with three consortia announcing plans for up to 16 GW of new plant by 2025 – the first commissioning in 2018. However significant funds will be required to bring this to fruition and the consortia concerned will only proceed if they are convinced that the new plant will be economic. This requires the creation of an electricity market framework that will provide stable, predictable returns commensurate with the risks of large low carbon projects. Importantly the new arrangements need to reflect the long term nature of the investments and provide policy stability over an extensive period.

Against this background the NIA strongly supports the Government's intention to transform the electricity market so that it rewards low carbon generation. In this context we agree that the level of carbon price and its uncertainty is a key factor affecting investment in low carbon generation, and therefore welcome the intention to

introduce a carbon support price mechanism. Alongside the broader market reforms that are the subject of the separate Electricity Market Reform consultation this will create a package that should provide investors with the certainty they need to proceed with the plant that is critical to meeting the UK's goals on carbon emissions and security of supply.

The NIA therefore welcomes the Government's proposals in relation to providing certainty for low-carbon investment. The NIA is not in a position to comment on the future levels of carbon price required to incentivise investment, or to comment on how the proposals would impact on electricity price or other forms of generation. These questions are better addressed by the relevant utilities. We do not therefore intend to respond to the detailed specific questions posed in the consultation, but would wish to make the following points:

- It is important that early decisions are made in respect of the carbon price support mechanism. This would provide a clear indication of the Government's commitment to creating a market framework for investment in low carbon generation. We would like to see provisions included in the Finance Bill 2011.

- In the absence of greater certainty on carbon price, there is a risk that investment in more gas-fired generation will come forward, locking the UK in to a higher emission scenario and delaying the transition to a low carbon economy.

- In making decisions over the level of carbon price support and its trajectory, the Government will need to balance the interests of customers against the need for clear incentives to bring forward investment in low carbon generation.

- A carbon price support mechanism is not sufficient on its own, however. The related consultation on electricity market reform is vital and a coherent package of measures will be required to create an enduring framework.

- If the timetable for new nuclear build assumed by Government (which envisages the first of many new nuclear reactors coming on stream by 2018) is to be met the first major investment decisions will need to be taken from as early as the beginning of next year; it is essential that there is much greater clarity on market arrangements at that point.

- There must also be continued momentum on other new build facilitative actions, including the designation of the national policy statements on energy which will guide investors and decision-makers on the priorities and needs for investment in energy infrastructure. It is important that the NPS are designated as soon as possible, subject to the appropriate parliamentary scrutiny.

Nuclear Industry Association
11 February 2011

NU'GEN

NUGEN RESPONSE TO CARBON PRICE FLOOR CONSULTATION

INTRODUCTION

We welcome the opportunity to respond to HM Treasury's consultation "***Carbon price floor: support and certainty for low-carbon investment***". This response is submitted on behalf of NuGeneration Limited (NuGen), a consortium of GDF Suez, Iberdrola and SSE, who have an interest in developing new nuclear power generation at a site adjacent to Sellafield, in West Cumbria.

Each of the NuGen parent companies is already a leading player in the global energy sector and together form a very strong partnership of companies. We have a total installed nuclear capacity of almost 10,000MW by operating in Belgium and Spain, and having partnership in France and Germany. We have more than 250,000 employees worldwide and almost 40,000 of those are working in the UK. We have also developed and are operating thermal and renewable power stations in the UK.

Certainty over the planning process and certainty over the investment framework is crucial if plans to develop nuclear new build are to be taken forward through to construction and subsequent operation.

An effective and timely implementation of planning reform is one key element of the framework to be put in place in order to ensure the delivery of energy projects and to attract the huge investments needed in the UK.

In order to invest in new low carbon generation, such as nuclear new build, there needs to be a stable, long-term policy framework to deliver the sustained, multi-billion pound build investment programme required to deliver the Government's energy policy goals over the coming years and decades. We welcome the Government's efforts to address investor concerns by consulting on a number of Electricity Market Reform proposals, including this consultation on the carbon price floor.

We believe that the package of proposals outlined in the Electricity Market Reform consultation has the potential to provide investors with the certainty they require to commit to the investment programme that is required in the UK and we look forward to considering these in more detail as the proposals become more well defined.

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CARBON FLOOR PRICE CONSULTAITON

Carbon floor on its own does not address all investment constraints
The principle of a carbon floor price can help to provide a market signal for the de-carbonisation of the electricity sector and we agree with Government that "*further reforms of the electricity market are likely to be necessary*" but we would go further and say that further reforms of the electricity market are absolutely necessary. A carbon floor price is not sufficient on its own to provide the level of certainty required for investment in new low carbon generation, such as nuclear new build, and other incentives will also be needed to attract the necessary investment.

Some of the other Electricity Market Reform mechanisms (Feed In Tariff / Contract For Difference) are likely to effectively neutralise the impact of the long term wholesale electricity price on low carbon technology investments (including neutralising the effect of the carbon price floor on long term wholesale electricity price). Therefore, the carbon floor price may not, in practice, result in the acceleration of investment in new low carbon technologies.

UK competitive position
We support, in principle, the use of a carbon floor price to stimulate investment in new low carbon generation but we believe there are risks that this could place UK industry at a relative disadvantage in relevant markets. It is important to balance the policy benefits of a price floor against any impacts on competitiveness.

Not a revenue raising vehicle
While any mechanism delivered through the tax system is subject to political risk, and, unlike a contractually-based mechanism, risks revision in response to changing political imperatives, a carbon price floor can nonetheless be helpful in influencing investment decisions. Some concerns may also arise if the core purpose of the policy measure becomes obscured and the tax simply provides a means for Government to raise revenues.

Timing of implementation
We would like to see a minimum of two to three years between the announcement of a mechanism in the Budget Statement and its coming into force to coincide with investment horizons and provide transparency in the traded electricity and carbon markets and allow price adjustments to take place. In this regard, implementing the mechanism from 2013, as proposed, is a sensible suggestion. The effect of carbon price support should be relatively low in its early years, with an increasing trajectory over time to smooth the effects.

Level of carbon price floor
The purpose of the introduction of a carbon price floor is to stimulate new low carbon investment. It must therefore be borne in mind that too high a floor

price could lead to substantial gains for existing low carbon generation, at the expense of consumers. It is widely understood that the revenue streams required to support investment in new low carbon generation must be higher than what projected electricity prices can currently provide. However, if this entails an increase in electricity prices, consumers are right to expect investment in new low carbon generation in return but it is not clear to us that this will be the case.

At this stage of development of the respective carbon price floor proposal and Electricity Market Reform (EMR) proposals, we would judge that some of the other mechanisms outlined in the EMR consultation may have a greater potential to provide the level of certainty needed to invest in nuclear new build than the carbon price floor proposal.

11 February 2011

Martin Shaw
environmentaltaxes.consultation@hmrc.gsi.gov.uk

[redacted]

Date: 11 February 2011

Dear Martin,

Ofgem's response to HM Treasury carbon price floor consultation

In February 2010 we set out in our Project Discovery consultation our view that greater long-term carbon price certainty could better facilitate investment in low carbon technologies. Consequently we welcome the Government's commitment to providing such certainty.

While taxation matters are very much an issue for Government, we have an interest in considering the impact of any carbon price support mechanism on electricity consumers. We note that the carbon price support proposal (CPS) forms part of a wider package of proposed reforms and it should therefore not be considered in isolation. Consequently our comments take account of its likely interaction with the other electricity market reform (EMR) proposals and wider Government energy policy, including amongst other things the Green Deal and schemes targeted towards vulnerable customers. We note that the latter Government initiatives will play a vital role in ensuring that vulnerable consumers are not unduly affected by the EMR and CPS proposals. From the perspective of consumers, it will be important that the reforms work together efficiently to achieve the Government's objective of secure, affordable, decarbonised, energy supplies.

Key observations

Our principal objective is to protect the interests of existing and future consumers. In line with this objective and our other statutory duties we have paid particular attention to the impact of the proposals on consumers. Below we have outlined our key observations:

1) Affordability

In the accompanying impact assessment HM Treasury noted that when viewed in isolation the CPS mechanism could result in between 10,000 and 200,000 households falling into fuel poverty by 2020. Furthermore, the distributional impacts of the policy would be most significant on consumers with the lowest incomes. We consider it vital that the Government address the impact of the EMR reforms as a whole (including carbon price support) using other policy initiatives to ensure that vulnerable consumers are not disproportionately affected.

2) Additional profits for existing Generators

Existing low carbon generators will see a relative benefit to their position without any need for them to change behaviour. They will have taken on carbon price risk at the time of their investment decision (or indeed, in the case of existing nuclear, invested without any carbon price in place). Consequently, in removing some or all of this carbon price risk, the Government's proposed carbon price support potentially puts these generators in a more advantageous position than they might have expected to be in, and they will benefit accordingly. This may have some benefits to consumers to the extent that it may affect a future investment decision for low carbon technology, e.g. in relation to the life extension of a nuclear plant. However, it is a particular issue where subsidies have already been provided, e.g. for those generators whose investments have already been subsidised by the Renewables Obligation. The latter is similar to the position many fossil fuel generators found themselves in at the commencement of the EU Emissions Trading Scheme, where grandfathered rights saw those generators profit from free EU allowances (EUAs).

3) Interactions with EMR reforms

In Project Discovery, we discussed a range of options for ensuring secure and sustainable energy supplies. We considered a minimum carbon price could facilitate long term investor certainty for low carbon generation, but we also considered that this objective could be achieved through more interventionist measures. In considering 'packages' of potential reforms, we considered that full capacity tenders for low carbon generation and a minimum carbon price would not be required together, as these were alternative ways of achieving the same objective. While the proposed Feed-in-tariff (FiT) with a Contract for Difference (CfD) in the EMR differs from the full capacity tenders we envisaged, there remains a risk that consumers could pay more than is necessary to decarbonise GB's electricity market. However, we note this would be off-set to an extent because the CPS should lead to a reduction in the portion of overall revenue that generators receive through the CfD.

4) Combined Heat and Power

We note the proposal to remove Climate Change Levy exemptions for Combined Heat and Power (CHP) generators. As a result, the proposal will have a negative impact on the investment case for CHP, which is one of the most efficient forms of thermal generation. In the overall policy framework of moving to a low carbon electricity sector, CHP could play a significant role and this decision therefore appears to be inconsistent with the overall policy aim.

5) International considerations

It is important to consider any wider international implications of the proposal. The EU Emissions Trading Scheme (EU ETS) sets an annual limit for carbon emissions across all EU-27 Member States. A feature of a GB only scheme is that a greater and potentially cheaper number of EUAs are likely to be available for other Member States without contributing to a reduction in EU emissions as the amount of allowances is currently fixed by the existing ETS mechanism. It may be possible to take the effect of the carbon floor price into account in setting longer-term caps in the EU ETS.

In addition, in the coming years the UK electricity market will become more interconnected. The efficient use of interconnectors will be important to achieve Government's aims like security of supply, decarbonisation, affordability and efficient market functioning. Introducing a GB-only carbon tax may distort cross border trade patterns. A higher GB price may lead to an increasing level of imports. However, the impact on domestic energy prices and trade may be offset by other parts of the EMR proposals and so we do not consider that this should be viewed in isolation.

6) Administration of the CCL

We also have a function as administrator of the Climate Change Levy through Ofgem E-Serve. In this context, we consider the proposals indicate that there will be no direct effect

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upon the administration of the CHP and Renewable LEC schemes themselves. However, indirect effects may feed through in terms of the numbers of generators registering with each scheme.

Further engagement

We welcome the opportunity to respond to your consultation on the carbon price support and in addition to submitting this response we also intend to engage with DECC on the wider EMR consultation, which closes on 10 March.

[redacted]

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HM Treasury's Consultation – Carbon Price Floor: support and certainty for low-carbon investment

Response by Oil & Gas UK

Introduction

Oil & Gas UK which is the main trade association representing the oil and gas exploration and production industry in the United Kingdom is pleased to be able to contribute to the debate on this important matter. We fully support the government's desire to reduce emissions of GHGs in economically efficient ways and to encourage investment that will achieve this objective, coupled with securing the country's energy supplies in a manner which is both affordable for consumers and keeps the economy competitive. We also understand the government's desire to end some of the investment uncertainties which are currently evident in the electricity generating market, in particular.

Rather than answer HMT's specific questions in detail, which others are better placed to do than we are, we would like to make some high level comments for your consideration. Also, it is necessary to consider DECC's consultation about reforming the electricity market alongside this consultation by HMT.

EU Emissions Trading Scheme

As noted on p.14, the price of CO_2 in Phase II peaked during mid-2008 at close to €30/t, before falling by 50+% as the financial crisis and the recession developed. Following a slight recovery, it has since been reasonably steady at €13-15/t. Phase III of the EU ETS begins on 1st January 2013 and it is likely that the price will rise appreciably, given the reduction in the number of allowances available and the requirement to purchase all allowances relating to electricity generation. It would not be unreasonable to assume that it will revert to €25-30/t in Phase III, especially if an economic recovery becomes established. In this regard, DECC's forecast in Chart 3.D looks to be low.

Therefore, it is concerning that, before Phase III has begun, the government is introducing a new mechanism for pricing carbon which will only apply in the UK, not the rest of the EU, never mind the rest of the world. This has significant implications for the economy's international competitiveness and is likely to lead to so-called "carbon leakage". It will also tend to undermine the EU ETS. The current weakness of the EU ETS is that there are no clear signals for what will happen after 2020; will the ETS continue or will it be superseded by other economic instruments? In the absence of any such signals, it becomes difficult for companies to plan their long term investments. Assuming that it continues, however, it should be the means for setting the price of CO_2 in the longer term.

Multiple Regulation and Complexity

There is a clear risk of undue regulatory complexity arising when this proposal is considered alongside DECC's proposals for reform of the electricity market and on top of the EU ETS. There is an excessive number of measures being contemplated whose overall coherence is far from clear. Furthermore, taken together, the measures represent a substantial shift away from allowing markets to work, with all the benefits which have accrued over the past 20 years in Great Britain, towards much more intervention by government. Indeed, after the application of the various measures proposed, it is difficult to see how much of a market in electricity will be left to be contested in a normal, competitive way and, therefore, how a reliable market price for electricity will be set.

Any floor price should be just that: a floor to the price of something. It should not be used as a means for trying to set the marginal price of some desired objective, in this case CO_2 abatement. Paragraphs 4.38 – 4.41 suggest that HMT is trying to set the marginal price, but, as stated above, that should come from the EU ETS. In any event, artificially set prices are unsustainable in the medium to long term.

The Gas Market

The market for gas in Great Britain has become an international model, respected for its open-ness, good liquidity and competitive pricing. Investors have responded magnificently in recent years to the need for new infrastructure, as our own production has declined, such that supplies were maintained throughout the worst winter for more than 30 years (2009-10) and again during the severe weather in the early weeks of the current winter (2010-11). According to National Grid, of the ten days of highest demand for gas ever recorded in Great Britain, nine occurred in 2010, with three in January and six in December. The investment in gas which sustained the country through these testing times, when, for example, transport infrastructure was very much less reliable, would probably not have happened without an open and liquid market.

There has, of course, been the move to gas fired power generation since the 1990s, with all the benefits which that has produced: lower costs and fewer emissions of CO_2, NOx, SOx and particle matter when compared with the coal fired plant which has been replaced. Gas remains the technology of choice. If all of the electricity currently generated in GB from coal and oil were replaced by gas fired plant, emissions of CO_2 would fall by some 50 million tonnes a year. This requires no subsidy, no new market mechanisms and would keep electricity prices internationally competitive, thereby helping our heavier, manufacturing industries remain competitive.

However, DECC's 2050 Pathways document published in July 2010 projects gas demand to fall by about 30% by 2020 and nearer 90% by the mid-2040s. This offers no encouragement for future gas investment, whether in new supplies as UKCS production declines or in storage (the main infrastructure has been built already, as noted above). Not only do such projections discourage future investment, but they also discourage those who currently provide a wide variety of international supplies to this country from including GB in their longer term plans, other than occasionally. This will do nothing for security of supply and could lead to the very opposite.

Carbon Capture and Storage

CCS is widely seen as one of the main ways of reducing CO_2 in power generation. However, CCS at scale remains some years away and commercial CCS will probably not come about before 2025-30. If CCS can work with coal, it can work with gas and probably more cheaply[1]. It is encouraging to see ministers promoting CCS with gas for one of the four planned demonstration projects (DECC's 2050 Pathways did not seem to envisage this).

In order to incentivise the development of this technology, we believe that demonstration plants should receive relief, as should commercial plants in relation to those emissions captured and stored (ref question 4.C3). However, to the extent that new technologies such as CCS receive other support, this should only be in their development stage during transition to maturity and not in the longer term. The best technologies should be allowed to emerge without artificial economic distortions.

[1] ref Mott MacDonald for DECC, June 2010

Energy Policy

It is abundantly clear that current policies which aim to electrify the economy and de-carbonise electricity generation by 2030 are going to be very expensive. Indeed, it is must be doubtful if the necessary capital can be raised within the timeframe contemplated, never mind spent to good effect, i.e. without straining the supply chain's resources such that it leads to significant cost inflation, which would be the worst of all outcomes[2].

Furthermore, current policies assume the simultaneous and successful introduction of a wide range of new technologies and changes in the way we live:

- 12-15GW of new nuclear power plant
- CCS becoming commercial
- offshore wind power of a scale, complexity and distance from shore never undertaken before
- development of a smart and much expanded electricity grid
- widespread use of electric vehicles
- electrifying home heating (80% of homes currently use gas)
- introduction of smart metering across the country
- dramatic improvements in energy efficiency and the way society uses energy.

The consequences of this programme were analysed in two separate reports which were published last autumn, the first by Poyry Energy Consulting for Oil & Gas UK[3] and the second by Redpoint Energy for the Energy Networks Association[4]. Poyry noted in its report that "There is a greater risk of the lights going out from a lack of power generation than there is of gas interruptions because of a shortage of gas."

Although approaching the subject from very different directions, the two reports came to similar conclusions, namely that using more gas in the energy mix would be more affordable, less risky and, therefore, more likely to succeed. Indeed, Redpoint estimated that it could save up to £700 billion over the years to 2050.

Summary

- **The proposed carbon price floor is a complex measure.**
- **There is an undue number of interacting measures being contemplated simultaneously whose durability must, therefore, be questionable.**
- **Artificial prices do not endure – they collapse under their own contradictions.**
- **The various measures proposed are likely to undermine the markets which have served GB so well in recent years.**
- **Within the overall energy policy framework, the substantial benefits of gas seem to be ignored.**
- **Current energy policies are risky and very expensive, threatening both their achievement and the competitiveness of the economy.**
- **It would be better for policies to be simplified and de-risked.**

* * * * *

[2] It is worth noting that the much quoted £200 billion of energy infrastructure investment during 2010-20 excludes our sector, where £50-60 billion of capital investment is expected in the decade.

[3] See http://www.oilandgasuk.co.uk/Role_of_gas.cfm

[4] See http://2010.energynetworks.org/reports/

From: Dr John Rhys 19 January 2011

CARBON FLOOR PRICE. TREASURY CONSULTATION

I am a Senior Research Fellow at the Oxford Institute for Energy Studies, and a Visiting Fellow at the Science Policy Research Unit, Energy Group at Sussex University. I am also a former Managing Director of the consulting firm NERA where I was intimately involved in the design of the 1990 market arrangements, and a former Chief Economist at the Electricity Council, responsible for the pre-1990 coordination and regulation of the power sector in England and Wales. The views expressed in this note are my personal opinions.

In my response I wish to focus on the single question of whether further steps would be necessary to decarbonise the power sector.

Q 3.A4. In addition to carbon price support, is further reform of the electricity market necessary to decarbonise the power sector in the UK?

I believe carbon price support on its own will not be sufficient to decarbonise the power sector in line with the government's 2050 targets, and does not on its own constitute an efficient means of doing so. In summary I argue that:

- On its own this measure will not provide sufficient regulatory or contractual certainty to investors
- Trying to second guess a market response by setting a carbon floor, in order to achieve a required level of low carbon investment, risks either failure to achieve targets or the possibility of windfall profits to investors.

These arguments are set out in more detail in the following brief note, and I also anticipate setting them out more fully in the context of the related DECC consultation currently in progress.

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TREASURY CONSULTATION ON THE PROPOSITION FOR SUPPORTING LOW CARBON INVESTMENT THROUGH A CARBON PRICE FLOOR

Note by Dr John Rhys, Senior Research Fellow, Oxford Institute for Energy Studies

19 January 2011

Prima facie a proposal to set a floor price for carbon should improve the economics of low carbon investment and make it easier for investing companies to establish a commercial case for new generation investment.

However the proposal raises two important questions as to whether a floor price for carbon, in the absence of other measures, would lead to development of an adequate amount of low carbon capacity:

- Whether it provides adequate revenue and regulatory security for investors.

- Whether it is possible to "tinker" with an important component of the market price in such a way as to "second guess" the market and produce the "right" price that both induces the desired amount of investment and avoids windfall gains to low cost producers and technologies.

Adequate revenue security. Limited influence of a carbon floor price.

First, under current and near future conditions, the carbon floor price would form only one part of the electricity price. The other major component is currently fossil fuel prices, which remain volatile and uncertain. Low carbon investment would therefore still potentially have volatile revenues as a result of volatile fossil fuel prices; net revenues for fossil plant are less affected by fossil price volatility, for obvious reasons.

Second, if decarbonisation proceeds at the rapid rate that is necessary to achieve the Government's carbon targets, then at some point in the future, and certainly well within the operating life of the new low carbon capacity that is required, it is low carbon plant that will often be at the margin, setting very low or zero system marginal costs. At this stage the carbon floor price would, in effect, be "pushing on a string". It is, therefore, absent additional market reforms, not clear that a carbon floor price would necessarily be sufficiently effective in supporting the revenue stream over the life of a project.

Regulatory uncertainty.

Even within these limitations, an administered carbon floor price should, depending on the level at which it is set, improve to some degree the incentives for low carbon investment. However if companies believe that the floor price could be changed by future governments, then prima facie the proposal, in the absence of additional measures, would fall a long way short of the guarantees that would be sought, for example, in a long term contractual approach. Much stronger guarantees would almost certainly be sought by a prudent investor providing very large amounts of capital for investment in an asset with a very high degree of asset specificity. This is especially so for investors not already enjoying the benefit of vertical integration and a secure customer base.

In addition the original design of existing market structures was negotiated in an era dominated by fossil fuel plant, and the pricing, optimisation and system marginal cost structures compatible with that market regime cannot be assumed to be efficient or even viable in a world dominated by low carbon plant with very different operating and cost characteristics. Failure to address wider issues of market reform will therefore add to regulatory uncertainty.

The absence of contractual or regulatory certainty means that investors will look for a higher expected return to compensate for the much higher level of risk they are being asked to carry.

Second guessing the market

As matter of public policy it is clear that the UK can only meet its targets, or any realistic contribution to carbon reduction, through the rapid and extensive decarbonisation of the power sector. There is therefore a fairly well determined range of acceptable outcomes for the amount of low carbon capacity to be developed over the next two decades. If we

assume the carbon floor price is the sole policy instrument available to achieve this policy, then it must be set at a level that will “second guess” the market response. There are therefore two main risks.

The first is that the carbon price floor is set too low. In that case it has little effect on investment, and since additional low carbon capacity is still desired and indeed essential to meet targets to which the UK is committed, the government is obliged to return to the issue, after a delay, and either to further raise the floor price or to instigate additional supporting policies. The second possibility is that the price floor is set too high, and results in windfall profits for investors. While it may be possible to stop excessive investment, the clawing back of excess would further damage confidence in the regulatory regime.

This provides further reason to suppose that the introduction of a carbon price floor will not, on its own, provide an effective and efficient means to bring about the volume of new low carbon capacity that is required.

Conclusion

Given that the need for very large amounts of low carbon capacity investment is widely accepted as a policy necessity, it is not appropriate to rely on the single instrument of a carbon floor price in order to achieve it.

MOWREY
MEEZAN
CODDINGTON
CLOUD
LLP

February 11, 2011

Submitted Via Email

Martin Shaw
Environmental Taxes
HM Revenue and Customs
3rd Floor West
Ralli Quays
3 Stanley Street
Salford, M60 9LA
UK

Re: Consultation on Carbon Price Floor – Support and Certainty for Low-Carbon Investment

Dear Mr. Shaw:

On behalf of our client Peabody Energy, we are pleased to provide these comments on the December 2010 consultation entitled "Carbon Price Floor: Support and Certainty for Low-carbon Investment" (hereinafter "Consultation").[1]

Executive Summary

- ✓ Fossil fuels used to generate electricity should remain exempt from the climate change levy ("CCL").
- ✓ Alternatively, if the CCL exemption for fossil fuels used to generated electricity is to be revised, in whole or in part, the Government should: (1) not favor the use of natural gas in electricity production at the expense of coal; and (2) ensure that any carbon-content-based levy on natural gas takes into account that fuel's lifecycle GHG emissions.

Background

The CCL is an environmental tax levied on taxable commodities supplied to businesses and the public sector. Covered commodities are electricity, gas, solid fuels and liquefied petroleum gas

[1] http://www.hm-treasury.gov.uk/d/consult_carbon_price_support_condoc.pdf.

("LPG"). Solid fuels include coal and coke, lignite, semi-coke of coal or lignite, and petroleum coke. The CCL applies when the covered commodities are supplied to a business or public sector consumer. The CCL "encourages energy efficiency to help the UK meet its targets for cutting greenhouse gas ["GHG"], including CO_2 emissions."[2]

Currently, in most cases, fossil fuels used to generate electricity are exempt from the CCL.[3] In this Consultation, the Government has proposed to remove these CCL exemptions and to tax these commodities at rates that take into account their average carbon content.

The policy objective behind these proposals is to "provide more certainty and support to the carbon price and to encourage investment in low-carbon electricity."[4] Low-carbon electricity, in turn, is needed to meet the Government"s GHG emission reduction goals[5]:

> The Government has a commitment to reduce UK [GHG] emissions by at least 80 per cent (from 1990 levels) … The Government"s 2050 Pathways Analysis published in July 2010 considered a range of plausible ways to reduce UK emissions while retaining a secure and reliable energy system. It concluded that decarbonizing the power sector and the electrification of heating, transport and industry over the long term would be necessary to meet the 2050 target and that, as a result, electricity supply would need to increase significantly.

Current CCL rates are shown below:

CCL Taxable Commodity	Rate
Electricity	0.470 penny per kWh
Gas as supplied by a gas utility	0.164 penny per kWh
LPG (or other gaseous hydrocarbons)	1.050 pence per kg
Solid fuel	1.281 pence per kg

[2] Consultation, ¶ 2.12.
[3] The Government imposed the CCL in part to meet its obligations under the 2004 European Union framework for the taxation of energy products (Directive 2003/96/EC).
[4] Explanatory Note, Clause XX and Schedule X: Carbon Price Support Rates, Background Note, ¶ 11 (available at http://www.hm-treasury.gov.uk/d/en_draft_clause_schedule_carbon260111.pdf).
[5] *See* Consultation, ¶ 2.7 (internal footnote omitted).

Comments

I. Removing the Current CCL Exemption For Fossil Fuels Used To Generate Electricity Would Harm the UK Economy and Its Citizens

The CCL"s current exemption for fossil fuels used to generate electricity should be retained for several reasons.

First, taxing fossil fuels used to generate electricity will necessarily lead to an increase in retail electricity prices, as even the Government acknowledges.[6] Independent modeling similarly suggests that the UK will see "double-digit price increases … for … electricity as a result of the emissions- reduction efforts."[7] Tax increases of all kinds decrease consumer spending and put negative pressure on both employment and investment. Energy tax increases – specifically including carbon taxes on industry – are additionally harmful to the economy because they are regressive, and thus hurt the poor disproportionately.[8]

The UK already is on a path of decreased economic growth due to its climate policies. Modeling demonstrates that achievement of the UK"s 80% GHG reduction goals by 2050 would lead to the following effects (in 2050)[9]:

- ✓ A 1.4% reduction in GDP "reflecting the economic costs to achieving large emissions reductions."
- ✓ A three-fold increase in consumer prices.
- ✓ Double-digit increases in prices for petrol.
- ✓ Double-digit increases in prices for electricity.
- ✓ "Large increases in the price of air travel … a reflection of the difficulty in moving to less emissions-intensive technologies" for this industry. The cost of air travel is expected to be

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[6] Consultation, ¶ 2.5 ("In the short to medium term, the Government recognizes that supporting the carbon price is likely to have a knock-on effect on the wholesale electricity price, which is likely to increase retail electricity prices").

[7] "Modelling a UK 80% Greenhouse Gas Emissions Reduction by 2050: A Short Modelling Exercise for New Scientist," at p. 5 (Cambridge Economics, UK, Dec. 2009) (hereinafter "Cambridge Report") (available at http://www.newscientist.com/data/doc/article/mg20427373.400/ce_new_scientist_report.pdf).

[8] M. Wier, "Are CO_2 Taxes Regressive? – Evidence from the Danish Experience," Ecological Economics 52 (2005) 239-251 ("regressivity not only increases with CO_2 taxes paid directly by households, but also with CO_2 taxes imposed on industry").

[9] *See generally* Cambridge Report, at pp. 5-7.

7.35% and 143.42% higher in 2020 and 2050, respectively, as a result of the imposition of climate change policies in the UK.

- ✓ Higher retail product prices across the board via pass-through of carbon costs, with large price increases expected in particular for drink, tobacco, electronic goods, household appliances, and glassware & tableware.

- ✓ Negative subsidiary effects in the labor market due to the "per-unit cost of [labor] in production ris[ing], driving up prices."

- ✓ Similar negative subsidiary effects in "hotels and catering and business services" that will lead to "higher accommodation and rent costs."

- ✓ A reduction in producers" profits.

Figure 1 below, taken from the cited Cambridge Report (where it is identified as Table A), itemizes the marginal increase in specific retail commodities in 2020 and 2050 in the UK as a result of the Government"s climate change policies.

TABLE A: PERCENTAGE DIFFERENCES FROM BASELINE

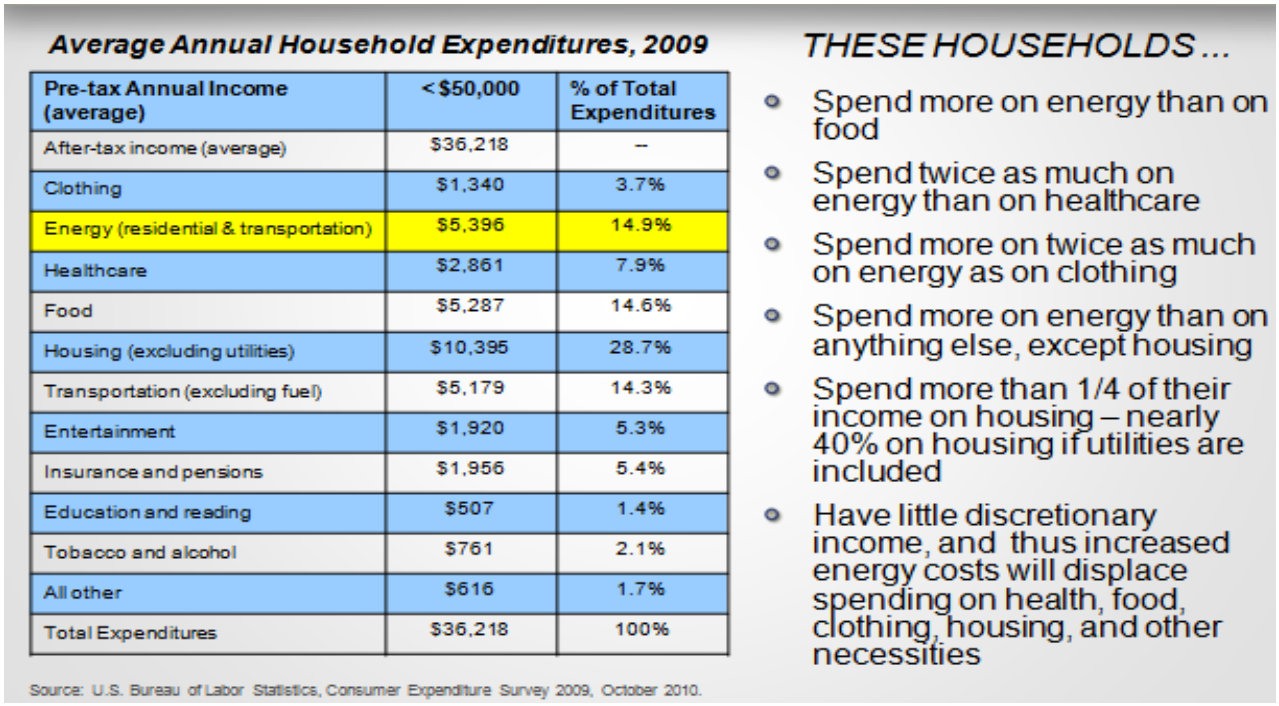
Sector	2020	2050
1 Food	0.59	1.42
2 Drink	0.88	2.10
3 Tobacco	0.95	2.02
4 Clothing and Footwear	0.76	1.44
5 Actual Rent	0.62	2.32
6 Imputed Rentals	0.62	2.32
7 Maintenance & repair	1.41	3.06
8 Water and Misc. serv.	0.24	0.78
9 Electricity	6.35	14.82
10 Gas	106.51	158.10
11 Liquid Fuels	13.57	20.36
12 Other Fuels	3.87	9.14
13 Furniture and Floor.	0.61	1.29
14 Household Textiles	0.78	1.48
15 Household Appliances	0.73	1.90
16 Glassware Tableware	1.05	1.86
17 Tools and Equipment	0.92	2.33
18 Household Maintenance	0.32	0.89
19 Medical Products	1.73	4.61
20 Medical Services	0.09	0.32
21 Purchase of vehicles	0.22	1.22
22 Petrol etc	13.94	31.59
23 Rail Transport	0.18	1.05
24 Air Transport	7.35	143.42
25 Other Transport	0.32	1.61
26 Communications	0.14	0.36
27 Electronics goods	0.60	1.94
28 Other rec. durables	0.69	1.38
29 Other rec goods	0.60	1.50
30 Recreational Services	0.60	1.46
31 News, Books, Stationery	0.64	1.61
32 Package Holidays	0.00	0.00
33 Education	0.10	0.33
34 Catering services	1.11	2.49
35 Accommodation.	1.29	2.89
36 Personal Care	0.51	1.10
37 Pers. effects n.e.c.	0.62	1.28
38 Social Protection	0.08	0.28
39 Insurance	0.72	4.75
40 Financial Serv n.e.c.	0.32	1.83
41 Other Services n.e.c.	0.14	0.67

Note(s) : 'Package Holidays' were originally distinguished in dummy data used to define the model classification, in preparation for the transition to a new set of accounts, but were no longer separately identified when actual new data were published.
Source(s) : Cambridge Econometrics.

Figure 1: UK Retail Price Increases in 2020 and 2050 from Imposition of Climate Change Policies

Increase energy costs also lead to negative health effects for the citizens of the UK.[10]

Data from the US tell a comparable story. Figure 2 below documents what happens to an American family with annual income of US $50,000 or less when electricity prices increase.



Average Annual Household Expenditures, 2009

Pre-tax Annual Income (average)	< $50,000	% of Total Expenditures
After-tax income (average)	$36,218	--
Clothing	$1,340	3.7%
Energy (residential & transportation)	$5,396	14.9%
Healthcare	$2,861	7.9%
Food	$5,287	14.6%
Housing (excluding utilities)	$10,395	28.7%
Transportation (excluding fuel)	$5,179	14.3%
Entertainment	$1,920	5.3%
Insurance and pensions	$1,956	5.4%
Education and reading	$507	1.4%
Tobacco and alcohol	$761	2.1%
All other	$616	1.7%
Total Expenditures	$36,218	100%

Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Survey 2009, October 2010.

Figure 2: What Happens to an American Family with Annual Income of US $50,000 or Less When Electricity Prices Increase?

[10] *See* D. Klein and R. Keeney, "Mortality Reductions from Use of Low-Cost Coal-Fueled Power: An Analytical Framework" (Twenty-First Strategies, Dec. 2002) ("When regulations are enacted with the intent of reducing certain life threatening risks, we expect to see benefits in the form of safer, healthier, and longer lives … But at the same time, the economic costs of these regulations – particularly the impacts on income and employment – tend to worsen individual health or safety and can shorten lifetimes") (emphasis added); M. Brenner, "Health Benefits of Low Cost Energy: An Econometric Case Study," J. of Air & Waste Management Assoc. (Nov. 2005) ("[G]overnmental programs intended to protect public health should take into account potential income and employment effects of required compliance measures … [because b]y increasing the costs of goods and services such as energy, and decreasing disposable incomes, regulation can inadvertently harm the socioeconomic status of individuals and, thereby contribute to poor health and premature death") (emphasis added); *see also* "Economic Growth and Low-Cost Energy Drive Improved Public Health," (Annapolis Center for Science-Based Public Policy, 2006) (noting that affordable energy has led to a high standard of living and longevity).

Second, while the Consultation suggests that more electricity is desired, taxing its production would have the opposite effect. Economics teach that taxing a producing activity will result in less of that production.[11] If the Government‟s policy is the production of more electricity, the current CCL exemption for fossil fuels should be retained, not eliminated.

Third, because an increase in energy taxes would result in more, not less, electricity in the UK, the benefits of electrification would be lost, too. The benefits of electrification are reflected in Figure 3 below.

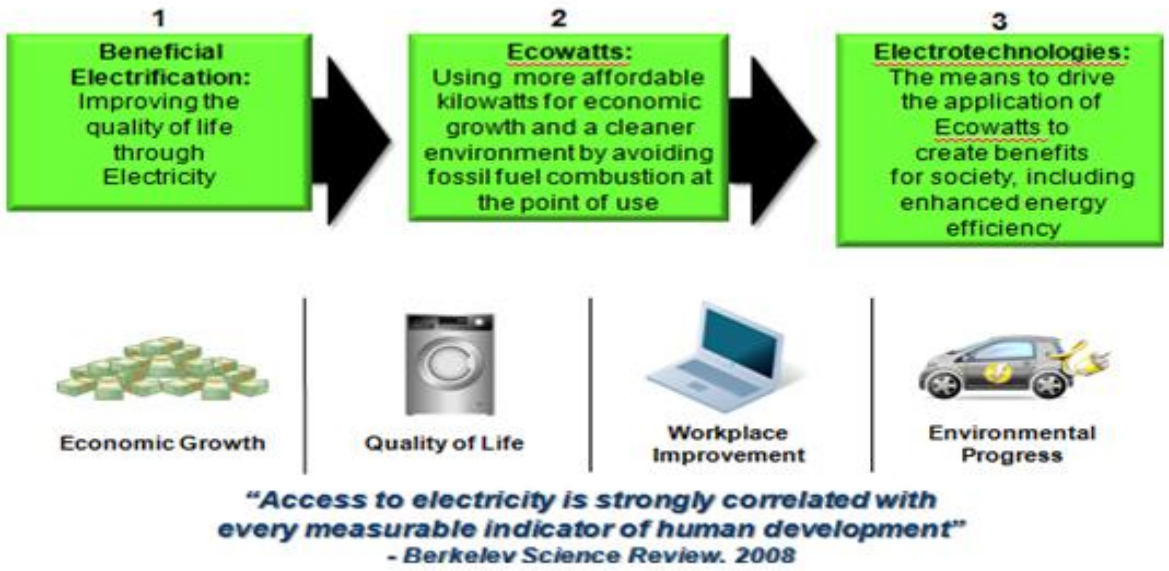


Figure 3: "Electricity is Good, More is Better"

Fourth, increasing energy taxes reflects a flawed policy choice because the promised outcome – punishing politically disfavored fuels while increasing economic output – is illusory:

> [T]he claims for green taxes are easily exaggerated. Enthusiasts for the „green shift‟ often overstate the case. They argue that when environmental taxes are

[11] W. McEachem, "Economics: A Contemporary Introduction," p. 361 (2009) (noting that taxes "discourage[] production"; tax increases have two subsidiary effects: (i) "resource owners may supply less of the taxed resource because the after-tax wage declines" and (ii) "some people shift from the formal, reported economy to an underground, „off the books‟ economy"; and "when the government taxes market exchange and the income it generates, less market activity and less income get reported").

> used to cut labor taxes [for example] they offer a „double dividend" – a better environment and more jobs. This claim is hotly disputed among economists. Moreover, recent experience suggests that a radical shift towards green taxes may be harder than the politicians imply.[12]

In its January 2011 report, the House of Commons" All Party Parliamentary Group on Peak Oil & The Lean Economy Connection[13] made the same point (emphasis added):

> [A carbon t]ax has no role in the distribution of fair entitlement to energy at a time of scarcity … In short, taxation ought naturally to be aligned with recognised values – being set at higher rates for bad things than for good things – but its usefulness as a motivator is limited. [A tax] should concentrate on what it is good at – raising money.

Production of electricity is a "good thing," not a "bad thing," as discussed above.

Governments that fail to recognize these truths frequently find themselves on the outside looking in. The winds of climate change policy have shifted, as most recently reflected in the outcome of the U.S. congressional mid-term elections in November 2010. Leading up to that election, supporters of cap-and-trade (a policy which of course has the effect of increasing energy prices in a manner similar to that envisioned by the Consultation) rammed H.R. 2454, the "American Clean Energy & Security Act," through the U.S. House of Representatives on June 26, 2009 by a narrow vote of 219-212. The narrowness of that vote, given the then-perceived pro-climate policy composition of that chamber, foretold political trouble ahead for the supporters of cap-and-trade. But they persisted nonetheless.[14] Cap-and-trade thereafter expired rather rapidly in the U.S. Senate in mid 2010 in the face of mounting voter opposition.[15] At about the same time, President Obama, sensing that the political tide had shifting against cap-and-trade, struck all references to the phrase "cap-and-trade" from the White House"s web site.

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[12] "Benefits Can At Times Be Fictional In A Fiscal Switch to Green," The Financial Times (Sept. 26, 2006) (available at http://www.ft.com/cms/s/0/95805b04-4f9a-11db-9d85-0000779e2340.html#axzz1DOSjG2WW).

[13] "Tradable Energy Quotas: A Policy Framework for Peak Oil and Climate Change," p. 18 (All Party Parliamentary Group on Peak Oil & The Lean Economy Question, Jan. 2011).

[14] The ongoing break-down in the EU-ETS, with documented cases of fraud and allowance theft, perhaps provide – or should provide – a similar foreshadowing of the fate of cap-and-trade in Europe.

[15] Action on cap-and-trade in the U.S. Senate specifically transpired as follows. Sen. Boxer (D-CA) marked up S. 1733, the "Clean Energy Jobs and American Power Act," through the Senate Environment and Public Works Committee on November 5, 2009, with the Republicans boycotting the mark up. Then, in early 2010, Sens. Graham (R-SC), Lieberman (I-Conn) and Kerry (D-MA) failed in their efforts to craft a bipartisan compromise bill. Finally, in mid 2010, the U.S. Senate engaged in its last gasp on cap-and-trade when Sens. Lieberman (I-Conn) and Kerry (D-MA) issued a stand-alone bill that was so politically unpopular it did not even get a legislative hearing.

And the American politicians supporting cap-and-trade in America paid a high price thereafter. The U.S. congressional mid-term elections in November 2010 were largely a referendum on cap-and-trade. The election itself saw one Senate Democratic candidate (then Governor Manchin of West Virginia, who ultimately won a Senate seat) fire a rifle at the cap-and-trade bill and political candidates of all stripes running on the slogan "no cap-and-tax.."

When the ballots were counted: (1) in the House, thirty five (35) Representatives who voted for cap-and-trade lost; (2) in the Senate, several notable freshman were elected who are certain "no" votes for higher energy taxes and cap-and-trade; and (3) President Obama, viewing the outcome of the elections, remarked that "Cap-and-trade was just one way of skinning the cat … [i]t was a means, not an end."[16] On February 9, 2011, Lisa Jackson, the Administrator of the U.S. Environmental Protection Agency ("EPA"), testified before Congress that "I do not believe that there will ever be a cap-and-trade program authorized under the Clean Air Act."[17]

The new, common sense approach to climate policy – i.e., one that shuns cap-and-trade and carbon taxes -- is not an American-only phenomenon. Polling data from 2010 in the UK indicated that the proportion of adults who believed climate change was "definitely" a reality dropped by 30%, from 44% to 31%.[18] The Kyoto Protocol appears poised to expire at the end of 2012. This Consultation is also inconsistent with the new aspirational goal set forth in the 2009 Copenhagen Accord, which provides that a "low-emission development strategy is indispensable to sustainable development."[19] Whatever else can be said about the CCL, surely increasing taxes on electricity production is not going to further the UK"s "sustainable development" goals. Both the 1992 United Nations Framework Convention on Climate Change ("UNFCC," or "Rio Treaty") and 2009 Copenhagen Accord emphasize that "economic development and poverty eradication are the first and overriding priorities of developing countries."[20] And while the UK is not a developing country, it would be a perverse result under these agreements if the Government increased poverty at home by raising electricity prices.

II. Using Coal Furthers A Cleaner Environment

On the eve of the 20th anniversary of the Rio Treaty, it is worthwhile for the Government to take a look at fossil fuel data from 1992 to the present. Those data mark the inexorable increase in global fossil fuel demand (Figure 4 below), power generation growth since 1990 (Figure 5 below), and global coal production since 1990 (Figure 6 below).

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[16] http://www.npr.org/templates/story/story.php?storyId=131104674.
[17] Politico Pro Afternoon Energy Alert, Feb. 9, 2011 (on file with the author).
[18] "Sharp Decline in Public"s Belief in Climate Threat, British Poll Reveals," Guardian.co.uk (Feb. 15, 2010) (available at http://www.guardian.co.uk/environment/2010/feb/23/british-public-belief-climate-poll).
[19] Copenhagen Accord, ¶ 2.
[20] UNFCCC, art. 4, ¶ 7; Copenhagen Accord, ¶ 2.

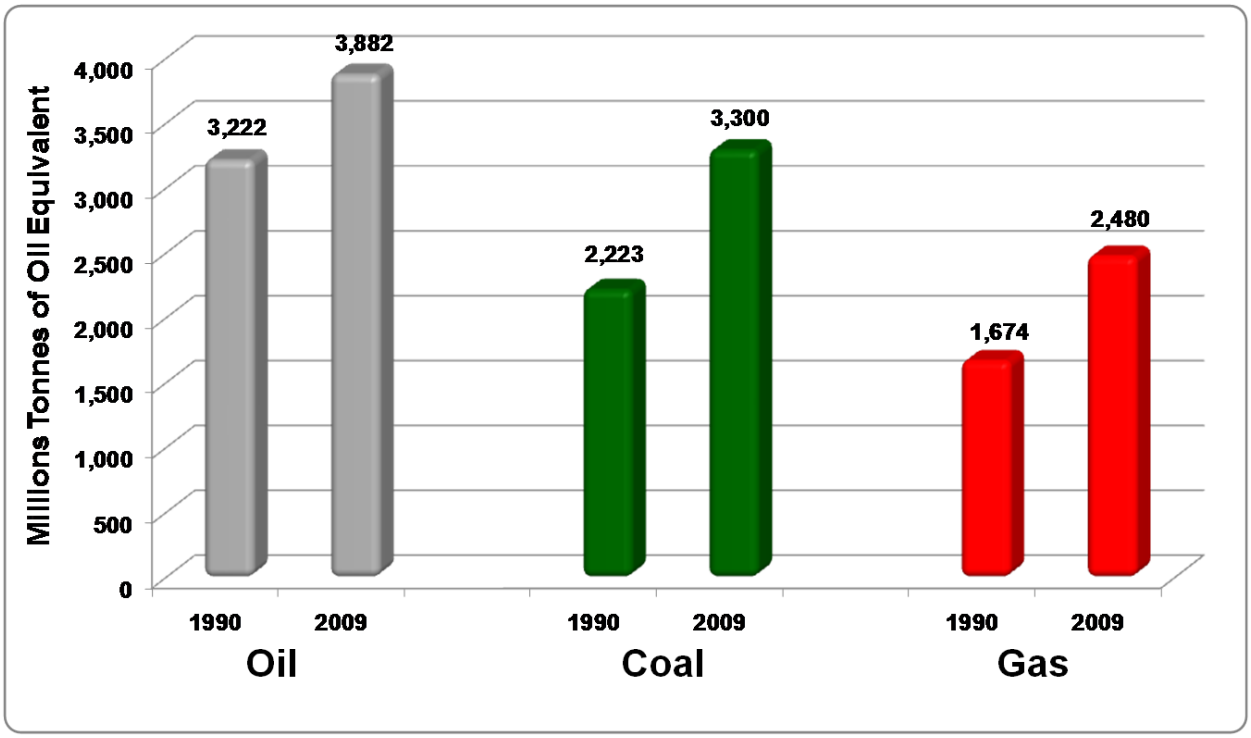

Figure 4: Global Fossil Fuel Demand

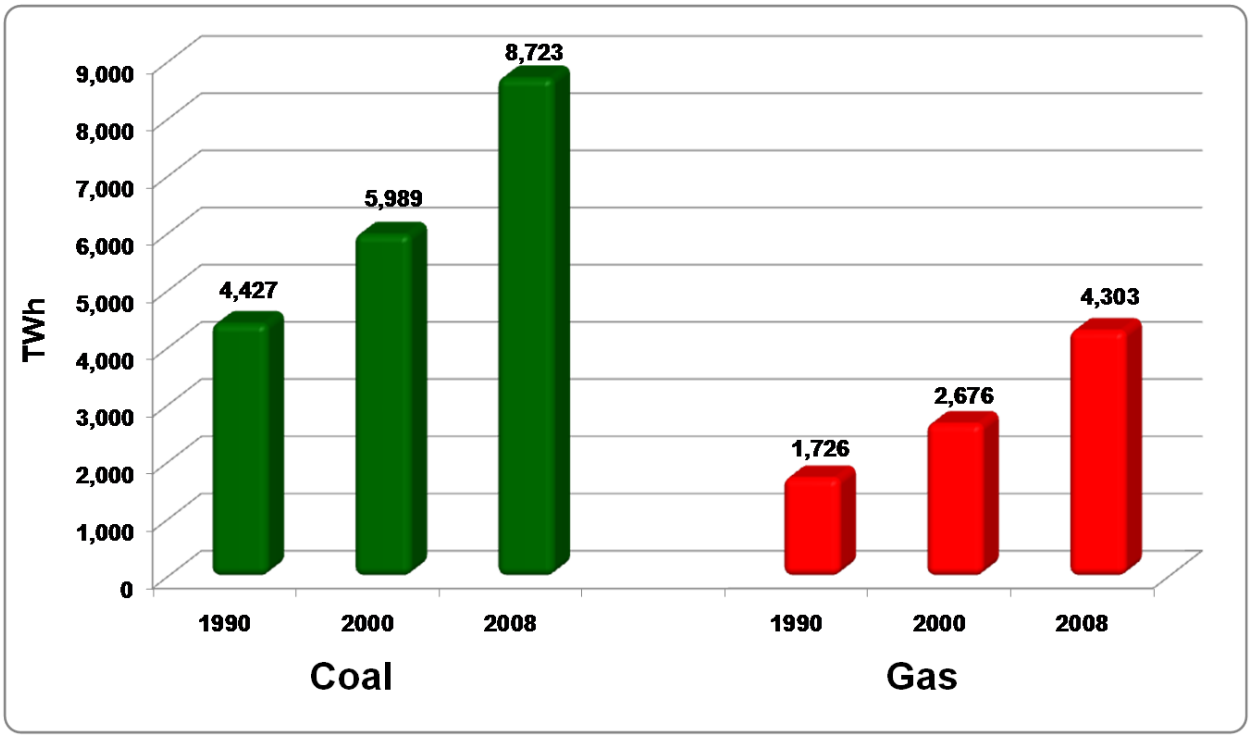

Figure 5: Power Generation Growth Since 1990

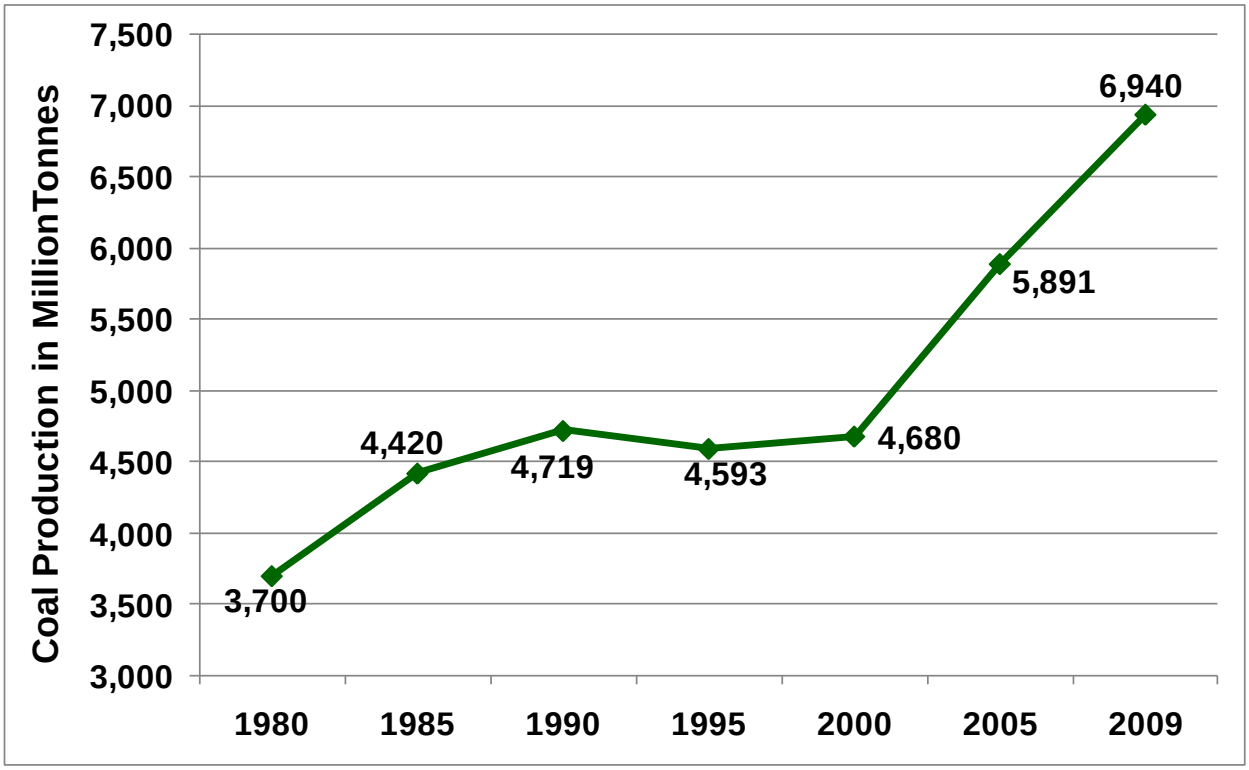

Figure 6: Global Coal Production Since 1990

Figures 4-6 above document coal"s inexorable role in a growing World economy. Figure 7 below graphically demonstrates why coal is keeping the world"s lights on – literally.

Figure 7: The World At Night –30,000 Oil Equivalent Gallons a Second – 42% of Electricity Worldwide Fueled by Coal

More coal is a "good thing" indeed.

And over the same time period covered by Figures 4-5 (i.e., 1990 to 2008/2009), the air quality in the UK has improved with coal usage. Table 1 below shows coal consumption for electricity generation in the UK:

Coal Consumption in Electricity, UK, 2000 to 2008[21]	
Year	**Consumption in million tonnes**
2000	46
2001	51
2002	48
2003	53
2004	50
2005	53

[21] *Source: Historical Coal Data: Coal Availability and Consumption, 1853 to 2000, UK Department of Energy & Climate Change* (downloaded from http://www.decc.gov.uk/en/content/cms/statistics/publications/trends/trends.aspx).

Coal Consumption in Electricity, UK, 2000 to 2008[21]	
Year	**Consumption in million tonnes**
2006	57
2007	53
2008	48

Table 1: Coal Consumption in Electricity, UK, 2000 to 2008

Table 1 suggests that coal usage in the UK has roughly hovered around 51 million tonnes per year over the past decade. The most recent data from 3Q 2010 indicate that coal consumption is trending back up from 2009.[22]

Data from the European Environmental Agency confirm that over the same period UK air quality has improved – and in most instances, 2010 goals were met years in advance.[23]

Figure 8 below shows the dramatic improvement in UK NO_x emissions, 2000 to 2008, and projections through 2020.

[22] *Energy Trends* (Department of Energy & Climate Change, Dec. 2010) (available at http://www.decc.gov.uk/assets/decc/Statistics/publications/energytrends/1082-trendsdec10.pdf).
[23] Figures 9-12 which follow are taken from the European Environment Agency"s UK Air Pollutant Emissions Country Factsheet (downloaded from http://www.eea.europa.eu/themes/air/air-pollutant-emissions-country-factsheets/united-kingdom-air-pollutant-emissions/view).

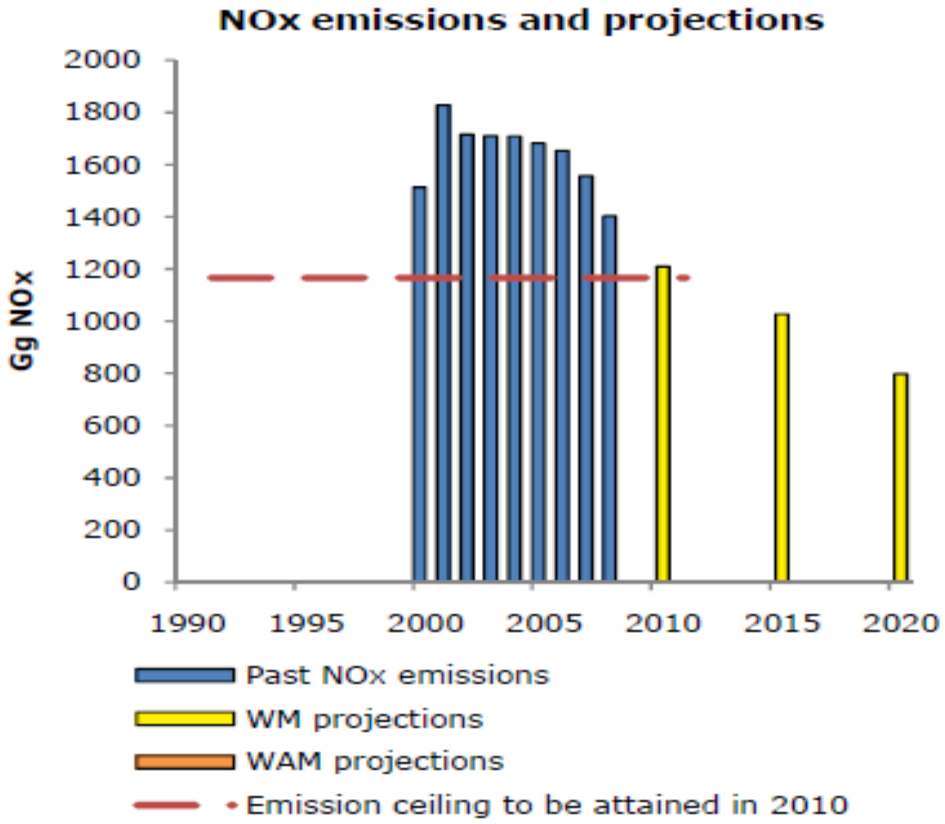

Figure 8: UK NO_x Emissions and Projections

Figure 9 below shows the dramatic improvement in UK non-methane volatile organic compounds ("NMVOC") emissions, 2000 to 2008, and projections through 2020.

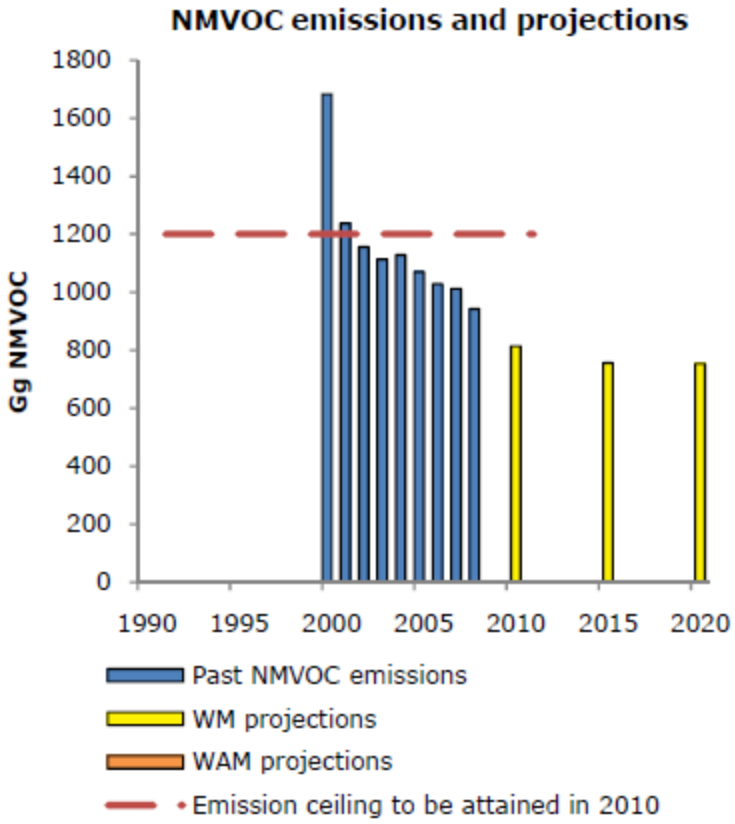

Figure 9: UK NMVOC Emissions and Projections

Figure 10 below shows the dramatic improvement in UK SO_2 emissions, 2000 to 2008, and projections through 2020.

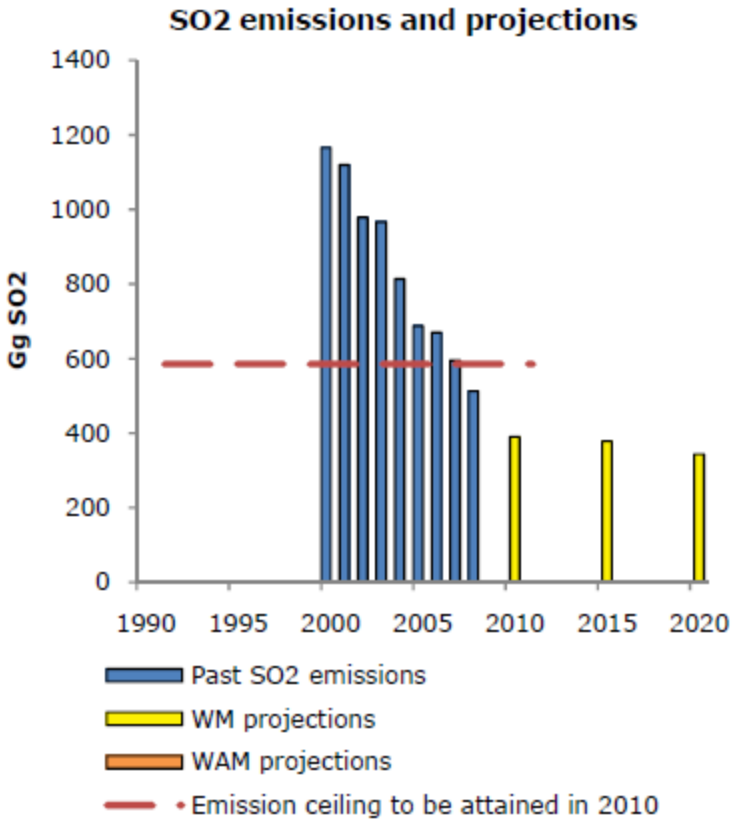

Figure 10: UK SO_2 Emissions and Projections

Figure 11 below shows the dramatic improvement in UK ammonia ("HN_3") emissions, 2000 to 2008, and projections through 2020.

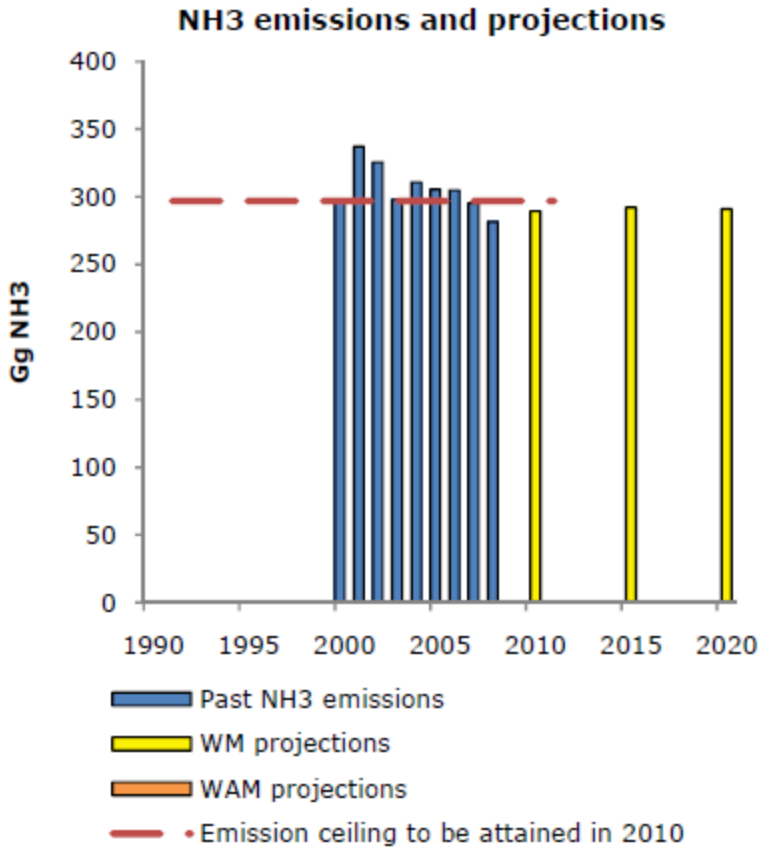

Figure 11: UK NH_3 Emissions and Projections

Data from the U.S. show a similar story of increasing coal usage accompanied by striking improvements in air quality.

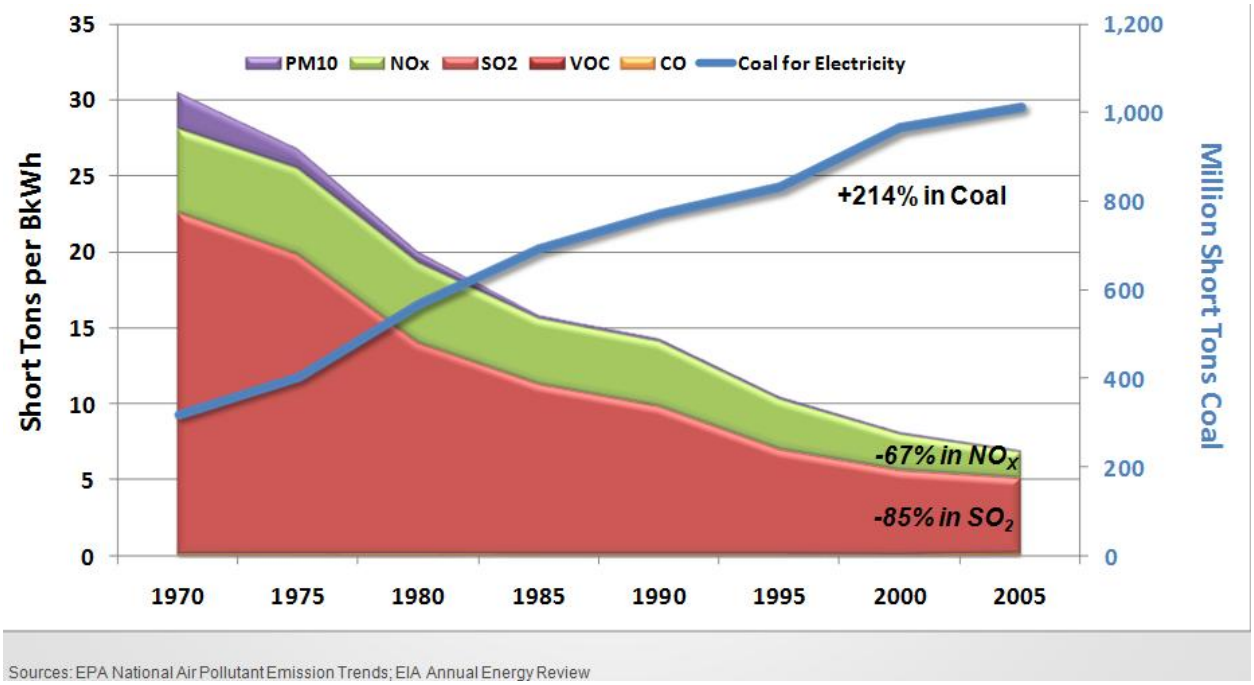

Figure 12: Total U.S. Emissions Have Declined 77% While Coal-Fueled Electricity Generation Has Increased

The lesson of Figure 12 is that coal usage brings with it improved air quality. Coupled with coal‟s economic and social benefits, as discussed above, the answer to the Consultation is enactment of policies to foster the use of coal, not tax its use.

III. Natural Gas Usage in Electricity Production Increases GHG Emissions in Comparison to Coal

Natural gas – particularly from unconventional sources -- has higher GHG lifecycle emissions in comparison to coal. Accordingly, any CCL policy change should not favor the use of natural gas in electricity production at the expense of coal. The Government also should ensure that any carbon-content-based levy on natural gas includes that fuel‟s lifecycle GHG emissions. The Government‟s failure to take these steps will result in *increased*, not decreased, GHG emissions.

A growing number of studies, reports and articles is documenting that natural gas, on a GHG lifecycle basis, has higher emissions than coal. This is particularly the case for natural gas produced from unconventional sources – i.e., shale gas.

A starting point is the recent report by the UK's Tyndall˚ Centre for Climate Change Research, which found (emphasis added)[24]:

> It is clear, however, that … shale gas extraction … does post significant potential risks to human health and the environment. Principally, the potential for hazardous chemicals to enter groundwater via the extraction process must be subject to more thorough research prior to any expansion of the industry being considered. Additionally, <u>while being promoted as a transition route to a low carbon future, none of the available evidence indicates that this is likely to be the case</u>.

The Tyndall˚ Centre report is buttressed by comparable research in the United States. A 2010 study by Cornell University concluded (emphasis added)[25]:

- ✓ "Natural gas is being widely advertised and promoted as a clean burning fuel that produces less greenhouse emissions than coal . . . <u>society should be wary of claims that natural gas is a desirable fuel in terms of the consequences of global warming</u>."

- ✓ "Comparing the total emissions of greenhouse gas emissions from [hydraulic fractured] natural gas suggests that they are 2.4-fold greater than are the emissions just from the combustion of the natural gas."

- ✓ "The leakage of methane gas during production, transport, processing, and use of natural gas is probably a far more important consideration . . . . <u>Since methane is such a powerful greenhouse gas even small leakages of natural gas to the atmosphere have very large consequences on global warming</u>."

A 2009 study by Southern Methodist University estimated GHG emissions from natural gas production activities in the Barnett Shale of Texas to be 33,000 tons per day of carbon dioxide

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[24] "Shale Gas: A Provisional Assessment of Climate Change and Environmental Impacts," Tyndall˚ Centre for Climate Change Research, at p. 5 (UK, Jan 2011). The Tyndall˚ Centre has submitted similar information to the Energy and Climate Change Committee: http://www.publications.parliament.uk/pa/cm201011/cmselect/cmenergy/writev/shale/sg12.htm. Note that prior European papers on lifecycle GHG emissions from natural gas do not examine unconventional gas operations, so tend to underestimate current GHG emissions from that industry. These papers nonetheless document sizeable upstream GHG emissions from upstream conventional natural gas production and transportation activities. *See* R. Dones et al, "Life Cycle Inventories for the Nuclear and Natural Gas Energy Systems, and Examples of Uncertainty Analysis," Int. J. LCA 10(1) 10-23 (2005).

[25] *See* R. Hayworth, "Preliminary Assessment of the Greenhouse Gas Emissions from Natural Gas Obtained by Hydraulic Fracturing" (Cornell University, 2010).

equivalent, an amount that the researchers concluded was roughly equivalent to the expected GHG impacts from two 750 MW coal-fired power plants.[26]

Researchers at the University of Wisconsin-Madison made the same point back in 2005 (emphasis added)[27]:

> Due to the recent growth in combined-cycle power plants, the role of natural gas fuel deserves critical evaluation. [Life cycle analysis] dramatically alters the environmental performance of this technology. The emission rate from plant fuel combustion alone increases 22% to 466 tonnes CO_2-Eq./GWh, with full accounting of the system life-cycle. Most of this increase occurs due to fuel-cycle losses resulting from natural gas combustion and methane leaks … An important question is whether increased natural gas reliance can provide sustainable compliance with greenhouse gas emission targets … Neglecting life-cycle emissions, in particular from the natural gas fuel-cycle, is shown to lead to inaccurate assessment of policy alternatives.

The 2010 Pulitzer Prize-winning journalists at ProPublica have launched an independent investigation of the alleged climate benefits of shale gas. In their most recent article, the ProPublica journalists note that "new research by the [EPA] – and a growing understanding of the pollution associated with the full „life-cycle" of gas production – is casting doubt on the assumption that gas offers a quick and easy solution to climate change."[28]

In 2010, the National Research Council of the U.S. National Academy of Sciences concluded (emphasis added)[29]:

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[26] *See* A. Armendariz, "Emissions from Natural Gas Production in the Barnett Shale Area and Opportunities for Cost-Effective Improvements" (Southern Methodist University, 2009).

[27] P. Meier, "US Electric Industry Response to Carbon Constraint: A Life-Cycle Assessment of Supply Side Alternatives," Energy Policy 33 (2005) 1099-1108.

[28] http://www.propublica.org/series/buried-secrets-gas-drillings-environmental-threat. On January 31, 2011, members of the Energy and Commerce Committee in the U.S. House of Representatives released the results of their investigation into fracking practices by the oil & gas industry. The congressional investigation found that oil and gas service companies had injected over 32 million gallons of diesel fuel or hydraulic fracturing fluids containing diesel fuel in wells in 19 states between 2005 and 2009. In addition, the investigation found that no oil and gas service companies had sought – and no U.S. state and federal regulators had issued – permits for diesel fuel used in hydraulic fracturing, which appeared to be a violation of the U.S. Safe Drinking Water Act. http://democrats.energycommerce.house.gov/index.php?q=news/waxman-markey-and-degette-investigation-finds-continued-use-of-diesel-in-hydraulic-fracturing-f.

[29] "Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use," p. 116 (National Research Council, 2010).

> The upstream life cycle of power generation from natural gas includes many relevant activities such as construction of the infrastructure and power plants, but the most significant from a perspective related to GHG emissions … are the extraction and transportation of gas. These activities are generally fuel- and energy-intensive, requiring combustion of fossil fuels for drilling and removing the gas from underground and delivering to the power plant. Beyond emissions from engines, these are also significant GHG emissions of methane, which is from fugitive emissions of natural gas.
>
> Of increasing relevance is the use of liquefied natural gas … to generate power. Over the past decade, a global market has begun for the extraction of gas for export via liquefying it, shipping it by tanker (similar to petroleum), and regasification. Each of these stages increases the energy use and air emissions associated with the life cycle of the power generated.
>
> Transportation of natural gas in the United States occurs via pipelines. While pipelines are a very cost- and energy-efficient transportation mode, they use significant amounts of fuels and electricity to move the gas from well to power plant. In addition, pipelines leak natural gas as methane into the air. …

The Council of Scientific Society Presidents – representing the presidents, presidents-elect, and recent past presidents of approximately sixty scientific federations and societies whose combined membership numbers well over 1.4 million in over 150 scientific disciplines – sounded an identical cautionary note in 2010 about the GHG lifecycle emissions of shale gas (emphasis added)[30]:

> Some energy bridges that are currently encouraged in the transition away from GHG-emitting fossil energy systems have received inadequate scientific analysis before implementation, and these may have greater GHG emissions and environmental costs than often appreciated … Prior, thorough science-based studies are required to evaluate the impact of massive shale development on … full-life-cycle greenhouse emissions.

[30] http://www.eeb.cornell.edu/howarth/CCSP%20letter%20on%20energy%20&%20environment.pdf.

In its just-released February 2011 "Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources," the EPA stated[31]:

> One of the largest potential sources of air emissions from hydraulic fracturing operations is the off-gassing of methane from flowback before the well is put into production. [State of New York environmental officials] estimated that 10,200 mcf of methane is off gassed per well (ICF International, 2009a). One study in the Barnett shale estimated that between 1,000 and 24,000 mcf of methane is released per well (Armendariz, 2009).

The Parliament is taking up these issues, too. On February 9, 2011, the Energy and Climate Change Committee held its first evidence session on shale gas, to include topics such "How does the carbon footprint of shale gas compare to other fossil fuels?"[32] While suggesting an answer to that question, the studies referenced above suggest that the Government would be embarking upon a GHG *increasing*, not decreasing, path to the extent it modifies the CCL to increase natural gas usage in electricity production and/or fails to take into account natural gas' lifecycle GHG emissions in assessing the level of the carbon-content-based levy for that fuel.

IV. Coal Is The Path to Near-Zero Emissions and Affordable Green Coal

Coal is the answer for UK energy policy. In the context of this Consultation, that means retaining the CCL's current exemption for fossil fuels used to generate electricity.[33] In the alternative, if the exemption is lifted, in whole or in part, the carbon-content-based levy for natural gas must include that fuel's full lifecycle GHG emissions and the Government should ensure that any modification to the CCL does not explicitly or implicitly encourage fuel switching from coal to natural gas in electricity production.

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[31] http://yosemite.epa.gov/sab/sabproduct.nsf/02ad90b136fc21ef85256eba00436459/D3483AB445AE614185257759000603E79/$File/Draft+Plan+to+Study+the+Potential+Impacts+of+Hydraulic+Fracturing+on+Drinking+Water+Resources-February+2011-Report.pdf (at p. 55).

[32] *See* http://www.parliament.uk/business/committees/committees-a-z/commons-select/energy-and-climate-change-committee/news/sg1/; Memorandum submitted by the World Coal Association (http://www.publications.parliament.uk/pa/cm201011/cmselect/cmenergy/writev/shale/sg02.htm).

[33] In future comments on the separate electricity market reform consultation, we will set forth the remainder of the coal path for the UK, which consists of: (1) supercritical coal plants, which already are being built globally; (2) carbon capture and storage (CCS) demonstration by 2016; (3) commercially ready electric power production with CCS by 2020 (integrated gasification combined cycle and pulverized coal plants); and (4) retrofit supercritical and ultra-supercritical plants with CCS.

* * *

Thank you again for the opportunity to provide these comments.

Regards,

[signed]

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PEEL ENERGY

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11 February 2011

Dear Sir,

HM TREASURY CARBON PRICE FLOOR CONSULTATION

Peel Energy welcomes the opportunity to comment on the government's proposals for the Carbon Price Floor. We have provided our initial thoughts based on the available information but stress that while the information presented supports investment in renewables and nuclear, insufficient detail has been presented to understand the true implications for investments in new fossil fuel generating plant and Carbon Capture and Storage infrastructure that will be critical to ensuring security of supply. We believe a further round of consultation is required once such details have been clearly articulated.

We would welcome the opportunity to discuss our response to this and DECC's Electricity Market Reform with you and your colleagues in DECC.

We have set out our main comments in this letter and attach responses to the consultation questions.

Mechanism to ensure polluting consumer pays

Peel Energy agrees with the principle that the polluter pays. While consumer prices are influenced largely by a volatile electricity wholesale price that is driven primarily by the price from gas generating plant, the proposal for an escalating Carbon Floor price will impact all electricity consumers.

The introduction of a low carbon support mechanism (such as contract for difference) that breaks the link between the volatile electricity market price and the cost to the consumer will benefit the consumer and encourage the transition to low carbon electricity, but this will only have sufficient impact once it accounts for a significant majority of the supply.

Given that the UK will be dependent on gas and coal to bridge the gap between demand and intermittent low carbon supply for at least a few decades, it is imperative that the principle of polluter pays (i.e. higher prices) is able to be passed on to the end consumer through more advanced market mechanisms including the use of real time pricing through the Smart Grid and Smart Meters.

Given the life of equipment and appliances (i.e. typically 10 to 40 years) such market mechanisms must also be implemented in line with this legislation to encourage and enable consumers to make the necessary investment decisions and avoid the impact of peak electricity prices.

Security of Supply, Spare Capacity and Affordability

The Carbon Price Floor will impact the economics of older less efficient coal generating plant and may accelerate their closure, particularly when these plants are faced with reduced opportunities to operate coupled with significant maintenance and upgrade costs associated with the Industrial Emissions Directive and anticipated Carbon Capture and Storage requirements. This reduced generating capacity during the transition to the new mix of generation, transmission and storage solutions expected in 2030 will impact on electricity market prices, particularly during periods of high demand.

The timing and scale of the Carbon Price Floor escalator should be considered carefully in the overall context of the delivery of new low carbon generating plant to give sufficient certainty to investors and operators of the fossil fuel balancing plant that will be required during the transition to 2030 (and potentially 2050) energy mix.

Investments in Clean Coal and CCS demonstration programme

New supercritical coal plants will fare better than existing stock with up to 25% saving on fuel consumption and corresponding carbon emissions. However the proposed Levy adds greater uncertainty to the future economics of such plant (on top of the CCS risk). Investment decisions for a new coal plant (that has a design life of over 40 years) will undoubtedly be affected and potentially deferred until greater certainty is achieved on the future economics of the electricity market and CCS.

This, in combination with the closure of existing plants, presents a real risk for the UK's security of supply and affordability of electricity during the transition to a low carbon economy. The timing of the escalation must therefore be carefully considered in combination with the proposed feed in tariffs and capacity payments for new coal power stations (that are required to demonstrate CCS) as well as a rebate for sequestered carbon.

This uncertainty will also affect investments in the CCS demonstration programme, as experienced during the first CCS demonstration competition. A robust long term policy that supports plants involved in CCS demonstration projects must be implemented to ensure a timely and comprehensive demonstration programme.

A long term approach to rebates for carbon sequestered must also be factored into the policy from the start to support investment decisions for fossil fuel plants and CCS infrastructure.

Transition to low carbon heat and transport

If the UK is to achieve a timely transition to low carbon electricity as a means to reduce carbon emissions in the heat, transport and industrial sectors, the electricity market must not be treated independently of other energy markets, such as gas. A higher, volatile and escalating electricity price will discourage investment in electrical infrastructure and equipment such as vehicles and heating that will be instrumental in moving to a supply-led electricity market.

One way to help counter the economic effects of the Carbon Price Floor is to recycle the revenue into supporting the price of electricity or investment in electrical equipment, potentially for specific sectors of industry and society that will otherwise remain dependent on fossil fuels.

Alternatively the Levy could be used to support the investment in shared CCS infrastructure to help accelerate its implementation and reduce the economic barriers to future investment.

UK versus EU action

Peel is concerned about the UK taking unilateral action on the price of carbon as this will affect investment decisions in energy-intensive industries, potentially including the manufacture of low carbon technologies such as tidal and wind turbines. A thorough impact analysis should be conducted to ensure that stakeholders who are one step removed from this consultation are not unduly impacted to the detriment of the UK economy.

Imported fuels and electricity

It is assumed that the regulations and its administration will not leave any loop holes for imported fuels to gain an advantage over indigenous sources of supply. We are concerned about the potential for unequal treatment of electricity generated from fossil fuels outside the UK and transmitted through interconnectors and would welcome further information on why the Government perceives it appropriate to treat this differently.

Peel Energy looks forward to commenting in more detail on the carbon floor price.

In the meantime, please contact me should you require any further information.

HM Treasury Carbon Price Floor Consultation

Response to questions

INVESTMENT

3.A1: What are your expectations about the carbon price in 2020 and 2030? And how important a factor will it be when considering investment in low-carbon generation?

Carbon Price is not explicitly considered in our renewable energy investment decisions – the carbon price is one factor in the forecast of electricity prices. We expect that an increase in carbon prices will drive up the wholesale price of electricity in this period which will in turn support the investment case for renewable energy schemes that are assisted through the ROC mechanism. It is unclear at this stage to what extent the carbon price will influence the investment decision for schemes supported by the proposed Feed in Tariff with a 'contract for difference'.

The carbon price has an important influence on the economics of new coal generating plant and CCS infrastructure. While it is assumed that variable costs related to fossil fuel generation will continue to be passed on to the consumer, of which the carbon price is only one element, the more important factor is the demand/supply profile and opportunity to operate.

3.A2: If investors have greater certainty in the future long-term price of carbon, would this increase investment in low-carbon electricity generation in the UK? If so, please explain why?

Future certainty is important to remove one element of risk but Carbon Price alone will not have sufficient impact on investment decisions, see 3.A1.

3.A3: How much certainty would investors attribute to a carbon price support mechanism if it were delivered through the tax system?

The suggestion that the rates would be set for the life of a Parliament or annual budget cycles increases the potential intervention in the price of carbon and introduces greater political uncertainty that will impact investment decisions. Investments in electrical generating plant and CCS infrastructure need to be made on the basis of a 20 to 30 year business case; any mechanism that introduces further uncertainty in the context of an already unpredictable market is unwelcome. We strongly recommend that the mechanism adopted allows for a long term price trajectory and any new low carbon support mechanism, including funding of new CCS infrastructure, incorporates terms related to the price of carbon and the new Levy.

The mechanism as proposed is unlikely to increase investor confidence during the critical investment period leading up to 2020 targets and for demonstrating CCS but could do so in the longer term.

See also our response to 4.E1.

3.A4: In addition to carbon price support, is further reform of the electricity market necessary to decarbonise the power sector in the UK?

Yes. We support the wider review of the electricity market pricing mechanisms - please refer to our general remarks in our letter accompanying this response and our response to the DECC's EMR consultation.

ADMINISTRATION

4.B1: What changes would you need to make to your procedures and accounting systems to ensure you correctly account for CCL on supplies to electricity generators?

Not applicable.

4.B2: How long would you need to make the necessary changes to your systems to account for CCL on supplies to electricity generators?

Not applicable.

4.B3: Please provide an estimate of how much the system changes would cost, both one-off and continuing?

Not applicable.

TYPES OF GENERATOR

4.C1: Do you agree that all types of electricity generators should be treated equally under the proposed changes? If not, please explain why.

Yes, we need to encourage the adoption of low carbon technologies including CCS. While plants <300MW are excluded from current CCS regulations, we believe they should not be excluded from the Levy, otherwise it will encourage a proliferation of smaller, potentially less efficient, and more costly (per MW) generating plant.

We assume that waste and biomass derived fuels (that are not mentioned in the consultation document) are not classed as 'Solid fuels' as categorised in the proposed Levy. We believe these should remain exempt from the Levy. Failure to do so would create great complexity and decrease investor confidence in technologies that offer low carbon balancing capacity.

The application of the Carbon Price Floor to all fuel supplied to electricity generators, means that the financial viability of biomass plants which use fossil fuels to initiate the combustion process will be

marginally affected. Such plants may require slightly more support through the Feed In Tariff than if they were to receive an exemption to CCL.

4.C2: Is there a case for providing additional or more preferential treatment for CHP? If so, what is the best way of achieving this?

A full or partial exemption or rebate should be maintained to encourage investment in CHP, particularly for on-site generation in property developments where alternative distributed low carbon generation technologies are generally not suitable.

If offered, this rebate must be implemented from the start to support design and investment decisions for new generating plant.

Large scale CHP deployment, such as district heating systems, would benefit from a mechanism that delivers upfront capital support to kick-start and de-risk these projects.

4.C3: Do you agree that tax relief should be considered for power stations with CCS? If so, what are the practical issues in designing a relief; what operational standards should a CCS plant meet in order to be eligible; and how might these issues differ for demonstration projects?

Yes. This is a matter that needs to be considered in a much wider context than the Carbon Price Floor. We would welcome the opportunity to discuss our views on this and the wider Electricity Market Reform, after which we would be happy to put something in writing.

IMPORTS AND EXPORTS

4.D1: What impact would the Government's proposals have on electricity generators and suppliers that export or import electricity?

From the available information, the proposals would appear to encourage import and export of electricity generated from fossil fuels as a way of avoiding CCL. We would welcome further information on why the Government considers it appropriate to treat imports and exports differently.

4.D2: What impact might the proposals have on trading arrangements for electricity?

See 4.D1.

4.D3: What impact might the proposals have on electricity generation, trading and supply in the single electricity market in Northern Ireland and Ireland?

See 4.D1. The proposals would encourage the use of spare fossil fuel capacity to support any connected state. Does the Government consider that the Carbon emissions follow the imported and exported electricity?

CARBON PRICE SUPPORT MECHANISM

4.E1: How should the carbon price support rates be set in order to increase certainty for investors, in particular over the medium and long term?

Careful consideration needs to be given to the basis for setting the CCL in the context of the timescale for varying the rates for the Levy (which will be static for a period) and the market price of carbon (which may be volatile). While we agree with the intent of the Carbon Price Floor, the mechanism adopted may result in some unintended winners and looser in the context of volatile electricity and carbon markets. This additional risk will deter some potential investors.

While of the three options presented we favour a longer term rate escalator (adjusting the CCL to take account of the volatility and trends in carbon price), the period of a single parliament provides little additional certainty over the current situation with the carbon market. To have a significant impact on investment decisions, the escalator needs to have a longer term outlook.

4.E2: Which mechanism, or alternative approach, would you most support and why?

See 4.E1.

4.E3: What impact would the proposals have on your carbon trading arrangements?

We have no comment at this stage.

FUTURE PRICE OF CARBON

4.F1: Should the Government target a certain carbon price a) for 2020 and b) for 2030? If so, at what level?

We have no comment at this stage.

4.F2: What is the most appropriate carbon price for the UK to meet its emissions reduction targets in the power generation sector? How would this be affected by changes in the structure of the electricity market?

We have no comment at this stage.

4.F3: When would be the most appropriate time for introducing a carbon price support mechanism and what would be the most appropriate level?

This depends entirely on the success rate of the existing and new policies to support low carbon investments, including CCS, and the government's intentions to encourage the development of new fossil fuel plant to support the transition to the future energy mix. Please see comments in our letter.

ELECTRICITY INVESTMENT

5.B1: What impact would you expect the carbon price support mechanism to have on investment in low-carbon electricity generation?

On current information, we expect the proposed mechanism will encourage the completion of new generating plant in time to benefit from ROC, before the introduction of feed in tarrifs. With feed in tarrifs, it will have less impact on investment decisions.

We expect it to delay investment in new fossil fuel generating plant with CCS until CCS is proven and the electricity market has adjusted to the significant increase in renewable generation in the mix.

5.B2: What other impacts would you expect carbon price support to have on investment decisions in the electricity market?

We expect it will discourage investment in maintaining and upgrading existing fossil plants to extend their life.

5.B3: How should carbon price support be structured to support investment in electricity generation whilst limiting impacts on the wholesale electricity price?

Any revenue generated through the CCL should be invested in infrastructure that supports balancing of demand and supply and decarbonising the electricity market, including CCS infrastructure.

EXISTING LOW-CARBON GENERATORS

5.C1: Can you provide an assessment of the impact of the proposals on your generation portfolio and overall profitability?

Any increase in electricity wholesale price (brown power price) driven by the Carbon Floor price is likely to benefit any generating plant that is in receipt of ROCs. Careful consideration needs to be given to the rates of the Levy in the context of the generating mix to avoid unwelcome increases in

consumer bills and accusations of the industry profiteering from transitional changes to the regulations over which it has no control.

5.C2: What would be the implications of supporting the carbon price for existing electricity generators and how should the Government take this into account?

See 5.C1. We have no suggestions for how the Government can take this into account at this stage, other than delaying and reducing the Levy escalator.

ELECTRICITY PRICE IMPACTS

5.D1: How do you currently manage fluctuations in the wholesale electricity price?

We have no comment at this stage.

5.D2: What difference will supporting the carbon price make to your business?

We have no comment at this stage.

5.D3: As an electricity generator or supplier, how much of the cost of the carbon price support would you pass on to consumers?

As a variable cost, the price of carbon and the Levy would all need to be passed on to the consumer in order to maintain a profitable operation.

5.D4: As a business, how much of the cost of energy bills do you pass on to customers?

We have no comment at this stage.

5.D5: How might your company or sector be affected and would there be any impact on your profit margins?

We have no comment at this stage.

5.D6: Do you have any comments on the assessment of equality and other impacts in the evidence base of the Impact Assessment, included at Annex D?

We have no comment at this stage.

[redacted]

Progressive energy

Martin Shaw
Environmental Taxes HM Revenue and Customs
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10 February 2011

Dear Mr Shaw,

Consultation: Carbon price floor: support and certainty for low-carbon investment

Progressive Energy is a clean energy project development company. We welcome the opportunity to present briefly the key issues we see in the Carbon Floor Consultation.

This consultation is running in parallel with the Consultation on Electricity Market Reform (EMR), and by definition the issues raised in either cannot be viewed in isolation.

The EU ETS has not to date provided a basis for investment in low carbon projects. The low and fluctuating value of carbon under the EU ETS demands significant discounting of it as a contributor to future cashflows in investment cases. Provision of certainty to the value of carbon price is a necessary mechanism to enable business to incorporate the future value of carbon in the funding of low carbon businesses.

However, it must be noted that this will only *indirectly* stimulate growth in low carbon investment. The floor will increase the costs for high carbon investment. Whilst eventually this will lead to a somewhat higher market price for high carbon emitting products, it is simply a way of giving everything else a partial competitive advantage. The carbon floor will not pass through the full benefit of the value of carbon in the market place to low carbon projects with certainty. For example in the electricity sector, the mix of nuclear, renewables and CCS, gas and coal fuelled power will change over time. As the mix changes, the value wholesale electricity will reflect only the grid average carbon emissions and not the floor price. On a short term basis the wholesale price will be set by he generating plant having the lowest marginal costs and this will vary making it difficult to assess how the carbon price is reflected in the wholesale price. Thus any investment remains subject to uncertainty in the price of carbon in assessing its future cashflows.

This reinforces that any form of carbon floor must operate in tandem with appropriate mechanisms for these technologies such as Feed in Tariffs, capacity payments (to handle the increasing non-firm generation that renewables impart) and dedicated support mechanisms for demonstration and exemplar projects, particularly the CCS programme which has no other form of support.

It is also vital that a carbon floor as a framework must have sufficient certainty for investors to be confident that it will continue to exist, at the proposed value for the lifetime of typical investments, many of which will be in excess of 20 years. If the carbon floor can be subject to political influence in the future, there is jeopardy that competing political drivers could adjust or remove the floor, and therefore decimate existing investments and undermine confidence in low carbon investment *per se*. Without this the carbon floor will simply act to influence the operating behavour of existing plant without supporting investment in low carbon new plant.

Clearly relief from the proposed tax must be granted for power stations with CCS since the goal of the CCL tax is to incentivise low carbon generation of power and CCS lowers carbon emissions. There needs to be no operational standards to be eligible for tax relief because relief can be abated according to the proportion of carbon actually emitted. This means that tax relief should be granted to all emitted carbon that is removed for storage and any residual plant emissions would still be subject to tax. This would be wholly consistent with the operation of the EU ETS for the installation and would only incur a small administrative penalty as the net emissions would be already accounted for. Clearly, early demonstration plants would need to have more flexible treatment in anticipation of first-of-a kind operational issues, possibly resulting in lower emission abatement during the developmental period of this technology. We propose that demonstration plants are granted full tax relief on the rated emissions capacity of the CCS plant over an agreed lifetime operating period of the project so that failure to achieve rated abatement during demonstration is not penalised.

Subject to these issues being properly addressed, Progressive Energy welcomes the carbon floor as part of a package of low carbon incentives.

Yours sincerely

Carbon price floor: support and certainty for low-carbon investment
HMT / HMRC consultation
Response by PwC

1. Introduction

1.1. PwC welcomes the Government's aspiration to "bolster certainty and provide credible long-term price signals for UK investors" and is pleased to have the opportunity to provide our comments on the consultation document prepared by HM Treasury entitled "Carbon price floor: support and certainty for low-carbon investment".

1.2. PwC also welcomes the UK Government's viewpoint that "Failure to deliver sufficient investment in low-carbon plants now risks increasing the cost of mitigation over the long term". The transition of the UK economy to the necessary low carbon, sustainable energy future will not be achieved without a commitment by policymakers to long-term goals and the implementation of real-term plans to achieve these goals. As the paper states, the achievement of the required emissions reductions will also be far more expensive in future should we fail to take action now.. A key theme in our comments below is a desire to ensure that the design of a carbon floor price policy is consistent with this vision.

1.3. As a firm, PwC is in agreement with the Treasury assessment that, whilst the EU emissions trading scheme (EU ETS) has been an important and significant step towards a Europe-wide response to the challenge of emissions reduction, to date volatility in the price of the credits provided by the scheme has meant that its role as an effective carbon price signal by which to bring about emissions reductions and encourage a move away from fossil fuel use is yet to be fully realised.

1.4. PwC therefore also agrees with the follow-on view that the introduction of a UK carbon price floor at the correct level can help to stimulate and, hopefully, accelerate alternative energy development in the UK by providing a further certainty to investors and developers looking to enlarge this industry.

1.5. PwC believes it is important that the government consider the impact of the increased energy costs that a carbon floor price could have on UK competitiveness compared to territories with less stringent carbon policies, which could include many European competitors that do not currently have a floor price to support the EU ETS price. We recognise that some tension between maintaining the UK's competitiveness and the need to incentivise the development of lower carbon generation capacity is unavoidable. Until this capacity is substantially online, which will take many years, UK taxpayers are likely to face higher energy bills than many of their competitors overseas. Concurrent with increasing energy taxes the government should consider policies that help maintain competitiveness. In this respect, a reasonable balance between low-carbon and energy cost competitiveness could be struck by using the proceeds from additional taxes to fund tax incentives or other stimulus measures which would at least in part offset the impact of increased energy costs. Discussion of such incentives is beyond the scope of this response, but we would welcome the opportunity to engage Government on this topic separately. This issue is particularly important in the short to medium term, where the UK must be focussed on encouraging investment to boost economic growth after the recent recession.

1.6. As many of the questions posed within the consultation are industry specific, comments are made on a general basis. Specific responses to questions are made where appropriate.

1.7. It is noted that the Carbon Price Support Mechanism (CPSM) is linked into three other measures reforming the energy market designed to create an overall package of reform. The consultation on these other proposals is not due to conclude until next month. At this stage we do not propose to comment specifically on these measures in this paper.

1.8. We note that the draft legislation has now been released and, other than setting the rate of the CPSM, at first sight appears to meet the amendments required to the Climate Change Levy (CCL) primary legislation to introduce the CPSM.

1.9. We would be interested to see an analysis of how the proposed policy is consistent with the forthcoming revised EU Energy Tax Directive. We understand details of this revision are to be announced in March.

1.10. As a firm we are concerned about the environment and sustainability and take action to minimise our carbon footprint. Measures to increase the levels of renewable sources or other forms of low-carbon generation are welcome. We do however have some concerns on the way the CPSM is proposed to be introduced which will be commented upon in this paper. We also note that the consultation is only on the way the CPSM will be introduced and apply, rather than whether it is an appropriate measure or whether there may be suitable alternatives.

1.11. In sections 2 and 3 below we have set out what we believe should be the policy objectives for a carbon floor price, and, how we believe an alternative approach could better serve these objectives. In the remainder of the document we have provided some specific comments on the proposals set out in the Consultation document.

2. Objectives of a carbon floor price

2.1. Our view is that there should be three fundamental policy objectives in setting a carbon floor price:

2.1.1. **Simplicity.** A clear policy that is understood by the markets and investors and therefore has maximum effect as a price signal to encourage the necessary low carbon investment.

2.1.2. **Singularity.** There should be one point in the supply chain for each KWh of electricity where the carbon content of this electricity is taxed. A singular point of taxation would aid simplicity, create a strong price signal and avoid double taxation, although consideration needs to be given to both the potential inflationary impacts of this measure and how well understood the policy would be further down the supply chain in encouraging different business and consumer behaviours.

2.1.3. **A clear and consistent long term floor price for carbon.** When detailing the anticipated benefits of the new carbon tax, the Treasury paper states that "a transparent and predictable carbon price is the most cost-effective way to encourage emitters to invest in alternative low-carbon technologies and change consumer spending patterns". PwC agrees with this statement, and regards it as a crucial tenet of the new policy. All the infrastructure investments required are long term, particularly the development of carbon capture and storage technology, offshore wind farms and new nuclear capacity. A lack of clarity over the long term trajectory for carbon prices intended by the Government is a significant barrier to completing sufficiently accurate modelling and investment appraisal for these projects to be in a position to secure the necessary finance.

Assessment of the proposed CPSM against these criteria

Simplicity and Singularity

2.2. We believe the proposed solution has some claims to simplicity (as the tax is applied upstream pre-generation so there are fewer tax payers than for a post-generation tax). This makes tax collection more efficient for both the government and consumer. However, this adds an additional tax to up to three existing environmental taxes in the energy supply chain:

- the cost of an EU ETS permit to be acquired;
- the old main rate CCL paid by the business buying the electricity; and
- a Carbon Reduction Commitment (CRC) permit acquired by a business using the energy.

In adding a fourth tax to this supply chain (not including VAT which could be considered a fifth tax) the proposals fails to enhance the simplicity of energy taxation overall and is a step further away from singularity and could be considered 'quadruple environmental taxation'. As such, it may be difficult for potential investors in low carbon generation to distil from these overlapping policy measures a reliable carbon price signal to guide investment decisions, and for users of energy to understand the overall policy objective of a shift to a low carbon economy

2.3. We also note that this complexity has a negative impact for the government as well as the private sector. Particularly in the current fiscal climate, the government should welcome an opportunity to simplify the tax system and remove additional administrative expenses. Put simply four separate environmental taxes is four separate administrative processes where one or two (bearing in mind that the EU ETS will need to remain) could be sufficient.

A clear price for carbon.

2.4. There is currently no clear methodology proposed for setting the price level of the CPSM, so we are concerned that when implemented the flexibility that the government would like to retain over the CPSM price will undermine the crucial ability of the policy to deliver a longer term price signal.

2.5. PwC, and some consumer representative bodies, have been voicing concerns that UK environmental tax policy is becoming unnecessarily complex and confusing. In its recent global survey by PwC, 'Appetite for Change', which interviewed over 650 business leaders across all industry sectors in a number of countries, including the UK, PwC asked interviewees whether they thought that there are currently clear policies on environmental instruments coming from governments around the world. Only 36% believed this to be the case. A clear message from this answer and others in the report is that not only is it imperative that governments take a lead in encouraging a move towards a more sustainable economy, but that they do so in a clear manner.

3. Alternative policy concept A – A top up levy integrated into the EU ETS compliance cycle

3.1. We believe a policy based on the following approach would go further to meet the three policy objectives set out above.

3.1.1. The system operates as a top up levy to be paid by electricity generators in line with their EU ETS obligations.

3.1.2. The government sets a floor price for carbon for each calendar year - with clarity over this price as far into the future as possible, or at least a clear, transparent mechanism for setting the floor price with reference to future economic factors (for example the EU ETS permit price). It is important that the price level is driven by robust and transparent economic factors.

3.1.3. At the end of each EU ETS compliance year, the Government publishes an average EU ETS carbon price for the period. This calculation would need to establish a fair average of all carbon credit (EUAs, CERs and ERUs) prices over the period, possibly using the daily spot rates for these permits during the year as a data source. We suggest that this methodology would be subject to consultation. This 'average price of carbon' in the EU ETS would be compared to the floor price and any excess of the floor price over the average would become a levy payable by all electricity generators for each tonne of carbon that has been emitted in the period. So for example if the floor price was €20 per tonne of carbon in 2013, and the EU ETS average carbon price per tonne was established as €17, each generator would multiple the total carbon emissions figure (for which a calculation methodology is already established as part of the EU ETS compliance process, so would not need to be separately designed and administered by the government) by €3 to calculate their tax bill under this new levy. Were the average EU ETS carbon price higher than €20 in this example, no levy would be collected.

3.1.4. The existing CCL could be abolished and the revenues incorporated into a higher carbon floor price than would be possible under the proposals set out in the consultation; Under the current proposal the floor price would need to be artificially lowered so that the existing CCL can be retained without making electricity too expensive for the consumer. Allowing for an assumption that the existing CCL is in part a tax on carbon (which seems reasonable given the name of the levy), under the proposals, there would in effect be an explicit carbon price (the floor price) and an implicit higher floor price (the floor price, plus the CCL levy, plus the CRC). We believe it is preferable to increase the proportion of tax paid in the energy supply chain that is explicitly described as a carbon price, creating a stronger price signal. Spreading the carbon price throughout various policies makes it difficult for potential investors to pick up the total carbon price signal, as well as adding unnecessary complexity to the tax system.

3.1.5. The new policy should maintain a mechanism to refund at least part of the new levy to electricity consumers that are currently exempt from the CCL and lower rates to CCL payers with Climate Change Agreements. The rationale for lower rates of tax for these consumers is sound and in the case of CCAs should be retained to continue driving actions to reduce energy usage. Bearing in mind our comments regarding competitiveness in para 1.5 above, it is important that these consumers do not end up paying more additional tax per KWh as a result of the new policy than the additional tax paid by full CCL payers.

3.2. A further benefit of this policy is that it contains a relatively simple solution to the issue of imported electricity, which, as we note below, is not currently addressed as part of the CPSM policy in the consultation. Each company responsible for importing electricity to the UK would be required to disclosure the same average cost per EU ETS permit calculation as the UK companies, and a top up levy charged to the imported electricity accordingly.

3.3. We appreciate that HMT may have concerns that this system, unlike their current proposals, would not have a controllable revenue stream as an EU ETS price above the floor price would eliminate levy receipts. However, as an increasing proportion of EU ETS permits will be auctioned by the government, particularly in Phase III of the EU ETS commencing in 2013,

this effect would be offset by increased EU ETS auction receipts. We encourage the government to look at carbon pricing receipts holistically in this regard in designing and appraising a carbon floor price policy.

3.4. We note that this approach is fundamentally very similar to that proposed in the Conservative party document 'Rebuilding Security - Conservative Energy Policy for an Uncertain World' published early in 2010. If the government decides to adopt the CPSM as proposed in this consultation instead of a form of 'top up levy' system as suggested here, and by the Rebuilding Security document, we believe the rationale for this should be formally explained.

3.5. In terms of green policy communication overall, PwC believes that the shift towards a single point of environmental tax would aid the government to provide a clearer message to businesses and the public on how it is attempting to combat climate change. We believe the messages of simplification and clarity of purpose would be particularly valuable in communications supporting the introduction of this policy.

3.6. Furthermore, we believe that the government would experience greater acceptance, recognition and response from green policy overall if receipts from a carbon floor price were clearly aligned with current and planned environmental stimulus spending such as the Renewable Heat Initiative, Feed-in Tariffs, the Green Deal and the new Green Investment Bank.

An alternative policy concept B – Amend and increase the existing CCL

3.7. We accept that maintaining the existing CCL reliefs into proposal A could be difficult and administratively complex, amongst other potential challenges with this proposal.

3.8. A less disruptive alternative to both our proposal A and the CPSM proposal set out in the consultation would be to raise the main rate of CCL for each fuel, possibly by some form of escalator if the overall carbon price set by the EU ETS going forward is not seen as achieving the desired trajectory. This approach in landfill tax has been successful in changing behaviours. Rises in CCL would incentivise both producers and users of energy to increase low-carbon (CCL exempt) production and related investment. Such an approach could also address other issues such as whether domestic use should remain outside the scope of CCL, and whether nuclear power should be brought within CCL exemption. CHP generation would remain incentivised, and new CCS technology could also be introduced into the exemption as and when advances in the technology and carbon abatement achieved justify this.

4. Comments on the CPSM Proposal - Executive Summary

4.1. The data presented in the consultation, both in the main body, and Impact Assessment gives concerns over the basis for the CPSM and the intended impact on investment over time. Much of the data is uncertain and uses projections over time that may not be appropriate. As such it is unclear whether the rationale for introducing the CPSM is soundly based.

4.2. The tightening of the EU ETS from 2013, which aligns with the introduction of the CPSM, may well create the conditions of upward pressure and stability on carbon pricing that is intended by the CPSM. Accordingly we believe that the CPSM must have a direct link with the EU ETS and not be seen as a separate tax in its own right which applies regardless of the carbon price set by the EU ETS. We believe the CPSM may be best to be an annual top-up should the EU ETS price not achieve the desired levels.

4.3. There is a risk that the CPSM will be seen as a stealth tax pushing up the price of energy to businesses and domestic consumers. The projected price reductions in relative terms to be achieved by the reform programme are long-term and at this stage unreliable. If the reasons for CPSM were made clear, and revenue targeted at specific environmental improvements e.g. ring-fenced to the "Green Investment Bank", then this may assist acceptance.

4.4. We are concerned that the introduction of CPSM amounts to double taxation and therefore undermines one of the basic principles of taxation. Its introduction is also in an area where other regulatory costs around carbon emissions are already in force and exacerbate the double-taxation effect. Consideration of addressing the main rate of CCL instead of a CPSM is recommended as this could have the same incentivising impact for low-carbon production as well as driving further business energy efficiencies.

4.5. New nuclear power facilities are presented as key to the proposed development of a low-carbon generation mix by 2030. As the CCL system is being amended by introduction of the CPSM this may be a suitable time to consider other reforms to the CCL system to address anomalies within it, including extending CCL exemption to the full range of low carbon generation, including nuclear and CCS.

4.6. We consider that both Combined Heat and Power (CHP) generation and Carbon Capture and Storage (CCS) technology should be supported by the taxation system. The CPSM and other market measures proposed should help drive the development of new technology but when this is introduced, if the result is low-carbon generation in the form of either CHP or CCS from gas or coal, then this should be treated equally with other renewable source generation.

5. Commentary on the CPSM proposal set out in the consultation document

Data / projections

5.1. The following is extracted from Appendix D Impact Assessment:

"*The carbon price forecast is uncertain, especially in the long term, and therefore the estimated carbon benefits which factor in these prices are also uncertain. Similarly, the estimated resource costs are also uncertain as they depend on the projected generation mix resulting from investment decisions and from uncertain technology costs and fossil fuel prices.*"

There appears to be very little concrete evidence on which to base the assumptions and rationale behind what the CPSM is stated to help achieve. The main driver appears to be that the carbon price set by external factors is too unreliable to provide sufficient certainty for investment decisions. Whilst a measure like CPSM may be desirable as a fall-back in case other measures, e.g. tightening of the EU ETS, do not produce the desired results there does not appear to be a compelling case for imposition of the CPSM across the board as proposed.

Method of Introduction

5.2. The paper recognises that the EU ETS is intended to address "the negative externality of carbon dioxide emissions and factor the price of carbon into the development and operation of electricity generation assets". It is the current uncertainty on how carbon prices will be driven that gives rise to the CPSM which would aim to ensure the carbon price trajectory was maintained at levels considered required to influence energy investment decisions.

5.3. The EU ETS is intended to be tightened each year from 2013, intended to provide the long-term carbon price increases desired. It is unclear whether this will have the desired impact on carbon prices and therefore a mechanism for the UK to address failings may be advisable. We consider, however, that it is important that the relationship between the carbon price derived from the EU ETS and the CPSM rate is clear.

Public reaction

5.4. One impact of the CPSM is shown as a rise in electricity costs for both business and domestic users. Longer term, the paper suggests that the introduction of greater electricity production from nuclear and renewable source should start to bring the price down in relative terms. This would be through such energy sources having lower operating costs than conventional generation.

5.5. Any long-term price forecast would be inherently uncertain and at the least would rely on continued strict regulation of the industry to ensure that cost savings are passed on to the consumer. As the initial impact would be to produce price rises for energy then consumers may be resistant, seeing the cause as being another tax measure introduced through the back door. Most business users already bear up front CCL costs. The tax revenue benefits are not referred to explicitly in the paper, other than in figures produced for the Impact Assessment. One option for transparency purposes may be to ring-fence any additional tax revenue from the CPSM to other desirable environmental projects. For example the paper refers at para 1.4 to the intention to finalise the policy design of the Green Investment Bank, GIB, in spring 2011. It would be open to the government within that process to confirm that CPSM revenues would be wholly allocated to help fund the GIB. This would be consistent with the stated aims of the CPSM.

Double taxation

5.6. The proposals clearly recognise that the CPSM will amount to double taxation, and the draft legislation has confirmed this aspect through the insertion of Para 21(2A) in FA 2000 Schedule 6 to remove CPSM from being considered a taxable transaction for CCL purposes, thereby allowing double taxation. We consider that this is against the basic principles of "good" taxation.

5.7. Fossil fuel electricity generation will be subject to double taxation from the CPSM rate of CCL in its production and then CCL at main rate in the ultimate supply to the business end-user. Allied to this, the costs of the EU ETS and/or CRC schemes to energy-intensive producers/users already apply – essentially three carbon taxes and one energy tax for the same unit of fossil fuel-generated electricity.

Imports

5.8. A level playing field should also apply to imported energy. As the paper does not propose to introduce CPSM on imported electricity there is the risk that the expected expansion in interconnector capacity may otherwise draw overseas players into the UK market by a potential competitive advantage created by CPSM. Under this proposal, it is not immediately evident how a mechanism to tax imported energy could be applied. Designing a fair and practical solution could require negotiation with other governments and may take some time. We recommend that this aspect is considered early in the policy design process so that addressing international consistency does not delay the introduction of the policy.

Combined Heat & Power / CCS

5.9. CHP has traditionally been treated by CCL legislation as an efficient and desirable way to generate electricity given the heat benefits arising. Exemptions for efficient plant, along with renewable source CHP incentivise this area of generation. The imposition of CPSM on CHP fossil-fuel inputs appears contrary to this policy, and the paper recognises the importance of security of supply to back up less predictable renewable source energy. Whilst we do not agree with the imposition of CPSM in these situations, one consequence may be to boost investment in renewable source CHP such as biomass or incineration. We conclude that the existing CCL exemption for outputs from good quality CHP should remain, and it is also recommended that the levy exemption certificate (LEC) system be equalised between CHP and renewable source. LECs should be interchangeable which would simplify the current balancing and averaging system and provide a boost to development of CHP in parallel with renewable source.

5.10. We consider that as CCS technology develops then an exemption from CCL should be phased in, (main rate and CPSM, if applied). This would reflect the carbon abatement environmental benefits and security of supply derived from maintaining the flexibility of gas or coal-powered generation but without the carbon emissions. Wherever low-carbon electricity is generated we believe that the tax system should support that activity regardless of input fuel as a way of promoting the stated long-term aims for the generation mix.

6. Question-specific responses

6.1. Box 3.A Questions on investment

- The questions are industry or investor-specific. However as at 5.1 above whether price certainty can, or even should, be delivered by the tax system in the way proposed by the CPSM is debateable.

6.2. Box 4.B Questions on administration

- We do not propose to comment as these are industry-specific.

6.3. Box 4.C Questions on types of generator

- **4.C1** – it is agreed that all types of electricity generators should be treated equally under the proposed changes but including imported electricity
- **4.C2** – comments on CHP are at 5.9.10 above.
- **4.C3** – comments on CCS are at 5.10 3.11 above.

6.4. Box 4.D Questions on imports and exports

- We do not have any other comments than those made at 5.8. above.

6.5. Box 4.E Questions on carbon price support mechanism

- Please see our comments at 3.4 above and section 3 generally. The preferred “rate escalator” appears to go against the concept of a credit mechanism when the carbon floor price was first suggested pre-election 2010. ('Rebuilding Security - Conservative Energy Policy for an Uncertain World' published early in 2010).

6.6. Box 4.F Questions on the future price of carbon

- This is outwith our experience, however we refer to the comments at 5.1 above.

6.7. Box 5.B Questions on electricity investment

- From the data available in the paper / Impact Assessment there appear to be too many unknowns involved to be able to predict what impact, if any, the CPSM will have on investment decisions.

6.8. Box 5.C Questions on existing low-carbon generators

- We do not propose to comment as these are industry-specific.

6.9. Box 5.D Questions on electricity price impacts

- Again these are industry-specific. Comments on the evidence base used in the Impact Assessment are made at 5.1 above.

PricewaterhouseCoopers
11 February 2011

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11th February 2011

Dear Mr Shaw,

Consultation: Carbon Price Floor: Support and Certainty for Low Carbon Investment, December 2010

I write in relation to the above consultation to express the views and opinions of px Limited (px), an energy services company based on Teesside.

px Limited

To put our response in context and to explain our interest in the proposed changes to the Climate Change Levy (CCL), it is worth summarising briefly the nature of our business. px has a long history of operating strategic assets within the power and energy sectors, including gas fired power stations and combined heat and power (CHP) plants, biofuels processing operations and also gas processing operations accounting for approximately 6% of the UK gas supply. In addition to our operations business we also have a 24/7 energy trading business and offer consultancy and support services throughout the power sector on a wide range of projects.

In recent years we have extended our business to include the development of new power generation projects, the largest of which was the development of a 1020MW gas fired CHP scheme on Teesside. We are currently looking to develop other CHP schemes throughout the UK.

Support for a Carbon Floor Price (CFP)

In principle, px supports and recognises the need for the UK to make the transition to a low carbon economy and further supports the implementation of a CFP. By implementing a CFP, we believe that this could help stimulate the much needed investment in certain methods of more efficient and low carbon generation power in the UK.

Carbon Floor Price and Combined Heat and Power (CHP) Plants

Whilst we support the CFP in principle, we also believe that the proposed changes could have a negative impact on CHP plants and in particular the development of new CHP plants. These provide a proven, efficient form of generation that has a key part to play in the energy mix .

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In our opinion, the Government's key policy for supporting CHP plant operation and the resultant emissions reductions, is the exemption of CHP plants from the Climate Change Levy (CCL). As you are aware, both the fuel used and electricity generated are exempt from the CCL (at least until in 2023) and this exemption has been fundamental in helping to sustain the CHP industry in the UK. However, this stimulus has not been sufficient to meet the previous Government target of provoking the development of an additional 10GW of generation from CHP plants and we believe that by applying the new CFP part to the CCL on all the fuel used by CHP plants, the stimulus could be reduced further.

To try to put our concerns into context we will explain these in relation to a current project that we are developing:

Scenario
We are considering the development of a new CHP plant to provide steam to a manufacturing plant. This manufacturing plant is currently using old and less efficient methods to raise steam than would be used on the proposed CHP plant. When we have tested the effect that the CPF could have on this project the results have shown that it could be so detrimental to the project that it would make the project highly unlikely to ever gain finance. This project would have the potential of saving in excess of 85000 tonnes of CO2 per annum. Such a substantial CO2 reduction however is unlikely to happen if CHPs are penalised by the CFP introduction, as currently proposed.

In the current climate, attaining investment in major energy infrastructure is extremely difficult. In order to encourage investment any introduction of a CFP must ensure that this position is not worsened and that, in fact a market is created where the development of efficient and low carbon CHP plants can thrive.

The Coalition Government has stated that it is committed to reforming the CCL to introduce a CFP to the electricity market, yet we believe that the effect of the proposals, if implemented, would be to:

- significantly decrease the competitiveness of CHP plants and the advantages currently offered to prospective customers who buy CHP derived heat;
- discourage investment in new CHP plants, thus potentially locking in higher emissions rates; and
- discourage investment in CHP plants where the technology has been providing a growing level of tangible emissions reductions.

Suggestions

We believe that the Government should consider actively supporting CHP operators. To accomplish this, we propose that CHP plants should be entirely exempted from the new carbon tax. As a minimum, the Government should certainly exclude a portion of the fuel, representative of the heat delivered, from the new tax. This would preserve the value for CHP operators and would be very simple to administer, as we believe that the existing CHP Quality Assurance programme could be utilised.

We also believe that it is imperative that the changes proposed in the consultation (if implemented) are done so in a fair, clear and transparent way. To ensure that the industry receives the clear investment signals necessary and to make such investments feasible by helping to limit the risk exposure to potential investors, we believe that in bringing about the changes to CFP the Government should endeavour to provide a forward projection of the CFP for at least 15 years, which is enshrined in legislation to provide a clear and transparent method for calculating the carbon price support aspect of the CCL levy.

If you have any questions in relation to our response or would like any further information we would be happy to discuss these with you and for these purposes you may contact Martin Green at the address above, by email to martin.green@pxlimited.com or by telephone on (01642) 623000.

From: Stewart Reddaway
To: Consultation, Environmental Taxes (ECSM)
Subject: Carbon price consultation
Date: 11 February 2011 18:13:33

My interest is as an energy policy analyst, and I am not involved with a generating company. Hence some questions are n/a.

3.A1 2020 £50/tonne, 2030 £70/tonne

3.A2 Yes. More confidence in revenue and competitive edge. The intermittancy of renewables would encourage more pumped storage to be built.

3.A3 Greater than via the ETS.

3.A4 Not if the carbon price is sufficiently high and credible. (EG over £70/t in 2020 and £100/ton in 2030.)

4.C1 Yes

4.C2 No

4.C3 For all CCS plants tax relief should only be to the extent that CO2 is actually saved compared with an unabated coal plant. Thus if it is claimed when the plant is built that x % of the CO2 will be saved, this should NOT be used to determine the tax relief. Rather, the actual performance should be continuously monitored.

A demonstration CCS plant should, from the beginning, have net emissions of less than 600 g/kWh. If this is not achieved over a month or more, this performance should be enforced by closing unabated parts of the plant.

4.D1 Obviously imports would be encouraged and exports discouraged. However, the effect would be small as the main driver is the big variations in demand and supply, and the associated big price swings. The intermittancy of renewables would encourage more interconnectors to be built.

4.D2 Could be significant, especially if more Interconnectors are installed. This could help with backup for renewables. Norway's hydro could be very useful.

4.E1 A formula should be used that removes the need to set rates each year. (I think the Proposal "rate escalator" achieves this. Rather than being set for only a parliament, the formula should be for longer, and only an act of parliament can change the formula.)

4.F1 Yes, with a +/- 10% band. a) £50, b) £80

4.F2 £60/t. A higher price than this should enable the target to be exceeded.

4.F3 Late 2012, with an initial carbon price of £30/t. Starting early helps renewables with a relatively quick construction time.

5.B1 Considerable.

5.B2 Should kill off new unabated coal.

5.B3 Provided there is not profiteering, the effect on prices is not very big. Higher electricity prices should slightly reduce demand and hence CO2.

5.C2 Coal would be used less and gas more. New nuclear will be a decade off and not affect existing generators much. When intermittent renewables have high output they will take some of the market from existing generators, but this will be compensated by higher prices when demand is high and renewables are weak.

5.D6 Poverty and fuel poverty should be addressed by using the tax collected. One way is to use all of it to give every adult in the country an equal share, with children getting half. People with above average electricity consumption subsidise those with below average consumption. Such a universal payment would be relatively cheap to administer (like the Winter Fuel Payment).

Finally, you have not asked which of the 3 scenarios is preferred. Of the 3, scenario 3 is preferred.

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11th February 2011

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Carbon price floor: support and certainty for low-carbon investment

The Renewable Energy Association (REA) welcomes the opportunity to respond to this consultation. The REA is the largest renewable industry body in the UK, with over 650 corporate members. These companies are active across the range of renewable electricity, heat and transport technologies.

The core membership we seek to represent is renewable energy producers, renewable fuel providers, renewable energy equipment manufacturers, installers and project developers. We also have many corporate members with interests in these areas, but whose core business lies elsewhere. Our members are also involved in the injection of renewable gas into the grid.

General Comments

The UK has a legally binding target of 15% renewable energy by 2020. This is likely to require roughly 30% renewable electricity, 12% renewable heat and 10% renewable transport. A diverse portfolio of renewable technologies will also greatly contribute to the carbon emissions targets and energy security objectives beyond 2020. We hope the Government gives sufficient consideration and importance to the impacts any proposed reforms will have on investment and deployment of renewable energy technologies.

We welcome the proposal to introduce a Carbon Price Support mechanism. Greater certainty to the carbon price should improve the economics of low carbon projects, including renewable generation. An increase in the wholesale electricity price should be beneficial to the industry. It will take time for the increases to occur and also for investors to have confidence in the higher price. We therefore support the proposals to start early and low, and increase in relatively stable and linear trajectory. It is also vitally important that all renewable generation is exempt from paying they levy.

As the Government recognises, the carbon price floor alone is unlikely to be sufficient to incentivise renewable generation or to meet the Government's low

carbon aspirations. The REA will be providing a comprehensive response to the electricity market reform consultation, which is addressing the wider reform issues. We are also waiting for the Government's proposals for the Green Investment Bank that are due in May.

Government's low carbon energy policy should be consistent. It seems irrational that something incentivised under one government policy is at the same disadvantaged by another low carbon policy.

Our response focuses on clarifying that energy from waste (EfW), biomass and electricity deemed to be generated by biomethane, should be exempt from paying the Carbon Price Support (CPS) Levy.

Energy from waste

Energy from waste plants generate electricity from a mix of biogenic and fossil fuel derived material. EfW facilities make a significant contribution to renewable electricity and also landfill targets. They are currently exempt from the EU ETS and we would like clarification that energy from waste facilities are also exempt from paying the carbon price support levy. Government should be further encouraging EfW facilities to improve energy recovery and incentivising efficiency, rather than disincentvising them through the CCL.

Biomass

Generating plants using biomass fuel are also currently exempt from the EU ETS[1], including those that use fossil fuel for start up and shut down purposes. We think it would be an unintended policy consequence if biomass generation plants were not exempt from paying the levy on the renewable fraction of their fuel.

The treatment of Biogas and Biomethane

Biomethane produced by anaerobic digestion or gasification is a renewable gas and zero carbon. It is recognised as contributing to a low carbon and sustainable energy sector and Government is proposing to support it under the Renewable Heat Incentive (RHI). It is also a classified as a non-fossil fuel source in Climate Change Levy (CCL) legislation.

We are concerned that the current CPS proposal does not recognise this green gas, which will discourage its use relative to other renewable technologies. It is unclear whether biogas and injected biomethane is a taxable commodity (as defined in the CCL legislation) or not. The draft legislation refers to "taxable commodity" used to generate electricity and these are listed as follows;

[1] Biomass plants over 20MW have to report under the EU ETS.

- Any gas in a gaseous state that is of a kind supplied by a gas utility
- Any petroleum gas, or other gaseous hydrocarbon, in a liquid state

If biogas is consumed on site the CPS should not apply because it would be outside the CCL legislation definition, as it would not be a liquid or a gas supplied by a utility.

Injected biomethane (produced by AD or gasification) is not liquid but it will be gas of a kind supplied by a utility. You may be aware that the REA is introducing a certification scheme (the Green Gas Certification Scheme (GGCS) – see http://www.greengas.org.uk). This is intended to promote the use of biomethane by 'matching' inputs of biomethane into the gas grid with offtakes of gas by consumers, allowing consumers to purchase 'Green Gas'. However, based on the CCL legislation definition, the CPS levy could apply to this deemed consumption of biomethane at CHP or other electricity generators even if the CHP consumer is participating in the GGCS and purchasing biomethane. If this is the case then clearly the CPS mechanism will act in opposition to the RHI mechanism, disincentivising green gas injection for use in CHP / electricity generation applications.

We believe that injected biomethane should be exempted from CPS levy at the point of consumption, where the gas consumed has been certified as renewable for example by means of the GGCS.

We hope that you find these comments useful and agree that renewable generation should be exempt from the CPS levy. Please let me know if you would like to discuss them further.

Gaynor Hartnell

Chief Executive, Renewable Energy Association

RES Response to the HM Treasury Consultation on Carbon Price Floor

RES is a leading renewable energy developer active across the UK. We have developed and constructed over 537MW of wind farms in the UK and over 5200MW globally. We have 85MW currently under construction and over 350MW consented in the UK. We retain ownership interest in 130MW of operational wind farms. We also develop offshore wind farms and dedicated biomass projects, as well as small scale and buildings integrated renewables. The Carbon Floor Price and its impact on the wholesale price of electricity in the UK are therefore very important to us.

We welcome the opportunity to comment on this consultation.

Headline comments:

- RES is highly supportive of the Government's proposals to introduce a floor price for carbon.
- The carbon floor price has the potential to significantly improve the investment case for low carbon technologies.
- Renewable energy investments routinely take account of the market's expectations of future carbon prices. The impact of the CPS on new investments is therefore the amount that it increases carbon prices over current expectations, not the absolute level.
- It is necessary to address some low carbon investors' lack of confidence over carbon prices in order to achieve the greatest and most cost efficient outcomes of the scheme.

Investment

A1: What are your expectations about the carbon price in 2020 and 2030? And how important a factor will it be when considering investment in low-carbon generation?

Our internal view of carbon prices is that they will be €25/tCO2 in 2020 and €45/tCO2 in 2030. This is broadly similar independent forecasts which suggest prices in the low €20/tCO2 in 2020 and well over €50/tCO2 in 2030. Expectations of carbon price feed directly into our forecasts of wholesale electricity prices. We raise finance on the basis of forecast revenues based on these prices.

A2: If investors have greater certainty in the future long-term price of carbon, would this increase investment in low-carbon electricity generation in the UK? If so, please explain why.

We would expect improved investor confidence in low carbon electricity generation as a result of a long term carbon price and the extent to which it is passed through to the electricity price. However to achieve its aim, it needs to be pre-defined price signal that increases over time to provide a strong investment signal.

A3: How much certainty would investors attribute to a carbon price support mechanism if it were delivered through the tax system?

Administering the carbon price support mechanism would increase the level of certainty, however, the most important determinant of confidence and certainty will depend on the price of European Allowances, as it will undermine confidence in political commitment if there is a significant difference between the carbon floor price as set in the UK and the EUA or international carbon price.

It should also be noticed that in the EMR consultation document there appears to be an asymmetry between different investors' confidence over carbon prices. It seems that some investors who

would potentially benefit from increases in carbon prices have little confidence in the long term carbon price, whereas those who might be negatively impacted have far higher levels of confidence.

It is important to recognise that many renewable energy investors have been factoring in increases in carbon prices to their financing case for a number of years. The market's leading provider of electricity price forecasts has been factoring in increases in carbon prices out to 2030 for since 2008, before any government supported level was suggested.

In the supporting analysis to the EMR consultation the impact of low investor confidence in future carbon prices was investigated. Perfect foresight of future carbon prices was not investigated. It is highly likely that perfect foresight would require a far lower level of carbon price to achieve the same outcome. The lack of confidence of certain investors therefore represents a substantial inefficiency in the market and should be addressed.

A4: In addition to carbon price support, is further reform of the electricity market necessary to decarbonise the power sector in the UK?

Whilst it is not essential to reform the electricity market studies have suggested that there are some benefits that could arise (the Poyry study on the Impact of Intermittency on the system supports this case). Particularly to address investment decisions in new capacity required for system stability.

In the longer term even if carbon price support was implemented in isolation, it would be necessary to address the difficulty of forecasting wholesale prices when low carbon generation becomes the marginal price. It should be noted that in other markets, where low marginal cost generation sets the price, such as France (dominated by nuclear) and Nordpool (dominated by large hydro), a sustainable price is achieved, and markets which have experienced negative prices have quickly adapted without additional reform. So these concerns may be more hypothetical than an actual problem.

Administration

As a low carbon generator RES does not have any comments on this section of the consultation.

Types of generator

C1: Do you agree that all types of electricity generators should be treated equally under the proposed changes? If not, please explain why.

We consider that there is a case for treating combined heat and power plants differently. As it stands they will be disproportionately impacted. Only a station's fuel use which relates to electricity generation (not heat) should have the carbon tax applied.

C2: Is there a case for providing additional or more preferential treatment for CHP? If so, what is the best way of achieving this?

We believe there is a strong case for different treatment for CHP.

C3: Do you agree that tax relief should be considered for power stations with CCS? If so, what are the practical issues in designing a relief; what operational standards should a CCS plant meet in order to be eligible; and how might these issues differ for demonstration projects?
RES is not in a position to comment.

Imports and exports

D1: What impact would the Government's proposals have on electricity generators and suppliers that export or import electricity?

The proposals will make power exported from Ireland via the interconnector relatively cheaper. This could result in near constant export flows from Ireland. If this occurred it would reduce the flexibility provided by the interconnector.

D2: What impact might the proposals have on trading arrangements for electricity?

The proposals would alter the marginal cost of generation. This would be expected to increase the amount of gas fired generation relative to coal. Whilst thermal plant continued to set the marginal price, this would be expected to increase wholesale prices. Once low carbon plant set the marginal price, the impact would decline somewhat.

D3: What impact might the proposals have on electricity generation, trading and supply in the single electricity market in Northern Ireland and Ireland?

The proposals are likely to have a substantial impact on the Single Electricity Market. It is likely that thermal plant in Northern Ireland will move up the merit order, and so be dispatched less frequently than the equivalent plant in the south. This could reduce constraints in the Northern Ireland grid. However, it could also exacerbate constraints in the south. The lower relative cost of thermal generation from southern Ireland is likely to make exports to the GB market more attractive and substantially increase interconnector flows from the SEM to the GB market. This could reduce the flexibility offered by the interconnector.

Carbon price support mechanism

E1: How should the carbon price support rates be set in order to increase certainty for investors, in particular over the medium and long term?

A long term trajectory for carbon price support should be set, with key milestone rates in 2020, 2025 and 2030 and beyond. Long term trajectories will provide as much certainty as possible. However, there is a concern that any price set by a tax would be discounted by certain investors who desired greater levels of certainty.

E2: Which mechanism, or alternative approach, would you most support and why?

RES considers that carbon price support is a good way of providing greater support to low carbon generators. Over time it will reduce the level of support required by low carbon generators, enabling them to be competitive with conventional fuels. A sustainable decarbonised electricity sector would be able to provide long term price signals for low carbon generation. In other markets dominated by low carbon, low marginal cost generation prices are remarkably stable and sustainable.

E3: What impact would the proposals have on you carbon trading arrangements?

By providing international leadership the carbon price support could strengthen the current carbon trading arrangements. We would not expect the carbon price support to undermine the EUETS in a material way.

Future price of carbon

F1: Should the Government target a certain carbon price a) for 2020 and b) for 2030? If so, at what level?

The carbon prices should be set at a level that incentivises and gives confidence for the commercial introduction of CCS from coal in 2020 and from natural gas from 2030. We consider these two points as critical price barriers that have to be achieved if we are to decarbonise electricity and to decarbonise domestic electricity consumption. Whilst these are subject to debate, we consider the 2020 level should be around £40/tCO2 and the 2030 level should be £70/tCO2.

F2: What is the most appropriate carbon price for the UK to meet its emissions reduction targets in the power generation sector? How would this be affected by changes in the structure of the electricity market?

RES considers that the carbon price support should be set so as to enable CCS coal to be economic.

F3: When would be the most appropriate time for introducing a carbon price support mechanism and what would be the most appropriate level?

Electricity investment

B1: What impact would you expect the carbon price support mechanism to have on investment in low-carbon electricity generation?

RES invests in a number of renewable energy technologies. We believe that the carbon price support could increase investments in renewables if the level was set above the forecast carbon price and renewable generators have access to the market in which the carbon price effect is realised.

If low carbon generators are either excluded from the market affected by the CPS or are not allowed to benefit (due to a CfD or other feed in tariff) then there could be a negative impact as most renewable investments would have been undertaken on the expectation that the electricity price they would realise would be positively affected by increasing carbon prices. If the market arrangement changed and they were not able to realise the effect of increasing carbon prices on their revenues would be substantially lower than forecast. This would undermine the project economics of many existing projects.

B2: What other impacts would you expect carbon price support to have on investment decisions in the electricity market?

We would expect that CPS would deter investment in carbon emitting generating capacity. However, there appears to be an asymmetry between the negative impact on carbon emitting generation and the potential positive impact on low carbon capacity.

B3: How should carbon price support be structured to support investment in electricity generation whilst limiting impacts on the wholesale electricity price?

If the carbon price support is to impact investment decisions it will have to feed to through to electricity prices. The Government could overcome policy risk for those low carbon generators that needed it by offering a contract for difference on the carbon price. This would still require the carbon floor price to impact wholesale prices. It would, however, ensure that those generators not able to have sufficient confidence in the carbon price could be reassured over the carbon price by having a direct contract with the government.

Existing low-carbon generators

C1: Can you provide an assessment of the impact of the proposals on your generation portfolio and overall profitability?

For our operational projects the impact of the proposals would depend upon whether the carbon floor price was set relative to the market expectations. If the carbon floor price was set higher than current expectations then it would represent greater revenues than we had anticipated. If it were set below expectations electricity revenues would be lower than forecast. Revenues are, however, dependent upon a number of factors in addition to the carbon price. The carbon floor price is likely to make gas relatively more attractive than coal. This is likely to move gas down the merit order. Overall this would increase the amount of gas fired generation which would reduce carbon emissions. It could, however, make coal the marginal plant more frequently. If there is a greater difference between the generation economics of gas and coal this could create more volatile prices.

The impact on our generation portfolio would also be affected by how much the carbon floor was passed through to the wholesale electricity market, and the access that our projects had to that market.

C2: What would be the implications of supporting the carbon price for existing electricity generators and how should the Government take this into account?

The implications of supporting the carbon price would be that generators who used gas and coal would realise costs that non-carbon generators would not. Fossil generation sets the wholesale price for the majority of periods so the cost of the carbon price support would be expected to increase wholesale prices.

Electricity price impacts

D1: How do you currently manage fluctuations in the wholesale electricity price?

RES projects tend to have floor prices in their PPAs. The floor prices are usually very low and it would not normally be expected that they would be called on. The floor price ensures the project's revenues cover the minimum level required to prevent it defaulting on debt payments. Fluctuations in wholesale electricity prices above the floor price impact the returns that RES as the project owner would receives. We undertake internal analysis of future wholesale prices and purchase external price forecasts to ensure that we have a reasonable expectation of future prices.

D2: What difference will supporting the carbon price make to your business?

If our existing projects realise the expected increased in wholesale price associated with the carbon floor then it would be expected to improve the viability of those projects, to the extent that wholesale prices rise above our expectations.

D3: As an electricity generator or supplier, how much of the cost of the carbon price support would you pass on to consumers?

This is not relevant for RES.

D4: As a business, how much of the cost of energy bills do you pass on to customers?

This is not relevant for RES.

D5: How might your company or sector be affected and would be there any impact on your profit margins?

It would be expected that profit margins would increase if the carbon floor price increased wholesale prices above the forecast levels. It should be noted that there are a number of factors which influence the wholesale price such as gas prices. These could have opposing impact on wholesale prices.

D6: Do you have any comments on the assessment of equality and other impacts in the evidence base of the Impact Assessment, included at Annex D?

We have very serious concerns over the analysis which supported the EMR proposals. We would be happy to discuss these with you.

The impact of the carbon floor price is likely to increase electricity bills. It has been estimated that Treasury receipts from EUETS allowance auctions and the carbon price support will lead to revenues of around £16bn by 2030. The impact of the carbon price support will be highly regressive, with the very poorest parts of society experiencing the greatest impact proportional to their income. We consider it vital that to prevent such inequitable impacts compensatory measures are implemented. Given the scale of the impact, subsidised for free energy efficiency measures are unlikely to be sufficient to mitigate the regressive impact of the tax.

If you would like to discuss further any of the comments made in this response please do not hesitate to contact us.

RenewableUK previously: BWEA

Briefing Paper

Prepared for HM Treasury consultation on the Carbon price floor

14 February 2010

Key issues

- RenewableUK acknowledges that long-term certainty in the price of carbon is required to encourage further investment in low-carbon power generation.
- We understand that the ETS carbon price has not been high or stable enough to provide certainty to encourage additional investment in low-carbon technology
- RenewableUK stresses the importance of integrating any carbon price floor proposal and the proposed Electricity Market Reform (EMR) to ensure the correct package in its entirety is adopted to encourage low-carbon investment
    - while a carbon price floor could be put forward as the means of supporting the wholesale price paid to renewable generators under the Contract-for-Difference (CfD) mechanism proposed in the EMR, this would leave many other risks unchanged.
    - if a premium FIT were adopted under the EMR then the carbon price floor should reduce the revenue risk to renewable generators.
- If the proposed carbon price floor is to have any impact on renewable build rates, it would need to provide a predictable carbon price over a long period.
- Any carbon floor price should operate on the principle of increasing support - it should start at a low level and increase gradually to provide confidence in it as a genuine means to support and as projects come on-line in the latter part of this decade.
- There is a degree of political risk associated with the longevity of a carbon price floor while it is effectively a tax.

Background

The Government is currently holding consultation on separate proposals to reform the UK energy market. One of these is the carbon floor price, which has been proposed to give long-term certainty on carbon prices to encourage low-carbon investment. HM Treasury has suggested that expanding the CCL to the use of fossil fuels for power generation is an effective way to implement a carbon price floor. It has laid out three scenarios that set a minimum price on carbon of £20, £30, or £40/tonne by 2020, rising to £70/tonne by 2030.

A carbon price floor should add to certainty in the wholesale electricity price and this is feasible under the CfD. It is not clear, however, that the proposed carbon price floor will have a significant impact on investment in wind energy in the UK over the short-run, over the next two years when key investment decisions need to be made if the UK is to meet its 2020 (or 2050) targets for the de-carbonisation of electricity generation.

We are not convinced that, as stated in HM Treasury's Consultation on the carbon price floor, that 'increased investment in low-carbon generation is driven by expectations of higher carbon prices increasing electricity prices.' We believe that the carbon floor price proposal does not address the main barriers to investment in renewable energy - to the deployment of offshore wind in particular - which relate to development and construction risk, technical barriers and the lack of a sufficient track record to engender investor confidence in offshore wind, more than they do power price certainty.

While the a carbon floor price is likely to be beneficial over the long term, the current form of price support, the Renewables Obligation, is viewed by investors and the developers of renewable energy projects as effective.

The renewable energy sector in the UK needs vision and a clear policy framework from the Government. It requires a stable policy framework and an integrated approach towards carbon pricing, low carbon support, security of supply, planning reform, and transmission issues. Consistency and longevity of policy are critical to give companies the confidence to invest.

For further information please contact:

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Martin Shaw
Environmental Taxes
HM Revenue and Customs
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Ralli Quays
3 Stanley Street
Salford, M60 9LA

11 February 2011

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Dear Mr Shaw

Re: carbon price floor consultation

The Royal Academy of Engineering is supportive of the Government's efforts to reform the electricity market in the UK and recognises the importance of the proposals to introduce a carbon price support mechanism. After consulting with Fellows of the Academy with experience in the energy sector and our colleagues in the Institution of Engineering and Technology (IET), the Institution of Civil Engineers (ICE) and the Institution of Chemical Engineers (IChemE) it was decided that the level of economic detail raised in the consultation was outside our specific area of expertise. The Academy and the engineering institutions are, however, planning to respond in greater detail to DECC's Electricity Market Reform consultation. In the meantime, there are some general points of importance that we would like to make, to inform the overall consultation.

Increased confidence in a mechanism to support the price of carbon is essential to encourage investment in low-carbon generating technologies. It is clear that the EU Emissions Trading Scheme (ETS) is not providing a sufficiently robust carbon price signal and additional support is required. There are, however, several issues worth highlighting:

- The final mechanism must provide long-term confidence for investors in low-carbon technology. Previous Government support mechanisms or penalties have, on occasion, been subject to unexpected revisions. This increases the financial risks and has a detrimental effect on the Government's credibility with investors.
- The mechanism must be compatible with the complete raft of proposals to reform the electricity market.
- With the carbon support mechanism only being applied to the electricity market there is a danger that it could have unintended consequences in the heat and transport markets which are inextricably linked via their reliance on fossil fuels.

- The UK unilaterally introducing a carbon price floor may have unwanted effects if the marginal price difference with the wider EU ETS price becomes significant. It could have a direct effect on electricity interconnections with Europe and could also have knock-on effects for UK industry due to relatively higher energy prices compared to EU competitors.

Clearly, the final details of how the scheme will function will be crucial. However, the scale of investment required in the UK electricity sector is so huge that any mechanism that increases confidence for investors and aids delivery of the required infrastructure is to be supported. This is particularly true for low-carbon technologies which are generally capital intensive and long-term.

The Academy, the IET, ICE and IChemE are therefore supportive of the Government's plan to introduce a carbon price floor and with its wider proposals to reform the UK's electricity market.

Yours sincerely,

Ms Beverley Parkin
Director of Policy and Public Affairs

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Via email: Environmentaltaxes.consultation@hmrc.gsi.gov.uk

10 February 2011

Dear Mr Shaw,

Carbon Price Support: Support and certainty for low-carbon investment consultation: RICS Submission

The Royal Institution of Chartered Surveyors (RICS) is pleased to respond to the Carbon Price Support Consultation

RICS is the leading organisation of its kind in the world for professionals in property, construction, land and related environmental issues. As an independent and chartered organisation, RICS regulates and maintains the professional standards of over 91,000 qualified members (FRICS, MRICS and AssocRICS) and over 50,000 trainee and student members. It regulates and promotes the work of these property professionals throughout 146 countries and is governed by a Royal Charter approved by Parliament which requires it to act in the public interest.

RICS offer responses to your questions as follows:

Investment

3.A1: What are your expectations about the carbon price in 2010 and 2030? And how important a factor will it be when considering investment in low-carbon generation?
It is important that longer term carbon prices are considered, not only 2020 prices, as investment appraisals of potential generating projects will cover periods extending significantly beyond 2020, for example, 20 years typically for wind energy projects and longer still for fossil or nuclear plants.

Although long term carbon price should be an important factor in the investment decisions supporting low carbon energy sources by closing the investment/return gap, focusing investment on low carbon and gradually drive down the cost of renewable sources, the key driver will be the FIT regime that will replace RO. To achieve the desired investment, it is not considered that carbon floor price alone would achieve this, unless a FIT regime based on a premium FIT tariff rather than CfD is adopted in the EMR. In addition, any measures will take time to take effect so the introduction of the carbon price needs to be carefully implemented and staggered to prevent a dramatic 'cliff edge' effect on high carbon producers and suppliers, creating uncertainty in the producers of high carbon based energy in the short term.

By charging for carbon on delivery of fuel to the generators, rather than when used to produce energy will have a significant distortional effect between different suppliers of raw material. Coal (which is for the foreseeable future a major element of the energy mix) will be disadvantaged because:

- Generator stocking costs will be increased.
- Reduced coal stocks at power stations, (because of the financial implications for holding stocks) will have the effect of exposing the UK to short term energy demand spikes.

- Behavioural changes in buying coal could have an impact on UK coal producers in the short term, affecting an industry that provides circa 7000 direct jobs and some 3-4 times that in the wider supply chain.
- Environmental impacts resulting from coal being stockpiled at mines rather than the power stations.

The cost of gas holding will be substantially less as gas is transported through pipeline and therefore there is little need to stockpile gas at the power stations. This may unfairly prejudice coal compared to gas, not due to carbon content but due to management of working capital constraints.

The carbon price should be applied when energy is produced for carbon fuels. It should take these things into consideration and be balanced in its implementation across industrialised economies so as not to disadvantage indigenous sources unduly or too quickly.

3.A2: If investors have greater certainty in the future long-term price of carbon, would this increase investment in low-carbon electricity generation in the UK? If so, please explain why.
Yes. RICS sees this as being the case provided that, as in 3A1, the FIT regime is based on Premium FIT tariff. If the CfD approach is used then the investment will not necessarily lead to investment in renewables capacity, and would probably favour short term CGGT and nuclear investments. Long-term carbon price certainty is important as a basis for investment decisions. Given the differential levels of carbon emissions from alternative technologies, uncertainty as to carbon prices leads to sub-optimal investment decisions, both from an economic and environmental viewpoint.

However, 'most affordable' and 'value for money' statements from the Government should not be considered in isolation, and need to take account of other constraints and influences on investment. Investment will not be based solely on carbon price measures.

3.A3: How much certainty would investors attribute to a carbon price support mechanism if it were delivered through the tax system?
Whilst tax is a big driver that investors would attribute certainty to, RICS believes the certainty is only part of the solution – see 3A2 above. Overall, RICS feels uncertain about the merits of using a carbon tax system as opposed to other possible mechanisms, other tax factors such as depreciation allowances on higher capital cost technologies, individual investors tax positions, or other non-tax mechanisms such as certificates, rates, subsidies or grants could distort decision making and itself cause uncertainty.

Whilst tax is a big driver that investors would attribute certainty to, RICS believes that certainty is only part of the solution – see 3A2 above. Tax rates need to be published for many years in the future to provide certainty and long term planning.

However, if the proposed tax simplifies things and steers the industry away from the massively developing industry of 'carbon trading' then the effect of the tax on the high carbon energy sector's employment needs to be carefully considered, in respect of how and when it is applied. Any new tax system should be applied to the output of high carbon energy sources, not throughout the supply chain end, i.e. the tax is an issue between the 'generator' and the Government.

3.A4: In addition to carbon price support, is further reform of the electricity market necessary to decarbonise the power sector in the UK?
Yes, although RICS believe that not only electricity market reform, but also strategic planning guidance is necessary to support the development of low carbon electricity generation. During the consultation on the draft NPSs in late 2009 and early 2010, it was noted that carbon emissions were not a factor to be considered in planning decisions or on which the NPSs provided a steer, It remains relevant to comment that a favorable, clear planning context is also necessary as a basis for investment decisions, and policy in these different areas needs to be "joined up".

The comments in 3A2 are relevant and the long term surety on Renewable Obligations must be in place to provide the basis for investment, as well as the FIT and RHI.

Adminstration

4.B1: What changes would you need to make to your procedures and accounting systems to ensure you correctly account for CCL on supplies to electricity generators?
This is not area where RICS has particular expertise. However, input from members suggests it appears that the proposals will require some firms to introduce new finance and reporting systems if they do not already have them embedded in their systems. This would place additional financial burden on the small and medium businesses rather than the larger organizations.

4.B2: How long would you need to make the necessary changes to your systems to account for CCL on supplies to electricity generators?
This is not area where RICS has particular expertise. However, input from members suggests it appears that between 6 – 12 months depending on the system upgrades required.

4.B3: Please provide an estimate of how much the system changes would cost, both on-off and continuing?
This is not area where RICS has particular expertise. However, input from members suggests it appears that upwards of £500k may be the true cost of implementing and resourcing a new accounting system. RICS would advocate some element of additional tax relief for businesses to update their systems.

Types of generator

4.C1: Do you agree that all types of electricity generators should be treated equally under the proposed changes? If not, please explain why.
There would be no incentive for new technologies if they were treated equally. Furthermore, there may be a case for different treatment for example for different types of generator, for example, CHP plant operators (in particular having regard to heat as well as electricity output) or small compared with large scale generation. This is already recognized by differential Feed in Tariffs as well as the current limitation of Feed in Tariffs to small projects.

However, in the short term the proposals will have a negative effect on the UK supply chain and fossil fuel suppliers well ahead of the 2030 target for decarburization. The effect of this will be to reduce the attractiveness of the sector in the longer term for investment and R&D in CCS. In the short term it will have a negative impact on the core base load energy suppliers in the immediate period up to 2020. All energy suppliers and fuel types must be supported in this period when growth in the economy is crucial, jobs are under threat and maintaining the supply chain is important. For this reason, short term support, up to 2025, should be provided to this sector of the industry for public benefit reasons.

4.C2: Is there a case for providing additional or more preferential treatment for CHP? If so, what is the best way of achieving this?
Yes, RICS believes it should be, although the exact mechanism is not within RICS scope. However, a more efficient mechanism should take account of the additional heat production, the RHI will be a major step in providing the right framework.

4.C3: Do you agree that tax relief should be considered for power stations with CCS? If so, what are the practical issues in designing a relief, what operational standards should a CCS plant meet in order to be eligible; and how might these issues differ for demonstration projects?
Yes - incentivisation for getting CCS off the ground is crucial for the longer term energy security of the UK. The importance of renewables is understood and agreed, however, the UK has significant and long term supplies of indigenous coal and gas that should be part of the energy security mix going forward. CCS should not be viewed as a gesture by the developer/operator of the plant but an essential requirement before something can be built which would otherwise on environmental (emission) grounds should not be built at all.

However, to get to this point CCS has to be made deliverable and tax relief and/or

incentivisation is part of the measures to make it attractive to investors. Support should be sufficient to keep coal with CCS in contention, but not to make it so attractive as to disadvantage other technology options, and capital allowances alone would probably be insufficient. Options such as exemption from CCL or short term enhanced R&D type relief might be required stimulate investment.

Imports and Exports

4.D1: What impact would the Government's proposals have on electricity generators and suppliers that export or import electricity?

The issue is not confined to electricity generators, but includes the impact on energy raw material suppliers.

The implications would depend not least on where the electricity is imported from/exported to, and with what technology it was generated, but they could be significant. For example, imports of hydro power from Norway or wind power from Ireland would distort the situation less. The EU would no doubt seek to avoid distortion by ensuring a level playing field at least within technologies internationally but increasingly across technologies as well. The delivery of off shore grids and international interconnectors etc will necessitate some EU wide approach.

4.D2: What impact might the proposals have on trading arrangements for electricity?

Detailed trading arrangements for electricity are not within the remit of RICS, although RICS believe a distortion is far more likely to arise as a result of the impact of new nuclear on the electricity market than the carbon pricing. It is not clear if there are to be mechanisms e.g. 'bonded warehousing', that will allow generators to delay paying carbon floor price by leaving coal in stock at ports. Any such possibility will seriously impact on UK high carbon raw material producers.

4.D3: What impact might the proposals have on electricity generation, trading and supply in the single electricity market in Northern Ireland and Ireland?

RICS believes it would be significant. There is an All Ireland Electricity market, and it would make Northern Ireland generating stations more costly and less competitive in the Irish market.

Carbon Price Support Mechanism

4.E1: How should the carbon price support rates be set in order to increase certainty for investors, in particular over the medium and long term?

A 'straight line' should not be used but instead a 'soft hit' up to 2020-25 should be provided for those high carbon sectors of the energy industry and supply chain that are delivering at the present time.

4.E2: Which mechanism, or alternative approach, would you most support and why?

RICS believe that in the medium to long term the rates should increase on a steepening curve post 2025.

In the short term the rates must be set such that they don't create significant uncertainty that adversely impacts on the high carbon sectors - they are still the base load of energy production in the short term. Rates should be set low in the short term but be higher in the longer term – possibly not linear. Funding of investment in new renewables technologies is being undertaken by industry, and the change and investment being facilitated by existing high carbon activities.

4.E3: What impact would the proposals have on your carbon trading arrangements?

RICS does not have detailed knowledge of carbon trading and the implications.

Future price of carbon

4.F1: Should the Government target a certain carbon price a) for 2020 and b) for 2030? If so, at what level?

2020 EU Market rate for Carbon – Assume £20
2030 £50
2050 £80

4.F2: What is the most appropriate carbon price for the UK to meet its emissions reduction targets in the power generation sector? How would this be affected by changes in the structure of the electricity market?
There is a concern should there be a premium of UK Carbon Pricing over and above EU Carbon Pricing. If EU pricing is different to UK pricing then there are potential issues and implications throughout the supply chain that will impact on jobs and economic recovery in the short term up to decarburization. Examples may be:

a. What regime does a UK Coal exporter operate?
b. Will EU generators close UK plants and burn coal in Europe Plants? EU generators will look at their generation mix from an EU rather than national level to obtain their best profile
c. In the event that Carbon pricing levels are significantly different in Europe, then with interconnector facility it is reasonable foreseeable that carbon generation could take place in Europe and be exported to UK. What are the competition implications of such generation?

4.F3: When would be the most appropriate time for introducing a carbon price support mechanism and what would be the most appropriate level?
There should be a low level introduction that allows experience to be gained before impact of carbon pricing is increased and allow time for industry to plan – 2013 is fairly immediate in business planning terms.

Electricity Investment
5.B1: What impact would you expect the carbon price support mechanism to have on investment in low-carbon electricity generation?
It would encourage investment. However, the impact on short term high carbon generators needs to be assessed, particularly in period up to 2020.

The increased working capital requirements in the short term for high carbon generators may impact on generator ability to fund other projects in a period that the Government has identified as requiring substantial investments. Increased UK working capital may be a factor for generators to invest in countries which have less of a financial impact on their running costs

5.B2: What other impacts would you expect carbon price support to have on investment decisions in the electricity market?
It will provide a greater degree of certainty for renewables, but not necessarily CCS and CHP technologies.

5.B3: How should carbon price support be structured to support investment in electricity generation whilst limiting impacts on the wholesale electricity price?
As energy efficiency measures (Green Deal) reduce energy usage, the effect of rising energy prices should be mitigated, but it is unrealistic to expect to achieve energy and emission policy benefits whilst avoiding energy price rises, or to expect that generators, of whatever kind, cushion the blow. Rising energy prices are a factor to be expected, unavoidable in any case, and an essential market signal to politicians and consumers to take action reduce demand. However, the RICS feels that there needs to be a holistic view on rising energy costs and impact on all of society recognized, not just those in the benefits system. . In particular, the realistic ability for improving the existing UK housing stock.

Existing low carbon generators
5.C1: Can you provide an assessment of the impact of the proposals on your generation portfolio and overall profitability.
RICS is not a generator and is unable to comment on this question.

5.C2: What would be the implications of supporting the carbon price for existing electricity generators and how should the Government take this into account?
RICS is not a generator and is unable to comment on this question.

Electricity price impacts

5.D1: How do you currently manage fluctuations in the wholesale electricity price?
RICS is not a generator and is unable to comment on this question.

5.D2: What difference will supporting the carbon price make to your business?
RICS is not a generator and is unable to comment on this question.

5.D3: As an electricity generator or supplier, how much of the cost of the carbon price support would you pass on to consumers?
RICS is not a generator and is unable to comment on this question. It must however, be expected that the cost of CPS would be passed onto consumers, and could therefore be seen as a form of 'stealth tax' by consumers.

5.D4: As a business, how much of the cost of energy bills do you pass on to customers?
RICS is not a generator and is unable to comment on this question.

5.D5: How might your company or sector be affected and would there be any impact on your profit margins?
RICS is not a generator and is unable to comment on this question.

5.D6: Do you have any comments on the assessment of equality and other impacts in the evidence base of the Impact Assessment, included at Annex D?
RICS is not a generator and is unable to comment on this question.

RICS looks forward to continuing engagement with HMRC as it considers the existing regime. Please do not hesitate to contact me for further briefing or detail.

Yours sincerely,

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February 11th 2011

Response to Consultation on Carbon Price Floor

Dear Mr Shaw

RWE welcomes the opportunity to respond to this consultation. We are responding on behalf of RWE companies operating in the UK; RWE npower owns and operates one of the largest and most diverse portfolios of power generating plant in the UK with over 9,000 megawatts (MW) of large gas, coal and oil-fired power stations and cogeneration plant. Our retail arm, npower, is one of the UK's leading suppliers of electricity and gas with around six million customers. RWE npower renewables, the UK subsidiary of RWE Innogy, is one of the UK's leading renewable energy developers with an operational portfolio in the UK of 535MW and a UK development portfolio of over 8500MW including wind farms, hydro plant and biomass generation to produce sustainable electricity. RWE Supply & Trading is one of the leading companies in European energy trading and is responsible for all of RWE's activities on the international procurement and wholesale markets for energy.

We fully support the aims of the Electricity Market Reform proposals to deliver a secure, low carbon affordable electricity mix for the 2020s and beyond and will be responding to the consultation on the proposed measures. It is important that the final package of measures results in an attractive, stable and predictable investment environment that delivers returns to investors commensurate with the risks of low carbon technologies, value for money for customers and maintains the competitive nature of the electricity market.

Whilst we are strongly supportive of a sense of urgency in delivering an appropriate outcome associated with the review of the energy market, we are disappointed that the time period for both the consultation and the proposed introduction of the carbon support mechanism is extremely short and are concerned that legislation will be introduced that has not been considered in sufficient detail. In particular there would appear to be no reason, other than an arbitrary timescale set by the Finance Bill, for consideration of the carbon price support separately from the other Energy Market Reform mechanisms. The exercise appears to be driven purely by the commitment in the coalition agreement to a carbon floor price rather than by any well considered detailed assessment of the most effective means to ensure delivery of investment in low carbon generation in the UK.

The proposals in the Electricity Market Reform consultation have the potential to deliver the certainty that investors will need, however until the detail of the EMR proposals is finalised the carbon price support could be the only mechanism for investors to judge the attractiveness of low carbon investment in the UK. The carbon price support mechanism will be seen, at least in the short term, as a revenue raising tax and will not give the perception of stability that investors require. In the short term, before new low carbon generation is commissioned, it could be seen as a mechanism that is delivering benefits solely to existing

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low carbon generation. We are concerned that the mechanism could give particular advantage to existing nuclear generators.

Delivery of investment

We recognise that the stated aim of the carbon price support mechanism is to encourage investment in new large scale low-carbon generation but we have concerns that the proposed mechanism is not the most cost-effective means of achieving this. The carbon price support has the potential to lead to significant levels of tax on consumers but will not provide any guarantee that new low carbon generation will be delivered.

Carbon price signals set through the EUETS will give investors a degree of confidence through legislation set at European level; a carbon price set through a UK tax does not provide an equivalent level of confidence. The potential risks from changes to the future levels, or even abandonment of the tax, would mean that a carbon price support mechanism could not provide the certainty necessary for investment in new low carbon generation. Furthermore as the UK electricity sector decarbonises, the benefit of any carbon pass through to electricity prices will fall away resulting in reducing benefit for low carbon investments with long pay back times.

Impacts on UK Competitiveness

Introduction of the carbon price support mechanism could have significant impact on the competitiveness of the UK. It is essential that any support for low carbon generation should deliver investment in the most cost effective way for UK electricity customers. The carbon price support mechanism will result in higher electricity prices for both industry and households and significant tax revenue for Government. In addition, UK carbon prices (and hence electricity prices) could become significantly out of line with prices across the EU which would have a significant negative impact on investment in the wider UK economy.

The potential interaction between mechanisms needs to be taken into account in deciding on the optimal package for Electricity Market Reform that delivers investment in the most cost effective way. In particular, if a Feed in Tariff using a two-way Contract for Difference is introduced as envisaged by Government then there is little benefit to low carbon generators around having certainty in future carbon prices. On the other hand there is significant benefit to Government around ensuring high carbon prices and therefore minimising the Government exposure to any financial liability and market volatility associated with a Contract for Difference. There is the potential that a broad based tax would be attractive to Government but have higher overall costs for customers.

Carbon price support will also raise UK electricity prices relative to continental prices and increase the value and volume of electricity imports to the UK, reduce exports and distort cross-border trade and undermine the drive toward EU power market liberalisation and integration.

Impact on operation of the market

The level of carbon price support needs to be visible when we sell electricity forward in the wholesale market. It is not sufficient to know the total carbon price (as set by a carbon trajectory) as it will not be possible to hedge forward the carbon tax element of the total price and this uncertainty would generate unnecessary uncertainty over future power prices and a consequent reduction in the liquidity of the wholesale power market, increasing spreads and increasing risk management costs (ultimately borne by consumers). We therefore strongly recommend that the tax rate be set for a moving window so that it is always known in advance for the current and the following three years to avoid disruption to and a consequent reduction in liquidity in the traded electricity market. This would require the rate to be set annually for the year four years ahead (i.e. set in financial year 2011/2 for financial year 2015/6). To ensure efficient operation of power and carbon markets, the carbon price support should therefore not come into effect until 2015 at the earliest and certainly not in 2013 as currently proposed.

The current debate on future carbon reduction targets both at the global and EU level make it premature to set a trajectory to 2030 at the present time. Any carbon price support should therefore be introduced at a nominal rate (no higher than £1/tonneCO_2) up to 2018 prior to further assessment on an appropriate trajectory to 2030. This would also then be consistent with the lead time necessary for new low carbon investments.

Impacts on Combined Heat and Power

We have specific concerns that the proposed application of carbon price support to all forms of generation will have a potentially significant negative impact on CHP plant. This would potentially lead not only to early closure of existing CHP plant but also to investment in new gas-fired CHP becoming even more challenging than currently. We recommend that the carbon price support mechanism should not apply to the proportion of fuel used for heat production in CHP plant.

Responses to the detailed consultation questions are attached below.

Yours Sincerely

Penny Tomlinson
Asset Policy Manager

Responses to consultation questions

3.A1: What are your expectations about the carbon price in 2020 and 2030? And how important a factor will it be when considering investment in low-carbon generation?

The carbon price in 2020 and 2030 will be set by the future level of the EUETS cap. Whilst the current level of the cap is set in the Directive out to 2020 (with a future rate of reduction set at 1.74% per annum beyond 2020), the cap is subject to revision. The EU is currently debating a move to an overall green house gas emissions target of a 30% reduction and discussions on a future International agreement on emissions reductions are ongoing. Until these agreements have been finalised it is difficult to take a view on carbon prices in 2020 or 2030.

Clearly the future carbon price is an important factor when considering investment in both low carbon generation and other investments in our generating portfolio. However it is only one of the factors taken into account. For nuclear investment in particular the future level of the carbon price will have a diminishing level of importance in setting future electricity prices as the sector decarbonises. Other important factors will be future fuel and commodity prices, exchange rates and, given the International nature of RWE's investments, the level of political and regulatory risk associated with investment in any particular country.

3.A2: If investors have greater certainty in the future long-term price of carbon, would this increase investment in low-carbon electricity generation in the UK? If so, please explain why.

Whilst the future long-term price of carbon will be one factor in investment decisions for low-carbon electricity generation other factors will be more important. Certainty on carbon price will not, on its own, be sufficient to guarantee the investment needed in the electricity sector. The support mechanisms proposed in the EMR consultation will be more important in delivering increased investment in low-carbon generation particularly new nuclear. A key factor will be the impact of future gas prices on the potential returns for investors.

For renewables, neither the current support mechanism, the Renewable Obligation, nor the lack of certainty on carbon price have been seen as key challenges. Other issues such as the appetite for construction risk, time delays between investment and returns, exchange rate risks, final sums liabilities, and the fact that most investors want a portfolio of risk are more important factors in investment decisions.

3.A3: How much certainty would investors attribute to a carbon price support mechanism if it were delivered through the tax system?

The preference must be through certainty on carbon price to be delivered through a global agreement on carbon reductions and through European legislation particularly the EUETS. The main concern would be that taxes are subject to change by future Governments. There would continue to be uncertainty that if the gap between UK and EU carbon prices, and resulting electricity prices, widened significantly the impacts on UK competitiveness would be such that a future Government would be under potentially significant pressure to reduce the level of the tax or remove the carbon price support altogether. Very recent developments in respect of the bank levy illustrate the difficulty the Government faces in trying to make credible commitments to certainty in future carbon support rates. The resulting level of risk will inevitably therefore be factored into investment decisions in low-carbon generation.

To provide some degree of certainty would require, as a minimum, the carbon price trajectory and method of calculation for carbon price support to be set in primary legislation.

3.A4: In addition to carbon price support, is further reform of the electricity market necessary to decarbonise the power sector in the UK?

Our view is that further support will be needed to decarbonise the power sector in the UK. The primary focus should be on finalising the details of the mechanisms proposed in the EMR consultation, the detail of carbon price support needs to be considered as part of this debate. It is possible that under some mechanisms (in particular a contract for difference) carbon price support would not be needed to provide certainty to investors, and it is

therefore premature to introduce a structure for carbon price support until after the detail of the other mechanisms has been agreed.

Administration

There is insufficient detail within the consultation document to establish precisely the extent of changes necessary to our systems in order to account for the new rates of CCL. The consultation document appears to be mostly about the high level principles rather than the detailed implementation issues, which it acknowledges need to be discussed between HMRC and the major generators/fuel suppliers.

Given that the tax is about carbon being burnt, we would have expected that the generator, which is the entity burning the fossil fuel, would be best placed to both measure and also account for tax. However, the consultation document is proposing that the supplier of fuel is the one that will have to register and account for the new tax.

Within the RWE group in the UK virtually all the fossil fuel is acquired through our affiliated trading company RWEST. It does not currently need to be registered for CCL. On the worst case basis, therefore, that the design of the tax remains as the supplier of the fuel being accountable for the new CCL, and in the absence of any more detail than that, we have estimated a worst case scenario where the costs of changing all of the relevant systems within our trading affiliate would be around £2-3 million, with a lead time of at least two years. This is clearly considerably in excess of the estimate of £50,000 within the impact assessment. Our trading affiliate is one of the largest in Europe and deals with a very large number and range of transactions. Commensurate with this, there are three different sets of complex and inter-related systems that will all need to be reviewed and modified to cope with any imposed obligation to register for CCL. A detailed appreciation of both the systems implications and the "go-live date" would be needed as soon as possible, not only to allow lead time, but also to avoid duplication of effort in modifying systems for the new tax in circumstances where those systems may then be the subject of major upgrade process in any case. These are :

A Trade capture systems
B Billing systems
C Financial Accounting system

There is no mention in the consultation document of the tax point for the new tax. Much of the transactional volume in our trading affiliate will be wholesale trades, and only some of the transactions will be for the actual supply for fuel to a generator for burning. There is work to be done to establish how the trading company will know that any particular contract is for the supply of fuel which will actually be used for generation, as opposed to being sold on or back. The physical quantities rather than monetary values that will also need to be captured as a basis for charging the new rate of CCL will cause part of the significant systems cost.

Given that large generators are in the EU ETS scheme, the amount of carbon emissions is already something which they need to capture and report on. We would expect that generators are very clearly better placed to record levels of fuel supplied and used for generation, and we would therefore strongly urge government to reconsider the design of the administration of the tax.

4.B1: What changes would you need to make to your procedures and accounting systems to ensure you correctly account for CCL on supplies to electricity generators?

Please see above comments.

4.B2: How long would you need to make the necessary changes to your systems to account for CCL on supplies to electricity generators?

Please see above comments.

4.B3: Please provide an estimate of how much the system changes would cost, both one-off and continuing?

Please see above comments.

Types of generator

4.C1: Do you agree that all types of electricity generators should be treated equally under the proposed changes? If not, please explain why.

We agree that in principle all types of electricity generators should be treated equally but we are concerned about the potential impacts on CHP as a consequence of the carbon price support levels also applying to the proportion of the fuel used for heat production.

We are concerned that the carbon price support could result in the price of carbon emissions resulting from electricity generation being significantly higher than the cost of carbon associated with other uses of gas. We recognise that decarbonisation of electricity generation as being an important mechanism for reductions in emissions across other sectors (both heating and transport in particular). Nevertheless we are concerned that electricity and other fuels need to be treated equally in terms of the implied cost of carbon in order to ensure that appropriate price signals to all sectors to support rational actions to decarbonise the economy.

4.C2: Is there a case for providing additional or more preferential treatment for CHP? If so, what is the best way of achieving this?

The consultation document suggests that CHP plants already receive a number of benefits. The majority of the mechanisms listed do not provide any benefit to our own portfolio of CHP plant particularly beyond 2013.

The proposed introduction of carbon price support on fuel for CHP plant will lead to significant additional costs which will erode the environmental benefits of CHP compared to separate provision of heat and electricity.

The consultation document fails to clarify the treatment of sites that only receive a partial relief from the CCL. Currently it would appear there is the potential for three layers of taxation to be imposed on these sites through the EU ETS, the existing CCL and the new carbon price support. This would consequently contribute to even less favourable conditions for CHP.

In order to prevent any potential disadvantages being created through the application of the carbon price support on fossil fuelled CHP, and to recognise the efficiencies of CHP which support the Governments decarbonisation strategy, we propose the application of an exemption for the heat element associated with CHP. This would create a level playing field by recognising that the electrical efficiencies in using CHP are reduced due to the production of useful heat in the process. An exemption for the fuel associated with the production of heat would prevent CHP being disadvantaged in comparison to the separate production of heat and power.

An exemption for heat would provide for fair and equitable treatment of CHP and could be done using an existing mechanism to avoid any significant design complexities and costs. The CHPQA are an established body that already have processes in place to calculate the amount of fuel used for heat; it is logical to use a well established recognised body that can provide this at minimal effort or expense.

We also note that the Cogeneration Directive would support a partial relief in the form of a heat exemption to reduce the regulatory barriers facing cogeneration.

4.C3: Do you agree that tax relief should be considered for power stations with CCS? If so, what are the practical issues in designing a relief; what operational standards should a CCS plant meet in order to be eligible; and how might these issues differ for demonstration projects?

We agree that relief from the new tax equivalent to the amount of carbon captured and stored should be considered for power stations with CCS. This should be consistent with the emissions reported under EUETS monitoring and verification.

Imports and exports

4.D1: What impact would the Government's proposals have on electricity generators and suppliers that export or import electricity?

The first-order impact of carbon price support will be to raise UK prices relative to continental prices which will increase the value and volume of imports and reduce the value and volume of exports. Overall – with the UK as a net importer - this would therefore be expected to transfer net significant revenues from UK consumers. This in turn could stimulate the expansion of interconnection capacity to the UK.

The tax also distorts cross-border trade significantly; the "wedge" created by the tax between marginal costs on the continent and in the UK means that imports will continue to the UK – and beneficial exports from the UK won't take place - even when UK production costs fall below those on the continent. In this respect the tax is economically equivalent to an export tax. This is inefficient and directly undermines the drive toward EU power market liberalisation and integration.

The interaction with other EMR mechanisms may also need to be considered in terms of potential impact on imports/exports.

4.D2: What impact might the proposals have on trading arrangements for electricity?

The tax could shift the economic value of forward power contracts as the tax feeds through directly into marginal generation costs and prices. For example, introducing the tax now for 2013 will increase the forward 2013 power price benefiting those who have already purchased, and disadvantaging those who have already sold, 2013 power. Contractual means to deal with the prospect of these shifts, eg, through change of law clauses, are insufficient to address these risks because the tax will only feed through indirectly into power prices and there will always be widely divergent views – the buyer's and the seller's – on the precise impact of the change. Moreover, the market will not be able to hedge uncertainty in the level of the tax efficiently. HM Treasury is the only party which is "long" the tax (ie, benefits when the tax rises) which forecloses an efficient "hedge" on future variability of the tax rate with the "short" generators who will have to pay it.

The prospect of retrospective shifts in the economic value of forward contracts in this way will undermine market confidence and liquidity in the entire UK wholesale market. Buy-sell spreads will increase to compensate for the increased risk and hence increase the cost of wholesale risk management to consumers. It is for this reason that we strongly recommend that tax rates are fixed for the following four years according to the mechanism described below.

The administrative implementation of the tax may also affect the balance between forward physical versus forward financial trading. Specifically, if the point at which the tax is accounted falls "upstream" at the point of wholesale trade/supply as opposed to the final delivery to a power station, we would expect many wholesale market participants to shift more of their trading into financial derivatives and away from the forward physical markets. (In turn this would need to be balanced against the increased costs of margin and regulatory capital that might be imposed on derivatives trades in the course of current proposed revisions to financial services regulation.)

We do not expect carbon price support to have any direct impact on the operation of the balancing and settlement arrangements.

4.D3: What impact might the proposals have on electricity generation, trading and supply in the single electricity market in Northern Ireland and Ireland?

While we have no specific views on this, we would expect similar impacts in the Northern Ireland and Ireland market to those experienced in Great Britain, albeit there will be less distortion at the interconnections between Britain and Ireland than at the links between Britain and Continental Europe.

Carbon price support mechanism

4.E1: How should the carbon price support rates be set in order to increase certainty for investors, in particular over the medium and long term?

It is important that the carbon price trajectory once agreed should not be subject to continued revision and updating. Our proposal for setting carbon price support rates would be

- In the short term (2015 to 2018) prices are set on a nominal basis at a low level (no more than £1/tonneCO_2) four years in advance.
- The appropriate carbon trajectory should be agreed as part of the finalisation of EMR mechanisms taking into account EU and global greenhouse gas emissions reductions agreements.
- The annual carbon support rates for 2018 onwards are set four years in advance on the basis of an agreed carbon price trajectory. The carbon support rate should be calculated on the basis of an approved carbon price index such as the ECX index (eg support rate for 2020 is calculated in 2016 from carbon trajectory less forward carbon price for 2020).
- In order to be consistent with European carbon prices it may be appropriate to set the long term trajectory in € whilst setting the level of carbon price support in £.

4.E2: Which mechanism, or alternative approach, would you most support and why?

We propose that the tax rate be set for a moving window so that it is known for four years in advance (ie the current and the following three years) to avoid disruption to the traded market.
We would note that to the extent that UK power has already traded for 2013, it is essential that the tax is not introduced until 2014 at the very earliest to avoid an unfair shift of the economic value of those forward power contracts that have already been entered into.

4.E3: What impact would the proposals have on you carbon trading arrangements?

As noted above, revisions to the tax rates within a four-year window seriously disrupt market participants' ability to hedge carbon and power risks efficiently, by making it difficult to lock in the total carbon cost (including tax) that will be reflected in power prices and by introducing additional and unnecessary uncertainty over likely output.

Carbon price support in the UK will have relatively little direct impact on the narrow question of trading carbon allowances. However, the indirect impacts on carbon markets and prices are profound and cannot be ignored. Under a fixed EU-wide cap, less demand for allowances in the UK simply reduces the supply-demand balance, drives down carbon prices outside the UK and therefore results in more emissions elsewhere in the EU. With a fixed EU cap, UK price support will not lead to a single tonne reduction in EU-wide emissions. Not only that, but the lower resultant carbon prices give a weaker signal on the future need for low-carbon investment elsewhere in the EU. The UK government might hope to true up this "zero-sum" affect in EU negotiations on future caps, e.g., the move to 30 per cent etc. However, as one of 27 Member States, the UK has no ability to ensure that its own super-equivalence raises the bar for other Member States. Indeed, such action merely relaxes the overall EU constraint which allows other member states to claim a greater share of the pie.

Future price of carbon

4.F1: Should the Government target a certain carbon price a) for 2020 and b) for2030? If so, at what level?

Clearly to provide any level of certainty on carbon prices Government would need to publish a carbon price for both 2020 and 2030. However as it is unlikely that the carbon price support alone will incentivise investment in low-carbon generation, the actual carbon price trajectory needs to be considered in conjunction with the detail of the EMR support mechanism. The level will also need to take account of current International and European discussions on future carbon reduction commitments. We do not see the need to set the trajectory until 2014 on the basis that a nominal carbon support level should be used until 2018 and levels of carbon price support should be set 4 years in advance.

4.F2: What is the most appropriate carbon price for the UK to meet its emissions reduction targets in the power generation sector? How would this be affected by changes in the structure of the electricity market?

The additional mechanisms proposed in the electricity market reform consultation will be needed to achieve investment in the power generation sector. Once the detailed proposals for these mechanisms are clearer it will be possible to comment on the balance needed to be achieved between for example a Feed in Tariff and the carbon price.

4.F3: When would be the most appropriate time for introducing a carbon price support mechanism and what would be the most appropriate level?

As previously explained, in order to avoid disruptive impacts on the electricity market the carbon price support mechanism should not be introduced until 2015 at the earliest (i.e. with a carbon price support rate set four years in advance).

Electricity investment

5.B1: What impact would you expect the carbon price support mechanism to have on investment in low-carbon electricity generation?

The impact of the carbon price support mechanism will depend on the interaction with other mechanisms under the EMR.

5.B2: What other impacts would you expect carbon price support to have on investment decisions in the electricity market?

The level at which the carbon price support is introduced is likely to be a significant factor in decisions that operators will be making around existing fossil fired generation and investments that may be needed to meet the requirements of IED beyond 2016.

5.B3: How should carbon price support be structured to support investment in electricity generation whilst limiting impacts on the wholesale electricity price?

We propose that the tax rate be set for a moving window including the current and the next three years to avoid disruption to the traded market. This would require the rate for the year four years in the future to be set annually.

Existing low-carbon generators

5.C1: Can you provide an assessment of the impact of the proposals on your generation portfolio and overall profitability?

As the carbon price support is effectively a further tax on carbon emissions it will result in increased costs associated with coal-fired generation. The overall impact will depend on the level of the tax, and timing of its introduction. In the long term the EMR mechanisms if they are successful in incentivising investment in low-carbon generation are likely to have a significant impact on our portfolio.

If CHP plant are required to pay carbon price support on fuel associated with heat production then there could be a potential impact on our CHP portfolio. Existing assets will be less profitable and this could result in early closure and investment in any new fossil CHP would be less likely.

Dedicated biomass plants will need to burn gas (or fuel oil) during start-up in order to raise the combustion temperature to a level where the biomass can burn without any support gas and will presumably be subject to the carbon price support on this use of gas. However, as the gas is only used during start-up, no electricity is being generated from the gas. There is therefore the potential for the levy to have a negative impact on the economics of renewable generation from biomass.

5.C2: What would be the implications of supporting the carbon price for existing electricity generators and how should the Government take this into account?

If set at too high an initial level introduction of the carbon price could result in early closure of existing coal fired generation. If this occurs before there has been significant investment in replacement low-carbon generation there is likely to be an incentive to invest in significant new levels of CCGT capacity.

There will also be a clear benefit to existing nuclear generators which has the potential to distort the market if levels of carbon price support are set too high. We recommend that to avoid this, the carbon price support is introduced at a nominal level until at least 2018 (no more than £1/tonneCO_2) when new large scale low carbon generation is likely to be commissioned.

There will be a lesser benefit to existing renewables as most projects are subject to either NFFO contracts or long term power purchase agreements which will negate the energy price benefit in the short to medium term.

Electricity price impacts

5.D1: How do you currently manage fluctuations in the wholesale electricity price?

Fluctuations in the wholesale electricity price are managed through execution of our hedge strategies for generation and retail parts of the business, from long term bulk hedging through to short term optimisation of positions. The key challenge for generation is to provide recovery of fixed and variable costs for power stations operations through sales of electricity and purchase of fuels and carbon, optimising plant investments against wholesale market forward prices and longer term forecasts. For the retail part of the business the key challenge is to achieve competitive purchase price matching volume to demand.

5.D2: What difference will supporting the carbon price make to your business?
See response to questions on electricity generation and supply.

5.D3: As an electricity generator or supplier, how much of the cost of the carbon price support would you pass on to consumers?

The cost of carbon price support will be fully passed through into wholesale and subsequently retail prices based on the market's forward view of the carbon price support level and its consequent impact on the short run costs for the marginal plant. As we've outlined above, low transparency or uncertainty about the future support price – in liquid forward market periods – would also result in additional risk premia being included in forward wholesale prices. We see no reason why the increased wholesale prices would not be passed through in full to retail consumers. While we expect the tax itself to feed through directly to consumers, the one-off system costs and the additional administrative burden falling on the industry will further reduce the scope for more beneficial investment.

5.D4: As a business, how much of the cost of energy bills do you pass on to customers?

In a very competitive market, energy bills are influenced by a number of factors including wholesale costs.

5.D5: How might your company or sector be affected and would be there any impact on your profit margins?

5.D6: Do you have any comments on the assessment of equality and other impacts in the evidence base of the Impact Assessment, included at Annex D?