Response from BP plc to DECC's Consultation on Electricity Market Reform (EMR) and HMRC's Consultation on a Carbon Price Floor

Introduction

BP's interest in Electricity Market Reform (EMR) is not as extensive as some other energy companies. Hence, in this submission we restrict our comments to those areas where BP's experience both in the UK and elsewhere is relevant. Rather than answering the individual questions posed in the DECC consultation, we prefer to present our overall view of the proposed reforms, and to include our view on the HMRC proposal on carbon pricing at the same time. We believe the proposed measures should be regarded as an integrated package, as there will be interactions among them.

We assume that the test of any package of reforms should be the practicability and cost effectiveness of its proposals in helping to meet the objectives of energy policy. If there is an easier and less expensive way of meeting these objectives, then this is clearly desirable. In addition, the goals of minimum complexity and overall transparency should always be at the forefront of policy considerations.

Policy Principles

At the most fundamental level, open and competitive energy markets offer the most effective means of finding, producing and distributing diverse forms of energy. We accept that, in order to achieve more rapidly policy goals such as climate mitigation, targeted interventions in the market may sometimes be necessary. However, when deployed, they should be simple, justified and proportionate, preferably market-based (flexible), and conscious of the need to avoid those unintended effects which might compromise other important objectives, such as energy security.

If HMG's energy policy is to be driven primarily by the need to reduce CO2 emissions, some degree of intervention is necessary. BP's view is that placing a price on carbon is the most simple and transparent way of working towards this objective. The carbon price should apply economy-wide, and should treat all carbon equally whether it comes out of an industrial smokestack or a car tailpipe. Carbon pricing will make energy efficiency and conservation more attractive, and make lower carbon fuels like natural gas, nuclear power and renewables more cost competitive. While a global carbon price should be the long-term goal, national systems are a necessary first step in the transition, with some temporary financial relief for domestic industrial sectors which are internationally traded.

There are strong arguments on both sides of the debate as to how best to price carbon. BP is inclined to favour the determination of a carbon price via a cap and trade scheme where the cap size determines the environmental outcome.

Whatever instrument is used to create a carbon price, and at whatever level the carbon price is created, we believe as an important matter of principle that the instrument should have the widest geographic coverage possible in order to prevent competitive distortions in internationally traded sectors, which could lead to both economic and carbon leakage, and compromise security.

Beyond a carbon price, interventions should be made with great care, aimed at an agreed and well-defined objective, based on compelling evidence of market or other failure, and directed only towards activities and technologies for which clear evidence of failure, and the potential to overcome the failure and deliver the objective, exists.

Improved or accelerated energy efficiency is a particular area where supplementary regulation and standards may be justified, for example for vehicles, buildings and appliances.

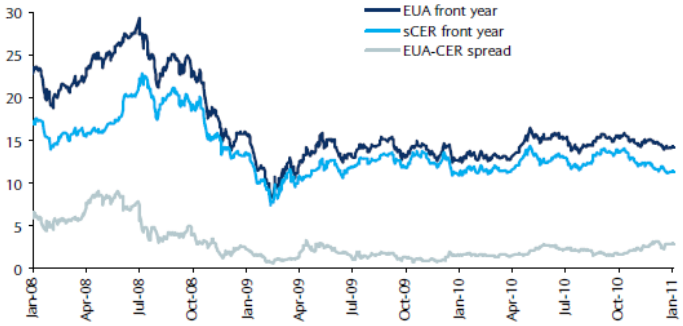
Limited and temporary support may sometimes be justified for the development and early deployment of emerging low-carbon technologies, including renewables, carbon capture and storage and electric vehicles. But it should be acknowledged that that transitional support for emerging renewable and low carbon technologies serves a quite different purpose from a carbon price. Transitional technology support should not be seen as an ongoing subsidy to deliver carbon reduction. Transitional technology support should be directed at technology improvement and commercialization. Carbon abatement itself should be driven by a carbon price.

The Carbon Price Floor

While accepting the principle of a carbon price, our preference is that it should be delivered though a cap and trade scheme. The ETS already provides such an instrument for EU member states, including the UK, and should remain the principal carbon pricing policy. One reason for preferring the trading approach is that, if properly enforced and transparent, it offers much greater certainty of producing the desired environmental outcome than does a carbon tax. However, by definition it does not deliver price certainty or stability. Neither of course does a carbon tax in a mature democracy where tax rates are decided by elected Parliaments.

Some argue that greater price certainty is required to encourage investment, and that a carbon price floor would provide this stability. Whether or not this is true, it is worth emphasising that it is easy to exaggerate the volatility of carbon prices allegedly arising from the ETS. With the exception of a sharp price drop resulting from a poorly planned transition from phase 1 to phase II of the ETS, prices have been quite stable (see chart below).

Figure 1: Phase 2 (front year) (€/t CO_2) – side to side



Source: ECX, Barclays Capital

Whether the main objective is to increase the carbon price or improve price certainty, we believe this can best be delivered by introducing more long-term quantity and price certainty into the ETS by setting targets further into the future, and by taking steps to improve market liquidity. An EU-wide approach would have the considerable advantage of avoiding competitive distortions among EU member states.

Complexity and duplication arising from a Carbon Price Floor

If a 'floor' is judged to be necessary, there is a real danger that it could lead to unnecessary complexity and duplication if superimposed on top of the existing two instruments to which the electricity sector is already subject. In addition to the carbon price created through the EU ETS, the UK already has the Climate Change Levy, although the levy is not currently applied to the domestic use of energy, and is not properly reflective of carbon intensity. For electricity, the amended set of carbon taxes proposed for fossil fuels (and increased duty rates for mineral oils) used for generation, will be additional to the CCL already imposed on electricity use itself, and will presumably be passed on to both industrial customers and domestic consumers (who are shielded from the existing CCL on electricity).

The effects on CHP could also be perverse. If the proposed reform of the two taxation instruments (extension of mineral oil duty and the amendment of CCL rates for electricity generation) is applied to the heat element of cogeneration (CHP) installations, this will serve as a disincentive to existing and future CHP plants, widely regarded as one of the most efficient uses of fossil fuels, and instead promote the use of simple steam boilers to avoid designation as an electricity generator.

Finally, it is unclear whether it might be decided at some stage for offshore generating facilities to be included in the scope of the proposed generation fuel tax rates. Such a step would be unwise, because the UKCS already has its own separate and distinctive fiscal regime designed to maximise recovery from the North Sea and support UK energy security. The imposition of additional taxes for different purposes would have to take

account of their overall fiscal effect on the UKCS, and revenue neutrality would be necessary in order to sustain HMG's current objectives relating to the UKCS.

The Feed-In Tariff (FIT)

BP's view of the scope and value of Feed-in tariffs is to some extent determined by their purported objective. We understand how the use of targeted, and time-limited incentives for the development and early deployment of emerging low-carbon technologies can encourage investments which have the potential of delivering significant carbon and cost reductions in the future. However, the purpose of such support should only be to enable emerging technologies to compete commercially and more quickly with the support of the prevailing carbon price. Support extending beyond this level could reduce the market price signals necessary for technology innovation, and could encourage premature deployment on a very large scale thus limiting the use of more immediate and affordable technologies for reducing greenhouse gas emissions and providing energy security, such as natural gas. Most crucially, supplementary support should not be aimed at carbon saving per se. Carbon reduction itself is most effectively delivered through the carbon price, as discussed above.

The precise objective of the FIT is not made explicit in the consultation, although decarbonisation, security, affordability – and simply "renewables" – are all mentioned (for example p. 50). The apparent eligibility of any "low-carbon generator" suggests that the primary purpose of the FIT is to cut carbon, rather than support the commercialization of immature renewables or other emerging low carbon technology with future potential. If so, this could prove to be an unnecessarily expensive and inefficient way to cut carbon. It also appears to violate substantially the principle articulated in the DECC consultation itself, namely "to achieve [decarbonisation of electricity] affordably, markets should be allowed to function efficiently" (p. 14).

If carbon abatement is indeed the primary objective of FITs, then additional complications arise over which technologies are eligible for support. If any low carbon technology is eligible, what counts as a low carbon technology, and does the definition include already commercially mature technologies, especially nuclear?

We note the justification given in the consultation for the eligibility of nuclear power, on the grounds of elevated cost and, in particular, the high cost of capital that nuclear faces, and which creates a barrier to investment and deployment. It could equally be argued, however, that any such incremental cost for a mature technology is best covered by the prevailing carbon price under an environmentally determined cap.

A carbon abatement objective also raises questions over the level, overall scale and the source of public subsidy required to deliver the 2030 target using large quantities of zero carbon technologies (renewables, nuclear and CCS). In order to deliver very significant decarbonisation of electricity supply by 2030 using zero carbon generation will require

high levels of subsidy per unit of energy (or capacity), and a total quantum of subsidy that is substantial.

Carbon Capture & Storage

BP's current experience is that CCS is unlikely to be ready soon enough for its currently assumed wide deployment. It is vital to remember in particular that CCS for gas or coal cannot be deployed widely until the necessary infrastructure is in place, and this will require at least a decade of policy-driven development.

It is also important to acknowledge that large-scale deployment of *gas* (as well as coal) CCS will be important. If gas CCS deployment doesn't begin to occur by around 2025, or at all, this is likely to force rapid and very expensive decarbonisation in the decades immediately before 2050 in order to catch up. If, on the other hand, the assumption is that gas doesn't need to decarbonise, or that CCS gas is not necessary or too expensive, this becomes a self-fulfilling prophecy leading research funding away from gas and exclusively to coal. That is undesirable as all options will be needed, including gas (and industrial) CCS.

All this suggests that, if the current policy reliance on CCS is to be maintained, more support for CCS research and demonstration will be needed starting now, especially for gas CCS. In addition, policy drivers for CCS infrastructure need to be put in place. But wide deployment and large scale abatement look unlikely before 2025.

Energy Efficiency

From BP's commercial and technical experience and expertise, we would merely emphasise that energy efficiency in vehicles could make a substantial contribution to carbon reduction, relatively quickly, at a moderate cost, compared with the electrification of transport which will take longer and cost substantially more. The efficiency of appliances and buildings which are dependent on electricity could also be substantially improved. For this reason, more attention should be paid to driving efficiency on the demand side pushing aggressively zero-carbon power supply.

The role of natural gas in power

Our concerns expressed above on many aspects of the proposed reforms underline our central argument, namely that the role of natural gas in power is currently under-estimated and misunderstood. This is worrying because BP shares many of the concerns expressed over the practicability and cost of the approach implicit in the Consultation Document. There is very little margin for error, should these assumptions prove too ambitious, costly or politically contentious to deliver.

Natural gas is the fossil fuel that releases the least carbon dioxide and, when burned to create electricity, it produces about half the emissions caused by conventional coal generation, per kilowatt hour. Other substantial advantages of natural gas-fired power are the relatively low construction costs and speed of construction for new plants, and their

clean air benefits (mercury, sulphur and nitrogen oxides) compared with coal. Importantly, natural gas is a substantial and increasingly secure resource. Technological developments for producing unconventional gas in rock formations – whose geology makes production particularly difficult – have made natural gas more widely available, and this in turn has had a downward and stabilizing effect on natural gas prices. This effect has been amplified by the increasing geographical diversity of natural gas resources, improved pipeline infrastructure for its distribution, the rapid expansion of facilities to produce and import liquefied natural gas (LNG) from any part of the world, and improvements in the efficiency of natural gas markets. Natural gas is now more secure and its prices lower and less volatile than previously, as well as being much cleaner and lower carbon than coal.

Emphasising gas in the short to medium term also creates time and opportunity to focus on developing and demonstrating the options that will ultimately be needed – not just CCS but wind and nuclear. The risk of pushing the power sector to deploy these options too widely too early is that investments are made in the wrong technologies or in "first of a kind" technologies that become obsolete before anyone else's. For example, the US nuclear fleet (built 70s and 80s) is now expected to operate for 20 years beyond its original 40 year design lifetime; the UK's (built from the 60s and 70s onwards – and the only country to use Magnox technology) is not.

An additional point is that energy security comes through energy diversity, and a mixture of all fuel types is preferable. No one technology should be allowed to overly dominate supply - hence the wisdom of continued a reliance on gas, and the need CCS for use with both gas and coal.