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Consultation response: 'Reforming the business energy efficiency tax landscape'

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Reforming the business energy efficiency tax landscape

This policy paper was submitted to HM Treasury on 9th November 2015 in response to their consultation on 'Reforming the business energy efficiency tax landscape'. The consultation document can be found at: https://www.gov.uk/government/consultations/consultation-reforming-the-business-energy-efficiency-tax-landscape

Simplifying and improving the effectiveness of policy instruments

1. *Do you agree with the principle of moving away from the current system of overlapping policies towards a system where a single business/organisation faces one tax and one reporting scheme? Please provide evidence on level and types of benefits of an approach like this.*

Yes. The current UK policy landscape for energy and carbon taxes is complex (see discussion in Bassi et al, 2013). There is a strong case for the simplification of the current system. However, it is important to recognise that existing policies have two overlapping but different objectives: improving energy efficiency and reducing greenhouse gas emissions. A reform towards a simpler policy landscape should recognise some essential principles:

- **Acknowledge the true costs of energy**. It is important that policies take account of the externalities associated with energy production and consumption. Correcting market failures involves internalising these externalities. A major externality associated with fossil fuels is the cost of climate change caused by carbon dioxide and other emissions of greenhouse gases. Internalising this can be achieved either by decreasing the energy intensity of GDP or by reducing carbon intensity. However, they are not equally effective at reducing emissions. A reduction in carbon intensity could, in principle, achieve full decarbonisation on its own, even without reducing energy use. Notably if the carbon intensity of electricity and other energy forms were to be reduced to near zero, emissions would fall dramatically, even if the amount of energy consumed remains constant. A reduction in the energy intensity of GDP, for example by improving energy efficiency, on the other hand, would be unable to achieve decarbonisation necessary to meet the carbon budgets without over-taxing energy use.

- **Correct the market failures.** A primary aim of energy policy should be to tackle the main externalities that are responsible for market failures affecting energy production and consumption. These include: climate change, energy efficiency (in which firms and households may underinvest) energy security, and local air pollution. The latter is, in principle, already addressed through UK and EU regulation, like the Industrial Emissions Directive. The other three require additional policy, in particular to curb emissions and improve energy efficiency.

- **Recognise multiple policy objectives.** The Government should design policies with a clear understanding about how they affect each market failure. A single policy may not be sufficient to address all of the externalities adequately, and indeed, may, if poorly designed, exacerbate market failures. For instance, measures to boost productivity through greater energy efficiency will not necessarily result in cuts in greenhouse gas emissions if the source of energy is low-carbon (e.g. removing the CCL exemption for renewable energy generators).

- **Increasing the price of energy, for instance through an energy consumption tax, does not necessarily increase energy efficiency.** Energy use is relatively inelastic to price changes, at least in the short term, and energy waste is almost, by definition, unresponsive to price

signals. Taxing energy is arguably not the best way to improve energy efficiency (see question 16). Energy efficiency can be best achieved through measures to increase the elasticity of demand e.g. better information, reporting mechanisms and behavioural measures.

- **Taxing pollution and raising revenues.** While taxing energy may not be the most effective way to promote energy efficiency it would enable revenue raising that could be used to reduce other distortionary taxes (for example on labour and capital). However, if the government is seeking behavioural change, for example a change in consumer and producer activities in order to reduce energy waste and carbon emissions, alternative measures are likely to be required. The government should make clear its stated objectives in order to assess the effectiveness of the policies. To use the language of economics, the Government should be clear as to whether it is seeking a Ramsey tax to raise revenues or a Pigouvian tax to change behaviour.

Taxes and price signals

[Government] Proposal: To move towards a single tax by abolishing the CRC and moving the revenue raising element into a single business energy consumption tax based on the CCL. The government is open to views as to the balance of tax costs across fuels, where proposals can better deliver carbon reduction potential.

2. *Do you agree that moving to a single tax would simplify the tax system for business? Should we abolish the CRC and move towards a new tax based on the CCL? Please give reasons.*

Yes. The abolition of the CRC would have the immediate effect of reducing significant administrative costs to businesses. Evidence suggests that costs incurred by an average business in the first four years of the CRC scheme (Phase 1) were about £62,000 - an average of £15,500 per year. Extrapolations indicate that these added a further £0.59 (5 per cent) to the cost of each tonne of carbon in Phase 1 (KPMG, 2012). Costs were also incurred by businesses not regulated by the scheme, but who had to prove their non-eligibility. No estimate is available, but for some businesses these costs may have been significant. Moving to a new tax based on the CCL; applying it uniformly across all sectors and aligning the tax rate to the carbon content of fuels would deliver a more efficient and non-discriminatory carbon price across the whole economy (more on this in question 10).

3. *How should a single tax be designed to improve its effectiveness in incentivising energy efficiency and carbon reduction?*

A tax is most likely to be effective as a Pigovian tax if it addresses no more than a single market failure. Where two failures -and therefore two objectives of policy--overlap, the most efficient policy is likely to be the adoption of two measures, one to address each externality. For example, achieving the optimal uptake of cost-saving efficiency investment and providing a price signal to steer consumer and producer behaviour away from carbon-intensive activities may be best achieved by the application of a tax on energy and the application of an effective carbon price. The administrative cost of both taxes should be kept to a minimum, but a prerequisite for an effective carbon price is that carbon emissions are credibly monitored. The principle is that you cannot manage what you do not measure.

Using one tax to address two separate failures may lower administrative cost, but at the expense of failing to cost-effectively deliver the stated outcomes (see also question 10).

A key trade-off between one policy and more than one policy when it comes to overlapping goals is between reduced effectiveness in attaining these goals (using fewer than necessary policies) and reduced administrative costs from fewer policies. So if the overlap is great (e.g. 90% of one outcome can be achieved by targeting the other) and the costs are high, it makes sense to have one instrument. If the administrative costs are low and the outcomes very different, it makes sense to have more than one.

Our recommendation is that a carbon tax would be more effective than an energy tax at meeting climate goals AND attaining efficiency gains than vice versa (see also question 4), although the monitoring and administrative costs of the former may be higher. However, if the carbon budget objectives are to be met, an energy tax will not be sufficient to deliver the stated outcomes.

For the purpose of carbon emissions reductions, the first best option would be to replace the CCL, CRC, CCA and the carbon price support rate with a single carbon pricing policy that imposes a uniform carbon tax on coal, gas and LPG further upstream i.e. at the point of import or manufacture. Levying upstream taxes on fuels can reduce administrative costs and the scope for tax evasion. In addition, the cost of renewable policies (the renewable obligation, feed-in tariffs and contracts for difference), currently charged on electricity bills, should be moved to general taxation, to reduce the disproportionate fiscal burden on electricity. The single policy should apply a carbon price across all sectors of the economy and take into account the price levied through the European Union Emissions Trading System.

A second best option, and likely more feasible in the short run, would be a 'downstream' carbon tax on fossil fuel content of energy levied uniformly on all businesses, in the form of an adjusted CCL. This should be accompanied by the removal of the CRC [as discussed in Q. 9] as well as of the lower tax rates allowed by the Climate Change Agreement (CCA), which has proven less effective than the CCL at reducing emissions and driving energy efficiency (Bassi et al, 2013) [more on this in questions 13 and 14]. Electricity could be exempted, since it is already taxed upstream via the carbon price support rate. The carbon price support rate and the CCL should be set so that their carbon tax rates are consistent. An alternative is to get rid of the CCL as well and extend the CPSR to all fuels and sectors.

The aim of such a reform should be to create a stronger and uniform carbon price across the economy. If it cannot be levied uniformly then efforts should at least be made to make carbon prices across fuels and sectors more even. This would help to remove or reduce energy price distortions which currently favour the use of coal and gas over electricity. It would also help to create a level playing field for mature low-carbon technologies, and reduce the need for direct subsidies.

It is important to remember that the primary aim of the carbon price is to achieve the carbon budgets, as set in line with the Climate Change Act (2008). It is difficult to predict in advance what carbon price value will result in a particular level of emissions, so it is likely that the value will need to be adjusted after introduction in light of information about emissions.

In addition, a carbon price should rise steadily for many years. According to models in which the greenhouse gas externality is the only one that policy-makers have to worry about, it should increase at a constant rate close to the real rate of interest (that is, after correcting for inflation), as this ensures that the marginal cost of abatement, discounted to the present, is the same in all periods, so that total costs cannot be reduced by shifting around when abatement efforts are carried out. Models have typically adopted a real interest rate of 3% to 5% per year, depending in part on the assumptions they incorporate about the appropriate rate of trade-off of welfare across time.

Additional measures would be required to increase the elasticity of energy demand, for example providing better information, enhanced reporting procedures or behavioural measures.

Although subsidies for immature low-carbon energy sources will remain essential, there is a strong link between carbon pricing and subsidies: the higher the carbon price, the easier it will be for low-carbon energy sources to compete with fossil fuels. For those technologies that are close to the market (e.g. onshore wind and solar), lower or no subsidies will be needed. Reforming business taxes with this in mind could lower the pressure on the Levy Control Framework.

These proposals are described in detail in 'Energy use policies and carbon pricing in the UK', a joint report by the Grantham Research Institute, LSE, and the IFS. Nevertheless, the Institute recognises that recommending a higher and more uniform carbon price across fuels and sectors goes against the grain of recent changes in policy. Ending the CCL exemption for renewable energy generators means that it is now an energy tax rather than a carbon pricing instrument. The justification appears to be a desire to drive greater energy efficiency rather than carbon reduction per se; however, removing the exemption has increased the cost of low-carbon energy and so has hindered carbon reduction efforts.
The arguments against this option are outlined in question 4.

4. *Should all participants pay the same rates (before any incentives/reliefs are applied) or should the rates vary across different businesses? For example, do you think that smaller consumers and at risk Energy Intensive Industries (EIIs) should pay lower rates?*

Yes. In terms of climate change, the environmental damage caused by emissions depends only on the amount and type of each GHG emitted, not on who does the emitting and where. As a result, a single emissions price is the most efficient outcome. If there are other externalities associated with using particular forms of energy then they too should be accounted for in any pricing regime.

A price for emissions would give energy consumers incentives to reduce emissions until the point where the cost of further reducing emissions is greater than the cost of paying to emit. If different users face different prices, then those facing a higher price would spend more per unit of abatement (emission reduction) than those facing a lower price. This creates an efficiency cost: the same abatement could be achieved at lower cost by shifting abatement effort from the high-price to the low-price consumer.

It may be desirable to cushion the impacts of higher energy prices on some groups of business or household consumers, at least in the short term. This could be achieved through some form of compensation. However, policy support to vulnerable sectors should not

offset the price signal to reduce emissions. It should, for example, take the form of flat rate allowances or support to retool and restructure (see Q14 and also Bassi et al., 2013)

5. *Do we currently have the right balance between gas and electricity tax rates? What are the implications of rebalancing the tax rate ratio between electricity and gas? What is the right ratio between gas and electricity rates?*

No. The existing policy inconsistencies and overlaps create large disparities in the (implicit or explicit) carbon price applied to different fuels and sectors.

Estimates of the aggregate implicit carbon pricing of the CRC, CCL, CCA, EU ETS, CPSR, RO, FiT and CfD, once policy overlaps are accounted for, shows significant disparities in how fuels are taxed, and which are completely inconsistent with their carbon content. Notably, electricity is currently charged more heavily, per unit of carbon, than gas or coal.

In 2013-2014, carbon prices for electricity range from £37.11/tCO_2 to £65.70/tCO_2, while gas carbon prices range between £3.45/tCO_2 and £21.77/tCO_2, coal from £2.34/tCO_2 to £6.68/tCO_2, and LPG from £1.40/tCO_2 to £4.00/tCO_2 (Bassi et al., 2013). This suggests that the current policy regime is providing a perverse incentive for businesses to prefer high-carbon content fuels over electricity. This could serve to discourage further electrification of the energy system, potentially making the decarbonisation objectives set in the UK's carbon budgets (CCC, 2010) more difficult to achieve.

Protecting the competitiveness of energy intensive industries and incentivising energy efficiency and carbon reduction

6. *Do you believe that the CCA scheme (or any new scheme giving a discount on the CCL or on any new tax based on the model of the CCL) eligibility should only focus on industries needing protection from competitive disadvantage? If so, how should government determine which sectors are in need of protection?*

No. Analysis of the past performances of the CCA and CCL have found no, or negligible, evidence that the CCL has had a negative impact on output and employment, compared with the performance of businesses under the regime for CCAs operating in the same economic sectors and therefore facing the same international competition (see for example Martin *et al.*, 2011; Bassi et al, 2013). This suggests that CCAs may not be fully justified on competitiveness grounds alone.

7. *Do you believe that the CCA scheme (or new scheme) eligibility should focus only on providing protection to those EIIs exposed to international competition and at risk of carbon leakage? If so, how should the government assess which CCA sectors are at risk of carbon leakage?*

Yes. A new tax scheme should provide support to energy-intensive industries exposed to international competition and at risk of carbon leakage. Compensation should not be offered by reducing the tax rate for these firms, but rather by providing other tax exemptions, subsidies or lump sum transfers. Reducing the tax rate lowers the incentive for energy efficiency and cutting emissions, and is unlikely to be effective in preventing carbon leakage. For this reason, the CCA would not be the most suitable instrument to provide such support.

If the Government follows the recommendation to apply a uniform - or at least a more even - carbon price across sectors and fuels, this could generate substantial fiscal revenues. Such revenues could be used for compensation policies. However, it is important that any compensation does not undermine the price signal about emissions (see also question 11). This would have the potential to keep the overall reform cost-neutral. Some of the revenues could also be used to cover some of the costs incurred for the decarbonisation of the power sector, through the CfD, RO and FiTs. This would reduce pressure on the Levy Control Framework, and reduce the indirect policy cost borne by electricity users.

8. *Do you believe that the targets set by the current CCA scheme are effective at incentivising energy efficiency? Do you believe that the current CCA scheme is at least as effective, or more effective, at incentivising energy efficiency than if participants paid the full current rates of CCL? How could CCAs be improved? Are there alternative mechanisms that may be more effective?*

No. Interviews with energy managers (Bassi et al., 2013) revealed that they recognise the need to meet targets, together with the possibility of receiving a discount on the CCL, as a powerful justification for engaging senior management about the issue of energy savings, and an incentive for investment in low-carbon technologies, including energy efficiency measures. Nevertheless, the empirical evidence suggests that the full rate of the CCL provides an even stronger incentive. Compared with a full application of the CCL, the tax discounts provided by CCAs seem to have led to less innovation for energy efficiency technologies (Martin & Wagner, 2009) and to worse energy performance (Martin *et al.*, 2011).

An important weakness of the CCA is that targets are set at the sectoral level, which fails to account for firms' individual potential for energy use and emissions reductions. Furthermore, facilities can apply for the CCA reduced tax rate even if they miss their target, provided that the sector as a whole meets its target.

[Government] Proposal: The government is open to considering options for new incentives in line with the principles in paragraph 4.20 [of the consultation document]. Proposals would need to be funded through increases in tax to support fiscal consolidation objectives. Proposals would also need to be simple, meet strict value for money criteria and be more effective than other options.

9. *Do you agree that incentives could help drive additional investment in energy efficiency and carbon reduction? Please explain why you agree or disagree.*

Yes. It is important to acknowledge that the purpose of increasing energy efficiency in business is to improve productivity by reducing production costs. Energy efficiency is a complex issue, and a tax on energy consumption can be a crude tool, in isolation, to optimize energy use. The price elasticity of energy demand (i.e. its responsiveness to a change in price) is relatively low, especially in the short term. Therefore energy consumption taxes may have to be quite substantial to have an effect on demand. And while energy consumption taxes can, for this very reason, raise significant fiscal revenues, they can also result in a significant fiscal burden on energy users.

This does not mean that energy consumption taxes have no use. Raising prices does have an effect on energy use, particularly in the long run. However, the instrument of choice to

achieve the Government's policy objectives should be a price on the carbon content of energy, rather than on the amount of energy consumed, in order to address the greenhouse gas externality. A carbon tax would have the intended price effect on demand, while being consistent with the decarbonisation objective. Carbon pricing addresses a specific market failure: the greenhouse gas emissions from energy use which cause climate change. Internalising this cost in the price of electricity will make users include the real cost of emissions in their decision about how much energy to consume.

However, there are other market failures that prevent energy users from undertaking profitable investment in energy efficiency in the short term. This, in turn, results in a lower response by energy users to price signals. For instance, consumers and companies may be unaware of existing energy-saving opportunities, and innovation spillovers may prevent the development of new cheaper technologies. To address these market failures, dedicated policies are needed, such as tax rebates or bespoke subsidies.

In the longer run, new energy efficient technologies and processes will be needed to achieve more substantial changes in energy demand. The costs of these innovations vary, and some can be relatively expensive. Large investments are unlikely to be triggered by a marginal increase in energy prices. Bespoke policies will be needed to stimulate innovation and increase the price response of demand in the long term.

10. *What is the best mechanism to deliver incentives for investment in energy efficiency and carbon reduction (e.g. tax reliefs, supplier obligations, grants, funding based on competitive bidding)? Are different approaches needed for different types of business? If so, which approaches work for which business types? What approaches should be avoided?*

In order to improve energy efficiency, a number of short-term and long-term policies are needed. In the short term, these include a credible replacement for the Energy Company Obligation and the Green Deal, while relying less on taxing energy consumption and more on pricing carbon. Improved and simplified energy and emissions reporting could also incentivise awareness and stimulate behavioral change. Reputational drivers, such as league tables, can also influence energy use (as well as carbon emissions), as proven by evidence from the CRC energy efficiency scheme (DECC, 2015). Measures to encourage long-term energy efficiency and innovation include policies incentivising deployment of mature low-carbon and energy efficient technologies, and research and development for new technologies which are further from being competitive with conventional ones.

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