

Personal carbon taxation: its role in climate policy

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Abstract

In the UK, there is currently little interest in exploring increased direct personal carbon taxation as a response to climate change. In theory it should be an attractive policy tool, being cheaper and administratively simpler to introduce than personal carbon trading, and more comprehensive than the current patchwork of product, housing, renewable energy and behavioural policies. So why isn't it perceived as being an important part of the future policy mix, and is this likely to change?

This paper reviews UK and European evidence on responses to personal carbon and energy taxes and focuses on three aspects; (1) their effectiveness in environmental terms; (2) social acceptability, and; (3) the political risks involved in introducing increases in taxation. Using historical and current evidence, this review concentrates on energy and carbon taxation of household energy and transport and aviation fuels. Current UK and EU sources of environmental taxation are outlined, as are recent trends in receipts. Public views on carbon taxation are described using a variety public opinion and social acceptability research. The place of carbon taxation in political decision making is discussed. Finally, the potential contribution of taxation will be combined with an understanding of the social, political and policy context to discuss whether, and under what circumstances, personal carbon taxation could play a bigger role in future climate policy.

1 Introduction

In recent years, much of my research has been focussed on personal carbon trading (PCT)¹. A common response to personal carbon trading by researchers, policy makers and NGOs is that carbon taxation on household energy use and personal travel would be a lower cost, equally effective, more socially and politically acceptable alternative policy option. However, detailed proposals for increasing personal carbon taxation, or environmental taxation in general, seem few and far between. A report from a Swedish think-tank suggests that globally carbon taxation is being neglected as a response to climate change (Global Utmaning 2009) and revenue raised from environmental taxation has been falling across the EU. However, some commentators expect that environmental considerations, particularly shaped by the climate change debate, will play a greater role in tax systems in future years. Evans (2010) suggests this will be the case in the UK, even if carbon taxes may continue to play a secondary role to carbon trading. This paper investigates the case for increased environmental taxation within the UK, specifically taxation on household energy use and transport fuels and services, collectively referred to as 'personal carbon taxation'. It looks at barriers to its adoption and considers whether it is likely to play a greater role in future climate and energy policy.

At European level, carbon trading has been chosen instead of carbon taxation to manage industrial, large-scale commercial and electricity-related carbon emissions, in the form of the EUETS. The EU tried and failed to introduce a community-wide carbon tax as a principal means of tackling climate change during the 1990s. Considerations of subsidiarity, legal and institutional structures, and the inherent political difficulties of the large-scale revenue transfers embodied in carbon taxation combined to make emissions trading more practical (Grubb, 2007). While EUETS has an effect on the price of household electricity, heating and transport fuels are not covered by this policy, so presently there would be little overlap with a personal carbon taxation scheme. The EU appears committed to EUETS and its further expansion, and it seems unlikely that it will take a lead on significant carbon taxation in the near future.

¹ PCT is an umbrella term used to describe any policy which locates rights and responsibilities for the carbon emissions from household energy use and /or personal travel at the individual level. Under PCT, each individual would receive a free allocation of carbon allowances which are tradable. The allocation would reduce over time in line with national carbon reduction goals. PCT would be a mandatory scheme, and individuals would be required to surrender allowances when they purchased fuel or electricity for personal use.

While increased environmental taxation has not been high on the policy agenda internationally lately, there have been recent contributions which may promote a reconsideration of this option within the UK. The Stern Review on the economics of climate change included reflections on the role of carbon taxation in climate change policy (Stern 2006). It concluded that climate change policy should be based on three essential elements: carbon pricing, technology policy, and removal of barriers to behavioural change. Stern identified taxation as one of the means of generating a suitable carbon price (along with trading and regulation) and suggested that the choice of policy tool would depend on countries' national circumstances, on the characteristics of particular sectors, and on the interaction between climate change policy and other policies. In addition, there have been two recent reports, from the Green Fiscal Commission (2009) and the Chartered Institute of Taxation (CIOT 2009), both of which review the academic case for green taxation and fiscal reform, and which present evidence on how such policies have fared in practice. The work by the Green Fiscal Commission sets out very clearly the case for green fiscal reform, and concludes that a large-scale green tax shift would be economically sensible and environmentally effective and that if implemented with appropriate complimentary measures, it could also be socially acceptable. The CIOT report (2009) covers some of the same ground as the Green Fiscal Commission, with the aim of encouraging debate on environmental taxes more widely. Together these reports demonstrate the solid intellectual case and evidence base around carbon and environmental taxation.

The UK context for climate change policy is its legally binding target of an 80% reduction in national greenhouse gas emissions by 2050, and a reduction of 26% of carbon dioxide by 2020, compared with a 1990 baseline (Climate Change Act 2008). Despite many years of UK and EU policy to reduce energy use and carbon emissions across the economy, including EU energy labels, mandatory minimum standards, voluntary agreements on vehicle efficiency, successive tightening of new home standards under building regulations, subsidies for home insulation and efficient lights and appliances, and EUETS, UK net carbon dioxide emissions only fell by 8.2% between 1990 and 2007² (DEFRA, 2008a). Meeting the UK's long-term goals implies a reduction in national emissions of around 4% per annum to 2050, a rate of change far in excess of anything achieved so far. This underlines the need for more effective and stronger policies than hitherto introduced. Could personal carbon taxation be one of the missing policies?

This paper is structured as follows. In Section 2, current environmental taxation in the UK is described in some detail, with a summary of that in other European countries. Section 3 questions whether environmental taxation works, particularly in environmental terms. Section 4 reviews UK and European evidence on the social acceptability of personal carbon taxation, and considers how tax design can affect social acceptability. In Section 5, the political acceptability of carbon and environmental taxation is discussed. Themes are brought together and discussed in Section 6, followed by conclusions in Section 7.

2 Current environmental taxation

2.1 Definitions of environmental taxation

An environmental tax is defined at European level as 'a tax whose base is a physical unit such as a litre of petrol, or a proxy for it, for instance a passenger flight, that has a proven specific negative impact on the environment' (Eurostat, 2001 quoted in Gazely, 2006). A comprehensive change towards greater levels of environmental taxation is known by a number of different names including green fiscal reform, ecological tax reform and environmental tax reform. Green fiscal reform increases taxes on natural resource use, use of polluting products or pollution and lowers other taxes,

² These are actual emissions figures, with no adjustment to national totals made for trading under EUETS. By adjusting for trading activity, in 2006 Defra estimated that the UK's carbon emissions were 12.1% lower than in 1990, compared with a reduction of 6.4% based on actual emissions (DEFRA, 2008b.)

usually those on employment. The rationale is that the tax burden should fall more on ‘bads’ than ‘goods’, such that appropriate signals are given to consumers and producers (Dresner, Dunne et al. 2006).

As Gazely (2006) notes, the definition of environmental taxation above enables analysis on the effects of taxes rather than the aims behind their introduction, that is, the aim of a tax for raising government revenue rather than reducing environmental degradation does not preclude it from being defined as an environmental tax. Many environmental taxes do raise substantial tax revenues, and some, like the duty on road fuels, were introduced for this purpose before they were thought of as green taxes. Raising revenue and reducing demand for polluting fuels / services are not necessarily mutually exclusive objectives, although clearly there can be tension between them.

Within this paper, the phrase ‘personal carbon taxation’ is used specifically to mean taxation on personal energy use for households and transport, and transport services (e.g. air travel). It is a particular combination of a sub-set of existing environmental taxes (as shown in Figure 1) and potential future environmental taxes, which matches the activities and goods which could be included under a policy of personal carbon trading. Personal carbon trading does not include indirect carbon emissions from purchase of other goods and services – food, clothing, housing etc. – and neither does personal carbon taxation, as defined in this paper. This paper does not include a discussion of environmental or carbon taxes for business and industry, or the international competitiveness issues that this raises.

2.2 UK environmental taxation

In 2009, £39.5 billion was raised from UK environmental taxation, which represented 8.2% of total taxes and social contributions, and 2.8% of GDP (ONS 2010). This was an increase from 7.5% in 2008, reflecting both the rise in environmental tax receipts and a fall in total tax revenues. The sources of revenue are shown in Figure 1. It is striking how high a percentage of UK environmental tax revenues are linked to motoring – 89% of the total. As a report from the Institute of Fiscal Studies argues: “The importance of taxes on petrol and cars to total environmental receipts is such that it is, arguably, misleading to talk about “environmental” taxes – there are essentially taxes on motoring and then a number of smaller additional taxes” (Johnson, Leicester et al, 2010:5). According to Gazely (2006), between 1993 and 2003, households have contributed between 52 and 56% of all environmental taxes, with the service sector contributing between 30 and 34% and remaining sectors of the economy paying the rest.

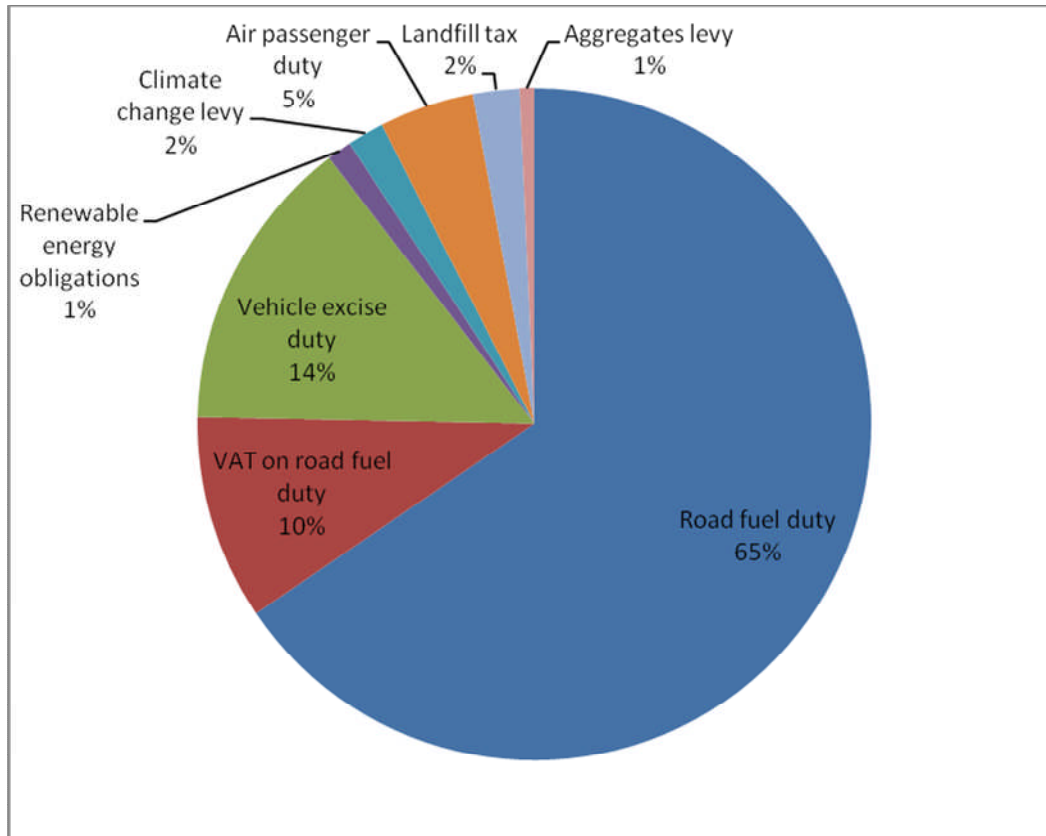


Figure 1: Environmental tax revenues, UK, 2009 (percentages). Source: ONS 2010

Note that VAT on household energy use is not counted as an environmental tax³. In this, the UK government is following European convention whereby value added type taxes (VAT) are excluded from the definition of environmental taxes. VAT is a tax levied on all products (with few exceptions), and because of this it does not influence relative prices in the same way that other taxes on environmentally related tax bases do (Gazely 2006).

Overall the broad structure of environmental taxes has changed relatively little since 2000 (ONS 2010). The percentage of total receipts generated from environmental taxes has varied between around 7% and 10% from 1981 to the present. It peaked at 9.7% in 1999, and has generally fallen since then (with the exception of the increase in 2009), almost entirely because the fuel duty escalator was discontinued in the 1999 Pre-budget Report (Johnson, Leicester et al. 2010) (for further details see Section 4.1).

The current system of environmental taxation has been characterised as “a hotchpotch of prices, taxes and charges which are very distant from a consistent and rational pricing system” (Johnson, Leicester et al. 2010:2). While this may not be surprising, it is worth bearing in mind the reality of taxation policies. Political economy analysis, in which the interaction of economics and political reality is emphasised, can be used to explain the gap between theoretical ideals and practical reality, as illustrated for the UK Climate Change Levy in a paper by Pearce (2006).

³ Household energy use is taxed at a reduced VAT rate of 5%, instead of the standard 17.5%. Compared with uniform taxation of all consumption at the standard VAT rate, the UK effectively subsidizes domestic energy at an annual revenue cost of almost £3 billion. (Fullerton, Leicester et al 2010). This estimate does not include the additional costs related to Winter Fuel Allowance payments which, notionally at least, further subsidize the cost of energy usage.

2.3 European environmental taxation

In the EU member states, household energy and motor fuels are very differently taxed, in terms both of absolute amounts and of purchasing power parity. The implicit tax rate⁴ on energy (including transport and household energy) shows wide differences in the tax revenue raised per unit of energy consumed. The highest taxing country levies over five times as much revenue per unit of energy as the least taxing Member State. In the vast majority of cases, Member States raise a very high proportion of energy taxes from transport fuels, around three quarters of the total as an EU-average. Other, less significant, sources of environmental taxation are transportation taxes (mostly on vehicle ownership), which make up slightly less than one quarter of the total, and pollution and resources taxation, which together make up just 4% of total environmental taxes. The data also show that as a percentage of GDP, environmental tax revenues have been on the decline, in the weighted average, since 1999, particularly in the euro area. This trend continued in 2007 (Eurostat 2009). As Eurostat comment, this decline in revenue may be justified by greater efforts elsewhere, for example in emissions trading, by the trend decline in energy intensity, and by the fact that energy prices at source have grown considerably; but it is nevertheless at odds with the perceptions of the general public as well as with oft-stated policy objectives.

2.4 Understanding environmental taxation

Environmental taxation is only one tool of environment policy and measured by itself is unlikely to be a good measure of how 'environmental' policy making has been. Further, the interpretation and use of measures of environmental taxes need care for a number of reasons, including the following:

- The levels of revenues from environmental taxes do not necessarily indicate the relative importance or the success of environmental policy. High environmental tax revenues can result either from high rates of taxes or from high levels of environmental problems (e.g. pollution) leading to a large tax base (ONS 2010).
- Some taxation measures do not raise additional revenue. For example, the UK policy which introduced graduated vehicle excise duty dependent on CO₂ emissions in 2001, provided better incentives for drivers to purchase cleaner cars, but did not in itself raise much more revenue (Johnson, Leicester et al. 2010).
- The relative costs of lower-carbon or less polluting options may be increasing, regardless of taxation on the higher polluting option. For example, despite relatively high taxation on motor fuels, the total cost of private motoring has fallen in comparison with both general prices and (less environmentally damaging) public transport options, primarily because of falling vehicle purchase prices (DfT 2009).

3 Does environmental taxation work?

UK evidence demonstrates that environmental taxation can provide stable revenues over many years – so, if properly designed, it can work as a reliable form of taxation. But how well does environmental taxation work in terms of protecting the environment?

Both the Green Fiscal Commission (2009) and Global Utmaning (2009) have compiled evidence from various studies looking at the effectiveness of environmental taxation policies which have already been introduced in various countries. Evaluating the effect of individual taxation policies, in an ever changing policy and economic landscape, and where there are many influences on what people buy or do apart from price, is necessarily a complex and imperfect process. As the Green Fiscal Commission state, it can range from difficult to impossible to isolate the effect of the tax by itself. Nevertheless, a number of researchers have carried out detailed studies on various environmental taxes. Based on these case studies, the Green Fiscal Commission's analysis leads them to conclude that green taxes are positive and effective instruments for environmental improvement. The studies they looked at on

⁴ Implicit tax rates are computed as the ratio of total tax revenues of the category to a proxy of the potential tax base defined using the production and income accounts of the national accounts.

energy and carbon-based taxes show a range of reductions in carbon emissions, from 2 % over 16 years in Norway, to an estimate of 20% reducing in carbon emissions in Sweden over a similar period. Global Utmaning focus on analysis from Nordic countries, which have had carbon and energy taxes for several years. Their report concludes that reductions in CO₂ emissions directly attributable to carbon/energy taxes are in the order of 2-3% over a ten year period, although they also say that some studies ascribe greater effect directly to the taxes.

Understanding how well taxes have worked historically is difficult. Using that understanding to project how they might work under future scenarios is even more challenging. Global Utmaning (2009) suggest that analyses of historical reactions to CO₂ taxes (the price elasticities) may underestimate the future reactions to such taxes. They argue that a tax increase in a clear and convincing context of climate change mitigation might elicit a much greater response than hitherto and, as people change their preferences and habits, initiate a process of transformation. This argument sounds very similar to some of those made about potential response to personal carbon trading (e.g. Fawcett and Parag 2010).

4 Social acceptability

A major barrier to increasing carbon and environmental taxation is the social and political unacceptability of these policies. The evidence with regard to social acceptability is presented in this section, followed by the linked issue of political acceptability in Section 5.

4.1 UK evidence

Social acceptability can be difficult to define and to measure. There are a number of methodologies used to seek opinions from the public, ranging from nationally representative opinion polls to studies exploring individual views from a non-representative sample in a much more nuanced way. The evidence presented here on views about potential increases in personal carbon taxation comes from a variety of different study types. All studies necessarily give a snapshot of opinions at a certain point in time: clearly opinions can and do evolve over time.

The Green Fiscal Commission (2009) summarises UK opinion polling evidence from over a dozen polls on green taxes from 2005-2007. There was some support for green taxation where other taxes were reduced (although this varied between polls), and majority support for taxation on aviation in earlier polls, but this appeared to be decreasing over time. Road fuel duty increases were opposed by a majority, even if the revenue was spent on improving public transport. By contrast, taxation increases on highly polluting vehicles were supported. Only one poll asked specifically about increasing taxation on domestic energy use, and that was very strongly rejected, with 86% opposed. Overall these polls demonstrate that views on green taxation vary with the type of taxation and the way in which it is implemented (and, of course, with how the questions in polls are asked).

More detailed data about views on personal carbon taxation can be found in the literature on PCT. There have been several studies researching people's views on carbon taxation (and upstream cap and trade) as well as PCT (Fawcett 2010). This research was carried out by investigators primarily interested in responses to PCT, not experts in carbon taxation. Nevertheless, researchers have tried to design attractive carbon taxation policies, including revenue recycling, and it is worth highlighting results from two of the studies.

In Owen, Edgar et al's work (2008), the model of carbon tax proposed was one where prices of household energy use and road fuels rose, but with revenue being recycled in the form of annual 'tax refunds' to participants. Participants felt carbon tax would be easier and cheaper to implement than PCT. They thought that the introduction of carbon tax would be unlikely to change people's behaviour and there was a particular concern that the taxation would not affect the behaviour of the better off. By contrast there was concern about how it would adversely affect the less well off.

Despite their concern about its potential ineffectiveness, participants did feel a carbon tax would encourage people to think about the necessity of personal travel and other activities which produce carbon. Questionnaires completed at the end of the focus groups indicated that carbon tax was less popular than PCT, but more popular than upstream trading (which it seems was not very well understood by participants).

Bristow, Zanni et al. (2008) carried out a detailed study with a sample of just under 300 people. They used questionnaires to compare responses to a PCT scheme, covering household energy use and personal transport, to increased carbon taxation with tax refunds up to the average carbon consumption (so the schemes were as close to financially identical as possible). Initial carbon footprint estimation was used with all respondents to ensure the information they were given to enable them to compare PCT and taxation was tailored to their own situation. Respondents were given a list of carbon and energy saving actions and asked which they would undertake if either policy was introduced. They were also asked about the comparative effectiveness, fairness and acceptability of the different options. In this survey, more people said they would change their behaviour in response to a tax than to PCT, but those responding to PCT chose to make greater savings giving higher expected savings overall from this policy. 'Acceptability' for PCT was higher than for taxation, but neither measure achieved majority support. Bristow et al also looked at how people responded to the design attributes of a carbon tax. They found that a carbon tax became more acceptable if the revenues are recycled into measures that would further reduce emissions, e.g. technology to improve energy efficiency. Recycling options such as spending the money on council or income tax cuts were less favoured.

In 2007, the Green Fiscal Commission undertook their own nationally representative opinion poll (1010 respondents) and deliberative research looking at responses to green fiscal reform, including specific carbon taxation proposals. The opinion poll showed substantial support in principle for green taxes (51% support versus 32% opposition), which rose if revenue was to be hypothecated to be spent on projects reducing carbon emissions. There were quite high levels of support for higher taxation of air travel (60%), petrol (48%) and home energy use (48%) when offsetting tax reductions were mentioned. The deliberative workshops demonstrated conditional support for green fiscal reform, the principles finding approval, but more concerns, particularly about fairness, being raised when specific interventions were explored.

As well as research evidence, there is direct UK evidence from recent history. Dresner, Jackson et al. (2006) briefly describe the history of environmental taxation in the UK. They suggest "the idea of increasing taxation on domestic energy received a fatal blow from the public reaction to the introduction of VAT on domestic energy in 1993". This engendered strong public opposition, the full intended tax rise was unable to be put in place, and when a new government was elected in 2007 one of its five main pledges was to reduce the rate of VAT from 8% to 5%. The political problems with environmental taxation are further exemplified by the story of the road fuel duty escalator. The fuel duty escalator was a policy which introduced automatic above-inflation rises in duty year on year from 1993 to 1999 (of 5% and then 6%). Until 1999 oil prices were falling, and the effect of the escalator was to stop petrol / diesel prices falling at the pump. However, in 1999 the escalator began to receive political and media criticism and the Chancellor announced the escalator was being abandoned in November 1999. The following year, road fuel protests led by the haulage industry (characterised as a 'vociferous lobby' by Pearce, 2006:155), caused widespread disruption, while retaining public support. In response to this, various tax concessions around road fuel taxes were introduced as were specific concessions to the haulage industry. Together these episodes have pushed environmental taxation down the political agenda.

4.2 European evidence

A European research project examined the attitudes of policy makers, businesspeople, and the general public towards environmental tax reform (ETR) in five EU member states (Denmark, France, Germany, Ireland and the UK) (Dresner, Dunne et al. 2006). Fieldwork, in the form of interviews and

focus groups was generally conducted in 2000/01. Findings included the following: both businesses and the general public showed a lack of understanding of ETR; the fundamental problem that ETR faced in the focus groups with the general public was lack of trust that the government would do what it promised with the revenues; the fear that poverty might be worsened by ETR was frequently expressed in focus groups.

By contrast, Global Utmaning (2009:12) report a different response in those countries which already have personal carbon taxes: their interpretation is that “the public acceptance in the European countries applying carbon taxes and environmental tax reform in general is high”.

4.3 Taxation design

People, it seems, judge proposals for carbon and environmental taxation primarily on the practical details, and their expected effects, rather than on the underlying philosophy. They are also influenced by their (national) experience of carbon and environmental taxation⁵. So the detailed design of taxation is likely to significantly influence acceptability. As evidence in Section 4.1 indicates, issues of revenue recycling, reduction in other forms taxation and hypothecation are all important variables, as is the extent to which vulnerable ‘losers’ are compensated.

Two of the major opportunities for increasing personal carbon taxation in the UK are introduction of household energy / carbon taxation and increasing road fuel duty. It is well established that carbon taxation on household energy use would be regressive⁶ in the UK (Ekins and Dresner 2004). Similar results have been shown in other countries, including Denmark and Ireland (Wier, Birr-Pedersen et al. 2005; Callan, Lyons et al. 2009). This is not the case for road fuel duty, but there are groups, particularly rural dwellers, who would be hit much harder by a tax increase than the majority of the population. Designing adequate compensation schemes for vulnerable losers is generally seen as an important or even essential aspect of taxation design (e.g. Weir et al, 2005), and various options for doing so have been suggested (e.g. Ekins and Dresner, 2004, FOE 2007, Green Fiscal Commission, 2009). However, this is acknowledged as particularly problematic (and socially / politically sensitive) in the case of household energy taxation. As the Mirrlees report states: “compensating low income households for the burden of a domestic carbon tax is likely to be complicated and imprecise.” (Fullerton, Leicester et al. 2010:425). Part of the solution is generally seen as vastly improving the quality of the UK housing stock, so that it is more energy efficient, with a particular focus on the homes of the fuel poor. However, renovating the housing stock is a complex issue where there are unlikely to be any easy solutions (Oreszczyn and Lowe 2010).

5 The politics of environmental taxation

Taxation is very evidently a highly political issue. Political parties hold differing views about what proportion of national expenditure should be directed by the state, and therefore how much tax should be levied, from whom and from which activities, and by which level of government. By contrast, environmental issues are not often given political priority, particularly by the two major parties (Carter 2008). This leaves the issue of environmental taxation in an interesting position.

On assuming office in 1997, the new Labour Government issued a ‘statement of intent’ which talked about exploring the scope for using the tax system to deliver environmental objectives and to ‘shift the burden of tax from “goods” to “bads”’ (HM Treasury 1997). However, it added the proviso that ‘...environmental taxation must meet the general tests of good taxation. It must be well designed, to

⁵ In a paper looking at political economy obstacles to fuel taxation, Hammer, Lofgren et al (2004) suggest that not only does low taxation lead to higher consumption of gasoline, but also that causation may operate in the other direction, with high levels of consumption leading to considerable pressure against raising taxes.

⁶ Tax regressivity relative to income means that households with lower income pay a greater share of their resources than those with higher income.

meet objectives without undesirable side-effects; it must keep deadweight compliance costs to a minimum; distributional impact must be acceptable; and care must be had to implications for international competitiveness'. As analysis from the Institute of Fiscal Studies demonstrates, between 1997 and 2010 environmental taxation fell as a share of national income and as a share of all receipts (Johnson, Leicester et al. 2010). This was largely due to the removal of the fuel duty escalator in 1999 (a tax not noted for its adverse distributional impacts or detriment to international competitiveness, but which had had the undesirable side-effect of becoming unpopular).

The UK Coalition Government (Conservative and Liberal Democrats), which came into power earlier this year, has set out its policy intentions in the Coalition Agreement. It makes a general commitment to reforming the tax system to make it 'greener' and specifically promised:

"We will increase the proportion of tax revenue accounted for by environmental taxes." (HM Government 2010:31)

However, the Government's first Budget, in June 2010, was judged by one commentator to be 'arguably the least green Budget address in recent memory' (Murray 2010), with few specific green measures and no changes to environmental taxation. However, the government has re-stated its intention to be 'the greenest government ever' (HM Treasury 2010:28), and a further budget in Autumn 2010 offers the opportunity for specific policy proposals.

IFS consider that the government is likely to have difficulty meeting its pledge to increase the proportion of taxation coming from environmental sources, especially since in an economic recovery, revenues from taxes such as income and corporation tax are likely to grow faster than taxes on fuel and energy – naturally depressing the share of total revenue from environmental taxes as a matter of arithmetic (Johnson and Levell 2010). A more detailed analysis shows that, in the absence of further policy intervention, environmental taxes are forecast to fall from the current 6.9% of the total to 6.5%⁷ by 2014/15 (Leicester and Levell 2010). As the authors point out, if the Coalition Government wanted to raise much more revenue from the existing system of green taxes, it would be hard to do so without further increases in fuel duty, since fuel duty makes up almost three-quarters of green tax receipts. Alternatives could include new taxes, on carbon emissions or congestion, for example.

6 Discussion

The evidence is that environmental and carbon taxation can work, but in many cases the emission reductions delivered (typically 2-3% reduction over 10 years) have been very modest in comparison with future goals (4% reduction per annum to 2050). While carbon taxation would always be part of a package of policies, it needs to make a significant contribution to emissions reduction, if it is to be introduced / increased. Securing higher carbon savings would require much higher levels of taxation than employed to date, ideally in combination with greater behavioural responses to price rises.

At present UK social and political support for specific personal carbon taxes (rather than environmental or carbon taxation in principle) seems limited. Responses to taxation are very particular to the taxation base, for example, the UK has been able to introduce one of the highest levels of motor fuel taxation in the EU, but has very low taxation on household energy use. Recent history speaks of strong public rejection of additional taxation on household energy use and resistance to increasing road fuel taxation. The research evidence shows limited enthusiasm for increased environmental or carbon taxation, with personal carbon trading usually preferred in comparative studies. However, research also demonstrates that careful taxation design, including reductions in other taxes, hypothecation and compensation of vulnerable losers can significantly increase support.

Designing personal carbon taxes which can gain enough public or political support to be introduced will require good understanding of, and adequate response to, concerns about their effects and

⁷ These figures are calculated on a slightly different basis from those presented earlier from ONS (2010).

effectiveness. The ‘official’ understanding of an environmental tax is one which is levied on activities which harm the environment. Its primary purpose does not need to be environmental protection, and neither does it need to achieve significant environmental improvements (UK use of motor fuels has continued to rise despite high levels of taxation). This contrasts with public views of environmental taxes: if a tax is designated as environmental, people expect to see environmental improvements as a result. If the main goal of personal carbon taxation is to significantly reduce demand for fossil fuel energy over the medium to long term (rather than revenue raising), then taxation design may differ from current practice. Further detailed research on personal carbon taxation design is needed. This should include exploring compensation routes for vulnerable losers and issues around hypothecation, looking at different methods of introducing and scaling up taxation over time, researching taxation in combination with other policy measures, understanding whether and how taxation can generate behavioural responses beyond the price effect, and comparing taxation with alternative policy routes. Because there is social and political resistance to the introduction of such taxation measures, all research will need to include these perspectives, and offer insights into how to accommodate such concerns while still being environmentally effective.

This paper has introduced the concept of personal carbon taxation, as an alternative policy approach to personal carbon trading. It is interesting to consider whether explicit linking together of household energy, transport fuel and transport services taxation in this way would increase the acceptability of carbon taxation. Certainly, as personal carbon trading research shows, if the carbon from each was taxed at the same rate, the overall effect would be progressive, although there would be some low-income losers. This might overcome some of the very real concerns about taxation on household energy use, which on its own is regressive. Research on the advantages of an overall personal carbon tax, rather than individual taxation measures, could open up new perspectives on carbon taxation.

7 Conclusions

This paper arose out of a wish to better understand the prospects for personal carbon taxation in comparison with personal carbon trading. Environmental taxation benefits from endorsement, in principle, from all major political parties. However, in reality environmental tax receipts have been on a downward trend and specific carbon taxation ideas face considerable barriers. The EU appears fully committed to EUETS and its further expansion, and it seems unlikely it will take a lead on significant carbon taxation in the near future. Indeed, the profound difficulties with EU-level carbon taxation which influenced the turn towards trading still remain. Therefore, increasing personal carbon taxation is likely to come at the national level, if it comes at all. In the UK, agreement with the principles of green fiscal reform did not translate into major green fiscal reform during the New Labour years, and a similar phenomenon may well be seen under the Coalition government. At present, expansion of environmental taxation does not appear particularly likely.

However, the problem of climate change remains, as does the challenge of meeting UK carbon reduction targets. As the Stern Report concluded, carbon pricing seems certain to form part of an effective response. Increases in motor fuel and household energy taxation are, at present, unpopular – but public opinion can change. Politicians can prepare the public to accept initially unpopular policies (as is happening currently with public sector funding cuts). The introduction of personal carbon taxation is likely to require more active concern to reduce the risk of dangerous climate change and, for example, a convincing programme of improving the efficiency of the housing stock. Within this paper, research routes to more socially and politically acceptable forms of carbon taxation have been identified. While good policy design can improve the chances of introducing personal carbon taxation, the most important drivers towards acceptance may be linked to wider moves on energy policy and climate change mitigation.

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