

Green Taxation

From being the preserve of a handful of green economists in all but the most progressive of countries just a few years ago, green taxation has now moved to the mainstream of the political debate. Politicians are waking up to the fact that they can use a national taxation system strategically, to achieve goals for the environment much as health-related taxation has always been used to encourage more beneficial lifestyles. Because green taxation used in this way is explicitly a form of social engineering, exactly the kinds of taxes that are introduced are the subject of fierce debate since they raise questions about exactly what sorts of lifestyles we should be encouraging as part of our sustainable economy of the future. Do we wish to encourage airline companies to buy more efficient planes or be careful to fill those they do own to the maximum? Or is our concern rather to discourage passengers from flying so often, or from purely hedonistic motives? Or do we wish to use our taxation system for even deeper green ends, such as to encourage smaller, locally based businesses rather than global corporations?

The chapter begins with a theory of green taxation. What is the moral and strategic basis on which decisions about taxation are made within a green view of the economy? The next section addresses the strategy of taxation policy, including concern for the inadvertent or unpredicted consequences of taxation, as human beings find means of evading or avoiding rendering their income to the common pot. Next we look at a specific group of taxes which are favoured by green economists but are not directly related to pollution: taxes on commons. Finally we explore the ecotaxes that have been proposed, devised and introduced in various countries.

[a] Theory of Green Taxation

Taxation serves two main functions: first, it raises revenue for governments to spend on public goods and services or to redistribute to bring about a more equal society; secondly, it offers policy-makers a chance to influence behaviour, encouraging behaviour they see as beneficial and discouraging what they consider destructive behaviour. Green economists refer to this as shifting the burden of taxation from 'goods' like useful employment onto 'bads' like pollution. However, these two motives for introducing taxes are often in conflict. For example, taxes on cigarettes raise the price of cigarettes and reduce levels of smoking, and also reduce the level of spending needed to treat people suffering the health consequences of smoking. However, if fewer people smoke there is less revenue for the government for general investment. Similarly, in the case of environmental taxation, aviation taxes may cause an increase in the price of flights and hence a reduction in demand. However, governments may come to rely on this tax and ultimately may face a perverse incentive not to allow air travel to decline too rapidly.

When devising tax strategy policy-makers must also consider the likely response by citizens, most of whom are keen to control as much of their income as possible and preserve it for private expenditure. The behavioural consequences resulting from tax changes are notoriously difficult to predict and frequently confound the expectations of policy-makers. An example is the plastic-bag tax in Ireland, which was intended to generate revenue for an Environment Fund to pay for waste management and anti-littering projects. The tax was introduced at the relatively low rate of 15c but it reduced the use of plastic bags by some 94 per cent, yielding very little in terms of revenue, but having a beneficial environmental impact. The success of the tax in changing behaviour

has led to discussion in the Scottish parliament and London Assembly about introducing a similar tax.

The key point for a green economist is that taxation should be used primarily as an important tool to move us towards a sustainable economy. Margaret Legum defines the objectives of a taxation system as follows:

Taxes should encourage social inclusion, social equity, economic efficiency and environmental sustainability. They should discourage the use of non-renewable resources, monopoly of common resources, pollution and waste.

Existing taxes are perverse because they:

- Reduce employment by taxing it and value added;
- Subsidise capital and energy-intensive production;
- Encourage pollution and waste which the state then has to repair through the health service;
- Encourage inefficient land use and speculation;
- Encourage currency speculation;
- Subsidise long-distance transport and hence inefficient use of resources;

The quotation makes it clear that the theory of green taxation is informed by the principles of green economics that we already have established, namely sustainability, equity and genuine economic efficiency. Legum identifies some of the key criticisms of a conventional approach to taxation, especially its focus on encouraging the substitution of capital and energy for labour, and its failure to tackle pollution and inefficient land use. As we would expect from preceding chapters, a green taxation system would be focused on the efficient and minimal use of resources and the elimination of wasteful economic activity, whether through transport or speculative activity. Rather than focusing on a marginal argument over the exact rate of income tax, a green critique questions the need for such a high level of government spending. A holistic approach to the economy would suggest tackling pollution as one major source of ill-health which would then reduce the need for tax on incomes to pay for treatment of the sick. Similarly, an economic system which reduced the distance freight was transported would have less need to invest in maintenance of its road network.

The green economist's aim of greater equity within society is another target of the fiscal regime. James Robertson argues that, just as we should not be taxing incomes to pay for the ill health that our economy is creating, we should avoid the need for taxation to redress the imbalances that economy creates. In what he refers to as 'predistribution' rather than 'redistribution' he makes a case for asking more searching questions about the sharing of basic resources such as land and housing, which would then reduce the need for later redistribution of incomes:

This will involve a shift from the idea of *redistribution* to the idea of *predistribution*. Whereas redistributive taxes aim to correct the outcomes of economic activity, predistributive taxes and charges will share the value of essential *inputs* to economic activity. Whereas redistribution is dependency-reinforcing, predistribution will be empowering. It will correct an underlying cause of economic injustice, inequality, exclusion and poverty.

Environmental economists, operating within a more conventional economic paradigm, have argued the case for introducing environmental taxes and reducing employment-related taxes in a way that is 'revenue neutral', i.e. there is no additional

money going into the national coffers; the two taxes balance each other out. They have argued this position on the basis of a ‘double dividend’ because the tax system can be made more efficient, in neoclassical economic terms, while achieving environmental benefits at the same time. However, from the viewpoint of green economics, questions also need to be asked about the quality of the jobs created and the type of economic growth that is stimulated: if it is won at the cost of further pollution and resource depletion, and if the jobs are demoralising and destructive then there may not be a double dividend or any sort of dividend at all.

[a]Strategic Taxation

It is clear that for a green economist one of the key strategic aims of fiscal policy is to ensure that activities beneficial towards the environment are encouraged while those that are detrimental are discouraged. But green economists favour the use of a whole range of strategic taxes to achieve different aims: redistributing income, encouraging the deconsolidation of large corporations into smaller businesses, supporting less polluting forms of agriculture, and so on.

Green economists are deeply concerned about the wide and growing inequality both within developed economies and between them and the poorer economies of the South: ‘Questions of equity must be central in designing green tax systems’. In the UK context, the reduction in the top rate of tax to 40 per cent has resulted in a huge shift in both income and asset ownership towards the upper end of the income range: in other words, the rich are growing much richer while the poor are growing much poorer. Figures reproduced in Table 10.1 show a similar trend. Green economists argue that wealth should be redistributed within developed economies through a range of taxes, the most fundamental of which is income tax on higher earners. However, green economists are also concerned with the increasing share of assets owned by a smaller proportion of very wealthy people. Thus a green economy would be likely to involve distribution of assets via enhanced inheritance and capital gains taxes.

Table 10.1. *Share of UK Wealth Owned by Different Sectors of the Population*

<i>Most wealthy</i>	<i>1976</i>	<i>1986</i>	<i>1996</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>
1%	29	25	26	34	37	34
5%	47	46	49	58	62	58
10%	57	58	63	72	74	71
25%	73	75	81	88	87	85
50%	88	89	94	98	98	99

Note: Percentages represent marketable wealth less the value of dwellings.

Source: Sikka, P. (2007), ‘Reclaiming the Economy: Taming the Corporations’, in A. Cumbers and G. Whittam (eds.), *Reclaiming the Economy: Alternative to Market Fundamentalism in Scotland and Beyond* (Glasgow: Scottish Left Review Press). Data from UK Office for National Statistics.

The debate over inheritance tax is related to the discussion about commons in the following section. While from the perspective of the individual it may feel natural to pass wealth you have accrued in your lifetime on to your descendents, from the perspective of the ‘commonwealth’ there is an argument that this money should be shared between all those who share in the wealth of the nation. As an attempt to balance these two perspectives the UK Green Party has proposed an Inheritance Tax with a

reasonably low threshold but which allows those making bequests to avoid tax if they share their wealth with a relatively large number of inheritors, whom they can choose. Because the tax relates to the wealth of the inheritor rather than the inheritee the system provides an incentive for those making bequests to choose poorer inheritors, thus ensuring redistribution. A similar policy was adopted by the Fabian Society in the UK

For green economists the most glaring inequality in today's world is that between the rich nations of the West and the poor nations of the South. They interpret this as an outcome of a historical relationship of exploitation that began with colonisation and has since been continued under the guise of multilateral institutions such as the World Bank and World Trade Organisation that are, in reality, dominated by the rich nations. Given this analysis, the prescription is that the economic terms of trade between nations should be renegotiated in a democratic manner; this proposal is discussed more fully in Chapter 5 on money and Chapter 11 on trade. As an interim measure green economists have lent their support to the proposal for a Tobin Tax, first proposed by Nobel-Prize-winning economist James Tobin. This is a percentage tax on speculative financial transactions, imposed at the global level with the revenue invested in projects to improve the lives of those living in poorer nations. Although such an initiative would be supported by most green economists, 'as a panacea itself it would certainly be a failure since it could not deal with the fundamental systemic problems'.

Within a green economy taxes would also be used strategically to influence the power and behaviour of businesses. The neoliberal domination of policy-making has resulted in the shift of taxation away from corporations and onto the incomes of private citizens. In the US personal income taxes make up 30 per cent of tax revenues while corporate taxes contribute only 6.3 per cent; in the UK 45 per cent of tax revenue comes from individual incomes (direct income tax and national insurance contributions) with only 8 per cent coming from corporation tax. The tax burden on individual UK citizens has increased rapidly (from £48.8bn. in 1989/90 to £109.5bn. in 2002/3) while that for corporations has not. Meanwhile, despite a large growth in corporate profits during the same period, the tax they paid rose from £21.5bn. to only £29.3bn. During a period of downward pressure on incomes and upward movement in profits individuals saw their taxes rise by 124% while corporate taxation rose by only 36%. One aim of a green government would be to redress this balance, by increasing the rates of taxation of businesses. However, a more strategic aim could be to use banded corporation tax to encourage smaller businesses, by relating the rate of tax to the size of the business, as proposed by the UK Green Party. A similar objective might be achieved by reversing the policy of a unified business rate, which relates the level of tax paid to the floor space of the business, to one which related to the turnover of the business. This would help to reverse the relentless consolidation of businesses and the movement of retail outlets out of city centres leading to what the New Economics Foundation refers to as 'ghost town Britain'.

[a] Taxes on Commons

According to James Robertson, 'common resources are resources whose value is due to Nature and to the activities and demands of society as a whole, and not to the efforts or skill of individual people or organisations.' Robertson gives as an example the sudden increase in the value of properties located near the Jubilee line on the London Underground after the route was published which he valued at £13bn. Although land is the most obvious and important example of a commons there are others, of which the radio spectrum is one that is now the subject of government fees rather than taxation. EU governments raised considerable revenue by auctioning off the right to use various

band-widths, some £22.5bn. in the case of the UK government. For green economists such commons are shared resources, the bounty of nature, whose value should be shared. If it is to be exploited by a few then they should pay for that privilege.

The Land Value Tax, or as Robertson refers to it, the 'Land-Rent Tax':

Is a tax on the annual rental site value of land. The annual rental site value is the rental value which a particular piece of land would have if there were no buildings or improvements on it. It is the value of a site, as provided by nature and as affected for better or worse by the activities of the community at large. The tax falls on the annual value of land at the point where it enters into economic activity, before the application of capital and labour to it.

Greens share with libertarian economists a fondness for the land tax because of its extreme simplicity and efficiency. According to classical economists rents were to be eschewed since they encouraged decadence and idleness: increasing the value or quality of a piece of land, or producing something from it was to be encouraged; merely living from its wealth should be discouraged, preferably by high rates of taxation. This simplicity is the object of obfuscation by many writers on economics. Their argument is that economic rent cannot be quantified and hence is not a secure basis for taxation. Richard Bramhall provides an amusing critique of their argument concluding that economists have 'dumped a valuable fiscal tool on the scrap-heap of history, leaving the burden of tax to fall on labour and enterprise, while the landowner grows fat doing nothing'.

In today's planning environment, where local authorities have the legal right to decide what land can be used for, vast quantities of value can be generated by the stroke of a computer keyboard, i.e. when agricultural land undergoes a 'change of use' and becomes development land. Those who argue for a land-value tax claim that this value is democratically created and hence should be shared between all the citizens of the local authority. For many proponents of a land tax it can be a single tax, simply because of the vast sums it can generate. Robertson's calculation for the potential revenue from site-value tax on land in the UK was between £50bn. and £90bn. annually in 1994.

Other taxes in the green economist's knapsack can be justified on the basis of being taxes on commons. For example the streets of a thriving city belong to all; if only a few choose to use them for private transport then that right can be charged for and the proceeds shared with others via a congestion charge. By a similar argument the right to pollute the Earth's atmosphere with greenhouse gases, causing economic disaster for others, should be paid for via a carbon tax.

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Box 10.1. *The London Congestion Charge*

The congestion charge in London was motivated more by irritation at the slow pace of traffic in the city than by environmental concern, but it has none the less been an important example of how traffic can be reduced in one of the world's largest cities. By the 1990s traffic was moving more slowly in the UK's capital than it had been at the beginning of the 20th century, before cars had been invented! Following his election as Mayor in 2000, Ken Livingstone launched an 18-month period of public consultation and the outcome was a decision to launch a congestion charge based on area licensing rather than parking levies. Considerable research and modelling was undertaken to predict the correct level of the charge to deter the desired number of people (30 per cent) from continuing to drive into the capital. In February 2003 a daily charge of £5 was introduced between 7am and 6.30pm on weekdays; this was increased to £8 in July 2005.

Research had predicted that, at a rate of £5, car miles travelled in central London would be reduced by 20-25% and total vehicle miles would be reduced by 10-15 percent. Car traffic was reduced by 33% representing up to 70,000 journeys no longer made by car on a daily basis. Details of changes in road-traffic journeys are given in Table 10.2.

Transport for London estimates that about half these journeys are now made by public transport; a quarter divert to avoid the zone; 10% have shifted to other forms of private transport including bicycles; 10% have either stopped travelling or changed their time of travel. There have been sharp rises in journeys by bus, taxi and bicycle. Meanwhile, travel speeds have increased by some 17%. The reduction in vehicle usage within the charging zone was greater than expected, leading to less revenue than had been predicted. The London Congestion Charge appears to have been a political and environmental success. It has encouraged changes in behaviour towards less polluting forms of transport, reducing CO₂ emissions. It is also an example of a tax which is flexible, since the rate can be increased or decreased depending on the relative balance of traffic and public transport desired by the city's residents.

Table 10.2. *Impact of the congestion charge on traffic in London*

<i>Type of vehicle</i>	<i>% change</i>
Cars	-34
Vans	-5
Trucks	-7
Taxis	+22
Buses	+21
Motorcycles	+6
Bicycles	+28
All vehicles	-12

Source: Leape, J. (2006), 'The London Congestion Charge', *Journal of Economic Perspectives*, 20/4: 157-76.

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A carbon tax can be considered a 'commons tax', since it attempts to reduce behaviour that adds to the amount of CO₂ pollution in the atmosphere, which is a shared commons. There are several variants of the scheme, but the basis of the tax is that it should be a unified tax on the carbon content of fuels to replace the complex array of fuel-related taxes that are in effect in many countries. Such a tax would provide a strong incentive for both businesses and individuals to reduce their energy consumption, their driving, and to switch to non-fossil-fuel heating as well as renewable electricity supply. In the mid-1990s the EC considered a proposal to introduce a carbon tax throughout the European Union. This was rejected, although Sweden, Finland, Norway, the Netherlands and Denmark introduced related taxes. The Swedish carbon tax achieved a reduction in CO₂ emissions of 7 per cent through use of this tax, while the Danish energy tax resulted in a 10 per cent reduction in energy use.

[a] Ecotaxes

Ecotaxes have two aims: to discourage pollution and to change behaviour, especially behaviour that leads to the unsustainable use of non-renewable resources. In the case of some ecotaxes, as in the example of the Irish plastic bag tax cited above, a related aim

may be to generate revenue, but this is generally then intended to be spent directly on policies to support the central aim of the tax, i.e. for recycling in the case of the plastic bag tax, or to invest in more public transport in the case of the congestion charge in London. A more subtle aim of ecotaxes is to change the relationship between labour and resources within the economy as a whole. During the era of industrialisation, and especially since the discovery of fossil fuels, profits can more easily be generated by exploiting natural resources rather than by using labour. While, as pointed out in Chapter 4, green economists are not inclined to create work for its own sake, there is a sometimes conflictual desire to emphasise the contribution of human labour relative to nature's services when considering how production is to be achieved:

In the industrialized countries, labor is relatively more expensive and more highly taxed; materials are cheap and lightly taxed. Green taxation can level the playing field for eco-material vis-à-vis nonecological products, it can discourage waste, and it can help create an economy that is more people-intensive than capital-intensive.

The Scandinavian countries led the way on ecotaxes, with Norway setting up a Green Tax Commission in 1994 and Sweden following suit the following year. As indicated in Table 10.3, there is a vast range of possible taxes. We have already considered the carbon tax and the congestion charge as an example of a transport tax. The other main types of environmentally related taxes are those on pollution, such as the landfill tax cited in the table or the Swedish pesticides tax considered in Box 10.3; and those on scarce resources, such as the UK Aggregates Levy. While a primary motivation for proponents of a green economy is to shift towards renewable resources, for those which will always be in limited supply there is support for the introduction of taxes. This should encourage the switch to renewable alternatives where these are available, and where they are not it should encourage efficient use of the scarce resource and a greater emphasis on its retrieval and re-use. Such a policy could be diverse and flexible, with rates of taxation being increased or decreased as particular metals or minerals became more scarce or as new deposits were discovered.

Table 10.3. *Examples of environmental taxes and charges*

	Upstream charge on resource use or environmental emissions	Downstream charge on resource use	Downstream charge on environmental emissions
Energy	Carbon tax on primary energy	Energy tax	Energy tax differentiated by fuel carbon content
Water	Charges on abstractions or emissions by water companies	Metered water charges	Not possible
Transport	Carbon tax on petroleum producers	Fuel tax	Fuel tax or vehicle excise duty differentiated by emissions
Waste	Landfill tax	Volumetric waste charges	Differentiated waste charges

Source Dresner, S. and Ekins, P. (2004), *Green Taxes and Charges: Reducing their Impact on Low-Income Households* (York: Joseph Rowntree Foundation), Table 1.

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Box. 10.2 *Energy Tax Credit Program in Oregon, USA*

The Department of Energy of Oregon state in the Western USA operates a scheme to offer tax reductions to residents who invest in energy efficiency improvements to their homes. The maximum rebate is \$1,000 annually for appliances and \$1,500 annually for either renewable energy equipment or an alternative fuel or hybrid vehicle. Eligible appliances include washing machines, dishwashers and fridges, heat-pump systems, CHP installations, high-efficiency boilers, wind turbines, and fuel-cell, geothermal or hydroelectric generation equipment. Table 10.4 shows the uptake for the program in 2006, and indicates that the overwhelming majority of tax credits were granted for the purchase of energy-efficient appliances.

Table 10.4 *Types of installations resulting in tax credits for Oregon citizens in 2006*

<i>Product/System</i>	<i>Number of Installations</i>	<i>Total Tax Credits Annual Energy (\$)</i>	<i>Savings* (\$)</i>
Renewables	489	1,017,830	80,049
Appliances	34,023	4,696,088	871,248
Ducts	993	222,564	78,063
Furnaces and Boilers	4,627	1,620,371	294,003
Heat Pumps/AC	672	244,021	35,907
Heat/Energy Recovery Ventilators	28	3,008	
Alternative Fuels/Hybrid Vehicles	2,129	3,178,000	796,615
Total	42,961	10,987,323	2,158,893

* Includes savings values for electricity, natural gas, and automobile gasoline.

The cost of the residential and business schemes was \$73.8m. in 2006, but this was balanced by an estimated increase in economic activity in the state of \$142.7m. during the same year. This included the creation of 1,240 new jobs, an increase in wages of \$18.6m.; and increased tax revenue of \$10m. Energy costs were reduced by \$48m.

Source: EconNorthwest (2007), *Economic Impacts of Oregon Energy Tax Credit Programs in 2006*.

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The German experience with taxation represents a deliberate attempt by a red-green coalition to achieve significant environmental goals by using targeted fiscal measures, and one which has been well documented. The programme of measures introduced in Germany on 1 April 1999 represented an attempt to increase the price of energy and resource consumption while simultaneously reducing the cost of labour. Taxes on mineral oils and electricity were raised in a series of steps between 1999 and

2003; on the labour side pension contributions were reduced. According to the German *Umweltbundesamt* (Federal Environmental Bureau) these taxes achieved substantial CO₂ reductions of more than 7 million tonnes by 2002, while leading to the creation of at least 60,000 new jobs. Overall, Germany has managed to reduced its CO₂ emissions by 15% between 1990 and 2000, although the economic recession in the former East Germany following Reunification accounted for a significant proportion of this reduction.

Table 10.5. *Examples of Eco-taxes in Four EU Countries*

Sector	Transport	Waste	Resources	Pollution
Denmark	Petrol, energy	Domestic refuse	Water supply	CO ₂
Ireland	Road tax, petrol tax	Domestic refuse, non-domestic water	Plastic bag tax	Effluent levy
Netherlands	Fuel	Refuse	Energy, groundwater, tapwater	
Sweden	Air travel tax	Drinks cans, batteries		Carbon tax, taxes on NO _x and SO ₂ , fertiliser, pesticides
UK	Vehicle excise duty, mineral fuels tax, air passenger duty	Landfill Levy	Aggregates Levy	Climate Change Levy (CO ₂)

Sources: Netherlands Environmental Assessment Agency, FEASTA (Dublin), ONS (UK).

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Box 10.3. *Pesticide Taxation in Scandinavia*

From the mid-1980s onwards, Norway, Sweden and Denmark introduced policies to reduce the levels of pesticides in use by their agricultural sectors in response to concerns about the levels of residues from the pesticides in food and in the water-table. The policies involved strict regulation of which pesticides could be used, as well as limits on the number of applications, but there was also a taxation element. By the late 1990s, reductions in usage of 47 per cent for Denmark, 54 per cent for Norway, and 67 per cent for Sweden had been achieved. Sweden estimates that risk to human health was reduced by 77 per cent between 1997 and 2001.

Source: Pesticides Action Network Europe, Briefing No. 6: <http://www.pan-europe.info/publications/PesticideTax.htm>

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Table. 10.6. *Revenue from Environmental Taxes in the UK, 1993-2006 (£000s)*

	1993	1996	1999	2002	2003	2004	2005	2006
Duty on hydrocarbon oils	12497	16895	22391	22070	22476	23412	23346	23448
Climate change levy	0	0	0	825	828	756	747	711
Vehicle excise duty	3482	4149	4873	4294	4720	4763	4762	5010

Air passenger duty	0	353	884	814	781	856	896	963	
Landfill tax	0	113	430	541	607	672	733	808	
Total		19,755	25,673	32,635	32,695	33,729	34,924	34,907	35,368

Note: Individual figures do not sum to the total because only a range of taxes have been included.

Source: Gazley, I. (2006), 'Review of Environmental Taxes', Economic Trends No.635; based on data from ONS.

—Insert Figure 10.1. Revenues from Environmentally Related Taxes as a Percentage of GDP in OECD Countries near here—

Source: OECD Statistics Division.

In spite of strong rhetorical support for eco-taxes in the UK, environmental tax receipts fell as a percentage of taxation following a high point reached in 1999. Table 10.6 provides figures for the revenue raised from various environment-related taxes in the UK between 1993 and 2006. A cross-national comparison of the significance of environmentally-related taxes to the GDP of a range of developed economies is offered in Figure 10.1. It makes clear that, as expected, the Scandinavian countries have some of the highest rates of environmental taxation; it is also worth noting that, in spite of the growing political salience of the environmental crisis, many countries are reducing their rate of ecotaxation as a proportion of their GDP.

At the level of policy, concern has also been expressed by both green and environmental economists about the possible regressive consequences of a range of green taxes; and regimes need to be devised and tested to ensure that they would be fiscally advantageous to those in the lowest income groups before they are introduced. One study found that 'poor households already pay substantially more per unit of energy than rich households' and proposed a scheme that 'would effectively abolish fuel poverty, could achieve carbon savings of four million tonnes of carbon (mtC) over ten years and save households nearly £20 billion net present value'. Other green policies, particularly the introduction of a Citizens' Income, would clearly operate to support the incomes of the poorest in society. The German experience suggests that, when ecotaxes are judiciously combined with tax reductions and other social policies, they can lead to an increase in income for the majority of households.