

A Green Living Initiative

Engaging households to achieve environmental goals



Policy Studies Institute

A Green Living Initiative

By Simon Dresner, Paul Ekins and Rebecca Willis

Produced by the Policy Studies Institute, January 2006, £15

Artwork and printing by Seacourt www.seacourt.net

Printed on Revive uncoated – 75% post-consumer waste.

ISBN 0 9549757 5 8

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without the prior permission in writing of the Policy Studies Institute. Within the UK, exceptions are allowed in respect of any fair dealing for the purposes of private research or study, or criticism or review, as permitted under the Copyright, Design and Patents Act, 1988, or in the case of reprographic reproduction in accordance with the terms of the licences issued by the Copyright Licensing Agency.

This book is sold subject to condition that it shall not, by way of trade or otherwise, be lent, resold, hired out or otherwise circulated without the publisher's prior consent in any form of binding or cover other than that in which it was published and without a similar condition including the condition being imposed on subsequent purchaser.

Policy Studies Institute
50 Hanson Street
London
W1W 6UP
www.psi.org.uk

Copies of this publication can be ordered from Green Alliance:

Green Alliance
36 Buckingham Palace Road, London SW1W 0RE
tel: 020 7233 7433 fax: 020 7233 9033
ga@green-alliance.org.uk
www.green-alliance.org.uk

This report has been produced by the Policy Studies Institute. The work was commissioned by Green Alliance as part of a project on fiscal incentives for sustainable homes, which is being funded by the Environment Agency, the National Insulation Association, the Pilkington Energy Efficiency Trust and Thames Water.

The report was written by Simon Dresner, Paul Ekins and Rebecca Willis.



“green alliance...”



Acknowledgements

Many thanks to Tracy Carty, Guy Thompson, Ben Shaw and Russell Marsh at Green Alliance; to the members of the steering group: Eoin Lees, Chris Hewett and Esther Thompson for their comments and encouragement; and to all the participants of the seminar held at Defra on 7 September, 2005, to discuss these issues. Thanks also to Louise Every, Rob Westcott, Martin Fodor, Matt Lusty and Magdalena Styles for commenting on drafts, and to Hannah Hislop and Jenny Yip for designing the report.

Contents

Executive Summary	1
The case for action	4
The political opportunity	4
Beyond efficiency	4
The environmental imperative	6
Proposal: A Green Living Initiative	7
Branding, information and advice	9
Products	10
New homes	12
Energy use	15
Water use	17
Waste	20
Conclusion	22
References	23

Appendix: a literature review and survey of other potential measures can be found on Green Alliance's website: www.green-alliance.org.uk/ourwork/FiscalIncentivesHomes/

Executive Summary

This report puts forward an integrated package of measures, linking tax incentives to clear information, advice and branding, designed to engage households in taking action on three key environmental issues – energy, water and waste.

The case for action

There is a clear rationale for government action to engage households in achieving environmental goals, including reduction in energy and water use, and waste generation. The **political opportunity** is there: awareness and concern about environmental issues is growing, and most people take limited action, such as recycling newspapers. However, few look at the environmental performance of their household in a systematic way. Evidence shows that consumers are 'locked in' to specific behaviour patterns, and change will only come about through an integrated approach by government at all levels, which links policy measures with information provision.

To do this, government will need to look **beyond efficiency**. Previous approaches, particularly to energy conservation, have focussed on improving the energy efficiency of houses, rather than the energy demand of individuals. They have not tried to engage or motivate householders in the issue. This can lead to perverse outcomes, with people offsetting some of the efficiency gains by using energy in other ways. Even less has been done to engage householders in water conservation or waste reduction. If we are to move beyond efficiency, there is a need to use fiscal incentives as part of a package of measures to engage householders. A number of information initiatives are under way or proposed – including the government-sponsored environmental information service, Environment Direct, and the Home Condition Reports being introduced in 2007, produced when a property is sold or undergoes a change of tenancy. If these communications initiatives are connected to fiscal measures, this could both enthuse and incentivise households to think through their impacts and take action.

There is a strong **environmental imperative** for these measures. Households have a considerable environmental impact. UK domestic buildings are responsible for a quarter of all emissions of greenhouse gases; more than half of the country's water consumption; and nearly ten per cent of waste. The UK's Sustainable Development Strategy commits to 'living within environmental limits', but use of energy, water and waste in the household is already far beyond these limits, and on an upward trajectory. The government's commitment to increased house building will put even greater stresses on the environment, necessitating a significant improvement in the environmental performance of households.

Proposal: A Green Living Initiative

To enable and encourage households to adopt more sustainable lifestyles, this report proposes a single 'green living initiative', which combines information and advice with fiscal incentives. The Initiative aims to interest, motivate and empower individuals, and is focussed on engagement, not solely on efficiency. It builds on the government's own analysis, outlined in the Sustainable Development Strategy, of linking regulation to fiscal incentives and information provision, in order to catalyse behaviour change.

The measures proposed as part of this initiative are selected from a range of different fiscal instruments, selected following an extensive survey of existing and proposed measures. Each measure was picked for its capacity to engage individuals, to impact on the environmental problem, and to be neutral or beneficial in terms of distributional effects. The Initiative overall is revenue-neutral – although some aspects of the package raise revenue, which is recycled elsewhere.

At the core of the proposal is an overall **Green Living brand**, to be developed following consumer research. This will be linked to the Environment Direct information service, and to other sources of information and advice including the Home Information Pack, Energy Efficiency Advice Centres and the Climate Change Communications Strategy.

At national level, the report proposes **inefficiency charges** on products that use comparatively large amounts of energy or water, or generate comparatively greater amounts of waste. Revenues generated from these charges can be used to fund Council Tax reductions (see below) or information and advice. The report also proposes national-level action on new homes. It recommends **increasing VAT on new homes**, from 0% to 5%, whilst reducing VAT on major refurbishments that meet standards set by the Code for Sustainable Homes (level 3). This will make refurbishment an economical alternative to new build. It also recommends a **reduction in planning gain supplement** for new homes with that meet the Code for Sustainable Homes (level 3).

The report recommends local-level action on energy, water and waste. To address energy use, there should be a **Council Tax reduction** for households who install insulation measures. To encourage water saving, the introduction of universal metering should lead to **tariffs for water based on the amount used**, linked to Council Tax bands to ensure that the measure does not impact adversely on poorer households. Lastly, local authorities should be allowed to experiment with **variable waste charging**, to allow them to charge households for the amount of unsorted rubbish they throw out.

The table overleaf sets out these proposals in more detail, and outlines the cost and revenue implications, as well as the likely distributional effects.

The Green Living Initiative: Integrating information and policy to incentivise households

proposed measure	aim	timescale	cost/revenue implications	social equity considerations
national-level branding and information				
Green Living Initiative brand	One overall brand, to raise awareness and link information provision (Environment Direct) with policy measures, as below	To be launched as part of Environment Direct information service in 2006	Costs of brand development and advertising – could be linked to / shared with Environment Direct costs, as below	None – branding / information only
Information and advice, through Environment Direct Incorporating: Home Information Pack; Energy Efficiency Advice Centres; Climate Change Comms Strategy	Provide information in order to encourage action, and to explain and back up policies, as below	Pilot to be launched 2006 (N.B. already agreed by government)	Cost £5m - £7m per year plus set-up costs (from ERM estimates – see ERM (2005) Funding could be obtained through product charges and VAT on new homes (see below)	None – information provision only
national-level action on products and new homes				
National-level action on products: inefficiency charges	Draw attention to inefficient products in order to discourage their purchase	Medium-term – need to draw up criteria for judgement. Begin 2007-8	Would raise revenue – amount depends on products chosen and level of charge. Revenue could be recycled to fund Environment Direct and / or Council Tax reductions	Depends on products chosen. Social equity should be a criterion for charges. Fuel Poverty Action Group said that charges on inefficient white goods and incandescent light bulbs would not be regressive (FPAG 2003)
National-level action on new homes	Establish a 5% VAT rate for all new houses and for major refurbishments that meet standards set by the Code for Sustainable Homes (level 3). A reduction in Planning Gain Supplement for new homes with that meet the Code for Sustainable Homes (level 3)	Medium-term – need EU agreement. Begin 2007-8	5% VAT on new homes would raise around £650 million a year. Revenue used to fund VAT reductions on refurbishment and Council Tax reductions, or Stamp Duty reductions	Low income households rarely buy new homes. Would decrease the price of refurbishment
local-level action on energy, water and waste				
Council Tax reduction for insulation	Massively increase take-up of insulation measures (as demonstrated by pilots)	Could be done quickly – 2006-7	Would cost Local Authorities. Costs in region of £11.1m. Funds would need to be provided by central government. Could be funded by product charges and / or VAT on new homes	Progressive because flat-rate Council Tax discount proportionally greater for owner-occupier homes in lower bands
Water metering and tariffs linked to Council Tax bands	Measure water use and encourage people to reduce water use through volume charging in water-stressed areas	Long-term – need to install meters before proceeding to volume charging	Costs of installing meters would fall to companies and could result in higher charges for water overall, but this would not hit the poorest groups disproportionately (see next column)	Water charging currently has a higher proportional impact on the poor (OECD 2003). Linking water tariffs to Council Tax bands would be socially progressive according to detailed PSI research (Dresner and Ekins 2004b)
Variable waste charging	Encourage waste reduction through charging for unsorted waste	Would require legislation – medium-term 2007/8	Would depend on charging structures. Could require Local Authorities to make it revenue-neutral overall	Costs for larger households could rise. Could link to Council Tax bands, or increase benefits and tax credits to compensate (Dresner and Ekins 2004c)

The case for action

There is a clear need for government action to engage households in achieving environmental goals, including reduction in energy and water use, and waste generation. First, there is a rationale for government involvement: whilst people want to protect the environment, they feel powerless as individuals, and want government to build a framework for collective action. Second, experience so far, particularly on energy consumption, shows that trying to bring about greater efficiency, without reaching out and engaging households in the reasons for this, has only limited and temporary success. Third, and most important, the environmental imperative is clear: private households are responsible for a significant and growing proportion of environmental damage, and so the benefits could be substantial. The report first sets out the political and environmental case. It then proposes a 'green living initiative', which brings together information, advice and incentives to encourage action by households.

The political opportunity

Although awareness and concern about environmental issues is growing, few people are taking action to improve the environmental performance of their homes. A recent survey by ICM showed that nearly 80% were concerned about the issues, and take limited action, such as recycling newspapers. But "very few are systematically undertaking an integrated range of sustainable behaviours" (Brook Lyndhurst 2004), and the National Consumer Council reports that only 19% ever seek out information on how they can make a difference (NCC 2005).

The reasons for this gap between concern and action are complex. A review of evidence on sustainable consumption points to the role of social norms and expectations in governing choice; the importance of habit and routine; and the way in which "consumers are locked into specific behaviour patterns through institutional factors outside their control" (Jackson 2005).

Any attempts by government to improve the environmental performance of households needs to harness the enthusiasm for the issues whilst tackling the complex reasons for inaction. The government's new Sustainable Development Strategy acknowledges this. It says that there needs to be a "fundamental shift" in behaviour in order to achieve the Strategy's goals. It also makes clear that this shift will not come about through single policy levers, but through a combination of approaches, designed to work together (HM Government 2005).

This report puts forward a package of measures based around tax incentives, linked with information and advice, which, if implemented, could bring about a step-change in the environmental performance of our households.

Beyond efficiency

The report recommends measures to tackle three important areas: energy use, water use and waste generation. These measures would catalyse changes in behaviour, rather than simply improving efficiency. Previous approaches, particularly to energy conservation, have focused on improving the energy efficiency of houses, rather than the energy demand of individuals. Although this enables people to get more value out of the energy they use, it does little to incentivise greener action. In fact, efficiency without engagement may well lead to perverse outcomes. Work by Tadj Oreszczyn points to "our almost innate ability to think of new uses of energy often facilitated by improvements in energy efficiency" (Oreszczyn 2004). Double-glazed conservatories, for example, make it possible for them to be heated and used throughout the winter; previously, single-glazed conservatories would have been passively heated, through sunlight, and used only in warmer seasons. These examples show that efficiency gains will quickly be swallowed up if not accompanied by clear understanding and engagement about the environmental reasons for energy efficiency.

Given this analysis, it is surprising that most climate change policy measures to date – the Renewables Obligation, Emissions Trading and the Climate Change Levy – have not aimed to engage with and impact on consumers directly. Even under the Energy Efficiency Commitment, mandating electricity suppliers to improve the energy efficiency of their customers' homes, there is no requirement to communicate or explain why the measures are needed. Whilst all these measures have an effect, individual householders are not brought into a debate about why the measures are necessary, and what objectives are in mind. Energy is something done to people, not by people.

There are signs, however, of a change in emphasis, partly in acknowledgement of the need to engage individuals more in climate change. The Energy Saving Trust, which previously used to attempt to attract people through demonstrating the money-saving potential of energy efficiency measures, is now using an explicit ethical pitch, explaining the issue of climate change and exhorting individuals to "Save Your 20%" (Energy Saving Trust 2005). The government also recently launched a Climate Change Communications Strategy, designed to engage and shift attitudes on climate change (Defra 2005).

Meanwhile, very little indeed has been done to try to encourage householders to save water. Water companies provide some information on conservation measures, particularly at times of water scarcity, but there is hardly any policy or legislation setting standards for, or encouraging, water conservation by individuals. Similarly with waste, although local government has put considerable effort into encouraging people to recycle more, there are no policy mechanisms or fiscal incentives that incentivise householders directly.

Whether for energy, waste or water, it is clear that fiscal measures work best when they are linked explicitly to attempts to inform and engage. In fact, fiscal measures themselves do not simply work through the price mechanism. Experience from other sectors shows that fiscal incentives can have a significant effect over and above the price signal that they send. The Climate Change Levy, a tax on the industrial use of energy, resulted in reductions in energy use even before the tax began, because companies had anticipated the need to take action. This is what economists call an 'announcement effect'. There was also an 'awareness effect' caused both by the Levy and the associated Climate Change Agreements (Agnolucci 2004). The policies put the spotlight on energy use, so companies saw the opportunity for cost-effective improvements, over and above that required by the measures (Ekins 2006). A similar 'announcement' or 'awareness' effect would be expected in the domestic sector, though there has been no research to predict the scale of such effects.

If we are to move beyond efficiency, therefore, there is a need to use fiscal incentives as part of a package of measures to engage householders. This could be achieved through linking to the various information initiatives under way or proposed. Over the next two years, two major initiatives will be launched, both of which will provide householders with better information and advice about their impacts. Next year, an independent, government-sponsored environmental advice service, Environment Direct, will be launched. This will offer consumers clear, credible environmental information across a range of issues, and will be accompanied by a communications initiative. Then in 2007, 'Home Condition Reports' will be introduced. These are an objective report on the condition of a property, which will be required when a property changes hands. Energy efficiency is assessed as part of the report. Further measures include the provision of information on energy bills, about how the electricity has been generated, and the Climate Change Communications Strategy, which aims to build awareness of climate change in order to facilitate action.

If these communications initiatives are connected to fiscal incentives, this could both enthuse and incentivise householders to think through their impacts, and take action.

The environmental imperative

Such a package of measures is needed because households – and the individuals that live in them – have a considerable environmental impact. UK domestic buildings are responsible for a quarter of all emissions of greenhouse gases, more than half of the country's water consumption, and nearly ten percent of waste, not including waste from construction and demolition (SDC 2005).

The UK's Sustainable Development Strategy commits to "living within environmental limits", which it defines as "respecting the limits of the planet's environment, resources and biodiversity – to improve our environment and ensure that the natural resources needed for life are unimpaired and remain so for future generations". But use of energy, water and waste in the household is already far beyond these limits, and on an upward trajectory. Gains brought about by greater efficiency are quickly swallowed by increased overall consumption (Defra 2003a).

The government's commitment to increase house building will put even greater stresses on the environment. Over a million new homes are planned for the South-East, an area with less annual rainfall than Istanbul. The government recognises these difficulties, and has a manifesto commitment to reduce water use, improve resource efficiency, and promote more sustainable buildings as part of its Sustainable Communities Plan. But it is not yet clear how this will be achieved. Current policies and regulation will not be sufficient to ensure high standards in the growth areas. More will need to be done, if these ambitions are to be realised.

Proposal: A Green Living Initiative

To enable and encourage households to adopt more sustainable lifestyles, this report proposes a single 'green living initiative', which combines information and advice with fiscal incentives. The Initiative aims to interest, motivate and empower individuals – it is focussed on engagement, not solely on efficiency.

It is modelled on the government's own Sustainable Development Strategy, which says that "regulation alone will not be able to deliver the changes we want to see" (HM Government 2005 p26) and that different instruments need to be combined to bring about behaviour change. Any approach should aim to:

- Enable, for example, by providing information and advice;
- Engage, for example, through campaigns and community action;
- Exemplify, through government's own action and by achieving consistency in policies;
- Encourage, for example, through the tax system.

The Green Living Initiative combines all these elements together, making it more likely to catalyse a shift in behaviour.

Although the Green Living Initiative should be branded and presented as a package, there should be separate policy approaches to energy, water and waste, given the different history and circumstances of each. Much more has been done on energy than on waste and water, so the starting point is different. Water resources differ across regions, whereas there is a clear need to reduce energy use and waste arisings across the economy.

The measures proposed as part of this Initiative are selected from a range of different fiscal instruments. The criteria for choosing the specific measures proposed were as follows:

- Capacity to engage individuals
- Effectiveness in dealing with the environmental problem
- Neutral or beneficial in terms of distributional effects.

The measures were picked following a wider survey of a range of potential measures, which formed the background work to this report. This work can be found on Green Alliance's website www.green-alliance.org.uk/ourwork/FiscalIncentivesHomes/.

As a whole, the Green Living Initiative should be designed to be revenue-neutral. Some elements will be revenue-raising, others will impose a cost on the Exchequer, but overall, they should balance each other out.

The Green Living Initiative comprises the following elements:

The Green Living Initiative

An overall 'Green Living' brand owned by the government, to be developed following consumer research, and launched with Environment Direct.

Information and advice - provided primarily through the proposed Environment Direct information service. Environment Direct will act as a hub and signpost for other sources of information, including the Home Information Pack, Energy Efficiency Advice Centres and the Climate Change Communications Strategy.

National-level action on products - inefficiency charges on appliances and devices that use comparatively large amounts of energy or water, taxes on plastic bags and non-recycled paper.

National-level action on new homes - establishing a 5% VAT rate for all new houses and for major refurbishments that meet standards set by the Code for Sustainable Homes (level 3). A reduction in planning gain supplement for new homes with that meet the Code for Sustainable Homes (level 3).

Local-level action on energy, water and waste:

- A one-off Council Tax reduction for households that install insulation measures. This measure should be backed up with a training incentive for installers.
- Universal water metering in areas with unsustainable water demand, with tariffs linked to Council Tax bands, backed up with a Water Saving Commitment for suppliers and a Water Saving Trust at national level.
- Variable waste charging, allowing local authorities to experiment with different charging systems.

N.B. The table on page 3 sets out in summary form the proposed timetable, the cost and revenue implications, and social equity considerations for each of the main elements of the Initiative.

The following sections look at each element of the package in detail. For each element, firstly, the proposal is presented, with an idea of the possible timescale. Then the rationale for its inclusion is explained, including the costs or revenue implications of the measure, and the social equity considerations.

Branding, information and advice

The Green Living Initiative includes:

An overall 'Green Living' brand owned by the government, to be developed following consumer research, and launched with Environment Direct.

Information and advice, provided primarily through the proposed Environment Direct information service. Environment Direct will act as a hub and signpost for other sources of information, including the Home Information Pack, Energy Efficiency Advice Centres and the Climate Change Communications Strategy.

A new environmental information service, Environment Direct, will be launched as a pilot in 2006. Environment Direct will be an independent organisation, presenting information to help people make better environmental choices (ERM 2005). The information service will be accompanied by a communications campaign, and will be clearly branded. The Green Living Initiative will link directly to Environment Direct, in order to create links between information provision and policy measures. This brand could be introduced quickly, alongside or as part of Environment Direct, with other elements of the Green Living Initiative being phased in over time. It is important to start with the information, advice and branding elements, in order to build a case for policy interventions.

Rationale

As the Demos/Green Alliance report *Carrots, Sticks and Sermons* (2003) emphasised, people do not simply change their behaviour in response to information and awareness-raising, important though that is. There is a need for information to be linked to policy measures which draw attention to the issue and which reinforce the information message. In Australia, a campaign to encourage recycling of plastic bags achieved a 1% recycling rate, but in Ireland, an information campaign backed up with a €0.15 tax on plastic bags reduced their use by over 90%.

Links between information and policy are two-way. A fiscal incentive can focus attention and motivate people to seek information. Information can also help people understand the reason for a policy measure, and build support for it.

Linking information with fiscal incentives is essential in tackling the 'free-rider problem'. No one individual's action can safeguard the environment, it requires collective action or many coordinated individual actions, implemented or enabled by government. It is easier to get people to change their behaviour in response to health messages, for example, because the benefits are felt personally, but even there it can be a long and slow process, as years of experience have shown. ERM's recent scoping report for Environment Direct (2005) emphasises that the service will need to be backed up with other policy measures like fiscal incentives if it is to be effective. Publicity campaigns are more effective when backed up with measures that the consumer notices at the point of sale.

There would, of course, be costs involved in brand development, advertisement and information provision. However, costs could be lessened if these were linked closely to Environment Direct. Additional costs could be met through the funds raised from product charges (see below).

Products

The Green Living Initiative includes:

National-level action on products - inefficiency charges on appliances and devices that use comparatively large amounts of energy or water and taxes on plastic bags and non-recycled paper.

Product-based measures are an important part of the Green Living Initiative. Labelling, to inform consumers about environmental impacts, should be accompanied by charges on inefficient appliances and devices, to reflect the environmental costs of the products. An inefficiency charge should apply to products that are particularly wasteful in their use of energy or water, or in the production of waste. The charge would apply to individual products that failed to meet efficiency criteria compared to the other products in the same class. For example, the least water-efficient showers would attract the charge. Products to be charged would be decided through strict pre-defined criteria, and should include considerations of social equity.

The government may shortly establish a 'Products Agency' to research and advise on product policy and product standards. If this Agency is established, it should play a key role in drawing up criteria and assessing products against them, then making recommendations to government on charges which could be announced through the Budget process. Before the establishment of the Products Agency, the Energy Saving Trust could advise on energy standards, and the Environment Agency on water standards and the Waste and Resources Action Programme on waste standards. The work by the Market Transformation Programme on water products labelling would also provide a benchmark. Precise products to be charged will depend on the criteria and recommendations put forward, but examples of the sort of products that *could* have an inefficiency charge are:

- B and C-rated appliances
- Incandescent light bulbs
- Power showers
- Garden sprinklers
- Plastic bags
- Disposable batteries, cameras, razors, etc
- Non-recycled paper

The purpose of these charges is to remind consumers that these products have negative environmental impacts and deter their purchase. In order to do that, a message explaining the rationale for the charge should be shown prominently when the products are displayed before the point of sale. Where appropriate, they will also warn consumers that these products will cost much more to run than more efficient alternatives, stating the true whole-life costs of the product compared to an efficient alternative. The charges will work not only as a financial disincentive, but as importantly as a reminder to consumers of environmental messages.

Successes in energy labelling show that defining and policing standards for products is possible. However, product charges would need to be introduced carefully, following a thorough process to establish criteria for charging. The process should start immediately, but the first charges might not come into effect until 2007-8. The money raised from inefficiency charges would be used to fund other parts of the Green Living Initiative, including Environment Direct and other information and advice, and also the cost of the Council Tax rebates for energy efficiency measures described below.

Rationale

Energy consumption labelling on fridges and washing machines has been crucial in shifting the market for these appliances, and shows that this approach can be effective in changing purchasing behaviour. The same principle could be applied to other energy-using products, or high water-using or waste-generating products. Energy labelling has been a European Union initiative, but there is nothing to stop the UK government introducing such criteria for other products.

The main alternative to inefficiency charges would be reduced taxes for the most efficient goods – implemented through reduced VAT. However, inefficiency charges are preferable because they are more consistent with the 'polluter pays' principle (since they increase the cost of inefficiency); they allow for a much larger differential than the 10.6% discount in purchase price that a reduction from 17.5% to 5% VAT entails, and they send a much clearer signal to consumers.

Research into product charges on inefficient white goods shows that they can be designed so as to minimise impacts on poorer groups. When HM Treasury and Defra consulted on fiscal incentives for household energy efficiency in 2003 (HM Treasury 2003), many organisations, including the Association for the Conservation of Energy and the Energy Saving Trust, put forward proposals for product charges to be levied on inefficient appliances. The government expressed concern after the initial round of consultation that product charges would have a disproportionate impact on poorer households, and asked the Fuel Poverty Advisory Group (FPAG) for advice. FPAG replied that the relationship between price of white goods and their energy efficiency is surprisingly weak (FPAG 2003). The charge would not necessarily increase costs to poorer households over the life of the product, and so FPAG supported inefficiency charges on incandescent lights and B and C-rated appliances. The government did not mention the FPAG submission in their summary of the second round of consultation and continued to reject inefficiency charges. Similarly, with water-using products, the most efficient products are not necessarily the most expensive (Grant 2003).

Another concern would be that inefficiency charges may increase the demand for second-hand appliances, which tend to be less efficient. FPAG pointed out that while many of the sellers are socially-owned enterprises, the products they resell are energy inefficient and very expensive to run for the low income households that buy them. They pointed out that the Social Fund forces benefit claimants to buy inefficient second-hand appliances, working entirely contrary to government policies on fuel poverty and carbon emissions – there is clearly a strong case for changing Social Fund rules.

In order to ensure that social equity continued to be a consideration, it should be included as a criterion in choosing which products should be charged.

Although less research has been done on water and waste, the same principle could be applied. Belgium and Denmark have taxes on disposable cameras. Belgium, Denmark, Italy, Sweden and Switzerland have taxes on disposable batteries. Belgium, Denmark, Finland and Norway have taxes on beverage containers. Denmark, Finland, Norway, Sweden, Italy and, as mentioned earlier, Ireland, have taxes on plastic bags (Strategy Unit 2002). The Irish tax specifically aims to draw attention to environmental issues, and acts as a communications 'hook' for a wider range of issues (Demos/Green Alliance 2003).

New homes

The Green Living Initiative includes:

National-level action on new homes - establishing a 5% VAT rate for all new houses and for major refurbishments that meet standards set by the Code for Sustainable Homes (level 3). A reduction in planning gain supplement for new homes with that meet the Code for Sustainable Homes (level 3).

Currently, there is no VAT on new homes, but 17.5% VAT on refurbishment, which discourages the renovation of existing properties rather than demolishing them. Refurbishment has the potential to be environmentally and socially preferable to demolition and rebuilding. We propose that the VAT rate for refurbishment should depend on whether it meets good environmental standards, as defined by the Code for Sustainable Homes. The Code for Sustainable Homes will have several standards, expressed as a star rating from one-star to five-star (ODPM 2005). It is planned that new publicly-funded developments will have to be at least three-star, although what that standard will involve is to be decided. We recommend that the three-star rating should at a minimum require EST's Energy Efficiency Best Practice standard.

Under European law, the UK is allowed a number of existing VAT exemptions, but it cannot create new exemptions. It is possible with EU agreement to reduce the VAT rate on items that have been charged at a higher rate to the minimum VAT rate, 5%.

We recommend that to reduce the perverse incentive encouraging new build over high-quality refurbishment, the rate of VAT for new homes be increased from zero to 5% and VAT on major refurbishments creating homes that meet at least the three-star standard under the Code for Sustainable Homes be reduced to 5%. Refurbishments that do not involve the insulation of the fabric of the building to these high standards would continue to attract 17.5% VAT. We understand that it would mean giving up one of the UK's existing VAT exemptions, but we believe that the exemption creates perverse incentives that are not in the national interest. VAT at 5% on new homes will not significantly increase the price of new homes because they are competing with a much larger supply of second-hand homes. It will instead reduce land values, marginally decreasing the number of sites on which it is economic for developers to build new homes.

The Barker report (2004) proposed a new land development tax, planning gain supplement (PGS), to capture part of the windfall increase in land value when planning permission is granted. PGS would replace the current Section 106 agreements. In the 2005 Pre-Budget report, the Chancellor announced a consultation on PGS. We propose that there should be a discount in PGS if the development is to meet at least three stars under the Code for Sustainable Homes. A lower tax rate for better environmental standards would offer a clear incentive to build more sustainable houses.

Rationale

The Sustainable Buildings Task Group (2004) put forward a recommendation for a Code for Sustainable Buildings, based on BRE's EcoHomes system; following this recommendation, government is now consulting on a proposed Code. The costs of building to the EcoHomes 'Excellent' standard vary by site and dwelling type, but a 'typical' capital cost has been estimated in a study by the Housing Corporation (2002) as between £1,700 and £3,000 per home. This cost is not huge, being equivalent to 2% extra on the average house price. Roughly half of this cost is related to sourcing environmentally sustainable timber supplies.

The Environment Agency have estimated the additional one-off capital costs of reducing resource (water, energy, waste) consumption by new homes by 25% at £800 per home. If these costs of building to higher environmental standards were passed on to house-buyers, at current interest rates roughly £4 per month (£48 per year) would be added onto a typical mortgage. These measures can reduce energy bills and metered water bills by a total of £138 per year, giving them a payback period of 6 years (James and Desai 2003).

Many Housing Associations build to higher standards than required by building regulations. However, in the absence of a clear financial incentive or demand for such properties, few private house-builders will accept the additional costs involved in exceeding Building Regulations. This is particularly the case as any efficiency savings to be gained from better buildings will accrue to the eventual occupier, not the developer. In addition, house-builders argue that they lack the skills and experience to exceed Building Regulation standards, and this acts as a brake on progress on the Regulations themselves. Using tax incentives to make it worthwhile for house-builders to build to the higher Code for Sustainable Homes standards will therefore provide an opportunity for a testing and learning process, opening up the possibility to ratchet up Building Regulations.

This measure would increase the price of new homes relative to good-quality refurbishment. Given that low income households rarely buy new homes, the overall effect would be socially progressive.

Although VAT would raise the cost of new homes, it would only apply to the construction costs and not the land value, as VAT is a tax on added value. The land value is a significant proportion of the cost of a new home. Land values and hence house prices are much higher in South-East England than in other parts of the UK, but construction costs are only slightly higher. The construction cost of an average new home is about £85,000 (James and Desai 2003). Based on the building cost of new homes, it is estimated that VAT at 5% on all new homes would raise around £650 million per year. As new homes outnumber significant refurbishments (for which VAT would be reduced), this measure would therefore be a net revenue-raiser. However, the actual amount of revenue raised would depend upon what proportion of homes were built to Code standards.

This revenue could be used to fund other measures, such as the Council Tax or Stamp Duty rebates for existing homes (see below).

The Barker report (2004) suggested the introduction of 'planning gain supplement' as a way to tax the windfall development gains accruing to landowners when they sell land for housing. Kate Barker argued that the granting of planning permission was a suitable point at which to levy a charge that aims to capture part of the windfall. Given the structure of the land and housing market, she argued, such a move would allow the cost of the contribution to fall largely on the landowners in the form of lower land prices for them and avoid increasing the total cost of land development because of competition from second-hand properties. The tax would actually be imposed on developers and would be a proportion of the increase in the value of land for housing over the value of agricultural or other land.

Information would be gathered on the value of land proposed for development in each local authority. Government would set a tax rate on these values, sufficient to at least cover Section 106 payments and to release additional resources to encourage local authorities to increase the supply of land for development. The granting of planning permission would be conditional on the payment of the planning gain supplement determined. Barker suggested that there should be a substantially lower rate of planning gain supplement for building on brownfield land and the possibility of varying the rate in other circumstances, for example, for areas with particular housing growth strategies or where other social or environmental costs may arise.

These fiscal incentives rely on a Code for Sustainable Homes which is ambitious and meaningful, and which ratchets up standards over time, as the Sustainable Buildings Task Group recommended. The benefits of building to Code standard will obviously depend on the final outcome of the current consultation on the Code.

Energy use

The Green Living Initiative includes:

A one-off Council Tax reduction for households who install insulation measures. This measure should be backed up with a training incentive for installers.

In order to incentivise households to make their homes more energy efficient, the Green Living Initiative should include a Council Tax rebate in return for the installation of energy efficiency measures – either cavity wall insulation or loft insulation. This proposal is modelled on the scheme successfully operated by Braintree District Council and British Gas.

An alternative to Council Tax rebates would be rebates on Stamp Duty, for house owners who install energy efficiency measures at the time of purchase. However, this would only apply to houses changing ownership, the point at which Stamp Duty is levied.

There is also a need for a tax incentive to encourage existing installers of energy efficiency products to train new installers, in order to develop the industry's capacity.

Rationale

Offering a reduction in Council Tax is an effective way of engaging and motivating households to think about energy use in the home. Market research conducted by the Energy Saving Trust found considerable enthusiasm for the idea of undertaking energy efficiency measures to reduce Council Tax bills, or other taxes such as Stamp Duty (see below). Avoidance of a tax is a clear motivator (EST 2005).

The scheme proposed is modelled on one that has been successfully implemented in the last year by Braintree District Council in conjunction with British Gas. The scheme is aimed at encouraging residents to install cavity wall insulation. Householders taking advantage of a £175 package (a home energy audit, cavity wall insulation and energy efficient light bulbs subsidised by British Gas) receive a £100 one-off reduction in their Council Tax bill.

In the Braintree case, the reduction is funded by British Gas as part of their activities under the Energy Efficiency Commitment, and promoted jointly by Braintree Council and British Gas. The scheme is targeted at the 'able to pay' owner-occupier sector. Eligible residents are contacted by the Council around the time that Council Tax bills are sent out. Respondents are passed to British Gas-appointed insulation contractors, who arrange surveys, provide quotes, and sign households up to the scheme. The list of completed installations is then passed to the Council's Finance Department, who amend the Council Tax demands. The number of installations is limited by available funds, so only the first 500 installations could be financed. In the first six months of the scheme (October 2004-April 2005) there were 600 inquiries and about 250 installations were made.

The scheme proposed here is different from the Braintree example in two regards. Firstly, there should be an incentive for householders to install (or top up existing) loft insulation. Loft insulation is not as cost-effective as cavity wall insulation, but it is still one of the most important ways of reducing carbon emissions in the home.

Second, in order to roll out the Braintree scheme across the UK, it will be necessary to provide central government funding for the initiative. Braintree has been able to fund its contribution out of surpluses generated from other activity it has undertaken for energy suppliers under the Energy Efficiency Commitment. However, this is not a reliable source of funding for other Local Authorities, nor would it provide adequate resources. The funding could be provided from the charges on inefficient products, or the VAT charged on new homes, proposed earlier in the report. EST has estimated, based on the Braintree experience, that about 8% of eligible

households would take up such a scheme each year. Nationally, it would cost about £110 million per annum, saving around 290,000 tonnes of carbon (9.8 million tonnes of carbon over the lifetime of the measures).

In the longer term, Council Tax rebanding and revaluation would offer an opportunity to introduce such a measure in all areas in a revenue-neutral fashion, but that has now been postponed to 2010 at the earliest.

The distributional effects of this measure would be progressive within the owner-occupier sector, because a flat rate Council Tax discount is proportionally greater for homes in lower tax bands. Research by PSI for the Joseph Rowntree Foundation (Dresner and Ekins 2004a) on reducing the impact of green taxes and charges on low income households found that there is enormous variation in household energy use between households with similar incomes, including those with low incomes. The variation in carbon emissions is not as great, but is still very substantial. Low-income households also pay substantially more per unit of energy than richer households.

There is also a case for reductions in Stamp Duty, for houses whose owners install energy efficiency measures at the time of purchase. The EST proposes such a measure, which could work alongside, or instead of, Council Tax rebates.

In addition to this incentive for householders, there is also a need to incentivise installers to increase capacity and respond to increased demand. EST has proposed a tax incentive to encourage existing installers of energy efficiency measures to help with training of new installers. Improving home energy efficiency substantially will require increasing capacity in the insulation and heating installation industries. Both already suffer from skill and labour shortages. There are a very substantial number of sole traders who are often not prepared to take on apprentices as it reduces their own productivity during the training period. The ability to offset training time and costs against their tax bill would be a useful incentive to overcome this problem.

Water use

The Green Living Initiative includes:

Universal water metering in areas with unsustainable water consumption, with tariffs linked to Council Tax bands, backed up with a Water Saving Trust and Water Efficiency Commitment at national level.

In most homes, water use is not measured, and this makes water use very hard to monitor or influence. Water metering is a prerequisite to charging people for what they actually use. This report therefore proposes universal water metering by companies in areas that the Environment Agency has identified as having unsustainable water use (most of southern and eastern England). Once metering is in place, householders can be charged for the amount they use, with tariffs linked to Council Tax bands to ensure that low-income households are not penalised. A national Water Saving Commitment, similar to the Energy Efficiency Commitment, would allow water companies to play their part in engaging householders in water use issues; additionally, creating a Water Saving Trust would provide a source of advice and information on the issue.

Rationale

England is generally thought of as a wet country, but in fact rainfall in much of the country is moderate, while the population density is high, especially in the south of England. As a consequence, England has less water resources per capita than Spain or Portugal. In the Thames Water region, water resources per capita are less than in Ethiopia or Sudan (World Resources Institute 1999).

In parts of the country, particularly the South and the East, population increases are expected to place additional demands on water resources. Unfortunately, these are the two regions that already have the greatest difficulties in meeting demand. Many regions already have excessive river abstraction and the southern and eastern regions also have unsustainable groundwater abstraction. The South and the East are beyond their sustainable use of water resources. Other regions are at or near the limits. Only in the North East is there additional water available. In regions other than the North East there is little capacity to increase the water supply without the construction of costly and environmentally damaging new reservoirs (Environment Agency 2001). That means that the capacity to meet increased demand is very limited. In addition, it is expected that, over the next decade, climate change will result in hotter and drier weather, reducing the supply of rainwater and increasing the demand for water. The effect of climate change on water resources is likely to be particularly pronounced in southern and eastern England.

Given this situation, it is curious that the water usage of most households in the UK is not measured. Among OECD countries, only the UK and Ireland do not measure the water use of most households (OECD 1999). Consequently, UK water companies generally have very poor data on how much water is being used by households in different areas, and what factors influence that use. Their ability to manage the household use of water, and indeed households' ability to manage such use themselves, is low. The contrast between water and other utilities (gas, electricity, telephone), the use of all of which is measured and charged for on a unit basis, is marked.

Both Green Alliance (2005) and the Institute for Public Policy Research (2005) have advocated increased water metering. The government supports voluntary water metering, but has not been prepared to make it compulsory. Current legislation allows water companies to introduce compulsory metering if they have 'water scarcity status', but companies must apply to the

Secretary of State for this status. Folkestone and Dover Water have recently applied, and a decision is expected soon.

We recommend that all water companies that predominantly cover areas the Environment Agency has classified as being beyond sustainable use of water resources should be granted 'water scarcity status'. That would apply not only to Folkestone and Dover Water, but to nearly every water company across southern and eastern England.

The need to measure water use in order to manage it is a strong argument in favour of universal water metering, especially in those regions which have been or may be affected by water shortages. Metering has been found to reduce water consumption by about 10% on average. When Ofwat surveyed consumers they identified water metering as the fairest way to pay for water (National Consumer Council 2000).

The government is planning to restrain water consumption by improving efficiency. We support this, but believe that measures to restrain the continuing growth in demand for water are also needed. Water demand is now far beyond the levels required for health and hygiene. It clearly is necessary to encourage the installation of more efficient water-using equipment, but in the absence of any incentive for households to actually install efficient toilets, showers and taps in their bathrooms, the impact of such programmes is bound to be low. It is unrealistic to believe that water demand can be restrained in the absence of policies to actually manage demand or even to measure water use.

Water tariffs could be designed to ensure that poorer households are not penalised. Concerns have been expressed that water metering would be more expensive for poorer households than the existing system, where households pay a fixed amount based on a standing charge and the rateable value of the home. However, the current system for water charging in England and Wales has a higher proportional impact on the poor than in any other of nine OECD countries surveyed except possibly Mexico (OECD 2003, p.61). Although the average proportion of disposable income spent on the water supply in England and Wales is 1.2%, which is about average for OECD countries, the proportion of income spent by the lowest decile is 3.75%, the second highest among the nine countries compared. In no other country except Mexico was it above 2.53%. The reason why water charging in England and Wales is so regressive is probably because for customers of most water companies a large proportion of the bill consists of a standing charge that is the same across all households in the water company's area. Only a proportion of the bill is based on rateable value, and this proportion is less for less valuable houses.

Research by PSI (Dresner and Ekins 2004b) used data from Anglian Water's consumption monitor and examined the distributional effects of a range of different hypothetical universal water metering tariffs. It was found that all the tariffs, including the current Anglian Water metered tariff, benefited low income households on average compared to the unmetered tariff, but some low income households lost out. The options that had fewest low income losers involved varying the volumetric rate (the price per litre of water) according to the Council Tax band. It would make the marginal cost of a litre of water largely proportional to income. Larger low income households were helped most by tariffs that had a lifeline allowance of 'free' water for each person living there, covering essential needs, and ensuring that there would be no incentive to use less water than necessary – that is how water is already metered in Flanders. A tariff that combined both options was good in both ways. It was possible to design a highly progressive tariff under which 86% of low-income households gained and only 14% lost, just 8% losing more than £1 per week. Because of the safeguards in the design of the tariff, and with special measures for people with relevant medical conditions, there would be no reason for any household to have to experience hardship as a result of universal water metering. The vast majority of low income households would gain substantially from these tariff designs. These proposed tariffs are more sophisticated than traditional water metering tariffs, but they do not require the introduction of 'smart meters'. The introduction of these socially-conscious water metering tariffs can deal with concerns about negative impacts on poorer households.

Changes to water tariffs would need to be accompanied by advice and encouragement to householders to take up water saving appliances and habits. IPPR's Commission for Sustainable Development in the South East advocated a Water Efficiency Commitment, placing a requirement on water companies to work with customers to reduce demand (IPPR 2005). Green Alliance (2005) has called for the creating of a Water Saving Trust, to deliver water efficiency programmes and champion the issue – mirroring the work of the Energy Saving Trust. This role could be carried out by a reformulated Energy Saving Trust. We support both these measures, together with the product charges proposed for inefficient products, described above. These measures, combined with universal water metering, would be effective in incentivising households to prevent the wasteful use of water.

Waste

The Green Living Initiative includes:

Variable waste charging, allowing local authorities to experiment with different charging systems.

This report proposes that local authorities should have the power – but not a requirement – to charge householders for their waste, depending on the amount of rubbish they produce. These powers should only be used once good quality doorstep collection facilities are in place. At present, local authorities are not allowed to charge according to the amount of waste, and so householders have no direct incentive to reduce or recycle. Allowing variable waste charging would encourage experimentation to see how best to incentivise households.

It is also worthwhile to tackle the most egregious forms of waste production – such as disposable batteries, cameras, razors, pens and plastic bags – through product charges, as described above.

Rationale

The main fiscal incentive for reducing household waste is the landfill tax. However, this has only an indirect effect on the householder, as it is levied at the point of final disposal. The Strategy Unit's (2002) report on waste called for the landfill tax to be increased to £35 a tonne in the medium term, and the Treasury subsequently announced that it would be increased by at least £3 a tonne each year from 2005/6 to reach £35 per tonne.

The Landfill Allowance Trading Scheme (LATS) started in April 2005. Local authorities across England have been set limits on the amount of biodegradable municipal waste they can dispose of in landfill sites. These 'landfill allowances' are tradable. Authorities can buy more allowances if they expect to landfill more than is permitted by the number of allowances they hold. Authorities with low landfill rates can sell their surplus allowances. This creates a further incentive to reduce waste to landfill. Disposal authorities that exceed the limit set by the allowances they hold will be fined £150 for every tonne they are over the limit, and the limits will get progressively tighter.

The cost of the landfill, the tax on it, and LATS are borne by the local authority and passed on indirectly to households through Council Tax. However, this is not in relation to amount of waste produced, which creates little incentive for householders to take action. The indirect nature of charging is further diluted as local authorities' annual grant settlement from central government contributes to the cost of waste management (and other services).

The Strategy Unit (2002) report on waste called for early legislative changes to allow local authorities to implement incentive and charging schemes for municipal waste collection, not least to provide an incentive for householders either to reduce their waste or to co-operate with recycling schemes. At present, local authorities cannot vary their charge in accordance with the amount of waste produced. Charging according to the amount of waste produced is common in other developed countries. The subsequent Local Government Act allowed local authorities to give Council Tax discounts, but did not allow for direct or variable charging. The government expressed concern about the danger of fly-tipping, ensuring that low-income families are not penalised and the cost or complexity of administration (Defra 2003b). By refusing to legislate to allow local authorities to experiment, the government has made it impossible to test the effects.

In other countries it has been found that the most effective way of getting consumers to reduce the amount of waste they produce is through variable waste charging for unsorted waste. Under these schemes, people are charged according to the quantity of residual (non-recycled) waste they produce. Variable charging for waste not only encourages people to

recycle, but also makes them more conscious about avoiding waste in the first place. Variable charging schemes in North America have reduced the amount of residual waste disposed of by 15-45% without any problems of additional fly tipping (Enviros Aspinwall, 2000). Similar results have been found in Europe (Eunomia Research and Consulting, 2001). Additional fly tipping has not been a problem in European countries either. Aside from increases in recycling, the large reductions in municipal waste were found to be mainly due to households taking up garden composting. Material that was previously entering the municipal waste stream was remaining in gardens (Eunomia Research and Consulting, 2001).

Defra have made funds (£5-6 million) available to local authorities wishing to run pilot household incentive schemes. These pilots started in October 2005 and will be concluded by Spring 2006. These schemes will not be allowed to charge according to waste produced but can use other incentives. Benefits can be financial, for example, discounts or Council Tax rebates, prize draws for participating in recycling, cash back incentives for real nappy use, "cash for trash" schemes, and cash discounts (e.g. subsidised compost bins).

We believe that it is essential that local authorities be allowed to experiment with true variable waste charging. Eunomia (2003) has calculated that the higher collection costs of variable waste charging would only increase disposal costs slightly and the reduction in the quantity of waste to be disposed (based on experience in other countries) would lead to lower costs overall, though costs for larger households would in general rise. Research by PSI (Dresner and Ekins 2004c) has suggested two potential ways to deal with potential increases for larger low-income households, either having different charges based on the Council Tax band (although this would not work in parts of the North where most homes are in Band A) or, at a national level, slightly increasing benefits and tax credits to compensate lower income households. The former option is suitable for local experimentation immediately.

Conclusion

2006 provides a real opportunity to engage with households on environmental issues. Environment Direct, which will be launched as a pilot, will for the first time provide a single source of information and advice on environmental issues. New Home Information Packs will include detail on energy standards in homes, when they change hands. The Code for Sustainable Homes will also be launched, providing an integrated framework for environmental standards, including energy and water use, and waste disposal.

However, as the government itself acknowledges in its Sustainable Development Strategy, such communications initiatives will not work unless they are accompanied by enabling policy, and particularly by a fiscal framework that provides financial reward for good choices. Attempts at communication and engagement cannot succeed in isolation.

The same is true in reverse. Changing the tax system to benefit the environment will only be possible if a clear case is made for the change. An unexplained tax increase will be deeply unpopular, and an unexplained tax decrease will go unnoticed. There is a real need to link fiscal incentives into a wider narrative about the need for sustainable behaviour.

That is why this report proposes the Green Living Initiative, to provide an integrated approach to engaging householders to help achieve environmental goals.

The package of measures proposed in the Green Living Initiative is novel for three reasons. First, it combines fiscal incentives with information and awareness-raising, which, as research has shown, greatly increases the effectiveness of the package as a whole.

Second, it links together three major environmental issues – energy, water and waste – in one initiative. This allows people to see household sustainability in a holistic way, making it easier to take action across the three areas. People do not categorise the different issues into separate categories, they are motivated by a general wish to take action on the environment. This Initiative encourages and rewards them to do just that.

Last, it does not penalise the poorest households. Each element of the package is designed for fairness, so that its distributional effects are neutral or positive. Overall, the Initiative is revenue-neutral, so it will not raise the burden of taxation.

The alternative to an integrated package like the Green Living Initiative is to undertake slow, piecemeal measures – in each of the three areas, energy, waste and water, separately; and separating out information and branding from fiscal incentives. This piecemeal approach would benefit from none of the synergies gained from tackling the issues together, or the motivational boost provided by linking information provision to tax changes. The advantages to integration are huge: the opportunity to engage and enthuse households to think through, and take action on, their environmental impact.

References

Agnolucci P, Barker T and Ekins P, (2004) Hysteresis and Energy Demand: the Announcement Effects and the effects of the UK Climate Change Levy, Tyndall Working Paper 51, Tyndall Centre.

Barker, Kate (2004) The Barker Review of Housing Supply, HM Treasury.

Brook Lyndhurst (2004) Bad Habits and Hard Choices, Brook Lyndhurst.

Defra (2003a) Changing Patterns: UK Government Framework for Sustainable Consumption and Production (p21).

Defra (2003b) Government response to Strategy Unit report 'Waste not, Want not', Defra.

Defra (2005) Tomorrow's Climate, Today's Challenge: Working together to tackle climate change, press release 1 December 2005. See also www.climatechallenge.gov.uk

Demos/Green Alliance (2003) Carrots, Sticks and Sermons, Green Alliance.

Dresner, Simon and Paul Ekins (2004a) Economic Instruments for a Socially Neutral National Home Energy Efficiency Programme, Research Discussion Paper 18, PSI.

Dresner, Simon and Paul Ekins (2004b) Towards the Design of an Environmentally and Socially Conscious Water Metering Tariff, Research Discussion Paper 21, PSI.

Dresner, Simon and Paul Ekins (2004c) Charging for Domestic Waste: Combining Environmental and Equity Considerations, Research Discussion Paper 20, PSI.

Ekins, P and Etheridge, B 2006 (forthcoming) 'The Environmental and Economic Impacts of the UK Climate Change Agreements', *Energy Policy* (forthcoming).

Energy Saving Trust (2005) Save Your 20%: How will you save yours? Publicity booklet and campaign, www.saveyour20percent.co.uk

Environment Agency (2001) Water resources for the future: A strategy for England and Wales, Environment Agency.

Enviros Aspinwall (2000) Local Authority Waste Charging Schemes: Best Practice Evaluation Study, Scotland and Northern Ireland Forum for Environmental Research.

ERM (2005) Scoping of an Environment Direct service, ERM.

Eunomia Research and Consulting (2001) Financing and Incentive Schemes for Municipal Waste Management – Case Studies, European Commission.

Eunomia Research and Consulting (2003) Waste Collection: To Charge or not to Charge?, Chartered Institution of Wastes Management Environmental Body.

Fuel Poverty Advisory Group (2003) FPAG Response to Consultation Paper on Economic Instruments, FPAG.

Grant, Nick (2003) The economics of water efficient products in the household, Environment Agency.

Green Alliance (2005) Better Buildings: Designing for water efficiency, Green Alliance.

HM Government (2005) Securing the Future: Delivering UK sustainable development strategy.

HM Treasury (2003) Economic incentives to improve household energy efficiency: consultation document on specific measures – Summary of responses, HM Treasury.

Housing Corporation (2002) EcoHomes Costings. Report to the Housing Corporation undertaken by e2S environmental consultants.

Institute for Public Policy Research (2005) The Commission on Sustainable Development in the South East: Final Report, IPPR.

Jackson, T (2005) Motivating Sustainable Consumption: A review of evidence on consumer behaviour and behavioural change, Sustainable Development Research Network.

James, Nick and Pooran, Desai (2003) One Planet Living in the Thames Gateway, WWF.

NCC (2005) Desperately Seeking Sustainability? Summary of NCC research into information and advice on sustainable lifestyles, National Consumer Council.

OECD (1999) Household Water Pricing in OECD Countries, Organisation for Economic Co-operation and Development.

OECD (2003) Improving Water Management: Recent OECD Experience, Organisation for Economic Co-operation and Development.

ODPM (2005) Proposal for Introducing a Code for Sustainable Homes: A consultation paper, published 6 December 2005.

Oreszczyn, Tadj (2004) Our Innate Ability to Think of New Ways to Use Energy, Energy and Environment 2004 Volume 15 Pt 6.

SDC (2005) Sustainable Buildings: The challenge of existing stock, Sustainable Development Commission.

Sustainable Building Task Group (2004) Better Buildings - Better Lives, Sustainable Building Task Group.

