

Sustainability Committee

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Written paper from the Energy Saving Trust to the: National Assembly for Wales Sustainability Committee

Purpose

The Sustainability Committee is about to begin an inquiry into carbon reduction in Wales. In advance of this the Chair of the Committee, Mick Bates, has organised a 'scene setting session' the aim of which is to provide the Committee with "an overview of the current situation with carbon reduction in Wales and its link to climate change". The Energy Saving Trust has been invited to present its view at the meeting, and to submit this paper in advance of the meeting.

Submission from the Energy Saving Trust

Introduction to the Energy Saving Trust

The Energy Saving Trust was established as part of the Government's action plan in response to the 1992 Earth Summit in Rio de Janeiro, which addressed worldwide concerns on sustainable development issues. We are the UK's leading organisation working through partnerships towards the sustainable and efficient use of energy by households, communities and the road transport sector and one of the key delivery agents of the Government's climate change objectives. We have offices in each of the countries in the UK, and have had a dedicated office in Wales since 1999.

The Energy Saving Trust operates a number of programmes in Wales including Energy Saving Trust Advice Centres (ESTACs), support for domestic energy efficiency activities to all 22 local authorities in Wales and a pilot renewable energy advice (REAS) through the West Wales Eco Centre. The agreed development of our Welsh ESTACs into a Sustainable Energy Network for Wales will offer a significant expansion of service, providing energy efficiency, renewables and low carbon transport advice to not just consumers but also community groups and small businesses operating in domestic properties. The service will be launched in December 07, with full service in April 08 with targets requiring a three-fold increase in consumer contacts, reaching over 200,000 people a year.

Climate change targets - where does Wales fit in?

The UK has set challenging climate change targets which go beyond its commitments under Kyoto. These targets are: to reduce emissions CO₂ emissions by 20% (against a 1990 baseline) by 2010 and a 60% reduction by 2050 (with real progress by 2020). The Welsh Assembly Government has committed itself to 'contributing' to the Kyoto target and to the UK national targets. This paper therefore assumes that Wales will make an equitable contribution to the delivery of the UK's climate change targets. In addition the One Wales document notes that the Welsh Assembly Government will 'aim to achieve annual carbon reduction-equivalent emissions reductions of 3% per year by 2011 in areas of devolved competence' and that they 'will set out specific sectoral targets in relation to residential, public and transport areas'.

Climate change targets - where do housing and road transport fit in?

In Wales individuals are responsible for about half of Wales' carbon emissions, through household energy use and road transport. What people do in their homes and travel affects the climate.

Currently neither UK climate change policy, nor Welsh climate change policy provide any breakdown of the contribution that different sectors (eg housing, transport industry etc) will be expected to make to climate change targets. The remainder of this paper therefore assumes that each sector will deliver an equal share of the targets (ie each sector will deliver a 60% reduction in emissions).

So, what can be done to reduce the impact that household energy use and road transport in Wales have on climate change? And how much can that impact be reduced?

This section first of all considers the importance of consumer behaviour change in delivering carbon savings and goes on to consider delivering carbon savings in the household and road transport sectors.

The importance of behaviour change

A transformed market for household and road transport energy in Wales depends on moving people along the behavioural change chain. Only when the majority of consumers are actively ready to make a change in their behaviour and have set a timeframe for implementing this change will the market be transformed.

What do we mean by behaviour change?

In the context of sustainable energy, 'behaviour change' can be broken down into two broad categories, namely changes to purchasing or routine behaviour. In each case, there are two broad categories of behaviour change as set out below.

Changes to purchasing behaviour:

Purchase the low carbon option. Such purchases are generally prompted by the need for replacement, for example when an appliance breaks down. They are relatively rare purchases, and require only a modification in behaviour (i.e. a change in purchase decision in favour of the most energy efficient replacement).

Make a new sort of purchase. Such purchases are not prompted by the need for replacement, for example buying loft or cavity wall insulation (CWI). They require consumers to do something they were not necessarily going to do in the first place.

Changes to routine behaviour:

Minor change to a common routine. Some changes to existing routines are relatively simple and easy to implement, for example turning down the thermostat, and switching off the lights.

Behave in a completely new way. Other changes to existing routines require a complete change in behaviour, for example using public transport instead of driving.

Scale of behavioural change

Modification/minor change

Complete/major change

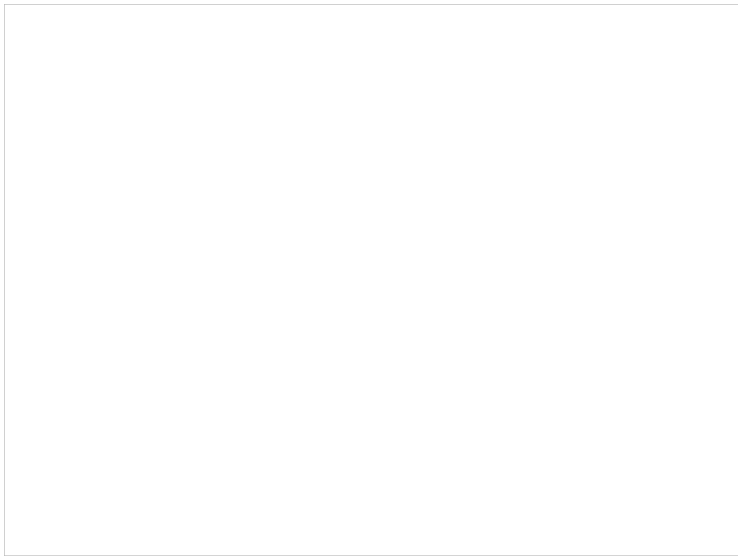
<p>Purchase the low carbon option</p> <p>Compact florescent lights A-rated appliances Efficient boiler Efficient cars (in same class)</p>	<p>Make a new sort of purchase</p> <p>Loft or cavity wall insulation Green electricity tariff Smaller, lower power or alternatively powered car Micro-generation Move house to reduce commute</p>
<p>Minor change to a common routine</p> <p>Turn down the thermostat Switch off the lights Don't overfill the kettle 'Eco drive', eg don't accelerate hard Switch off not standby</p>	<p>Behave in completely new way</p> <p>Use public transport Cycle or walk Take holidays close to home Video or tele-conference Buy at the local shop</p>

Consumers need to be 'educated' so they are ready to take action to change both their routine and purchasing behaviour. This requires a combination of leadership from local and national Government, raised awareness, increased information and advice from independent and trusted sources, fiscal incentives and regulation as well as supplier activity.

Delivering Behaviour Change

The long term future for energy efficiency in consumer markets will rely to a large extent on securing greater involvement of individual consumers and communities. Changing consumer behaviour, both in purchasing and use of energy consuming equipment, is critical. Our experience and research over a long period shows that the modest financial gains to be made from citizen-scale energy investments are rarely sufficient, alone, to motivate action - cost-effectiveness is not a sufficient condition.

The key to success will be to convert existing high levels of concern about climate change, energy costs and energy security into personal action. The new environmental imperative of climate change provides a new opportunity to engage individuals and communities. Our research (see below) shows that while almost 90% of people recognise that action is needed to address climate change caused by their own energy use, only about 20% are actively making significant changes to their own energy consumption. This leaves over 70% of citizens who know that their energy use is contributing to climate change but are currently not empowered to take action. The task is no longer to persuade people that climate change is real and serious, rather it is to persuade them that individual and community action is a key part of the solution, and that such action is not too difficult or expensive.



A great deal is now understood about how (and how not) public policy can change citizen behaviour. Public policy and Government leadership play a key role in developing the institutional framework, but social networks are also critical. The most trusted and effective proponents of change are friends, family and the local community. Whilst there are different issues depending on the scale and type of behaviour change involved, a common theme is the requirement for both engagement (i.e. awareness raising and motivation) and enabling (independent information and advice and support for action). Consistent and local delivery of awareness raising and advice will be better delivered by an organisation that is expert and trusted in the field of energy saving, and one that can be seen to be independent of both commercial and political interests.

For these reasons, we believe that our proposed "one stop shop" network of EST Advice Centres (ESTACs) will be crucial in driving up consumer demand to help deliver WAG targets.

Behavioural research shows that friends and family are key agents in normalising action on carbon emissions reduction so community sector organisations are likely to be a very cost effective approach to embedding low carbon behaviour. Not only do they provide an effective support network for increasing sustainable behaviour amongst citizens, but the third sector is also active in sustainable energy/carbon saving in its own right - including road transport as well as homes. Communities - both geographic and of interest - are an important channel to reach citizens and provide reputable information and advice on low carbon behaviour and investment. Investment in communities and the third sector including the development of tools specifically targeted at community organisations, eg training programmes, would empower group members to take action individually and collectively. This would help drive consumer demand through extending the reach of citizen engagement and facilitate the development of low carbon community projects.

The vital leadership role played by local authorities within their communities is increasingly being recognised, most recently in the Local Government White Paper, "Strong and Prosperous Communities", and needs to be extended to the climate change agenda. In most local authorities, energy saving activity has been focussed on the improvement of the social housing stock to deliver the objectives of the Welsh Housing Quality standards and with Policy Agreements expiring in March 07, local authorities have no current requirement to reduce their carbon emissions. This is not sufficient - local government has a key role to play in carbon emissions reductions not just in their estates but also by citizens more generally. Whilst direct engagement of individuals is best delivered by a specialist EST Advice Centre, local authorities have a key role in focussing community action through their strategic partnerships and leadership. Provided with the right level of support and incentivisation local authorities can be incentivised to become leaders and focal points for action in their communities.

Existing housing

There are a number of cost effective physical measures that are proven to be effective in improving the energy performance of existing homes, including:

Insulation measures - cavity wall insulation, loft insulation, double glazing (from single, or to more efficient), hot water tank insulation and draught proofing.

Heating measures - condensing boilers (to B and A rated), heating controls

Lighting - CFLs

Appliances - cold appliances, wet appliances, brown goods (digital adaptors).

Energy efficiency in the UK is already a success story with investment in improvements in UK households having doubled energy efficiency since 1970. These changes have reduced carbon emissions by 28MtC per annum whilst saving consumers £10billion every year. This is three times the saving from the whole nuclear industry and almost as much as the emissions of the UK's fleet of coal fired power stations

There is still significant potential in Welsh households for the installation of these measures. The Energy Saving Trust estimates that the achievable annual potential for household carbon savings is around 40 million tonnes CO₂ at a UK level through existing technologies,

excluding solid wall insulation. This equates to approx **27%** of household energy use. We believe that similar potential exists in Wales (in terms of % savings achievable).

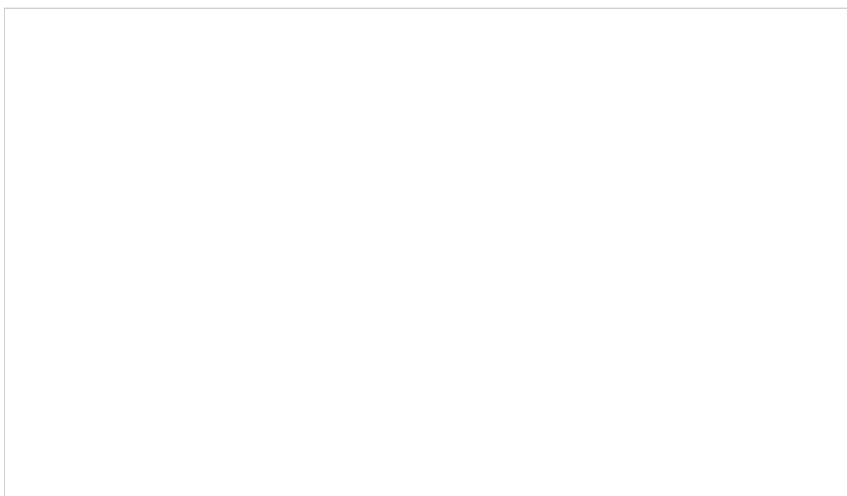
However, the installation of these measures alone will not be sufficient to for Wales to meet an equitable share of UK climate change targets.

Additional physical measures (those that are not yet cost-effective will be required - including other forms of insulation, heating and heating controls, more efficient lighting (eg LEDs/OLEDs) and increasingly microgeneration. These technologies need to be encouraged and developed as part of a long-term market transformation strategy, so that the domestic sector does not "run out of solutions" in the middle of the next decade.

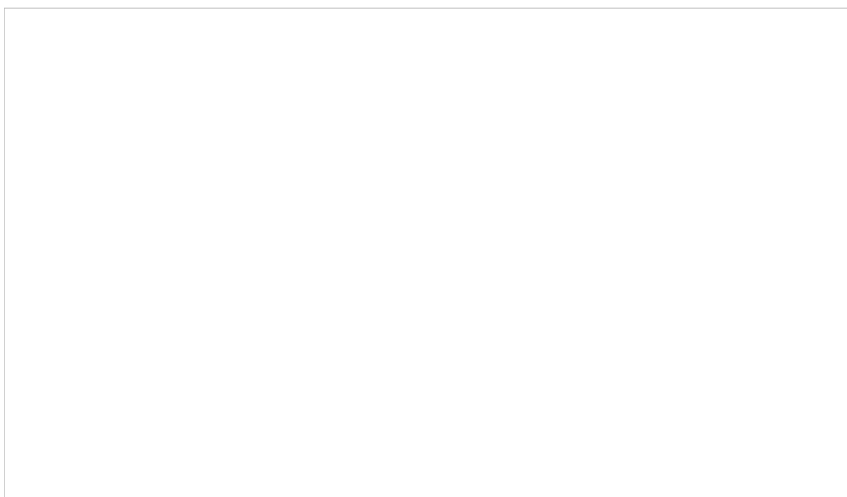
New Build

The Energy Saving Trust's recent publication "Pathway beyond Zero Carbon Homes" sets out in broad terms the emission reductions required from newbuild housing if we are to reach our long-term climate change goals; and offers a framework for policy and support mechanisms that would assist the achievement of these.

This work shows that if no further improvements to current Building Regulations are made then by 2050 new build housing would account for some 7MtC by 2050 (see figure below) at a time when we need to reduce emissions from the whole housing stock by 60%.

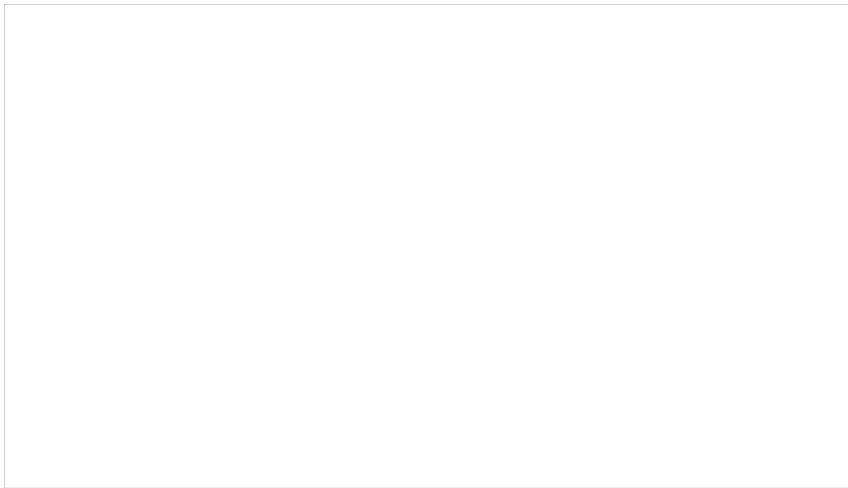


Even with incremental improvements in energy performance requirements at current rates of improvement every five years, new build emissions become significant by 2050, not least because of the role of appliances within the home (see figure below). As a consequence, the emissions reductions the UK (would need to achieve from the existing housing stock would be significantly higher than 60 per cent.



Clearly more needs to be done if we are to achieve our long-term climate change targets.

In order to ensure that the UK meets its long-term climate change targets the Energy Saving Trust believes that emissions from newbuild housing be radically reduced over a period of time. This means requiring net zero-carbon heating by 2015/16, and overall zero-carbon housing by 2030. The figure below shows the resultant cumulative carbon emissions to 2050.



Under this scenario, carbon emissions from newbuild would amount to only 1.6MtC by 2050. The above scenario would not only reduce significantly the carbon emissions from the newbuild sector; it would also lead the way in methods and technologies for refurbishing the existing housing stock.

In order to achieve the vision of zero-carbon housing, a robust and clear policy, research, and a support framework are needed.

Transport

Transport, excluding aviation, is responsible for 27% of UK carbon emissions and these have risen 16% since 1990 93% of these emissions come from road transport. Measures delivered at the level of the devolved administrations can significantly reduce in emissions from transport. Policies should enable and encourage people to:

- travel less
- shift to less carbon intensive means of transportation (eg walk instead of car etc)
- purchase more efficient vehicles and fuels
- Adopt more efficient driving practices

Nearly a quarter of car journeys are less than 2 miles and over a half of all journeys made by car are less than 5 miles. These journeys could be made by bicycle or walking. Investment in, and promotion of, infrastructure such as well-lit paths, cycle lanes and facilities for securely locking bicycles can encourage walking and cycling. Smarter choice measures, such as workplace travel plans, teleworking, home-shopping, car clubs and public transport information can reduce the need for travel, and reduce car use. The Government have invested in 3 Sustainable Travel Towns as exemplars for 'smarter choices'. Smarter Choices have the potential to reduce traffic levels by 11% and 21% in rush hour urban traffic. Typical companies with travel plans achieve reductions in car use of 10-25%.

If every consumer chose the lowest carbon car in its class this could produce carbon savings of over 30%. For consumers to choose lower emitting cars, there is a need for consumer information and clear labelling on lowest emitting vehicles.

Eco-driving techniques such as adhering to speed limits, accelerating gently and reducing excess weight from the vehicle, and keeping tyres at the optimum level, when adopted together can lead to average fuel savings of 5-10%. In Scotland we have run an eco-driving campaign for the Scottish Executive, which led to a doubling of awareness of eco-driving from 15 to 34% within the target audience of 866,842 commuters into Edinburgh and Glasgow. We would be happy to discuss with the Welsh Assembly how such a scheme might be delivered in Wales.

So, the household and road transport sector in Wales has a very significant role to play in terms of helping to meet climate change targets. But what policies will ensure that this potential is turned into actual savings? Firstly it is important to consider the policy levers that the Welsh Assembly Government has control over.

What policy levers are at the discretion of WAG?

The promotion of energy efficiency is the direct responsibility of the Welsh Assembly Government as are a number of other policies of relevance to energy efficiency including:

- environment policy,
- housing,
- planning,
- transport,
- local government,
- fuel poverty and vii) promotion of renewable energy.

However, other policies of relevance to sustainable energy, notably Energy Policy and the Building Regulations for Wales, are the responsibility of the UK Government.

It is important to bear in mind that where issues are devolved there is substantial opportunity for the Welsh Assembly Government to provide tailor-made Wales-specific solutions, which have to date included, for example, the inclusion of domestic and non-domestic energy efficiency targets for Welsh local authorities under their policy agreement with the Welsh Assembly Government. It is worthwhile noting that where such policies are particularly innovative and successful they can provide a lead for the rest of the UK to follow.

Policies for Wales

Earlier this year the Energy Saving Trust published 'Action for a Low Carbon Society in Wales'. This set out the policies that we believe are necessary in order to ensure that Wales delivers its climate change targets. Please find a copy of this publication attached. For ease of reference we have summarised the policies outlined in our publication below. These are set out in 3 broad categories:

incentives for low carbon citizens,
support for low carbon citizens, and
technology for low carbon citizens.

Incentives for low carbon citizens:

People do not want to damage the environment. They expect government to regulate against damaging products and to incentivise green behaviour. We will encourage the Welsh Assembly Government to:

encourage local authorities to use exemptions for the lowest carbon vehicles in future schemes for congestion (e.g. in Cardiff) and parking charges and low emissions zones,
motivate home owners to invest in greening their homes through incentives in local taxes (e.g. Council Tax).

We will also support the Welsh Assembly Government to positively influence policy outcomes at a UK level. In particular:

continue to use Building Regulations to drive carbon emissions reductions in new homes,

to reach a zero carbon standard by 2016,

strengthen product standards and endorse low carbon products,
increase the size and flexibility of the Energy Efficiency Commitment to provide an economic incentive for all those who help reduce carbon emissions from Britain's homes.

Support for low carbon citizens:

Local communities are an important channel to reach citizens and provide reputable information and advice on low carbon households and transport. We will continue to press for funding for those who can deliver practical support at a local level:

making carbon reduction in the community a target for local authorities,
funding the Sustainable Energy Network for greater local engagement of people and communities through the provision of practical impartial advice and support for action on sustainable energy,
encouraging voluntary sector commitment to action to reduce carbon emissions, ensuring that training is available for the new skills in energy efficiency and microgeneration needed in a low carbon society,
creating local energy service companies to provide commercial packages for energy saving and microgeneration.

Technology for low carbon citizens:

Innovative green technologies have the promise of revolutionising the way consumers convert and use energy. We will encourage the Welsh Assembly Government to:

increase the support given to microgeneration technologies to produce power at the smallest scale - in our homes - until the products are well-established,

support the use of smart meters that give better information on energy use in the home,

work with the rest of the UK to promote the development and deployment of superefficient hybrid and fuel cell vehicles,

encourage planners to use the Code for Sustainable Homes to give developers incentives to build very low carbon homes,

help businesses accelerate the deployment of the improved energy efficiency technologies for insulation, heating, glazing and building management,

work with the rest of the UK to ensure that innovative low carbon products are independently tested and accredited to provide consumer confidence.

Finally, it is worthwhile noting that for future consumers, it may be easier to encourage pro-environmental attitudes and behaviour at an early stage. Education therefore has a key role to play. It will be most effective to link climate change, energy efficiency and renewable energy in the curriculum with practical work to encourage efficient use of school energy resources. Educating children about sustainable energy has the potential to raise levels of environmental awareness not only of students, but also of teachers and parents. It can affect behaviour of individuals in the home. Activity to raise awareness and positive attitudes in schools needs to be increased.