



One Planet Dartmoor:

Dartmoor Low Carbon Strategy

Chapter 8: Warmer Homes, Lower Bills

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The Dartmoor Low Carbon Strategy:

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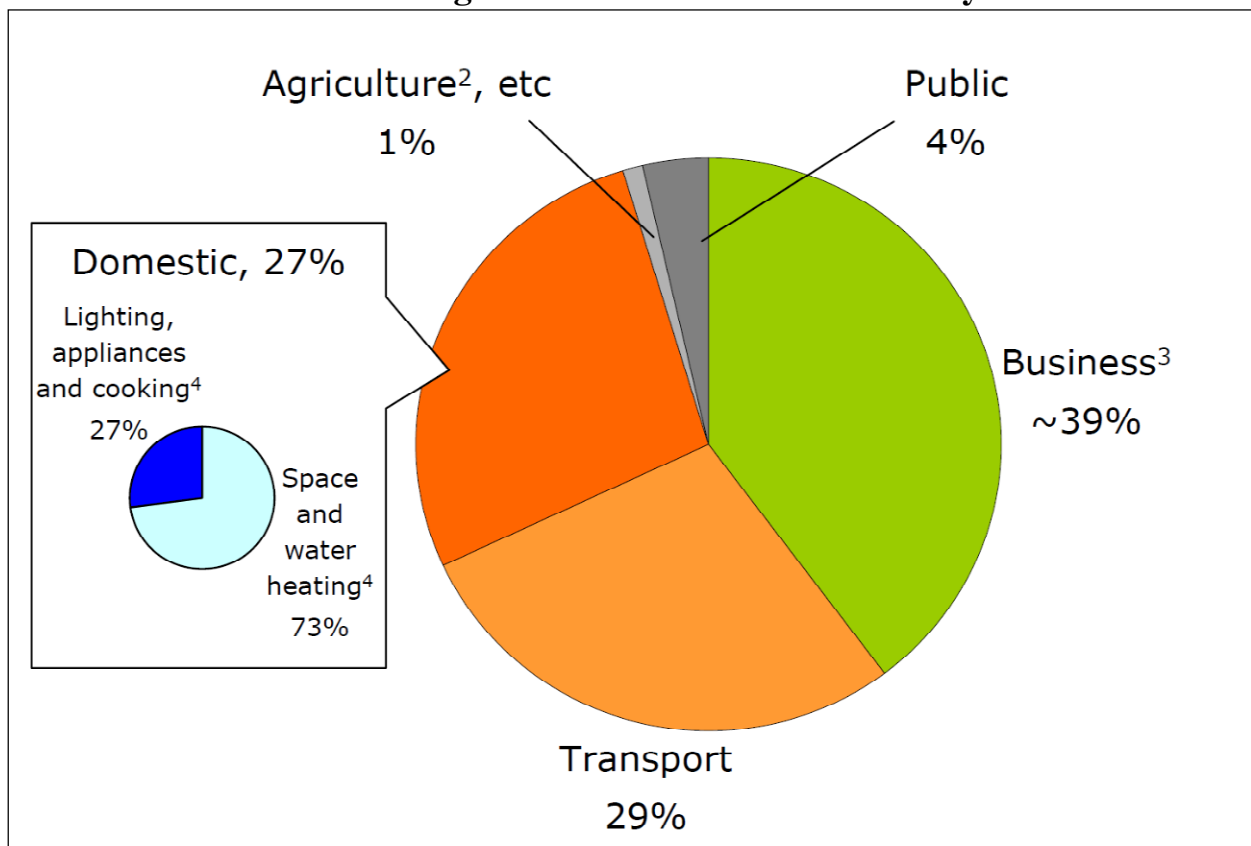
Lowering the carbon emissions of homes and businesses is one of the most effective ways of reducing overall emissions, and can also be one of the most cost effective. This chapter looks in detail at how household emissions can be reduced.

8.1 Household carbon emissions: the scale and nature of the challenge

“Our homes are responsible for a quarter of the UK’s carbon emissions, because they leak heat like a sieve. We use more energy to heat our homes than Sweden, where it’s seven degrees colder in January. We might as well be standing outside burning 50 pound notes.” Chris Huhne, Secretary of State for Energy and Climate Change¹

Our homes are the third greatest single source of carbon emissions in the UK after business and transport, as shown in Warmer Homes Figure 1, creating 27% of total emissions. Most of this, 73%, comes from space and water heating, while the balance is from lighting, appliances and cooking.²

Warmer Homes Figure 1: UK Carbon Emissions by Sector³



Emissions from Dartmoor’s housing stock, of roughly 15,600 homes,⁴ Are likely to

¹ Speech to Liberal Democrat conference, 21 September 2010, at http://www.libdems.org.uk/news_detail.aspx?title=Chris_Huhne:_Green_Deal_will_be_a_revolution_&pPK=88186f4a-e1d5-4b34-9fc9-83cff3bf195d

² Office of Climate Change (2007) *OCC Household Emissions Project: Analysis Pack* Office of Climate Change p.5

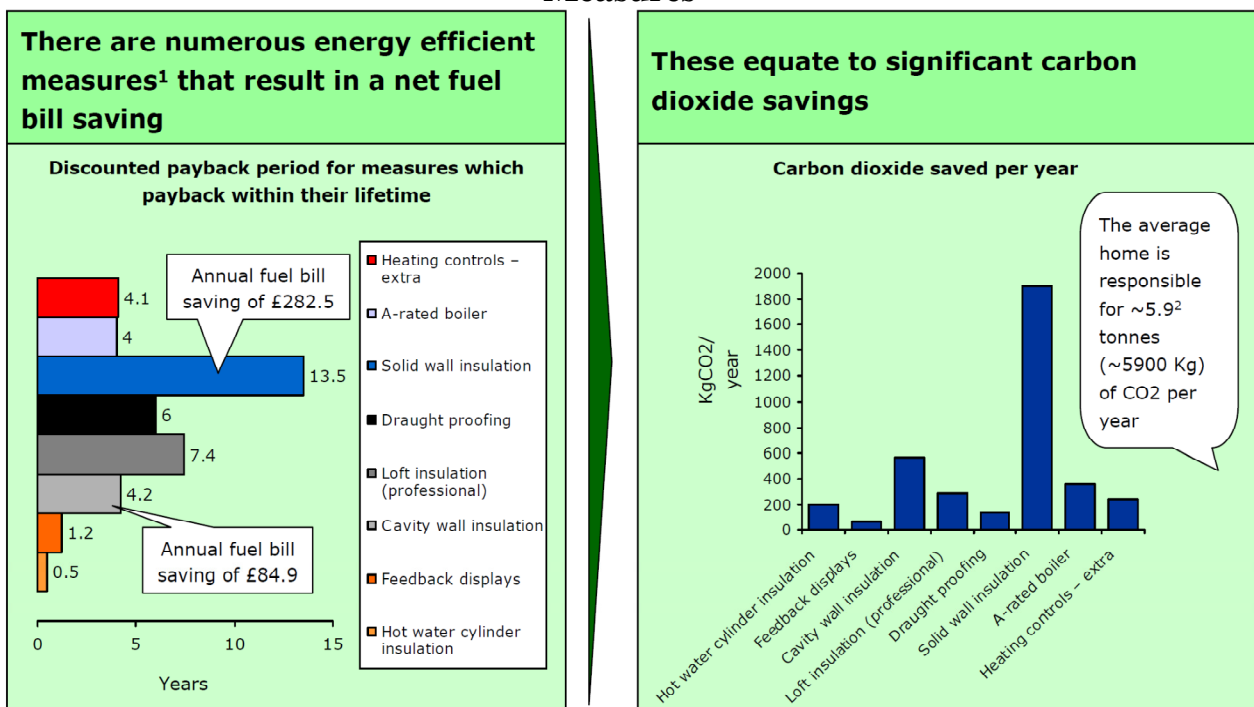
³ Department of Trade and Industry (2007) *Meeting the Energy Challenge: A White Paper on Energy* Department of Trade and Industry p.328

be higher than average per property. This is because many are solid wall, and so harder to insulate, and are off the gas grid, so may well be heated using oil.

There is an additional need to minimise potential emissions from new housing, but this is much less of a problem. This is partly because efficiency standards are comparatively high for such properties, and also because very few new homes may be built on Dartmoor.⁵ Reducing emissions will mean implementing a wide variety of measures, from loft and cavity wall insulation to solid wall insulation for hard to treat homes. There will also be a need to look at alternative heating fuel options for homes which currently use heating oil.

Of all the different measures, loft and cavity wall insulation is the most significant, because there are a large number of eligible properties, it is comparatively cheap and has fast payback (as shown in Homes Figure 2), and there is an existing mechanism for delivery.

Home Figure 2: Non-Financial Reasons for Low Uptake of Energy Efficiency Measures⁷



⁴ In 2001. Devon County Council (2007) Dartmoor Baseline Profile 2007 p.36 at www.devon.gov.uk/dnpbaselineprofile.pdf The discussion in this section focuses primarily on the area within the Dartmoor National Park boundary, because the Dartmoor Management Plan requires emissions to be reduced within this area. The same approach can be taken to reducing emissions from the area around the park as well.

⁵ There is some residual scope to require true zero carbon standards in both the build and operation of those new dwellings which are permitted. This is dealt with by homes activity 8.4 at the end of this chapter. .

⁷ OCC (above) p.10

8.2 Barriers to Installing Fuel Efficiency Measures in Homes.

There are several barriers to increasing uptake of efficiency measures. These are: limited data; cost (and lack of awareness of schemes, grants and discounts which can reduce it) and a range of non-financial barriers, including lack of knowledge of the benefits of insulation. This section looks at them in turn.

8.2.1 Limited data as a barrier to increasing energy efficiency in homes

No information is yet available which identifies the individual houses requiring insulation on Dartmoor⁶, or which households are likely to be prepared to install it. There is some data from which information can be derived,⁷ but to create a database of such information from scratch, as a single exercise, would be an enormous undertaking.

In theory, it would be possible for communities to gather this information, partly from secondary sources, and partly by street inspection and house to house visits. In practice, the most efficient way to gather this baseline data is as part of the delivery of a home energy efficiency programme, under the Green Deal (see below for details).⁸

8.2.2 Cost as a barrier to uptake to increasing energy efficiency in homes.

At present, cost is a significant barrier to some people undertaking energy efficiency, despite the fact that there is a range of grants available. This section looks at the position at present, with grants which may remain until 2012/3. The position will change after that, when the first Green Deal loans are made, and that scheme is looked at in the next section.

⁶ As Chapter 3, *Where is Dartmoor* says, “Dartmoor” for the purposes of this plan includes the moor’s surrounding towns and their hinterlands.

⁷ For example, there are 28 conservation areas on Dartmoor, and for each there is a map showing listed buildings (see, for example, DNPA Ashburton Conservation Area Appraisal Building Types Materials and Styles at <http://www.dartmoor-npa.gov.uk/li-caaashb-03.pdf>). Information can be assembled either from these maps or the database from which they were compiled, to identify particular hard to treat dwellings. Local authorities also receive a range of relevant data. There is a methodology for creating a database to hold it at <http://ruralcommunities.gov.uk/wp-content/uploads/2010/06/fuelpovertyupdate.pdf>, which may be useful.

⁸ When community groups start to implement such programmes, they will find it useful to undertake an exercise to identify the streets, and sometimes the properties, which they wish to engage first. They can do this using secondary data, including from existing databases, such as that of Energy Action Devon, housing authorities, as well as that on listed buildings and those in conservation areas. This could be validated by street-level inspection, either physically or using Google Street View, to determine all house types. This would be even more effective if the house type data were overlaid with information on age and social indicator for occupiers, obtained from the Devon County Council MOSAIC listings.

Grants available for insulation work vary in size, depending on the recipient's age and income. For example, loft and cavity wall insulation is currently free to everyone on most of Dartmoor who is over 59, on qualifying benefits, or where the combined total household income is less than £18000 per year.⁹ Even the associated costs of a loft hatch, core vents, any additional areas to be insulated, and access equipment can be reduced for people in these groups. The most anyone else is asked to contribute is £150 towards loft insulation and £170-£200 for cavity wall insulation.

Despite the availability of grants, not all poorer people apply for them. If the national trend applies in Devon, some eligible people do not apply for free grants, because they do not wish to be means tested. This is particularly true of older people, who often find means testing intrusive and demeaning. This is particularly unfortunate since there is no means-testing for people over 70 in Devon.⁶ Funding may fail to reach many younger people with families, who consequently fall into fuel poverty.¹⁰

Another problem is that the grants do not pay for some associated costs, such as the cost of emptying a loft. This is important – some older people need help to empty their loft, and if it is not available, cannot take up an insulation grant.¹¹

The cost barrier is more serious in the case of solid walled properties, which form 33.4% of housing in Devon as a whole (and perhaps up to 50% within Dartmoor National Park). These are very expensive to insulate, with a very long payback period, of up to 13 years. There are no grants for such insulation on or around Dartmoor,¹² despite the fact that nationally 50% of people who are fuel-poor live in such hard to treat dwellings.

Data from the CSE 2008 Fuel Poverty Indicator¹³ suggests there were 18,921 houses in fuel poverty within Devon (excluding Plymouth and Torbay), but this is based on data taken at a time of lower energy costs (2001 and 2003), and so true figure likely to be far higher now.¹⁴ The proportion is likely to be even greater on Dartmoor, because there are many homes which are off the gas grid, and heating oil is expensive. It is estimated that twice as many people in oil-heated homes are in fuel

9 In North Devon, people aged fewer than 70 and in households with a total income below £18000 per year need to contribute £99 towards the cost of both cavity wall and loft insulation. www.cosydevon.co.uk

6 Help the Aged (2008) *Fuel Poverty: Help the Aged Policy Statement 2008* Help the Aged

¹⁰ A household is considered to be in fuel poverty where over 10% of the household income is used on heating.

¹¹ For many people, a problem arises after insulation, because the insulation rises above the level of joists. If people want to replace stored items in the loft, they will either compress the insulation, or need to install rails on which to lay boarding.

12 "Warmfront" is a government scheme which provides grant funding to householders who are eligible because of age, or sickness and disability, and are also in receipt of income-related benefit. Warmfront grants may be used for loft and cavity insulation and the installation of efficient heating systems. From 2011 the amount of money given to fund the scheme will be cut to £110 million, and it will be focused on older and poorer people. It will be abolished when the Green Deal is introduced.

¹³ <http://www.cse.org.uk/pdf/sof1066.pdf>

¹⁴ This is higher than the national average, because there are more pensioners that average in Devon, more which are "hard to treat" and more occupied by people on lower than average incomes.

poverty as those in other homes, and such homes may represent 15% of the housing stock. The total proportion of fuel poverty households on Dartmoor is likely to exceed 20%.¹⁵

Energy efficiency measures are often complemented by household renewable generation, to reduce overall emissions from fossil sources. This is frequently the case for solid wall dwellings, where the cost of insulation can be very high. This has become a more affordable option since the introduction of the Feed in Tariff, which is discussed in detail in Chapter 9. The initial cost can still be high, however, and any installation needs careful design to suit each property and its household. Solar hot water, for example, may be appropriate for larger households where there will be considerable summer usage, but less so for a single person. Renewables may also require planning permission, for example if they are to be used in a conservation area or for a listed building. Dartmoor National Park Authority can assist, by making information available on the planning implications of all forms of renewables. The Energy Savings Trust has conducted a large pilot study using different combinations of efficiency measures and renewables across the UK, and would be a good partner for such work on Dartmoor.

8.2.3 The Green Deal: Overcoming the financial barrier to insulation from 2013.

The Green Deal is the government's solution to the problem of increasing the energy efficiency of homes and businesses. Its overall approach was summarised by Chris Huhne, Secretary of State for Energy and Climate Change, as "Companies will pay up-front to insulate your home, recovering their spending from the energy savings that will result. Every home will be better off with the Green Deal than without it. And we will provide extra help directly for those in hard-to-heat homes and in fuel poverty."¹⁶

On the face of it, the Green Deal will change the environment for home energy efficiency activity. It will bring increase demand, by eliminating the upfront cost of installations, and in many cases removing the cost of repayments by making them no greater than fuel savings. It will provide a market for home energy assessors and installers. It should result in an overall fall in emissions from home and businesses.

No government money will support the scheme. Instead, there will be a new Energy Obligation, and installing companies and consortia will pay the remaining costs, and be repaid from loans to householders. Such consortia could include community

¹⁵ CSE, above, extrapolated from the figures for Dartmoor wards of adjacent districts.

¹⁶ Speech to Liberal Democrat conference, 21 September 2010, at [http://www.libdems.org.uk/news_detail.aspx?title=Chris Huhne: Green Deal will be a revolution &pPK=88186f4a-e1d5-4b34-9fc9-83cff3bf195d](http://www.libdems.org.uk/news_detail.aspx?title=Chris+Huhne%3A+Green+Deal+will+be+a+revolution+%26pPK=88186f4a-e1d5-4b34-9fc9-83cff3bf195d)

groups. Warmer Homes Figure 3 gives an overview of the scheme, so far as they were known in January 2011.¹⁷

It seemed likely at the time of writing that there would be three levels of service within the scheme:

1. Green Deal

- repayments covered by energy saving
- includes insulation for loft wall pipes, hot water tanks, and heating controls

2. Green Deal +

- repayments greater than energy savings – for those who could afford this
- includes insulation, LEDs, and double glazing

3. Green Deal Whole House

- incorporating renewable electricity and heat and home improvements
- Integral wall insulation, window refurbishment and replastering, redecorating and rewiring

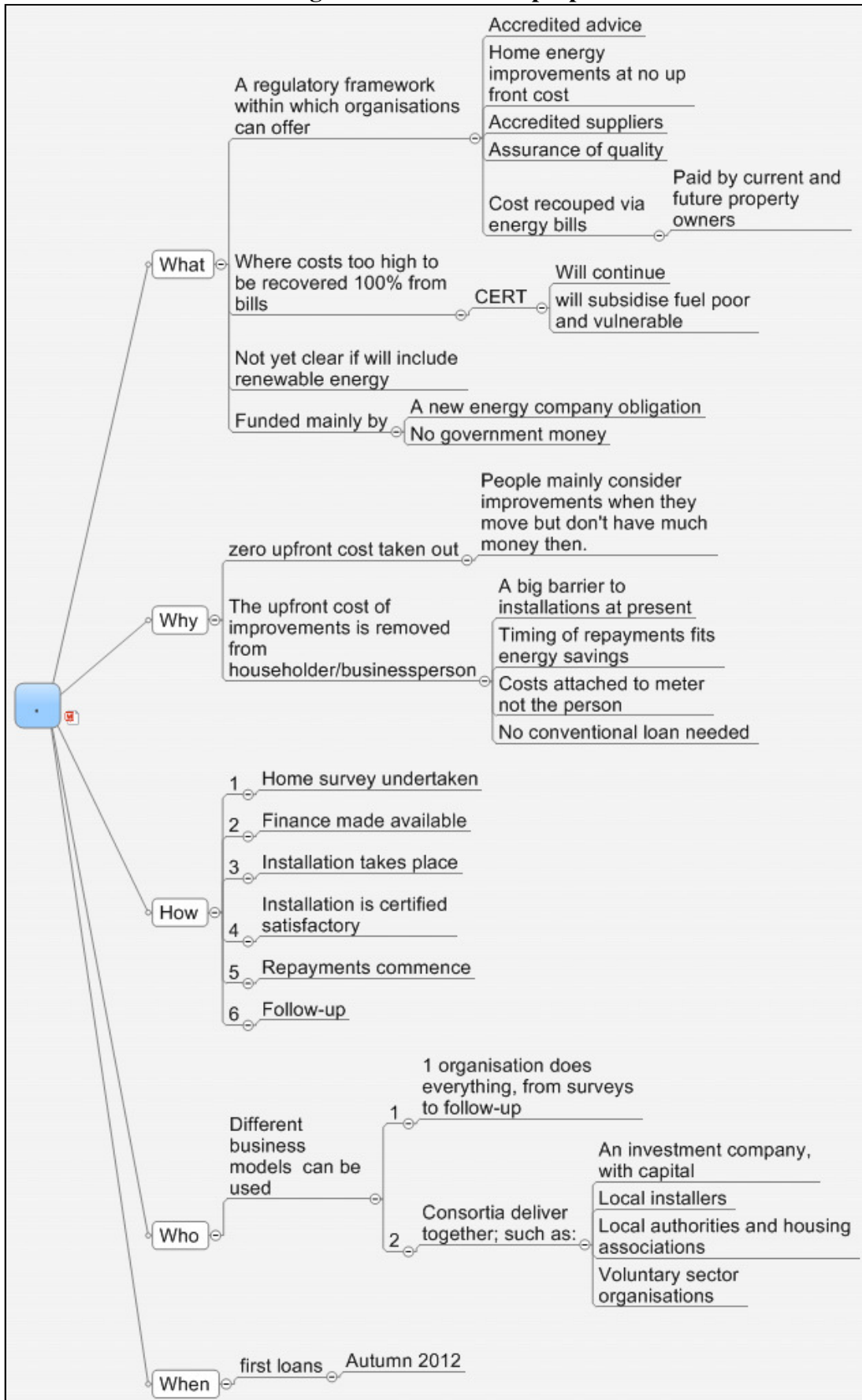
The Green Deal will remove the initial capital cost of installing insulation, and the accompanying publicity, and availability of installers through high street retailers may also increase uptake.

Despite all its promise, the Green Deal is unlikely to be a panacea. There will still be some people, who do not find the scheme sufficiently attractive financially. The government was aware of this at the time of writing, and considering stamp duty cuts for Green Deal houses.¹⁸ Other problems will remain. The programme may not provide insulation for solid wall dwellings, for example. Neither will it, of itself, address non-financial barriers to installing insulation, which are discussed in the next section.

¹⁷ While originally designed for existing homes, there were indications in February 2011 that it would be extended to new properties.¹⁷

¹⁸ <http://www.businessgreen.com/bg/news/2031406/treasury-mulls-green-deal-stamp-duty-incentives>









Warmer Homes Figure 3: Elements of proposed Green Deal



8.2.3 Non-Financial Barriers to Increasing Energy Efficiency in Households

For some people, the cost is not the main reason to avoid increasing energy efficiency. The various other reasons can vary according to the social group to which people belong, as shown in Home Figure 3.

Home Figure 3: Non-Financial Reasons for Low Uptake of Energy Efficiency Measures ⁷

Segment		Example of attitude
	Environmentally Mature (Affluent Couples, Large homes. Well educated)	<ul style="list-style-type: none"> • Higher likelihood of energy saving products in home • Higher personal concern + motivation • Higher interest in energy saving products and renewable technologies
	Educated Advocates (Young couples & professionals. Well educated)	
	Discerning Elders (On cusp of retirement, mortgages paid off)	
	Comfortable Conservatives (Professional couples. Don't like to be pressured into change)	
	Driving Dependency (Young sharers or couples. Car is a lifeline)	<ul style="list-style-type: none"> • Fewer energy saving products in home • Lower personal concern or motivation regarding environment issues
	Financially Burdened (Families with high expenditure on everyday living)	
	Ethnic Tradition (High importance on family. Extended households)	
	Fixed Horizons (Poorer families and elderly couples. Live in council or ex-council property)	

The table shows that younger people sharing a house, some ethnic minorities, and poorer couples and older couples (often living in ex-council properties) are often less motivated than others regarding environmental issues. This may well mean they are less likely to install insulation.

Sometimes there are very specific issues, which need a specially designed solution. For example, older people, and those who feel vulnerable at home may be reluctant to allow anybody into their property. Or they may need to move items stored in their loft before any insulation can be done, and may find this very difficult to do. This is a common problem among older people.

⁷ OCC (above) p.12

There is scope for discussion with Home Improvement Agencies to see whether help with loft clearance could be delivered by them. Alternatively, volunteers in each community might be able to help. There are several ways other ways, in which community groups can help, which are discussed in the next section.

8.3 Opportunities for communities to contribute to home energy efficiency

Community groups can help more people to take advantage of schemes to support insulation and home energy efficiency generally, both before and after introduction of the Green Deal. They can create a campaign and support package, adapted to suit particular groups, and deliver it in partnership with Energy Action Devon or Green Deal installers.

In the case of the Green Deal, there may well be a considerable cost for energy companies and installers in reaching people and persuading them to take part. Communities may be able to reduce these transaction costs, because they are locally based, and trusted by their communities, and can access some volunteer time. Groups could:

1. Train home energy advisers.

Green Deal will only be available where a qualified home energy adviser has undertaken a survey of the property. Such advisers will need to be trained, and this provides an opportunity for local employment. Communities could form social enterprises, recruit and train advisers with the help of, for example, the Energy Savings Trust, and nef, which will run courses for them, and then provide a service to organisations delivering Green Deal in their area.

2. Become a trusted intermediary between local people and installers

In Bishops Castle, a local group found that many householders were too busy to investigate which efficiency measures were appropriate for themselves, and what was involved in undertaking them. The group addressed this by:

- a. Conducting household surveys, giving people appropriate information, rather than simply distributing a leaflet
- b. Asking people who had been helped, to tell friends and neighbours about the programme – so that new households were recruited through people they trusted
- c. Undertaking simple, cheap measures, such as draughtproofing.¹⁹ Volunteers were keen to do this kind of practical work.²⁰
- d. Providing professional support to volunteers, so that householders knew

¹⁹ Draughtproofing is very important, and in older buildings, or those with sash windows, can cut emissions by 25%.

²⁰ The Bishops Castle group found that working on energy efficiency was a very effective way to develop a database of clients, who might later be interested in other changes, to the transport, food or waste practices, for example. The group takes the view that the trusted relationship is one of the most valuable outputs of the efficiently programme.

they would receive a high quality service.

This type of service might be appropriate in small communities on and around Dartmoor.

3. Helping local independent installers obtain work

8.4 Warmer Homes, Lower Bills Objective and Activities

Community groups can do a great deal to help increase the level of home energy efficiency on and around Dartmoor, provided they are inspired to do so, and give straightforward approaches which have been shown to work. The authors propose the following objective as a way of inspiring people to take part.

Warmer Homes, Lower Bills Objective

To ensure everyone on and around Dartmoor lives in a warm home, with carbon emissions from Dartmoor's cavity walled houses reduced by 20% by 2015 and solid walled houses by 20% by 2020²¹.

This objective is challenging, but the government's Green Deal means that it may be achievable. The role of Dartmoor Circle and its member groups will be to work with others delivering different aspects of the Green Deal, to increase the speed of uptake, and ensure people in fuel poverty and older people can participate. At the same time, groups can help the Dartmoor economy, by supporting local home energy advisers and installers.

This objective will be achieved through the following activities:

Homes Activity 8.1 Ensure that the uptake of grants, while they exist, and the Green Deal, as quickly and comprehensive as possible, by:

- 8.1 Training a network of local energy advisers, and helping them gain work through Green Deal
- 8.2 Help community groups to provide individualised information about how they can make their home more energy efficient, and access the current grants, and later Green Deal.
- 8.3 Work with Energy Action Devon to develop and implement a programme which helps everyone in fuel poverty to take up insulation, through Green Deal.

Homes Activity 8.2 Help older people to install loft and cavity wall insulation

²¹ It will not be possible to measure the reduction in carbon emissions exactly, unless the final version of the Green Deal provides for estimating baseline emissions before insulation and other measures are carried out. It will, however, be possible to estimate the overall reductions, by multiplying the average reduction per property, by property type, by the number of properties of that type which take up Green Deal measures.

Work with Energy Action Devon, District Councils and care and repair agencies (where these continue to operate) and Age UK to develop and implement an Older Ambassadors programme to encourage older people to take up insulation, as well as any benefits they are entitled to, and provide a loft emptying and refilling service.

Homes Activity 8.3 –Reducing costs of energy

Develop a green energy bulk tariff in partnership with an energy utility, with a simple option for people on dual electricity and gas tariff, and publicise it across and around Dartmoor.

Homes Activity 8.4 increasing the energy efficiency of solid walled homes

Working with Dartmoor National Park Authority, examine ways to streamline approval of external insulation for properties on Dartmoor, where this is appropriate.

Homes Activity 8.4: New buildings:

Work with Dartmoor National Park Authority and other partners to ensure all new buildings developed on Dartmoor are low carbon in building materials, and zero carbon in operation. This will require close engagement with the Local Development Framework review process, to help development of appropriate policies and any relevant Supplementary Planning Documents