



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Framing sustainable housing as a solution to climate change

Citation for published version:

Lovell, H 2004, 'Framing sustainable housing as a solution to climate change', *Journal of Environmental Policy and Planning*, vol. 6, no. 1, pp. 35-55. <https://doi.org/10.1080/1523908042000259677>

Digital Object Identifier (DOI):

[10.1080/1523908042000259677](https://doi.org/10.1080/1523908042000259677)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Published In:

Journal of Environmental Policy and Planning

Publisher Rights Statement:

Published in Journal of Environmental Policy & Planning by Taylor and Francis (2004)

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.



Framing sustainable housing as a solution to climate change

Heather Lovell

School of Geosciences
University of Edinburgh
Drummond Street
Edinburgh, UK
EH8 9XP

This is the author's final draft as submitted for publication. The final version was published in *Journal of Environmental Policy and Planning* by Taylor and Francis (2004)

Cite As: Lovell, H 2004, 'Framing sustainable housing as a solution to climate change' *Journal of Environmental Policy and Planning*, vol 6, pp. 35-55.

DOI: 10.1080/1523908042000259677

Made available online through Edinburgh Research Explorer

Framing sustainable housing as a solution to climate change

Heather Lovell
PhD Student
Department of Geography
Downing Place
University of Cambridge CB2 3EN

Abstract

A sustainable housing advocacy coalition emerged in the UK in the early 1970s. It is best characterised as an advocacy coalition due to the deep green environmental values and beliefs shared by its members. Its political activities have focused on practical demonstration and lifestyle choices: the sustainable houses can be seen as an extension of their deep green values, and government policy has until recently had little influence. However, during the 1990s government and other mainstream institutions have become interested in sustainable housing as a solution to a range of policy problems. This paper examines the framing of sustainable housing as 'low carbon housing', i.e. as a solution to climate change. Actors involved in the framing of low carbon housing constitute a discourse coalition: they are united by the discourse itself, and not by shared values. The framing of low carbon housing is being conducted using ecologically modern discourse, primarily as a strategy to create distance from the sustainable housing advocacy coalition. Translation of the low carbon ecological modernist discourse into practice remains uncertain at present, in particular because it is unclear whether the technical aspects of the sustainable housing advocacy coalition can be divorced from the social aspects.

Key words

Sustainable housing; low carbon; advocacy coalition; discourse coalition; ecological modernisation; framing; deep green; climate change.

Introduction

The contemporary sustainable housing movement emerged in the early 1970s in the UK (Barton, 1998; Bhatti *et al.*, 1994; Chappells & Shove, 2000; Ecologist, 1972; Smith *et al.*, 1998), concurrent with an increased public awareness of environmental issues, and an upsurge in radical deep green environmentalism (Dryzek, 1997; Porter & Brown, 1996; Sandbach, 1980; Weale, 1992). Examples of sustainable housing developments from this period include the Centre for Alternative Technology in Wales and the Findhorn Ecovillage in Scotland. Those involved in sustainable housing in the UK are best characterised as an advocacy coalition (Sabatier, 1998; Sabatier & Jenkins Smith, 1993), defined as:

"people from a variety of positions.....*who share a particular belief system - i.e. a set of basic values, causal assumptions, and problem perceptions - and who show a non-trivial degree of co-ordinated activity over time.*" (Sabatier, 1998: 115 emphasis added).

Members of the sustainable housing advocacy coalition share deep green environmental values and beliefs. They believe radical societal changes are necessary in order to achieve environmental sustainability, such as governance via small-scale self-sufficient communities (Dobson, 2000). Deep greens believe use of more efficient technology and reform of existing institutions (the light green approach) will not be sufficient to solve

environmental problems: a fundamental shift in attitudes and consciousness is required (ibid. 2000). The sustainable housing advocacy coalition can, therefore, only loosely be defined as a type of policy community, because those involved believe in small-scale community action outside of government. In other words, sustainable housing advocates have intentionally distanced themselves from government, and have not been primarily focused on effecting policy change.

None the less, the UK government has become interested in sustainable housing during the 1990s, along with other mainstream actors, such as private sector house builders. The sustainable housing sector has diversified and grown. Recent surveys have identified over four hundred sustainable housing developments or single houses in the UK (White, 2002), with nearly two hundred built or planned since the mid-1990s (Sustainable Homes, 2003). These newer more mainstream actors are united through shared discourse rather than values, thus Hajer's notion of discourse coalitions best characterises these groups (Hajer, 1995). They are presenting sustainable housing as a solution to a range of policy problems. The original sustainable housing advocacy coalition remains active, and is resisting narrower framings of sustainable housing. The wider sustainable housing policy subsystem¹ therefore currently comprises a mix of different coalitions, united either by values or discourse.

The paper is structured as follows. Firstly, the sustainable housing advocacy coalition is introduced. Sustainable housing is defined as housing that has environmental and social benefits above those of an average new UK house, i.e. a house built to conform to the 2002 UK Building Regulations. This broad definition is used because much of the

¹ Sabatier (1998: 99) defines a policy subsystem as "actors from a variety of public and private organisations who are actively concerned with a policy problem or issue..and who regularly seek to influence public policy in that domain."

discussion in the paper is about struggles over the definition of sustainable housing: there is no consensus on a more specific definition. The types of policy problem that sustainable housing is being linked to are examined in the following section, and the framing of sustainable housing as low carbon housing is presented as a case study. Low carbon housing is defined as housing which has lower greenhouse gas emissions (principally carbon dioxide) compared with an average new house built to the UK 2002 Building Regulations, i.e. less than one tonne of carbon per year (DTLR, 2002). A low carbon house typically incorporates one or more of the following features: passive low energy design, a thermally efficient built form, and use of renewable energy technologies. A brief introduction to UK climate change policies is then provided to help explain the emergence of the low carbon discourse coalition. Government is shown to be the primary driver behind the process of low carbon framing amongst three overlapping policy communities involved in domestic energy efficiency, renewable energy and modernising the construction industry.

Those framing sustainable housing as low carbon are using ecologically modern discourse. Two discursive story-lines which help unite the diverse group of low carbon framers are about housing 'life cycles' and 'smart housing'. Story-lines are the glue that unite discourse coalitions, defined as:

"the essential discursive cement that creates communicative networks among actors with different or at best overlapping perceptions and understandings. "

(ibid. Hajer, 1995: 63).

There are several definitions of ecological modernisation (see Mol & Spaargaren, 2000: for an overview). In this paper ecological modernism is defined as a policy discourse, described as follows:

"the discourse that recognises the structural character of the environmental problematique, but none the less assumes that existing political, economic, and social institutions can internalise the care for the environment." (Hajer, 1995: 25).

Further, the ecological modernist policy discourse used by the low carbon discourse coalition constitutes a weak version of ecological modernisation, in that eco-efficiency and technology solutions dominate (Christoff, 2000). It thus stands in strong contrast to the deep green values and beliefs of the sustainable housing advocacy coalition.

In the concluding section, these differences between the beliefs and practices of the advocacy coalition and discourse coalition are discussed. Attempts by the low carbon discourse coalition to translate the practices of sustainable housing into mainstream policy and activities have involved discarding its social aspects, in particular its deep green values, and focusing solely on the technologies. The implications of this partial adoption remain unclear, but early experience suggests deep green values may continue to be critical in sustaining the degree of commitment required to actually build sustainable housing.

Methodology

The paper is based on a combination of interview and documentary evidence.

Approximately fifty in-depth semi-structured interviews were conducted with a range of

people involved in sustainable housing and climate change policy and practice in the UK. Organisations interviewed include local and national government, sustainable housing groups, consultancies, Registered Social Landlords (RSLs), non-governmental organisations, regional government agencies and private sector house builders. The interviews have been transcribed and coded in order to identify key policy discourses. In addition, documentary evidence has been compiled and analysed from a range of sources including government policy documents, housing and energy industry trade magazines and the national press.

The sustainable housing advocacy coalition

The key distinction of an advocacy coalition from other policy categorisations, including policy networks and discourse coalitions, is that members are united by shared values and beliefs. The glue that binds those involved in sustainable housing is their deep green environmental values. The deep core, policy core and secondary beliefs of the sustainable housing advocacy coalition are outlined in Table One. Table Two briefly describes some of the principle actors involved in the sustainable housing advocacy coalition in the UK since the 1970s.

An important difference between the sustainable housing advocacy coalition and the advocacy coalition model, and indeed most other models of the policy process, is that influencing government policy is not its main objective. Most policy models including policy network analysis, advocacy coalitions, discourse coalitions (Hajer, 1995: Marsh & Rhodes, 1992: Sabatier & Jenkins Smith, 1993), all either implicitly or explicitly assume policy change as the desired end point. In contrast, members of the sustainable housing advocacy coalition share a belief that government is not a necessary part of

solutions to environmental problems. Their solutions are based on small scale, self sufficient and self governing communities (European Eco-village Network, 2003: Wood, 1990).

However, the advocacy coalition model remains a useful concept through which to analyse those involved in sustainable housing because they are united by strong values. The intention is to suggest a more inclusive definition of advocacy coalitions which does not exclude those whose political activities are directed outside of government. The political activity of the sustainable housing advocacy coalition has been channelled into demonstrating how environmental sustainability might be achieved through building and inhabiting small scale developments that are compatible with their environmental and social values (Shepherd, 2002). This is not to say that coalition members are not willing to engage with government or other mainstream institutions, but that such engagement does provoke tension, and in some instances may be seen to threaten their approach (see for example the description of a visit by Prince Charles to the CAT Centre for Alternative Technology, 1995).

The next section examines how and why sustainable housing is currently being framed as a solution to a range of policy problems, a process driven mainly by government. A detailed case study of the framing of sustainable housing as a solution to climate change is then discussed.

Framing sustainable housing as a solution

The framing of an issue is judged to be an important precursor to more detailed policy making (Hajer, 1995: Kingdon, 1995: Rein & Schon, 1993). Framing is defined as:

“.. a way of selecting, organising, interpreting and making sense of a complex reality to provide guideposts for knowing, analysing, persuading and acting.”
(Rein & Schon, 1993: 146).

Framing is important because it sets the boundaries around an issue, and allows ownership of it by certain actors. It is a particularly critical stage in policy making if dealing with complex, interdisciplinary issues which require action across a range of different sectors and institutions; characteristics of most environmental problems (Hajer, 1995).

Framing is usually discussed in terms of framing an emerging situation or issue as a problem, as the following quotes illustrate:

“A frame is a perspective from which an amorphous, ill-defined, *problematic situation* can be made sense of and acted on.” (Rein & Schon, 1993: 146 emphasis added).

“Discourse analysis..investigates..how a particular framing of the discussion makes certain elements appear as fixed or appropriate *while other elements appear problematic.*” (Hajer, 1995: 54 emphasis added).

In this paper it is argued that framing of *solutions* can also occur, as is taking place with sustainable housing in the UK. Solution framing is of course inherently linked to

problem framing, as how one categorises an issue to be a problem necessarily sets parameters on the solutions that are sought. However, the relationship between solutions and problems is not usually linear, but fluid, with events and politics having a strong influence (Kingdon, 1995). Thus there are situations in which existing policies or activities are reframed as a solution to a different, often new, policy problem. Solution framing is described by Kingdon in his 'garbage can' model of the policy process, whereby 'streams' of problems, policies and politics co-exist, sometimes merging to form a coherent policy 'package' (ibid. 1995):

"..people in and around government sometimes do not solve problems. Instead, they become advocates for solutions and look for current problems to which to attach their pet solution." (ibid. 1995: 123).

Sustainable housing in the UK is currently being framed as a solution to a number of policy problems (see Table Three), ranging from modernisation of the construction industry, to meeting the demand for new housing. There is a struggle for ownership of sustainable housing across a range of government departments and institutions, and between different types of housing provider (social, private sector and self build). Of course the suitability of sustainable housing as a solution to any particular problem depends on how sustainable housing is defined. The intensity of the debate over the meaning of sustainable housing provides evidence of this struggle (see for example ENDS, 2001: ERM, 2002: Rudlin, 2002: TCPA, 2002).

There are two explanations as to why sustainable housing has been targeted for solution framing. Firstly, there are push factors, i.e. characteristics of sustainable housing itself

that make it an attractive proposition; and secondly pull factors – motivations for the framers to claim ownership.

The first push factor is that a reasonably large amount of sustainable housing already exists. There are many sustainable housing developments within the UK that have been built since the early 1970s, and building these housing developments has been the main political activity of the advocacy coalition. The material presence of these sustainable housing developments renders them liable to ‘capture’ and rebranding, unlike other activities or policies with less tangible, visible outcomes, for example community trading schemes (North, 2000), or recycling programs (Pellow *et al.*, 2000). The houses are photogenic, and media-friendly (see for example Hockerton Housing Project, 2003). The second push factor stems from sustainable housing having emerged from outside of government (a ‘bottom up’ radical social movement), it is thus relatively free of associations with past policy programs, and therefore easier to frame as a solution.

The pull factors, which explain why sustainable housing is of interest to policy makers and other mainstream institutions, are as follows:

- a) it is potentially a solution to some persistent policy problems, e.g. fuel poverty;
- b) because some sustainable housing already exists it:
 - is relatively easy to make it appear that rapid progress has been made on an issue. This is particularly important with policy problems where there is a gap between government targets and predicted policy program results, such as climate change;

- demonstrates that new sustainable technologies work, and thus reduces risk for more mainstream institutions who wish to use them;
- grounds rhetoric or discourse about a particular problem and thus lends the discourse (and speaker) credibility.

An important element in the process of solution framing has been the creation of distance between the framers and the deep green values of the sustainable housing advocacy coalition through use of ecological modernist discourse. The dimensions of the debate between the ecologically modern ‘framers’ and the sustainable housing advocacy coalition are examined in more detail in the section below through a case study of sustainable housing being framed as a solution to climate change.

An example of solution framing: the policy discourse of low carbon housing

The remainder of the paper focuses on one attempt at solution framing of sustainable housing: presenting sustainable housing as low carbon housing. As discussed above there are several other policy problems which sustainable housing is also being linked to. Climate change has been selected for further analysis because it is judged by the UK government to be an important domestic and international environmental issue (Beckett, 2003). Two widely used ecological modernist story-lines are discussed - the housing life cycle and smart housing. Firstly, the UK climate change policy framework is briefly introduced, followed by an introduction to those conducting the low carbon housing framing.

Climate change – the policy problem

Climate change has become an important policy problem within the UK, and other industrialised countries, since it first captured widespread public attention at the Rio 1992 Earth Summit (Bulkeley & Betsill, 2003; Newell, 2000). The UK government has been one of the most proactive countries in the international climate change negotiations (Grubb, 2002), and has set a carbon dioxide reduction goal of 20% below 1990 levels by 2008-2012, thus going significantly beyond its Kyoto Protocol international target of 12.5% greenhouse gas reduction on 1990 levels by this time (DETR, 2000). The UK Climate Change Programme outlines in detail how greenhouse gas emissions will be reduced during the ten year period to 2010 . The government has also recently accepted recommendations by the Royal Commission on Environmental Pollution (RCEP) made in its influential energy report (RCEP, 2000) to reduce greenhouse gas emissions by 60% by 2050 (DTI, 2003a).

There is increasing evidence of the structuration of climate change policy discourse (Hajer, 1995).² Most notably, the term ‘low carbon’ is now used frequently (see Table Four). Ecologically modern concepts include the ‘win win’ idea of economic growth and reductions in energy consumption, and stimulating economic growth through investment in new low carbon technologies. Yet despite the discourse structuration of climate change policy, there remains a shortage of solutions to the problem, thus leaving the government open to challenges of engaging in policy rhetoric rather than action. In other words, there is a gap between the UK government climate change targets, and the policies in place (RCEP, 2000: Sustainable Development Commission, 2003). Thus

² Hajer defines discourse structuration arising when a certain way of discussing an issue dominates policy discourse, such that those not using particular phrases or story-lines risk losing credibility. Discourse institutionalisation occurs if a discourse is then translated into institutional arrangements (Hajer, 1995: 60-61).

there is a strong political drive for solutions: ‘ready made’ solutions such as sustainable housing are ideal. For example, the recent Energy White Paper acknowledges that:

“Some homes that use little or no energy for heating already exist in the UK.”
(DTI, 2003a: 42).

and goes further to promise:

"We will promote the development of homes and communities that combine energy efficient technologies and renewable energy to reduce radically their demand for energy from the grid." (DTI, 2003a: 15).

Who are the low carbon housing framers? Members of the low carbon housing discourse coalition

The low carbon housing framing is being conducted by three policy communities³:

- domestic energy efficiency:

Members include: local authorities; the Building Research Establishment (BRE); RSLs and The Housing Corporation; the Energy Saving Trust (EST); energy utilities; Energy Efficiency Advice Centres; Department for Environment Food and Rural Affairs (DEFRA); Association for the Conservation of Energy (ACE); Office of the Deputy Prime Minister (ODPM);

- renewable energy:

³ The term policy community is used here in a broad sense (see Kingdon, 1995: Majone, 1989), to denote groups of actors engaged in a particular policy sector or subsector, ranging from close knit groups (such as the domestic efficiency policy community) to more fragmented ones (including the renewables and construction industry communities).

Members include: renewable energy companies (e.g. Solar Century), Department for Trade and Industry (DTI); Regional Development Authorities (RDAs); energy utilities; BRE; the Carbon Trust; DEFRA; the Renewable Power Association.

- construction industry modernisation:

Members include: Rethinking Construction (the Housing Forum); ODPM; large private sector house builders (e.g. Countryside Properties, Laing); small private sector house builders (e.g. Greenfield Way, Gusto Construction); BRE; English Partnerships (the Millennium Communities Programme); RSLs and The Housing Corporation.

Those framing sustainable housing as low carbon housing are best described as a discourse coalition rather than an advocacy coalition (Hajer, 1995). The actors involved do not necessarily share the same values, rather they are driven by a variety of different aims and beliefs, and united instead by their use of low carbon housing story-lines. Government is a key actor in all three of the policy communities, in strong contrast to its absence within the sustainable housing advocacy coalition.

Domestic energy efficiency policy community

The domestic energy efficiency policy community has been active in the UK since the early 1970s, emerging initially in response to the OPEC fuel crisis (Toke, 2000). The policy community's members are predominately located within the public sector, especially within local government, as housing policies, and specifically energy management, has been an important area of activity for UK local authorities (Bulkeley

& Betsill, 2003: Guy & Marvin, 1996: Jones & Leach, 2000). Though the activities of this policy community have remained largely unchanged since the 1970s (e.g. refurbishment of older housing, energy saving campaigns, housing energy surveys etc), the specific problems they are linked to have changed over time (Toke, 2000). By the 1980s attention had shifted from energy conservation to energy efficiency and fuel poverty, and in the 1990s to climate change (ibid.2000).

Members of the policy community are using the concept of low carbon housing explicitly as a discursive strategy, rather than being driven by values and beliefs about climate change. It is judged to be politically and financially rewarding to frame their work as low carbon. An ex-local authority energy manager in the East Midlands describes the shifts in discourse from energy conservation to climate change mitigation:

“10 or 15 years ago [the local authority energy managers’] jobs were to save energy, to save money. Over the past few years *they have concentrated on saving carbon*, it still saves energy, it still saves money, *so they just package things differently.*” (Interview, December 2002).

Similarly, another local authority energy manager in the East Midlands, who has been working on energy issues within local government for the last twenty-five years, explains his strategy for accessing funding through using different discourses:

“what happened then was that the government came back from Rioand they said we’ll do a green house program in council housing. *So we took our strategy and shoved it through the word processor....* So we developed this technique, *as flavour of the month changes, we took the same strategy and just*

reordered the priorities. So I secured about £2 million extra money through competitive bidding.” (Interview, August 2002).

Low carbon framing is thus an attempt to rebrand the policies and activities long advocated by the domestic energy efficiency community. The rebranding allows their activities to be extended to include renewable energy, which is perceived to be much more exciting than energy efficiency. The Centre for Alternative Technology (CAT) rather ironically summarise this view as follows:

"Using energy efficiently is the key, but it does have one serious drawback: it is terribly dull. How much more exciting to put up a windmill which will generate 1000kWh a year than to install draught-proofing which will save the same amount at one-tenth of the price!...Inevitably, large moving chunks of generating machinery has a far higher profile at CAT than thermostats or insulation materials." (Centre for Alternative Technology, 1995: 16)

The source of the perception that energy efficiency is boring is complex, and beyond the scope of this paper. It is likely to have arisen because of a lack of progress in improving the energy efficiency of the UK's buildings, despite the long existence of the policy community (Owens, 2002: pers comm), and also because of the invisibility of energy (Guy & Shove, 2000: Shove, 1997).

Renewable energy policy community

The renewable energy community has a close relationship with the energy efficiency community, with some overlapping members, for example the Building Research

Establishment (BRE). However, there are differences between them. For example, the discourse of the renewable energy advocates is much more overtly ecologically modern compared with the energy efficiency community (see for example DTI, 2001: 2000: Flavin & Lenssen, 1994: Freeman, 1997: Johansson, 1993). Renewable energy is portrayed as a new non-polluting growth industry, thus combining economic growth and environmental protection in the classic ecologically modern 'win win' approach. Climate change mitigation is embraced enthusiastically by the renewables industry: it is seen as the key policy driver for increasing the market share of renewables (DTI, 2003a). Indeed, climate change is the main issue that unites those involved in renewable energy, as there is much fragmentation within the community because actors are clustered around the different renewable technologies (e.g. wind, solar, combined heat and power), and tend to compete against each other (Elliot, 1997: Evans, 2002: pers. comm.).

The construction industry modernisation policy community

A third more distinct group of actors involved in framing sustainable housing as low carbon can be found within the housing and construction sector. Although the actual term low carbon is used more rarely here than in the domestic energy efficiency and renewables policy communities, sustainable housing and energy efficient housing are terms that are used interchangeably (see for example Coward, 2001: Minton, 2001).

Social housing institutions are the most proactive low carbon framers within this policy community. The social housing sector has a long experience with energy issues in its building and refurbishment programs, and there is overlapping membership with the

domestic energy efficiency policy community. Fuel poverty has traditionally been a key focus of activity (Ekins, 2000). The social housing sector has made more rapid and significant progress than private sector house builders on environmental sustainability issues because the regulatory and financial framework for Registered Social Landlords (RSLs) has been adjusted to support such initiatives. For example, it is now mandatory for all Housing Corporation funded housing to meet the Building Research Establishment's EcoHomes standard (The Housing Corporation, 2003). Climate change has come to be seen as a primary policy driver, as with the domestic energy efficiency community. The manager of a Housing Corporation funded organisation which aims to improve the sustainability of the social housing in England and Wales, explains the focus on energy efficiency in social housing as being driven by climate change:

“Why energy efficiency? Is it something that is easy to do?

No, I don't think its because it's easy to do necessarily... I think it was because.. *climate change came out as one of the key areas.....*and there was the support there, the research was being carried out...[in the] early 1990s, so that's where the focus started.” (Interview, July 2002).

However, over three quarters of new housing in the UK is built by the private sector, and nearly seventy percent of houses are privately owned (Barlow, 2000). Government attention is therefore increasingly focused on improving the sustainability of private sector housing, in particular on energy issues and climate change (Heller, 2003: The Housing Forum, 2002). For example, a Sustainable Buildings Task Group has recently been established by government to examine ways to reduce the carbon emissions of new and existing buildings (DEFRA, 2003). In addition, by 2005 there is to be a further

upgrade of the UK Building Regulations to increase energy efficiency requirements (DTI, 2003a).

An extract from a speech by the Construction Minister, Brian Wilson, at the 2003 Buildings Awards encapsulates the current policy discourse:

"The shift to far greater energy efficiency is also an ideal opportunity to intensify the efforts already being made to improve the productivity of the construction industry.....Government is seeking a partnership in the way we "de-carbonise" our building stock, involving all of the players in delivering greener, better buildings faster." (DTI, 2003b).

Coalition discursive strategies: story-lines and their sustainable houses

This section concentrates on two discursive strategies being used to frame sustainable housing as low carbon housing, and the responses from the sustainable housing advocacy coalition. The ecological modernist story-lines used by the low carbon discourse coalition comprise weak (Christoff, 2000) or narrow (Andersen & Massa, 2000; Bulkeley, 2001; Gibbs, 2000) versions of ecological modernism: the focus is on economic and environmental issues, rather than social or institutional restructuring (Christoff, 2000). Two dominant story-lines are discussed: housing life cycles and smart housing. The response from the sustainable housing advocacy coalition has been to try to widen the discourse from the narrow low carbon framing, and tensions are evident between these two groups.

The life cycle story-line

The low carbon story-line – an economic framing of the argument

In the housing sector a ‘life cycle’ approach refers to the practice of examining economic (and environmental) costs and benefits over the lifetime of a house, or housing development. In other words, taking a long term view as to when initial investment capital may be recouped. Life cycle story-lines are used in response to the (often posed) question: ‘*Does sustainable housing cost more?*’ about which there remains much confusion. This is because the answer depends on:

- the timeframe of consideration;
- the type of housing (i.e. private or social sector, or self build); and
- whether it is new build housing, or refurbishment of old housing (and if so, how old the housing is).

The story-line is a way of making sense of this complex situation through use of familiar metaphor – the life cycle – including terms such as ‘pay back periods’, and the financial accounting discourse of costs and benefits. The story-line proceeds as follows: it is sensible to invest extra money at the design and construction stages of a house, as it can be recouped when the house is sold, because there is significant consumer demand for low carbon better quality housing, and it can therefore be sold at a premium. Further, better quality housing leads to lower (or even non-existent) utility bills, thus over the lifetime of the house these costs are recouped by the householder.

A local authority manager responsible for planning a large low carbon housing development near Leicester uses this type of life cycle story-line to justify the council

selling the land to a developer at a lower price, and their intention to retain a financial stake in the development:

“So the houses are more expensive because they are more popular,
because it is a super place to live, well designed very attractive, low energy.....
There will be a premium on the house prices so the [local] authority will get
some of that back through each house that is sold off. *So ultimately it will be self
financing*, but there is a cost up front through the land sale.”
(Interview, December 2002).

The economic life cycle story-line is used in part to as a way to remove environmental values from the debate, and thus distance low carbon housing actors from the sustainable housing advocacy coalition. In other words, low carbon housing is portrayed primarily as a sensible financial investment.

The sustainable housing advocacy coalition response: economic rationality disputed

The response of the sustainable housing advocacy coalition to the life cycle story-line is to counter the idea that a financial profit must be made in order for an investment decision to be deemed rational. In particular, the pay back of any investment is widened to include environmental and social criteria. For example, a local authority manager involved in planning a sustainable housing development describes a situation of environmental pay back through higher capital investment:

“So the [local] authority is ultimately having to pay for the energy

efficiency approach. But we accept that the pay back to the environment is worth it, and ultimately it will make Ashton Green....a more attractive place to live, because energy costs will be so much less.” (Interview, December 2002).

Another example is the decision-making by the owners and builders of the UK’s first autonomous house (i.e. not connected to the utility grid) (Vale & Vale, 1980). The Vales decided to purchase expensive photovoltaic panels for their house, essentially a non-economically rational decision, as the financial savings in annual energy bills are small, with a pay back period of approximately fifty years. The story told about this decision by members of the sustainable housing advocacy coalition is as follows, here told by a local authority energy manager⁴:

“..the Vales’ response to how you can justify spending £15,000 [on photovoltaics (PVs)]..for a £150 [per annum] saving was beautiful... It is normal to have a £20,000 kitchen in a high status house isn’t it? Where is the pay back in a £20,000 kitchen or a £2,000 kitchen? ‘So I look out the window at my PVs and it gives me great pleasure. £20,000 kitchen annoys me, well what a waste of money.’ *It’s down to values isn’t it?*” (Interview, August 2002).

The Vales’ are contesting the idea that financial pay back is the only consideration of a rational purchase decision. The payback for them instead comprises less tangible, non-monetary returns, such as reducing their consumption of non-renewable resources: a life style decision in keeping with their deep green values.

⁴ I have also heard this story with a BMW car substituted for the expensive kitchen (source: Interview with sustainable housing project manager, March 2003).

The smart housing story-line

Ecological modernist discourse coalition storyline

A second story-line that is commonly used by the low carbon housing discourse coalition centres on the notion of ‘smart’ housing. Smart housing can be narrowly defined as that which:

“use electronic networking technology to integrate the various devices and appliances found in almost all homes...so that the entire home can be controlled centrally – or remotely – as a single machine.” (Pragnell *et al.*, 2000: v).

However, in this context smart housing is viewed more broadly as housing in which householders are not required to modify their behaviour in order to become less resource intensive. In other words, one can live in a smart house and continue to behave as normal. Examples of low carbon smart technology include movement sensitive light switches and low energy electrical appliances. The smart housing story-line is ecologically modernist in that it is technology focused, and does not involve social or institutional change: one does not have to adopt the deep green values of the sustainable housing advocacy coalition in order to live more sustainably.

A sustainable housing manager at an environmental charity involved in building sustainable housing developments describes their approach in smart housing terms:

“So what we’re trying to do on our [housing] developments is, *its all in there*, *you buy the house and its there*, *you don’t have to think about it*, you’re not even aware of it. But actually when your water bill comes through its only £50

because you've got a 2 litre flush toilet, and you've got low pressure aerated taps...*And they are all put in in a way that you would be nuts to want to replace them with something else.*" (Interview, June 2002).

As does a sustainability manager in the social housing sector:

"We try to promote passive [technologies], so that householders don't even need to know that they're making an environmental saving." (Interview, June 2002).

The chief architect at the well-publicised BedZed sustainable housing development in south London also discusses the approach of the BedZed team using smart housing ideas:

"[we're] trying to come up with a lifestyle that makes it easier and more convenient to live a lower impact existence, than by using conventional alternatives. So what we're saying is that *if you're prepared to work with the infrastructure we've provided*, you can achieve really quite astonishing things. Its possible to live [at BedZed] and be pretty close to carbon neutrality."

(Bill Dunster, quoted in (Lowenstein, 2001: 16 emphasis added))

The sustainable housing advocacy coalition response

The response of the sustainable housing advocacy coalition to the smart housing story-line is that such approaches may go some way to reducing resource consumption, but that ultimately some modification of householder behaviour, and greater householder awareness and education is required. Smart housing poses a challenge for sustainable housing advocates, as it is a direct attempt to prove that environmental

values are not a necessary component of successful sustainable, or low carbon, housing. Adding smart technologies to a house is viewed by sustainable housing advocates as an ‘end of pipe’ solution: a short term technological fix to a problem which requires institutional and social change (see for example Centre for Alternative Technology, 1995; Liddell & Grant, 2002).

Another response is that without an ideological commitment of the householder (i.e. deep green values), and an associated level of knowledge and motivation, the smart technology in the houses will simply not function properly. The sustainable housing manager at UK charity describes the difficulty of making the technologies work in their holiday cottages:

“we started making [the holiday cottages] green, because we thought it would be an attraction....And we found that actually the systems that we were putting in were just that little bit too different, so that somebody coming to stay never learnt how to use it properly.” (Interview, June 2002).

Further, this attitude often finds expression in a ‘simplicity is best’ argument. Removing the need for energy consumption in the first place is advocated as the best low carbon approach. Thus energy conservation, rather than energy efficiency, should be the first area of attention, followed lastly by increasing energy supply. A local authority energy manager complains about the dominant perception of energy efficiency as boring, with renewable energy technologies being given priority:

“[the renewable sector] are focusing on that which is exciting....the technology and everything else, and in fact its all the boring basic stuff that should

be done first.” (Interview, August 2002).

The perception that these simple energy conservation and energy efficient approaches are boring is perhaps in part a recognition of the fact that calls for householder behaviour change are politically unpopular – i.e. in opposition to the ecological modernist low carbon framing.

Summary and Conclusions: the importance of values in achieving change

To summarise, this paper has described, and endeavoured to explain, changes that have taken place in the sustainable housing sector in the UK since its formation in the early 1970s. Sustainable housing has been presented during the 1990s as solution to several policy problems. In particular, a growing government focus on climate change mitigation has encouraged the framing of existing sustainable housing as a solution to climate change. Thus sustainable housing is being reconceptualised as low carbon housing by government and other more mainstream organisations.

In conclusion, I wish briefly to reflect on what I perceive to be the most important issue raised in this paper, namely the importance of values in achieving change. The key distinction between advocacy coalitions and discourse coalitions is the presence or absence of uniting values. Does this translate into any real difference in policy change and innovation?

The sustainable housing sector and climate change policy in the UK are currently experiencing a period of flux. It is therefore difficult to answer this question with certainty. However, there is evidence that values are important in achieving innovation

in well established sectors, such as housing, where social and institutional structures and habits can pose difficulties in effecting change. As Sabatier suggests, the values and beliefs of members of the sustainable housing advocacy coalition act as glue, enabling group cohesion and aiding policy learning. I would add that values are also important at an individual level in driving change. The sustainable housing sector in the UK is full of reference to key individuals or entrepreneurs who are presented as the explanation for why particular sustainable housing developments were able to be built (Fleming, 2002: pers.comm. Lowenstein, 2001: Pickles, 2002: pers.comm.).

But do values continue to be important once new technologies and practices start to become more mainstream? Strong uniting values are maybe crucial in early stages of innovation in a sector, only to become less central when more mainstream institutions become involved, and practices thus become standardised. We possibly have reached the point where, as Guy suggests, sufficient change has taken place for values to be unnecessary in achieving further change in environmental policy, particularly that involving use of sustainable technologies:

“Environmentalists need to stop reducing debate about technical change to personal ethics.”(Guy, 1999: 212).

Guy alludes to the relationship between technologies, values and ethics. The low carbon discourse coalition has actively tried to delink environmental and social values from technologies pioneered by sustainable housing advocates. The ‘mainstreaming’ of low carbon housing is in effect a process of the low carbon framers promoting sustainable housing as a technology, (or group of technologies), and thereby seeking to

mask the complex social issues embedded within these technologies, as well as their own diverse set of values.

However, in the majority of cases low carbon framers are reframing sustainable housing actually built by members of the sustainable housing advocacy coalition. In other words, the low carbon discourse coalition has borrowed material evidence - the sustainable housing - from the advocacy coalition. The houses are used as evidence to prove that the ideas and technologies embedded within them work, thereby giving instant credibility to what otherwise may be dismissed as rhetoric. However, the adoption of existing sustainable housing by the low carbon discourse coalition tends to overlook the social processes behind the design and construction of the sustainable houses, in particular the beliefs and motivations of the project team. Sustainable houses are perhaps more realistically viewed as the end products of social processes, rather than technical demonstrations (Guy & Osborn, 2001: Jensen, 2001: Mauruszat, 2001). Certainly, the sustainable housing technologies and the values of the project team are inter-linked, and it thus remains to be seen whether the low carbon discourse coalition will achieve the desired climate change outcomes in the absence of strong uniting values.

Acknowledgements

I would like to thank my supervisor Dr Susan Owens for her helpful comments on drafts of this paper, and the ESRC for funding the doctoral research (grant number R42200134546). Thanks also to all those who spared the time to be interviewed in the course of my PhD research.

Deep core	Policy core	Secondary beliefs
<i>Fundamental normative and ontological axioms</i>	<i>Fundamental policy positions concerning the basic strategies for achieving core values within the subsystem.</i>	<i>Instrumental decisions and information searches necessary to implement policy core</i>
Environment prioritised: ecocentric or deep green values and beliefs.	Live according to values: practice sustainable lifestyles.	Autonomous provision of resources (energy, water, food etc).
Anti-capitalist – environmental problems indicate a fundamental flaw with modern Western lifestyle.	Holistic approach to sustainability: economic, social and environmental issues all important.	Engagement with government not a priority.
Future generations and nature of greatest concern.	Government is cause of the problem: progress is via small-scale self-governing communities.	Reduce demand for resources before considering (sustainable) supply options.

Table One – Belief system of the sustainable housing advocacy coalition (after Sabatier, 1998).

Name of actor	Brief description
Centre for Alternative Technology (CAT), Machynlleth, Wales 1973+	A community development in an old quarry site in rural Wales, established in 1973. It is a self built autonomous development (energy and water self sufficient). It also operates as a sustainable housing education and resource centre, and runs residential courses (see Centre for Alternative Technology, 1995). CAT also publishes a quarterly sustainability magazine called 'Clean Slate'.
Findhorn Ecovillage, Scotland 1962+	A self built community in rural Scotland. It was established in 1962, and building on site started in the early 1970s. As with CAT, there is an education centre and residential courses (see Findhorn Ecovillage, 2003).
Communes Network and Diggers and Dreamers 1968+	The Communes Network started as the Communes Movement in 1968, founded by the Selene Community in Wales. Amongst other activities it produced a bi-monthly magazine 'The Communes Journal', which had a print run of 3000 copies. In 1975 it became the 'Communes Network', a more loosely connected organisation, which still operates informally today. Some members of the Communes Network have formed 'Diggers and Dreamers' – a self build community organisation which aims to help self builders to network, and to access information on self build housing (Dawling, 1992).
Undercurrents magazine 1972 - early 1980s	Undercurrents was a radical environmental magazine published in the 1970s and early 1980s (commenced in 1972), and was regarded as the alternative movement's journal during this period. Its subtitle was 'the magazine of radical science and people's technology'. It focused in particular on sustainable housing communities active during the 1970s.

Table Two – Principle founding actors of the sustainable housing advocacy coalition.

Policy problem sustainable housing is being framed as a solution to	Organisations involved in framing	Examples of policies, programmes and housing developments
Meeting the demand for new housing (c.3 million new homes needed by 2016)	Office of the Deputy Prime Minister (ODPM); private sector house builders; English Partnerships; Rethinking Construction (the Housing Forum); local authority planners; the Town & Country Planning Association (TCPA); WWF.	Sustainable Communities Plan (ODPM, 2003b). Millennium Communities Programme (English Partnerships, 2003). WWF One million sustainable homes campaign (WWF, 2003). <i>Housing Developments:</i> <ul style="list-style-type: none"> • forthcoming ‘Zed squared’ zero energy, zero waste development in the Thames Gateway (Desai, 2003); • West Stevenage development (The West Stevenage Consortium, 2002); • Ashton Green, Leicester.
Lack of innovation in the construction industry	Rethinking Construction (including the Housing Forum); CIRIA; ODPM; DTI.	Six Guiding Principles to Improve the Sustainability of the Housing Construction Industry (The Housing Forum, 2002). Speech by Construction Minister Brian Wilson April 2003 – green housing and housing sector modernisation (DTI, 2003b). Off Site Manufacture report – ‘Homing in on Excellence’ (The Housing Forum, 2001). <i>Housing Developments:</i> <ul style="list-style-type: none"> • Greenwich Millennium Village (English Partnerships, 2003); • Social housing – INTEGER projects at Maidenhead & Sandwell (Ekins, 2002).
Poor quality of existing housing stock	ODPM; The Housing Corporation; Registered Social Landlords (RSLs); local authorities; Regional Housing Boards.	Sustainable Communities ‘Pathfinder’ Regeneration Areas (ODPM, 2003b). Decent Homes (ODPM, 2003a). Urban Regeneration Companies <i>Housing Developments:</i> <ul style="list-style-type: none"> • inner city Tower Block refurbishment – e.g. Glastonbury House, Pimlico, London (Brown, 2003). • plans for 7000 new and refurbished ‘ultra green’ homes in Oldham (Tickle, 2003).

Fuel poverty	Local authorities; Energy Efficiency Advice Centres; Energy Saving Trust (EST); energy utilities; Association for the Conservation of Energy (ACE).	<p>UK Fuel Poverty strategy (DEFRA, 2001).</p> <p>The Energy White Paper (DTI, 2003a).</p> <p>Warm Homes program and the Home Energy Conservation Act (HECA) (DEFRA, 2000b).</p> <p><i>Housing Developments:</i></p> <ul style="list-style-type: none"> • Boughton Energy Village, Newark and Sherwood District Council, East Midlands; • Ravenscliffe, Bradford, North British Housing Association (1999), 64 low energy timber frame houses.
Traffic congestion	Department for Transport; local authority planners; Transport 2000.	<p>Transport 10 year plan (DEFRA, 2000a).</p> <p><i>Housing Developments:</i></p> <ul style="list-style-type: none"> • Slateford Green, Edinburgh; • Bedzed, south London.
Meeting renewable energy generation targets	Energy utilities; Department for Trade and Industry (DTI); renewable energy companies; The Countryside Agency; Building Research Establishment (BRE); RSLs.	<p>‘Clear Skies’ community and household grant programme (BRE, 2003).</p> <p>Generating Solar Homes (Generating Solar Homes, 2002).</p> <p>The Energy White Paper (DTI, 2003a).</p> <p><i>Housing Developments:</i></p> <ul style="list-style-type: none"> • North Nines, Edmonton, London (Laing Homes and Solar Century) • Sherwood Energy Village, near Ollerton, East Midlands.
Climate Change mitigation	EST; Department for Environment, Fisheries and Rural Affairs (DEFRA); The Carbon Trust; local authorities; Private sector house builders; RSLs; green architects; the Town & Country Planning Association (TCPA); WWF; DTI; BRE.	<p>The Energy White Paper (DTI, 2003a).</p> <p>(RCEP, 2000) Energy - The Changing Climate. 22nd Report.</p> <p><i>Housing Developments:</i></p> <ul style="list-style-type: none"> • The Vales’ Autonomous House; • Hockerton Housing Development, Notts.; • BedZed, south London; • Greenwich Millennium Village.

Table Three - The framing of sustainable housing as a solution to current UK policy problems.

Name of policy document	Examples of low carbon ecologically modern discourse
Energy White Paper (DTI, 2003a) <i>Our Energy Future – creating a low carbon economy</i> .	<p>"..as we move to a new, low carbon economy, there are major opportunities for our businesses to become world leaders in the technologies we will need for the future..science and technology are vital" (Prime Minister Tony Blair: 3);</p> <p>"The opportunity to shift the UK decisively towards becoming a low carbon economy where higher resource productivity - producing more with fewer natural resources and less pollution - will contribute to higher living standards and a better quality of life." (pp.6).</p> <p>"To achieve our goal of reducing carbon emissions we need to continue to decouple economic growth from energy use and pollution." (pp.12).</p>
Prime Ministers speech at the launch of the energy White Paper (Blair, 2003) <i>Concerted International Effort necessary to fight climate change</i>	<p>"If we harness new technology the evidence is mounting that we can achieve a target of 60% [greenhouse gas emission reductions] – and at a reasonable cost."</p> <p>"The UK's economy has grown by nearly 17% since 1997 – in that time, emissions have fallen by 5%....We in Britain have shown it is possible to break the relationship between economic growth and ever-rising pollution."</p>
Performance and Innovation Unit Report (PIU, 2002) <i>The Energy Review</i> .	<p>Chapters 6 - 'Options for a Low Carbon Economy', and Chapter 7 - 'A Programme for a Low Carbon Future'.</p> <p>"Alongside low prices and secure supplies, climate change has become a central aspect of energy policy." (Foreword by Tony Blair: 3).</p> <p>"Energy efficiency should be at the centre of low carbon strategies – much can be achieved at very low cost. A step change in energy efficiency is needed....The wide range of renewable energy technologies represents the most important priority among zero carbon supply options."(pp.109).</p>

Table Four - The discourse structuration of climate change: examples of low carbon ecologically modern discourse.