

**WINCHESTER DISTRICT LOCAL DEVELOPMENT FRAMEWORK**  
**CORE STRATEGY POLICY ON CLIMATE CHANGE; ISSUES AND**  
**OPTIONS**

**Summary**

**The consequences of climate change are one of the most serious challenges facing humanity. The solutions to both reducing the causes of global warming, and the appropriate measures to mitigate against the effects of extreme weather patterns, must be found at both the inter-governmental level, and locally.**

**The Core Strategy is expected to provide strategic guidance as to how the district will contribute towards national and regional objectives aimed at reducing carbon emissions, the principle cause of global warming. And to set out other measures aimed at addressing climate change.**

**Government and regional policy is setting new standards for sustainable building design and renewable energy, the main issue for the council to determine is whether these standards and targets go far enough, or whether locally it would be possible to develop a more ambitious approach to tackling climate change.**

**This paper sets out the background and policy framework for dealing with climate change; together with a brief discussion on the technologies available; it draws together the various issues facing the district; and finally sets out a series of policy options for inclusion in the Core Strategy**

**1. Introduction**

- 1.1 The issue of climate change is of global importance, but many of the actions to tackle the problems created through global warming will need to be delivered locally.
- 1.2 The Stern Review; 'The economics of climate change' was published in October 2006. This provided an overwhelming body of evidence to demonstrate that it is human activity which is changing the world's climate.
- 1.3 This evidence has been supported by the Intergovernmental Panel on Climate Change, which concluded that the variable, and extreme weather patterns we have been witnessing both locally and internationally; warmer summers and winters; and both drought and flood conditions, are all part of a trend caused by global warming, which is set to continue.
- 1.4 The government has recently consulted on a draft Planning Policy Statement (Supplement to PPS1): Planning and Climate Change, which it intends to publish in its final form by the end of the year. It sets out how spatial planning should contribute to reducing emissions and stabilising climate change, and the need to take into account the unavoidable consequences.

- 1.5 Clearly the problems of climate change cannot all be resolved through the planning system, but the government does see effective spatial planning as one of the many elements required for a successful response to tackling climate change
- 1.6 To tackle climate change will incur costs, (this is recognised in the Stern Review) but the price that will have to be paid, is far less than the social, economic and environmental costs of doing nothing. A Mori poll carried out in the summer, showed a degree of scepticism by some individuals on the actions necessary to combat climate change. Therefore the policy response by the City Council must lead to cost effective actions that make a serious contribution to reducing green house gas emissions, if it is to engage the local community in the fight against global warming.

## **2. Policy context**

### *National Policy*

- 2.1 PPS1 Delivering Sustainable Development sets out the governments overarching planning policies on the delivery of sustainable development through the planning system.
- 2.2 In December 2006 the Department of Communities and Local Government, issued a consultation draft Supplement to PPS1; Planning and Climate Change. It is intended that the supplement to the PPS will be published in its final form towards the end of the year, specifically setting out how the planning system should deal with the issue of climate change.
- 2.3 The role the government sees for spatial planning in tackling climate change is;
- Directly influencing energy use and emissions
  - Delivering the government's ambitions of zero carbon development
  - Shaping sustainable communities that are resilient to climate change
  - Creating attractive environments for innovation, and supporting renewable and low energy technologies
  - And finally; giving local communities the real opportunity to influence and take action on climate change.
- 2.4 Local authorities should ensure that their Core Strategy (CS) sets out policies and proposals in line with the RSS, and consider the local circumstances that would allow further progress to be made in addressing climate change. In doing so the CS should both inform and in turn be informed by the approach to climate change in the sustainable communities strategy.
- 2.5 In identifying and allocating sites in the LDF account should be taken of the opportunities to meet the climate change agenda. Planning authorities should assess their area's potential for accommodating renewable and low carbon technologies in all forms of development. DPDs should clearly state policies to ensure that a significant proportion of a development's energy supply is generated on site through renewable or low carbon energy supplies.

- 2.6 Planning applications that clearly ignore these policies should be refused, but the government doesn't consider it necessary to apply conditions to those aspects of building construction that are best dealt with through the building regulations.
- 2.7 While the above requirements are not yet formally adopted government policy they do give firm guidance on the direction the governments expects spatial planning to take in addressing climate change.
- 2.8 The Code for Sustainable Homes was published in 2006 to accompany the other government measures aimed at reducing 'green house' emissions. The Code is important in addressing climate change as housing is responsible for 30% of the UK's CO2 emissions.
- 2.9 This will replace the BREEAM eco-homes accreditation system. There are 6 levels; the highest level 6 equating to an entirely carbon neutral home. It is expected that all government funded housing will reach at least level 3, which is the nearest equivalent to eco-homes 'very good', the current standard for publicly funded homes. Level 3 is significantly more energy efficient than would be the case of a development that merely met part L of the Building Regulations (the section in the Building Regulations that deals with energy efficiency).
- 2.10 The Code is not solely concerned with energy efficiency, and sets standards for water management, waste/recycling and sustainable construction/materials.
- 2.11 The government sees the Code as being largely voluntary. But nonetheless expects local authorities to persuade developers to adopt the higher standards. It is an aspiration that by 2016 all homes will be built to level 6, and therefore be carbon neutral, although it is widely acknowledged that with today's technologies it would be difficult to reach level 6 without incurring high costs.
- 2.12 The government target is that by 2010 10% of the nation's energy requirements will come from renewable sources. This will rise to 20% by 2020, under a target recently agreed by the European Commission, which is binding on the UK government.
- 2.13 While not a national policy as such the 'Merton rule' introduced by the London Borough of Merton in their unitary development plan (2004) requires residential developments of 10 units or more to provide 10% of their energy needs on site from renewable sources. One of the main aims behind this policy is to make new homes more energy efficient. Meeting 10% of the energy needs of a standard house through renewable energy is expensive and challenging, but providing 10% of the energy needs of a highly insulated energy efficient house, which obviously uses significantly less energy to start with, is a much cheaper and more effective means of meeting this policy.
- 2.14 The Draft Supplement to PPS1 set a requirement for a minimum of 10% of 'substantial new development' energy requirements to be provided through on-site renewables or from local low carbon energy supplies where available. Furthermore the Planning White Paper (May 2007) states that the Merton rule should be the reference point for local authority policies.
- 2.15 Since its introduction a large number of councils have adopted policies based on the Merton rule into their development plans, and many more are developing similar policies in their emerging policy frameworks. The London Plan has gone even further and is raising the target for on-site renewables to 20%.

2.16 However there has been a ‘backlash’ against the approach of setting targets for on-site renewables, mainly lead by the development industry. Their argument is largely centred on the costs and efficiency of the available technologies; and the final outcome in respect of the government’s support for this policy approach remains unclear.

### *Regional Policy*

2.17 The draft Regional Spatial Strategy; The South East Plan, sets out in policy SH14 a strategy for environmental sustainability for South Hampshire. It requires new development to incorporate energy efficient passive solar design principles, and to promote high standards of energy efficiency in new and existing development, which requires developers to provide at least 10% of energy demand from renewable sources in housing schemes of over 10 dwellings and commercial schemes of over 1,000 sq metres.

2.18 The policy also requires new commercial and residential buildings to achieve as a minimum ecohomes ‘very good’, and ‘excellent’ after 2012. This would equate to the Code for Sustainable Buildings level 3 and 4. (Although the Code does not at the present time cover commercial buildings).

2.19 The South East Plan requires local authorities to include policies in their LDFs to contribute towards the achievement of the sub regional targets for renewable energy. It also requires DPDS to encourage high standards of energy efficiency.

2.20 The policy was not seriously challenged at the EIP into the S E Plan, although the Panel Report to the Examination in Public notes that it might need to be updated to take account of the new Code for Sustainable Homes. The government’s response to these policies in the form of any proposed modifications is awaited.

2.21 The policy requires local authorities to develop common policies to achieve these aims. The Partnership for Urban South Hampshire(PUSH),is currently producing a policy which it is hoped can be adopted by all the south Hampshire local planning authorities in their CSs. However, whether PUSH can develop a policy that covers such spatially diverse areas as the cities of Portsmouth, Southampton and largely rural districts such as Winchester, and still be locally distinct and sufficiently flexible to pass the test of soundness remains to be seen.

2.22 PUSH has also recently commissioned a study from consultants Ove Arup to consider the energy option for south Hampshire. The study is due to be completed by the end of the year and should indicate what sustainable technologies are available and viable for delivering the PUSH strategy.

### *Local policy*

2.23 The adopted Winchester District Local Plan Review reiterates the government’s target of meeting 10% of electricity requirements from renewable sources by 2010, and policy DP15 is generally permissive towards renewable energy schemes, provided they meet certain criteria.

2.24 The policies in the local plan were produced before the imperative of tackling climate change really took hold, and it would be expected that much clearer and firmer policies linked to local opportunities and targets would emerge in the LDF.

### **3. Background**

3.1 In order to 'frontload' the LDF process, and to inform and ensure consistency with the Community Strategy, a campaign was launched in February 2007 called 'Live for the Future'. The aim was to engage with the local community to identify the needs, issues and aspirations of local stakeholders. The focus of the campaign was to explore the concept of creating sustainable communities.

3.2 One of the key elements in the campaign was to identify how and where the community accessed different services, much of this evidence gathering was aimed at developing options with the objective of reducing the need to travel.

3.3 A key question that was asked was what makes a community sustainable, and in response there was recognition that while there was a preference for traditional forms of housing, there was also a need to make use of new technologies to make them more energy efficient. In fact there was a consensus that new development should be more energy efficient.

3.4 Amongst the main priorities identified by stakeholders in planning Winchester's future were, encouraging good public transport; promoting renewable energy and recycling to help reduce the impact of climate change; planning new development and services concurrently; and ensuring all new development has access by means other than the private car. All of which very much fit in with the government's climate change agenda.

3.5 In the summer of 2007 the council published a draft paper 'Live for the Future Tackling Climate Change' for consultation setting out a framework for developing policies to address the issue of climate change. The draft plan sets out what the local community through the Winchester District Strategic Partnership can do in delivering action on this important issue. This document recognises the strong link between this plan and the council's spatial policies in the LDF.

3.6 In response to the consultations a number of comments were made which are of relevance to this paper.

- New development should be designed to minimise the need for heating and lighting
- All new buildings should be carbon neutral, and preference should be given to carbon neutral developments.
- Employment policies should reduce the need to travel to work; and encouragement given to opportunities to increase the ability to walk to work.
- Winchester should require that 20% of energy in new development should be provided through on-site renewable sources.
- A comprehensive strategy should be developed for the supply and promotion of renewable energy. Joint heating venture should be required in new developments.

3.7 The main ways that the Core Strategy can address the issue of climate change is through developing policies that reduce the need to travel, and to encourage journeys by sustainable modes of transport; to guide development to the most sustainable locations; to ensure that development is directed away from areas liable to flood; and to ensure that all new buildings are efficient in the use of scarce water resources.

- 3.3 The requirement to reduce the need to travel and to allocate new development in sustainable locations is a fundamental principle that will underpin the Core Strategy. No direct policies are proposed in respect of water conservation, as this issue is addressed through meeting the standards set out in the codes for sustainable building. This issues and options paper will therefore concentrate on the opportunities to address climate change through the development of policies to promote energy efficiency and the use of renewable energy.
- 3.4 As previously stated while spatial planning can play a role in addressing climate change its impact needs to be put into context. New homes only account for approximately 1% of the UK housing stock, and even if they only meet part L of the current Building Regulations, it would mean that they are significantly more energy efficient than the majority of older homes.
- 3.5 However the district is expected to provide at least 12,240 new homes over the next 20 years, plus a part of the new Strategic Development Area to the north/north east of Hedge End, this offers the opportunity to make a significant impact on improving the energy efficiency in a sizable proportion of the districts housing stock.
- 3.6 While it is therefore important to ensure that new homes meet the highest standards of energy efficiency the biggest challenge is to ensure that the energy performance of the existing housing stock is also raised.
- 3.7 It should also be borne in mind that there is a cost involved, and applying eco-home standards increases the costs of housing. Rough calculations for the West of Waterlooville development have shown that moving from a requirement of meeting eco-homes very good, to the Code for Sustainable Homes level 3 adds approximately a further £2,000 per dwellings. It has also been estimated by the Building Research Establishment, that to reach level 6 of the Code would increase house prices by between £15- 20,000.
- 3.8 The Core Strategy will need to provide clear policy guidance on how the district intends to contribute towards achieving the national and regional targets on renewable energy; it should also be clear on the standard of energy efficiency it expects in respect of new development.
- 3.9 In developing a climate change strategy the council needs to take into account the range of technologies available to deliver the strategy. The most common available in the district include:
- Solar water heating; these systems include the installation of solar panels on the roof which collect heat to provide hot water. They are relatively simple and cheap to install and are generally considered to be a cost effective means of providing heat. But they can look unsightly, particularly in the historic environment, and they do not normally count towards meeting national or regional targets in respect of renewable energy.
  - Photovoltaic systems; these are in some respects similar to solar panels in that they are usually installed on the roof, but in this instance they employ solar radiation to stimulate an electrical current in photovoltaic cells. At the present time they are extremely costly to install and would rarely justify their costs in energy savings alone. Although the Building Research Establishment anticipates that the costs of these installations will fall significantly as the technology improves.

- Wind energy; the district is not really suited to large scale wind turbines generating between 50 kW to 3 MW of electricity. Small scale turbines mounted on buildings which would typically generate between .5 to 6 kW are notoriously unreliable, and their wide spread use as an effective contribution towards renewable energy is unlikely until there are significant improvements to the technology.
- Combined heat and power; this is a widely used technology and can be used to provide power over a wide area. It can be at its most effective in mixed use areas where the peak demand for power from the different users varies across the day, i.e. employment uses need more power during the day, and residential in the evenings and week ends. The important factor is to ensure a consistent source of low carbon fuel. In this respect biomass is sometimes used a fuel source. This involves burning wood chips, straw, or energy crops. But there is a finite limit on the sources of some of these fuels and there are also questions over the financial viability and sustainability of many so called energy crops. However this form of small to medium scale energy production offers the greatest opportunity to meet some of the challenging on site and off site renewable energy targets.
- Anaerobic digestion; this technology breaks down organic waste to produce a biogas which contains high concentrates of methane. This methane would have occurred naturally if the waste had been sent to landfill, but rather than provide a source of energy, it would have contributed towards the increasing levels of green house gases in the atmosphere, as it is 24 times more potent in respect of its impact on global warming than carbon dioxide. But again as a source of energy it effective but limited by the finite supply of raw materials.
- Heat pumps; this usually involves water pipes being embedded below the ground. In the south of England soil temperatures just a few centimetres below the surface are sufficiently high to provide enough heat to power hot water or space heating systems. They can even be reversed in the summer to provide cooling in hot weather.
- One further means of ensuring energy efficiency is through the layout and design of new buildings, in particular ensuring that buildings are orientated to maximises the opportunity to optimise the use of passive solar gain. This would improve the buildings performance in respect of daylight and natural ventilation. Buildings should ideally be orientated so that the principal rooms face towards the south (a variation of up to 25 degrees in either direction is acceptable). This will allow them to maximise sunlight throughout the day, and will be cooler in the late afternoon/early evening. Conversely kitchens or other rooms which generate higher levels of heat should be located on the northern side of the building. Another benefit of this orientation is that solar panels work more effectively on south facing roofs.

3.10 Research undertaken by Savills (The Market for Sustainable Home 2007) suggests that for some sustainable technologies the capital costs of installation are rarely justified through the financial savings on energy costs. For example a photovoltaic solar energy system could cost several thousand pounds to install and might take 40- 55 years to pay for itself. Other technologies however show bigger savings and much shorter payback times. For example a micro combined heat and power unit would cost around £1,600- 2,000 and save approximately £230 per annum in fuel bills, thus paying for itself in about 6-7 years.

- 3.11 A report produced by Savills and Future Energy Solutions on the 'Sustainable energy opportunities in the Waterloo MDA' concluded that the wide spread use of solar photovoltaics was unlikely due to the high costs involved, but there was scope for incorporating solar water heating, and the development of combined heat and power/biomass systems.
- 3.12 It is expected that the above order of costs and savings will change significantly even in the short term as technologies improve and the costs of those technologies is reduced accordingly.
- 3.13 As stated earlier the option of doing nothing is not a serious option, but it is essential that the policy approach adopted by the council leads to cost effective as well as environmentally sound solutions.

#### **4. Main issues emerging**

4.1 The widespread use of wind power or photovoltaic technology to provide renewable energy in the district is unlikely at least in the short term. The main source of renewable energy is therefore likely to come from combined heat and power (chp)/ biomass systems, combined with micro-generation such as solar water heating, or heat pumps. The chp technologies have the potential to provide the greatest source of renewable energy in the district, but are likely to be most effective on larger developments. The main issues which need to be addressed in the Core Strategy are;

- Should the council set a target for on site renewable energy; should this reflect the 10% Merton rule or be more challenging.
- What scale of development should any targets apply to; should there be a sliding scale of targets with the larger developments being set the more challenging targets.
- Should the targets initially be set at a lower standard to reflect the current costs and technologies available and be progressively raised to meet anticipated improvements to both the cost and effectiveness of sustainable technologies.
- To what extent should the policies on climate change have a spatial element, and separate policies developed for the rural areas, the city, and the market towns.
- Given that the sources of low carbon fuels is not infinite, and should be drawn from local sources, what if any are the limitations within the district to maximise the use of chp/biomass.
- How can the use of renewable energy technologies in new development be 'rolled out' to benefit the whole community.
- Much of the district enjoys an extremely high quality of landscape and townscape, which can cause conflicts with the visual appearance of many sustainable technologies. How can the need to employ new sustainable technologies be reconciled with the need to protect and enhance the environmental quality of the district.

- The Core Strategy is required to take a broad strategic approach to developing policies to address climate change, and at this stage it will be necessary to determine the level of detail appropriate for the CS, and whether any more detailed advice will be required in the form of a further DPD on climate change; policies in a general DPD for development control purposes; or an SPD.

## 5. Options

From an analysis of the above issues a number of options have been identified. It is not suggested that each option is 'stand alone', and the preferred options for addressing climate change might be either a variation or combination of the following options:

### **A. To set the minimum standards necessary to comply with government and regional policy.**

This approach would ensure conformity with government advice and the South East Plan. It would still see significant improvements above the standards of energy efficiency currently found in new buildings, while not adding substantially to building costs. But it would offer little encouragement for developers to do anything other than meet minimum standards, and would do little in respect of establishing renewable energy sources which could benefit the wider community.

*Question; If this option is not accepted then what standards/targets should the council adopt, and would they be realistic, deliverable and affordable.*

### **B. To set more challenging targets, which require all new buildings to provide at least 10% of their energy from on-site renewables, until 2010 rising to 20% by 2020, with higher targets set for large scale developments, or development in rural areas.**

Meeting the requirement for 10- 20 % of energy from onsite renewable sources, should not prove particularly challenging in large scale developments and development in some rural areas. But can prove very hard to achieve in small scale developments and developments in urban areas where the options are more limited. So a blanket policy that covered all development across the district would not be appropriate, so if more rigorous standards were to adopted then it would be expedient to set thresholds for the percentage of renewable energy generate from on site sources, and the specific areas to which the policy applies.

*Question; Are higher standards actually achievable, what technologies could be employed and what order of costs would be incurred. How should this policy be applied throughout the district and what would be a reasonable threshold for complying with this policy*

**C. Rather than requiring energy to be provided through on site renewable energy sources, more encouragement is given to seeking energy from off-site renewable energy sources.**

It would probably be expedient to ensure that a proportion of a development's energy needs are generated on site to ensure that the actual energy requirements are kept low. But the development of off-site renewable energy facilities has the greatest potential for bringing benefits to the wider community in respect of cheaper sustainable energy.

*Question; How should such off- site facilities be planned and managed, and what role does the council have in the later. Should the council be identifying sites for renewable energy production.*

**D. To set really challenging standards in respect of new housing development and require all new homes to achieve Code for Sustainable Homes level 4 from 2009 rising to level 5 after 2012.**

This would have significant cost implications, and might be difficult to make mandatory, but would ensure that new housing development makes a serious contribution towards tackling climate change. It is also questionable whether Registered Social Landlords or other providers of social housing who are currently required to meet level 3 would be able to fund/get grant for the higher levels. Whatever targets are finally set the government is quite clear that they should not threaten housing delivery.

*Question; Would the benefits of developing housing to high standards of sustainable design, outweigh the difficulties and costs of achieving the higher standards. Would setting higher targets have a significant effect on the delivery of housing*

**E. To develop polices which are more permissive towards the use and installation of renewable energy technologies.**

This could bring the polices to address climate change into direct conflict with policies to protect and enhance the historic environment and the countryside.

*Question; Unless standards of visual amenity are relaxed then it could mean that achieving the aims of addressing climate change are seriously compromised. Does the council need to be specific as to where and in what circumstances it might be prepared to relax standards in order to promote renewable energy.*