Energy Efficiency **Partnership** for Homes

Energy Saving Trust

Local Government *Association*

leading the way: how local authorities can meet the challenge of climate change

about this document

In 1998 the Local Government Association (LGA) published *Energy services for sustainable communities*. This was a comprehensive explanation of the need for a sustainable approach to energy, the policies and actions that this would require, and the role of central government in delivering it. Subsequently, the government adopted the document's central recommendation that the UK should aim for greenhouse gas reductions of 60 per cent or more as called for by the Royal Commission on Environmental Pollution in its energy white paper, and confirmed its emphasis on reducing consumption.

Against this background the LGA, this time in partnership with the Energy Saving Trust (EST) and with the assistance of the Energy Efficiency Partnership for Homes, has commissioned this new statement on climate change and sustainable energy and how local government can achieve the 60 per cent target.

It has been researched and drafted by the same consultants who wrote the 1998 report; Roger Levett and Riki Therivel. It draws on new expertise, fresh thinking and recent achievements from local government and others. We are very grateful to all who contributed to a series of consultations as it was being produced.

contents

"Unless we are guided by a conscious vision of the kind of future we want, we will be guided by an unconscious vision of the kind of present we already have."
(**The Edge magazine** 1995)

Prime Minister, 14 September 2004:
I want to concentrate on what I believe to be the world's greatest environmental challenge: climate change … a challenge so far-reaching in its impact and irreversible in its destructive power, that it alters radically human existence.

Conservative Party leader, 13 September 2004
Climate change is one of mankind's greatest challenges… Britain and the global community are still moving too slowly. The international effort on climate change desperately needs renewed leadership.

Liberal Democrats leader, 1 March 2004:
… we are facing an environmental disaster and we need to act now...the truly rich countries of the world, those who consume the most and pollute the most, should preach less and act more.

executive summary

Political leaders are united about the urgency and importance of climate change. Local government has a key role to play in this agenda. We offer a vision of 'Anytown 2025', a sustainable energy future, adapted to the effects of climate change; and set out the steps, building on existing good practice, which local government can take to achieve it. Working towards this future can lead to multiple benefits for local authorities and their communities: improvements in health, community cohesion, social inclusion and quality of life. It does not rely on any technological breakthroughs. The various components of the scenario are mutually supportive and reinforcing. The challenge for council leaders and chief executives to is to make a political decision to start now.

The scientific evidence to date makes the case that humankind needs to reduce greenhouse gas emissions, promptly and dramatically, to avert dangerous climate change. The most significant man-made source of greenhouse gas is carbon dioxide (CO_2), emitted from burning fossil fuels. Both for mitigating climate change and increasing energy security, the UK needs to reduce its fossil-fuel reliance and have a more sustainable approach to energy.

The UK's target of a 60 per cent cut in greenhouse gas emissions by 2050 should now be treated as the minimum responsible level of change.

There are already excellent local authority climate change initiatives. Because individual initiatives often have little effect in isolation, success in dealing with the problem depends on tackling all related aspects as well. Responding to the threats as well as benefiting from the opportunities of climate change cannot be achieved through incremental steps. We need co-ordinated interventions to achieve a step change[1].

Local authorities can already do a great deal to co-ordinate action on climate change. Commitment from council leaders and chief executives is fundamental to success.

Some positive steps they can take include:

- making a public commitment to tackling climate change, such as signing the Nottingham Declaration on Climate Change;
- adoption of a council-wide strategy on climate change and sustainable energy, and using a variety of management tools to deliver it;
- promoting sustainable energy and climate change objectives through community-wide strategies and land use plans;
- adopting a 'whole life' approach to investment, including revolving funds which pay upfront for sustainable energy measures, and then reinvesting the savings in further projects;
- integrating climate change across all service areas within the authority;
- seeking early wins: places where climate protection resonates with an area's needs and authority's values and priorities; and where such action can achieve early benefits that will broaden support.

Central government can help and enable local authorities to respond to climate change.

Key actions for central government include:

- sending a strong message that climate change is a priority within central government and that local authorities are key to delivering national climate change targets;
- correspondingly, inspection regimes must recognise good performance in this challenging area;
- using continuing increases in world energy prices as an opportunity to accelerate action on reducing energy consumption, especially fossil fuel dependence;

1. Energy White Paper (Feb 2003) "Our Energy Our Future Creating a Low Carbon Economy" paras, 3.4, 4.15, 7.23, 7.32 the need for energy efficiency and renewables to deliver "step-change breakthroughs which will contribute significantly to carbon reductions".

- regulating the energy sector to encourage energy suppliers to become energy service companies;
- encouraging emissions trading so that the most cost-efficient emissions reduction measures are taken first: trading regimes depend on other measures that enable companies or individuals to reduce energy use, and are not a substitute for them;
- 'climate proofing' policies to avoid accidental perverse side effects;
- recognising the importance of collective choice about the kind of society we wish to live in: some of the most successful sustainable settlements are popular precisely because they set collective standards;
- seizing the opportunity that large-scale house-building presents to achieve a step change in energy dependence in the housing sector;
- enable local authorities to access locally-meaningful real-time energy consumption data at a six-figure postcode level.

Within a supportive context, dramatic levels of reduction are achievable: the 'Anytown 2025' future demonstrates how it all fits together. The CO_2 emissions embedded in a typical energy-intensive UK lifestyle could be slashed with existing technologies, through a combination of energy efficiency in housing, locally-based renewable energy generation, waste recovery and food production, and a reduced need to travel, made possible and supported by the local authority policies and involvement.

Local authorities have a huge opportunity to help make this future a reality. Councils owe it to their communities to take on the challenge of climate change with strong commitment and leadership.

Whatever a local authority has or has not done in the past, now is the time to start action on climate change. The first step starts with political and senior officer level commitment within local government, which is critical to drive local action.

section 1
introduction

The three major political parties are unanimous: climate change is a grave threat calling for urgent and decisive action. Local authorities have a responsibility to respond to climate change – and a huge opportunity to make life better for their residents at the same time.

A huge challenge. The government's energy white paper includes a commitment to cut the UK's greenhouse gas emissions by 60 per cent by 2050 (DTI, 2003). This is a huge challenge, but one that must be met to achieve 'climate security', a safe level of global greenhouse gas emissions that will eventually halt climate change. Deep and fast cuts in emissions are needed now to reach the 2050 target and prevent the worst effects. The UK also needs to adapt to climate change already underway. But this must be achieved without sacrificing quality of life. Responding adequately to climate change while also meeting people's needs and aspirations here and now is a key challenge.

Can you ignore this challenge?

Local government's unique role. Local authorities have "a clear local democratic leadership role as the only body elected by, and accountable to, the whole community" (ODPM, 2004). They have a pivotal and indispensable role in climate security. Local government is uniquely where *responsibility* to promote the well-being of an area now and for the future, *delivery* of key services, *influence* over how people live and work, *enforcement* powers, practical *know-how* and democratic *legitimacy* all come together. Local authorities can plan, co-ordinate, enable and deliver the changes needed for sustainable energy in a way no other organisation can match.

How can your council help meet this challenge?

An exciting opportunity for local government. Local authorities have an unprecedented opportunity to make a difference, through their own activities and through enabling and leading partnerships. Local strategic partnerships, community strategies, local area agreements, local public service agreements and the power of well-being give local authorities exciting new powers to set and achieve a vision for their areas with their partners. Climate security challenges local government to act decisively, coherently and ambitiously as never before.

What do you want your locality to be like in 2025?

Success is possible. The apparently daunting changes that climate security requires are perfectly practicable, could be achieved with technologies already known, and, far from eroding quality of life, should improve it. The report identifies effective and successful actions which many local authorities are already taking, and encourages others to follow. (Box 1 gives a few examples). It shows how councils can take a coherent approach to climate change across all their activities, and the benefits not only for the environment but also for the health, well-being, security and prosperity of their community.

Is your authority going to reap the multiple benefits of tackling climate change effectively?

We need to prepare. Significant climate change is now inevitable, including more violent and extreme weather of all kinds. The 'freak' heat of summer 2003 may be on the cool side of normal summer weather by 2080. We need to be ready for more heat, but also for more frequent and severe storms, floods and droughts.

Some local government successes
(Box 1)

Newark and Sherwood have virtually eradicated fuel poverty.

Crawley has used its environmental management system to cut council car use.

Worcester County Hall is heated entirely by wood.

South Somerset is helping owners of former historic water mills install modern hydro generation.

83 local authorities have already signed the Nottingham Declaration pledging action on climate change. (IDeA, 2005)

63 per cent of local authorities have already agreed climate change strategies. (EST, 2005)

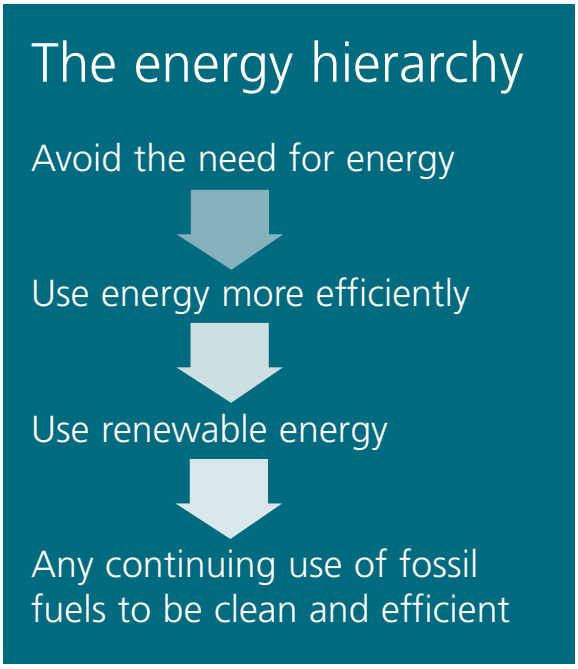
How will climate change affect your area? How resilient are your services to a changing climate?

Overall aims and principles

The majority of man-made greenhouse gas emissions globally and in the UK are carbon dioxide (CO_2) from the burning of fossil fuels for energy (Environment Agency, 2005). Therefore, dealing with climate change means reducing fossil-fuel reliance and having a more sustainable approach to energy. The following principles should guide sustainable energy policy and practice in local government.

Decouple quality of life from energy. The cardinal aim of climate protection policy and action should be to enable people to *live well with less climate impact*, in other words to decouple quality of life from environmentally damaging forms of energy use. Reducing CO_2 emissions need not, and must not, mean poorer living standards.

Energy services, not energy itself. The key to achieving this is to recognise that people do not want to consume energy itself. Instead, people want the **services** or **benefits** which energy can help provide, such as being warm and comfortable, having light at night, storing and cooking food, washing themselves and their clothes, and accessing entertainment, amenities and services.



An energy hierarchy: avoidance, efficiency, renewables. We can decouple these benefits from environmental damage in three ways:

- *avoiding* the need for energy - that is, getting the benefits without needing to use energy at all, for example by designing buildings to be warmed by the sun, using natural light and ventilation, or enabling people to get access to the amenities they want with fewer and shorter car journeys;
- using energy more *efficiently* – that is, getting more benefit per unit of energy, for example by using higher-efficiency appliances, generating heat and power together, or insulating buildings better to retain heat;
- switching to *less damaging* sources of energy, especially renewables, for example by digesting organic wastes, energy crops, hydro, solar or wind power.

This is like the waste hierarchy of 'reduce, reuse, recycle'. We need to push policy and solutions 'up the hierarchy'. Not creating the problem in the first place is better than needing to rely on technical fixes.

Adaptation. We need to adapt our existing buildings, settlements, livelihoods and lifestyles to cope with unpredictable, varied and potentially extreme weather. Simplicity, robustness and short supply lines will help. We can improve our resilience by making sure we can meet basic needs (eg food, warmth, employment, shopping, entertainment) locally if long trade links are disrupted.

Changing behaviour and attitudes. Government at all levels needs to make it easy and attractive for people to make the choices and behavioural changes needed to decouple quality of life from environmental damage. An important aspect of this is to identify and use the trigger points which encourage people to make one choice rather than another.

Sir David King KB ScD FRS, Chief Government Scientist

"We cannot undo whatever we've done, so in the next 30 years there is all to play for. By that I mean everybody. It's business, consumers, you and me and the world we pass on to our grandchildren."

Multiple benefits

Quality of life. The low-energy lifestyle sketched in this report could offer a higher quality of life in many ways:

- more comfortable homes despite more varied and violent weather: warm in winter, cool in summer, with nobody suffering fuel poverty and space well matched to occupants' needs;
- access to good amenities and services with less time, effort and stress spent on travel;
- cleaner, quieter, safer streets;
- healthier diet, with less anxiety about food safety;
- healthier lifestyles, with more exercise 'built in' and less risk of obesity;
- more active cohesive and lively local communities;
- fairer and more equal access to the good things in life, through (for example) fewer disadvantages to those without use of a car;
- fewer people exposed to flood risk, and more resilience against any disruptions of trade or transport, including those caused by climate change.

A sustainable approach to energy and climate protection can help further a range of local policy priorities:

Fuel poverty
Cold is currently a major cause of illness and excess winter deaths. The UK's 30,000 excess winter deaths each year is twice the typical level (pro rata) of other northern European countries. Better thermal performance in housing has a direct impact on improving health and well-being. Better insulation and more efficient heating and appliances reduce the cost of keeping warm, taking people on low incomes out of fuel poverty. Millions of households have escaped from fuel poverty in recent years, but rising energy prices now threaten to push them back: energy efficiency improvements are essential to safeguard and continue the progress.

Health
Many households presently suffer from fuel poverty which is exacerbated in cold winter months; whilst climate change may reduce winter cold as a health threat, it will also increase excessive heat: we now need to plan to keep people comfortable in hot weather. Road traffic is now the main cause of urban air pollution, so reducing traffic would also have a direct effect on respiratory health, while increasing cycling and walking as routine methods of transport would make a major contribution to increasing exercise and reducing obesity.

Regeneration and local environmental quality
Energy improvements in housing can directly improve school performance, reduce crime and improve mental health, as the experience of many local authorities shows (see appendix). High energy efficiency standards can improve the attractiveness and versatility of refurbished buildings. Local energy conservation and renewables projects can play a major role in building local community cohesion. Reducing traffic can improve the public realm, make streets safer and more attractive, and safeguard the vitality of local centres.

Employment and economy
There is huge potential for job creation in sustainable energy. Energy efficiency installation, advice, local small-scale generation and renewables are all more labour intensive businesses than traditional power generation, and the jobs are rooted in the areas they serve. A renewables supply-chain gap analysis, produced by the government's Renewables Advisory Board (RAB), estimates that up to 35,000 jobs could be sustained across the UK in the renewable energy industry by 2020. The study found that, on average, 10 full-time jobs can be sustained per new megawatt of renewable energy produced (DTI, 2004).

Organisational efficiency
Energy is a resource that any well-managed organisation should use efficiently: energy efficiency is a part, and a sign, of wider efficiency. Energy management can make substantial savings on council running costs.

A political question

If a sustainable energy path is so necessary, desirable and beneficial, why has it not been adopted already, and what is stopping us now?

The main reason is that until very recently sustainable energy has generally not been given high policy priority at either national or local level. The potential negative side-effects on energy of other, higher priority policies have not been recognised or mitigated. These negative impacts often reinforce each other. We are locked-in to unsustainable energy behaviour: isolated individual initiatives have little impact, and indeed are often neutralised by unsustainable trends.

A determined and concerted push will now be needed to get over the 'hump' of inertia, habit, transitional costs, and above all of entrenched beliefs and perceptions, which currently keep our energy behaviour unsustainable. **This is ultimately a test of political leadership, commitment and persuasiveness**.

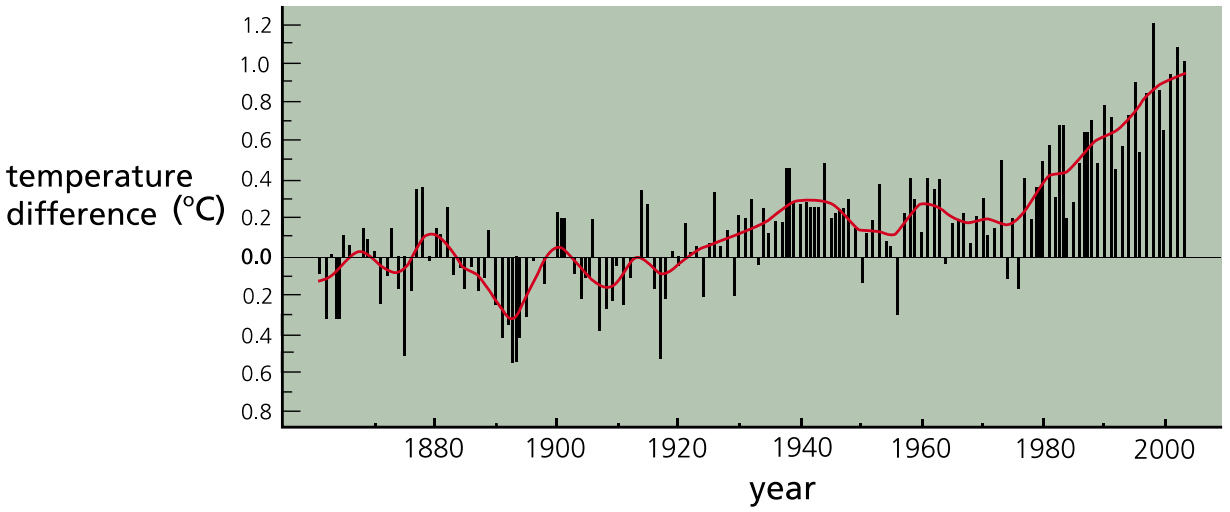
section 2
the climate security challenge

This section summarises the best available information about the seriousness of climate change, its likely effects globally and in the UK, and the scale of action now required.

Scientific evidence

Scientific evidence points to the fact that human action is destabilising the planet's climate in ways that can cause suffering and death throughout the world, which could threaten the well-being and security of millions of people.

Observed global average land temperatures relative to the end of the 19th Century



Some of the latest authoritative scientific evidence shows the global average surface temperature in the year 2003 was nearly 0.8 °C above the average temperature at the end of the 19th century. The 1990s were the warmest decade on records. (Hadley Centre, 2004). Physical observations confirm that the planet has been warming. The planet's snow cover has decreased by 10 per cent and the extent of arctic sea-ice has decreased by 15 per cent in spring and summer since the 1950s. And there has been a worldwide retreat of mountain glaciers. (IPPR 2004)

Other effects are being already being felt, such as an increasing frequency of weather-related natural disasters, including, floods, storms droughts, heat-waves and tropical diseases, and increasing economic losses and rates of death as a result (see web-based fact sheet 1). The Association of British Insurers estimate that losses from natural disasters cost $60bn in 2003 and could be as much as $150bn by 2010.

Impact likely to be at the worse end of previous predictions

But this is only the beginning. The latest predictions of the severity of climate change and its results are towards the worse end of previous ranges, because more reinforcing effects are being discovered than stabilising ones. The most likely global average temperature rise for a doubling of the concentration of atmospheric carbon dioxide is predicted to be 3.5 °C, with a 90 per cent probability that the warming will be between 2.4 °C and 5.4 °C (Hadley Centre, 2004). However *Meeting the climate challenge* (IPPR 2004) identifies 2°C global

John Lawton, Head of the Natural Environment Research Council
"…in a world heading towards massive climatic change, I have become extremely worried... In fact, I am terrified."

temperature rise since pre-industrial times, or 400ppm CO_2, as a safe limit. Above the 2°C level, the risks to human societies and ecosystems grow significantly and the risks of abrupt, accelerated, or runaway climate change also increase, which would have catastrophic consequences. For more information, see web-based fact sheet 1.

Until recently there was still room for honest doubt about whether human activities were harming the global climate. This time has now passed. It is now unscientific to deny a causal link between human use of fossil fuels and climate change as between smoking and lung cancer.

Security of energy supply

The UK will move from being a net exporter of oil to a net importer before 2010, with it bringing considerable risk. The UK will increasingly rely on long chains of supply from and across politically volatile regions. Energy infrastructure is intensely vulnerable to disruption, from domestic protests, international terrorism (Zaitchik, 2005) and natural events including, ironically, extreme weather caused by climate change. Security and risk arguments provide further powerful reasons for reducing the UK's fossil-fuel reliance and centralised energy services.

International impacts

It is sometimes argued that efforts to reduce carbon emissions in the UK are futile while the USA refuses to reduce its emissions and China and India pursue development paths that will rapidly increase their emissions. The government has recognised the importance of securing support from these countries and is giving this high priority, including playing a leading role in international climate negotiations. But attempts to persuade other countries to cut their emissions will only carry credibility if we do it ourselves. Effective action at home is therefore a prerequisite for international success.

Effects of climate change on the UK

The timing and severity of effects is still uncertain, but Hadley Centre (2004) research shows that the effects of climate change on the UK are likely to include:

- higher temperatures all year: more heat waves in summer; possible disappearance of snow and freezing weather from all but the highest mountains;
- people will be able to lead more 'outdoor' lifestyles;
- more extreme weather events including hurricanes, flash floods, droughts and heat waves;
- less rain overall, especially in the south and east and in summer (ie where water shortages are already the biggest potential problem), although there may be more in the west and in winter (ie where excess rain is already a problem);
- more coastal and river flooding;
- more frequent disruption to transport and other infrastructure;
- increasing risk of failure of infrastructure operating beyond the conditions that it was designed for (eg roads melting, rails buckling in extreme high temperatures; drains overwhelmed by rate of rainfall);
- fewer winter deaths and illnesses as a result of cold, but more heat-related summer deaths and stresses;
- return of pests and diseases currently prevented by cold weather, eg malaria;
- loss of wildlife, especially species near the southern end of their ranges;
- low lying areas such as much of East Anglia will experience increased risks of coastal flooding as a result of sea level rise and storm surges;

- flood plains and other low lying areas near rivers such as Thames Gateway, are likely to flood more often and severely;

- dense urban areas are likely to suffer worse extremes of summer heat because unshaded buildings; roads and paved areas absorb and retain solar heat;

- southern areas are more likely to be able to grow grapes and other Mediterranean crops – but less likely to be able to sustain traditional English crops, habitats and landscapes. More irrigation will be required.

  Some of these are potentially beneficial. But most impacts are liable to be negative, costly and disruptive.

All of this makes clear that the government's committed 60 per cent reduction in greenhouse emissions by 2050 must now be regarded as the minimum prudent for security. Action is needed now: the severity of climate change in coming decades depends on whether we reduce emissions over the next few years. The Nottinghamshire and Derbyshire Local Authority Energy Partnership, which consists of 17 local authorities, commented that the developed world needed to be on a 'war footing' over climate security, deciding and carrying out the necessary actions swiftly and decisively. As dramatic as this may sound, it is the rational response to the scientific evidence.

section 3
the need for step change

This document will look at how we could live well with much lower energy use in Anytown, 2025 which could be achieved with current technologies, and how the various components of the package could reinforce and support each other. But at present, measures are often carried out piecemeal, with their effectiveness limited by the lack of co-ordination. As a result, the overall trend on climate security is barely positive if at all. In order to get to Anytown 2025, this section argues that co-ordinated action is needed.

Individual successes – but insufficient progress overall

Progress is falling far short of what is needed to achieve the levels of greenhouse gas reduction required. The techniques and methods necessary may all be proven, but many of them are only being implemented in a few exceptional places. Overall, the UK is at best making very slow and incremental progress, and much of this is being neutralised or even reversed by other trends.

All sectors must act. Road transport emissions are increasing. On current trends, by 2030, aviation emissions could make up nearly 25 per cent of all UK CO_2 emissions. The Environmental Audit Committee stated that the Department for Transport is "*comprehensively failing to address concerns over climate change.*" Such is the discrepancy between UK climate change goals and aviation expansion the EAC has demanded that the DfT "*clarifies what it understands 'sustainable consumption' to be*" (2004).

Beyond perpetual piloting

We don't need more pilots. Existing examples of good practice have already established that it is possible for local authorities, working with others, to achieve very significant progress in many aspects of green energy. However, these are often pilot projects which are short–term, and depend on fulfilling various, sometime contradictory, criteria. Existing good practice needs to be rolled out comprehensively across the UK.

Currently, the best projects often depend on exceptional commitment, resourcefulness and hard work by individual members and officers, and often also on special circumstances and/or funding. There are key reasons why individual pilot projects are not currently adding up to the level of overall change needed.

Technology, incentives, opportunities and behaviour need to be co-ordinated

Emissions on the scale needed can only be achieved if logistical, technological and behavioural changes all work together. Improvements in thermal performance of housing will not achieve reductions in energy use if occupants are then careless and wasteful with heating. Locating housing near jobs or shops will not reduce transport energy use if people still drive to distant alternatives. Economic signals and social norms for example need to reinforce the physical changes that are made.

Many solutions only work as integrated packages

In some cases, different parts of the package are only possible or effective when combined. For example, a big reduction in car ownership and use would only be acceptable to most people if there were high quality local amenities and services near the people affected, and good public transport to give access to amenities not available locally. Likewise, if people are unable or less inclined to drive, businesses would have a motive to choose locations near their customers and staff, or with good public transport connections, rather than locations with good parking and road access. Less car traffic would enable public transport to move faster, improving service quality and cutting costs. Less traffic would also make walking and cycling more attractive. All these changes would further encourage each other: we would have a 'virtuous circle' of mutually reinforcing beneficial changes, in place of the current 'vicious circle' where, all too often, the negative effects reinforce each other.

Converting the vicious circle into the virtuous one requires individual initiatives to be done together in a co-ordinated way. The transition to a sustainable way of life must be a step change. It cannot be achieved as the cumulative result of piecemeal incremental actions, because these will be largely ineffective until the full framework is in place.

section 4
action for step change at local level

Local authorities can already do a great deal to co-ordinate and integrate action on climate security. However, the key success factor for local action is the need for political and senior officer commitment at local level. This section discusses how councils can already act – and what support they need to go further.

Achieving the scale of change required is a tough challenge. Local authorities will need to rise to it through developing their own strategies, targets and actions which are tailored to local priorities. This section outlines some good practice which is already working for some authorities. Members and chief officers should consider the following issues:

- Are you doing this?
- Would it work for your authority?
- If not, what would work for you?
- How can these actions address your area's priorities?
- What would appropriate targets be for your authority?
- Will these targets get you to where you want to go?

Member and chief officer commitment

Political leadership, and informed commitment from chief officers, are essential for success. Energy has often tended to be overshadowed by more urgent and 'visible' priorities, even within the environmental portfolio, which itself faces competition for attention. A key priority of energy and sustainability officers is securing much wider 'buy-in' and support across all departments and amongst officers and members. This remains challenging given many officers and members still regard climate change as a 'distant blip on the radar screen' at best and, at worst, something which has yet to proved.

If local government is to take a proactive stance, councillors and chief officers need to become engaged without waiting for a crisis. At Cambridgeshire County Council, members took ownership of the issue by setting up a member-led review (see appendix). At Maidstone Borough Council, a scrutiny committee carried out an inquiry into how the council is addressing climate change which produced wide ranging and ambitious recommendations on both reducing greenhouse gas emissions and adapting to climate change (see appendix).

The challenge for the managers and political leaders of local government is to recognise the urgency of climate change and the opportunity to be pro-active and to take the lead in the interests of their community, without waiting for circumstances to force their hand.

How government can help

Government has given a valuable lead through its public statements on climate change. But historically, climate security and sustainable energy have not been statutory duties for local government, nor can local authorities gain credit in standard performance assessments, or have access to ring-fenced funding. Progress has depended on the personal conviction and commitment of individual members and officers.

- Government needs to send a strong message that this leadership role is expected of local authorities and is essential to national delivery of energy and climate change targets. Whatever the future inspection regime looks like for local government, it must be intelligent enough to recognise good performance in this challenging area and to actively reward it, alongside performance in more traditional service areas. An effective response to climate change should be seen as one of the outputs of any good local authority, and excellence should gain credit.

Area-wide partnerships

Local strategic partnerships, community strategies, local area agreements, local public service agreements and the power of well-being offer local authorities new opportunities to set and achieve a vision for their areas with their partners.

They create the potential for different agencies to pool budgets in pursuit of common aims and challenging targets.

These local partnerships should be seen as the key vehicle for delivery at local level; progress needs to be made by local stakeholders joining together and not by management from Whitehall. So far, the use of these new local partnerships to tackle climate change has been a minority interest but they could be far more widely used:

Nottinghamshire public bodies have negotiated a Local Public Service Agreement (LPSA) with government to invest £1.5m to achieve annual emission reductions of 5000 tonnes of CO_2 (see appendix).

Middlesbrough council led the development of a Climate Change Community Action Plan, which was adopted by the Local Strategic Partnership, including agreed actions both to reduce emissions and to prepare for anticipated changes in weather (see appendix).

How government can help

- Government can support local authorities and their partners to exploit the potential for joined-up working by actively encouraging local authorities and their partners to adopt challenging local targets for climate change. Central government should see these local mechanisms as a key to the delivery of national targets. Experience shows that where central government takes on this active and supportive role, the response from local partners can be significant. During negotiations for the first round of LPSA targets, the DCMS (Department for Culture, Media and Sport) secured a substantial increase in local targets in their areas of interest, particularly sports participation, by sending newsletters to councils, offering them advice and surgeries and helping them identify outcome targets for their local agreements.

Planning and strategy

To take a lead in energy issues and adapt to climate change, local authorities must be able to manage and measure their progress. Climate change strategies are one way to do this. Many local authorities have adopted council-wide climate change strategies. Examples include Southampton, Bournemouth and Bristol (see appendix). Such a strategy can be valuable as a tool to raise the profile of climate security throughout the local authority, signal the authority's commitment to its wider community, and plan actions in a coherent way. The Nottingham Declaration is a voluntary commitment for UK councils to take action on climate change, launched in October 2000 in Nottingham which over 80 councils have signed up to. Signatory councils have found it a useful way of raising the profile of climate change and making their commitment public. The text of the Nottingham Declaration is available on a separate web-based fact sheet (fact sheet 2).

Management and monitoring of progress is vital and an authority's overall climate change strategy needs to be followed through with specific targets, actions, monitoring and review. Corporate targets can also help focus attention on energy issues. The following targets have been developed by the Energy Saving Trust (EST) based on long experience of working with local authorities and provide a useful starting point, (see box 2, over the page).

EST's suggested voluntary targets
(Box 2)

Cut greenhouse gas emissions by 60 per cent by 2050.

20 per cent improvement in domestic energy efficiency from 2010 to 2020.

End fuel poverty in vulnerable households by 2010 and in all households by 2016-18.

Adopt building regulations requirements rather than Decent Homes as the standard for thermal efficiency.

Adopt renewable energy supply wherever practicable.

Utilise whole-life costing when assessing all capital projects.

Incorporate CHP/Community Energy in developments wherever practicable.

A range of existing management tools and approaches can be used to help deliver climate strategies. Examples include Environmental Management Systems which is a powerful method to promote sustainable energy. Crawley Borough Council and High Peak Borough Council use the Eco-Management and Audit (EMAS) process to set a range of energy-related targets and ensure that action is taken to achieve them. Middlesbrough integrated climate impacts assessment into its Environmental Management System (see appendix).

Many local authorities now use sophisticated Building Energy Management Systems to monitor and control energy use in their own buildings. These pay for themselves quickly in energy savings. 'Intelligent metering' as used by authorities such as Leicester City Council provide an opportunity to measure detailed energy use in buildings (see appendix).

How government can help

- Appraisal should be applied at all levels. National planning strategies, decisions and guidance should be subjected to the same disciplines of independent appraisal as regional and local strategies, to ensure the coherent 'nesting' assumed in the Strategic Environmental Assessment Directive. This avoids the risk of appraisals misleadingly assessing relatively minor consequences of implementation of higher level decisions that have not been subject to any independent appraisal.

- Appraisal criteria should include climate change outcomes: the effect of a policy, programme or decision on net greenhouse gas emissions, and (where significant) the effects on climate security and resilience.

- Detailed and accurate data on energy use and the energy performance of housing and other buildings is essential for local authorities to design, prioritise and deliver energy measures effectively and efficiently. Lack of data has been a known problem since the first Energy Action Cities in the mid 1980s. Efficiency pressures and increasing energy challenges make this more important than ever. The inability to access the necessary data is still a problem. One leading local government expert said that 'data from utility companies is very poor at the moment and appears to be getting worse.' Government should require energy suppliers to provide accurate, real-time energy consumption data at six-figure postcode level available to local authorities, and work to overcome any problems of personal and commercial confidentiality.

Spatial planning

The land use planning system is one of the most powerful tools for sustainability available to local authorities. In line with national guidance, structure and local plans (and now regional spatial strategies and local development documents) generally promote a 'sustainable settlements' agenda of higher density development, good public transport access, restrictions on out of town development and parking, maintaining the

vitality of existing settlements, and cleanup and reuse of previously developed land. These objectives are generally highly supportive of sustainable energy, so this is one area where local authorities can achieve results simply by applying existing agreed policy as vigorously as possible. There are other existing planning levers that can be used. Fenland District Council used Section 106 of the Town and Country Planning Act (1990) to get wind-farm developers to contribute funding for the formation of a district climate change strategy as a condition of their planning approval (see appendix).

Recent planning guidance has responded to climate change by giving stronger emphasis to avoiding flood risks (eg by not building in flood plains) and a proactive and supportive approach to renewable energy: these give local authorities opportunities to promote these aims more vigorously in future plans.

Merton's Unitary Development Plan requires commercial developments over 1000m^2 to meet 10 per cent of their energy demand from on-site renewables. It has been reported that the 10 per cent requirement is also encouraging developers to take much more interest in energy efficiency measures so as to reduce the size of the renewables requirement (see appendix).

Many local authorities have had an influence over energy and environmental performance of development through producing guides for developers and adopting them as supplementary planning guidance (now supplementary planning documents). Examples include Nottinghamshire County Council and Bristol City Council (see appendix).

How government can help
Government's endorsement of the Merton policy sets an important and valuable precedent for a more proactive approach to sustainable energy.

- Planning authorities should be able to set higher standards for energy efficiency than national building regulations. Parking space allocations already set a precedent where national guidance specifies a basic standard to be achieved everywhere, but local plans can go further where circumstances permit.

- More generally, the planning system needs to allow local authorities to set and require outcome-related standards for energy efficiency.

Investment, finance and whole-life accounting

Sustainable approaches to energy and climate security often require high, up front investment which pays back over a period of some years in terms of energy costs saved and/or better service delivery. This is particularly true of the ambitious measures needed to achieve step change. Local authorities such as Bristol have developed solutions to this problem such as revolving funds which pay for energy efficiency improvements and recoup the costs out of future savings (see appendix). Once established, these can be self-sustaining (provided they are limited to measures that pay back quickly enough to replenish the funds.) But it is increasingly difficult for local authorities to set aside the money needed to get them started: recent examples invariably depend on special external funding sources. Local government activities in the area of sustainable energy and climate protection are restricted by constantly having to look for funding for projects.

How government can help
Local authorities need:

- freedom to use investment appraisal methods that recognise and give due weight to 'whole life' impacts, including non-monetary benefits;

- ability to raise finance for environmental 'spend to save' measures without competing with mainstream services. Money should not be so tight that only the shortest payback projects ever reach the top of the queue, and projects with the

biggest potential energy savings never get funded because of their longer financial payback;

- funding to support officers to work on climate change as a permanent established function.

- One possible route would be for the government to be prepared to act as guarantor for local authorities embarking on major projects, so that for example, local authorities can offer financial bonds to raise finance for major projects, like installing a district heating system or city-wide combined heat and power project.

Energy services companies

The principle of 'contract energy management' is that a client sub-contracts provision of energy services (heat, light, building services) to a specialist energy services company (ESCO) for a fixed period (typically seven years) for a set fee. The ESCO then specifies, pays for, installs and runs new equipment to reduce the amount of energy needed to provide those services. The ESCO recoups its investment and makes its profit out of the energy savings. The client benefits from having modernised energy systems without needing to invest in or manage them, some savings immediately and greater savings after the contract period (the client takes over ownership of the equipment that the ESCO has installed).

Contract energy management has immense potential to overcome two of the biggest obstacles to energy efficiency improvement in the domestic market; poorer households being unable to afford energy saving investments and most people lacking the expertise to choose and specify appropriate measures.

Local authorities play an indispensable role as trusted intermediaries/project facilitators for energy projects. For example Broadlands District Council acted as an intermediary to co-ordinate the installation of 40 solar water heating systems in private homes; the Nottinghamshire and Derbyshire Local Authority Energy Partnership has researched, specified and arranges installation and grants for solar water heating systems: South Ribble District Council arranged a scheme for replacing old 'fridges with new energy efficient ones (see appendix).

With their detailed knowledge of the people and housing in their areas, energy efficiency expertise and status as trusted public bodies, local authorities are ideally placed to extend this work by becoming, or helping establish, ESCOs which could install packages of measures for householders and recoup the costs from energy savings. Woking Borough Council has set up a pilot ESCO.

How government can help

- Development of local government based ESCOs is hampered by restrictions on local authority commercial activities. Government should review the rules to enable local authorities to borrow to set up and run ESCOs.

- Ideally, energy suppliers should themselves become energy services companies, making their profit out of providing better energy services with less energy, rather than (at present) selling more energy.

Procurement

Public sector procurement can play an important role in creating markets for more sustainable products and stimulating suppliers to improve performance. Local authorities are large buyers of goods and services, spending £40bn a year on procurement. Many are already using their purchasing power proactively to support sustainable energy.

The most direct way to do this is for the council to buy green energy itself. Many authorities now specify renewable energy for some or all of their own consumption: The London Borough of Lewisham and Chester City Council are among a number of authorities already buying 100 per cent renewable energy for their own buildings and operations (see appendix).

However energy is a component of all goods and services, and should be considered in broader purchasing. Where detailed information is not available, good rules of thumb are to:

- buy recycled reclaimed products: they usually have lower embodied energy than those made from virgin materials as well as reducing wastes, saving raw materials, promoting jobs and reducing import dependence;

- buy local, to reduce transport impacts;

Bristol City Council has produced a code of practice for sustainable procurement to help council officers incorporate sustainability issues into the procurement process. The London Borough of Lewisham has a green procurement strategy under which environmental issues are included as a consideration in all contracts.

Purchasing consortia can both do more research and use buying power to influence: consortia can use the potential of very large volumes of purchasing to secure green alternatives such as renewable energy at no additional cost.

Capital projects and PFI schemes provide an opportunity to integrate sustainable design principles and use of high specification materials which will greatly improve the energy efficiency of buildings and thus reduce emissions as well as reducing running costs. For example, Bolton and Bristol have all successfully used PFI to set high energy standards in new schools (see appendix).

How government can help

- Government's support for proactive green procurement is very welcome. However government initiatives such as the Gershon efficiency review place local authorities under pressure to procure the cheapest option, regardless of energy or environmental performance. Efficiency drives should recognise that climate impacts are part of 'excellence' in procurement and good service delivery.

- The revision of EU procurement rules, and liberalisation of services within the EU must take adequate account of the climate impacts of the impact of the free market. The entire lifecycle of a product should be assessed through tools such as the forthcoming EU Integrated Product Policy. This should include assessments of impacts of transport as well as production. This approach would allow distant suppliers to win contracts if other aspects of the production process (eg outdoor fruit growing or renewable powered factories) offset the climate impacts of transport. The integration of environmental criteria into procurement rules should be wholescale and avoid piecemeal revisions to ensure clarity for local government.

Advice and promotion

The Nottinghamshire & Derbyshire Local Authorities' Energy Partnership (LAEP) operates a mobile energy advice centre which attends local events and supports outreach activities (see appendix).

Evidence suggests that generalised promotion and exhortation have a limited effect, but detailed personalised face-to-face advice from a trusted intermediary can achieve major and lasting changes in behaviour. This can be expensive, but the effectiveness makes the investment worthwhile.

How government can help

- More sustained, long term support is needed for personalised, tailored intensive energy advice and motivational work. This can build on the experience of Energy Advice Centres (EACs).

Demonstration

Demonstrations of what can be done with existing 'normal' buildings such as the Nottingham Ecohome are particularly useful. Buildings with high public uses are another good opportunity, especially ones with an environmental theme where exemplary energy performance in the building can act as a practical presentation of the message (see appendix).

Sharing expertise through local government and NGO networks

Regional and sub-regional partnerships can strengthen and co-ordinate local authority delivery as well as disseminate knowledge and exchange good practice. Examples include the Nottinghamshire and Derbyshire Energy Partnerships, Cornwall Sustainable Energy Partnership. Worcestershire County Council has learned from Marches Energy Agency and in turn passes expertise on to others (see appendix).

How government can help

- Mechanisms need to be put in place to ensure that the expertise and experience of local authority partnership working informs regional and national policy. A mechanism, which enables key messages, lessons learnt, and subsequent policy implications to be communicated from the ground to government would strengthen the link between national policy and local delivery.

Success breeds success

Even the most advanced and successful local authorities in the sustainable energy field had to start somewhere. Four important success factors are:

- choose initial actions carefully to produce quick wins. Projects that can produce benefits relatively quickly will be visible to and valued by members, and managers can get energy work off to a good start. Many of the most ambitious and sophisticated local government energy programmes started off with something as simple as a 'good housekeeping' initiative in one building;

- 'success breeds success': as Worcestershire shows, initially smaller scale experimental measures build both technical know-how and the political and management confidence to repeat the same approaches on a larger scale (see appendix);

- consistent commitment is important: authorities such as Newark and Sherwood, Woking or Shropshire have built their success through long term consistent commitment, often by officers and members working together;

- co-operation and partnership between stakeholder groups.

Regional support

Regional institutions and strategies can play a valuable role in supporting and enabling local authority action on climate change, providing a more strategic framework to co-ordinate local action, and reflecting the varying needs and opportunities of different areas and local authorities. Regions should be actively planning for climate change through integrating climate impacts into existing strategies. Several regions have regional climate change strategies setting a framework for proactive approach to both mitigation and adaptation; most have renewable energy strategies considering best opportunities for renewables throughout their areas.

Regional bodies should:

- integrate climate security into all their funding programmes and integrate sustainable energy into all regional policy streams – this would provide a clear signal to local authorities and other key stakeholders, whilst maximising opportunities to obtain economies of scale;

- support energy service companies providing a whole service in conjunction with local authorities, business and utilities through long term partnerships;

- encourage local authorities within regions to take up national programmes, such as Energy Saving Trust and Carbon Trust programmes;

- support regional strategic energy offices or co-ordinators, representing all the regional partners to act as a central point of contact for local authorities in the region;

- co-ordinate development of energy strategies

through EACs for developing county energy strategies, and ensure that energy strategies are adopted by all key stakeholders, not just local authorities (see fact sheet 3).

Action now

There are some immediate positive actions that local authorities can take to begin making progress:

1 Beginning with a public declaration of commitment, such as signing the Nottingham Declaration, the council can ensure that climate change gets the political priority it needs by appointing a senior-level champion and giving them the support they need.

2 Produce a strategy and action plan for reducing emissions in a measurable way across council operations and in the wider community.

3 The council can set a good example by improving energy performance in their own estate, social housing and vehicle fleet. Use building control and planning approval to set construction standards to at least EST best practice level, and to encourage renewables wherever possible.

4 Promote the council's green credentials to the community: opportunities like Energy Efficiency Week should be taken advantage of.

5 Form a strong partnership with the local EAC to help with delivery of programmes to residents.

6 And finally, take advantage of the free advice, support, information and funding available through agencies such as the Energy Saving Trust and the Carbon Trust. These steps have been endorsed by the Society of Local Authority Chief Executives (SOLACE) (see web-based fact sheet 4 for the full text).

the need for step change at national level

Local authorities need a supportive policy framework at national and regional level. Section 4 has already discussed how government could give more support for specific kinds of local action. This section outlines how the broader policy context needs to be changed to enable local action on climate change to be as comprehensive as needed.

The need for change

The UK is one of very few countries likely to achieve its Kyoto obligation of significant greenhouse gas reductions. However this is largely an unintended side-effect of the shift from coal to gas and the decline of manufacturing (which shifts greenhouse emissions to the countries from which we now import goods).

The UK's achievement therefore gives us no reason to be complacent. It does not mean that we have successful and effective climate change reduction policies, but almost the opposite: two big windfalls have saved the UK needing to ensure that climate change policies and programmes are effective enough to make a big difference. This is now a pressing issue because we have a long way to go, and no further windfalls are in sight.

Local government actions on climate security and sustainable energy called for in this document are currently swimming against the tide of:

- energy prices which do not reflect the costs of society of energy use, and make energy saving often a poor deal in financial terms;
- pricing structures that tend to reward higher energy consumption;
- market structure designed to encourage sales of energy rather than provision of energy services;
- low awareness of climate change and energy issues;
- an economy which prioritises consumer choice over public good.

These need to be addressed to enable the initiatives advocated in this document to deliver their full potential.

Prices and price signals

In recent years, low energy prices have helped take millions of households out of fuel poverty, increased consumer spending power and stimulated economic growth. But they have also discouraged investment in energy conservation and non-carbon energy sources by lengthening payback times, and encouraged economic growth to take place in energy intensive sectors such as car and air travel, leaving us less well placed to respond to climate change.

Motoring costs in the UK have remained almost constant in real terms since 1974, and have therefore halved relative to real incomes, while public transport costs have risen almost as fast as incomes. Untaxed aviation fuel and 'no frills' airlines have made flying cheaper than ever before – often costing less than much shorter car or rail journeys. These price relationships are not facts of nature, but the result of political decisions about taxes and subsidies for different transport modes.

Policy now needs to recognise that the era of cheap energy prices is over. Fossil fuel prices rose strongly in late 2004, and are likely to continue to rise as a result of depletion, economic growth in Asia, and global political insecurity. National policy needs to prepare for high energy prices. Government should not seek to insulate energy intense sectors from price rises, but instead treat rising energy prices as both a reason and an opportunity to promote energy conservation in all sectors, and structural shift to lower carbon sectors.

Government should protect vulnerable people from health and social exclusion as a result of rising energy prices. The top priority should be to reduce their dependence on energy. This gives new urgency and importance to programmes to improve the energy efficiency of homes and appliances.

Lord Oxburgh, former chairman of Shell

"…to say global warming has gone too far and we can't do anything about it, even if it is a rational decision, is not a morally defensible one. We have to try."

Price structures

Price structures can help reconcile environmental and social objectives. For example, 'rising block' tariffs for energy can reconcile affordability (the first, 'bare necessity' units of consumption are kept very cheap) with an effective price signal (higher levels of consumption are sold at a higher rate) and without subsidy. They are used for water and/or energy in Victoria (Australia), Israel, Manila (Philippines) and Sri Lanka (Sohail, M. (2004)).

Another example would be to introduce road pricing where felt appropriate locally, as part of a wider package of measures including public transport investment, more local government influence over the pattern of public transport services (particularly buses), and a holistic approach to reducing the need to travel by car to access public services.

Emissions trading

Emissions trading is a way to drive reduction of greenhouse gas emissions that works with the grain of the market: rewarding companies that achieve reductions by allowing them to profit by selling surplus permits to others who have not managed to reduce emissions.

However, companies and industries which have already invested heavily in reducing emissions may be penalised by getting low allocations compared to others which still have cheap and easy opportunities. Trading only drives reductions if government keeps up the pressure by reducing the number of permits over time – but this is politically difficult.

Most importantly, a trading scheme does not itself reduce emissions. Indeed, a trading scheme is only viable and politically acceptable if participating organisations have, between them, enough opportunities to make reductions without unacceptable results. Tradable permits must be seen as a complement to, and potential encourager of, actions to reduce greenhouse gas emissions, but not as a substitute for measures to make savings practicable.

Personal carbon allowances - some have argued that tradable carbon emissions permits should be extended to the an individual level: citizens to be issued with individual tradable carbon quotas to bring a sense of personal responsibility. People who wish to live beyond their carbon quota would have to buy extra permits from those who have succeeded in reducing their carbon dependence.

This would certainly raise the profile of climate impacts in everyone's day-to-day decisions in an unprecedented way. It would also be politically challenging. Political courage would be needed to stick to a path of reducing the allocation year by year, which would be necessary for a quota scheme to make a real difference. As with industry level quotas, personal carbon allowances would depend on the availability and practicability of other measures to reduce emissions, rather than offer an alternative to them.

Greenhouse emissions as a driver of policies and decisions

The preceding section outlines ways that climate change can be made a consideration in policy. Inclusion of greenhouse gas emissions as (for example) a criterion in sustainability appraisal ensures that the effects of a plan or policy on emissions are identified and taken into consideration alongside other objectives. However this does not ensure that the decisions taken will promote sustainable energy, or even that the best option for climate change possible in the circumstances is chosen.

It is difficult to see how the UK could achieve its target of 60 per cent greenhouse gas reductions by 2050, if emissions from particular sectors are allowed to increase. This implies that greenhouse gas emissions should no longer be just one objective among many to be balanced and traded off against each other, but instead that **climate impacts should be integrated into all major policy decisions**. Financial probity, equal opportunities and public safety are already entrenched as non-negotiable requirements in all public decisions;

climate impacts should sit alongside these requirements.

Climate proofing

All public policies and programmes should be 'climate proofed' to ensure they are consistent with climate security. This could be achieved as part of Regulatory Impact Assessment, or by extension of sustainability appraisal and strategic environmental assessment from regional and local strategies to the national policies and guidance that direct them. Existing policies should be reviewed to avoid unintended perverse consequences for climate security. Public procurement rules, transport policy, the role of consumer choice in public services, and the effects of tax and utility price structures are priority areas.

Sustainable energy approaches should not require a determined effort to overcome bureaucratic obstacles. For example, one consultee mentioned a range of requirements that discourage small scale renewable projects:

- earnings from sale of renewably generated electricity – even the tiny quantities exported from micro renewables are taxed;
- householders exporting renewable electricity are liable to be assessed for business rates, and businesses doing so will see a rise to their business rates;
- householders will need to spend a large proportion of their project costs just achieving planning permission for micro renewables.

High enough regulatory standards

Regulation has a proven record of success in driving energy efficiency improvements; most progress made so far has been driven by regulations, notably the building regulations and efficiency standards for cold appliances.

The government's initiative in progressively raising building regulations thermal standards is welcome. However standards need to be raised further and faster to achieve the reductions needed (Boardman, et al. 2005). It is important that regulation does not outstrip the ability of the building industry to comply. Government should research the possibility of requiring a step change in standards, with sufficient preparation to enable the industry to prepare and develop the necessary skills to implement higher standards.

Several other regulatory changes to drive energy improvements in buildings include:

- the general move in the last few updates of building regulations away from standards related to individual building elements to the performance of whole buildings is welcome. Consideration should be given to the practicality of relating standards to numbers of occupants;
- the 'decent home' thermal comfort standard should relate more closely to current building regulation thermal efficiency standards.

Regulation should be used systematically to drive up product energy standards, as has already happened very successfully with 'fridges and freezers. Priorities should include:

- reducing the five per cent of electricity currently used by appliances on 'standby';
- washing machines and dishwashers should have hot and cold fill so as to be able to take advantage of low-carbon hot water supplies;
- 'tail lopping' – raising the minimum permissible energy efficiency levels of appliances in equipment to exclude the worst 10 per cent or 20 per cent - should be carried out every few years in all categories of appliances where there is a significant difference in energy consumption between best and the worst;
- performance standards should relate to actual energy consumption levels as well as to efficiency,

to avoid the current perverse incentive on manufacturers to increase the size of appliances.

Information

One of the main obstacles to changing behaviour is that, unlike (for example) waste and rubbish, energy and climate change impacts are largely invisible in daily life. Concerted actions are needed to make the energy and resource implications of lifestyles visible. Energy and water meters could potentially provide far more intelligent feedback about consumption than at present.

Ecological footprint – the area of productive land needed to produce a product or support an activity – could provide a common currency to measure a range of impacts, including greenhouse gas emissions, whose impact can be 'footprinted' as the area of energy crop needed either to substitute for the fossil fuel or to mop up the emissions.

Mandatory standardised footprint information on all products with significant resource content would raise awareness of the environmental implications of consumption, and enable consumers to make informed choices.

New settlements are an opportunity that cannot afford to be missed

Many of the problems identified in the previous section are due to entrenched and self-reinforcing patterns of behaviour in existing settlements. It would be easier to achieve a step change in energy behaviour in a new settlement, where the kind of virtuous circles outlined can be established from the start. The government's proposals for large-scale house building therefore offer a unique opportunity to create genuinely low-energy communities from the start. If these were carefully located they could act as both examples and centres from which low-energy patterns of life could propagate to their surrounding areas.

Government should act to ensure that all significant new settlements are designed from the start to achieve zero net energy demand. Standards of this kind could be set through the landowner imposing covenants and conditions on developers. If the local authority were the landowner, this would provide democratic accountability.

This would, however, require some departures from normal British development practice, including:

- mandatory standards of energy efficiency in buildings much higher than even the proposed new building regulations;
- provision of biomass-fuelled combined heat and power generation, and heat distribution infrastructure as part of the initial development package, and a requirement for residents to buy their power and heat from it;
- excellent quality provision of all day-to-day amenities and public services on site as soon as residents move in, to save the need to travel;.
- good quality walking, cycling and public transport facilities;
- measures to encourage people to avoid unnecessary car use.

This is much the way the sustainable neighbourhood of Freiburg was developed (see appendix). Government could experiment with the idea of 'special sustainability areas' where existing rules are suspended.

section 6
a future vision: Anytown 2025

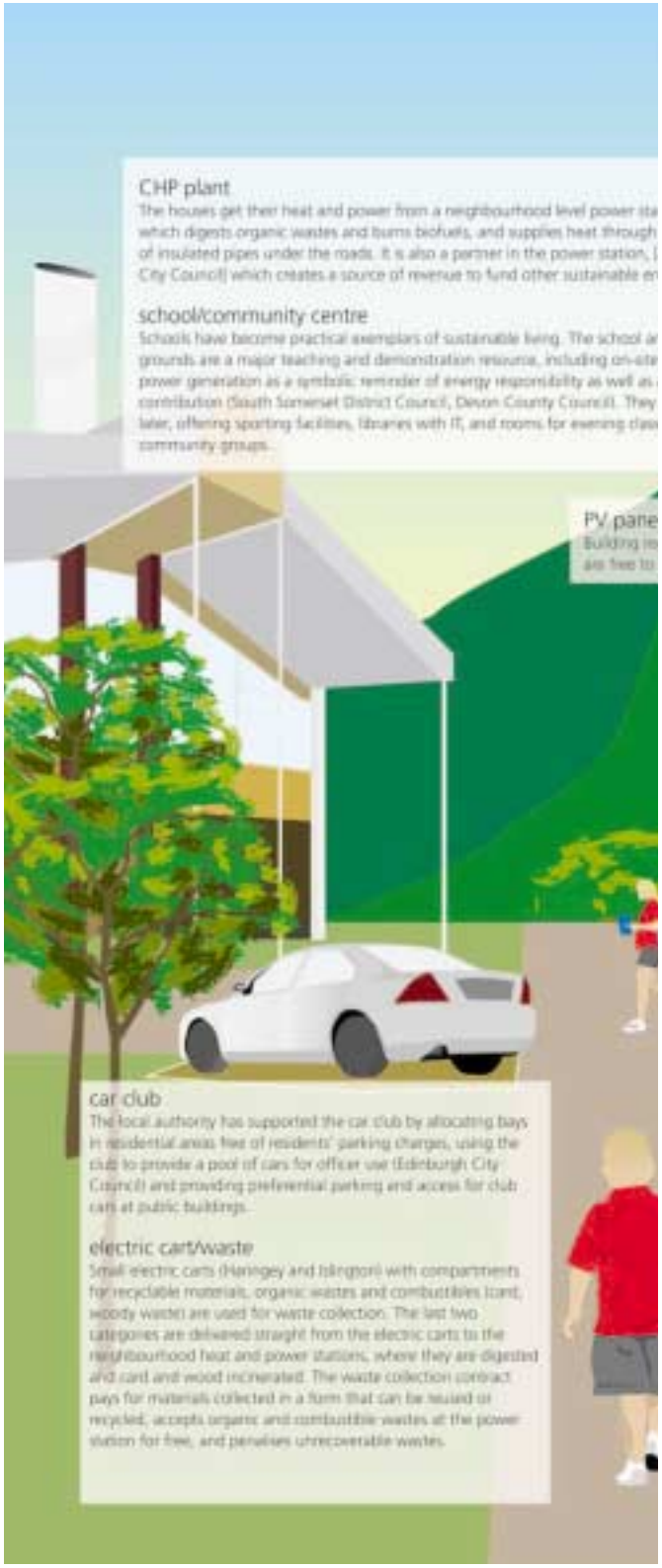
***Anytown is intended to be illustrative rather than prescriptive**. There are many more potentially valuable methods, technologies and supporting policy measures than there is space to discuss. Different solutions will be appropriate in different circumstances. Inclusion of an approach or policy measure here does not imply official LGA or EST endorsement, or rejection of alternatives: the aim here is to show how adapting to the impacts of climate change, together with a low energy life can be possible, not to prescribe a single 'correct' solution, a storehouse of ideas to draw inspiration from.*

This section illustrates how it would be possible for us to live well in 20 years time with significantly less use of environmentally damaging energy, and with much reduced vulnerability to climate change, if the type of actions outlined in the preceding two sections are implemented at local and national levels.

This section sketches how life might be in a typical suburban Anytown somewhere in middle England in autumn 2025.

***The italic text outlines some policies and actions that have made it possible, with particular emphasis on the role of local government.** The references are to examples of current practice which point the way; these are summarised, with reference to sources of further information, in the appendix.*

After the suburban vision, the section considers urban and rural variants, the implications for businesses and the local authority's own activities, how 'hangovers' from the unsustainable past could be tackled, and how the changes could be paid for.




terrace housing
Local authority development control, building control and energy advice centres, are now a single merged one-stop Sustainable Building Support Service which gives advice to developers and sets locally - specific environmental standards higher than national ones, in response to local policies.
Existing housing has been brought up to the highest energy standards practicable at the point at which major refurbishment was taking place anyway, as first required in the 2005 building regulations. These standards often approach what new build can achieve. (RB Kensington and Chelsea Flagship Home and the Nottingham Ecohome.)
Thus the local authority mediates and manages a mechanism that requires and encourages the highest practicable energy efficiency standards in both new and existing housing, and pays for improvements out of energy sales and development gains.
water management
Climate change has reduced overall rainfall, requiring better water management. Most houses have large water butts to collect rainwater (Harrogate Borough Council).
household gardens
Supplementary planning guidance encourages tree planting, which provides natural shading in summer and also helps absorb excess groundwater. Under its local sustainable food policy, the council supports initiatives including a 'matchmaker' database to put keen gardeners in touch with people who have spare food growing space in their gardens but lack the time and energy to do it themselves, and a marketing collective to re-sell local organic produce, underwritten by a commitment by school, hospital and other public service kitchens to buy surplus produce (Bristol City Council).
lock-up compartments
Twice a week, reusable plastic crates of foods pre-ordered over the internet are delivered, leaving the boxes in a lockup-type compartment outside the house. The driver takes back empty boxes, milk bottles and a range of other standardised containers (jam jars, wine bottles) for washing and reuse in local dairy/ies of their modernised milk bottling factories.
street layout
transport
Land use policies have encouraged balanced communities where employment, education and other amenities are closer to where people live; the council subsidises the buses; high costs for longer-distance travel have encouraged people at all income levels to live nearer their work, making walking and cycling more feasible.

Housing

At a glance, Anytown 2025 does not look very different from the kinds of places where most people live in 2005, as the majority of building stock from then still exists. The future will be reached more by adaptation and evolution of what we already have, rather than by revolutionary innovation. The housing is still largely traditional in appearance, mostly two or three storeys with pitched roofs, laid out along streets. But a careful look reveals some changes. The windows are high performance triple glazed; many of the walls on the north sides of houses have a rendered finish, over a thick layer of external insulation, making the walls work better as heat stores. On the south sides of houses there are larger windows, to capture solar heat in cold weather, but they have awnings or shutters to control heat gain in summer.

Many attics have been converted, providing more living space for the same amount of external envelope (and therefore heat loss). For the same reason, many of the narrower gaps between houses have been filled in, providing workshops, stores or hobby rooms, reducing heat loss while maintaining sound insulation between main living rooms. Most south-facing roofs are either tiled with photovoltaic 'slates' or have solar water heating panels; both come in a variety of styles to match different buildings. Many of the chimney stacks now sport distinctive cowls for stack ventilation.

Planting around the houses is carefully designed to contribute to energy management, with plenty of shrubs near north sides to moderate the wind, and vines and deciduous trees in front of southern walls located and pruned to provide cooling shade in high summer but let light through in other seasons.

Water management has become more conspicuous, reflecting the importance of both handling more uneven rainfall and conserving water. Eaves, gutters and drains are larger, to cope with more violent and concentrated rain. There are large water butts next to most houses, and unpaved 'soakaways' for excess rain. Paved areas are mostly permeable, and any solid paving has pebbled edges or other provision for rain to drain away. *Building regulations require new housing to achieve zero net carbon emissions. Builders are free to use whatever combinations of technologies they wish to achieve this result. Much higher standards of insulation are the norm, the ratio of external surface to internal space is reduced by using linked, terraced and tenemental forms, and layouts are designed to trap sunshine in colder weather, but use planting, shade, shutters, awnings and such like to keep uncomfortable heat out in summer – as has been standard practice for centuries in southern European countries whose climate England is slowly approaching.*

Developers use standard software to test and prove compliance with the energy standards. Local authority development control, building control and energy advice centres, now a single merged 'one stop' Sustainable Building Support Service gives advice to developers, sets locally specific environmental standards higher than national ones in response to local policies, checks compliance and monitors results – the actual energy used – to inform future policies.

Existing housing has been brought up to the highest energy standards practicable at the point that major refurbishment was taking place anyway, as first required in the 2005 building regulations. These standards often approach what new build can achieve (see appendix). Householders value housing with high energy performance, and there is a premium on A-rated housing under the Energy Label introduced in 2007. As well as this market incentive to refurbish, the building regulations require energy efficiency improvements whenever major works are taking place, including extensions, as proposed in the 2005 regulations.

Permitted development rights encourage extensions and conversions that increase living space within existing residential areas, but require any significant alteration or extension work to be accompanied by an energy conservation programme setting out all practicable improvements to the whole property.

The local authority Sustainable Building Support Service advises and agrees proposals. Householders do not find this onerous, because the local authority pays for all the measures in the agreed programmes.

This funding is also available to occupants of existing housing who voluntarily undertake energy efficiency measures following advice from the Sustainable Building Support Service. Thus the local authority mediates and manages a mechanism that requires and encourages the highest practicable energy efficiency standards in both new and existing housing, and pays for improvements out of energy sales and development gains.

Households

Demographic trends to smaller households have continued. But this has not resulted in as much extra housing space demand as had been feared. It has been easier and more attractive for families to 'downsize' when they wish, releasing larger houses.

Local plans have required a large increase in high-quality sheltered and semi-sheltered housing to provide an attractive option for people as they get older. Taxation has been re-engineered to encourage and reward people for not occupying more space than they really need. Stamp Duty – a tax on moving house – has been abolished, and costs of moving to a smaller house can be set against tax. Householders are taxed on housing space in excess of a standard allocation per resident. Tax breaks have also encouraged the establishment of neighbourhood guest flats where visitors can stay, reducing the need for residents to keep spare rooms.

Heating

The houses get their heat and power from a neighbourhood-level power station which digests organic wastes and burns biofuels, and supplies heat through a grid of insulated pipes under the roads. The council paid for installation of the heat main as part of a complete renewal of the street infrastructure and services which also replaced the impermeable metalled road with a narrower permeable surface - see following point. It is also a partner in the power station (see appendix) and is recouping the heat main investment from fuel bills over a period.

Streetscape

The streets seem less cluttered, more spacious and more inviting. Most people use the car club, which has two or three cars of different sizes in a marked bay every couple of hundred metres along the road and can easily be booked over the internet. The cars all use low-carbon technologies such as fuel cells using hydrogen produced from renewable energy sources, electric batteries charged by renewables, biodiesel (from vegetable oils), or hybrid (oil/electric) engines. So do buses and commercial vehicles. Many garages have been converted into rooms; others stores for bicycles, firewood or recycling bins.

The combination of car clubs, the availability of affordable and punctual public transport, and the reduced need to travel, together have resulted in car ownership and use falling dramatically from 2005 levels. The local authority has supported the car club by allocating bays in residential areas free of residents' parking charges, using the club to provide a pool of cars for officer use (as Edinburgh City Council already does (see appendix), and providing preferential parking and access for club cars at public buildings. These factors together have made club cars both cheaper and more convenient than privately owned ones - except for people with disabilities or special needs, who enjoy much better access because there is less competition for road and parking space.

Roads

The road, like most off trunk routes, is in fact an unsealed compacted aggregate track (the surface already used for much of the National Cycle Network). Rain percolates through it to recharge groundwater, its light colour reflects heat away,

reducing the urban 'heat island' effect – urban areas are several degrees hotter than surroundings, largely because dark roads and roofs catch and retain solar heat (Met Office, 2003), and it is safe and comfortable for cycling, walking and light traffic. The road runs between avenues of trees which shade it in summer but are now losing their leaves.

Highway standards are now no longer set externally. The local authority Sustainable Building Support Service advises on and agrees street layouts to achieve minimum hard surface and maximum tree cover (to reduce the 'urban heat island' effect) permeable surface (to recharge groundwater and avoid run-off), and provision for low speed traffic sharing with pedestrians and cyclists. Only a few roads are kept able to carry reduced levels of heavy goods traffic.

Gardens and planting

Many of the trees are fruit trees, and grape vines grow up many south facing facades. There are ribbons of allotments in spare space, for example along roads that have been narrowed, and gardens are dotted with vegetable patches. Some larger grassy areas are left as unmowed wildflower meadows for biodiversity and water management.

Supplementary planning guidance encourages shade, together with fruit and tree planting, which also help absorb excess groundwater. Under its local sustainable food policy the council support initiatives including a 'matchmaker' database to put keen gardeners in touch with people who would like food growing on spare space in their gardens but are not able to do it themselves; a marketing collective to re-sell local organic produce, underwritten by a commitment by school, hospital and other public service kitchens to buy surplus produce.

Commuting

The neighbourhood stays (by 2005 standards) uncannily quiet until after 08:30. The morning 'rush' does not start until then because most commuting journeys are much shorter and quicker – and even then it bears little resemblance to a 2005 rush hour. Many walk or cycle to small offices or shops in the neighbourhood centre a few streets away. This includes doctors and nurses at the local health centre and teachers at the local school. A few people catch a bus to the town centre a couple of miles away. The buses run at least every 10 minutes at rush hour. Many people are working from home at least part of the time.

Land use policies have encouraged balanced communities; the council subsidises the buses; high costs for longer distance travel have encouraged people at all income levels to live nearer their work. Demanding public services such as education and medicine pay both generous relocation packages and salary supplements to staff who live within 2 km of work, justified by their higher reliability and quality of work due to greater alertness and energy.

During the middle of the day, small electric buses operate flexible routing, diverting down residential roads to pick up or drop off outside people's houses.

The bus operator agreed to provide this expensive level of service as part of a package, negotiated with the local authority, which also granted a regulated monopoly on profitable popular routes.

Going to school

Most children walk or cycle to the nearest school. Very few are enrolled further away, although some go by bus once a week or fortnight for advanced teaching or coaching at a centre of specialist excellence in a particular subject or activity.

The education service's key performance measure is that all schools should be good enough so that only pupils with very unusual needs would wish to attend any other than the nearest one. Likewise

for health and other public services. Significant numbers of users wishing to exercise a non-local choice is seen as a warning sign that a local school or hospital is not performing well enough and needs remedial support.

Schools themselves have become practical exemplars of sustainable living. School buildings achieve near-zero energy demand through insulation, orientation for solar heat, maximum daylight and natural ventilation and cooling. Many schools, especially ones with sports facilities such as swimming pools, house combined heat and power plants that also serve nearby housing. School grounds often include patches of energy woodland, vegetable gardens, reed beds and ponds, managed by the children as part of the curriculum. Activities such as digging vegetables, pond dredging and tree surgery are included in the curriculum as alternatives to organised sport, offering equivalent physical challenges.

The school and its grounds are a major teaching and demonstration resource for sustainable living, including on-site renewable power generation as a symbolic reminder of energy responsibility as well as a practical contribution. South Somerset District Council is installing wind turbines on eight school premises (see appendix).

Understanding of the planet's life support systems and how human action affects them is now seen alongside literacy and numeracy as one of the basics of any education. Children's 'pester power' is harnessed to encourage more sustainable behaviour by parents who grew up with energy profligate habits.

Local authorities provide advice and help for schools to develop eco-resources. Special funds are available for investing in eco-infrastructure in schools. The National Curriculum has added a 'fourth R': responsibility.

Food shopping

An electric delivery vehicle hums down the road. It is like a 2005 milk float but carrying a wide range of fruit, vegetables and meat, mostly from farms and market gardens within 20km with minimal processing, and fresh breads from the local bakery. Most of these use organic or other low input methods. The float also carries bulk non-perishable groceries. Twice a week, the float delivers reusable plastic crates of foods pre-ordered over the Internet to about half the houses, leaving the boxes in a lockup cool compartment outside the house if nobody is in. The driver takes back empty boxes, milk bottles and a range of other standardised containers (jam jars, wine bottles) for washing and reuse in local plants (many of them modernised milk bottling factories). The driver can also buy surplus fruit and vegetables from residents' gardens on the spot.

This food delivery service is a commercial operation, competing with alternatives. Some households subscribe to a competitor which offers a more flexible service – deliveries by appointment, a chance to choose your own produce off the wagon – with higher prices. Most people only go to shops occasionally for special items or top-ups.

A big but flexible contract from the local authority to supply all schools and social services gave a local growers' co-operative the security to invest in the local food distribution system. The local authority also helped with low-cost premises.

Waste collection

It is the fortnightly rubbish collection day. Workers are guiding small electric carts, (as already used in Haringey and Islington) along the streets with compartments for recyclable materials, organic wastes (where residents don't compost them to fertilise gardens) and combustibles (card, woody waste). The last two categories are delivered straight from the electric carts to the neighbourhood heat and power stations, where wet household food and garden wastes and wastes from

restaurants and institutional catering are digested and card and wood incinerated: these categories are collected free as a valuable energy resource. Only recyclable materials and hazardous wastes have to be taken any distance to specialist reprocessing/treatment plants.

The waste collection contract pays for materials collected in a form that can be reused/recycled, accepts organic and combustible wastes at the power station for free, and penalises unrecoverable wastes. Collection contractors therefore separate as much as possible.

Workers are raking and sweeping up fallen leaves into a similar electric cart. One compartment is for wetter, greener waste which will be composted and returned to the soil; the other is for drier, woodier material which will be chipped and used for path surfacing. (Surpluses of either will go to the combined heat and power station).

Like all council departments, the Open Space Management Service uses hand tools wherever operationally appropriate, with rotas designed to give staff some healthy physical exercise as part of a varied workload.

The leaf sweepers spot some waste timber left out by a builder. They text a message using their GPS phone; software in the office automatically adds the location to the route passed to the wood waste collector. Half an hour later the wood wagon comes round and loads the timber up. It will be taken to the reclamation yard where re-usable items will be sorted and put on sale, and the rest chipped for the council office and swimming pool boilers. Paint is stripped off first and treated as hazardous waste.

The council provides premises to a non-profit organisation that funds the operation from sales of second-hand timber, where there are active markets, as there are incentives for reused materials. The council has also equipped buildings with woodchip CHP boilers.

Evening

All evening, groups of people of all ages are walking to and from the schools. They stay open late, offering sporting facilities, libraries with IT, and rooms for evening classes, amateur theatre and music and community groups. The elimination of long-distance commuting leaves many more people the time and energy to participate.

Local authority education departments collaborate with leisure and recreation departments and community and voluntary organisations to design, manage and fund schools to act as community centres in evenings, weekends and holidays, roughly doubling the benefits from the investment in facilities and making it easier to keep local provision.

Anycity

The illustration of Anytown shows how a dramatically more sustainable energy path is compatible with a lifestyle that retains the attractions that make suburbs popular. Most of the elements of Anytown are easier to deliver in a more urban context. There are far fewer cars; apart from people with mobility difficulties, who get special concessions on motoring costs and priority parking spaces, few people now own their own car in Anycity. Medium-rise flats or maisonettes are an inherently more energy efficient built form than terraced housing. Higher population densities make infrastructure such as heat distribution pipes and multi-material recycling collections more viable by increasing the number of households serviced by a given length of network or collection round. Higher densities also reduce the distance people need to travel to amenities with a given population catchment, such as schools. Large concentrations of population can create the 'critical mass' needed to make large-scale green businesses such as paper recycling possible. All these advantages should be exploited to the full.

However some aspects of the Anytown scenario are more challenging in urban areas. Dense building constrains orientation for solar energy use, and

leaves less room for vegetation for shade, food or biomass energy, so these will be less important.

Urban local authorities are able to secure large revenues from those sustainable energy technologies which are easy and efficient in urban areas: heat and power sales, recycled materials and public transport ticket income. They use this financial muscle to invest in the necessary infrastructure and facilities: heat mains, buses, recycling / energy plants. The green infrastructure pays for itself over its working life – but only because the local authority has the powers to borrow, invest, charge and recover income over the long term.

Councils also apply even more stringent design standards in urban areas to ensure buildings stay comfortable in hot weather without air conditioning, and that they do not add to the urban heat island effect. 'Green roofs' are increasingly used to help meet both requirements. The current general rule that local plans and strategies should not cover matters already subject to other regulatory regimes has been turned on its head: there is now a rule that local authorities are empowered to set higher local standards for any matter covered by national minimum standards.

Anyvillage

The lifestyle changes outlined for urban areas imply, and support, corresponding changes in villages and rural areas. Farms have increased crop rotations to maintain soil fertility and contain pests. Most farms are mixed, with animals fed largely on crops grown on the farm (reducing transport) and animal wastes used as fertiliser (reducing the need for synthetic fertilisers).

More food is processed on or near the farm. There are more smaller scale food processing businesses, responding to increased demand for local, seasonal produce and more willingness to pay for quality. Reduction in transport costs offsets the extra labour costs of smaller scale operations. *These have been made viable by local authority contracts for direct supply of local produce. Local plans encourage development for local processing of food for nearby markets – and set tight conditions which ensure that development is used for this purpose*.

Most farmers now get an important income supplement from renewable energy. Some have digesters which generate electricity from crop and animal wastes from their own and neighbouring farms; others chip and bale dry wastes such as tree thinning and straw land wastes for shipment to urban wood-fired CHP plants. Some grow and process energy crops including coppice timber, oilseed rape (pressed for biodiesel) or beet (fermented and distilled for bioethanol) as a main business. Farmers in suitable locations generate hydro or wind power.

Electricity companies pay an unconditional, guaranteed, index-linked standard price for each unit of electricity supplied to the grid from a list of approved renewable technologies. The simplicity and security of this system has encouraged farmers to diversify painlessly. As a result, most renewable energy development is now done on a small scale by existing local businesses seeking a modest additional income, or by community-based consortia of producers and customers. In either case, much of the resulting income and employment benefits the local community directly. Rural communities are therefore much more welcoming to renewable energy proposals than was previously the case. Local plans set out clearly which renewable technologies are acceptable in which locations, taking local conditions into account.

Urban local authorities have supported the development of renewables in neighbouring rural areas by contracting to buy biofuels for their CHP systems, sometimes guaranteeing loans for plant or equipment to get the farmers started in return for preferential prices on energy for a period. Rural authorities have supported farmer co-operatives to buy and operate larger scale equipment beyond the resources of individual farms.

These changes have increased the numbers of jobs related to food and farming, so more people now need to live in the countryside to be near their work. Many of them have taken over rural housing from earlier 'urban refugees' who are now happy to move back into town because of the improvements in urban environmental quality and quality of life outlined earlier. There is therefore less commuting both into and out of the countryside. The increase in rural population not commuting to town every day has provided an opportunity for reopening good quality services and amenities in villages. *Local authority commitment to keeping local schools, surgeries etc open has paid off. Councils have helped catalyse creation of 'one stop shops'*.

Anybusiness

The low energy lifestyles sketched above create a large number of new jobs in small-scale, locally-based service businesses, including more labour-intensive farming, food processing and delivery, a range of waste reclamation and reuse activities, and managing renewable energy infrastructure. In addition, the emphasis on good quality local public services is likely to call for more employment in these.

The same principles outlined for housing are applied to commercial and industrial buildings: design to minimise energy demand and maximise use natural lighting and cooling, and minimise building services. Small businesses would, just as now, need advice and support to deal with energy as an issue outside their core business. *Energy advice and investment support would form an important part of local authority support for small businesses. Every local authority has an energy advice agency, whether run in-house, as a partnership with other local authorities, or by a non-profit organisation on behalf of the local authority*.

Larger scale and more complex buildings offer opportunities for more sophisticated approaches, including heat recovery from computer rooms and kitchens, reuse of 'grey water' and combined heat and power. Industrial processes with significant process heat requirements are located where they can most effectively contribute to balanced combined heat and power loads. *The local authority's energy advice service helps firms ensure that opportunities are identified and exploited. Spatial plans co-ordinate business sites with energy use/generation profiles. Lower business rates for more energy-efficient companies provides an added incentive*.

Anydistrict council

As well as enabling low-energy lifestyles in the ways set out, the local authority also minimises climate impacts in its own housekeeping in the following ways:

- *the council's own buildings are built or refurbished to very high energy efficiency standards: high insulation, maximum use of daylight and natural ventilation (air conditioning only used for special high performance areas; heat from eg kitchens and computer suites recovered and reused;*
- *all the council's own energy is from renewable sources. Many local authorities are already buying a much higher proportion of their electricity from renewable sources than the three per cent of the UK's supplies currently generated (*see appendix*). Buildings are on biomass-powered CHP networks where possible; smaller buildings have 100 per cent renewable supply contracts;*
- *all the council's purchasing has minimum energy requirements. Choice of a tender which is not in the bottom quartile for greenhouse gas emissions out of suitable goods and services requires special authorisation at chief officer level. This exerts pressure on suppliers to improve standards;*
- *integrated one-stop shops to minimise travel intensity;*
- *the council's catering department sources local foods in season where possible;*

- *schools and social services transport is integrated with the local bus operator: vehicles run scheduled services when not required for council-specific purposes; members of the public are carried where there is spare space;*

- *the council uses cars from the car club for official travel which cannot be done by other means.*

Hangovers from the past

A major task for Anytown in the 2020s will be managing and adapting the unhelpful legacy of unsustainable buildings, infrastructure and spatial patterns from the past.

Outside conservation areas (which have special concessions), and older housing that is incapable of being brought up to reasonable energy standards is bought up by the local authority when it falls vacant, demolished and replaced. There is also a programme of buying up and demolishing housing too vulnerable to flood risks to be insurable any more (some of it only recently built).

Some out of town retail developments have become sites for bulk storage and processing of products coming in to urban areas from the countryside, including biofuels and foods. But many of them have had to be dismantled.

Reductions in demand for electricity, gas and water; and increases in local 'embedded' provision have reduced the capacity needed for long-distance distribution. Expensive infrastructure upgrades have been avoided. The national grid is used more to even out fluctuations in supply and demand between different suppliers and users, and less to deliver power from centralised generators.

Landfill gas is all collected and used as an energy source. The revenue stream from the sale of energy is recycled to fund other sustainable energy initiatives.

Some of the oldest heritage buildings – from before fossil fuel became cheap – have lessons for the post-fossil fuel age. Buildings such as the 200 year-old Georgian terraces of cities including London, Bath, Bristol and Edinburgh turn out to be more adaptable than other more recent buildings. Careful refurbishment brings these up to good energy performance while preserving their historic value (see appendix). Old mills (wind, water and tidal) are brought back into productive use, though with state-of-the art modern technology transforming their output (see appendix). Historic estates are once more run as self-sufficient economic units, producing and processing their own food, construction materials and energy, both reducing impacts and showing their visitors the possibilities.

section 7
good news from Anytown

Real places and lifestyles will vary in 2025 just as they do in 2005. The particular methods and technologies described in the preceding section are only illustrative examples, and will not necessarily turn out to be the only or best solutions. However, they demonstrate some important positive messages. Lifestyles with much less energy use are not only imaginable, but attractive: dramatic reductions in greenhouse gas emissions are achievable, and need not sacrifice quality of life. Indeed they could improve it. Moreover, they do not depend on any technologies that we do not already have; and different components of the solution often support each other.

Big reductions need not sacrifice quality of life

The Anytown scenario is not privation. Indeed, most people would see this as a big improvement over much of our lifestyle in 2005. It is very similar to the desirable futures which many communities have defined through local visioning processes over the last decade. It encompasses many of the contributors to life satisfaction identified by the Cabinet Office's own research (1999).

Dramatic reductions in greenhouse gas emissions are achievable.

Home energy use

There is no technical reason why all new housing built in the UK should not achieve a zero net carbon standard within a few years. There are already examples of housing in the UK which achieve zero net carbon emissions through combinations of higher energy efficiency and renewable sources for the remaining power. BedZed (see appendix) is particularly significant in showing how zero energy can be achieved in a high-density urban pattern, while the Autonomous House (see appendix) intentionally shows how a traditional-looking detached house with pitched roof can be comfortable without any external energy or water supply.

What reduction is realistic for housing being renovated? The Environmental Change Institute's '40 per cent house' research (Boardman et al 2005) is the most thorough study yet. This concludes that it would be possible to reduce overall carbon emissions from housing by 60 per cent by 2050 provided government takes a determined and proactive approach to planning and securing the necessary changes.

The main contributions to this are:

- very high energy standards in new-build housing, including near-zero space heating demand from 2020 onwards;
- accelerated new building, both to cater for household growth and to replace the most energy-inefficient 14 per cent of current housing which will be targeted for demolition. By 2050, one third of the housing will have been built by 2050;
- highly energy efficient retrofit of existing housing;
- an average of nearly two low or zero carbon technologies (LZCs) per house. LZCs include combined heat and power (either neighbourhood or household level micro CHP), heat pumps, biomass, photovoltaics, solar water heating and wind turbines.

The 40 per cent house report estimates that they are able to deliver 60 per cent reduction despite pessimistic assumptions including 'a 33 per cent projected increase in household numbers … no reliance on unknown technological advances', no change in the thermal comfort standards expected in housing, and no big unanticipated improvement in the emissions factor of generation.

Personal transport

Anytown's transport priorities are to reduce the need to travel, and increase the proportion of remaining travel done on foot, by cycle and public transport. At present 77 per cent of distance travelled in Britain is by car. The average trip distance is 6.9 miles (DfT 2004). It can be

envisioned that by bringing, work, shops, schools and amenities closer to where people live, this average trip distance could be greatly reduced. This in turn would make alternatives to car travel, such as cycling, more viable for these trips. In these circumstances, it is not unrealistic to imagine the total miles travelled by car could be more than halved, with a dramatic impact on CO_2 emissions, given that road transport represents 26 per cent of the total emission from the UK (DfT 2004).

Food

BBC research based on government statistics estimates that 30 to 40 per cent of all food is wasted, as a result of supermarket obsession with blemishes, excessive caution over sell-by dates, large packs, carelessness, inability to cook leftovers and low pricess. (Independent, 2005). 'Indoor' beef and poultry requires between three and ten times the nutritional input as using feedstock land directly for human consumption. Air freighting of food can have 10 to 50 times the energy 'footprint' of local growing. Organic farming methods virtually eliminate agrichemicals, which are energy intensive.

The figures quoted suggest that a move to shorter and simpler food supply chains, less processing, seasonal variation, local character and lack of standardisation welcomed as positive features rather than suppressed by uniformity, lower meat intakes, more 'free range' grazing, and less consumption of air-freighted perishables could add up to a 50 per cent or greater reduction in the climate change impacts of food.

The overall potential

Because the overall energy savings depend on how a range of changes interact, different assumptions could yield different results. But even with these caveats, the figures suggest that the changes sketched in the preceding section could, by 2025, make significant progress towards the 60 per cent the reduction that the government has set as its target for 2050, in household related energy use.

Is it plausible?

It must be recognised that the Anytown vision appears to fly in the face of most people's current preferences. Most people, given the opportunity, choose large detached houses with large private gardens, keep them warm all year round, fill them with an ever increasing variety, size and quality of appliances and gadgets, travel 'further, faster and frequenter' by car and air, and eat foods from all over the world, all year round, conveniently pre-prepared. Isn't it at best utopian, and at worst authoritarian, to try to reverse these trends?

Distinguish means from ends

Many current anti-sustainable choices are means to achieve ends that the Anytown vision seeks to achieve in other more sustainable ways. For example, a major motivation for the English preference for detached houses is a wish for space, outlook, privacy, freedom from neighbour noise and generally civil surroundings. These can be provided in higher-density communities if they are built well enough.

Choices within current circumstances don't mean the circumstances are right

Many energy wasteful choices are perfectly sensible, indeed often unavoidable, within the current framework of life. But that does not mean that these are what people really want. The Anytown examples argue that within a different framework, the sensible choice for people would be to live more sustainably, to their own benefit.

Unsustainable life choices are still allowed – just less attractive

In any case the scenarios do not require everybody to live the same way. The Anytown vision does not require prohibition of (for example) households owning their own car or driving to shops, but on changing the context so that few will wish to – because owning a car would bring little benefit to them.

The environmental 'bottom line'

The Anytown scenarios are not as a rigid prescription of life for everyone, but as general directions of change in typical ways of life which offer the best chance of reconciling the twin objectives of improving the quality of life and limiting and adapting to climate change. Selling this is, it is acknowledged, is a big political challenge. We suggest it is one that would be irresponsible to avoid.

Is it affordable?

The Anytown scenario apparently bristles with extra costs for local government, raising the question of how they could be financed in a politically acceptable way. However many of these are not in fact extra net expenditure, for several reasons.

In Anytown, many areas of local government are in effect acting as an 'environmental banker': financing investments, for example in energy efficiency improvements, which will pay back their financial costs out of reductions in the cost of energy. This is an extension of the concept of energy services. Local authorities would be well placed to do this because of their ability to act as 'honest broker' bringing together potential partners, and good credit rating.

Much of the brokerage role would involve the local authority not in spending money itself but in helping assemble consortia to take projects forward, or making connections between worthwhile energy opportunities and potential investors.

Many of the apparently 'big ticket' items would be offset by substantial savings in other costs which are currently taken for granted. Anytown greatly reduces the need for extra capacity for roads, mains water, sewerage and long distance energy grids. Energy from waste would reduce waste disposal costs as well as giving the council revenue from energy sales. Lifestyles with more walking and cycling will reduce health care costs, while better local amenities will reduce the need for provision for motoring.

The Anytown example does involve substantial local government spending on (for example) grants for comprehensive energy-efficient refurbishment of housing, and for buying and demolishing 'problem' housing. The future cost of dealing with unsustainable buildings underlines the importance of stopping building unsustainably as soon as possible.

These expenditures could be funded by new funding streams such as a levy on development profits based on the energy consumption of new housing, and from profits on the local authority's own energy services. It is beyond the scope of this report to try to assess how the savings and benefits from these actions would compare with the costs. It is possible that the savings could exceed the costs, especially given the likelihood of rising costs for energy and 'traditional' infrastructure. WWF and Bioregional (2004) estimated that zero-carbon, zero-waste sustainable housing in the Thames Gateway would cost about £8000 per home more than conventional housing, but that most of these costs offset by reduced need for conventional infrastructure. This area could benefit from further research.

Achievable with known technologies

The Anytown scenarios do not depend on any new technological discoveries. All the technologies mentioned – solar electricity, biomass fuelled combined heat and power, electric vehicles, water recycling – are already working, elsewhere in Europe if not in the UK. Further technological advances could make many aspects work even better, and reduce costs. For example, micro CHP could offer some of the efficiency gains of neighbourhood-level combined heat and power without needing heat infrastructure; widespread adoption of hydrogen as a fuel could improve vehicle fuel efficiencies. But these are not needed to make the scenario work. The key is to apply appropriate technologies fully and systematically.

Solutions are often mutually supportive

Measures such as energy efficiency improvements in homes, collection of park waste, organic waste and timber for energy, combined heat and power generation and a district heating system can be implemented separately. But the really dramatic savings outlined above are achieved by combining them in an integrated approach to sorting and collecting wastes, recovering materials and energy from them systematically, and delivering the energy back to households efficiently. Many initiatives which may seem silly or marginal when considered in isolation become worthwhile when set in a context where they can deliver multiple benefits.

For example, considered on its own, the approach to waste collection set out may seem needlessly elaborate and expensive. But when seen also as a way of providing reliable renewable energy and minimising the need for landfill space and for transporting waste to it, it becomes more sensible. Similarly, suburban food growing may seem marginal and inconsequential - until it is recognised as a way of reducing long-distance food transport, increasing resilience, giving a healthier diet, building moderate healthy exercise into lifestyles and a source of pleasure, fulfilment and co-operation – all at the same time.

section 8
conclusion

Climate change presents an opportunity for the future to be more secure, healthy, genuinely prosperous, fulfilled and progressive. Local authorities have a huge opportunity to help make it so. Councils owe it to the quality of life of their residents to tackle the climate security challenge with commitment.

This document has aimed to offer a picture of a better future, and clear practical guidance on what local authorities can do to help reach it. "A journey of a thousand miles starts with a single step". **Whatever a local authority has or has not done in the past, now is the time to start action on climate change**. The Local Government Association, Energy Saving Trust and the Energy Efficiency Partnership for Homes are committed to supporting them.

'Throw the kitchen sink at it'

(Ed Mayo, National Consumer Council)

This slogan captures an important principle. In debates about how to implement sustainable development, a great deal of energy has gone into arguments about the relative merits of economic instruments (taxes, prices) as against regulation or education or consciousness-raising. The truth is that all kinds of interventions will be needed to secure a sustainable energy future.

This discussion has shown why local government has a uniquely important role to play. Local authorities are the only bodies whose powers and services span the full range of activities which will need to be changed to achieve sustainability in energy. Local government is where the power to intervene collectively gets closest to the people affected. **Local authorities can make connections between the more specialised interests of other public agencies**. Local strategic partnerships, public service performance targets shared between organisations and the 'well-being power' provide a framework which will support strategic thinking and action on issues such as climate security.

The greatest challenge for leaders and chief executives?

Climate change is the greatest challenge now facing local government. Climate change for local authorities creates imperatives to protect people from risks to their health and well-being, and to play a fair part in ensuring human survival and security, as well as huge opportunities to improve resident's lives. Dealing with climate change is also challenging as a problem of practical politics and public administration: it calls for a range of linked interventions, many of them challenging and requiring short-term costs to achieve longer term benefits.

Local government is uniquely placed to orchestrate and integrate the actions needed. **Local authority leaders, members and top managers are therefore potentially in the forefront of action on climate change**.

Start here

The most famous and successful authorities had to start somewhere. Essential actions to ensure that your local authority can take to begin to rise to the challenge are:

- take a strategic approach: treat climate change as a major issue for explicit commitment;
- mainstream climate change across the authority;
- seek early wins: places where climate protection resonates with your area's needs and your authority's values and priorities, and where such action can achieve early benefits that will broaden support.

Over to you!

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appendix: examples and initiatives

During research for this document we came across a huge number of local authority initiatives. This offers a small selection of case studies that illustrate points from the document. Some are exceptional and outstanding achievements, others are representative examples of good work being done in many places. They come from local authorities in a wide range of sizes, types and political make-up. Some are well known energy leaders, others not. The entries here are necessarily brief: readers are urged to follow the links and references for more detail.

Many of the examples quoted were made possible by special funding and support from the Energy Saving Trust, the Carbon Trust, energy suppliers, DTI, ODPM, the European Commission and other bodies.

Building on success

Worcestershire County Council's experience shows how smaller scale experimental measures build both technical know-how and the political and management confidence to repeat the same approaches on a larger scale:

- low-energy features pioneered in 1993 by the council during the construction of its internationally renowned Environmental Education Centre at Bishops Wood are now used as standard in other projects including the county's schools and libraries;
- a combined wood fuel project at Weobley primary and high schools provided valuable experience towards the much larger wood fuel boiler project installed at County Hall in 2002;
- the county council's track record of creating innovative sustainable buildings and renewable energy installations has enabled it to provide sustainable design & energy consultancy to community organisations in the local area and to assist other organisations in the UK;
- the council's commitment to sustainable transport policies has led to a successful bid to the Department of Transport under the Sustainable Town Demonstration Project for Worcester City. This five year scheme has the aim of reducing vehicle traffic and CO_2 emissions in the city.

Contact: Worcestershire County Council, County Hall, Spetchley Road, Worcester WR5 2NP
tel: 01905 763763.

West Sussex County Council has a staff induction training programme and a further management programme which includes a 'reduce your footprint' element – this has been running for nearly three years and is now producing a critical mass of staff with increased awareness of sustainability issues and what they can do to reduce their impact – within the work place and externally.

Contact: Ann Griffiths, Group Manager, Environment Group Environmental and Economic Policy Service
tel: 01243 756852
email: Ann.Griffiths@westsussex.gov.uk

Demonstration buildings

Nottingham Ecohome is an inspiring example of how much can be done to transform the energy (and wider sustainability) performance of an ordinary Victorian semi-detached house. Key features include super-insulation, including external wall cladding, which reduces heat loss by a factor of nine, passive solar design, high performance glazing and energy efficient appliances and fixtures. The website gives very helpful explanations of the reasoning behind design choices and the details of how the work was done (by the owner occupiers, with limited budgets).
www.msarch.co.uk/ecohome

Brocks Hill Country Park and Environment Centre in Leicester opened in 2001. It was designed from the start to demonstrate sustainable techniques in practice. Sustainable energy measures include, photovoltaic panels, solar hot water, recycled newsprint insulation,

argon-filled triple glazing, high thermal mass, earth bank protection and passive design principles for light heat and ventilation. With addition of a wind turbine it has achieved its design aim of being autonomous in energy needs.

Contact: Brocks Hill Visitor Centre and Country Park, Washbrook Lane, Oadby, Leicester LE2 5JJ
tel: 0116 271 4514
www.oadby-wigston.gov.uk/brockshillv4/visitor_centre/home.aspx

Seaton Primary School with the support of Devon County Council has installed three renewable technologies: a wind turbine and photo-voltaic cells generating electricity, and solar panels used the sun's heat to warm the swimming pool. Seaton headteacher Alan Simpson said: "children today need to have knowledge and skills that will help them to understand the alternatives and to make good lifestyle choices. The renewable energy resources we have installed in our school provide the children with real examples of alternative energy production and ways of reducing dependence on fossil fuels."
www.devon.gov.uk/index/your_council/inside/directorates_and_departments/chief_executive_s/communication/news_service/press-releases/press_seatonmet.htm

The Royal Borough of Kensington and Chelsea Flagship Home is a 19th century, listed five-storey townhouse in a conservation area, containing 19 bedsits and is typical of much of the housing stock in many cities in the UK. The project has aimed to demonstrate just what energy savings can be achieved in hard-to-treat and listed properties. The achievements of the refurbishment include:

- heat losses through the walls will have been reduced by 65 per cent through dry-lining and double and secondary glazing;
- fuel bills for the building will be cut by more than 60 per cent from around £3,400 to £1,100;
- two condensing boilers will provide communal heating to all the tenants, who now have their own radiators and programmable controls;
- 60 per cent of the building's hot water will be supplied by a solar panel. Reliance on the boilers will be further reduced by the installation of a heat recovery ventilation system.
www.rbkc.gov.uk/flagshiphome

Development guides

Nottinghamshire County Council, all its district councils, the Environment Agency and the Newark and Sherwood Energy Agency collaborated to produce the *Sustainable developer guide for Nottinghamshire*. It offers detailed guidance on planning, design, construction and maintenance of buildings and considers how wider aspects such as transport and waste can be managed. It includes a wealth of practical examples from within the county, including some of the UK's foremost exemplars such as Hockerton, the 'Autonomous House' at Southwell.
www.sdg-nottinghamshire.org.uk

Woking Borough Council's *Climate neutral development: a good practice guide* is specifically targeted at climate change. It aims to raise awareness among developers of the realities of climate change, ensure development minimises its contribution to climate change, and to pass on a legacy of development that is fit to withstand changes in our climate.

Contact: Sean Rendall, Woking Borough Council,
tel: 01483 743416
email: sean.rendall@woking.gov.uk

Basingstoke & Deane Borough Council has adopted a *Sustainable design and construction guide* as supplementary policy guidance.

Contact: Anne Shattock, Forward Planning & Transport
tel: 012 56845464
email: a.shattock@basingstoke.gov.uk
www.basingstoke.gov.uk

Bristol City Council has produced the *Bristol sustainable development guide for construction* to assist all developers (big and small) to adopt more sustainable approaches to how they plan and build. It is part of a voluntary process which starts with developers completing a 'sustainable development profile' to be submitted with their planning application. The profile and guide are intended to encourage developers to think about a range of issues from community consultation to renewable energy, climate adaptation and recycling at the earliest possible stage in the site planning and design process before finalising their project and submitting it for consideration. Work is progressing to turn this into supplementary planning guidance.
www.bristol-city.gov.uk/sustainability

Education resources

Energy matters produced by the charity Centre for Sustainable Energy provides teaching units for education for sustainable energy. The activities address education for sustainable development through a number of curriculum areas. Pupils develop knowledge and understanding of issues relating to energy use and its link to environmental issues.

Independent evaluation showed that 76 per cent of parents changed their behaviour to save energy as a result of their children's' involvement in *Energy matters*, 54 per cent subsequently installed energy saving measures, schools also took action, and 90 per cent of teachers who returned evaluations will continue to use it and recommend it to other teachers.

Contact: Centre for Sustainable Energy, Create Centre, Smeaton Road, Bristol BS1 6XN
tel: 0117 929 9950.
www.cse.org.uk

Expertise sharing

Worcestershire County Council. Many of the WCC's sustainable energy initiatives benefited from expert technical and managerial input from Marches Energy, who had in turn learned and developed expertise from projects for Shropshire County Council. WCC has a track record of openness and co-operation with all who have requested dialogue concerning environmental and sustainable energy matters, particularly in speaking at and organising events and presentations. Furthermore by opening up its buildings, renewable energy plant and energy management system the council can offer a three-dimensional textbook in low energy and sustainable energy design and management.

Contact: Worcestershire County Council, County Hall, Spetchley Road, Worcester WR5 2NP
tel: 01905 763763

South Cambridgeshire District Council is the sole UK local authority participating in the European Climate Menu, a European Commission- funded climate policy tool meant to remove the barriers that local authorities experience while materialising climate policy. The ECM offers clear ambitions and targets, translates national climate policy targets into local ones, and uses a procedure to shorten the decision-making process while still addressing the need to achieve consensus.

Contact: Cameron Adams, South Cambridgeshire District Council. South Cambridgeshire Hall, Cambourne Business Park, Cambourne, Cambridge, CB3 6EA
tel: 08450 450 500
www.climatemenu.com

REWARD is a partnership of the Environment Agency with Regional Development Agencies to model and help improve the environmental impacts of regional economic strategies.

Contact: Henry Leveson-Gower, Environment Agency
tel: 077 71 834712
email: henry.leveson-gower@environment-agency.gov.uk

Local renewables

Bristol Wood Recycling Project aims to rescue, re-use and recycle some of the tonnes of wood going to landfill locally. It collects waste from construction sites and provides affordable timber to the local community including selling firewood. Bristol City Council is a key partner.
www.bwrp.org.uk

South Somerset District Council is running a scheme to help owners of former historic water mills install modern hydro generation, with funding from Energy Saving Trust's Innovation Programme. Local authority co-ordination allowed economies of scale and enabled mutual support between mill owners, as well as grant funding which made the installations possible.

South Somerset District Council is also installing wind turbines on eight school premises.

Contact: Keith Wheaton-Green, Environmental Projects Officer, South Somerset District Council, Council Offices, Brympton Way, Yeovil BA20 2HT
tel: 01935 462651
email: keith.wheatongreen@southsomerset.gov.uk

Plymouth solar bus shelters
The council has commissioned 330 solar powered bus shelters. Solar cells with a special vandal proof surface coating are mounted out of sight in the roofs of the shelters, and charge batteries hidden within the roof which power energy efficient lamps at night. The shelters are guaranteed for 20 years, save 23kg of CO_2 a year each, have zero running costs and save between £700 and £1500 for excavation and electricity connection per shelter.

Contact: Andrew Seedhouse, Plymouth City Council, Plymouth City Council, Civic Centre, Plymouth PL1 2EW
tel: 01752 668000
email: andrew.seedhouse@plymouth.gov.uk

Local food

Bristol City Council is working on a Food for Life pilot in 20 Bristol schools - buying unprocessed, fresh, seasonal healthy food for school dinners - the council working in partnership with the PCT and the Soil Association.

Hartcliffe Health and Environment Action Group is a local community development project managed by a committee of local residents working on a range of community-led food projects from 'plot to plate', which includes growing at their own community market garden and running a local food co-op.

Contact: Lorraine Hudson, Policy & Project Officer, Sustainable City Team, The CREATE Centre, Smeaton Road, Bristol BS1 6XN
tel: 0117 9224470
email: lorraine_hudson@bristol-city.gov.uk
www.bristol-city.gov.uk/climatechange

Management systems

Crawley Borough Council uses its Eco-Management and Audit (EMAS) process to set a range of targets and ensure action is taken to achieve them. For example the council set a target to reduce business car mileage by 10 per cent from 2000 levels by 2003. A wide range of actions were taken to achieve this, including developing a travel plan for the council, free secure cycle parking and shower facilities, interest-free loans for purchasing bicycles and season tickets for bus and train, discounts for staff negotiated at local cycle shops, introduced mileage rate for using private cycle for business use, CO_2 emissions ceiling for lease cars (180 g/km) and many more. The total mileage for leased cars, essential and casual users fell by 20.6% by the end of 2002-2003, and 34.2% by the end of 2003-2004 with CO2 savings of over 50 tonnes per annum.

Other Climate Change related EMAS targets include: taking action in reducing CO2 emissions from households (15.44% reduction to date); targets for Energy and Water reduction from

council buildings and operations; promoting Renewable Energy to the whole community (we have installed 25 solar hot water panels to our own buildings and one major PV scheme); taking over 60 companies through our 'Green Business Programme' in the last year helping them reduce energy and water consumption; undertaking a feasibility study with funding from the Energy Saving Trust for a community CHP/District heating scheme as part of the proposed redevelopment of the Town Centre.

Contact: Patrick Vickerman, Environment Unit, Crawley Borough Council, Town Hall, The Boulevard, Crawley, West Sussex RH10 1UZ
tel. 01293 438545
email: patrick.vickerman@crawley.gov.uk
www.crawley.gov.uk/environment

High Peak Borough Council "...was EMAS accredited in 2001, retaining its accreditation since then. Within its EMAS partnership framework, the council takes responsibility for delivering its climate change, fuel poverty, energy efficiency, energy costs and air quality objectives. There is real evidence of sustained efforts to secure effective and joined up partnership activity, such as the affordable warmth steering group (including the PCT, social services and the EEAC); a business transport project steering group; across-service EMAS officer group; the appointment of a voluntary sector co-ordinator; and active engagement in the regional energy partnership comprising nine LAs. Planning and development guidance is used to encourage adoption of sustainable energy principles in residential developments" (ODPM, 2005).

Contact: High Peak Borough Council, Hayfield Road, Chapel-en-le-Frith, High Peak, SK23 0QJ
tel: 0845 129 7777
www.highpeak.gov.uk/environment/emas/

Middlesbrough council
In November 2002, Ray Mallon, Middlesbrough's elected mayor, and the Middlesbrough Partnership signed the Local Government Declaration on Climate Change, initiating two years of consultation and development on Middlesbrough's Climate Change Community Action Plan, launched in November 2004. This five-year action plan includes:

- Community-agreed targets and actions to reduce emissions by at least 12.5% between 2000 - 2010, equal to cuts of 10,853 tonnes CO_2 each year).

- Local priorities and actions to reduce the impact of changing weather: Limiting impact of flooding; Improving Emergency Plans; Encouraging Weather Proof Development; Education on benefits of local climate change action

In April 2005 the first year's Work Programme was developed with partners, to identify and co-ordinate projects contributing to the Climate Change Community Action Plan in 2005/6. Projects include:

1. Cutting carbon dioxide emissions (Projects identified should save about 11,000 tonnes in 2005/6, or 1.25% of overall emissions)
This will be achieved through Housing improvement programmes, winter warmth projects, increased kerbside recylcing, implementing carbon management programme and longer term developments such as developing a CHP scheme amongst other projects.

2. Coping with changing weather
Middlesbrough Council is extending Climate Impact Assessment module across vulnerable service areas, improving emergency plans, and will review recently-commissioned flood relief studies, and submit bids to DEFRA to fund flood relief works. The Council is also working with partners such as Tees Valley Wildlife Trust to improve access to and quality of the Beck Valleys and Middlesbrough Environment City will work to increase the number of schools registered as Eco-schools .

Contact: Jim Gillon, Environmental Protection Officer (Climate Change), Community Protection Service, Middlesbrough Council

tel: 01642 728265
email: jim_gillon@middlesbrough.gov.uk
www.middlesborough.gov.uk

Leicester City Council has set up a city-wide monitoring system for the council's own buildings and also the SMEs in the city and hasve started collecting the data. They plan to introduce the first 50 homes in the city to have automatic metering to provide the data for our modelling software early in 2005. This will provide the city with a real time monitoring system linked directly to our software and show the effect of energy and water use in the city.

Contact: Don Lack, Director Leicester Energy Agency, Head of Service Energy, Leicester City Council
tel: 0116 299 5132
email: don.lack@energyagency.co.uk
www.energyagency.co.uk

Staffordshire County Council's energy management service reduced the county council's CO_2 emissions from most its properties from 136,000 tonnes a year in 1990 to 76,000 tonnes in 2005, a 44 per cent cut.

Contact: Martin Birch, Staffordshire County Council, St Chad's Place, Stafford ST16 2LR
tel: 01785 223121
email: martin.birch@staffordshire.gov.uk

Bristol set up a self financed energy management unit in 1992 to develop a sustainable energy efficiency programme for Bristol City Council operational properties. The unit now works on reducing energy consumption through awareness raising, installing energy efficiency measures and developing renewable energy projects. They recently received £400,000 from the Carbon Trust's local authority energy financing scheme, which the council match funded with £500,000 to set up a new energy spend to save fund which finances energy efficiency works in council properties.
www.bristol-city.gov.uk/sustainability

Partnerships

Nottinghamshire & Derbyshire Local Authorities' Energy Partnership (LAEP) was formed in February 1996 by all 19 of the local authorities in the two counties. The aim is to promote the sustainable use of energy across the two counties.
www.laep.org.uk

Nottinghamshire County Council with all its district councils and Nottinghamshire police have negotiated a Public Sector Agreement (PSA) with government to invest £1.5 million to achieve annual emission reductions of 5000 tonnes of CO_2.
www.nottinghamshire.gov.uk

Cornwall Sustainable Energy Partnership was created in 2001 to combine the expertise and knowledge of organisations within the public, private, health and community sectors. It now has 50 members including the county and all the district councils as businesses, community groups, the primary health care trust, etc. With help from CAG consultants, the partnership produced *Action today for a sustainable tomorrow: The energy strategy for Cornwall*. It sets out an overall vision, aims, objectives and over 30 actions allocated to task groups in the partnership. Over 100 organisations contributed suggestions, and over 80 are signed up to delivering the actions. Production of the strategy was funded by the Energy Saving Trust and by the county council and ODPM as part of a funding allocation awarded through an energy-related local public service agreement.
www.csep.co.uk

Planning

Fenland District Council used section 106 of the Town and Country Planning Act 1990, (which concerns entering into agreement with a developer to obtain provisions for works related to land development) to get wind-farm developers to contribute funding for the formation of a district climate change strategy as a condition of their planning approval. Fenland also reached an agreement with a housing association developing

53 new properties to grant land for children's play-space in return for the housing association installing technologies such as ground source heat pumps and solar hot water as part of the development.

Contact: Bruce Pittingale, Energy Manager, Fenland District Council, Fenland Hall County Road, March, Cambridgeshire, PE15 8NQ
tel: 01354 622337
email: bpittingale@fenland.gov.uk.

London Borough of Merton's unitary development plan includes a policy that stipulates all new industrial, warehousing, office and live/work units outside conservation areas and above a certain size are be expected to incorporate renewable energy production equipment to provide at least 10 per cent of predicted energy requirements. The council also offers grants to encourage smaller developments and businesses to use these technologies in both their existing and new premises.

Contact: London Borough of Merton, Civic Centre, London Road, Morden, Surrey, SM4 5DX
www.merton.gov.uk/planning/udp.htm

Procurement

Chester City Council buys 100 per cent electricity from new renewable sources for all council offices facilities.

Contact: Jean Briffett, Environmental Coordinator, Chester City Council, The Forum, Chester CH1 2HS.
tel: 01244 402326
email: j.briffett@chester.gov.uk

Bristol is currently building four new PFI schools and sustainable development requirements have been built into the specification, including energy efficiency standards. The next phase of PFI schools will be built to the new standard BREEAM for Schools Standard which was published in 2005.
www.bristol-city.gov.uk/sustainability

Bolton Metropolitan Borough Council has used PFI to secure a holistic package of renewable technology for Queensbridge School. All street lighting electricity is from CCL (Climate Change Levy) exempt renewable sources.
www.bolton.gov.uk

London Borough of Lewisham has purchased all of its electricity from green sources since 2000. It has also gained procurement savings from regular re-tendering of all energy contracts.
www.lewisham.gov.uk/energy

Regeneration

Carrick District Council together with tenant associations and other members of the Beacon Community Regeneration Partnership implemented energy efficiency improvements in the Beacon housing estate in Falmouth, once one of the most deprived areas in Cornwall. In terms of results: energy efficiency improvements have been made to 900 homes; central heating and insulation measures have been installed in 300 properties in the first year, a total of £186,000 was saved on fuel bills. The Regeneration Partnership believes a range of other improvements can also be attributed to the housing improvements: a 50 per cent drop in asthma cases, improved performance of school students, a drop in the crime rate, and vandalism is at an all-time low. There is increased employment, more people want to move to the estate and there is a remarkable upswing in community spirit.
www.bcrp.carrick.gov.uk

Newark and Sherwood District Council has almost eliminated fuel poverty among residents in public sector housing. In 1984, just six per cent of dwellings were capable of delivering affordable warmth - now, 98.4 per cent do as a result of investment in energy efficiency. Not only are houses warmer, but the average householder in Newark and Sherwood has saved £213 each year, which figures suggest has resulted in an additional spending power of £1.25 million in the local economy, figures suggest. Local schools have found improved performance through better

take-up of homework and the mental health of those previously living in fuel poverty has significantly improved. The improvement programmes have created 30 jobs locally each year for 18 years. The overall spend for 7,500 properties will have been approximately £16m for the period 1988-2008. The council has found that the associated benefits paid for themselves within four years.
www.newark-sherwooddc.gov.uk

Leicester City Council has had input from local schools reporting that energy improvements in housing lead to educational improvements in schools: "...in the Saffron estate ...one of the benefits that the school reported and recorded was an increase in pupil numbers attending, less respiratory disorders in the classroom - asthma attacks - less peer pressure because the clothing no longer smelt of mould and damp. Basically what it proved was if you have fitness standards, and you have good housing then it has a knock-on effect and one of the tests for that was the education, that the school was telling us what they were seeing. We were not probing them; they were giving us the results. So that is one example as a case study" (source: Don Lack, oral evidence to the DEFRA Select Committee 23/02/05).

Contact: Don Lack, Director, Leicester Energy Agency, Head of Service Energy, Leicester City Council
tel: 0116 299 5132
email: don.lack@energyagency.co.uk
www.energyagency.co.uk

Strategies

Southampton City Council's *Climate change and air quality strategy* links two issues, and considers "the close relationship between two themes, to cover: the reduction in emissions in energy consumption, waste disposal, transport, planning; and development for a better quality of life or all who live, work and visit Southampton". It includes an action plan for 2004-2009.

Contact: Planning and Sustainability, Southampton City Council, Civic Centre, Southampton SO14 7LS
tel: 023 8022 3855
www.southampton.gov.uk

Bournemouth City Council's climate change strategy lists aims relating to greenhouse gases and preparing for the effects of climate change; describes steps that the council has taken and proposes to take; proposes a mechanism for reporting on progress; and suggests how members of the Bournemouth Partnership can become involved.

Contact: Neil Short, Environmental Co-ordinator, Town Hall, Bourne Avenue, Bournemouth BH2 6DY
tel: 01202 451451
email: neil.short@bournemouth.gov.uk
www.bournemouth.gov.uk/business/Environmental_Health/Pollution_Control/Air_Quality/ClimatechangeStrategy.asp

Bristol's community strategy (2003) has recognised the importance of tackling climate change. It has set an ambitious target to cut the levels of greenhouse gas emissions in Bristol by 60 per cent by 2050, based on the year 2000 baseline. In order to deliver this target Bristol City Council has developed a climate protection and sustainable energy strategy and action plan to work towards this target. It contains actions for the council, local businesses, community groups and individuals. The actions will also deliver social and economic benefits (eg reduction in fuel poverty, new training and employment opportunities, improvements in air quality) and improve the quality of life of the local community.
www.bristol-city.gov.uk/climatechange

Sustainable communities

BedZed (Beddington Zero Energy Development) is a complex of houses, live/work units and workspaces in Beddington, south London. It was built by Peabody Housing and Bioregional Development Group. Architect Bill Dunster

designed to minimise fossil fuel use through measures including layout to maximise passive solar heating, daylighting, natural ventilation (aided by distinctive rooftop cowls), extremely high insulation standards, an on-site combined heat and power system, a car club running an electric car powered from photovoltaic panels on site, and discouragement of private ownership. Monitoring results from the BedZed's first year of occupation show reductions, compared to the national average, of 88 per cent in space heating, 57 per cent in hot water, 25 per cent for electricity, 50 per cent for mains water and 65 per cent for fossil fuel use from car mileage.
www.bioregional.com/programme_projects/ecohous_prog/bedzed/bz_monitoring.htm

Vauban is a demonstration new sustainable urban quarter built on the site of a former French military barracks in Freiburg in southern Germany. Distinctive features including strong car restraint measures. Vauban is a highly popular settlement, especially for families with young children who are attracted by the design standard that it should be safe for a five-year-old to walk to school unescorted: a second kindergarten had to be provided to cope with the higher than expected number of children.
www.vauban.de/info/abstract.html

Top commitment

Cambridgeshire County Council - in 2003 the environment and transport scrutiny committee instigated a member-led review to address the likely impacts of climate change on Cambridgeshire County Council. Five county councillors and a co-opted academic expert gathered evidence from senior officers across the county council's service areas. External speakers from the Environment Agency and the East of England Sustainable Development Round Table helped with the regional context. The review made 17 recommendations, ranging from reviewing highways construction standards to the way large capital projects (specifically buildings) are funded to allow the incorporation of energy-saving and climate-proofing measures. These recommendations were all recently agreed by the cabinet, and are incorporated in the council's climate change strategy which will be published in 2005.

Contact: Matthew Hunt, Environment Programme Team, Cambridgeshire County Council, Box ET1001, Castle Court, Shire Hall, Cambridge, CB3 0AP
tel: 01223 717701
email: Matthew.Hunt@cambridgeshire.gov.uk
www.cambridgeshire.gov.uk/environment/climate/council.htm

Maidstone Borough Council's environment and transportation overview and scrutiny committee conducted an inquiry into how the council is addressing climate change in 2003. After hearing a range of evidence, the committee made ambitious and wide-ranging recommendations for both adaptation (including sustainable drainage, water saving, resilient design, avoiding development in floodplains, green corridors) and impact reduction, including seeking carbon neutrality and energy efficiency (source: Maidstone Borough Council Environment and Transportation Overview and Scrutiny Committee: Addressing Climate Change, first report: municipal year 2003-2004).
www.maidstone.gov.uk

Miscellaneous

Aberdeen City Council secured funding from the EST community energy programme to implement a community heating CHP system for 288 flats in four tower blocks. An energy centre housing a 210kWe gas fired reciprocating engine CHP unit and 2 x 700kW (thermal) gas fired boilers for peak load and back-up was built nearby. The heat is distributed to the four blocks via pre-insulated underground pipes, which comprise the heat network, with each unit having a new internal distribution system. It is anticipated that 47 per cent of the electricity produced by the CHP unit will be sold to dwellings served by the heat network – with the remainder being sold to other customers. The heating system reduces maintenance time and

disruption as there are no longer individual boilers. It is estimated the system will reduce tenant heat costs by about 40 per cent and reduce CO_2 emissions by about 40 per cent.
www.est.org.uk/communityenergy

Car clubs. '*Smart moves*' is a private organisation that operates car clubs in London, Edinburgh, Bristol, Brighton and Hove. As well as being able to provide pool vehicles for local authority staff, they have assisted a number of local authorities with establishing supplementary planning guidance on the important role that car clubs have in reducing traffic.
www.smartmoves.co.uk/org_local_auth.html

Shropshire County Council "…has developed its approach to sustainable energy since 1995. The impressive Marches Energy Agency (MEA), while operating like an EST-sponsored energy efficiency advice centre, is independent and funded mainly through specific project management activity. This is perhaps unique and was a conscious decision by SCC and MEA. Much attention is given to transport-related issues including use of cleaner vehicles, reductions in staff travel, car sharing, greater use of bus services (or rural/parish car solutions where rural bus services prove uneconomical), cycling and walking and improving the standard of private sector vehicles (ie taxi fleets) utilised by the council in their service provision by culling older vehicles. Sustainable energy issues have been introduced into the school curriculum in imaginative ways". (ODPM, 2005)

Contact: Energy Beacon Co-ordinator, Shropshire County Council, Shirehall, Abbey Foregate, Shrewsbury, Shropshire SY2 6ND
tel: 01743 252562
www.shropshire.gov.uk/sustainability.nsf

Harrogate District Council: Under the Rethink Rubbish initiative, residents of Harrogate Borough Council are offered the opportunity to try out a water butt at no charge for 60 days. The Rethink Rubbish initiative is made up of the following councils: Harrogate Borough Council, North Yorkshire County Council, City of York Council, Hambleton District Council, Craven District, Borough of Scarborough, Richmondshire, Selby and Ryedale District Council.
www.harrogate.gov.uk/harrogate-1226

Haringey and Islington councils: Both councils use electric carts for waste collection.
www.haringey.gov.uk, www.inslington.gov.uk

promoting better local government

For further information telephone
LGconnect on 020 7664 3131

For a copy in braille, in larger print or audio tape
contact LGconnect
Fax 020 7664 3030 Email info@lga.gov.uk
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