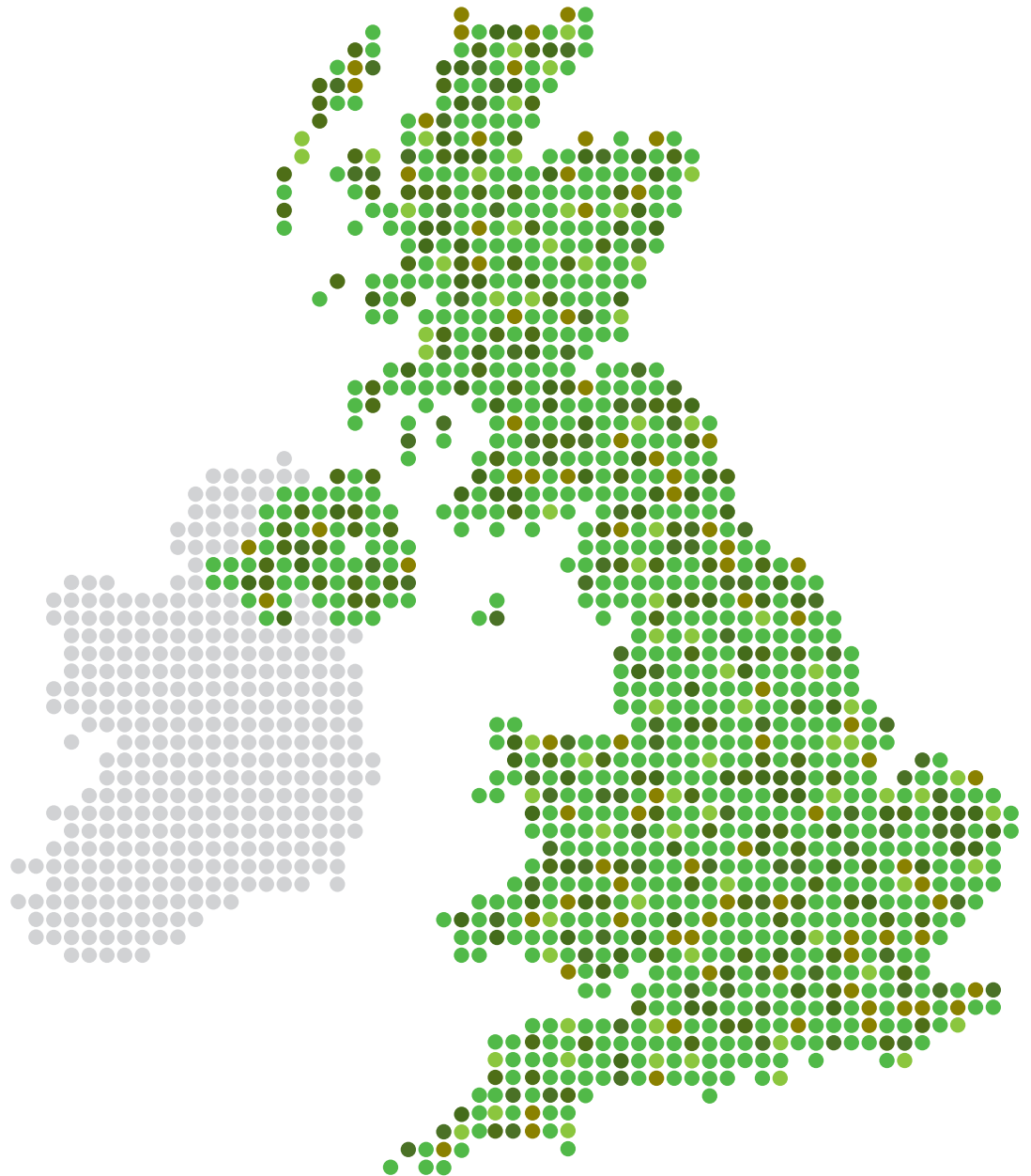


# Power to our neighbourhoods: towards integrated local sustainable energy solutions

## Learning from success

A report by CAG Consultants for the  
Ashden Awards for Sustainable Energy  
June 2010

### **Executive Summary**



### **About the Ashden Awards for Sustainable Energy**

The Ashden Awards for Sustainable Energy were founded in 2001 to reward and encourage the widespread use of local sustainable energy in the UK and the developing world in order to reduce carbon emissions and improve lives. UK Ashden Award winners, numbering more than 40, are delivering innovative local sustainable energy solutions through renewable energy, energy efficiency measures and behaviour change. They are drawn from sectors including small businesses, local authorities, charities and schools.

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### **About CAG Consultants**

CAG Consultants is an employee-owned business providing support, policy advice and training in a wide range of inter-related fields which can broadly be categorised as: sustainable development and climate change; regeneration; and stakeholder and community involvement. Founded in 1983, we continue to deliver high quality, innovative and thoughtful work for our clients, who include government departments, local authorities, public agencies, the NHS and regeneration and community planning partnerships in both urban and rural areas.

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### **About Houghton Research**

This report has been produced in association with Houghton Research. Trevor Houghton MSc is an independent consultant who has been working in the field of sustainable development for nearly 25 years with particular expertise in energy, climate change, planning and fuel poverty.

### **Acknowledgements**

This research was conducted by CAG Consultants, working closely with The Ashden Awards for Sustainable Energy and members of the project's Advisory Group (see Annex A).

We are grateful to all those that gave their time and expertise to take part in the research, including UK Ashden Award winners and other pioneering practitioners, nationally-renowned sustainable energy experts, and officials from Government and key public bodies.

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## Introduction

Delivering local sustainable energy solutions<sup>1</sup> at the neighbourhood level, through energy saving measures, small-scale renewable energy generation and collective behaviour change, is vital if the UK is to move towards a low carbon future.

Drawing on best practice, this report demonstrates that area-based energy efficiency initiatives are a successful model for delivering emissions reductions at the neighbourhood scale.

Furthermore, we believe that area-based approaches could be significantly enhanced if integrated with other successful approaches to delivering local sustainable energy. Empowering communities to take action, developing local energy supply and generation and building local supply chains are all invaluable.

The report highlights the conditions that would enable this to happen and puts forward recommendations that will enable government to create a framework for a low carbon revolution in neighbourhoods across the UK.

## What makes this report different?

The Ashden Awards wanted to know whether significantly more carbon savings could be achieved through pulling together local sustainable energy initiatives in an area to create synergies of skills, experience and enterprise, as well as economies of scale.

This report provides an answer. It explores what could be achieved through better integration and coordination and makes recommendations for scaling-up and replicating successful approaches.

Uniquely, our research draws on the experience of Ashden Award winners and other innovative practitioners in the field of local sustainable energy. Ashden Award winners have already demonstrated that local sustainable energy solutions - through technological solutions and through behaviour change - can play a significant role in the transition to a low carbon economy. It is from their success that we draw our findings.

We have also worked closely with a Project Advisory Group - drawn from successful practitioners, key government stakeholders and local sustainable energy experts - to define and evolve the focus of the research. This has enabled the research to be responsive to those involved in delivering local sustainable energy solutions, whilst at the same time being informed by the ever-evolving policy context. And by working closely with government, we have been able to feed in the findings of the research as it emerged, to help inform policy as it has developed.

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<sup>1</sup> The Ashden Awards defines local sustainable energy as having three strands all delivered close to point of use:

- Energy saving programmes in homes and in public and private sector organisations. Examples include improved insulation or behavioural change, combined heat and power, and community heat networks.
- Renewable electricity. Examples include solar PV, mini-hydro, and wind turbines.
- Renewable heating and cooling. Examples include solar thermal, biomass boilers and ground source heat pumps.

## What do we need to do?

The UK is committed to reducing emissions by at least 80% below 1990 levels by 2050, and by at least 34% by 2020. We need to do this by providing clean energy from fossil-free energy sources and reducing demand, while at the same time helping enhance the 'security' of energy supply.

The new UK Government has pledged to become the 'greenest government ever' and it now has a fantastic opportunity to expand support for energy efficiency and renewable energy. It also plans to create a 'big society', through using the state to galvanise social action, empowering individuals and neighbourhoods. But it must do this within the context of reducing the structural deficit over the course of the next Parliament.

Local sustainable energy solutions will play a crucial role in achieving this change. Their potential is huge. They can deliver significant physical and technological change. Insulation can deliver massive emissions reduction in the short term while small-scale renewable energy generation has considerable potential for emissions reductions in the residential sector - small scale wind turbines, solar PV, solar thermal water heating, biomass heating, ground source heat pumps, Combined Heat and Power and district heating schemes can all deliver.

And local sustainable energy solutions are ideally placed to support behaviour change. Individuals can contribute to carbon emissions reduction through relatively minor behavioural changes.

Ultimately at the neighbourhood level, local sustainable energy solutions can support a more fundamental move towards low carbon living through changes to collective behaviour, beliefs and value systems. The Big Green Challenge<sup>2</sup> found that "community-based initiatives can initiate a process of culture change in the community which reinforces and sustains individual behaviour change".

## What has been achieved?

### Area-based energy efficiency approaches

Area-based energy efficiency approaches are an increasingly common and much-championed form of local sustainable energy initiative, sometimes referred to as 'street-by-street' approaches. The UK Government, the Scottish Government, the Committee on Climate Change and the Energy Saving Trust (EST) have all shown support for this approach and as a result energy efficiency policies are increasingly favouring area-based approaches as a means of delivering greater emissions savings.

The EST defines an area-based approach as one that "delivers energy efficiency measures in a spatial area – which could be a street, neighbourhood, a local authority area or a group of local authority areas".

Ashden Award winners have been at the forefront of developing this type of approach and our research has focused on two examples in particular. Kirklees Warm Zone is a large-scale urban scheme covering 171,000 households, created to install home insulation measures (cavity wall and loft insulation). Meanwhile, the Hadyard Hill scheme, run by the

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<sup>2</sup> The Big Green Challenge The Big Green Challenge was a £1 million challenge prize run by NESTA designed to stimulate and support community-led responses to climate change. See [http://www.nesta.org.uk/areas\\_of\\_work/public\\_services\\_lab/environment/big\\_green\\_challenge](http://www.nesta.org.uk/areas_of_work/public_services_lab/environment/big_green_challenge)

Energy Agency in Ayrshire, is a small-scale rural scheme covering less than a 1000 households.

**Table: take up of measures in Ashden Award winners area-based initiatives**

Name of initiative	Total households in area	% of households contacted (number)	% take up of initial assessment (number)	% take up of measures (number)
Kirklees Warm Zone <sup>3</sup>	157,000 occupied homes	82% of occupied homes (129,453)	62% (97,366) <sup>4</sup>	68% (107,159) referred for detailed surveys  25% (40,000) had measures installed by March 2010
Hadyard Hill	828	96% (791)	90% (748)	57% (469)

Both schemes have been very successful. They demonstrate:

- Area-based approaches can deliver significant levels of take up and coverage (see table 1), especially when they offer universally free measures.
- Significant economies of scale can be achieved.
- A number of wider benefits can also be achieved, including local job creation, increased disposable income, benefit checks and health improvements.
- Area-based approaches can work in rural as well as urban areas.

### **Other approaches to delivering local sustainable energy**

Our research has also highlighted a range of other local sustainable energy initiatives that also offer real benefits both in terms of carbon savings and wider sustainability gains.

#### **Priming and supporting communities**

There are now a number of initiatives that are successfully working with communities, providing them with the knowledge, skills and confidence to continue taking action to reduce emissions in the longer-term.

#### **Local energy supply and generation**

A number of initiatives involve the development of a localised - and sometimes community-owned - energy supply. Ashden Award winner ALI Energy, for example, has aided communities to develop sustainable energy supply, the most advanced example being the Island of Gigha where the islanders have installed three wind turbines with a capacity of 670 kW which provide the community with 75% of their electricity requirements and an annual net income of around £75,000 from electricity sales.

#### **Developing local supply chains, creating local jobs**

Bringing together key partners to develop local supply chains for renewable energy fuel supply and installation, and expanding the number and capacity of local installation companies. Ashden Award winner Renewable Energy for Devon (RE4D) was set up by Devon County Council and its partners. It maximises the opportunities for local economic

<sup>3</sup> The Kirklees initiative is ongoing. Figures reflect progress by end of March 2010.

<sup>4</sup> In Kirklees a proportion of the households visited were council owned and therefore not eligible for measures but were offered all other support.

benefits and business growth amongst renewable energy companies by increasing the demand for smaller scale renewable energy installations, while also assisting SMEs and communities to reduce their energy costs.

### **Supporting energy intelligent businesses**

The experience of one Ashden Award winner, ENWORKS, shows that a regionally based partnership can deliver support to businesses at the local level whilst ensuring strategic alignment with regional and national policies. ENWORKS provides support to over 1,000 companies each year, delivering 66,000+ tonnes of CO<sub>2</sub> savings per year.

### **Developing a long-term vision**

Hackbridge Sustainable Suburb has a novel planning-led approach to developing a low carbon neighbourhood. A masterplan has been formulated that provides a long-term vision which incorporates new development alongside refurbishment of existing buildings. Its success is that it has brought together the local authority and the community to develop a truly comprehensive plan to transform a whole area.

## **What have we learned?**

The examples we have looked at prove that sustainable energy initiatives delivered at a neighbourhood scale can achieve significant benefits in delivering carbon emissions cuts, increasing the take-up of insulation measures, supporting jobs and businesses and empowering communities.

We have focused on a range of different examples of local sustainable energy initiatives which highlight different 'fields' of local sustainable energy, notably energy efficiency, behaviour change, and small-scale renewable generation.

Another way of looking at the experience to date, is to consider approaches as a continuum, summarised in the table below.

Table 2  
**Existing approaches to delivery of local sustainable energy**

Size	Approach	Range of measures	Community involvement	Pros and cons <sup>1</sup>
Largest, e.g. nationwide, but very limited measures	1. Business as Usual	Measure-based programmes	Minimal community involvement (e.g. CERT or WarmFront)	<ul style="list-style-type: none"> <li>➕ Large-scale, more easily replicated</li> <li>➖ Low level of take up and little impact on behaviour change</li> </ul>
	2. LA led or endorsed 'area based' scheme	Limited range of measures, normally focused on cost-effective energy efficiency measures	'Community' endorsement role – agenda determined by local government with some consultation (e.g. Kirklees and other Warm Zones)	<ul style="list-style-type: none"> <li>➕ Straightforward to manage and tie in with LA programmes and economies of scale</li> <li>➕ Greatest potential for delivering short-term, large-scale cost-effective measures</li> <li>➖ Heavy reliance on public funding and/or mandated funding</li> <li>➖ Little or no impact on lifestyle or behaviour</li> </ul>
	3. 'Planning' and 'regeneration' approaches	Long-term broad-based change to physical infra-structure and/or local economy	Local authority working in consultation with the community to reshape an area (e.g. One Planet Sutton) or develop local economy (Devon County Council)	<ul style="list-style-type: none"> <li>➕ Provides long-term vision and a more comprehensive approach</li> <li>➖ Small impact on behavioural change</li> </ul>
	4. Supported Community approach	Broader range of issues and measures	Community supported by NGO or local agencies – agenda set by agencies but modified by communities (e.g. Centre for Sustainable Energy or the Energy Agency)	<ul style="list-style-type: none"> <li>➕ Comprehensive range of physical improvements with some behaviour change</li> <li>➖ Smaller scale</li> <li>➖ Start-up funding sometimes required</li> </ul>
Smallest, e.g. one street	5. Grassroots community-led approach	Systemic change, broad range of measures and issues	Community in the driving seat and setting the agenda (e.g. Low Carbon West Oxford)	<ul style="list-style-type: none"> <li>➕ Comprehensive range of physical improvements with 'culture change' enabling deeper cuts in emissions through wider take-up of measures</li> <li>➖ Most effective at small-scale</li> </ul>

<sup>1</sup> Generalised conclusions. More detail on the merits of different approaches can be found in the main report.

The continuum presented here ranges from approaches that are extremely large in scale and have no community involvement, to those which are very small in scale but are led and owned by the community.

There also differences in the breadth and depth of the schemes. The larger schemes tend to have very wide coverage and offer economies of scale, but focus on a very limited range of measures (e.g. loft insulation), whereas the smallest are very limited in coverage but often

involve much more systematic change, involving changes in values, skills, awareness and behaviours, as well as a range of measures. The former are easier for governments to promote through policy frameworks, the latter are so small they can fall off the policy radar.

The schemes also demonstrate that there is not a one-size-fits-all model for delivering local sustainable energy. The examples reviewed work because they are 'situated' within the local area, reflecting local culture, conditions and needs. And none of the approaches described here are mutually exclusive. Different approaches have different advantages and disadvantages and some will be more suited to some areas than others.

## What could be done?

To build on success, we not only need a policy framework that encourages a multiplication of local sustainable energy initiatives reflecting local diversity, but we also need to encourage approaches that go even further.

A much more comprehensive package of measures needs to be applied to homes and businesses which includes micro-generation technologies and more disruptive/costly measures such as solid wall insulation.

Alongside this is the need for fundamental behaviour change as part of a major shift in values and collective behaviour. Without a shift in behaviours, carbon savings made through physical measures in households could be undone through the actions of the householders themselves.

## Mix and match

Area-based or street-by-street approaches clearly offer enormous potential, but they could go a lot further through 'adding on' or integrating other approaches.

These enhanced area-based approaches could offer the advantages of schemes such as Kirklees – wide coverage, economies of scale, local job creation – alongside collective change and action, developed local sustainable energy supply, or supporting the development of local supply chains.

What might these enhanced area-based approaches look like? They would mix and match different elements from the approaches outlined in Table 2 and described above. By way of example, two scenarios might be:

### Scenario 1

A local authority integrates an area-based energy efficiency scheme (option 2 in Table 2) within a longer-term, more holistic vision and plan for reducing emissions in a neighbourhood, working with the community to shape their area (option 3).

### Scenario 2

The area-based energy efficiency scheme (option 2) is designed and delivered to lay the foundation for increasing community leadership on emissions reduction (options 4 and/or 5). This would combine the roll-out of energy-efficiency measures with comprehensive action to build collective change within the community, creating a legacy for further action and leadership from within the neighbourhood. The process could also be used to create local jobs, business and social enterprise.<sup>5</sup>

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<sup>5</sup> Note that we explore the options for mixing and matching different approaches in more detail in the full report.

## **Enabling factors**

What are the conditions and various roles necessary to make any of these approaches a success?

### **The importance of an impartial ‘hub’ organisation**

A common factor in the area-based initiatives we have looked at is the presence of an impartial hub organisation, a locally trusted organisation that can orchestrate activity, is trusted by the communities it is working with and is skilled in bringing together and working with local partners. This might be the local authority, a socially-minded third sector organisation, and in some cases could even be a local community group.

### **Local authority involvement**

Local authorities have often played an important, if not central, role in the delivery of local sustainable energy initiatives. They can lead schemes, provide some or all of the funding for projects, can use their community leadership role to bring together key partners, are generally trusted by residents, and have a wide range of roles and responsibilities which can be used to deliver sustainable energy locally. Many local authorities will require further incentives and support in order to follow the example of pioneers such as Kirklees.

### **Partnership working**

All of the initiatives that we have reviewed have involved extensive partnership working. In Kirklees Warm Zone, for example, the local authority has worked with a range of partners to deliver benefits that go well beyond energy efficiency measures, including benefits checks, health referrals, fire safety checks, and, anecdotally, the strengthening of community cohesion.

### **Developing a local supply chain**

One of the successes of the initiatives reviewed has been their ability to work with leading sustainable energy businesses to develop local supply chains. This can offer enormous benefits. It develops a source of local, trusted expertise on sustainable energy issues, creates jobs and increases local ownership and support for the initiative.

### **Green entrepreneurs**

Green entrepreneurs are individuals or organisations - often locally-based - that provide the drive, dynamism and creative spark to kick-start and develop an initiative. They are very often key to the achievement of successful local sustainable energy initiatives.

### **Customer care**

One of the success factors behind the area-based schemes was a strong focus on what in business terms might be described as ‘customer care.’ This includes being flexible in meeting the needs of householders, minimising the period from first contact to installation of measures, and being responsive to complaints.

### **Creating income streams**

Given the squeeze on public spending, alternative mechanisms for funding are crucial. One route is developing independent income streams based on the ownership of key assets such as renewable energy generating plant. Again Ashden Award winners are demonstrating this as a key factor in their success. New feed-in tariffs and the renewable incentive and pay-as-you-save schemes offer real opportunities.

### **Empowering communities**

We believe that strong community involvement, and in some cases leadership, can add a significant extra dimension to achieving carbon reductions at the neighbourhood scale.

### **Culture change**

Local sustainable energy initiatives with a strong community element can achieve a culture change which might be defined as a change in collective behaviour, beliefs and value systems. It kickstarts a process where it becomes normal behaviour for people to seek to cut carbon emissions and where people adopt the view that there is a collective responsibility to take action.

### **Building on existing communities**

This enables initiatives to tap into existing community strengths, which can increase buy-in and take-up of measures. This is backed up by respondents to interviews carried out for this project. The Energy Agency, Ayrshire, for example, has tailored the support it provides according to the strength of communities it is working with. Some communities, however, will need support because of lack of social cohesion, lack of skills and levels of confidence among individuals.

### **Community leadership and momentum**

Dynamic local individuals, community groups and organisations are often at the heart of local sustainable energy initiatives. Empowering them to devise and lead work on emissions reduction can lead to local solutions that fit the local context and are better at delivering than programmes that operate on a top-down basis. This can result in a legacy of community action on emissions reduction.

### **Utilising trusted individuals and known networks**

Community action is based on the existing trusted relationships among local individuals and local networks. The community can provide the interface between national actors (e.g. government, government agencies, energy suppliers) and ordinary people (e.g. faith groups and residents associations).

## **What are our conclusions?**

The research has found that 'one-size does not fit all' when it comes to delivering local sustainable energy solutions. More often than not, best practice is the result of innovative, entrepreneurial, partnership approaches, based on local intelligence. Success is often achieved in spite of, not because of, the existing policy framework.

As we have stressed, area-based energy efficiency initiatives are a very good model for delivering emissions reductions at the neighbourhood scale. They deliver significant levels of take up of simple insulation measures in a cost-effective way, whilst also achieving a number of wider benefits, such as local job creation and benefits checks.

These approaches could be significantly enhanced if integrated with other successful approaches to delivering local sustainable energy, for example through empowering communities to take action, local energy supply and generation and building local supply chains. This would build on the strengths of area-based approaches, whilst offsetting their weaknesses, providing a more holistic approach to emissions reduction that creates lasting momentum and community engagement at the neighbourhood level.

## **How do we get there?**

The election of a new Government, one that intends to be the greenest ever and wants to empower neighbourhoods to take social action, means there is a real opportunity to create a

framework that will enable enhanced area-based approaches to be right at the heart of the UK's transition to a low carbon economy.

So what is required?

### **A policy framework for more enhanced area-based solutions**

Government should create a framework that supports the development of enhanced area-based approaches. Government needs to provide a strong sense of overall direction, giving appropriate support at key points in the development of enhanced area-based schemes. It also must provide the incentives, flexibility, and space - and remove the barriers - for communities, local authorities, social entrepreneurs and businesses to develop the solutions that work best for the areas in which they operate.

To help create the right framework for enhanced area-based solutions to flourish, we make the following recommendations.

#### **Recommendation 1**

The new government should build on the plans set out by the previous administration for developing a flexible policy framework for home energy saving.

It should allow for a diversity of approaches that goes beyond the installation of energy efficiency measures. It should encourage the involvement of community groups in delivery partnerships, and reward action to achieve 'softer' outcomes that influence human behaviour and help to create a momentum for change within neighbourhoods. It should aim to reach community groups and businesses as well as individual households.

#### **Recommendation 2**

Government should consider developing a programme to test out how to support very broad area-based schemes that include actions on energy, waste, water, food, transport, and greening the local economy. This could build on the work of Low Carbon Communities Challenge and would involve a pooling of budgets from related policy areas, so as to promote more co-ordinated support to area-based schemes to achieve multiple policy objectives.

#### **Recommendation 3**

Government should build on this research and that of others<sup>6</sup> to open a dialogue with Ashden Award winners and other local sustainable energy practitioners to develop a model for enhanced area-based approaches.

#### **Recommendation 4**

Government should convene a project that brings together local practitioners with carbon measurement and behaviour change experts to develop standardised methodologies and tools that are capable of measuring change across a very broad range of carbon emission reduction activities. This would enable a more consistent monitoring and evaluation of which approaches work best.

### **Supporting community action**

#### **Recommendation 5**

As part of the efforts to create a 'Big Society', government and the EST should expand its support for community capacity-building for local sustainable energy, building on the lessons learned from existing practice.

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<sup>6</sup> See for example the Sustainable Development Commission's report on creating Sustainable Neighbourhood Infrastructure Partnerships.

**Recommendation 6**

Government should work with others to develop the evidence-base to help communities to identify what works and to quantify the benefits of such action.

**Finance****Recommendation 7**

Government should continue to provide and expand competitive grant funding to provide initial support for a diverse range of enhanced area-based approaches with strong community involvement.

**Recommendation 8**

The new green investment bank should develop models for financing initiatives that promote multiple sustainable energy outcomes and that are as accessible for 'deeper' but small-scale projects, as for larger-scale projects.

**Recommendation 9**

Government should consider how loan guarantees can be provided to underwrite risks to enable community organisations to access private finance.

**Recommendation 10**

Government should consider enhanced FITs and RHI payments for neighbourhood renewable energy projects that are creating income streams for further carbon reduction measures in their communities.

**Local authorities****Recommendation 11**

Government plans to abolish the Comprehensive Area Assessment, but it should ensure that there is a significant mandate in place that encourages local authorities to work with communities and business to considerably reduce emissions in their area, building on NI186 and the Local Carbon Framework pilots.

**Recommendation 12**

Kirklees and other pioneering local authorities are showing what an important role local government can play in reducing emissions at the neighbourhood scale. But most local authorities lack the skills and resources to play their part. Government should therefore work with local government and improvement organisations to build the capacity of all local authorities so that they are equipped to make a significant contribution to area-wide emissions reductions.

A full set of recommendations can be found in the main report, which can be downloaded from [www.ashdenawards.org](http://www.ashdenawards.org)