

**CLASP.** Environment  
Resilience  
Resources  
& Support

## Briefings for Elected Members



### BRIEFING 3:

## Local and Low Carbon Energy Opportunities

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## Introduction

Energy is an increasingly significant cost, so many individuals, businesses and local authorities are starting to invest in low carbon alternatives to reduce their dependence on the volatile prices of fossil fuels and to generate income. This briefing explains some of the opportunities for local generation of energy, your role as an Elected Member, who to involve and questions to consider. It includes case studies and links to further information.

## Why It's Important

**Price stability:** Generating your own energy can protect local authorities, businesses and householders from energy price fluctuations, and create a long term source of income.

**Income generation:** Local authorities and community generators are getting an income from energy investments to support other services or community projects.

**Reducing fuel poverty:** Social housing providers generating their own energy not only provide long term price security for tenants, but cut tenants' energy bills and help reduce fuel poverty.

**Efficient use of resources:** District heating can make valuable use of wasted resources like process heat from industry and waste heat from electricity generation.

**Energy efficiency:** Generating your own energy can lead to better energy monitoring, improved efficiency and better understanding of the link between supply and demand.

**Strengthening local economies:** Most of the money spent on fossil fuel leaves the local economy. Investment in renewable energy involves spending on capital equipment and local fuel supply chains (such as biomass), some of which can be supplied within the local economy, creating jobs in the low carbon economy.

**Planning responsibilities:** Under the National Planning Policy Framework, local authorities should promote low carbon energy and support community-led renewable energy initiatives.



## CASE STUDY

**Golden Gates Housing Trust** and **Warrington Borough Council** are installing solar photovoltaic (PV) panels for 600 households. Each household will save an estimated £112 per year by using the electricity from the panels, alleviating their fuel poverty. The Council and Housing Trust will get an income from the feed in tariff (FiT), estimated at £7 million over 20 years. This surplus will be reinvested in the community.

**Preston City Council** is proposing a three-turbine wind project on its land by the River Ribble. The £12 million proposal is to generate enough green electricity to power 4,500 homes from three 3MW wind turbines, with the surplus being sold to the National Grid and income generated ploughed back into Council services.

**Morecambe Bay Community Renewables** raised £107,000 through a local share issue to install 50kW PV on a new housing development. The electricity is sold to householders at less than the market rate, and the income from this, plus the FiT, will provide a return on the members' investment of 3–4%, pay off the capital, and generate a surplus to help support the local Home Energy Advice Service.

## Which Energy Technology is Right for Us?

Local, low carbon energy generation varies in size and scale and includes:

- Large or medium scale **wind turbines** to supply electricity direct to end users, or sell to the national grid.
- **Energy from waste:** Use of municipal waste to generate heat and/or electricity for localised use.
- Growing **crops for energy** (biomass) as cultivation of specific crops (e.g. willow) allows for sales to the energy fuel supply market or for use in biomass-fueled combined heat and power (CHP).
- **Anaerobic digestion:** Electricity generation and heat from methane emitted by digesting animal or plant waste.
- **Geothermal:** Using heat from the earth to provide space heating and hot water, or generate electricity.
- **Hydro:** Generating electricity from moving water.
- **Solar:** Photovoltaic panels use sunlight to generate electricity and solar thermal panels produce hot water for domestic uses.



Energy can be supplied through local networks, which can provide heat (district heating) or electricity (micro-grid). These networks exist in a few places in the UK but are very commonplace in many parts of Europe.

- **District heating networks:** Large numbers of houses and/or businesses are supplied with heat generated at a central energy centre. This heat can be generated by low carbon technologies such as a biomass boiler or it could be a by-product of an existing process, such as an 'energy from waste' facility;
- **Micro-grids** supply electricity which can come from a range of sources to a group of buildings and can maximise the use of renewable electricity before exporting any surplus to the grid.

FACT BOX

### Funding Low Carbon Energy Schemes

Potential sources of funding for local energy generation include:

- Prudential borrowing.
- Community share issues.
- Banks with renewable energy portfolios e.g. Co-operative, Triodos, Charity Bank.
- Green Investment Bank.
- EU Programmes e.g. European Regional Development Fund (ERDF), European Local ENergy Assistance (ELENA), New European Commission Energy Efficiency Fund (EEEF), LIFE+ Environmental Policy and Governance, 7th Framework Programme and 8th Horizon Programme, Intelligent Energy – Europe (IEE).
- European Investment Bank.

## How Much Do Different Sources Produce?

The table shows the number of systems of different types needed to produce the same electricity output as our largest on-shore wind farm at Scout Moor in Lancashire and Rochdale.

	Capacity	Number of Installations to Produce Equivalent to Scout Moor
Scout Moor wind farm	65 MW	1
Landfill gas site	3 MW	10
Small hydro scheme	50 kW	522
Small wind turbine	11 kW	5,696
Domestic solar PV	2.5 kW	52,217



Many areas have had a Renewable Energy Capacity Study that explains the benefits and constraints of different technologies. An energy plan outlines which areas of the local authority are suitable for low carbon energy developments and helps manage and deliver these.

## CASE STUDY

### Liverpool City Region's Sustainable Energy Action Plan

The local enterprise partnership (LEP) and six Merseyside councils have worked together to produce a plan for energy across the city region. This looks at energy demand and related CO<sub>2</sub> emissions and lays out a set of actions to reduce this demand and provide more low carbon energy. The plan provides an over-arching framework for co-ordinating existing actions and for developing new ones. It contains specific actions such as supporting the development of district heat networks or developing a building retrofit programme, enabling actions on governance and project management and actions to evaluate progress. It is driven by a recognition of the need to grow the local economy while reducing CO<sub>2</sub> emissions, address fuel poverty and create jobs in low carbon energy industries.

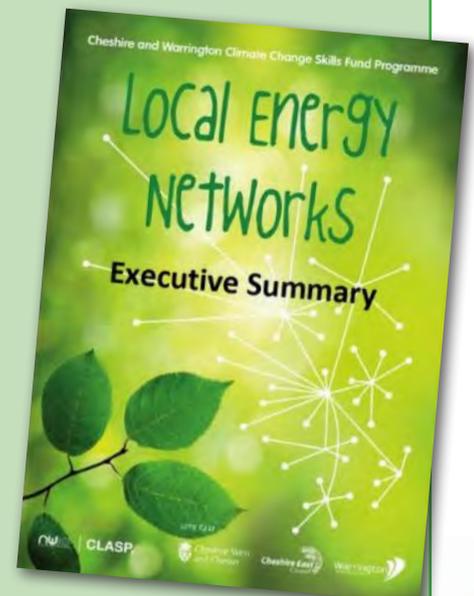
[www.liverpoollep.org/PDF/LiverpoolCityRegionSEAP1stEdition190712WEB.pdf](http://www.liverpoollep.org/PDF/LiverpoolCityRegionSEAP1stEdition190712WEB.pdf)

## CASE STUDY

### Planning a Local Energy Network

Cheshire and Warrington Councils have developed a road map to help develop a local area plan for energy networks, with guidance on the steps to take. Potential sites were identified in each local authority: the redevelopment of Warrington's Bridge Street Quarter can be a catalyst for a district heating network; Chester has the potential for a smart grid in its Business Quarter; Crewe has two new development sites and the Gateway Site around the railway that could support district heat networks.

[www.claspinfo.org/resources/local-energy-networks-executive-summary-and-full-report](http://www.claspinfo.org/resources/local-energy-networks-executive-summary-and-full-report)





## How Can Elected Members Make a Difference?

- **Communicating:** Supporting local and LEP-wide energy strategies and action plans and promoting the benefits of schemes to the local community, such as a sustainable income stream or creating local jobs.
- **Networking:** Bringing together people and organisations with the right range of skills and incentives to deliver local energy generation. Understanding local concerns and giving the opportunity for balanced discussion of the options and opportunities within the community.
- **Signposting:** Helping people find out what support can be drawn on from the council and other agencies. Putting people in touch with others who have done projects already. Sharing information with other authorities or community energy groups.
- **Supporting delivery:** Developing planning policies that identify and promote local low carbon energy generation and supporting proposals through the planning process; financing – supporting the cost of developing opportunities, either within or outside the Council, e.g. helping your local community group with seed funding to set up a co-operative. Supporting or sharing information at Funding Fairs. Investing in officer time to develop and deliver large scale, long term income-generating projects such as district heating or large wind turbines.

## Who to Involve

Your local area will have rich mix of people who can make delivering local low carbon energy a reality. These include your local residents and community groups, local authority regeneration/economic development and planning officers, LEPs, local experts – individuals or companies – who may work in the energy or renewable energy field, developers who want/need to meet energy efficiency or renewables targets, and energy service companies.



## CASE STUDY

### Community Hydro Power in Stockport

The Stockport hydro scheme at Otterspool Weir is Greater Manchester's first community-owned hydro-electric project. The 68 kW run of river scheme will use twin Archimedes screw turbines to generate electricity. The £1.3 million project has been funded primarily by a community share offer which has raised more than £250,000, supported by grant funding, a loan from Charity Bank and a £45,000 loan from Stockport Council. It should generate sufficient electricity to power about 60 homes, saving in excess of 100 tonnes of CO2 per year, for 40 years. The power will be fed into the national grid and profits from these sales used to support local community projects and pay a return to its investors.



*Councillor Stuart Bodsworth commented: "Stockport's mills were founded on water power and water is a resource we have plenty of. Stockport Council had the imagination to see the potential of our rivers, by commissioning research into the town's hydro capacity and finding a not-for-profit partner to lead the development of that potential. We had the patience to support a community-led company and their developers to get established, secure funding and navigate the through the Government's maze. The first of our hydro plants is now going on line, generating clean power and money for community sustainability projects. Bring on the rain!"*

## Key Questions

### Gathering Information on the Potential

- What is working here already?
- What resources do we have: wind, water, wood, waste heat?
- What technologies are most suited to the area's energy needs?
- Where do we have potential for low carbon energy: new developments, urban regeneration, wind sites, existing weirs or watermills, large areas of roofspace?
- What has been successful in similar areas? Can we visit these or hear from speakers?



### **Finding the Right People**

- Who are our local experts? Are there local businesses that can be involved?
- Do we have developers or community groups with the ability to take a scheme forward?
- Are there council staff who can initiate and develop a scheme?
- Do major energy users in the area talk to each other about their needs? Are these organisations (e.g. Higher Education, business, health) aware of local generation possibilities?

### **Ensuring Policy Support for Local Low Carbon Energy Generation**

- Is there an evidence base showing the local technical capacity for renewables?
- Has the council made strategic commitments to increase localised generation?
- Have we got a sustainable energy action plan or heat mapping?
- How are potential opportunities for localised energy generation considered in masterplanning/regeneration proposals?
- Can we identify funding mechanisms?

“Investing in renewable energy now will give us greater long term financial security and control over this vital resource.”

### **Resources**

**There are a number of guides on low carbon energy and local energy networks on the website**

[www.claspinfo.org/resources](http://www.claspinfo.org/resources)