

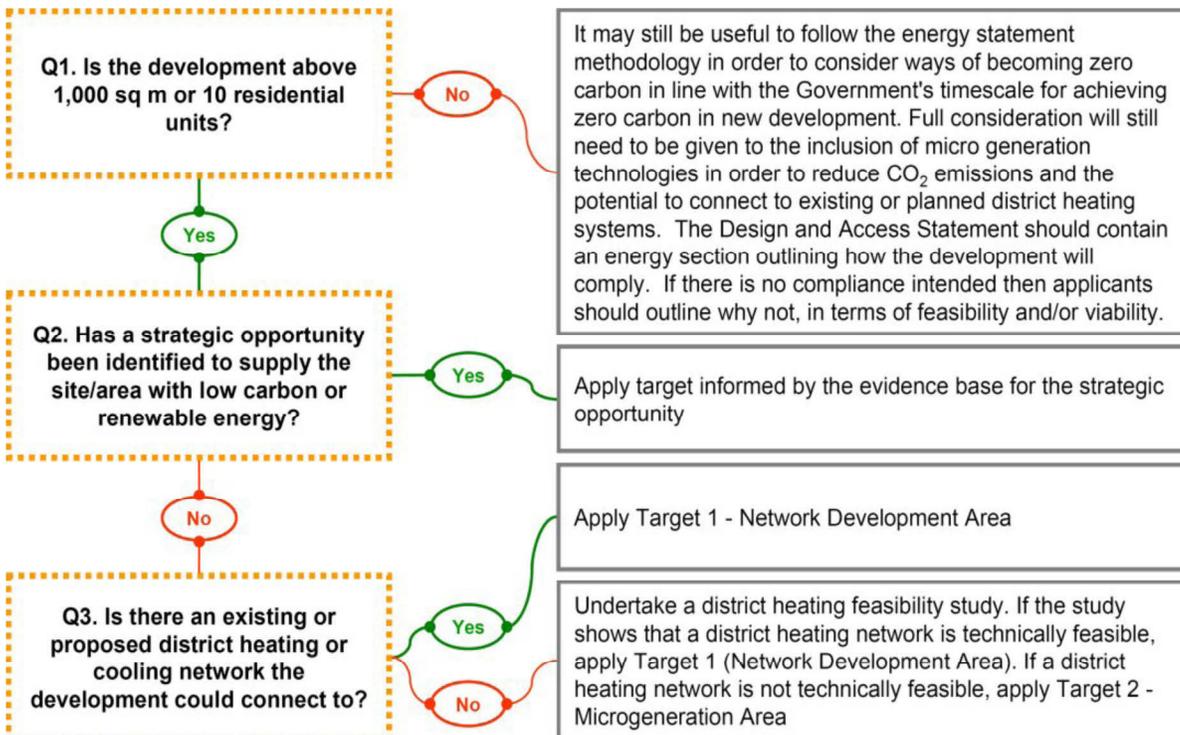
Stockport Core Strategy Development Management Policy SD – 3 Delivering the Energy Opportunity Plans – New Development

In order to assist with the achievement of low carbon design the following guidance has been produced outlining the steps required for inclusion in an **Energy Statement**. Stockport Planning Policy encourages all development, regardless of scale, to seek to minimise energy use and carbon emissions. All planning applications for new buildings (both residential and non-residential) should include an Energy Statement either within their Design & Access Statement or as a separate report.

In order for larger schemes that exceed certain thresholds (see Flowchart) to achieve Policy SD–3, planning applicants will need to apply carbon reduction targets to proposals.

Early consideration of energy and carbon reduction is cost effective therefore site layout and building design and orientation have an impact on both energy demand as well as the resources that can be made use of. Make use of the Pre-application Discussion option to enable appropriate consideration of energy needs in applications.

Use the Flowchart below to determine whether targets apply to your development, please note the requirements even if your scheme does not cross the target thresholds:



Above & Below Thresholds – Energy Statement Requirements for All Scales of Proposal

The above flowchart will help to determine if the proposal triggers specific targets. However **ALL** planning applications are still required to consider the inclusion of microgeneration and low carbon technologies in order to reduce CO₂ emissions. If no compliance is intended then applicants will need to detail why not in terms of technical feasibility and financial viability. Smaller scale development which does not cross the target thresholds should follow Steps 2 to 4 at least when undertaking an energy statement.

FOR ADVICE: If you have any queries with regards to carbon targets etc., then please email the Council's Health & Environment Advisor (Planning) at angie.jukes@stockport.gov.uk or call 0161 474 4385.

Step by Step Guidance

The following steps should be considered for inclusion within the energy statement of applications and there is further detail on each step within this Guidance – remember that proposals which do not cross the target thresholds should include Steps 2 to 4 at least:

STEP 1 Establish which Policy Target is relevant

STEP 2 Establish baseline emissions for the development

STEP 3 Consider which measures can be included in the development

STEP 3a energy demand minimisation measures

STEP 3b Low / Zero Carbon energy options

STEP 4 Prepare feasibility / viability statement where required

STEP 5 If required, establish level of payment to be made in lieu of ability to feasibly / viably meet Targets

The following sections provide more detail for each of the above steps. In addition Stockport Council have created sample energy statements for large (where targets apply) and small scale schemes (where targets do not apply) that provide clear guidance on appropriate structure and content. These samples can be downloaded from the 'Related Documents' section on the right of this web page:

www.stockport.gov.uk/planningsustainabledevelopment

STEP 1 Establish which Policy Target is relevant

Using the Energy Opportunities Map (EOP) you can initially determine which area of policy your development falls into whether Network Development or Microgeneration. Whilst geography does not absolutely determine the approach for each development, it should be noted that district heating is more technically feasible and financially viable in the locations marked on the EOP.

However, the policy is flexible and applicants can use whichever approach they determine will reduce carbon emissions most cost effectively, including achieving local targets where applicable. The EOP can be found in Section C1 of the additional information for Policies in the Core Strategy: www.stockport.gov.uk/corestrategy

PLEASE NOTE: The targets are threshold based, please see the flowchart on the front page of this guidance to determine if targets apply to the scheme.

Target 1 - Network Development Areas		
Development that can connect to an existing heat network or where the developer shows that it is viable and technically feasible to develop a heat network.		
	Minimum (% Beyond 2006 TER) ¹	Maximum (% Beyond 2006 TER) (A higher target may be required if the Local Authority or developer identifies a cheaper solution) ²
Domestic	40%	85%
Commercial	30%	45%

¹ Minimum target is derived from CO₂ reduction potential from connection to gas CHP network. Where the Building Regulations target is higher, this shall be used in place of minimum target.

² Maximum target derived from CO₂ reduction potential at reduced cost from alternative sources e.g. biomass CHP

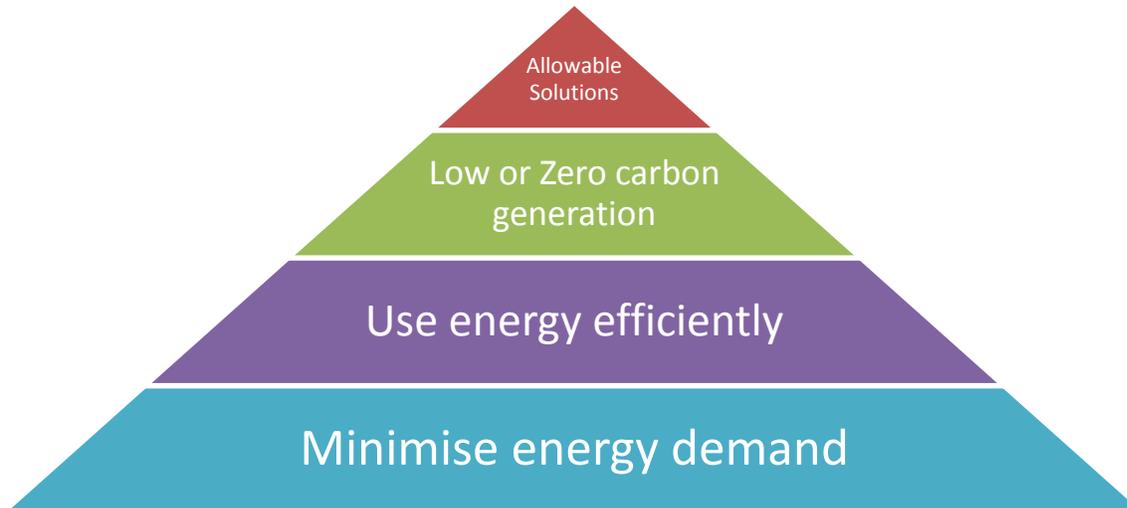
Target 2 - Microgeneration Area		
Development that is not near to an existing heat network or cannot feasibly and viably connect to a network and therefore requires a standalone solution.		
	Minimum (% Beyond 2006 TER) ¹	Maximum (% Beyond 2006 TER) (A higher target may be required if the Local Authority or developer identifies a cheaper solution) ²
Domestic	40%	100%
Commercial	30%	75%

¹ Minimum target derived from CO₂ potential from cheapest microgeneration solution. Where the Building Regulations target is higher, this shall be used in place of the minimum target.

² Maximum target derived from CO₂ reduction potential at reduced cost from alternative sources. E.g. large scale wind

Notes on Targets

The targets are derived from a calculation based on determining the carbon reduction minimum cost 'onsite' technologies that meet a 10% contribution from renewable energy plus a notional 5% uplift (i.e. 15% overall). However **there is no absolute requirement for a percentage of renewable energy as part of Stockport's policies**. The targets are designed to allow for flexible approaches to minimising carbon emissions from the site using the energy hierarchy.



In other words applicants should seek to ensure that design takes account of the need to minimise energy demand; then any intended energy use should be as efficient as possible; low or zero carbon technologies should be incorporated where technically feasible and financially viable (taking account of the opportunities offered by income generation).

Determining your targets:

Use the flowchart on the front page of this Guidance and the Energy Opportunities Plan (Section C1 in [Core Strategy](#)) to establish which of the target areas your proposal falls under. The policy is designed to be flexible but the EOP provides an idea of which approach is most feasible / viable in which areas. However, if you decide that development of a district heating network is not the preferable approach then microgeneration technologies can be considered as the means to achieve the targets.

However it should be pointed out that district heating has been determined to be the easiest and most cost effective way, particularly for large scale developments, to achieve the ever more stringent Building Regulations Part L. In addition if the preferred choice is to achieve targets through design materials alone, e.g. PassivHaus, then that approach is acceptable so long as minimum targets are achieved.

For further assistance, if you wish to consider undertaking a district heating feasibility study, or future proofing the development for connection to a district heating network at a later date, then please see the District

Heating Feasibility Guidance¹ document that Stockport Council has produced which provides detailed step by step approaches to feasibility work on district heating.

STEP 2 Establish baseline emissions for the development

As required within the Building Regulations Part L 2014 the Target Emission Rate (TER) is the minimum energy performance requirement for new buildings usually reported in kg CO₂ / m² / annum.

It would be useful for the TER to be stated in the Design & Access Statement (DAS) or Energy Statement to inform the Planning Department's assessment of policy target achievements.

Download the Approved Documents for Building Regulations Part L which outline calculation techniques for TER². Calculation software for SBEM and SAP 2013 has been made available: <http://www.ncm.bre.co.uk/>

STEP 3 Consider which measures can be included in the Development

There is a tie in with the Building Regulations Part L 2014 which outline calculation techniques for Dwelling or Building Emissions Rates. The D/BER should be no worse than the TER according to Building Regulations and based on the building once constructed. Once again it would be useful if the DAS or Energy Statement shows the D/BER in kg CO₂ / m² / annum. The Building Regulations Part L Technical Guidance outlines the requirements for establishing the D/BER.

It would be of further use for the DAS / Energy Statement to clearly show the difference between the TER and the D/BER to emphasise the additional savings, above building regulations, that the development will achieve in kg CO₂ / m² / annum. In addition it would be useful if the Energy Statement or DAS displayed, where relevant, the calculated percentage of the policy targets, that the development is deemed to achieve.

What if the calculations are based on software for 2010 or later?

Stockport Council have developed a tool to enable calculation of Stockport's targets reflecting current regulations carbon requirements. Please email planning.policy@stockport.gov.uk for access to the tool.

What if the TER and D/BER have not been calculated yet?

If the application has not reached the stage where Building Regulations calculations have been undertaken then a statement of the measures being included in the development (e.g. insulation levels beyond the building regulations requirements, improved lighting and heating specifications, use of passive solar design, etc.,) should be listed. Any projected carbon savings should also be stated as this will inform planning decisions. If the building is being built to current Building Regulations then the energy statement should simply state that fact. However it should be noted that the policy aims to encourage energy demand minimisation in design and the proposed approach taken by the design will inform the planning application decision process.

STEP 3a Energy Demand Minimisation Measures

Initially it makes sense to examine design options which can minimise energy demand in a building or buildings. It should be noted that energy demand minimisation measures are **typically** the most cost effective means of reducing carbon emissions. This will help to inform the TER and support your efforts to achieve the required policy targets. This activity is of even greater use if it is undertaken at the earliest possible stage of project conception. The following options and resources can inform opportunities to reduce energy demand.

- Passive solar design www.esru.strath.ac.uk/EandE/Web_sites/01-02/RE_info/passive_solar.htm
- National Home Energy Rating Scheme www.nesltd.co.uk/blog/what-nher-rating
- CIBSE Guide F: Energy Efficiency in Buildings
 - www.cibse.org/Knowledge/CIBSE-Guide/CIBSE-Guide-F-Energy-Efficiency-in-Buildings
- Energy Saving Trust's Guides for Housing Professionals (including refurbishment)
 - www.energysavingtrust.org.uk/business/Business/Housing-professionals
- Code for Sustainable Homes <http://www.breeam.org/page.jsp?id=86>
- BREEAM www.breeam.org
- English Heritage's advice to heritage home owners www.climatechangeandyourhome.org.uk

¹ Visit www.stockport.gov.uk/planningsustainabledevelopment - see Related Documents on the right of the page.

² <http://www.planningportal.gov.uk/buildingregulations/approveddocuments/part/>

There is a further list of resources at the back of this document and a specific description of energy demand minimisation measures in the Energy Topic Section of Stockport Council's Sustainable Design & Construction Supplementary Planning Document: www.stockport.gov.uk/planningsustainabledevelopment

STEP 3b Low / Zero Carbon Energy Options

At this stage it would be sound practice to identify and establish all potential low and zero carbon technologies for their capacity to deliver carbon reduction requirements. This will improve designers' and developers' knowledge of the sector as well as increase familiarity with technologies and their current costs. See the resources section of this guidance for information.

It would be useful for developers to establish knowledge of technologies and costs for a broad range of development types and scales. The Microgeneration Certification Website provides access to companies (including local firms) who install renewable energy technologies. They can provide information on appropriate technologies and potential costs to inform feasibility and viability considerations. Establishing a relationship with these firms can inform future work and projects. It is advised that developers should GET AT LEAST THREE QUOTES in the first instance on a project to inform options.

<http://www.microgenerationcertification.org/consumers/installer-search>

In addition the Council has produced a Guide to Technology Costs³ for a range of different building types which will inform the Planning Department's assessment of viability of the scheme. This Guidance can be used to assess the most cost effective carbon management option for the proposal. However it will not provide detailed knowledge of technology feasibility and specific costs including income generation opportunities.

STEP 4 Prepare feasibility / viability statement if required

If technologies are infeasible (i.e. cannot physically be implemented on a site) or are unviable (costs are considered prohibitive to the development going forward) then applicants will need to state these factors clearly in their DAS / energy statement, supported by evidence.

A simple statement of infeasibility or non-viability will not provide enough information to inform the Planning Department's decision process and may result in delay to a planning decision. Evidence should be provided of feasibility work undertaken to inform selection of appropriate options. For example a statement of how infeasible solar systems are could include mention of the unsuitable orientation of the site for solar, referencing plans to show orientation, whilst demonstrating the inability to re-orient buildings. Another suggestion maybe that wind speeds may be inappropriate for the site and these should be stated to support the statement.

In terms of cost of feasible technologies, **evidence of quoted or estimated costs** should be included as part of the application to make the case for claims of viability prohibiting development. A simple statement that technologies are 'expensive' will NOT be enough information and may delay the planning decision.

Remember that the Council has produced a Guide to Technology Costs for a range of different building types which will inform the Planning Department's assessment of viability of the scheme. This Guidance (or other resources outlined in the back of this document) can be used to inform the energy statement with estimated costs if an installer has not been recruited to provide costs.

STEP 5 If required, establish level of payment to be made in lieu of ability to feasibly / viably meet Targets

This option will only be acceptable where all other efforts to reduce carbon emissions through design and technology considerations on site have been fully exhausted and no feasible and viable option remains. This will need to be evidenced in an energy statement, alongside the appropriate calculations of payment (see below) and discussed with the Planning Team before submission of the finalised energy statement.

If the intention is to pay into Stockport's Carbon Fund rather than achieve reduced carbon emissions on site through minimised energy demand and/or use of low and zero carbon technologies, then the following calculation needs to be undertaken and agreed with the Planning Team at Stockport Council. An Excel spreadsheet version of the flowchart below is available on request from planning.policy@stockport.gov.uk or by phoning 0161 474 4385. The policy clearly states that planning applicants can make the case in their energy statements for delivery of low carbon technologies resulting in non-viability of the project and this

³ Visit www.stockport.gov.uk/planningsustainabledevelopment - see Related Documents on the right of the page

includes where carbon offset may be deemed by the applicant to make the project non-viable. However it is the responsibility of the applicant to make this case showing clear costs to support the statement.

Carbon offset means the increased carbon dioxide emissions from a new development are balanced by savings in carbon dioxide elsewhere, which are brought about by measures paid for by the carbon fund. Any net increase in carbon dioxide emissions from a development will be calculated as tonnes per year. A one-off contribution will be required to the carbon fund, by means of a Section 106 agreement, at a rate of £295 for each tonne of carbon dioxide emitted⁴.

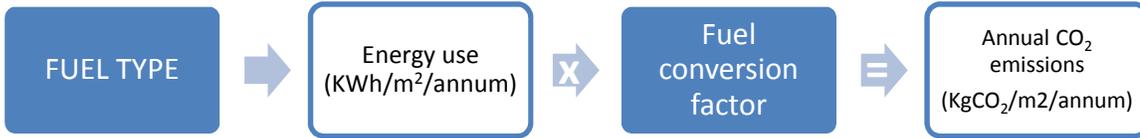
Coupled with existing best practice in energy efficiency, carbon offset could provide carbon neutrality for a few hundred pounds per house. The carbon fund is managed by Stockport Council's Planning Policy Team and as a priority will be used by the Council to fund the following activities: improvement of existing housing stock through funding of schemes to provide low and no cost insulation; pump prime funding for district heating networks including the proposed town centre scheme; pump prime funding of Stockport based community owned renewable energy schemes. The fund will be spent on carbon reduction measures with a lifespan of at least 30 years equivalent to the increased carbon output from new development.

Calculation method:

1. Take the energy use figure for the proposed development (KWh/m²/yr), including any reduction due to low or zero carbon technologies such as renewables, and subdivide into different fuel sources e.g. gas, electricity – see flowchart below.
2. Multiply the resulting figure for each fuel by the relevant conversion factor, shown in the flowchart, to give CO₂ emissions (Kg/m²/yr).
3. Add each fuel figure to give combined CO₂ emissions (Kg/m²/yr).
4. Multiply by total gross floor area to give total CO₂ emissions (tonnes/yr).
5. Multiply tonnes by £295 to calculate payment to the carbon offset fund.

⁴ This figure is the average estimated cost of carbon for retrofit improvement measures for Stockport provided by the [Stockport Low Carbon Policy Implementation Study](#)

Carbon Offset Mechanism Flowchart



FUEL TYPE	Energy use (KWh/m²/annum)	Fuel conversion factor	Annual CO ₂ emissions (KgCO ₂ /m²/annum)
GRID ELECTRICITY	_____ (KWh/m²/annum)	0.4455	_____ (KgCO ₂ /m²/annum)
NATURAL GAS	_____ (KWh/m²/annum)	0.1840	_____ (KgCO ₂ /m²/annum)
LPG	_____ (KWh/m²/annum)	0.2145	_____ (KgCO ₂ /m²/annum)
GAS OIL	_____ (KWh/m²/annum)	0.2718	_____ (KgCO ₂ /m²/annum)
FUEL OIL	_____ (KWh/m²/annum)	0.2688	_____ (KgCO ₂ /m²/annum)
DIESEL	_____ (KWh/m²/annum)	0.2451	_____ (KgCO ₂ /m²/annum)
PETROL	_____ (KWh/m²/annum)	0.2339	_____ (KgCO ₂ /m²/annum)
COAL	_____ (KWh/m²/annum)	0.3130	_____ (KgCO ₂ /m²/annum)

TOTAL _____
KgCO₂/m²/annum **A**



Low Carbon Terminology

LZC - Low or zero carbon energy is energy which is either renewable or comes from a more efficient generation process with lower carbon outputs such as heat pumps or combined heat & power systems.

Renewable energy is a type of energy whereby zero carbon emissions are achieved and includes solar, wind and hydro.

Biomass is called renewable by many but is also called a zero or low carbon option depending on where the fuel is resourced from. A sustainable option is wood resourced within a 30km supply area.

Microgeneration refers to those generation techniques which are small in size and output - such as to provide power to a single dwelling or a small scale community scheme.

Decentralised energy refers to energy which is generated on or adjacent to a site i.e. not from remote power stations.

Low & Zero Carbon Information Resources

Guidance

PLEASE NOTE: →

Please make use of Stockport's Sustainable Design & Construction Supplementary Planning Document, written as a 'how to' guide for sustainable development. There is a specific topic section on 'Energy' which provides information and ideas for low carbon design approaches.

Get input from installers - see the Microgeneration Certification Scheme List of Installers related to the Feed in Tariff and Renewable Heat Incentive schemes (see below) for an idea of local installers to consult with. It is recommended that you get three quotes for each technology as a minimum - some installers will provide feasibility assessment free of charge.

CLASP offers a Renewables Handbook for free download which explains the planning and design considerations for most technologies, including some estimated costs.

The Energy Saving Trust manages the **Feed In Tariff** scheme and Ofgem manage the **Renewable Heat Incentive** scheme and there are other details and resources shown below.

The Energy Saving Trust website contains information on generating your own energy with costs for domestic installation of most types of technologies

Space & Water Heating & Cooling - including District Heating and Combined Heat & Power Considerations:

For major housing and other development sites you should consider the opportunities that **district heating** could offer - these technologies are included in the LRT guidance referenced above and will assist with managing the carbon emissions from the site, even if using gas powered **Combined Heat and Power**. A recent publication (see link opposite) lays out district heating project development stages on its contents page.

Resources

Below are links to those organisations and information sites which can help with design, financing and information on various technologies

www.stockport.gov.uk/planningsustainabledevelopmentdevelopment

<http://www.microgenerationcertification.org/>

<http://www.claspinfo.org/cheshire-renewables-handbook>

<http://www.energysavingtrust.org.uk/Generate-your-own-energy/Sell-your-own-energy/Feed-in-Tariff-Clean-Energy-Cashback-scheme>

<http://www.energysavingtrust.org.uk/Generating-energy/Getting-money-back/Renewable-Heat-Incentive-RHI>

<http://www.energysavingtrust.org.uk/Generating-energy/Choosing-a-renewable-technology>

<http://www.chpa.co.uk/>

http://www.tcpa.org.uk/data/files/comm_energy_plandevdel.pdf

/Continued . . .

Guidance

For smaller sites remember that connection to future and existing district heating networks may be another factor to be considered.

The **Renewable Heat Incentive** came into force in 2014 and should be factored into budgets for the design aspects of the development. This includes **Ground and/or Air Source Heat Pumps** and **Solar Thermal Hot Water** provision alongside other space heating systems such as biomass. The RHI Incentive website provides information on the process.

Biomass resources can be used in boiler systems and stoves to provide heat for space and water heating – there are generation options (see below). Biomass can be used to power District Heating and/or CHP. Note that in Smokeless Zones specific types of stoves / flues are required.

Renewable and Low / Zero Carbon Technologies – includes Microgeneration Technologies

The launch of the **Feed in Tariff** providing income on both used and additional generated energy makes many microgeneration technologies viable as options for generation on all types and sizes of development.

Wind power is an option where average wind speeds are at least 5 metres per second on site – check out the other considerations for wind and visit the various websites that support the UK's growing wind energy sector. Remember that wind turbines can be building mounted and there are some innovations in design of turbines that might be appropriate for your site.

Solar Photovoltaics (PV) can be placed on buildings that have the right orientation and are free from shading and the FIT makes them attractive in terms of income generation. The Solar Trade Association is a good place to start for further information.

Micro hydro power is site specific obviously but if your site has the capacity for a micro hydro scheme it would be useful to factor this into early design stages. For local case studies on Archimedean Screw type hydro see H2OPE's website

Biomass generation can provide a site with low carbon energy generation and could also support a CHP or District heating system.

Other Resources

There are regional and national agencies who offer support (sometimes subject to their capacity or the size of organisation making the request, or the carbon savings being achieved) to enable low carbon design.

FINANCIAL OPTIONS

Enhanced Capital Allowances are a straightforward way for businesses to improve their cash flow through accelerated tax relief. The ECA Scheme for energy-saving technologies encourages businesses to invest in energy saving plant or machinery specified on the Energy Technology List, managed by the Carbon Trust. The ECA scheme provides businesses with 100% first year tax relief on their qualifying capital expenditure.

Resources

<http://www.rhinentive.co.uk/>

<http://www.heatpumps.org.uk/>

<http://www.solar-trade.org.uk/>

<http://www.woodpelletstove.co.uk/>

<http://smokecontrol.defra.gov.uk/>

<http://www.fitariffs.co.uk/>

<http://www.bwea.com/>

[EST Wind Speed Tool](#)

<http://www.solar-trade.org.uk/>

<http://www.british-hydro.org/index.html>

<http://www.h2ope.org.uk/>

<http://www.r-e-a.net/>

<http://etl.decc.gov.uk/etl>

Guidance

The launch of the **Feed in Tariff** and **Renewable Heat Incentive** providing income on both used and additional generated energy and heat makes many microgeneration and renewable heat technologies viable as options for electricity generation or space/water heat provision on all types and sizes of development.

Big Lottery Funded Community Sustainable Energy Programme funds community based organisations to deliver sustainable energy projects – closed now but this fund may have future rounds.

Igloo Regeneration Partnership invests in and develops sustainable urban regeneration schemes across the UK.

ADVICE RESOURCES

Carbon Trust are also able to offer free or subsidised consultancy throughout a building design project – depending on its size and potential carbon savings.

North West Centre for Construction Innovation provide advice and organise networking opportunities for designers and developers to discuss issues, including sustainable design and construction information and the North West Heritage Skills Hub.

English Heritage offer advice to home owners on climate change issues which is relevant to all design

Remember that Stockport's own Sustainable Design & Construction SPD has a wealth of resources and information with a topic sections on Energy, Site Layout & Building Design as well as Materials.

Resources

<http://www.fitariffs.co.uk/>

<http://www.rhincentive.co.uk/>

<http://www.communitysustainable.org.uk/>

<http://www.igloo.uk.net/>

<http://www.carbontrust.co.uk/cut-carbon-reduce-costs/products-services/building-design-advice/pages/building-design-advice.aspx>

<http://www.ccinw.com/services/sustainable-construction/20722>

<http://www.ccinw.com/services/north-west-heritage-skills-hub/20671>

www.climatechangeandyourhome.org.uk

<http://www.stockport.gov.uk/planningsustainabledevelopment>