

Providing an Energy Statement with your development



Policy context

For housing developments of more than 10 units and any other development with a floor space of 1000 square metres or more the council will seek a 10% reduction in carbon emissions through the implementation of renewable and low carbon technologies.

This is supported by national policy and EV3A(j) in our adopted Unitary Development Plan.

Pre application consideration of energy

Considering appropriate layout, design and orientation can all have a dramatic impact on energy use and the opportunities for low carbon technologies. Addressing these issues early on will generally result in greater carbon savings and lower costs.

Achieving the highest level of energy efficiency possible will reduce energy consumption, which will lower the amount of low carbon energy that will need to be generated.

Development should be designed as far as possible so that it is suitable for future climatic conditions and can be retrofitted with additional low carbon technologies as they become more advanced and cost effective.

Renewable and Low Carbon Technologies

There is a range of technologies that can be implemented to help lower the carbon emissions of a development over its' lifetime. The suitability of technologies will depend upon site characteristics and other factors.

The following technologies are widely accepted as beneficial carbon reduction measures given the right conditions.

- Wind
- Solar Photovoltaics
- Solar Hot Water Systems
- Biomass Heating
- Biomass Combined Heat and Power
- Ground source heating and cooling
- Air source heating and cooling
- Gas-fired Combined Heat and Power

This list is not exclusive; there are a range of other technologies that may also be appropriate. For example, micro hydro, hydrogen fuel cells, geothermal, energy from waste, solar air collectors and so on.

Applicants should demonstrate they have explored the appropriate renewable energy options for a particular development by drawing up a short-list of renewable and/or low carbon technologies and carrying out feasibility studies.

Applicants should provide an 'energy statement' which sets out the technologies that have been considered and chosen. Energy assessments should also be provided as part of the statement to outline the carbon savings that have been made.

*The 'Energy statement' can be incorporated into the Design and Access Statement or other document.

Calculation Methodology

The calculation method for the energy assessments is outlined below.

1. Developers should calculate the annual predicted **energy demand** of the site in KWh for each fuel type **before** low carbon technologies have been implemented.

The calculations should be made **after** energy efficiency measures (to meet or exceed Part L of the Building Regulations) have been factored in.

The Standard Assessment Procedure (SAP) is a recognised tool for these calculations for (Dwellings). The Simplified Building Energy Model (SBEM) is a recognised tool for calculations in non-domestic buildings.

2. The annual energy demand should then be converted into carbon emissions using the emissions factors of the current version of Building Regulations Approved Document Part L.

It is recommended that the total predicted emissions for the site should be accompanied by a breakdown of the emissions from **each building type**, other structures and infrastructure.

3. Developers should then calculate the potential carbon reductions arising from the implementation of each renewable energy technology.

For example, a housing unit may generate 150kg CO₂/per year /per m² before any renewable or low carbon technologies have been implemented.

- Installing 1m² Solar Panel to this unit could reduce emissions by x %
- Establishing a district heat and power system could reduce emissions by y %
- Installing a 1mw turbine could reduce emissions by z%

Developers may also wish to calculate the cost of technically feasible technologies to help them gain an idea of where to focus efforts.

Some renewable technologies could potentially generate income for the developer / tenant over the lifetime of the development. For example, feed-in tariffs, which promote a more competitive price for renewable energy that is sold back to the grid. These factors should be taken into account if appropriate.

4. The final calculation should show the overall reduction in emissions achieved for the development.

It is not necessary for all buildings / structures to achieve 10% reduction in carbon emissions, provided that the **overall emissions reduction for the development** is 10%.

Building type A (20 dwellings)

Predicted carbon emissions before low carbon technologies = 140kgC/year

Solar Thermal 3m² = 15% reduction (-21 KgC/year)

Building Type B (5 dwellings)

Predicted carbon emissions before low carbon technologies = 100kgC/year

No measures implemented = 0% reduction in carbon emissions (100kgC/year)

Overall reduction

20 dwellings at 140 kgC/year + 5 dwellings at 100kgC/year = 3300kgC/year

Take away reduction in emissions from both dwelling types.

Type A – 21kgC/ year x 20dwellings = 420kgC/year

Type B = 0kgC/year x 5 dwellings = 0kgC/year

Total emissions before low carbon technologies (3300 kgC/year) – Total emissions reductions (420 kgC/year) = Overall reduction (2880 kgC/year - a **13% reduction overall**)

Viability and feasibility

The policy is subject to economic viability and technical feasibility. It is the responsibility of the developer to provide robust evidence that the 10% target is unachievable due to feasibility or viability issues.

Should the 10% target be deemed unviable, the developer should provide information suggesting what level of carbon reductions would be viable, or suggesting alternative low carbon design additions which could off-set the 10% reduction.

A process of negotiation is likely to occur.

Financial opportunities

There is a wide range of financial opportunities to assist with the transition to low carbon development.

We would draw your attention in particular to the Government's Feed in Tariff and the Renewable Heat incentive schemes which offer a considerable source of income for low carbon energy generation.

Some key funding and income streams have been outlined below. This list is not exhaustive.

- Feed-in-tariff rates
<http://www.decc.gov.uk/Media/viewfile.ashx?FilePath=What we do\UK energy supply\Energy>
- Envirolink Funding Search
<http://www.greengrantmachine.co.uk/envirolinknw/Default.aspx>
- Enhanced Capital Allowances Scheme
<http://www.eca.gov.uk/etl>
- Carbon Trust 0% loans
<http://www.carbontrust.co.uk/energy/loans/default.htm>
- European regional development fund (ERDF)
<http://www.erdfnw.co.uk/>

Further information

- Green Book Live (Reference source for environmental products and services)
<http://www.greenbooklive.com/index.jsp>
- Energy Saving Trust (Energy efficiency best practice advice and standards)
<http://www.energysavingtrust.org.uk/business>
- The London Renewables Toolkit (Guidance on renewable energy technologies and their implementation)
http://www.london.gov.uk/mayor/environment/energy/docs/renewables_toolkit.pdf
- Combined Heat and Power Association (Guidance on Combined Heat and Power development)
www.chpa.co.uk
http://www.chpa.co.uk/news/reports_pubs.shtml
- North West Sustainability Checklist (Suggested standards for integrating sustainability into developments)
<http://www.sdchecklist-northwest.org.uk>