

Energy Statement Guidelines for developers

When is an Energy Statement needed?

As of January 1st 2009, the Council will now expect all schemes including 1 or more residential units, and commercial or other developments of 100m² or more, to be subject to the Sustainable Construction Checklist.

Items 4 and 5 of the Checklist – Designing for minimum energy use, and Reducing predicted site CO₂ emissions – should be addressed in an Energy Statement. An Energy Statement should therefore be provided for all new build developments that meet the relevant thresholds.

The Energy Statement should be submitted to the Planning Office with the full planning application.

What should an Energy Statement include?

The Sustainable Construction Checklist states that an Energy Assessment should show:

“the **predicted energy demand and carbon dioxide emissions for the site** and subsequently how these have been reduced by: 1 Using **less energy**. 2 Using **renewable energy**. 3 **Supplying energy efficiently**.”

The following information should be included:

1. **Baseline energy consumption.** This should include both regulated and non-regulated¹ energy use.
 - Major developments should use SAP/SBEM to calculate this data
 - Benchmark data is only acceptable for minor developments,
2. **Baseline carbon dioxide (CO₂) emissions,** calculated using standard conversion factors².
 - Total development emissions should take into account both regulated and non-regulated emissions sources
 - The baseline should include emissions from gas and electrical energy consumption

¹ Regulated energy consumption includes those forms of energy use covered in Building Regulations. This includes all fixed consumption inherent in the building, e.g. fixed lighting, space heating, water heating. Non-regulated energy consumption are those energy uses not covered by Building Regulations. This includes energy consumed by ‘plug-in’ appliances (e.g. standing lamps, TVs) or cooking.

² Available from Building Regulations Part L2a (2006) Table 2. These include:

Natural gas: 0.194kgCO₂/kWh

Electricity: 0.422kgCO₂/kWh

Electricity from on-site renewable energy: 0.568kgCO₂/kWh

- Emissions associated with water and space heating should be calculated from a gas baseline, unless an electrical baseline can be justified.
3. **Reductions** in energy consumption and carbon dioxide emissions resulting **from energy efficiency measures**
 - Provide details of the energy efficiency measures that will be incorporated into the development
 - Where available, specific details, such as building material U-values, ratings of electrical appliances, etc should be included
 4. **Reductions** in energy consumption and carbon dioxide emissions resulting **from supplying energy efficiently**
 - Illustrate in the proposal how the use of Combined Heat and Power (CHP) technology **or** a community / district heating scheme **or** centralised heating system has been explored
 - This may not be applicable to all sites. If it is not applicable, give the reason why this consideration has been excluded.
 5. Estimation of CO₂ **reduction** through use **of renewable energy technologies**. This should total a **minimum reduction of 20%** from the efficient energy baseline.
 - The required 20% emissions reduction should be calculated as a reduction from the efficient baseline emissions level calculated in step 4 (or calculated from the baseline in step 3, if step 4 is not applicable).
 - For each technology deemed to be suitable for the site, an estimate should be presented. This should include as a minimum:
 - Proposed system size; estimated energy generation; estimated CO₂ savings; site-specific design requirements – e.g. Where would the technology be installed? How would this impact current designs?; maintenance requirements; estimated lifecycle.
 - Where a technology has been ruled out, clear justification outlining the technical reasons for this should be provided
 - The **location** of any **renewable or low carbon energy technologies** should be shown in design plans: e.g. proposed location of solar panels on roof; location of plant room for communal heating system etc.
 - Example formats for simple tables containing the necessary energy and CO₂ offset data are given below. These may be used to summarise the information contained in your Energy Statement.
 6. A **concluding section** should be provided outlining the contribution of each set of measures, technology or combination of technologies towards meeting the relevant target and providing recommendations as to which would be more suitable for the site. Where it has not been possible to reach the target, a clear explanation should be provided.

Notes on presentation

An Energy Statement should present technical data while remaining easy to read and to understand. Clearly laid out tables should be used to present data for ease of reading and comparison. Site plans should be used where possible, e.g. to indicate suitable roof areas for installing solar technologies or the location of a plant room. References should be used to explain where data has been obtained from.

Example Tables

1. Summary of baseline energy demand.

This table may be amended or duplicated to show energy demand before and after the application of energy efficiency measures or renewable energy technologies.

	Total Energy Demand (kWh/yr)	Associated Total CO ₂ (kgCO ₂ /yr)
Hot water		
Space Heating		
Fixed Electrical		
Appliances/Non-regulated		
... (any other energy consumption)		
TOTAL		

2. Summary of CO₂ emissions reductions

	Total CO ₂ emissions (kgCO ₂ /year)
Baseline emissions	
Improved emissions (after application of energy efficiency)	
Improved emissions (after incorporation of efficiency energy supply)	
Improved emissions (after incorporation of renewable energy technology)	
% CO ₂ displaced in total	
% CO ₂ displaced by renewable energy	