

Cairngorms National Park
Supplementary Planning Guidance

Carbon emissions from new developments

**Consultation Draft
May 2010**

Planning in the Cairngorms National Park

The Cairngorms National Park is the largest National Park in the UK, encompassing areas of Highland, Aberdeenshire, Moray and Angus. A Scottish Government consultation is taking place to extend the boundary into Perthshire.

Planning in the Cairngorms National Park is unique. It involves the Cairngorms National Park Authority (CNPA) working alongside the Local Authorities, who

continue to deal with many of the planning applications within their respective areas. All planning applications submitted must comply with all the policies in the Cairngorms National Park Local Plan (once adopted) and any relevant Supplementary Guidance.

Any planning application should be submitted to the relevant Local Authority in the normal manner. The Local Authority checks to ensure all the necessary information is supplied and registers receipt of the application. The CNPA is informed by the Local Authority and then has 21 days to decide whether to call-in the application. Only applications which are of general significance to the aims of the Park are called-in. Thereafter the CNPA determines the application. In instances when planning applications are not called-in, the Local Authority continues to act as the planning authority.

This supplementary guidance sets out detailed advice to help you meet the requirements of the policies in the Cairngorms National Park Local Plan. It is recommended that it is read in conjunction with other relevant guidance, such as the Sustainable Design Guide.

GUIDANCE UPDATE:

This guidance is based on the current Scottish Government planning guidance on carbon emissions. It was up to date at the time of writing, however it is recognised that emissions targets are expected to change. We would encourage applicants to strive to meet and exceed any current carbon emissions targets.

1.0 Background

- 1.1 This guidance provides additional information relating to Carbon Emissions from new development, as outlined in Policy 17 in the Cairngorms National Park Local Plan.

Policy 17 Reducing Carbon Emissions in Development

Development with a total cumulative floorspace of 500 square metres or more should incorporate on-site zero and low carbon equipment contributing at least an extra 15% reduction in carbon dioxide emissions beyond the 2007 Building regulations carbon dioxide emissions standard.

Proposals shall be exempt from this standard only where developers are able to demonstrate that technical constraints exist. In such circumstances, developers will be required to meet the standard by providing equivalent carbon savings elsewhere in the area.

- 1.2 Ensuring new buildings meet increased energy standards will reduce their environmental impact, make them more affordable to heat, reduce their energy consumption and provide significant stimulus in new technology, practices and design in low and zero carbon technologies.
- 1.3 The policy only **applies to development proposals with a cumulative floorspace of 500 sq metres or more, typically, small groups of housing, major commercial or other large-scale developments.** It would generally not apply to individual houses. However the CNPA welcomes and encourages development proposals falling under this threshold to incorporate measures to reduce their carbon dioxide emissions.

2.0 Introduction

- 2.1 In Scotland, our existing buildings account for around 40 per cent of all carbon dioxide emissions; typically each household creates six tonnes annually, through space heating (60 per cent), water heating (20% per cent) and the remainder for lighting and appliances (Source: Energy Saving Trust). The design and management of new development therefore provides significant opportunities to reduce carbon dioxide emissions. **Good design at the outset will minimise the total energy demand for the lifetime of the building.**
- 2.2 The policy expects that through the use of energy efficient, micro-generation and decentralised renewable energy systems, proposals should incorporate sufficient equipment to reduce a building's carbon emissions by 15 per cent more than the level set by 2007 building standards.
- 2.3 This guidance provides examples of technology, outlines the information required in your application and the calculations to be compliant with the 15 per cent carbon reduction targets. See flow chart on page 00.

3.0 Examples of Renewable Energy Technologies

- 3.1 Renewable sources of energy such as sun, wind, waterpower and geothermal energy can offer diversity and security of supply and can reduce harmful emissions to the environment. Table 1 provides examples of some technologies which could be used to help meet the requirements of the policy.

Table 1: Measures to be considered in Energy Statements

Passive Energy Efficiency Measures	Operational Energy Efficiency Measures	Renewable Technologies	Emerging Technological Measures
Orientation Day lighting Natural ventilation Air tightness Avoidance of wind chill Layout and Landscaping	Heating system Insulation Lighting and appliances Glazing (Micro) CHP Heat recovery systems	Photovoltaics Solar water heating Micro wind Biomass Micro-hydro Ground, water and air source heat pumps	Fuel Cells Anaerobic digestion Solar air collectors

4.0 Use of energy statements: demonstrating compliance

4.1 Applicants should consider how to meet the requirements of this guidance early in the stages of design of buildings. An energy statement should be submitted at the planning application stage or when discharging a planning condition, demonstrating how the development will satisfy the requirements of the policy. The energy statement should include specific information that demonstrates how:

4.1.1 The design minimises energy demand, for example through environmentally friendly layouts, energy efficient design and thermally efficient buildings;

4.1.2 The developer intends to incorporate the use of renewable resources in the development;

4.1.3 The use of non-renewable resources within the development has been minimised;

4.1.4 The development incorporates renewable energy equipment while providing protection for the built, natural and historic environment and residential amenity; and

4.1.5 Equipment will be installed, used and maintained, and indicating any training to be provided to end-users.

4.1.6 In addition to the above, energy performance calculations (see p00) must be submitted. The applicant must provide the necessary information to demonstrate that the proposal complies with the policy target. PAN 84 (p10 and pp15-21) provides further information on the required calculations. Planning authorities expect calculations provided by the applicant to be accurate and planning officers will not carry out the calculations. See Appendix 1 (p00) for further information.

5.0 Use of conditions in planning permissions

5.1 In order to avoid any unnecessary delays in processing planning applications, a suspensive condition may be used. This allows developers to submit a detailed energy saving or renewables statement at the time of submission for Building Warrant. Such a condition may be specific to the individual development, but will generally require:

a) details of the proposed energy efficiency measures or renewable technologies to be incorporated into the development; and

b) calculations using the Standard Assessment Procedure (SAP) or Simplified Building Energy Model (SBEM) methods which demonstrate that the reduction in carbon dioxide emissions rates for the development comply with the policy requirements.

6.0 Exemptions

6.1 Applications shall only be exempt where applicants can demonstrate that constraints exist, and if this is the case alternative carbon savings shall be sought. The following is a list of examples of constraints which may limit the application of equipment, however, it is not exhaustive. Please note that, on their own, financial considerations do not constitute a constraint. It is recommended that applicants contact the planning authority in the following circumstances:

6.1.1 Areas where the supply of natural energy sources may be obstructed by another building or structure (overshadowing or wind screening).

6.1.2 Areas where space is constrained (storage, pipes, delivery of fuel).

6.1.3 Locations which restrict particular emissions (such as clean air zones).

6.1.4 Locations with an unsuitable type of ground or building for the location of the equipment.

6.1.5 Buildings with limited roof/wall areas or angles suitable for the equipment.

6.1.6 Areas with designations would be considered in relation to the merits of individual applications (eg listed buildings, conservation areas or National Scenic Areas).

7.0 Provision of equivalent carbon savings elsewhere

7.1 Where the planning authority agrees that there are technical or other constraints to achieving the emissions reduction target on-site, alternative provision may be made. These would normally be secured by S.75 Legal Agreement and may involve the installation of equipment on another site or building, offsetting or payment into an appropriate fund, which is used to reduce carbon emissions (if available). The amount of provision will be equivalent to the requirement for the application site.

8.0 Points to consider

8.1.1 The applicant provides the necessary information to demonstrate compliance with the policy target, submitting a statement outlining measures and equipment, including the calculations and use of the appropriate BRE software programme (see [PAN84http://www.scotland.gov.uk/Resource/Doc/214728/0057273.pdf](http://www.scotland.gov.uk/Resource/Doc/214728/0057273.pdf)).

8.1.2 The policy target is specific to CO₂ emissions from energy performance which is distinct from environmental performance; specifically, requiring an examination of how energy is used – in heating, cooling and lighting.

- 8.1.3 The planning policy requirement is a separate requirement to the building standard, which is a material planning consideration for all applications that meet the area thresholds.
- 8.1.4 Planning permission in principle (formerly outline planning permission): the developer should provide a statement of the intended equipment to meet the 15 per cent or more reduction, including types, scale, location and potential issues regarding the equipment. Once the applicant completes the design of the development they should submit the energy calculations within an energy statement for matters specified in conditions, with their application.

9.0 Further information

- 9.1 It is recommended that the following other sources of advice are read in conjunction with this guidance. Other useful information is on the Scottish Building Standards System website (www.sbsa.gov.uk) and at the Energy Saving Trust (www.energysavingtrust.org.uk).

Scottish Government

www.scotland.gov.uk/planning

Scottish Planning Policy

<http://www.scotland.gov.uk/Publications/2010/02/03132605/0>

PAN 84 *Reducing Carbon Emissions in New Development*

PAN 45 *Renewable Energy Technologies and annex*

Cairngorms National Park Authority

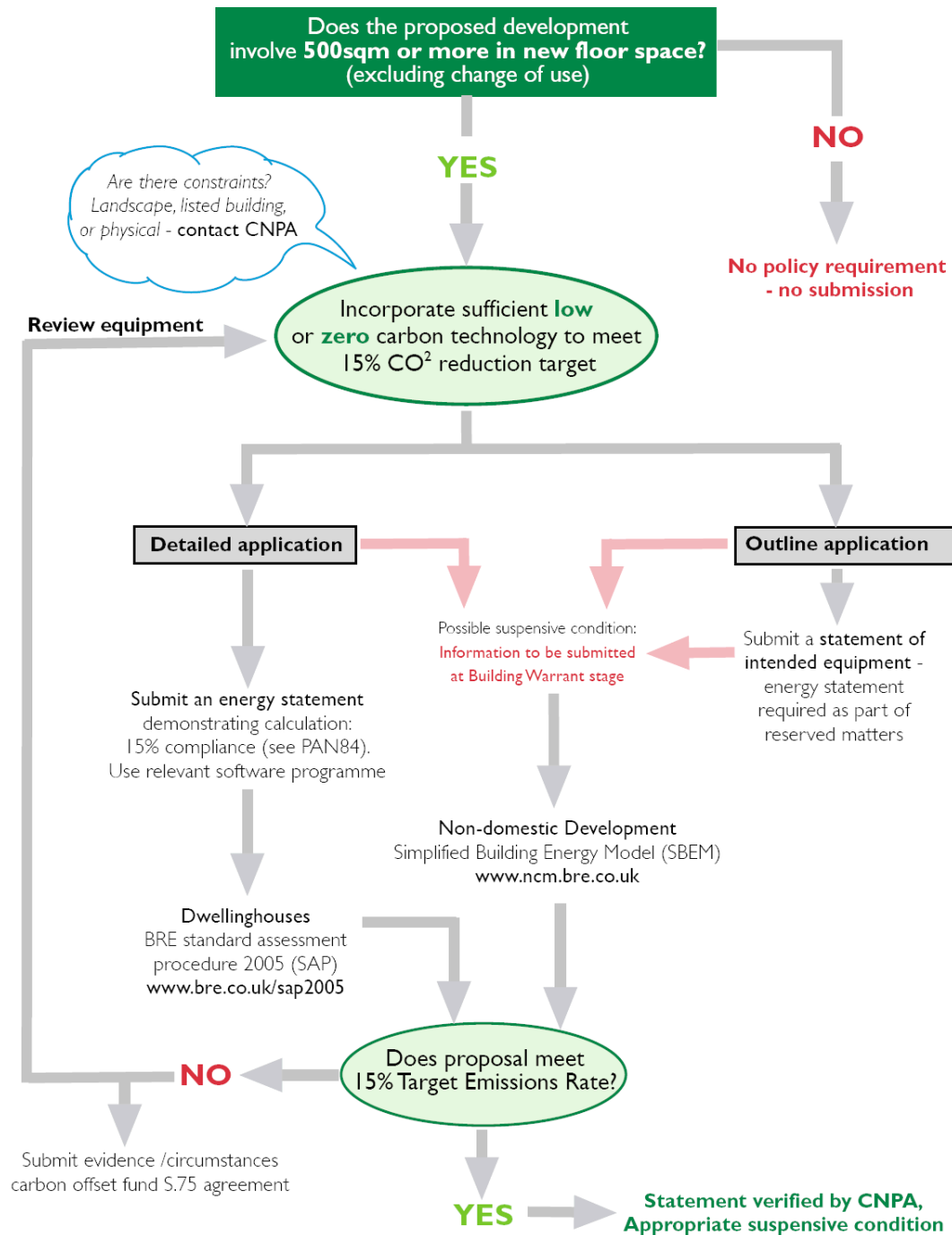
www.cairngorms.co.uk

Supplementary Planning Guidance

Sustainable Design Guide

Energy Generation

Carbon Emissions from New Developments: Flow chart



APPENDIX ONE

The table provides a step-by-step guide to firstly, assessing the CO2 base rating of the building itself without the equipment, with the equipment and then goes on to establish the reduction in percentage terms attributable to the equipment. Details of which software programme to provide the basis to the calculations is provided below:

THE 5 CALCULATIONS : THE APPROACH TO MEASURING THE REDUCTION

It is recommended that applicants refer to PAN84 for further details and worked examples, at <http://www.scotland.gov.uk/Publications/2008/03/06133051/0>

1. 2007 Building Regulations CO2 Emissions Standard

The appropriate software program (SAP/ SBEM) is used to calculate the 2007 Building Regulations CO 2 Emissions Standard. This is the Target Emissions Rate (TER);

2. Actual Emissions Rate Using LZC Equipment

The appropriate software program (SAP/ SBEM) is used to calculate the actual emissions rate for the development, including the low and zero carbon equipment. This is the Dwelling or Building Emissions Rate (DER/ BER);

3. Percentage Reduction

Calculate the percentage reduction from step 1 to step 2: $(100 - (\text{step 2} \div \text{step 1} \times 100))$;

4. Actual Emissions Rate Without LZC Equipment

The appropriate software program (SAP/ SBEM) is used to calculate the actual emissions rate for the development without the low and zero carbon equipment. This is a re-calculation of the DER/ BER;

5. Percentage Reduction Due to LZC Equipment

Calculate the percentage reduction due to the low zero carbon equipment: $((\text{step 4} - \text{step 2}) \div \text{step 1}) \times 100$.

For Dwellings

The Government's Standard Assessment Procedure for Energy Rating (SAP 2005) should be undertaken. BRE approved SAP 2005 software is available to the public www.bre.co.uk/sap2005 and it incorporates a function which automatically generates the target carbon dioxide emissions level (TER) when the fuel type is selected and the 'notional dwelling' dimensions and living area fraction have been fed into the program. The information submitted should demonstrate that the Dwellings Emissions Rate (DER) is at least an extra 15% reduction on the Target Emission Rating (TER) i.e. the developer has demonstrated that the dwelling has met the Building Standard and has improved on this by 15%.

For All Other Developments

The Simplified Building Energy Model (SBEM) www.ncm.bre.co.uk/index.jsp should be undertaken. The Target Emissions Rate (TER) should be calculated by inputting a) the size and shape data into the calculation methodology, b) the Scottish standard package of construction and building services performance measures and c) the formula that reflects the type of heating and cooling system for the building. The Building Emission Rate (BER) is calculated by inputting the data for the proposed building design. These calculations are required to be submitted and must show that the resulting BER indicates at least an extra 15% reduction on the TER.