

SG LSD11: Carbon neutrality in new development

We will approve new development intended for human occupation, subject to other policies, if the predicted carbon dioxide emissions are reduced by at least 30% beyond the 2007 building regulations' carbon dioxide emissions standard.

The following exceptions are made to the need to meet this requirement:

- 1) the alteration or extension of an existing building; OR**
- 2) the change of use or conversion of an existing building; OR**
- 3) an ancillary building that is stand-alone having an area less than 50 square metres; OR**
- 4) a building, which will not be heated or cooled, other than by heating provided solely for the purpose of frost protection; OR**
- 5) a limited life building, which has an intended life of less than 2 years.**

Reasoned Justification

This guidance sets requirements for the minimum reduction of carbon dioxide emissions in new developments beyond the 2007 building regulations' carbon dioxide emissions standard.

Following a report on climate change titled 'The Bigger Issue', produced by the Council's Scrutiny and Audit Committee, Aberdeenshire Council has committed itself to working towards being a carbon neutral organisation in the short to medium term.

As part of this and the Council's wider commitment to sustainable development throughout the community, the Council is committed to assessing the environmental impacts of building and construction projects and to taking appropriate action to reduce or minimise impacts. Reducing the carbon dioxide emissions of development will have a positive environmental impact and will contribute to the Council's commitments on climate change.

The energy required for buildings and how it is provided play an important role in delivering a sustainable economy. Burning fossil fuels for either heat or electricity generation is an important consideration, because the products of combustion cause local and global air pollution and climate change. 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. Energy requirement is determined at the design stage and there is significant potential to minimise energy demand through adopting good practice in the design and construction phases.

Applicants should consider how to meet the requirements of this guidance at an early stage of planning. An *energy statement* should be submitted at the planning application stage to demonstrate how the proposed development will satisfy the requirements of this supplementary guidance. Appendix 1 provides details of what an energy statement should deliver.

In order to avoid any unnecessary delays in processing planning applications a suspensive condition may be used to allow developers to submit a detailed energy saving or renewables scheme at the time of submission for Building Warrant. Such

a condition may be specific to the individual development, but will generally comply with the following model condition.

No development shall take place, unless there has been submitted to and approved in writing by the planning authority:-

- details of the proposed energy efficiency measures or renewable technologies to be incorporated into the development;
- calculations using the SAP or SBEM methods, which demonstrate that the reduction in carbon dioxide emissions rates for the development enable it to comply with this guidance.

The development shall be carried out in accordance with the approved details. Appendix 2 provides guidance on the information that must be submitted at the building warrant stage.

Appendix 1 Energy statements

An energy statement should:

- I. Demonstrate improved design through the promotion of environment-friendly layouts, energy-efficient design and thermally efficient buildings.
- II. Demonstrate how the use of non-renewable resources within the development has been minimised.
- III. Demonstrate how the developer intends to incorporate the use of renewable resources in the development.
- IV. Demonstrate how the development incorporates its requirement for renewable energy facilities, whether at a community or local scale, while providing protection for the built, natural and historic environment.

Table 1 – Measures which may 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	Heating system Insulation Lighting and appliances Glazing (Micro) Combined heat & power Heat recovery in mechanical ventilation systems	Photovoltaic Solar water heating Micro wind Biomass Micro-hydro Ground and air-source heat pumps	Hydrogen fuel cells Gas from anaerobic digestion Solar air collectors

Appendix 2 Demonstrating compliance with the supplementary guidance

In order to demonstrate that the requirements of the supplementary guidance are being met, and to discharge any suspensive planning conditions, the following information must be submitted at the building warrant stage.

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 public¹ 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)

¹ Information on software and guidance can be obtained from www.bre.co.uk/sap2005

is at least an extra 15%² 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) should be undertaken³. 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 30%² reduction on the TER.

Off-site contributions

It is understood that it may be difficult to achieve the required carbon dioxide reduction target when developing within natural and historic designations, for example within a Conservation Area. If there are technical constraints to achieving the emissions reduction imposed by any such constraint, the provision of carbon dioxide savings elsewhere in the area could be acceptable. However, all possible energy saving measures and low and zero carbon technologies must be considered on-site first and discounted before 'carbon dioxide savings elsewhere' are considered. These savings should be secured by a legal agreement and will involve the installation of equipment off-site. In such cases the amount of carbon dioxide emissions to be saved, combining both on-site and off-site contributions, will be 15% of the 2007 building regulations' carbon dioxide emissions standard (the Target Emissions Rate) for the application site. The percentage of carbon dioxide savings should increase in line with the current building regulations

References and further reading

Planning: Policy

- SPP6, Renewable Energy:
<http://www.scotland.gov.uk/Publications/2007/03/22084213/0>
- PAN84, Reducing Carbon Emissions in New Development:
<http://www.scotland.gov.uk/Resource/Doc/214728/0057273.pdf>
- Supplementary Planning Guidance – Use of Micro-renewable Energy in Aberdeenshire:

Planning: Designing for reduced energy demand

- Designing Places: <http://www.scotland.gov.uk/library3/planning/dpps-00.asp>
- PAN45, Renewable Energy Technologies:
<http://www.scotland.gov.uk/Publications/2002/02/pan45/pan-45>

² Or x% depending on the year in which the application was submitted, according to the figures in Table2.

³ A version of SBEM is freely available at www.ncm.bre.co.uk/index.jsp

- PAN45 Annexe, Planning for Micro-Renewables: Guidance on the Siting and Design of Micro-Renewables:
<http://www.scotland.gov.uk/Publications/2006/10/03093936/0>

Building standards system

- SBSA: www.sbsa.gov.uk
- Domestic & Non-Domestic Technical Handbooks
<http://www.sbsa.gov.uk/sullivanreport.html>
- Technical Handbooks Guide for Practitioners 6: Conversion of Traditional Buildings: http://www.sbsa.gov.uk/tech_handbooks/traditional_Buildings.htm