

ENERGY EFFICIENCY AND LOW CARBON DEVELOPMENT



Clackmannanshire
Council

www.clacksweb.org.uk

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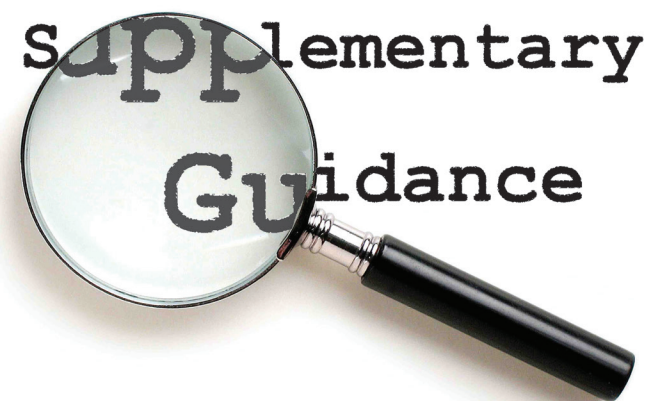
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List of Abbreviations Used

BER	Building Emissions Rate
BES	Building Energy Statement
CHP	Combined Heat and Power
CO2	Carbon Dioxide
DER	Dwelling Emissions Rate
EEAP	'Conserve and Save' the Scottish Government's Energy Efficiency Action Plan
ECO	Energy Company Obligation
EPBD	Energy Performance of Buildings Directive
EPC	Energy Performance Certificate
EST	Energy Saving Trust
HEEP	Home Energy Efficiency Programme
LDP	Clackmannanshire Local Development Plan
LZCGTs	Low and Zero Carbon Generating Technologies
SAP	Standard Assessment Procedure (energy rating for dwellings)
SBEM	Simplified Building Energy Model (energy rating for other developments)
SCCS	Clackmannanshire's Sustainability and Climate Change Strategy (SCCS), 2010
SEPA	Scottish Environment Protection Agency
SG	Supplementary Guidance
SOA	Clackmannanshire's Single Outcome Agreement 2013-23
SPP	Scottish Planning Policy
TER	Target Emissions Rate

1. Introduction

- 1.1 This document is Supplementary Guidance (SG) building on Policy SC7 'Energy Efficiency and Low Carbon Development' of the Clackmannanshire Local Development Plan (LDP), which requires that all new buildings must achieve a minimum of 15% of the carbon dioxide emissions reduction standards (as set by the Scottish Building Standards) through the use of Low and Zero Carbon Generating Technologies (LZCGTs). This proportion will increase to 20% from the beginning of 2018, and will thereafter be kept under review.
- 1.2 The document provides advice and guidance on various aspects of energy efficiency and low carbon development for those wishing to carry out, or otherwise concerned with or affected by, developments in Clackmannanshire.
- 1.3 Policy SC7 of the Local Development Plan is set out in order to ensure that a proportion (15%) of the reduction in Carbon Dioxide emissions from new development required by Building Standards is achieved through the use of Low and Zero Carbon Generating Technologies (LZCGTs). This proportion will increase to 20% from the beginning of 2018, and will thereafter be kept under review.



2. Key Issues

- 2.1 Climate change, future energy supplies, and fuel poverty are key challenges facing Clackmannanshire now and in the future. Over 40% of Scotland’s carbon dioxide emissions come from the energy used to heat and power buildings. The LDP plans for 5,227 new homes to be built in Clackmannanshire by 2035 and also allocates 161 hectares of business land. There is a need to ensure that these new homes and businesses are energy efficient, affordable to run and where appropriate, contribute to generating electricity or heating or cooling from renewable sources.
- 2.2 They must also be fit for the present and future climate: in addition to providing affordable warmth, it is necessary to ensure that they are comfortable and healthy spaces that can be proofed against the higher temperatures predicted over coming decades.
- 2.3 In developing this guidance the Council is mindful of potential cost implications associated with requiring low carbon technologies and energy efficiency measures in buildings. This is reflected in the Scottish Government’s decision to reconsider energy efficiency targets in the light of the economic downturn, and its announcement of revised standards on 25 September 2013. The Council is also mindful of the importance of long term affordability and energy security that energy efficient and low-to-zero carbon homes and non-residential buildings can offer to combat fuel poverty and climate change and support health and economic wellbeing.

- 2.4 Well considered design has a key role to play in reducing greenhouse gas emissions, not only through the energy efficiency of buildings themselves, but through the layout and design of new places and ensuring that they are designed to reduce dependency on the car and promote the use of public transport and active travel networks. LDP Policy SC5 and the related SG on Placemaking set out the manner in which the layout and design of developments can contribute to energy efficiency. This SG deals principally with ensuring energy efficiency and low carbon development within new buildings. It does not encompass existing buildings for which separate guidance and standards are available. These are signposted in the ‘Further Information’ section.
- 2.5 A factor of growing significance is the need for our buildings to cope with future as well as current climate. Fuel poverty is well understood but an emerging issue is ‘cool poverty’ where the design, construction and use of buildings may cause internal temperatures to become uncomfortable and unhealthy. Currently, there is no subsidy structure for summer energy consumption in vulnerable households.

Year	Building Standards Requirement: Domestic	Building Standards Requirement: Non Domestic
2010 “low carbon”	30%	50%
2013 “very low carbon”	60%	75%
2016 “ambition to achieve net zero carbon buildings* by 2016/17, if practical”	100%	100%
Ultimate aspiration of ‘total life’ zero carbon buildings by 2030	100%	100%

3. Policy Framework

The Low Carbon Building Standards Strategy for Scotland (the Sullivan Report)

- 3.1 In 2007, the Sullivan Report made recommendations to the Scottish Government about the most effective way to increase energy performance and reduce carbon dioxide emissions, in new buildings. Its recommendations set out staged improvements in energy efficiency standards beyond the 2007 Building Regulations, as shown below:

*In the context of the Sullivan Report and of this Supplementary Guidance “Net zero carbon buildings” means space and water heating, lighting and ventilation. “Total life zero carbon” means that the building should be responsible for net zero carbon emissions over its entire life, including construction (the embodied energy of building materials), use, maintenance and demolition.

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3.2 The Report was reviewed in 2011 and in early summer 2013 the panel reconvened in order to review the original recommendations in the light of the economic downturn. A revised Report was published in November 2013. This confirmed the Scottish Government’s interim announcement on 25 September to the effect that:

“From October 2015, improvement to new homes will reduce carbon dioxide emissions by around 21% when compared to the current levels.

These measures will also affect new non-domestic buildings such as shops and offices where the improvement will be greater with an average reduction in emissions of around 43%.”

3.3 Based upon this announcement, and upon the European commitment set out in Article 9 of the recast Energy Performance of Buildings Directive, the new standards will be:

Year	Building Standards Requirement: Domestic	Building Standards Requirement: Non Domestic
2010 “low carbon”	30%	50%
2015 “very low carbon”	45%	60%
2019 “nearly zero energy”		New non-domestic buildings
2021 “nearly zero energy”	All new buildings	All new buildings

3.4 These changes have been made in light of the economic downturn and the acknowledged pressures faced by the construction industry and buyers. The Scottish Government has undertaken costing research in order to inform the review.



The Climate Change (Scotland) Act 2009

3.5 Section 60 of the Climate Change (Scotland) Act 2009 requires Scottish Ministers to prepare and publish a plan promoting energy efficiency, and improving the energy efficiency of living accommodation. This must include details of how the Scottish Ministers intend to update planning and building regulations to ensure that all new buildings avoid a specified and rising proportion of the projected greenhouse gas emissions from their use through the installation and operation of low and zero-carbon generating technologies.

3.6 In Section 60, “energy efficiency” includes the use of:

- ▶ (a) technologies (other than those used for the production of heat) reliant on renewable sources of energy;
- ▶ (b) materials and equipment the manufacture or use of which produces or involves lower emissions of greenhouse gases than other materials and equipment; and
- ▶ (c) surplus heat from electricity generation or other industrial processes for district heating or other purposes.

3.7 Section 72 of the Climate Change (Scotland) Act 2009 requires Local Development Plans to include policies requiring developments to be designed to ensure that all new buildings avoid a specified and rising proportion of the projected greenhouse gas emissions from their use, through the installation and operation of low and zero carbon generating technologies. Policy SC7 of the Clackmannanshire LDP addresses this requirement.

Scottish Planning Policy

- 3.8 Scottish Planning Policy (SPP) emphasises the importance of new developments being designed to minimise carbon and greenhouse gas emissions through the location, siting, orientation, design, materials and insulation in achieving energy efficiency of new developments. Policy SC5 of the LDP and the Supplementary Guidance on Placemaking set out the Council's requirements in respect of these key components of energy efficient development.
- 3.9 The current version of Scottish Planning Policy (SPP) dates from 2014, and is available online at: <http://www.gov.scot/Resource/0045/00453827.pdf>

Clackmannanshire's Sustainability and Climate Change Strategy

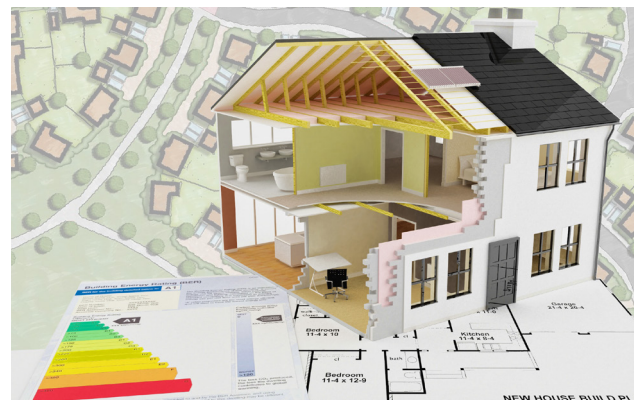
- 3.10 Clackmannanshire's Sustainability and Climate Change Strategy (SCCS), 2010, sets out a vision and action plan for achieving a Sustainable Clackmannanshire, and identifies the need to facilitate and encourage sustainable design and construction in new developments.

Local Development Plan Vision

- 3.11 Clackmannanshire's Local Development Plan Vision requires all new development to achieve demanding sustainability standards with exemplary levels of energy efficiency and ecologically sound design, well-adapted to cope with the predicted effects of climate change.

Other Policy Drivers

- 3.12 Although Policy SC7 in the Local Development Plan is specifically driven by Section 72 of the Climate Change Act, energy efficient and low carbon development also addresses policy requirements regarding health, community safety, affordable housing, and sustainability in construction.
- 3.13 Clackmannanshire 2013-23 Single Outcome Agreement
- Energy efficiency and low carbon development supports Priority Outcomes under the 2013-23 Single Outcome Agreement (SOA) including:
- ▶ Contribute to the improvement of public services
 - ▶ Protect and enhance the environment
 - ▶ Create a positive image which attracts people and business
 - ▶ Deliver more inclusive and cohesive communities
 - ▶ Support skills and training
 - ▶ Create communities that are, and feel, safer
 - ▶ Support vulnerable people and families
 - ▶ Improve health



- 3.14 The Energy Efficiency Action Plan (EEAP) "Conserve and Save" is the Scottish Government's Energy Efficiency Action Plan from 2010.

It states that, "energy efficiency and microgeneration are critical to satisfying our requirements for the services that energy provides, whilst ensuring that these remain affordable and we protect the environment for future generations. This places energy efficiency at the top of our hierarchy of energy policies as the simplest and most cost-effective way to reduce emissions."

- 3.15 Scotland's Sustainable Housing Strategy

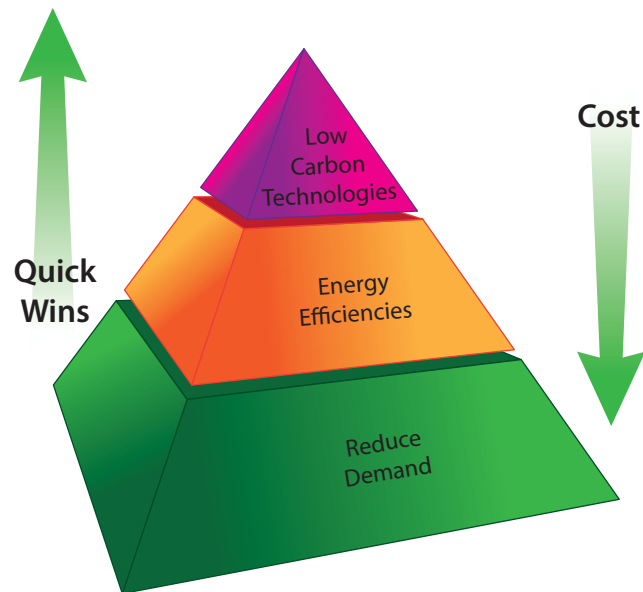
Launched in June 2012 this aims to:

- ▶ deliver a step-change in provision of energy efficient homes to 2030 through retrofit and new build, as promised in the Infrastructure Investment Plan;
- ▶ ensure that no-one in Scotland has to live in fuel poverty, as far as is reasonably practicable, by 2016;
- ▶ make a full contribution to the Climate Change Act targets, as set out in the Report on Proposals and Policies; and
- ▶ enable the refurbishment and house-building sectors to contribute to and benefit from Scotland's low carbon economy and to drive Scotland's future economic prosperity.

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4. The Low Carbon Hierarchy

4.1 The Low Carbon Hierarchy (or Energy Hierarchy) is a simple and widely acknowledged hierarchy of cost effectiveness in delivering energy. Underpinning everything is the principle to reduce the amount of energy we use through changing our behaviour and simply consuming less. Next come energy efficiency measures such as ensuring that our buildings are appropriately insulated so that whatever energy we use is not just wasted. After all of these comes generating our own power such as through low and zero carbon generating technologies. This is reflected in Green Deal assessments for existing housing where renewables are not considered until the house is properly insulated.



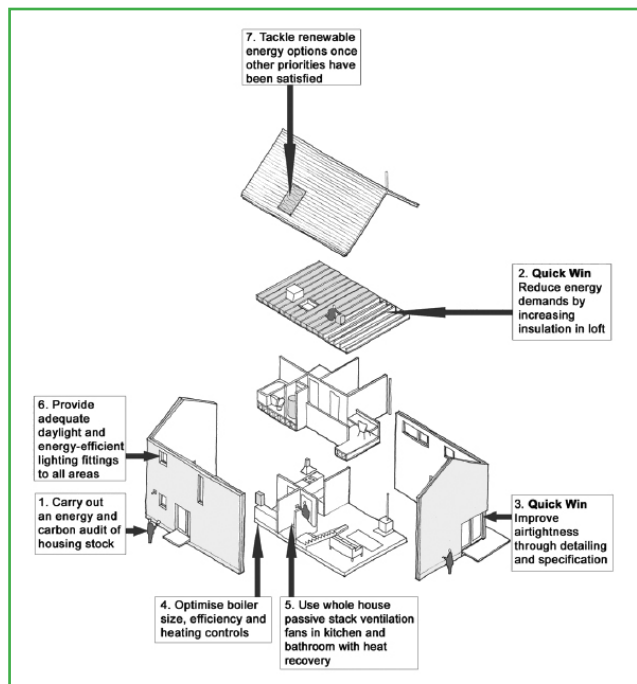
Reduce Demand

- 4.2 It is recognised that energy performance of buildings depends not only upon design and technologies but also upon factors that are outside the control of developers including how occupants maintain and use buildings. However, in order to support actual and prospective occupants in any decisions, there are requirements under the Energy Performance of Buildings (Scotland) Amendment Regulations 2013 to include information on buildings' energy performance in advertisements, and under the Building Regulations (Standard 6.8) the occupiers of a building must be provided with written information by the owner on the operation and maintenance of the building services and energy supply systems.
- 4.3 The Low Carbon Behaviours Framework outlines what the Scottish Government will do to drive and support the move to low carbon living.

Energy Efficiency

- 4.4 As stated above, the Scottish Government's Energy Efficiency Action Plan places energy efficiency at the top of the hierarchy of energy efficiency measures.
- 4.5 Because user behaviour is beyond the control of developers, and the current requirement for carbon reduction from Low and Zero Carbon Technologies (discussed below) for new buildings is 15%, this means in effect that energy efficiency measures are expected to deliver 85% of carbon savings.
- 4.6 Narrative around energy, as with fuel poverty, has traditionally majored on heating and affordable warmth. However, in a changing climate it is increasingly becoming necessary to consider overheating as an issue, and energy efficiency and low carbon technologies require also to minimise overheating and the need for energy-intensive cooling methods. A cooling hierarchy should prioritise design over active cooling systems. Placemaking, or layout and design including green infrastructure can also support this agenda.

Examples of “quick wins” in making a building more energy efficient



4.7 There are a number of ways in which building energy consumption can be reduced that can be both simple and cost effective, such as through improved insulation or more efficient boilers and water heaters. In many cases, these installations are eligible for grant aiding or subsidy.

Low and Zero Carbon Generating Technologies (LZCGTs)

- 4.8 The term Low and Zero Carbon Generating Technologies (LZCGTs) covers a variety of means of generating electricity or heat (or both), from sources which produce very low or zero carbon emissions, when compared to conventional fossil fuel sources. The term is frequently used interchangeably with the term “renewables”.
- 4.9 These include wind turbines, water turbines, heat pumps, solar thermal panels, photovoltaic panels, combined heat and power units (fired by low emission sources), fuel cells, biomass boilers/stoves and biogas.
- 4.10 Policy SC7 in the Local Development Plan is set out in order to ensure that a proportion (15%, increasing to 20% from 2018 and under review thereafter) of the reduction in Carbon Dioxide emissions from new development required by Building Standards is achieved through the use of Low and Zero Carbon Generating Technologies (LZCGTs).



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5. Low and Zero Carbon Generating Technologies in more detail

- 5.1 The 2013 Building Standards (Scotland) Technical Handbook section 7.1.3 lists the LZCGTs deemed eligible for compliance with the requirements of Section 72 of the Climate Change Act. In this respect, LZCGTs include: wind turbines, water turbines, heat pumps (all varieties), solar thermal panels, photovoltaic panels, combined heat and power units (fired by low emission sources), fuel cells, biomass boilers/stoves and biogas.
- 5.2 Since 2009, the Government have extended Permitted Development Rights to include micro-regeneration developments in both domestic and non-domestic settings. This means that, in many cases, the installation of micro-renewables will not need planning permission; however, it is always advisable to make contact with the Council to ascertain if planning permission is required before embarking on installation of micro-renewables, as installers or their agents may not be best placed to provide accurate planning advice.



Photovoltaics: What is Permitted without needing Planning Permission

Solar panels on a dwellings – Not permitted development in a conservation area or on a listed building. Outwith these locations panels are permitted subject to them protruding no more than 1 metre from the surface of the wall, roof or chimney.

Free-standing solar panels - Not permitted in a conservation area or within the curtilage of listed building. Outwith these locations panels are not permitted forward of any principal elevation or side wall, where that elevation/wall fronts a road.

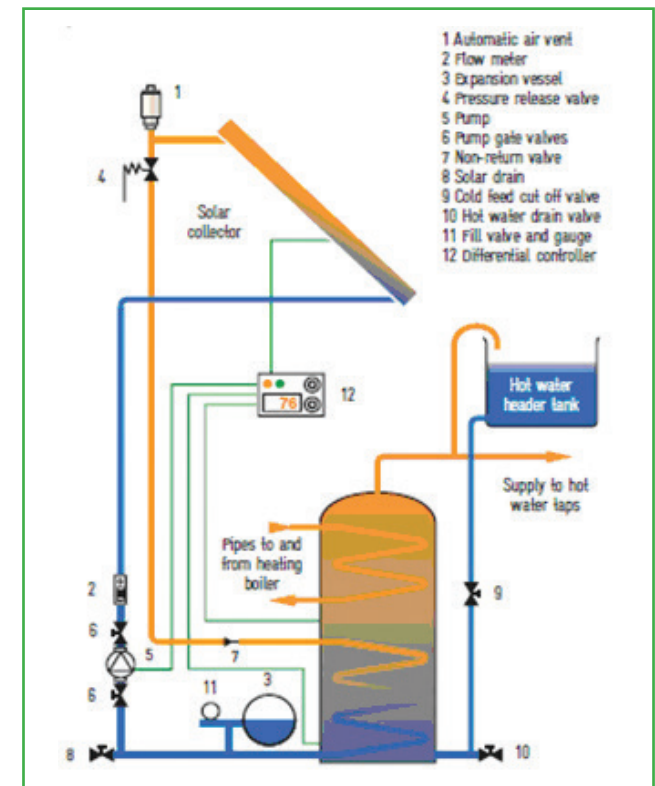
Panels will only be permitted up to 3 metres above ground level and only where the area of ground covered by development takes up no more than half a garden (excluding the ground area of the original house and any hard surface or deck).

Photovoltaics

- 5.3 Photovoltaic panels are made up of semi-conducting cells which turn sunlight into electricity. The panels are typically seen on south facing roof slopes, but can also be free-standing. These are amongst the most common form of micro-renewable technology seen on houses and other smaller buildings.
- 5.4 Particular attention will be paid to the visual impact of these installations where they affect listed buildings and conservation areas.

Solar Thermal

- 5.5 Although often similar in appearance to photovoltaics, solar thermal plates or tubes use heat from the sun to heat water. They comprise the solar collector (the external element), a heat transfer system and hot water storage cylinder. As with photovoltaics, particular attention will be paid to the visual impact of these installations where they affect listed buildings and conservation areas.

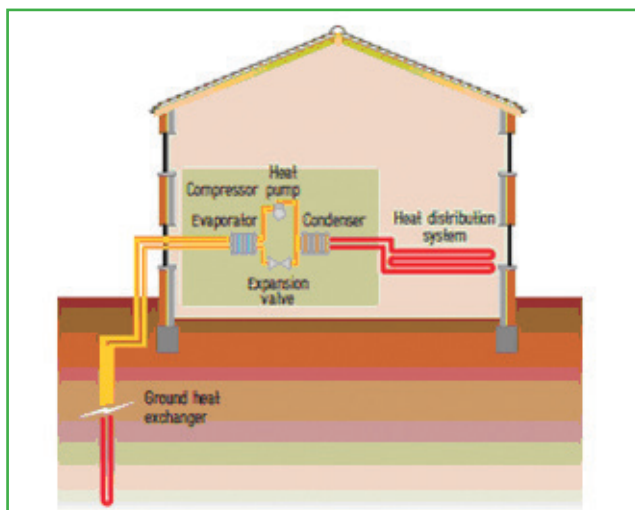


Solar Thermal: What is Permitted without needing Planning Permission

As with photovoltaics

Air, Water and Ground Source Heat Pumps

5.6 A heat pump works on similar principles to a refrigerator; removing heat from a colder place to a warmer place, using a heat exchanger which transfers heat from the ground, air or water to a heat pump. These technologies can provide space and water heating, and can also be used for summer cooling by reversing the heat pump. The potential impact of excavations to install ground source heating system on trees in and around a site are likely to be material planning considerations and may require a developer to submit a tree survey with their planning application.



Heat Pumps: What is Permitted without needing Planning Permission

Air-source heat pump - Not permitted development in a conservation area if the pump is visible from a road, and not at on a listed building. Outwith these areas only one installation per property, which should be sited at least 100 metres from the curtilage of another dwelling.

The installation must be:

- ▶ sited to minimise its effect on the amenity of the area;
- ▶ for domestic generation; and
- ▶ be removed when no longer needed (even though planning permission is not needed in these instances, you will need to apply and get the prior approval of the Council for the design and size of the proposed heat pump).

Ground-source and water-source heat pumps are permitted within the curtilage of a house or flat.

Biomass

- 5.7 Biomass comes in a variety of forms, be it woodchips or pellets or liquid fuels such as vegetable oil and also waste, in line with SEPA guidance at <http://www.sepa.org.uk/regulations/waste/energy-from-waste/>. The fuel source is burned in a similar manner to coal or gas in a bio boiler or in a stand alone stove, however, unlike fossil fuels, bio-fuels absorb carbon dioxide as they grow, and this off-sets the CO2 emissions given off in its combustion, making them a low or zero carbon fuel source.
- 5.8 Prior to installation of a biomass system, consideration should be given both to access to biomass fuel and disposal of waste from burnt fuel.
- 5.9 Biomass installations could affect air quality. Further information is available in the Scottish Government's online advice dated July 2013 on Woody Biomass at <http://www.scotland.gov.uk/Resource/0042/00427807.pdf>



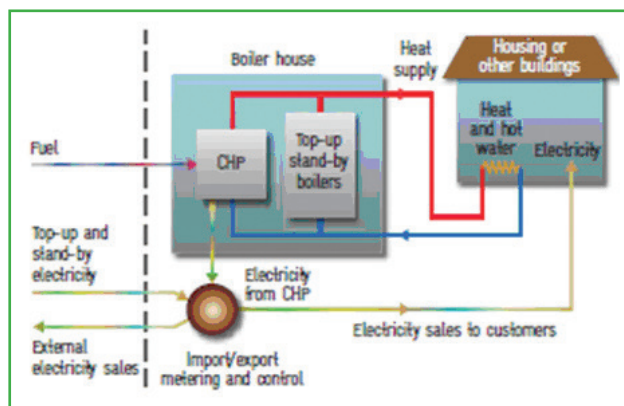
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Biomass: What is Permitted without needing Planning Permission

Boilers will largely be located inside a dwelling and consequently will not require planning permission.

The flue is not permitted on the principal elevation of a property within a conservation area, a listed building or within an Air Quality Management Area.

Outwith these areas permission is not needed for an external boiler flue providing that its height is no more than 1 metre above the highest part of the roof (excluding the chimney).

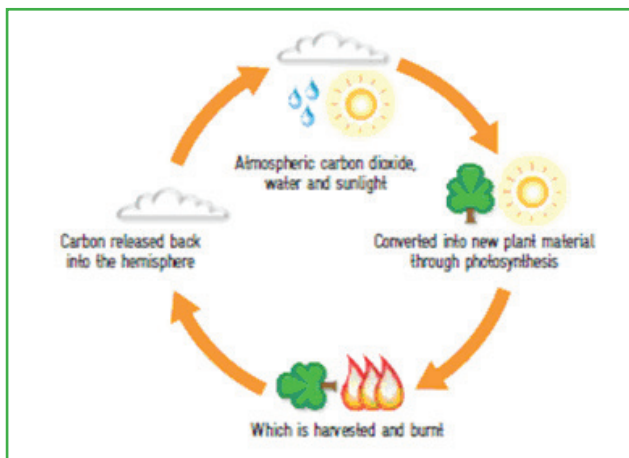


Combined Heat and Power (CHP) and Fuel Cells

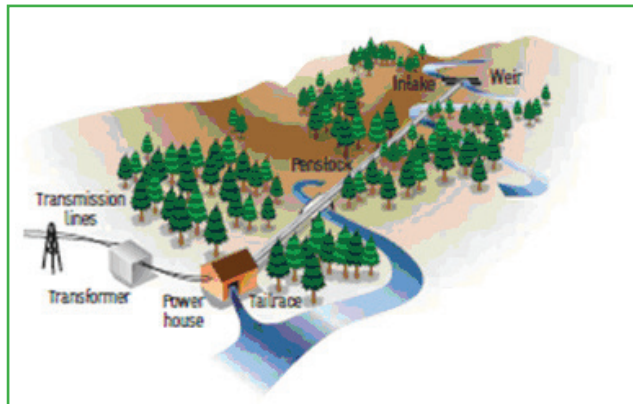
- 5.10 These systems are generally appropriate to larger sized developments, and involve generating electricity on or near a site, in order to utilise heat loss that normally occurs from energy generation in power stations, and use it for space and water heating in the development or surrounding area.
- 5.11 Micro-CHP refers to CHP at a domestic scale. Units are typically the size of a normal domestic boiler and currently run on mains gas or LPG.
- 5.12 With regard to fuel cells, which work by taking energy from fuel at a chemical level rather than by combustion, Energy Saving Trust (EST) guidance as at October 2013 is that the technology is still at developmental stage and not widely available to consumers.

Micro-hydro

- 5.13 This type of technology is simply a scaled down version of tried and tested hydro-electricity energy generation seen throughout Scotland. It relies on using running water, such as from a burn, to turn a turbine and generate electricity, after which, the water is returned to the feeder watercourse. As well as Planning Permission, these schemes may require consent from the Scottish Environment Protection Agency (SEPA) under the Water Environment (Controlled Activities) (Scotland) Regulations 2005.
- 5.14 Use of the technology will rely on availability of a suitable watercourse, and will be subject to assessment of the environmental issues associated with any impact on the watercourse and adjoining land required for the system.
- 5.15 The Hillfoots burns have a history of generating power for industry, and may be suitable for such new technology



- 5.16 SEPA has compiled a checklist of requirements for run-of-river hydropower schemes, including micro-hydro schemes. The checklist includes information to help potential developers identify sites where obtaining a water use licence is likely to be straightforward. SEPA's guidance also sets out the mitigation it will require to protect the water environment. The guidance, dated December 2012, is available at: <http://www.sepa.org.uk/water/idoc.ashx?docid=25e5f167-ab8c-4820-9350-677482889231&version=-1>



Micro Hydro: What is Permitted without needing Planning Permission

Planning permission is needed

Micro-wind

- 5.17 As with hydro, this is a scalable form of renewable energy technology, which can include free-standing turbines or those attached to a building. Where planning consent is required, the Council may require submissions to include landscape and visual impact assessment. In addition, where larger turbines are proposed in residential areas, an assessment of their noise impact may also be necessary.

Micro Wind: What is Permitted without needing Planning Permission

Free-standing turbines - Not permitted development in a conservation area or in the curtilage of a listed building. Outwith these locations, only one turbine per property is permitted and should be sited at least 100 metres from the curtilage of another dwelling. The installation must be:

- sited to minimise its effect on the amenity of the area;
- only be for domestic generation; and
- removed when no longer needed.

Whilst planning permission is not required in these instances, you will still require to seek the prior approval of the Council for the design and size of the proposed turbine).

Turbines attached to a dwelling will always require planning permission.

- 5.18 References for legislation relating to planning permission above are:

- The Town and Country Planning (General Permitted Development) (Domestic Microgeneration) (Scotland) Amendment Order 2009
- The Town and Country Planning (General Permitted Development) (Domestic Microgeneration) (Scotland) Amendment Order 2010
- The Town and Country Planning (General Permitted Development) (Scotland) Amendment Order 2011

Further information on the various technologies is available at <http://www.scotland.gov.uk/Resource/0041/00415738.pdf> and <http://www.energysavingtrust.org.uk/Generating-energy/Choosing-a-renewable-technology>



6. Requirements of Policy SC7 and this Supplementary Guidance

- 6.1 Policy SC7 requires developers to achieve a proportion (15%) of the mandatory carbon dioxide emissions reduction required by Building Standards, through the use of LZCGTs.

Policy SC7 - Energy Efficiency and Low Carbon Development

All new buildings must achieve a minimum of 15% of the carbon dioxide emission reduction standards (as set by the relevant Scottish Buildings Standards at the time of the proposed development) through the use of Low and Zero Carbon Generating Technologies (LZCGTs). This proportion will increase to 20% from the beginning of 2018, and will thereafter be kept under review.

Planning applications for all new buildings must be supported by a statement which demonstrates how the level of carbon dioxide emissions reduction will be achieved through the use of LZCGTs and through the use of appropriate design, materials and construction. Once built, a sustainability label that includes the level of carbon dioxide emissions reduction achieved shall be affixed to the building.

The Council will encourage development proposals that seek to achieve a higher level of carbon dioxide emissions reduction than that required by this policy. Achievement of a higher level of carbon dioxide emissions reduction will be treated as a material consideration in determining any planning application.

Further details, including limitations or exemptions, are included in the Energy Efficiency & Low Carbon Development SG.

The council will review this policy and its associated supplementary guidance in the event of any changes in Scottish Government policies or legislation.

See also: SC5, SC13:

Policy SC5: Layout and Design Principles

This has 12 requirements including that the Council will expect proposed developments to employ sustainable design and construction techniques to conserve energy and water, including through siting and orientation; water recycling; and re-use of materials.

Policy SC13: Decentralised Energy

Policy SC13 aims to encourage the provision of decentralised energy from appropriate sources and within suitable developments.

- 6.2 Applicants should consider how to meet the requirements of Policy SC7 at an early stage, in order that the most suitable forms of technology can be identified, taking account of the nature of their site, and the scale and type of development proposed. Issues such as site size, location, topography and ground conditions will have a bearing on the type of technology that will be viable, as will the type of buildings and their proposed use.

- 6.3 The following categories of building are exempted in Building Standards from the sustainability requirements stated:
- ▶ a. alterations and extensions to buildings;
 - ▶ b. conversions of buildings;
 - ▶ c. buildings that are ancillary to a dwelling that are stand-alone having an area less than 50 square metres;
 - ▶ d. buildings which will not be heated or cooled other than by heating provided solely for the purpose of frost protection;
 - ▶ e. buildings intended to have a life not exceeding the period specified in regulation 6 [currently limited life buildings which have an intended life of less than 2 years]; or
 - ▶ f. conservatories.
- 6.4 Larger scale developments may be able to take advantage of decentralised and local renewable or low carbon sources of heat and power.
- 6.5 The Council would encourage applicants to seek pre-application advice, which can help with identification of key issues before a planning application submission is finalised.
- 6.6 Applications that will require to incorporate LZCGTs will also require to be accompanied by a statement which demonstrates how the level of CO2 emissions reduction will be achieved through the use of LZCGTs.

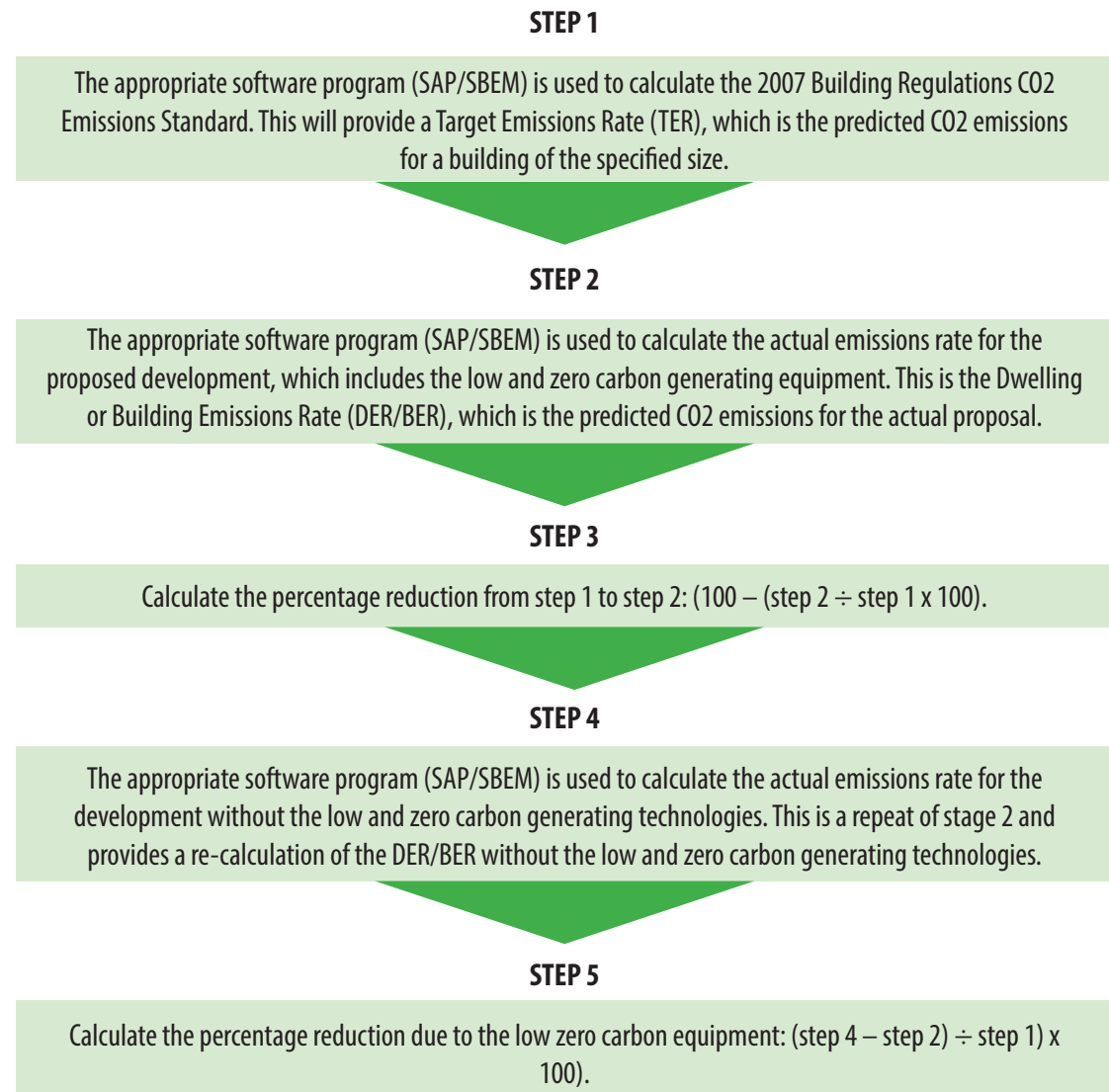
6.7 The Statement should include the following information:

- ▶ Detailed calculations showing both compliance with the Building Standards in respect of CO2 emissions reduction and how the use of LZCGTs will achieve the required percentage of this emissions reduction standard. This should be shown using the Standard Assessment Procedure Energy Rating (SAP) for dwellings and the Simplified Building Energy Model (SBEM) for all other developments (see Table 1 below, which sets out the manner in which these calculations should be presented).
- ▶ A summary of options of the type of LZCGTs considered for the development.
- ▶ A justification for the type of LZCGT chosen.
- ▶ A summary of design and visual impact issues in relation to options appraisal and chosen form of LZCGT (This will require to be more detailed where the development affects a Conservation Area, Listed Building, Special Landscape Area or Green Belt).

Summary of Calculation Process

6.8 The calculation process for Building Energy Statement is summarised in the table opposite.

Table 1 - Summary of Calculation Process



Note the calculation methodology may require to be updated when revised building standards come into force.

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Flexibility

- 6.9 There will be few cases where the use of at least one of the range of LZCGTs within a development is not feasible due to technical or other constraints. On their own, financial considerations do not constitute a technical constraint.
- 6.10 In exceptional circumstances where a developer proposes not to use LZCGTs, the justification for this will require to be fully set out in the Building Energy Statement (BES) accompanying the planning application. Where the Council is satisfied through the BES or its own assessment of the planning application, that LZCGTs cannot feasibly be provided, it will expect a developer contribution towards the improvement of energy performance in existing buildings, commensurate with the scale of the proposed development.
- 6.11 The Council will also consider that proposals need not comply with Policy SC7 where it is demonstrated that the proposed development will exceed the CO2 saving required by the current building standards.

Building Standards

- 6.12 Scottish Planning Policy (2010, section 44) states that, "It is recommended that development plan policies for development involving low and zero carbon generating technologies should accord with the standards, guidance and methodologies provided in building regulations."

- 6.13 Requirements are stated in the Technical Handbook 2013

► [http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/publications/pubtech/th2013domcomp \(domestic\)](http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/publications/pubtech/th2013domcomp(domestic))

► [http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/publications/pubtech/thb2013nondom \(non-domestic\)](http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/publications/pubtech/thb2013nondom(non-domestic))

- 6.14 These handbooks provide revised guidance, including detailed guidance on measures to reach the sustainability standards, and support the Building (Miscellaneous Amendments) (Scotland) Regulations 2013 which were laid before parliament on 13 May 2013. The amended regulations and technical guidance came into force on 1 October 2013. New standards will come into force in October 2015 and may be previewed at <http://www.gov.scot/Topics/Built-Environment/Building/Building-standards/techbooks/s62015>.

- 6.15 Sections 7.1 of both the Domestic and non-Domestic versions of the Handbook refers to the requirement for a Statement of Sustainability, or Sustainability Label, that includes the level of sustainability achieved, to be fixed to the building prior to completion. A sample of the domestic version of the label is provided below, and a program to generate such a label that is specific to a building can be accessed here at: <http://www.s7sust.co.uk/> or <http://www.scotland.gov.uk/bsd>.

- 6.16 Section 7.1 of the Handbook covers the levels of sustainability for buildings, as below:

7.1.1 Levels of sustainability

The specified level of sustainability should be selected from the following:

Bronze or Bronze Active

Silver or Silver Active

Gold

Buildings that exceed a gold sustainability level are also welcomed. A further level called 'platinum' has been reserved for further recognition within the building standards system.

7.1.2 Bronze level

This is the baseline level for sustainability achieved where the building meets the functional standards set out in Sections 1–6 of the Handbook. However, this does not meet the LZCGT requirement of the Climate Change Act and consequently the Bronze Active level has been introduced to meet this requirement.

7.1.3 Bronze Active level

This is the baseline level where the building meets the functional standards set out in Sections 1–6 of the Technical Handbook, but in addition the dwelling includes the use of a low and zero carbon generating technology (LZCGT) in respect of meeting Standard 6.1 within Section 6, Energy. This level is primarily to assist local authorities to meet their obligations under Section 72 of the Climate Change (Scotland) Act 2009 by identifying the use of LZCGT. In this respect, LZCGTs include: wind turbines, water turbines, heat pumps (all varieties), solar thermal panels, photovoltaic panels, combined heat and power units (fired by low emission sources), fuel cells, biomass boilers/stoves and biogas.

Requirements for Silver level and above are set out at: <http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/publications/pubtech/th2013domcomp>

Sample Sustainability Label

Building Standards
Scotland

Section 7: Sustainability Domestic

Building / Development:
64 Greenstreet,
Bigtown
XX9 9XX

Building Warrant Reference:
621621844KKY

Date:
10.10.2011

Building Standards Division's Technical Handbooks
Contain detailed guidance on the measures to achieve levels of sustainability
www.xxxxxxxxxx.co.uk

This label must be fixed within the building

- 6.17 Sustainability labels, subdivided into domestic and non domestic, are required under Building Standards. They are separate to, and should not be confused with, Energy Performance Certificates (EPC) which are required under the Energy Performance of Buildings Directive (EPBD).
- 6.18 Building Energy Statements as required under Policy LC7 are separate again and should not be confused with either Sustainability Labels or Energy Performance Certificates.

Existing Buildings

- 6.19 The focus of this Supplementary Guidance is on new buildings, pursuant to Policy LC7 of the Local Development Plan which in turn reflects the specific requirements of the Climate Change Act.
- 6.20 This is not to detract from the importance of existing buildings, and indeed Scottish Planning Policy (2014, section 45) refers to Resource Efficient development that “re-uses or shares existing resources, maximises efficiency of the use of resources through natural or technological means and prevents future resource depletion, for example by mitigating and adapting to climate change”.

Energy Performance Certificate (EPC)
PREVIEW
NOT FOR ISSUE

1 High Street, Low Town, AA0 0AA

Dwelling type: Semi-detached house **Reference number:** 0000-0000-0000-0000-0000
Date of assessment: 04 June 2012 **Type of assessment:** RdSAP, existing dwelling
Date of certificate: 17 July 2012 **Primary Energy Indicator:** 540 kWh/m²/year
Total floor area: 147 m² **Main heating and fuel:** Boiler and radiators, dual fuel (mineral and wood)

You can use this document to:

- Compare current ratings of properties to see which are more energy efficient and environmentally friendly
- Find out how to save energy and money and also reduce CO₂ emissions by improving your home

Estimated energy costs of your home for 3 years*	£9,468	See your recommendations report for more information
Over 3 years you could save*	£3,417	

* based upon the cost of energy for heating, hot water, lighting and ventilation, calculated using standard assumptions

Very energy efficient - lower running costs

(92 plus) A
(81-91) B
(63-80) C
(55-62) D
(35-54) E
(21-38) F
(1-20) G

Not energy efficient - higher running costs

Current

Potential

58

32

Energy Efficiency Rating

This graph shows the current efficiency of your home, taking into account both energy efficiency and fuel costs. The higher this rating, the lower your fuel bills are likely to be.

Your current rating is **band F (32)**. The average rating for a home in Scotland is **band G (0)**.

The potential rating shows the effect of undertaking all of the improvement measures listed within your recommendations report.

Very environmentally friendly - lower CO₂ emissions

(92 plus) A
(81-91) B
(63-80) C
(55-62) D
(35-54) E
(21-38) F
(1-20) G

Not environmentally friendly - higher CO₂ emissions

Current

Potential

43

22

Environmental Impact (CO₂) Rating

This graph shows the effect of your home on the environment in terms of carbon dioxide (CO₂) emissions. The higher the rating, the less impact it has on the environment.

Your current rating is **band F (22)**. The average rating for a home in Scotland is **band G (0)**.

The potential rating shows the effect of undertaking all of the improvement measures listed within your recommendations report.

Top actions you can take to save money and make your home more efficient			
Recommended measures	Indicative cost	Typical savings over 3 years	Available with Green Deal
1 Room-in-roof insulation	£1,500 - £2,700	£879	✔
2 Cavity wall insulation	£500 - £1,500	£1365	✔
3 Floor insulation	£800 - £1,200	£612	✔

A full list of recommended improvement measures for your home, together with more information on potential cost and savings and advice to help you carry out improvements can be found in your recommendations report.

GREEN DEAL APPROVED

When the Green Deal launches, it may allow you to make your home warmer and cheaper to run at no up-front cost. See your recommendations report for more details.

THIS PAGE IS THE ENERGY PERFORMANCE CERTIFICATE WHICH MUST BE AFFIXED TO THE DWELLING AND NOT BE REMOVED UNLESS IT IS REPLACED WITH AN UPDATED CERTIFICATE

SUPPLEMENTARY GUIDANCE 7

- 6.21 The 2013 Formal Review of the Energy Efficiency Action Plan for Scotland sets out a range of supporting measures to improve the energy performance of existing buildings including, but not limited to:
- ▶ The Home Energy Efficiency Programmes for Scotland (HEEPS). This investment is expected to attract additional funding from energy companies under the Energy Company Obligation (ECO),
 - ▶ The Central Energy Efficiency Fund (CEEF) for public bodies to implement energy efficiency and renewable measures,
 - ▶ The Resource Efficient Scotland programme with the Advice and Support service including energy efficiency savings,
 - ▶ The Green Homes Cashback Scheme to incentivise householders to take full advantage of the Green Deal,
 - ▶ The Scottish Partnership for Regeneration in Urban Centres (SPRUCE) in conjunction with European funds including a retrofit programme in social housing stock.
- 6.22 The Council runs a free and impartial energy efficiency advice and fuel poverty service Monday - Friday between 9.00 am and 5.00 pm. Home visits can be arranged outwith these times. Weekly Fuel Debt and Energy Efficiency Advice Surgeries are also held. Contact the Home Energy Advice Team on 01259 450000 or fuelenergyadvice@clacks.gov.uk, or visit <http://www.clacksweb.org.uk/housing/energyadvice>.

Contacts and Further Information

Contacts

Development Quality

Clackmannanshire Council
Kilncraigs
Greenside Street
Alloa
FK10 1EB

development_services@clacks.gov.uk

Tel: 01259 450000

Scottish Government Building Standards Division

Denholm House
Almondvale Business Park
Livingston
EH54 6GA

Full list of specific contacts at <http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/BSD/contacts>

01506 600 400

Contact details for specific policies and programmes are provided in the linked documents in "Further Information" on the next page.

Further Information

Clackmannanshire Single Outcome Agreement 2013-23

<http://www.clacksweb.org.uk/site/documents/communityplanning/clackmannanshiresingleoutcomeagreement20132023/>

Clackmannanshire's Sustainability and Climate Change Strategy

<http://www.clacksweb.org.uk/environment/sustainabilityandclimate/>

Climate Change (Scotland) Act 2009

<http://www.legislation.gov.uk/asp/2009/12/contents>

"Conserve and Save" the Scottish Government's Energy Efficiency Action Plan 2010

<http://www.scotland.gov.uk/Resource/Doc/326979/0105437.pdf>

2013 Formal Review of Conserve and Save

<http://www.scotland.gov.uk/Resource/0042/00423520.pdf>

Energy Performance of Buildings (Scotland) Amendment Regulations 2013

http://www.legislation.gov.uk/ssi/2013/12/pdfs/ssi_20130012_en.pdf

Low Carbon Behaviours Framework

<http://www.scotland.gov.uk/Resource/0041/00415744.pdf>

Low Carbon Building Standards Strategy for Scotland (the Sullivan Report) 2007

<http://www.scotland.gov.uk/Resource/Doc/217736/0092637.pdf>

Sullivan Progress Report 2011

<http://www.scotland.gov.uk/Resource/Doc/217736/0113638.pdf>

Sullivan Report Update 2013

<http://www.gov.scot/Resource/0043/00437438.pdf>

Scotland's Sustainable Housing Strategy, Scottish Government June 2013

<http://www.scotland.gov.uk/Resource/0042/00425697.pdf>

Scottish Building Standards

<http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards>

Scottish Building Standards Technical Handbook May 2015 - Domestic

<http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/techbooks/s62015/2015thdom>

Scottish Building Standards Technical Handbook May 2015 - Non-Domestic

<http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/techbooks/s62015/2015thnondom>

Scottish Government Specific Advice Sheet on Microgeneration

<http://www.scotland.gov.uk/Resource/0041/00415738.pdf>

Scottish Planning Policy 2014

<http://www.gov.scot/Resource/0045/00453827.pdf>

Sustainable Energy in the Built Environment: Best Practice for Scottish Planners Energy Saving Trust August 2011

http://www.energysavingtrust.org.uk/scotland/content/download/2809/64837/version/1/file/Sustainable_Energy_in_the_Built_Environment.pdf



**Clackmannanshire
Council**

www.clacksweb.org.uk