



**Sixth Annual Report on the Operation of Section 72 of  
the Climate Change (Scotland) Act 2009**

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## **Executive Summary**

This report provides information and conclusions which fulfil the Scottish Government's annual reporting requirements on the operation of Section 72 of the Climate Change (Scotland) Act 2009 (introduced as Section 3F of the Town and Country Planning (Scotland) Act 1997) as required by Section 73(1) and (2) of the Climate Change (Scotland) Act.

Section 3F requires local development plans prepared by planning authorities to include greenhouse gas emissions policies.

The national policy position is provided, as well as the strategic and local development plan context with regard to greenhouse gas emissions policies and low and zero-carbon generating technology.

This report covers largely the same topics as the 5<sup>th</sup> Operational Report. The legislative position and national planning policy position remain unchanged, although an independent review of the planning system is now underway. The practitioner perspectives have not been repeated this year, instead we include the findings of a study into the effectiveness of Section 3F policies by Dundee University, commissioned by the Scottish Government and managed by ClimateXChange. The Scottish Government committed to this study in the 5<sup>th</sup> Operational Report.

The study draws a number of findings. Significantly, it finds that the direct impact of the policies on emissions reduction is not separable from other activity that may have prompted the use of low and zero-carbon generating technology. As practice and regulations have evolved over time, it has become clear that the key driver of emissions reduction is through building standards rather than Section 3F.

It is recommended that Section 3F remains in force. Although implementation difficulties remain, the Scottish Government is currently preparing a revised Energy Strategy and its third Report on Policies and Proposals. The positive aspects of Section 3F and the findings of the study can be considered in the context of that work.

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## 1. Climate Change (Scotland) Act Context and Reporting History

1.1. Section 72 of the Climate Change (Scotland) Act (CCSA) 2009, which came into force on 1 April 2010, introduced Section 3F into the Town and Country Planning (Scotland) Act 1997 ('the 1997 Act') (This report will refer to Section 3F, although Section 72 is commonly recognised and used). Section 3F requires that:

'A planning authority, in any local development plan prepared by them, must include policies requiring all developments in the local development plan area to be designed so as to ensure that all new buildings avoid a specified and rising proportion of the projected greenhouse gas emissions from their use, calculated on the basis of the approved design and plans for the specific development, through the installation and operation of low and zero-carbon generating technologies.'

1.2. Section 3F applies only to local development plans and not retrospectively to adopted local plans. Local development plans are required to be prepared by each planning authority in Scotland by Section 16(1) of the 1997 Act.

1.3. It should be noted that the legislation supports the use of generating technologies, rather than energy saving measures, as its approach to addressing greenhouse gas emissions.

1.4. Whilst planning authorities are to implement the Section 3F policies, Section 73(1) of the CCSA requires annual reporting for the Scottish Parliament from the Scottish Government on two topics:

- The operation of the requirement on relevant planning authorities to include policies within development plans under Section 3F.
- An assessment of whether the Section 3F requirements have contributed effectively to the reduction of greenhouse gas emissions from developments.

1.5. Since CCSA Section 72 came into force on 1 April 2010, annual reports to the Scottish Parliament are required by 1 April each year thereafter. The Scottish Government has fulfilled the requirements of Section 73(1) as described in Table 1. All of the Operational Reports are available for download from the Scottish Government's website<sup>1</sup>.

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<sup>1</sup> <http://www.gov.scot/Topics/Built-Environment/planning/Roles/Scottish-Government/Guidance>

Table 1: Section 73(1) Published Reports		
Edition	Laying Number	Laying Date
First Report	SG/2011/21	22 March 2011
Second Report	SG/2012/38	26 March 2012
Third Report	SG/2013/06	28 March 2013
Fourth Report	SG/2014/15	1 April 2014
Fifth Report	SG/2015/20	30 March 2015

1.6. CCSA Section 73(2) places an additional requirement on reporting from the Scottish Government from the Fourth Report onwards:

- An assessment of the continuing need or otherwise for the requirement on relevant planning authorities to include policies within development plans.

1.7. Scottish Ministers are enabled by Section 73(2) of the CCSA to repeal Section 3F and CCSA Section 73, by order.

1.8. This report considers the provisions of CCSA Section 73(1) and Section 73(2).

## 2. National Planning Policy Context

2.1. National Planning Framework 3 and Scottish Planning Policy were published on 23 June 2014. Reviewed for the first time in parallel, they represent the up to date suite of national planning policy in Scotland.

2.2. National Planning Framework 3<sup>2</sup> is Scotland's long term spatial development framework for Scotland. As the Scottish Government's spatial expression of our Economic Strategy, National Planning Framework 3 focuses on where there are opportunities and challenges for planning to address.

2.3. National Planning Framework 3 includes an approach to achieving a low carbon economy. It notes that planning will play a key role in delivering on the commitments set out in 'Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027 – The Second Report on Policies and Proposals'<sup>3</sup>, published in June 2013. It also notes that heating and cooling makes up around half of our total demand for energy and shows that district heating projects are broadening out from small scale rural installations to larger projects across towns and cities.

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<sup>2</sup> <http://www.gov.scot/Publications/2014/06/3539>

<sup>3</sup> <http://www.gov.scot/Publications/2013/06/6387>

2.4. Paragraph 3.8 of National Planning Framework 3 states:

‘By 2020, we aim to reduce total final energy demand by 12%. To achieve this, and maintain secure energy supplies, improved energy efficiency and further diversification of supplies will be required. We want to meet at least 30% of overall energy demand from renewables by 2020 – this includes generating the equivalent of at least 100% of gross electricity consumption from renewables, with an interim target of 50% by 2015. Heat accounts for a significant share of our energy consumption, and by 2020 we are aiming to source 11% of heat demand and 10% of transport fuels from renewable sources.’

2.5. Furthermore, National Planning Framework 3 notes that maintaining security of supplies and addressing fuel poverty remain key objectives. It stresses that the overall strategy must remain flexible to allow planning to respond to the fast moving low carbon sector and adapt to uncertainty and change, so that Scotland is well placed to make the most of emerging opportunities.

2.6. Geographically, National Planning Framework 3 is clear that the cities network (Scotland’s seven cities and their supporting towns and villages) will be a focus for improving the energy efficiency of the built environment. It also notes that a key challenge and opportunity for emissions reduction is the retrofitting of efficiency measures for the existing building stock.

2.7. On heat, paragraph 3.17 of National Planning Framework 3 is explicit:

‘New development should be future-proofed to ensure that connections to existing or planned heat networks are taken forward as soon as they are viable.’

2.8. As a statutory document, strategic and local development plans are required to take account of National Planning Framework 3 in their preparation.

2.9. Scottish Planning Policy<sup>4</sup> is a non-statutory document and focuses on Scottish Ministers’ priorities for the operation of the planning system in Scotland. Its policies are thematically based and, for the first time, it includes two overarching principal policies which are expected to inform all planning decisions.

2.10. The first principal policy is on sustainability. It introduces a policy principle of a presumption in favour of development that contributes to sustainable development. That presumption is guided by a series of principles which include:

‘supporting climate change mitigation and adaptation including taking account of flood risk.’

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<sup>4</sup> <http://www.gov.scot/Publications/2014/06/5823>

2.11. The guiding principles also include supporting good design and the six qualities of successful places. Those qualities are addressed in the second principal policy on placemaking. The policy is clear that the outcome of placemaking should be sustainable, well-designed places and homes which meet people's needs. One of the qualities of successful places is being 'resource efficient'.

2.12. Paragraph 45 of Scottish Planning Policy deals with resource efficient development and states:

'This is 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 mitigation and adapting to climate change. This can mean denser development that shares infrastructure and amenity with adjacent sites. It could include siting development to take shelter from the prevailing wind; or orientating it to maximise solar gain. It could also include ensuring development can withstand more extreme weather, including prolonged wet or dry periods, by working with natural processes such as using landscaping and natural shading to cool spaces in built areas during hotter periods and using sustainable drainage systems to conserve and enhance natural features whilst reducing the risk of flooding. It can include using durable materials for building and landscaping as well as low carbon technologies that manage heat and waste effectively.'

2.13. Paragraph 55 of Scottish Planning Policy is clear that:

'Local development plans should contribute to high-quality places by setting out how they will embed a design led approach ... which should include reference to the six qualities of sustainable places which enable consideration of each place as distinctly different from other places and which should be evident in all development.'

2.14. As a result, an approach to sustainability which is rooted in place is supported. This reinforces the benefits of taking a carefully considered approach to using natural processes to provide a quality environment. It also allows for technology to fulfil the gap between what can be provided naturally and what is desirable for a comfortable environment in Scotland today, and in the future. It allows for building and place design to respond to the local characteristics and needs rather than offering an absolutely fixed approach, which could miss opportunities for innovation and synergy between different developments particularly in response to energy demands.

2.15. The Policy Principles for the Low Carbon Place theme are set out at paragraph 154 of Scottish Planning Policy and include the clear approach that the planning system should:

‘Help to reduce emissions and energy use in new buildings and from new infrastructure by enabling development at appropriate locations that contributes to:

- Energy efficiency;
- Heat recovery;
- Efficient energy supply and storage;
- Electricity and heat from renewable sources; and
- Electricity and heat from non-renewable sources where greenhouse gas emissions can be significantly reduced.’

2.16. Planning Policy does not need to re-state the legislation set out in Section 3F but provides a framework within which local development plan policy can respond to Section 3F.

2.17. These annual Operational Reports act as the Scottish Government’s guidance on Section 3F.

### **3. Review of the Planning System**

3.1. The planning system in Scotland is currently being reviewed by an independent panel. Written evidence has already been taken through a consultation in the winter of 2015. Oral Evidence is being heard this Spring from a range of representative groups who use the planning system.

3.2. It is anticipated that the report of the Panel will be made available in Spring 2016, following which the Scottish Government will respond.

3.3. As the review is independent from government it is not known at this stage if the Panel will make any recommendations or conclusions influencing the future of Section 3F.

### **4. Local Development Plan Context**

4.1. Local development plans are required to be published every five years. The stages of plan preparation include:

- Publication of a main issues report for public consultation
- Publication of a proposed local development plan for public consultation
- Adoption of the local development plan

4.2. Most planning authorities will prepare one local development plan for their area, but planning authorities can prepare multiple local development plans to address specific places or topics. Statutory and non-statutory supplementary guidance can also be prepared. The policy position set out in the adopted local development plan can largely be expected to be that of the proposed local development plan, subject to the representations made to it and subsequent modifications before or after an independent examination of the plan.

4.3. The Scottish Government does not prepare local development plans, but supports planning authorities in the preparation of local development plans by offering comments and making representations where required. The Scottish Government also provides support through the publication of Circulars, which contain policy on the implementation of legislation and procedures. Circular 6/2013 'Development Planning'<sup>5</sup>, published in December 2013, is explicit on the climate change requirements for local development plans at paragraphs 13 and 14. This reinforces the reasoning provided at paragraphs 2.16 above for not including reference to Section 3F in Scottish Planning Policy.

4.4. Where representations are made to a proposed local development plan, the planning authority will try to resolve them. Where there are unresolved representations to a proposed local development plan, the proposed local development plan is subject to examination on those unresolved matters. The examination is led by a Reporter appointed by Scottish Ministers. The findings of an examination are largely binding.

4.5. Despite having some influence on the content of local development plans beyond the publication of national planning policy, it is not the role of Scottish Ministers to ensure that local development plans are legally compliant. Planning authorities are to seek their own legal advice on the legal compliance of their local development plans. Previous annual reports on Section 3F have noted that a variety of approaches to fulfilling the legislative provisions were likely to emerge, and that has proven to be the case.

4.6. Should any person consider that a local development plan being put forward is legally deficient, they can challenge that plan through the Court of Session (the period for the challenge is time limited). A successful challenge could see part or all of a local development plan being overturned, leaving the planning authority without some or any adopted policies, and needing to return to the local development plan preparation stage.

4.7. Prior to the Planning etc. (Scotland) Act 2006, planning authorities prepared local plans for their area. The Act provided for a staged progression towards the preparation of local development plans. Currently 21 out of 34 planning authorities that prepare local development plans, have adopted local development plans in place. Those that do not have local development plans in place at present will do so in the future. Each planning authority has published a 'Development Plan Scheme' which is updated annually. This sets out their current stage in the process of

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<sup>5</sup> <http://www.scotland.gov.uk/Publications/2013/12/9924>

development plan review and the stages to come in adopting a new or replacement local development plan.

4.8. The process of plan making is continuous, to ensure that local development plans remain up to date and relevant. As a result we are now seeing that some of those planning authorities that adopted local development plans three or four years ago are now in the process of preparing their second local development plan.

4.9. The duty of planning authorities is to make decisions on planning applications which comply with the policies of the local development plan unless there are reasons (known as material considerations) as to why a non-compliant application should be approved. This means that the planning authority can make a decision contrary to a local development plan policy where it is content that the material considerations suggest this is the most appropriate course of action.

4.10. A planning authority may also deal with part or all of a particular development plan policy after an initial decision to grant planning permission has been made. This is achieved through the use of conditions attached to the planning permission, which are discharged at a later date.

4.11. As a result of the process of the application of development plan policy and conditions on consent, the local development plan greenhouse gas emissions policy may not be applied or applied fully at the time the initial decision on a planning application is made.

4.12. The stage in the local development plan cycle reached by the planning authorities in Scotland is described in Table 2 and the expected local development plan adoption schedule is described in Table 3. There are currently **21** adopted local development plans, 7 of these are in the process of being revised.

Stage	LDP1 - Main issues report	Local development plan 1 – Proposed plan stage	Local development plan 1 Adopted	Local development plan 2 – MIR stage	Local Plan 2 – Proposed plan
Number of Planning Authorities	2	11	21	5	2

Note:

1. East Ayrshire Minerals Local plan, Fife Minerals Local Plan, and South Lanarkshire Minerals Local Plan and East Ayrshire Town Centres and Retailing Local Plan are not included in the above statistics given that they are topic specific.
2. N.B This table counts only the Highland wide plan, not the three area plans which contain only local policies.
3. Plans that have proceeded to LDP2 are also counted in the LDP1 adopted figures.
4. Plans at examination stage have been counted as 'proposed plan'.
5. Plans are logged to reflect the stage of published plan that they have reached at 31 January 2016.

Table 3: Local development plan 1 adoption schedule	
Year of expected first local development plan adoption (As per the local development plan scheme)	Number of planning authorities
LDP1 now adopted	21
LDP1 2016	9
LDP1 2017	4

Note:

1. East Ayrshire Minerals Local plan, the Fife minerals local plan, and the South Lanarkshire minerals local plan and East Ayrshire town centres and retailing local plan are not included in the above statistics given that they are topic specific.
2. N.B This table counts only the Highland wide plan, not the three area plans also available for The Highland Council area that do not contain overarching planning policies.

## 5. Guidance on Implementation of Section 3F

5.1. The Scottish Government currently uses four means of providing guidance to developers and planning authorities on the implementation of Section 3F:

- 1 – Including guidance and identifying policy approaches of local development plans within the annual reports to the Scottish Parliament.
- 2 – Providing written and verbal guidance to planning authorities and developers on request.
- 3 – Providing informal comments to planning authorities on draft policies provided to the Scottish Government.
- 4 - Making comments in response to consultations from planning authorities on Main Issues Reports and making representations (where necessary) to planning authorities on their proposed local development plans.

5.2. The study from ClimateXChange and Dundee University considered in Section 9 of this report is not intended as guidance for planning authorities but is useful in helping to shape the policy approach taken locally. In terms of application of Section 3F and securing uptake, the study finds a check-sheet approach at the planning application stage has proved useful.

5.3. The ClimateXChange and Dundee University study is also clear that monitoring and enforcement of the implementation of low and zero-carbon

generating technologies does not appear to have been strong to date. Planning authorities may need to consider if the current local arrangements are sufficient.

## 6. Scottish Building Standards Context

6.1. In order to have a new building constructed, both planning permission is required and building regulations met. Building warrants are provided under the building standards system, which is a separate statutory requirement to planning permission. Building regulations include a requirement (functional standard 6.1) to limit carbon dioxide emissions arising from use of new buildings and has a methodology in place for assessing compliance with that emissions standard against a 'Target Emissions Rate'. This is a technical assessment of building performance that is appropriately considered within the building warrant process. As a principle the planning system does not seek to 'double regulate'. Therefore it is considered appropriate that this technical assessment is undertaken at the building warrant stage by professionals trained to do so.

6.2. Section 3F is clear that emissions reduction of new buildings should be assessed against the in-use projected emissions calculated on the basis of the approved design. Given that the building warrant is usually sought after a planning application has been granted, an 'approved' design is not usually available at the planning application stage. Given that the planning and building warrant processes do different things, it is assumed that designs presented at planning application stage are capable of meeting minimum building standards and achieving a building warrant. Although, further technical information about the building will need to be presented at the warrant stage.

6.3. It is possible for a developer, at the planning application stage, to complete the detailed design work that would otherwise only be required at the building warrant stage. This could then be subject to assessment of emissions using the building standards methodology. However, there would be the risk that this detailed work may need to change if changes are made to the design through the planning application process. That creates a risk for the developer that this detailed work would have to be done again.

6.4. Changes to energy standards in 2002, 2007 and 2010, and October 2015, seek to reduce carbon emissions associated with the fixed heating, lighting, ventilation and where applicable cooling of new buildings. For dwellings **the cumulative effect of these changes in building regulations equate to emission savings in the region of 75% compared to those associated with new dwellings built to the standards in force in 1990.** The emissions savings has been progressive, for dwellings the 2015 changes to Energy standards will reduce carbon dioxide emissions on aggregate by 21% for new dwellings, when compared to the 2010 standards, this equates to a 45% reduction when compared to 2007 standards.

6.5. In response to Article 6 of the EU Directive 2010/31/EU on the Energy Performance of Buildings, the 2010 changes to energy standards also require that the technical, environmental and economic feasibility of high-efficiency alternative

systems (such as decentralised energy supply systems using renewable energy, co-generation, district or block heating / cooling and heat pumps) are considered and taken into account in developing proposals for new buildings. This consideration must be documented as part of the building warrant application.

6.6. The Scottish Government introduced sustainability labelling into building standards in 2011. This awards new buildings that meet current building regulations with a Bronze level label. Further optional upper levels of sustainability were defined by Silver, Gold and Platinum labels. From October 2015, the introduction of revised building standards will mean all new buildings will meet the 'silver' level in respect of CO<sub>2</sub> emissions.

6.7. The labelling system also includes an indicator for buildings which incorporate a low or zero-carbon generating technology (LZCGT) identified with an 'Active' marking. Scottish building standards do not mandate the use of low and zero-carbon generating technologies. However, with each successive improvement to energy standards and where silver, gold and platinum sustainability levels are sought, it becomes increasingly likely that the emissions target will be met by solutions which include an element of low and zero-carbon generating technologies.

6.8. In 2007, Scottish Ministers commissioned an expert panel to give recommendations on how to make buildings more energy efficient and produced 'A Low Carbon Building Standards Strategy for Scotland', also known as the Sullivan Report. Through investigation and implementation of recommendations of the Report, the Scottish Government has made further substantial progress in reducing carbon dioxide emissions from both the new and existing building stock in Scotland.

6.9. In view of the economic downturn, Scottish Ministers requested that the Sullivan Panel reconvene to revisit some of their original recommendations. The output was the publication of a 2013 update to the Sullivan Report 'A Low Carbon Building Standards Strategy for Scotland'<sup>6</sup>. The recommendations of the reconvened Panel included:

- That new energy standards scheduled for 2013 be deferred until October 2015 to give industry more time to prepare for further change.
- That the next review of energy standards beyond 2015 be aligned with the timetable for the EU requirements for the delivery of 'nearly zero energy' new buildings from 2019/21.
- That options beyond building or site-related measures ('Allowable Solutions') be investigated as part of a 'net zero carbon standard' for new buildings.
- That the Scottish Government aligns the emissions abatement aspects of both the Planning and building standards systems.

6.10. Further review of energy standards within building regulations is proposed, with any additional reduction in emissions programmed for 2019/21 to meet EU

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<sup>6</sup> <http://www.scotland.gov.uk/Publications/2013/11/8593/0>

obligations for 'nearly zero energy' new buildings as well as in support of our climate change objectives.

6.11. Whilst the use of low and zero-carbon generating technologies in new buildings is not mandatory under building regulations, **from October 2010 such technologies form part of the specification used to set emissions targets for all new buildings.** Appropriate use of low and zero-carbon generating technologies will have a greater relevance in meeting challenging carbon compliance standards for new buildings set under building regulations.

6.12. **The next review of energy standards in Scottish building regulations will consider both the potential for the 60% and 75% reductions in carbon dioxide emissions, originally recommended for 2013 in the 2007 Sullivan Report and must deliver requirements for 'nearly zero energy' new buildings.**

## **7. Other Scottish Government Action on Climate Change**

7.1. The Climate Change (Scotland) Act 2009 requires that by 2050 the net Scottish emissions are at least 80% lower compared to the 1990/1995 baseline.

7.2. As reported in the Fourth Annual Report on the Operation of Section 72 of the Climate Change (Scotland) Act 2009, the variety of Scottish Government Action for meeting the 2050 emissions target is set out in 'Low Carbon Scotland: Meeting Our Emissions Reductions Targets 2013-2027: The Second Report on Proposals and Policies' (RPP2), published in June 2013 (now under review). Section 5 of the Fourth Operational Report provides further detail of relevant activities.

7.3. The key activities reported in RPP2 include:

- Implementation of the Electricity Generation Policy Statement and its targets to deliver 100% of Scotland's demand for electricity to be met from renewables by 2020, and roll out Carbon Capture and Storage technology for electricity generated from thermal power plants.
- Implementation of the Energy Efficiency Action Plan and its target to reduce total final energy demand in Scotland by 12% by 2020.
- Implementation of the Routemap for Energy in Scotland and its target of 11% of non-electrical heat demand from renewable sources by 2020.
- Home Energy Efficiency Programmes for Scotland (HEEPS) to retrofit existing homes to make them more efficient.
- Energy Efficiency Standard for Social Housing which aims to improve the energy efficiency of the social housing stock in Scotland, and consultation on minimum energy efficiency standards for energy efficiency in private sector homes.
- District Heating Action Plan.
- District Heating Loan Fund to support low carbon and renewable technology solutions to help overcome issues and costs in developing district heating networks.

- Renewable Heat Incentive, a GB wide incentive to install renewable heating technologies in place of fossil fuels.
- The CRC Energy Efficiency Scheme, a UK wide policy incentivising investment in energy efficiency targeting large businesses and the public sector.
- The Climate Change Levy, a UK tax on electricity, gas and solid fuel in the non-domestic sector.
- The UK Green Investment Bank to support initially large scale non-domestic energy efficiency projects.
- Decarbonisation of transport through four packages of decarbonising vehicles, road network efficiencies, sustainable communities, and business engagement around sustainable transport.
- Implementation of the Waste (Scotland) Regulations 2012.
- Implementation of the Zero Waste Plan.
- Implementation of the Farming for a Better Climate programme.
- Supporting peatland restoration.
- Supporting increasing the rate of new woodland creation.

7.4. The list of activities presented in paragraph 7.3 includes both building and non-building related activity for greenhouse gas emissions reduction. It is clear that managing emissions from buildings is not the only area that will help Scotland achieve its greenhouse gas emissions reduction targets.

7.5. Energy efficiency is a priority for the Scottish Government. This is about reducing Scotland's energy use, whilst maintaining a lifestyle that does not rely on ever increasing levels of energy generation. As announced by the Minister for Environment, Climate Change and Land Reform in June last year it has been designated a National Infrastructure Priority in recognition of its importance. The cornerstone of this will be Scotland's Energy Efficiency Programme which will provide an offer of support to buildings across Scotland – domestic and non-domestic – to improve their energy efficiency rating over a 15-20 year period. Through the new programme we will:

- continue to provide support to households suffering from fuel poverty
- seek to leverage in private investment to support the development of loan schemes to enable and households and businesses to spread the upfront costs of investing in energy efficiency
- take forward standards and introduce regulatory frameworks that give certainty to consumers and make it as easy as possible and the norm to invest in energy efficiency

7.6. Work to develop the programme is underway and will, with stakeholders, over the next two years set objectives and design the new programme to ensure it is tailored to Scotland's needs. To support this development, the Cabinet Secretary for Communities, Social Justice and Pensioners' Rights announced a fund to support pilot projects that will integrate support across various building types and evaluate the impact of innovative approaches to funding and delivery. The programme's delivery phase will begin around 2018 once further devolution of energy powers takes place under the Scotland Bill.

7.7. In June 2015 we published Scotland's first heat policy statement<sup>7</sup> which set out the Scottish Government's framework for achieving a largely decarbonised heat sector by 2050 to reduce greenhouse gas emissions. It set out the three key aspects of the Heat System:

- How we use it (heat demand and its reduction)
- how we distribute and store it (heat networks and heat storage)
- where our heat comes from (heat generation)

7.8. During 2016 we propose to develop a new Energy Strategy in tandem with work being taken forward on the Third Report on Proposals and Policies (RPP3) looking across the energy system as a whole at the most cost effective ways of decarbonising our heat, transport and electricity systems. **RPP3 will be the key and common factor that highlights key action that can be taken to meet our greenhouse gas emissions targets.**

7.9. The investment strand of the 2015 'Scotland's Economic Strategy'<sup>8</sup> is clear that the Scottish Government will:

'Prioritise our investment to ensure that Scotland protects and nurtures its natural resources and captures the opportunities offered by the transition to a more resource efficient lower carbon economy.'

7.10. The Low Carbon Infrastructure Transition Programme (LCITP), which launched in March 2015, is a working partnership between the Scottish Government, Scottish Enterprise, Highlands & Islands Enterprise, Scottish Futures Trust and sector specialists. LCITP is supported by the European regional Development Fund (ERDF) to accelerate the development of substantive private, public and community low-carbon projects across Scotland to develop investment grade business cases allowing projects to secure existing streams of public and private capital finance.

7.11. Therefore, the Scottish Government is taking action in terms of policy, financial and promotional support for the delivery of energy efficient buildings and reports on these actions. Many actions are clearly focused on reduced emissions from existing buildings. Importantly, other building related activities beyond Section 3F are assisting those who wish to install and operate renewable energy generation devices or energy efficiency measures to overcome barriers, including finance, to allow their projects to progress.

**7.12. This wider policy context, and in particular the new Energy Strategy, may mean that the approach to delivering low and zero-carbon generation technologies through Section 3F needs to be amended. Scottish Government will undertake further analysis of Section 3F in contributing towards the outcomes of RPP3 and the Energy Strategy.**

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<sup>7</sup> <http://www.gov.scot/Publications/2015/06/6679>

<sup>8</sup> <http://www.gov.scot/Publications/2015/03/5984>

7.13. In October 2015 the Scottish Government published 'The Scottish Greenhouse Gas Emissions Annual Target 2013' Report. Once trading under the European Emissions Trading Scheme have been taken into account, Scotland's emissions in 2013 fell by 14% compared with 2012. Overall the reduction from 1990 is estimated to be 38.4%. As a consequence we are more than three quarters of the way to achieving the Climate Change (Scotland) Act target of reducing emissions by 42% by 2020.

## **8. Assessment of Progress in Implementing Section 3F**

8.1. This section addresses the CCSA Section 73(1) requirement for the Scottish Government to report on the operation of the requirement on planning authorities to include policies that address Section 3F within local development plans.

8.2. Local development plan policies are often accompanied by contextual but non-policy text, but neither the context nor the policy is required to repeat legislative provisions. As a result, not all local development plans make direct reference to Section 3F or include a policy titled 'Greenhouse Gas Emissions.'

8.3. This means that in preparing this report, the Scottish Government cannot rely on these key words to understand whether the local development plan policies have responded to Section 3F. Since the 'Third Annual Report on the Operation of Section 72 of the Climate Change (Scotland) Act 2009', the Scottish Government has included within the annual reports, as a guide for planning authorities, suggested policy elements for inclusion within a local development plan policy responding to Section 3F. Those elements are:

- A proportion of emissions to be saved.
- At least one increase in the proportion of emissions to be saved.
- A requirement that the savings should be achieved through the use of generating technology (rather than energy efficiency measures).

8.4. It is considered that those three elements remain appropriate. Table 4 describes the various stages of local development plan preparation reached by the 34 planning authorities and indicates where the Scottish Government considers Section 3F has been directly addressed. It demonstrates that approximately 59% of planning authorities now have a policy in place which responds to Section 3F.

8.5. However, this does not mean that each document contains policies which address all three of the elements previously described. Several Local Authorities have policies that loosely reflect Section 3F, but changes to them would bring them further in line with the three suggested policy elements in paragraph 8.3.

8.6. Some authorities have now progressed to preparing their second local development plans. As these begin to be adopted, it will be important to monitor whether the Section 3F policies are retained/included.

Table 4: Local development plan stages directly addressing section 3F					
Local Development Plan 1					
Main Issues Report (2)		Proposed Plan (11)		Adopted Plan (21)	
Yes	No	Yes	No	Yes	No
1	1	9	2	20	1
Local Development Plan 2					
Main Issues Report (5)		Proposed Plan (2)		Adopted Plan	
Yes	No	Yes	No	N/A	
3	2	2			
Notes: Argyll and Bute adopted local development plan does not have a policy reflecting Section 3F in their plan, but there is a policy in supplementary guidance.					

8.7. Table 5 describes the increase in the number of adopted policies responding to Section 3F over time. Annex 2 contains the Section 3F policies of the 21 adopted local development plans.

Table 5: Number of adopted local development plans responding to Section 3F over time						
Year	2010/11	2011/12	2012/13	2013/14	2014	2015
Number of adopted Policies	0	1	4	6	14	20

8.8. Of the seven local development plans adopted in the period since 31 December 2014 (the cut-off date of the Fifth Operational Report) and 31 January 2016 (the cut-off date of this report), Table 6 highlights where representations on local development plans have been made by the Scottish Government development about Section 3F.

Table: 6 Local development plan representations and modifications for local development plans adopted between 31 December 2015 and 31 January 2016			
Action	Scottish Government Representations made about Section 3F	Representations resolved before examination and Development Plan modified by Planning Authority	Representations considered at examination and Development Plan modified by Reporter
Number of local development plans	2	0	2
Note: This table does not include adopted plans which were included in the Fifth Operational Report.			

8.9. Tables 4 and 5 demonstrate **that the Scottish Government's operation of the requirement for planning authorities to include relevant policies responding to Section 3F within development plans is effective and take up is now high.**

8.10. Table 6 demonstrates that there have been relatively few occasions in the past year where the Scottish Government has submitted representations at proposed plan stage on the subject of section 3F, suggesting a high take up of policies which respond to Section 3F.

8.11. However, as Section 3F has not universally been addressed in main issues reports and proposed local development plans, and to assist planning authorities in the review of their development plans, **the Scottish Government will need to continue to provide comments to planning authorities and make representations on proposed plans to encourage Section 3F to be addressed whilst the legislation remains in force.**

8.12. **A Local Authority may have a policy that loosely reflects Section 3F, the content could be improved to bring it further in line with the three suggested policy elements in paragraph 8.3 of this report. For this reason, it is considered that Scottish Government continue to monitor development plans for accordance with Section 3F and provide comments to improve, referencing these policy elements at early stages in the plan making /revision process.**

8.13. Main Issues Reports should focus on key changes in an area and do not need to suggest changes for policies where the policy approach does not require changes from the previous local development plan. **As a result, it may be that in the future that policies in adopted local development plans may simply be carried forward into proposed local development plans without the Main Issues Report suggesting changes are required, or indeed without reference to Section 3F policies at all.** In such cases, not dealing with the provisions of Section 3F at Main Issues Report stage would not mean that relevant policies would be excluded from the proposed local development plan.

## **Overall Assessment Conclusion**

8.14. **This assessment shows that good progress continues to be made on the operation of the requirement that relevant planning authorities include policies that address Section 3F within local development plans.**

## **9. Assessment of Effectiveness of Section 3F in Reducing Greenhouse Gas Emissions from Developments**

9.1. This section addresses the CCSA Section 73(1) requirement for the Scottish Government to assess the effectiveness of Section 3F in reducing greenhouse gas emissions from developments.

## Policy Type

9.2. In previous annual reports on the operation of Section 72 of the Climate Change (Scotland) Act 2009, the Scottish Government had identified the two broad types of policy response that planning authorities could make to Section 3F. The first would be an approach that requires the proposed building to meet Scottish building standards target emissions rate in part through the use of low and zero-carbon generating technologies. The second would be a requirement for low and zero-carbon generating technologies to be used to reduce emissions beyond the Scottish building standards target emissions rate.

9.3. Section 3F does not require that emissions savings are additional to the target emissions rate set by Scottish building standards.

9.4. Table 7 describes the number of policies within each type.

Type 1	Type 2	Type 1&2 combined
18	0	2

Note:  
Shetland Islands Council Policy 'GP2 General Requirements for All Development' is subject to further detail being set out in supplementary guidance 'Design' in relation to Section 3F. That guidance is not yet available, so it is not possible to determine which policy type will be progressed. Therefore, only 20 local development plans are included in the table.

9.5. All but two of the policy approaches promotes only the Type 1 approach. This means that **compliant buildings would not, in the majority of cases, secure emissions reduction beyond that which would have been provided through building standards in any case.** As a result, at this time, the adopted policies responding to Section 3F will not be contributing to greenhouse gas emissions reductions beyond what is already required by Scottish building standards. However, it is recognised that the policies are creating the conditions by which the required emissions reductions are in part resulting from the use of low and zero-carbon generating technologies. This is also a theme of the study by Dundee University (refer text from paragraph 9.8 onwards).

9.6. Previous annual reports on the operation of Section 72 of the Climate Change (Scotland) Act 2009 have recognised that Type 2 policies might emerge and, that has now happened in two cases. The previously reported limitations of the effect of Type 2 policies remains the same, the proportion of new buildings form a very small part of the building stock in Scotland. Indeed, the Scottish Government's publication, 'Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027: The Second Report on Proposals and Policies'<sup>9</sup> (RPP2) states that while buildings account for over 40% of the greenhouse gas emissions in the UK, less than 1% of the public and commercial building stock is replaced by new buildings each year.

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<sup>9</sup> <http://www.scotland.gov.uk/Publications/2013/06/6387>

**Therefore, the contribution of new buildings to the reduction of overall greenhouse gas emissions in the short term is low compared to the potential abatement from improvement to existing stock. As Type 2 policies are not widely used by planning authorities the further abatement arising from Section 3F is not likely to be significant at this time.** This is a finding also reflected in the study by Dundee University (refer to text from paragraph 9.8 onwards).

9.7. However, it is recognised that the new buildings of today are the existing stock of tomorrow. **In the long term, it remains important to ensure that appropriate action on emissions reduction is facilitated through the planning system and other Scottish Government policy.**

### **Quantitative Assessment**

9.8. One conclusion from our 5<sup>th</sup> Report was the need for further analysis of the impact of Section 3F policies. The Scottish Government, supported by ClimateXChange, commissioned Dundee University to undertake research to consider the quantitative impact of Section 3F policies.

9.9. The full report of that research study is published on the ClimateXChange website: <http://www.climateexchange.org.uk/reducing-emissions/effectiveness-greenhouse-gas-emission-policies-local-development-plans/>. The executive summary of the report is provided in Annex 1.

9.10. The Scottish Government will respond to the conclusions as appropriate. The conclusions will also help to inform the policy approach local energy generation as considered within the new Energy Strategy (see paragraph 7.8) and future updates of Building Standards (refer to Section 6).

9.11. **Although clearly the low and zero-carbon generating technologies are associated with a modest uptake in the technology and reduction in emissions, the research is clear that it is impossible to isolate if this trend is the result of Section 3F or other factors. It also finds that the key driver for reducing building emissions is building standards rather than Section 3F.** The study highlights that the use of planning conditions (see paragraphs 4.10 and 4.11 above) is likely to be an effective means by which the potential for duplication of regulation between planning and building warrant processes can be avoided. However, in order to achieve this, planning authorities must be able to discharge the relevant condition at a later date. Matters of enforcement are addressed later in this section.

9.12. The report also notes that a check list approach to meeting the provisions of the Section 3F policy could provide a clearer audit trail to demonstrate compliance in terms of the numbers of planning applications presented to planning authorities that respond to the policy. The report indicates that a suspensive condition would be required to ensure implementation of the technology and its scale of impact.

9.13. Interestingly, the research highlighted that one planning authority includes efficient gas boilers in its list of low and zero-carbon generating technology. As there is no fixed definition of low and zero-carbon generating technologies within Section 3F, this recognises that other fuels for space and water heating like gas when burnt in a modern efficient boiler could have low emissions, compared to older versions of the same technology. A further, more indirect, example would be the use of heat pumps where the technology is very efficient but relies on electricity, which is produced from a variety of renewable and non-renewable fuels.

9.14. This serves as a reminder that meeting our emissions targets cannot be achieved overnight or by single interventions. It is a journey towards a lower carbon future with improvements made along the way.

9.15. The research study also highlights that the link between building size and energy use has not generally been broken. In general, the larger the building, the more energy that is consumed in running it. However, the report highlights that the link has been broken for those buildings using the 'Passivhaus' energy standard.

9.16. Homes designed to 'Passivhaus' standards require minimal space heating demands by making best use of building efficiency and heat from the sun. Such designs require expert design. Whilst this can be facilitated by the planning system it is for the building design community to champion this approach amongst their clients because each building will need to be designed for its given position and local environment in order to be fully effective. Currently it is not the role of the planning system to undertake the technical design development of individual buildings, rather, it is to identify whether the buildings presented to it will help deliver quality places. Emissions are only one aspect of this. Paragraph 45 of Scottish Planning Policy is clear that the 'resource efficient' quality of successful places can encourage development to use siting to take shelter from prevailing winds and orientation to maximise solar gain. Whilst that is by no means the whole of the 'Passivhaus' approach, it does deal with two aspects that can be readily considered and influenced by the planning system in promoting buildings that can offer reduced energy consumption.

## **Enforcement Matters**

9.17. This section brings forward the enforcement matters raised in the 5<sup>th</sup> Report to the Scottish Parliament. At that time in addition to the industry practitioner comments, one planning authority had also advised that monitoring of their development plan drew out some concern around Section 3F. This concern related to the potential effectiveness of planning enforcement of requirements established for new buildings as a result of Section 3F. Enforcement around the sign off of suspensive conditions is a theme which is raised in the Dundee university study (see paragraphs 9.8 - 9.16). In addition it was noted that sustainability labelling within building regulations and the building warrant process provide a route for additional greenhouse gas emissions abatement to be made (it is also noteworthy that there is an enforcement process within Scottish building standards).

9.18. Enforcement generates a number of questions. What would happen if the low and zero-carbon generating technology is not installed? If there was a planning condition in place that addressed the technology, it would depend on the wording of that condition as to whether occupation of the property could occur before the technology was in place. It is unknown whether occupancy of a building has been challenged in relation to the application of Section 3F.

9.19. Secondly, property owners are required to comply with their planning permission by law. They are also required to notify the relevant planning authority when they start and complete the work. Beyond that, planning authorities are not required to assess completed buildings for compliance with the planning permission but will consider conditions that require sign-off as appropriate. Allegations of non-compliance can be investigated through the planning enforcement service of the planning authority with appropriate action taken as a result.

9.20. Thirdly, if a developer designs the building to meet a specified level of emissions reduction through the use of low and zero-carbon generating technology, the planning authority has no automatic authority or method of future investigation to understand if the expected level of greenhouse gas emissions reduction has been achieved. Even if the planning authority had this authority and method to investigate, it is questionable as to whether any action could reasonably be taken where a developer and household in good faith have installed and made use of a technology, in accordance with their planning permission, which has then failed to perform as anticipated.

9.21. Fourthly, the planning permission applies to the building for its life. If a low and zero-carbon generating technology breaks down and is not repaired (but is still in place), a planning authority is very unlikely to find out if the system is no longer operational. If a low and zero-carbon generating technology is removed from a building it may be obvious (in the case of a solar panel on a roof facing a public road for example) or it may not. The reasonableness of taking action, potentially some years in the future, has not been tested and so the outcome is not yet known at this stage. The implications of action for the property owner are also unclear. They could be required to install new low and zero-carbon generating technology but other ways of heating or powering the building may be available and also reasonable.

9.22. Fifthly, once a building is constructed it benefits from permitted development rights (unless they have been specifically removed by a condition on a planning consent or by listed building or conservation area status applied at a later date). Permitted development rights allow for renewable energy technologies to be applied to a variety of buildings and locations without the need for a planning application to be submitted. Should an occupier replace the original technology with new technology using permitted development rights, it may not be clear whether the original greenhouse gas emissions reductions are still being met. In practice permitted development rights should be removed if there is a desire to protect certain features from change without prior consent.

9.23. There may well be other enforcement difficulties not addressed here or outcomes that have not been anticipated. However, the clear potential is for buildings to fall into contravention of their planning consent through natural wear,

performance or technology failure which would need to be considered by building owners in the future. Contravention of a planning permission may occur without anyone being able to tell it has occurred as a result of poorer than expected performance of an installed technology.

## **Overall Assessment Conclusions**

9.24. Adopted Section 3F planning policies are not generally exceeding the emissions levels of Scottish building standards. As a result **it is not considered that additional emissions savings are gained compared to what is already provided for through Scottish building standards.**

9.25. **Dundee University have found that on the basis of available information it is not possible to determine that emissions savings resulting from the use of low and zero-carbon generating technology are a direct consequence of the application of Section 3F policies. Instead, it concluded that building regulations are the main driver of reductions in building emissions.**

9.26. As per previous reports, **concerns remain about the ability to enforce the Section 3F requirements through the planning system once buildings have been completed.**

## **10. Assessment of the continuing need or otherwise for Section 3F**

10.1. This section addresses CCSA Section 73(2) requirement for the Scottish Government to assess the continuing need for Section 3F. If the provisions of Section 3F are no longer considered to be needed, then Scottish Ministers can repeal the section and the accompanying reporting requirements.

10.2. This report has found:

- The role for the planning system in facilitating development that reduces energy demand is addressed in Scottish Planning Policy (Section 2)
- The next review of energy standards will consider the potential for reductions in carbon dioxide emissions originally recommended for 2013 in the 2007 Sullivan report and must deliver requirements for 'nearly zero energy' new buildings (Section 6)
- The Third Report on Proposals and Policies (RPP3) will be the key and common factor that highlights key action that can be taken to meet our greenhouse gas emissions targets, in tandem with our new Energy Strategy. The Scottish Government will undertake further analysis of Section 3F in contributing towards the outcome of RPP3 and the energy Strategy (Section 7)
- The number of adopted Local Development Plans that include a response to Section 3F continues to increase. Scottish Government action in that regard is therefore considered to be effective (Section 8)

- The relevant local development plan policies generally promote low and zero-carbon generating technology as a means of achieving minimum building standards (Section 9)
- An independent study has found it is building standards that drive reductions in greenhouse gas emissions from buildings, rather than Section 3F (Section 9)
- The study also finds that the link between building size and levels of energy use has not generally been broken, except by homes designed to 'Passivehaus' standards. This is a technical approach already facilitated by Scottish Planning Policy (Section 9)

10.3. This demonstrates that the effectiveness of Section 3F as an approach to emissions reduction is difficult to measure with confidence. However, there is a continuing role for the planning system in helping to promote low-emissions development. Importantly, the policy position on meeting our greenhouse gas emissions targets is being updated and it is important to understand the role of Section 3F within that in more detail.

**10.4. As required by Section 73(2) of the Climate Change (Scotland) Act, we conclude that this assessment, does not clearly indicate that Section 3F is no longer required at this time, nor does it demonstrate that there are significant benefits for meeting our climate change targets. On that basis, the Scottish Government has concluded that the legislation should remain in force.**

## **11. Matters for Future Operational Reports and Actions for the Scottish Government**

11.1. The Scottish Government will keep under review the role, influence and effectiveness of Section 3F within the context of the Third Report on Policies and proposals and the new Energy Strategy.

11.2. This report, along with the previous Annual Reports on the Operation of Section 72 of the Climate Change (Scotland) Act 2009 will be published on the Scottish Government's website and acts as advice for planning authorities and developers.

11.3. The Scottish Government will continue to provide comments on main issues reports and representations on proposed local development plans. More informal comments on Section 3F will continue to be provided to planning authorities and developers on request.

# ANNEX 1 – ClimateXChange / Dundee University Report Executive Summary

## Executive Summary

**Vincent Onyango, Neil Burford, Frances Wright, Dumiso Moyo**  
**University of Dundee, March 2016**

Scottish Government commissioned ClimateXChange to assess the effectiveness of greenhouse gas emission reduction policies in Local Development Plans (LDPs) in promoting the uptake of Low and Zero-Carbon Generating Technologies (LZCGT).

### Context

The Climate Change (Scotland) Act 2009<sup>i</sup> sets a target to reduce Scotland's greenhouse gas (GHG) emissions by 80 per cent by 2050<sup>ii</sup>. In addition, the Scottish Government has set a target for 100% of Scotland's demand for electricity to be met from renewable sources by 2020<sup>iii</sup>.

More than 40% of Scotland's GHG emissions are a result of the heating, lighting and ventilation of buildings. A key tool in reducing this demand is the use of more efficient technology in all new buildings. Legislation now requires that all developments "... be designed to 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" (Section 3F of the Town and Country Planning (Scotland) Act 1997, amended through the Climate Change (Scotland) Act 2009).

To date 14 Local Authorities have adopted specific Section 3F policies in their Local Development Plans since 2012. This study examined five of these authorities whose early implementation allows a sufficient set of applications for analysis. Examples of relevant technologies include hydro, wind, photovoltaics, solar thermal, biomass, all heat pumps and combined heat and power (CHP).

### Key Findings

- The evidence shows **a modest increase in the uptake of LZCGT** since the policies were adopted, although the extent varies across the authorities studied. Whether this trend is a direct result of Section 3F policies or due to a number of external factors such as improvements in Building Standards legislation, the regional context, market influences and consumer preferences was impossible to determine in this study.
- The evidence suggests that from a local planning authority (LPA) perspective, Section 3F policies can be used to facilitate a more integrated approach to specific regional and local energy contexts, delivering larger CO<sub>2</sub> emissions reduction.
- All buildings included in the study met the CO<sub>2</sub> emissions reduction standard set out in building regulations. Compliance with the Section 3F policy requirement

for new builds ranged from 35 - 98% across the five authorities studied. **The vast majority that did not comply were multi-domestic developments** (i.e. planning applications for more than one house), suggesting potential for improved compliance.

- The data suggests that **regional differences have a significant impact on the type and extent of LZCGT provision**, with remote areas and those without a gas connection demonstrating a relatively greater uptake than urban and grid-connected areas (i.e. gas grid).
- **All of the domestic buildings included in the sample complied with the 2010 energy standards emissions reduction target** in the Scottish Government's building regulations Technical Handbooks at the time of the study. However, only a limited proportion of the total sample (ranged across the authorities from 35% - 98%) complied with Section 3F policy and achieved this reduction through the installation and operation of LZCGT. Although far fewer in number, all the non-domestic buildings in the sample complied with the Section 3F policy.
- For dwellings, there is a significant correlation between both heat and electrical demand and dwelling size. Space heating dominates in terms of energy consumption and CO2 emissions in all but the smallest and most energy efficient dwellings.
- By concentrating solely on the specification of LZCGT, current Section 3F policies might, arguably, be detrimental to design-led responses to CO2 emissions reduction (e.g. demand reduction through energy conservation and passive design principles). The evidence suggests that scaled solutions such as district heating are not being supported. However, the potential should not be underestimated of Section 3F policies to promote awareness, support uptake of more sustainable buildings, and encourage the adoption of more innovative and efficient energy infrastructures.
- None of the policies studied implemented a reduction in CO2 emissions beyond that already required under the Scottish building standards (Bronze Sustainability Level). Nor do they incentivise applicants to voluntarily meet higher emissions reduction targets.

The **evidence indicates that the Scottish building standards are driving the current reduction in CO2 emissions, not Section 3F policies**. Although Section 3F policies are effective at raising awareness about the benefits of LZCGTs, there is potential for much more effective promotion of uptake in new buildings and, in particular in integrated solutions with specific local and regional drivers.

## **Current Practice and Factors Contributing to Effectiveness**

### **Policy approach in specifying LZCGTs**

There is general consensus among building design professionals that the most cost effective and long term approach to reducing CO2 emissions is to reduce overall energy consumption through improved fabric efficiency and site specific passive design before considering the specification of LZCGT. We found that three of the five LDPs studied encourage this approach by linking the Section 3F policy requirement for LZCGT with other energy efficiency measures and passive design principles. A fourth authority goes further and exempts Passivhaus

(<http://www.passivhaus.org.uk/>) from having to comply with the LZCGT policy due to its inherently very low energy consumption.

## Incorporating LZCGT policy at the planning stage

Discussing energy efficiency and CO2 emissions early in the design process has benefits: it promotes awareness of the requirement to design more sustainable buildings, and encourages the adoption of a more innovative and efficient energy infrastructure, including district heating and combined heat and power (CHP). The evidence suggests that the request for detailed technical data can be counterproductive at this early stage of the design process and is challenging for planners when judging the design and technological solutions offered.

### Policy design

There is **significant variation in the compliance methodology, type and complexity of evidence requested** in the LZCGT policies studied. Simple, clearly defined, evidencing procedures appear to achieve higher levels of compliance. One Local Authority achieved 97% compliance at the planning stage with a simple tick box form.

Any policy is only as effective as the rigour with which it is implemented in practice. This study found that **only two of the five Local Authorities studied have procedures in place for non-compliance with policy** and impose suspensive planning conditions where no LZCGT is specified in the planning application. This study did not however investigate if the suspensive conditions were in themselves effective at securing LZCGT.

### Delivering renewable energy

Regional influences have a significant impact on the type and extent of LZCGT provision, with remote and off-grid areas demonstrating a greater uptake of renewable technology than urban and grid-connected areas. The Scottish building standards recognise several technologies as LZCGTs. These include: hydro, wind, photovoltaics, solar thermal, biomass boilers/stoves, biogas, heat pumps, fuel cells and combined heat and power (CHP) fired by low emission sources. Most local authorities appear willing to expand this definition to include heat recovery devices and other innovative technologies. Efficient gas boilers and efficient appliances have a role to play in reducing GHG emissions, although they do not shift space and water heating away from non-renewable sources of energy, so inclusion of these as acceptable LZCGT undermines the ethos of the Section 3F policy.

All the policies studied actively encourage the use of scaled LZCGT (CHP and District Heating) but there was little evidence for this being strategically supported in practice.

The **issue of energy storage was absent in all Section 3F policies** with the exception of the inclusion of Fuel Cells as a LZCGT. There was little verification of energy storage provision in practice with the exception of hot water storage cylinders. Mechanical Ventilation Heat Recovery (MVHR) is considered fundamental to the Passivhaus concept, but is currently not sufficiently incentivised.

## **Delivering CO2 emissions reduction**

Of the five authorities studied, none currently impose requirement for CO2 emissions reductions additional to that already legislated for in the Scottish building standards. There appears to be little desire in the building industry to meet higher aspirational CO2 emissions targets, with 70% of domestic buildings simply aiming to comply with the 30% reduction target set in the Scottish building standards at the time of the study. Only 2 of the 482 dwellings (0.4%) returning building warrant data were carbon negative. It is clear that it is these Scottish building standards that are driving the current reduction in CO2 emissions; not Section 3F policies. We recognise, however, that there are at least two further authorities who have incorporated policies into their plans, but which it was not possible to study as part of this research.

## **Methodology**

The findings are based on a desk-based study taking a sample of planning applications with a heat and electrical demand that were submitted since the period that the specific Section 3F policies were adopted. Quantifiable data for heat demand, electrical demand, energy consumption, CO2 emissions, and the distribution and contribution of specific LZCGTs was generated from data contained in SAP and SBEM reports. Overall effectiveness was judged in terms of the design of the policy, the application of the policy and the outcome in terms of uptake of LZCGT and achieved GHG reductions. Improvements made to the building standards regulations in 2015 were beyond the scope of this study and have not been considered.

## **ANNEX 2 – Adopted Section 3F Policies to 31 January 2016**

### **Aberdeen City Local Development Plan (Adopted 29 February 2012)**

#### Policy R7 - Low and Zero Carbon Buildings

All new buildings, in meeting building regulations energy requirements, must install low and zero-carbon generating technology to reduce the predicted carbon dioxide emissions by at least 15% below 2007 building standards. This percentage requirement will be increased as specified in Supplementary Guidance.

This requirement does not apply to:

- Alterations and extensions to buildings;
- Change of use or conversion of buildings;
- Ancillary buildings that are stand-alone having an area less than 50 square metres;
- Buildings which will not be heated or cooled, other than by heating provided solely for the purpose of frost protection; or
- Buildings which have an intended life of less than two years.

Compliance with this requirement will be demonstrated by the submission of a low carbon development statement. Further guidance is contained in Supplementary Guidance on Low and Zero Carbon Buildings.

#### **Supplementary Guidance – Low and Zero Carbon Buildings (Adopted February 2014)**

*In terms of setting the specified and rising proportion of emissions to be saved, the supplementary guidance includes the information below.*

As the building standards energy requirements are increased there will be an increasing need to incorporate a larger proportion of low and zero carbon generating technologies. Therefore, as building standards are increased the proportion of savings to be met through low and zero carbon generating technologies is always to be at least half the total saving. The applicable rate will be half of the prevailing Energy Requirements at the point in time at which the application was granted consent. The CO<sub>2</sub> reduction through low and zero carbon generating technologies will not be increased ahead of the changes in the Building Standards Energy Requirements. Table 1 below sets out the indicative requirements.

**Table 1: Indicative % Reduction Achieved Through Low and Zero Carbon Generating Technologies Above 2007 Baseline**

Year	% Reduction	Planned Building Standards Energy Requirements
2010	15%	30%
2014	30%	60%
2016	50%	100%

## **Aberdeenshire Local Development Plan (Adopted 1 June 2012)**

### Policy 8 – Layout, siting and design of new development

Aberdeenshire Council will support new development on sites we have allocated within this plan, where they conform with a previously agreed development framework and/or masterplan (whichever is appropriate) for the site. We will assess all development, whether on sites we have allocated or elsewhere, using a process that includes appropriate public consultation and appropriate standards for design, open space, accessibility, safety, sustainability, and the provision of associated services.

The way we will do this is set out in the following supplementary guidance:

**SG LSD1: Masterplanning.**

**SG LSD2: Layout, siting and design of new development.**

**SG LSD3: House extensions.**

**SG LSD4: Infill development.**

**SG LSD5: Public open space.**

**SG LSD6: Public access.**

**SG LSD7: Community facilities.**

**SG LSD8: Flooding and erosion.**

**SG LSD9: Hazardous development.**

**SG LSD10: Contaminated land.**

**SG LSD11: Carbon neutrality in new development.**

All new buildings are required to produce ever-lower proportions of greenhouse gases through their siting, layout and design, and the installation of appropriate technologies. Supplementary guidance will provide a standard to achieve the council's target of carbon neutrality by 2016; a process to enable savings to be demonstrated, a specified and rising proportion of greenhouse gases to be avoided through the installation and operation of low and zero-carbon generating technologies for all new buildings, and any exceptions. In furtherance of SG LSD1, we may produce additional design guidance or planning advice for specific sites, to provide a basis for putting the masterplans into practice. We may also use section 75 obligations or conditions, as appropriate, to secure the results of applying this policy on a continuing basis.

## **Supplementary Guidance SG LSD 11: Carbon neutrality in new development** (Adopted 1 June 2012)

### *Extract*

We will approve new development intended for human occupation, subject to other policies if it is demonstrated that it will achieve at least a Bronze Active rating under Section 7 of the building standards Technical Handbook.

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.

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.

An energy statement should:

- Demonstrate improved design through the promotion of environment-friendly layouts, energy-efficient design and thermally efficient buildings.
- Demonstrate how the use of non-renewable resources within the development has been minimised.
- Demonstrate how the developer intends to incorporate the use of renewable resources in the development.
- 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.

### 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 2009) should be undertaken. BRE approved SAP 2009 software is available to the public 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 60%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 60%.

#### *For all other developments*

The Simplified Building Energy Model (SBEM) 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 60% 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 60% reduction on the TER (the Target Emissions Rate) for the application site. The percentage of carbon dioxide savings should increase in line with the current building regulations.

## **Argyll and Bute Local Development plan (Adopted 2015)**

### **6.2 Policy LDP 10 – Maximising our Resources and Reducing Our Consumption**

The Council will support all development proposals that seek to maximise our resources and reduce consumption and where these accord with the following:

- The settlement strategy;
- Sustainable design principles;
- Minimising waste and/or contributing to recycling;
- Minimising the impact on the water environment both in terms of pollution and abstraction;
- Avoiding areas subject to flood risk or erosion;
- Minimising the impact on biodiversity and the natural environment;
- Safeguarding our mineral resources and minimising the need for extraction;
- Avoiding the loss of trees and woodland
- Contributing to renewable energy generation;

- Avoiding the disturbance of carbon rich soils;
- Safeguarding our best agricultural land.

Further information and detail will be provided in Supplementary Guidance in relation to the following matters: resources and consumption; addressing climate change; minerals; renewable energy; and sustainable design.

## **Argyll and Bute Proposed Local Development Plan Supplementary Guidance – Feb 2013<sup>10</sup>**

### **SG LDP – Climate Change**

A) The Council will engage with developers to deliver well designed, sustainable buildings and high-quality environments suitable for lowcarbon living in a changing climate.

(B) In determining new planning applications, the Council expects proposed new development to be designed to contribute to achieving national targets to reduce greenhouse gas emissions by:

- i) supporting innovative, well designed sustainable buildings that incorporate renewable technologies and/or seek to minimise energy use;
- ii) using landform, layout, building orientation, massing and landscaping to reduce likely energy consumptions;
- iii) using the layout, density and mix of development to support identified opportunities for decentralised energy;
- iv) connecting to an existing decentralised energy supply system where there is capacity to supply the proposed development, or by being designed for a future connection where there are firm proposals for such a system;
- v) providing public or private open space as appropriate so that an accessible choice of shade and shelter is offered, recognising the opportunities for people, biodiversity, flood storage and carbon management provided by multi-functional green spaces and green networks.
- vi) give priority to the use of sustainable drainage systems (SuDS), paying attention both to the potential contribution to water harvesting to be gained from impermeable surfaces and to layouts that accommodate waste water recycling;
- vii) support sustainable waste management by providing space for recycling and composting;
- viii) by reducing the need to travel by steering significant scales of development to our larger settlements, by implementing green travel plans and ensuring connections are made to existing or new active travel routes;
- ix) providing for safe and attractive walking and cycling opportunities, secure cycling, parking and, where appropriate, showers and changing facilities; and
- x) managing the provision of car parking including the need for zero parking in town centre locations for specified scales of development;

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<sup>10</sup> NB Forthcoming replacement Supplementary Guidance for the adopted local plan is at the notice of Intention to adopt stage.

xi) be designed to avoid adding to the vulnerability of existing or other proposed development to impacts arising from changes in the climate. In assessing proposals account will be taken of policy LDP PROP 1 – SUSTAINABLE DEVELOPMENT and all other Policies and SG in the LDP that support or define these principles.

## **Cairngorms National Park Local Development Plan (Adopted 2015)**

### **Policy 3: Sustainable Design**

#### 1 Design statements

A design statement must accompany **all** development proposals to demonstrate how the proposal has been designed to:

- a) minimise the effect of the development on climate change in terms of siting, construction and once complete – to achieve at least the minimum standard in compliance with those set out in the Building Standards Technical Handbook; and
  - b) be sympathetic to the traditional pattern and character of the surrounding area, local vernacular and local distinctiveness, whilst encouraging innovation in design and use of materials; and
  - c) use materials and landscaping that will complement the setting of the development; and
  - d) make sustainable use of resources, (including the minimisation of energy, waste, and water usage), within the future maintenance arrangements, and for any decommissioning which may be necessary - to achieve at least the minimum standard in compliance with those set out in the Building Standards Technical Handbook; and
  - e) enable the storage, segregation and collection of recyclable materials and make provision for composting; and
  - f) promote sustainable transport methods including making provision for the storage of bicycles, and reducing the overall need to travel; and
- etc

### **Policy 3: Sustainable Design Non-statutory Guidance<sup>11</sup>**

6. All new developments must meet the minimum energy standards set out by the Building (Scotland) Regulations in the Building Standards Technical Handbook. It is mandatory for all buildings to achieve a bronze level of the sustainability labelling scheme, however opportunities to achieve bronze active and above through good design and the use of low and zero carbon generating technologies (LZCGT) are actively encouraged.

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<sup>11</sup> NB this policy guidance is provided in non-statutory guidance so does not form part of the local development plan. It is included here for information only.

## **Clackmannanshire Local Development plan (August 2015)**

### **Policy SC7 - Energy Efficiency and Low Carbon Development**

This policy sets out the Council's expectations with regards to the energy efficiency of new buildings. 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.

SG7 (Energy Efficiency and Low Carbon Development) details how energy efficiency standards should be met in new development and explains limitations and exemptions.

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

Clackmannanshire supplementary guidance 7 – energy efficiency and low carbon development (August 2015) – contains further information on this policy.

### **Comhairle nan Eilean Siar – Outer Hebrides Local Development Plan (Adopted 9 November 2012)**

#### **Policy 3: Zero and Low Carbon Buildings**

Low and/or zero carbon generating technology must be installed in all new buildings (with the exception of those listed below) to reduce predicted carbon dioxide emissions from buildings to meet minimum building standards.

A sustainability statement detailing the technologies proposed as demonstrating proposed achievement of Bronze Active Sustainability rating (Achieving or exceeding Building Standards), must be submitted as part of planning applications for new buildings.

This requirement does not apply to any of the following:

- buildings which will not be heated or cooled, other than by heating provided solely for the purpose of frost protection.
- alterations and extensions to buildings.
- changes of use or conversion of buildings.
- ancillary buildings that are stand-alone, having an area less than 50 square metres.
- buildings which are designed so that the energy necessary is integral to the structure requiring minimal additional mechanisation (the passive house concept).
- buildings which have an intended life of less than two years.

## **Dundee City Local Development Plan (Adopted 5 December 2013)**

### **Policy 29: Low and Zero Carbon Technology in New Development**

Proposals for all new buildings will be required to demonstrate that at least 10% of the carbon emissions reduction standard set by Scottish Building Standards (2007) will be met through the installation and operation of zero-carbon generating technologies. This percentage will increase to 15% from the beginning of 2016 and will be reviewed in 2018.

This requirement applies to all new buildings with the following exceptions:

- (1) Alterations and extensions to buildings.
- (2) Change of use or conversion of buildings.
- (3) Ancillary buildings that stand alone and cover an area less than 50 square metres.
- (4) Buildings which will not be heated or cooled, other than by heating provided solely for frost protection.
- (5) Buildings which have an intended life of less than two years.

A statement will be required to be submitted demonstrating compliance with this requirement.

## **East Renfrewshire Local Development plan (June 2015)**

### **Policy E2: Energy Efficiency**

7.3.1. All new buildings must be designed so that at least 10% of the carbon dioxide emissions reductions standard, set by Scottish Building Standards, is met by the installation and operation of low and zero carbon generating technologies. This percentage will increase to 15% by the beginning of 2015, and may be changed again during the lifetime of this plan following any reviews of Scottish Building Standards.

7.3.2. Other solutions will be considered where:

- an applicant is able to demonstrate that there are significant technical constraints in using on-site low and zero-carbon generating technologies; or
- where there is likely to be an adverse impact on the historic environment; or
- where development of the following types is proposed: extensions to existing buildings, buildings which have an intended life of less than two years, stand-alone ancillary buildings with an area of less than 50 sq.m, or buildings which will not be heated or cooled other than for the purposes of frost protection.

7.3.3. Further detailed information and guidance is provided in the Energy Efficient Design Supplementary Planning Guidance (June 2015).

## **Falkirk Local Development Plan (July 2015)**

### **Policy D04 Low and Zero Carbon Development**

1. All new buildings should incorporate on-site low and zero carbon generating technologies (LZCGT) to meet a proportion of the overall energy requirements.

Applicants must demonstrate that 10% of the overall reduction in CO2 emissions as required by Building Standards has been achieved via on-site LZCGT. This proportion will be increased as part of subsequent reviews of the LDP. All proposals must be accompanied by an Energy Statement which demonstrates compliance with this policy. Should proposals not include LZCGT, the Energy Statement must set out the technical or practical constraints which limit the application of LZCGT. Further guidance will be contained in Supplementary Guidance SG15 'Low and Zero Carbon Development'.

Exclusions from the requirements of this policy are:

- Proposals for change of use or conversion of buildings;
- Alterations and extensions to buildings;
- Stand-alone buildings that are ancillary and have an area less than 50 square metres;
- Buildings which will not be heated or cooled other than by heating provided solely for the purpose of frost protection;
- Temporary buildings with consent for 2 years or less; and
- Where implementation of the requirement would have an adverse impact on the historic environment as detailed in the Energy Statement or accompanying Design Statement.

2. The design and layout of development should, as far as possible, seek to minimise energy requirements through harnessing solar gain and shelter;

3. Decentralised energy generation with heat recycling schemes (combined heat and power and district heating) will be encouraged in major new developments, subject to the satisfactory location and design of associated plant. Energy Statements for

major developments should include an assessment of the potential for such schemes.

## Perth and Kinross Local Development Plan (Adopted 3 February 2014)

<b>Policy EP1: Climate Change, Carbon Reduction and Sustainable Construction</b>		
<p>Sustainable design and construction will be integral to new development in Perth and Kinross. Applications for development may require a Sustainability Statement to demonstrate how developments will uphold sustainable construction principles and contribute to mitigating and adapting to climate change and to meeting targets to reduce carbon dioxide emissions. New buildings should also include low and zero-carbon generating technologies (LZCGT) to off-set a proportion of emissions arising from the use of the buildings, as specified in the table below. Some relevant buildings must be accompanied by a sustainability statement and all buildings must receive an appropriate sustainability label as per the Building Standards Technical Handbook Section 7 – Sustainability. The specified level of sustainability for a dwelling or non-domestic property should be selected from the following table which also shows the standard expected and by which date.</p>		
	Domestic	Non-domestic
2012	<p>Bronze Active This is the baseline level for sustainability achieved where the dwelling meets the functional standards set out in Sections 1-6 of the Technical Handbook and includes a minimum 2% carbon dioxide emissions abatement through the use of Low and Zero-Carbon Generating Technology.</p>	<p>Bronze Active This is the baseline level for sustainability achieved where the building meets the functional standards set out in Sections 1-6 of the Technical Handbook and includes a minimum 2% carbon dioxide emissions abatement through the use of Low and Zero-Carbon Generating Technology.</p>
2016	<p>Silver Active Where the dwelling complies with the Silver Active level in each of the 8 aspects below and includes Low and Zero-Carbon Generating Technology: <i>Aspect 1</i> - Carbon dioxide emissions; <i>Aspect 2</i> - Energy for space heating; <i>Aspect 3</i> - Energy for water heating; <i>Aspect 4</i> - Water use efficiency; <i>Aspect 5</i> - Optimising performance; <i>Aspect 6</i> - Flexibility and adaptability; <i>Aspect 7</i> - Wellbeing and security; <i>Aspect 8</i> - Material use and waste. New buildings should include a minimum 3% carbon dioxide emissions abatement through the use of Low and</p>	<p>Silver Active Carbon dioxide emissions equivalent to a 50% improvement on the 2007 standards. A minimum 3% of this emissions improvement should come from the use of Low and Zero-Carbon Generating Technology.</p>

	Zero-Carbon Generating Technology	
2020	<p>Gold</p> <p>Where the dwelling complies with the Gold level in each of the 8 aspects below:</p> <p><i>Aspect 1</i> - Carbon dioxide emissions.  <i>Aspect 2</i> - Energy for space heating.  <i>Aspect 3</i> - Energy for water heating.  <i>Aspect 4</i> - Water use efficiency.  <i>Aspect 5</i> - Optimising performance.  <i>Aspect 6</i> - Flexibility and adaptability.  <i>Aspect 7</i> - Wellbeing and security.  <i>Aspect 8</i> - Material use and waste.</p> <p>New buildings should include a minimum 5% carbon dioxide emissions abatement through the use of Low and Zero-Carbon Generating Technology.</p>	<p>Gold</p> <p>Carbon Dioxide emissions equivalent to a 75% improvement on the 2007 standards. A minimum 5% of this emissions improvement should come from the use of Low and Zero-Carbon Generating Technology.</p>
2022	<p>Platinum</p> <p>Carbon Dioxide emissions equivalent to a 100% improvement on the 2007 standards including a minimum 6% carbon dioxide abatement through the use of Low and Zero-Carbon Generating Technology.</p>	
<p>All new development will be required to provide satisfactory arrangements for the storage and collection of refuse and recyclable materials as an integral part of its design. Major developments should include communal facilities for waste collection and recycling where appropriate. New homes and workplaces should allow for the provision of high-speed broadband access to enable provision of next generation broadband.</p> <p><b>Note:</b> Supplementary Guidance will expand on the above requirements including:</p> <ul style="list-style-type: none"> <li>• identifying the type of building which will require to submit a sustainability statement.</li> <li>• where combined heat and power technologies may be appropriate.</li> </ul> <p><b>Policy EP1A</b></p> <p>The Council is committed to ensuring that development minimises disturbance to, and the loss of, carbon rich soils, including peatland, which are of value as carbon stores. Development will only be permitted on areas of undisturbed carbon rich soils, including peatland, where it has been clearly demonstrated that there is no viable alternative, or where the economic and social benefits of the development outweigh any potential detrimental effect on the environment.</p>		

**'Sustainable Design and Zero Carbon Development Supplementary Guidance'** (April 2014) is available: <http://www.pkc.gov.uk/sustainabledesign>

## Highland Wide Local Development Plan (Adopted 5 April 2012)

### Policy 28: Sustainable Design

The Council will support developments which promote and enhance the social, economic and environmental wellbeing of the people of Highland.

Proposed developments will be assessed on the extent to which they:

- are compatible with public service provision (water and sewerage, drainage, roads, schools, electricity);
- are accessible by public transport, cycling and walking as well as car;
- maximise energy efficiency in terms of location, layout and design, including the utilisation of renewable sources of energy and heat;
- are affected by physical constraints described in Physical Constraints on Development: Supplementary Guidance;
- make use of brownfield sites, existing buildings and recycled materials;
- demonstrate that they have sought to minimise the generation of waste during the construction and operational phases. (This can be submitted through a Site Waste Management Plan);
- impact on individual and community residential amenity;
- impact on non-renewable resources such as mineral deposits of potential commercial value, prime quality agricultural land, or approved routes for road and rail links;
- impact on the following resources, including pollution and discharges, particularly within designated areas:
  - habitats
  - freshwater systems
  - species
  - marine systems
  - landscape
  - cultural heritage
  - scenery
  - air quality;
- demonstrate sensitive siting and high quality design in keeping with local character and historic and natural environment and in making use of appropriate materials;
- promote varied, lively and well-used environments which will enhance community safety and security and reduce any fear of crime;
- accommodate the needs of all sectors of the community, including people with disabilities or other special needs and disadvantaged groups; and
- contribute to the economic and social development of the community.

Developments which are judged to be significantly detrimental in terms of the above criteria will not accord with this Local Development Plan. All development proposals must demonstrate compatibility with the Sustainable Design Guide: Supplementary Guidance, which requires that all developments should:

- conserve and enhance the character of the Highland area;

- use resources efficiently;
- minimise the environmental impact of development;
- enhance the viability of Highland communities.

Compatibility should be demonstrated through the submission of a Sustainable Design Statement where required to do so by the Guidance.

All developments must comply with the greenhouse gas emissions requirements of the Sustainable Design Guide.

In the relatively rare situation of assessing development proposals where the potential impacts are uncertain, but where there are scientific grounds for believing that severe damage could occur either to the environment or the wellbeing of communities, the Council will apply the precautionary principle.

Where environmental and/or socio-economic impacts of a proposed development are likely to be significant by virtue of nature, size or location, The Council will require the preparation by developers of appropriate impact assessments. Developments that will have significant adverse effects will only be supported if no reasonable alternatives exist, if there is demonstrable over-riding strategic benefit or if satisfactory overall mitigating measures are incorporated.

## **Highland Sustainable Design Guide Supplementary Guidance** (Adopted 16 January 2013)

### *Extract*

Incorporating small-scale renewable or low-carbon energy systems into developments or individual buildings can make significant reductions in CO<sub>2</sub> emissions. Examples include:

- Small-scale stand alone wind turbines;
- Solar thermal heating panels;
- Solar energy photovoltaic cells, tiles and panels;
- Air, ground, or water source heat pumps;
- Small scale hydro-electric schemes;
- Biomass heating systems;
- Anaerobic digesters/biogas.

When considering incorporating these technologies into developments or individual buildings there are a range of planning considerations and constraints, and a suite of applicable policies and guidance, therefore pre application advice should be sought.”

Community heating schemes should be considered for small-scale developments of two or three buildings as well as for larger-scale developments. Larger-scale developments should also consider the use of a combined heat and power scheme (CHP).

*Checklist:*

Sustainable Design Checklist	Minimum Standards	Relevant Policies & Additional Guidance
<p><b>8. Renewable energy</b> Has the energy demand for the development been calculated to determine:</p> <p>A. The amount of low or zero carbon technology e.g. wind, solar, hydro, photovoltaic (PV), Combined Heat and Power (CHP) that is practicable to meet the extant Building Standards CO2 emissions reduction target.</p> <p>B. The % of total site energy demand that will be produced from on-site renewable energy technologies.</p> <p>C. Meeting the remaining energy demand efficiently, e.g. non-renewable or waste powered district heating and cooling.</p>	<p>A-C is required only where the development is 500m<sup>2</sup> or over.</p> <p>The CO<sup>2</sup> emissions reduction target should be met through a combination of on-site low or zero carbon technologies (LZCT) and other appropriate measures.</p> <p>The amount of low or zero carbon technologies (LZCT) employed will depend on the technical constraints and scale of the proposed development.</p>	<p>Climate Change (Scotland) Act</p> <p>Scottish Planning Policy (SPP)</p> <p>A Low Carbon Building Standards Strategy for Scotland</p> <p>Scottish Building Standards</p>

## **Inverclyde Local Development Plan (Adopted 29 August 2014)**

### **Policy INF2 - Energy Efficiency**

Support will be given to all new buildings designed to ensure that at least 10% of the carbon dioxide emissions reduction standard set by Scottish Building Standards is met through the installation and operation of low and zero carbon generating technologies. This percentage will increase to at least 15% by the end of 2016. Other solutions will be considered where:

- (a) it can be demonstrated that there are significant technical constraints to using on-site low and zero-carbon generating technologies; and

**(b)** there is likely to be an adverse impact on the historic environment.

Excluded from this requirement are:

**(c)** buildings that have an intended life of less than 5 years; or

**(d)** stand-alone ancillary buildings of less than 50 sq m; or

**(e)** buildings which will not be heated or cooled other than for the purposes of frost protection.

**Note:** It is recognised that Building Standards may change during the lifetime of this Plan. The requirements are therefore percentages of the Building Standard in operation at the time applications are determined.

## **Renfrewshire Local Development Plan (Adopted 28 August 2014)**

### **POLICY I7 – Low Carbon Developments**

All new buildings, with exception of those listed below, shall in meeting building regulation energy requirements, install technology that produces low or no amounts of carbon dioxide emissions, to reduce the predicted emissions by at least 15% below 2007 building standards. The developments exempt from the above standards are as follows:

- Buildings exempt from building regulations;
- Alterations and extensions to buildings;
- Changes of use or conversion of buildings;
- An ancillary building that is stand-alone, having an area less than 50 square metres;
- Buildings which will not be heated or cooled other than by heating provided solely for the purpose of frost protection;
- Buildings which have an intended life of less than two years.

The submission of a statement will be required to demonstrate to the satisfaction of the Council that this requirement can be met or setting out the reasons why it is neither practical nor viable to meet the requirement in part or in full.

## **Moray Development Plan (Adopted June 2015)**

### **Policy CC2:**

In order to contribute to reducing greenhouse gas emissions, developments of 10 or more houses and buildings in excess of 500 sq m should address the following:

- Be in sustainable locations that make efficient use of land and infrastructure,
- Optimise accessibility to active travel options and public transport,
- Create quality open spaces, landscaped areas and green wedges that are well connected,

- Utilise sustainable construction techniques and materials and encourage energy efficiency through the orientation and design of buildings,
- Where practical, install low and zero carbon generating technologies,
- Prevent further development that would be at risk of flooding or coastal erosion,
- Where practical, meet heat and energy requirements through decentralised and local renewable or low carbon sources of heat and power.
- Minimise disturbance to carbon rich soils and, in cases where it is agreed that trees can be felled, to incorporate compensatory tree planting.

## **South Lanarkshire Local Development Plan (June 2015)**

### **Policy 2 Climate change**

Proposals for new development must, where possible, seek to minimise and mitigate against the effects of climate change by;

- i. being sustainably located;
- ii. maximising the reuse of vacant and derelict land;
- iii. utilising renewable energy sources;
- iv. being designed to be as carbon neutral as possible;
- v. using, where appropriate, low and zero carbon energy generating technologies, that reduce predicted carbon dioxide emissions to meet current building standards within new buildings;
- vi. avoiding areas of medium to high flood risk;
- vii. having no significant adverse impacts on the water and soils environment, air quality, biodiversity (including Natura 2000 sites and protected species) and green networks;
- viii. ensuring new development includes opportunities for active travel routes and provisions for public transport and for the creation and enhancement of green networks,
- ix. providing electric vehicle recharging infrastructure in new developments to encourage the adoption of low carbon vehicles; and
- x. minimising waste. Development proposals must also accord with other relevant policies and proposals in the development plan and other appropriate supplementary guidance.

## **Stirling Local Development Plan (Adopted September 2014)**

### **Policy 4.1: Low and Zero Carbon Buildings**

(a) All new buildings must be designed so that at least 10% of the carbon dioxide emissions reduction standard set by Scottish Building Standards\*<sup>12</sup> is met by the

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<sup>12</sup> It is recognised that Building Standards are likely to change during the lifetime of this Plan. Therefore, the requirements are percentages of the Building Standard in operation at the time at which applications are being determined.

installation and operation of low and zero-carbon generating technologies. This percentage will increase to 15%\* in 2016.

(b) Part (a) does not apply where development of any of the following types is proposed: -

- Extensions to existing buildings
- Changes of use or conversion of buildings
- Buildings which have an intended life of less than two years
- Stand-alone ancillary buildings with an area of less than 50 sq. m;
- Buildings which will not be heated or cooled other than for the purposes of frost protection.

(c) Other solutions will be considered where: -

- (i) An applicant is able to demonstrate that there are significant technical constraints in using on-site low and zero-carbon generating technologies; or
- (ii) There is likely to be an adverse impact on the historic environment (see Policy 7.7).

(d) All relevant applications must be accompanied by a 'Low and Zero-Carbon Buildings Statement' demonstrating compliance with this policy.

[SG17 supports this policy by providing further guidance on how the requirements of this policy can be met, and the information required in the Low and Zero- Carbon Buildings Statement].

[\* It is recognised that Building Standards are likely to change during the lifetime of this Plan. Therefore, the requirements are percentages of the Building Standard in operation at the time at which applications are being determined].

**Stirling Supplementary Guidance** (Approved October 2014)

[http://www.stirling.gov.uk/\\_documents/temporary-uploads/economy,-planning-and-regulation/approved-ldp/sg-teith-house-jan-2015/sg17-low-and-zero-carbon-buildings\\_feb-2015.pdf](http://www.stirling.gov.uk/_documents/temporary-uploads/economy,-planning-and-regulation/approved-ldp/sg-teith-house-jan-2015/sg17-low-and-zero-carbon-buildings_feb-2015.pdf)

**Orkney Local Development Plan** (Adopted April 2014)

**Policy SD5**

**Low and Zero Carbon Technologies in Buildings**

Proposals for all new buildings will be required to demonstrate that at least 10% of the carbon emissions reduction standard set by Scottish Building Standards has been met through the installation and operation of zero-carbon generating technologies. This percentage will increase to 15% from the beginning of 2015 and will be reviewed in 2017.

This requirement applies to all new buildings with the following exceptions:

1. Alterations and extensions to buildings.
2. Change of use or conversion of buildings.
3. Ancillary buildings that stand alone and cover an area less than 50 square metres.
4. Buildings which will not be heated or cooled, other than by heating provided solely for frost protection.
5. Buildings which have an intended life of less than two years.

Where necessary, a planning condition will be attached to any consent in order to ensure compliance with this policy prior to construction commencing on site. Further guidance is contained in the Supplementary Guidance *Sustainable Design and Energy Efficiency*.

## **Shetland Local Development Plan (Adopted 26 September 2014)**

### **GP2 General Requirements for All Development**

Applications for new buildings or for the conversion of existing buildings should meet all of the following General Requirements:

- a. Developments should not adversely affect the integrity or viability of sites designated for their landscape and natural heritage value.
- b. Development should not occur any lower than 5 metres Above Ordnance Datum (Newlyn) unless the development meets the requirements of Policy WD1;
- c. Development should be located, constructed and designed so as to minimise the use of energy and to adapt to impacts arising from climate change, such as the increased probability of flooding; water stress, such as water supply; health or community impacts as a result of extreme climatic events; and a change in richness of biodiversity.
- d. Suitable water, waste water and surface water drainage must be provided;
- e. All new buildings shall 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 (LZCGT). The proportion of such emissions shall be specified in the council's Supplementary Guidance – Design. That guidance will also set out the approach to existing buildings which are being altered or extended, including historic buildings, and the approach to applications where developers are able to demonstrate that there are significant technical constraints to using on-site low and zero carbon generating technologies.
- f. Suitable access, car parking and turning should be provided;

- g. Development should not adversely affect areas, buildings or structures of archaeological, architectural or historic interest;
- h. Development should not sterilise mineral reserves;
- i. Development should not sterilise allocated sites as identified within the Shetland Local Development Plan;
- j. Development should not have a significant adverse effect on existing uses;
- k. Development should not compromise acceptable health and safety standards or levels;
- l. Development should be consistent with National Planning Policy, other Local Development Plan policies and Supplementary Guidance.

## **North Ayrshire Local Development Plan (20 May 2014)**

### **POLICY PI 13: CARBON EMISSIONS AND NEW BUILDINGS**

All new buildings must reduce their carbon dioxide emissions above or in line with building standards through appropriately designed:

- On-site low or zero carbon generating technologies (LZCGTs); **and/or**
- Passive/operational energy efficiency measures.

The following are exempt from this policy :

- (a) Buildings exempted from building regulations;
- (b) Individual buildings having an area less than 50 square metres;
- (c) Extensions to buildings, other than extensions to stand-alone buildings having an area less than 50 square metres that would increase the area to 50 square metres or more;
- (d) Buildings which will not be heated or cooled other than by heating provided solely for the purpose of frost protection;
- (e) Limited life buildings which have an intended life of less than two years;
- (f) CO<sub>2</sub> emissions arising from any apparatus operating within the proposed development which is not related to the heating or cooling of a building.

Applicants are required to demonstrate to the satisfaction of the Council how this requirement will be met. A suspensive condition may be used to allow applicants to submit energy saving or on-site LZCGT schemes at the time of Building Warrant submissions. On-site LZCGTs not permissible under General Permitted Development rights shall be considered against other relevant LDP policies and guidance. Further guidance will be contained within Supplementary Guidance: Climate Change.

## **Dumfries and Galloway Local Development Plan (Adopted 29 September 2014)**

### **1f) Sustainability**

Development proposals should limit the impacts of climate change and promote sustainable development by:

- Assisting the development of the local economy through sustainable economic growth;
- Minimising adverse impacts on water, air and soil quality;
- Reusing and/or regenerating previously used land and property, including derelict and contaminated land;
- Making the most efficient use of land;
- Integrating with existing infrastructure where possible;
- Supporting the Council's waste resource management objectives;
- Avoiding areas of significant flood risk;
- Using sustainable drainage systems (SuDS);
- Incorporating sustainable principles by demonstrating that in all new buildings at least 10% of the carbon emissions reduction standard set by Scottish Building Standards has been met through the installation and operation of zero carbon generating technologies. This percentage will increase to 15% from the beginning of 2015 and will be reviewed in 2017.\*

## **South Ayrshire Local Development Plan (Adopted 23 September 2014)**

LDP policy: low- and zero-carbon buildings

To meet the requirements of Section 3F of the Town and Country Planning (Scotland) Act 1997 (as amended), development proposals will be required to incorporate low and zero-carbon generating technologies to reduce greenhouse gas emissions. The target reduction for new buildings required by this policy will be set out in related supplementary guidance, which we will produce, and be based on the 2010 building standards. A rising proportion of greenhouse gases will require to be offset through the use of low and zero-carbon generating technologies and the supplementary guidance will specify incremental targets to achieve this. These requirements will not apply where the development is:

- a. an alteration or extension to an existing building;
- b. to change or convert an existing building;
- c. an ancillary building that is 'stand-alone' and has an area of less than 50 square metres;
- d. a building which will not be heated or cooled, other than by heating provided to protect it from frost; or
- e. a building which has an intended life of less than two years.

Developers must show they meet this requirement by giving us a low-carbon development statement and by consulting our Building Standards service.

We will support the reuse and recycling of waste in the construction of new developments.