The Scottish Government

ACTION ON CLIMATE CHANGE: PROPOSALS FOR IMPROVING THE ENERGY PERFORMANCE OF EXISTING NON-DOMESTIC BUILDINGS

A CONSULTATION BY THE SCOTTISH GOVERNMENT

Action on Climate Change:

Proposals for Improving the
Energy Performance of
Existing Non-domestic Buildings

A Consultation by the
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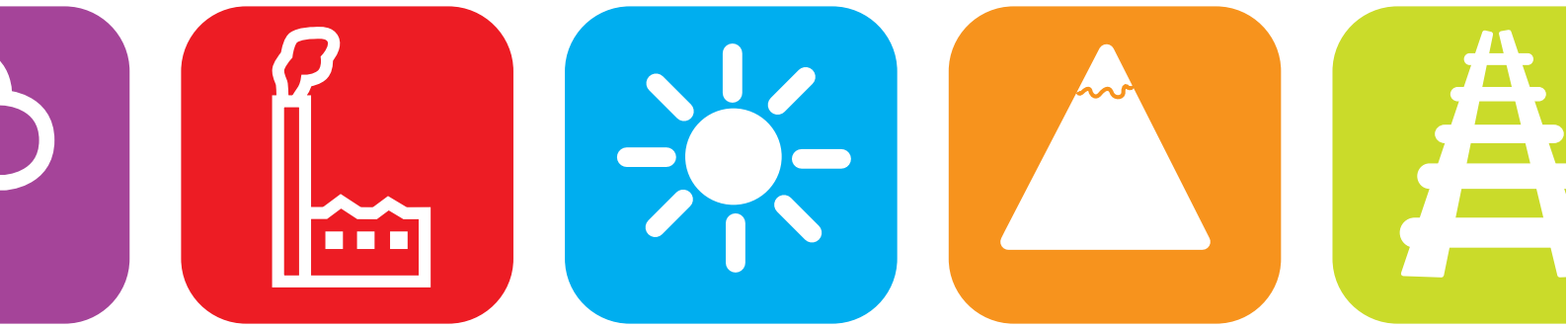
CONTENTS

01 MINISTERIAL FOREWORD



Climate change is having a major impact on the world we live in. We have an opportunity and a responsibility to take action now to shape the world which we will pass onto our children.

In January, the Scottish Government launched a major consultation on its ambitious proposals for a Scottish Climate Change Bill. The consultation document made clear that Scotland can play a leading role internationally in taking action on climate change as part of our vision to build a Greener Scotland. We propose to develop a long-term framework for this Government, and for successive administrations, to ensure that we reduce our emissions by 80% by 2050. This will play a key role in achieving the Scottish Government's Purpose of increasing sustainable economic growth that provides prosperity and opportunities for all, while ensuring that future generations can enjoy a better quality of life too.

The Scottish Climate Change Bill will establish the strategic statutory emissions reduction targets. However, it also provides an opportunity to set the legislative framework for practical measures that will be needed to achieve those targets.

Government, business and all of the people of Scotland must be ready to rise to the challenge of climate change – and action in all sectors of society will be needed to achieve the scale of carbon emission reductions we need. Improving the energy performance of non-domestic buildings – such as our offices, factories, schools, and hospitals – will be crucial given that a significant proportion of all carbon emissions in Scotland derive from our built environment. The Sullivan Report, 'A Low Carbon Building Standards Strategy for Scotland', includes challenging recommendations for enhancing the energy standards in building regulations towards our goal of zero carbon new buildings. It also highlights the challenge posed by our existing buildings, which form the large majority of buildings, both now and by 2050 and which is the focus of this consultation.

We will therefore consult on proposals for measures to improve the energy performance of buildings in Scotland that will help us to meet our challenging targets for emission savings. This consultation paper focuses on measures to improve the energy performance and carbon impact of our existing non-domestic building stock.

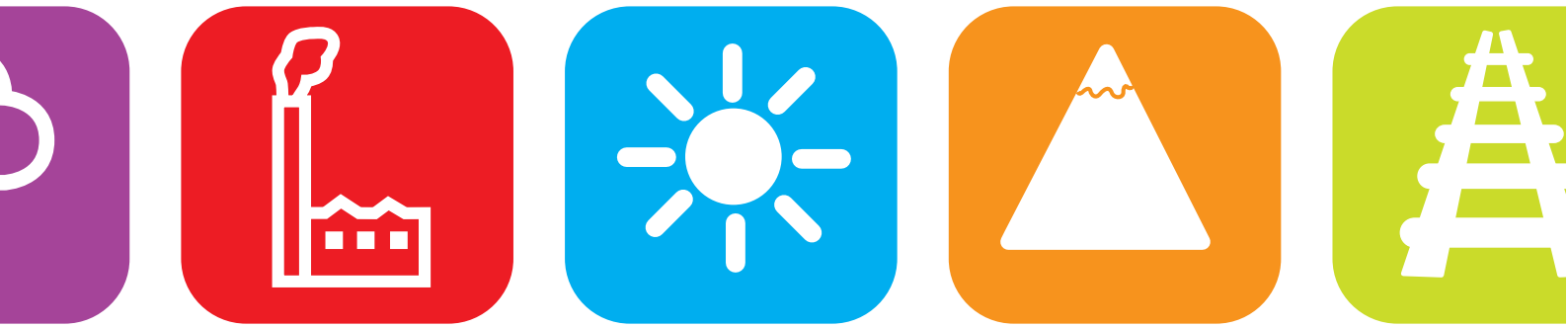
As we strive to protect our future, we also need to respect our past. Our buildings are an important part of our cultural and historic legacy and we need to ensure that measures to address older and historical buildings are undertaken in a sensitive manner that is appropriate to traditionally constructed buildings. Older buildings represent a major investment in energy and materials that should not be relinquished.

The Scottish Government wants to encourage action on climate change by active, engaged citizens and socially responsible public sector and business organisations. However, we are setting in train a long-term strategy and – looking ahead – we recognise that the use of enforceable standards may be necessary to complement voluntary action.

We know that reaching our target and making sustained emissions reductions over the coming years will be difficult. Indeed, we also know that the people of Scotland always rise to a challenge.

Stewart Stevenson
Minister for Transport, Infrastructure and Climate Change

02 INTRODUCTION



2.1 The small changes that each of us can make are important. Businesses and public services can reduce emissions by making changes to the way they provide their services, including how they run their business premises. Many of the steps we can take save money, and so cut fuel bills, boost competitiveness or release money for frontline services, as well as saving energy.

2.2 We all have a role to play in making environmentally sustainable behaviour the norm rather than something we do when we remember. Many businesses have already acted to improve the energy performance of their premises and many more will be considering such action in recognition of increasing fuel costs. Local authorities are already taking action as part of Scotland's Climate Change Declaration and many businesses have corporate social responsibility policies that include measures to reduce carbon emissions.

2.3 The Scottish Government wants to encourage consumers, businesses and public bodies to build on the action many are already taking voluntarily to reduce their emissions, including emissions from buildings. The Scottish Government already funds a wide range of information and advice services and grant and loan schemes to stimulate and encourage action, which are listed at the end of this section.

2.4 This encouragement and these incentives sit alongside existing legal requirements that ensure that owners, builders and others with an interest in the built environment meet certain standards. For example, building regulations require that when windows or boilers are replaced they must meet particular standards of energy performance. The Scottish Government would prefer to achieve the reduced carbon emissions we need through voluntary action alone. However, looking to the future, we recognise that there may be a role for additional legislation that enables or requires further action to be taken, if necessary. We want to canvass opinion on whether or not we need to have powers that could, if required, compel building owners and others to take action to improve the energy performance of non-domestic buildings in order to reduce carbon emissions.

2.5 This consultation paper sets out outline proposals for measures to require the assessment of the energy performance of non-domestic buildings and the implementation of measures to reduce carbon emissions. At this stage, the Scottish Government is seeking views on which such measures are required and the general principles underpinning such measures with a view to the introduction of broad enabling powers. Should Ministers wish to use these enabling powers to introduce specific measures in the future the intention would be consult further on detailed regulatory proposals and guidance at that time which would set out the detail of how these proposals would work in practice. A partial Regulatory Impact Assessment (RIA) is attached in Annex A. However, a further RIA would also be carried out on any more detailed regulatory proposals that are developed following consultation.

Government incentives to encourage action:

Business sector

- Interest free loans of up to £100,000 are available to help Small and Medium Sized Enterprises (SMEs) finance energy saving and renewables measures.
- Advice service for SMEs on energy efficiency and renewables from dedicated 'Business Advisers'.
- On-site energy audits for all sizes of business.
- Technical and change management guidance through a programme of 'Carbon Management'.
- Low carbon building design advice.
- Enhanced Capital Allowances help businesses to invest in energy saving equipment by claiming 100% first year capital allowances on qualifying plant and machinery. The investment is off-set against Corporation Tax.

Public sector

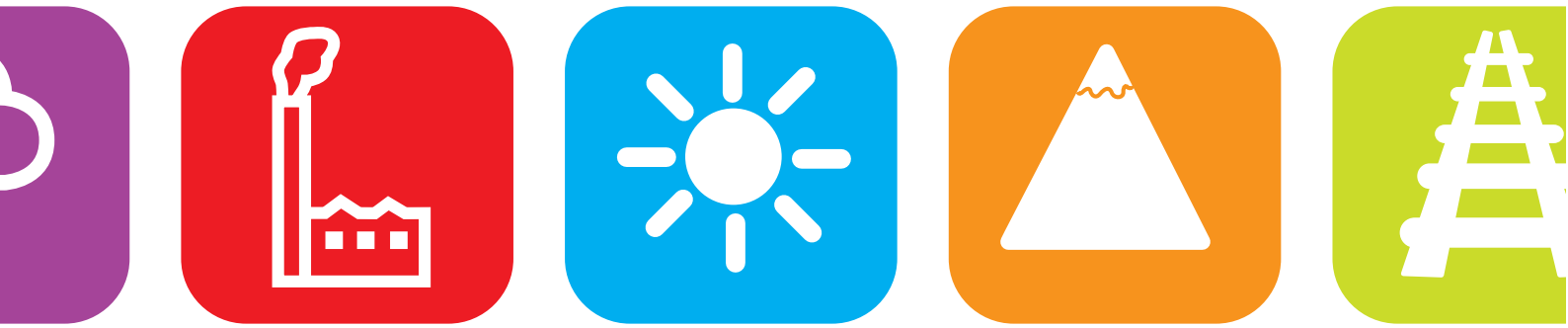
- Interest free loan funds to help local authorities, Scottish Water, universities and colleges to finance energy saving and renewables measures.
- Grants for the installation of microgeneration technologies are available to the public sector (including schools, hospitals, housing associations and local authorities).
- On-site energy audits.
- Technical and change management guidance through a programme of 'Carbon Management'.
- Low carbon building design advice.

All sectors

- The introduction of Energy Performance Certificates (EPCs) which are required for large public buildings and for all buildings when they are built, sold or rented out.

Q1. Can we achieve the significant carbon emission reductions we need from non-domestic buildings by relying on the current measures and support available?

03 RELATIONSHIP TO THE SCOTTISH GOVERNMENT'S PURPOSE



3.1 The Scottish Government's Purpose, as set out in our *Economic Strategy*, is to focus the Government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth. By sustainable economic growth we mean building a dynamic and growing economy that will provide prosperity and opportunities for all, while ensuring that future generations can enjoy a better quality of life too.

3.2 Our commitment to reduce carbon emissions is consistent with this Purpose. The activity around the setting of emission reduction targets at EU, UK and Scottish levels, is not an end in itself but must be used as a spur to new economic activity in addition to its central purpose of addressing climate change. The Scottish Climate Change Bill will provide a long-term legal framework and certainty about the Government's commitments.

3.3 It is our intention to also publish a Strategic Overview which will set out our thinking on how our target of reducing our greenhouse gas emissions by 80% can be achieved. Improving the energy performance of existing buildings will be an important strand in this.

3.4 The *Scottish Budget Spending Review* makes a number of commitments in respect of climate change. These include a commitment to introduce a system of cross-compliance to ensure that spending decisions across Government assess the carbon impact of policy options during the appraisal process and ensuring that every refurbishment of a public building to which the government contributes financially, delivers high standards of environmental performance.

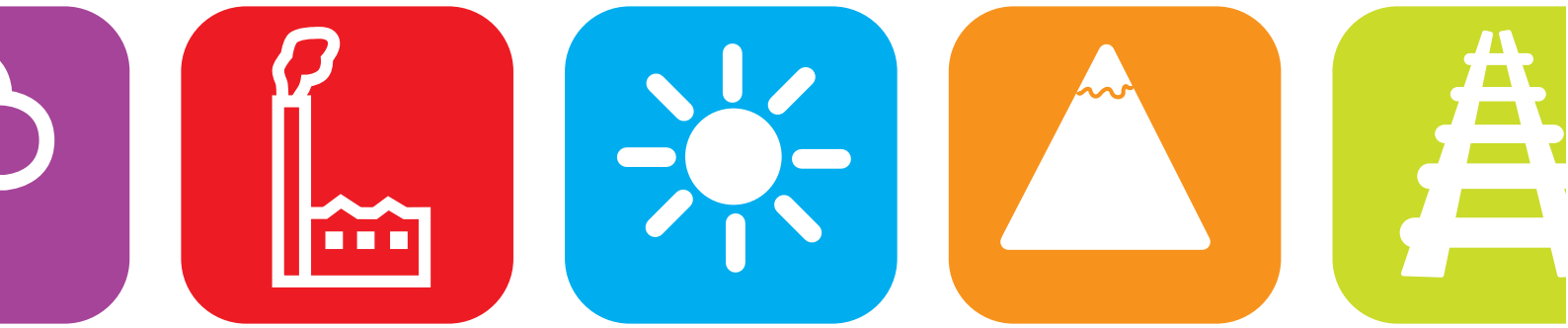
3.5 The Purpose is underpinned by a set of national outcomes which will be the focus for outcome agreements that will, in due course, cover all of the public sector in Scotland. These national outcomes include making Scotland the most attractive place for doing business in Europe while reducing the local and global environmental impact of our consumption and production.

3.6 In meeting these outcomes there are inevitably potential tensions and synergies that need to be considered and worked through. While the measures highlighted in this consultation are likely to have short-term cost implications for business and the public sector they also create potential opportunities in terms of reduced resource consumption and hence energy and materials costs leading to increased competitiveness. If introduced under these proposals, some measures may also assist larger commercial and public sector organisations in responding to the obligations they will face under the Carbon Reduction Commitment.[1] In terms of the economy more broadly, these measures may provide a boost to Scottish companies providing energy-related products and services and assist in growing the market for green technologies.

3.7 This consultation focuses on the overall principles of an assessment process for existing non-domestic buildings rather than on the detail of a fully worked out proposal. The business and public sectors will be consulted in the development of detailed proposals prior to any introduction and the Scottish Government will give due consideration to any advice and support that may be needed at that time.

1 http://www.defra.gov.uk/environment/climatechange/uk/business/crc/index.htm

04 THE IMPORTANCE OF THE ENERGY PERFORMANCE OF NON-DOMESTIC BUILDINGS IN OUR STRATEGY TO TACKLE CLIMATE CHANGE



4.1 The *Stern Review* indicates that by 2050, energy efficiency has the potential to be the biggest single source of emissions savings in the energy sector. It argues that this would have both environmental and economic benefits because energy efficiency measures cut waste and often save money.[2] Stern goes on to suggest that global carbon dioxide reductions from greater energy efficiency could be between 31% and 53% of the total achievable by 2050.

4.2 The Scottish Government is committed to reducing energy use and promoting microgeneration as it believes they can play an important role in reducing harmful carbon emissions, tackling fuel poverty and maintaining a secure energy supply, as well as reducing costs for consumers, public services and businesses. Following the recent consultation on the draft Energy Efficiency and Microgeneration Strategy, in March last year and the subsequent publication of the Scottish Government's response to the issues raised during the consultation process, the Scottish Government is now developing a plan that will translate our key objectives into action. Improving the energy performance of buildings is a key part of this action plan and of our wider strategy to tackle climate change as set out in our consultation on climate change.

4.3 This is because the buildings in which we live, work and spend our leisure time and the processes involved in the construction and operation of buildings are significant users of energy and producers of carbon dioxide emissions. Action to reduce carbon emissions will be needed in every sector of the economy, but clearly we need to focus first on the areas where we can make the most impact for the least cost. A recent report from the Confederation of British Industry (CBI) used modelling by the McKinsey consultancy to show the cost-effectiveness of different interventions.[3] This showed that most measures relating to buildings, such as retro-fitted wall and roof insulation, and use of condensing boilers, will actually save money – as well as saving carbon.

4.4 As outlined in the introduction, a range of measures is already in place to encourage and incentivise the owners of existing buildings to improve their energy performance, including advice and in some cases, financial incentives. There are also legal requirements to reduce carbon emissions and optimise the energy performance of new buildings and new building work as set out in Scottish building regulations.

2 *Stern Review: Executive Summary* p. 13 [based on research in Energy Technology Perspectives, International Energy agency, 2006.]

3 http://www.cbi.org.uk/pdf/climatereport2007full.pdf

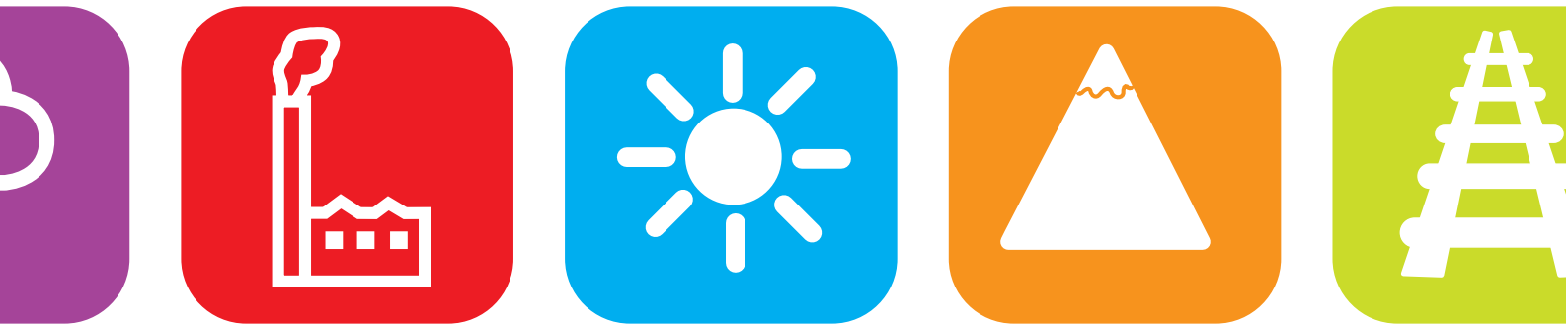
4.5 Scotland already leads the UK in terms of the energy standards set by building regulations. Scottish Ministers established a panel of experts, which met in September 2007, including contributors from Norway, Denmark and Austria along with energy specialists, designers, developers and contractors, to recommend measures to make houses and buildings in Scotland even more energy efficient. The output from this meeting was the Sullivan Report - 'A Low Carbon Building Standards Strategy for Scotland'[4] - which suggests proposals for both new and existing buildings. One of the major workstreams emerging from the Sullivan Report is consideration of how building standards can be progressively enhanced towards the aim of zero carbon new buildings. A review of energy standards is already underway, with public consultation proposed for early 2009.

4.6 This consultation, however, focuses on measures for existing non-domestic buildings which are particularly important given that new buildings comprise only around 1% of the stock each year. This means that existing buildings will remain the large majority of the built environment well into the future. In regard to existing non-domestic buildings, the Sullivan Report's recommendations included the proposal outlined in this consultation to introduce legislation to require all owners of non-domestic buildings to conduct a carbon and energy assessment and produce a programme for upgrading; together with the empowerment of local authorities, or similar public bodies, to check such assessments. The Sullivan Report also recommends that consideration is given to developing practical performance standards for existing buildings (aligned with Energy Performance Certificates). Our proposals reflect these recommendations and go beyond them in that we invite views on whether or not owners should be required to make improvements to energy performance following an assessment.

4.7 Historic and traditional buildings can also contribute to emission reductions if they are managed in a sustainable way. For example, extending the life of a building or its individual elements so that they need to be replaced less often means that the carbon emissions associated with their replacement are reduced. Preliminary work carried out by the Building Research Establishment on life cycle analysis of historic/traditional buildings has shown that a building constructed of new materials will have used a larger quantity of carbon relative to an equivalent building made from traditional materials.

4 Web address http://www.sbsa.gov.uk/sullivanreport.htm

05 MAKING THE RIGHT DECISION FOR NON-DOMESTIC BUILDINGS IN CARBON AND COST-TERMS



5.1 Emissions can be measured in a number of different ways and it is important that the most appropriate carbon assessment methodology is used to ensure decisions about our built environment are made on the basis of a proper understanding of the carbon and cost implications.

5.2 There are strong arguments for the use of a holistic approach to the assessment of buildings whereby sustainability is measured in the round, over the whole life cycle of a building and including the energy involved in its construction and not just in terms of energy usage. Such a holistic approach would take account of the way a particular building behaves in order to avoid inappropriate alterations and to avoid poor decisions when considering carbon impact. As well as the energy performance of individual components, it is important to consider the life cycle of building materials, embodied energy (see paragraph 5.7) and the interaction of moisture, heat and light in a building through heating, ventilation, lighting and use of appliances.

5.3 An appropriate approach is required for all buildings, and perhaps particularly the historic, traditionally built environment, which might be prejudiced by a simplistic energy-usage approach which ignores issues of sustainability and embodied energy, toxicity of materials, the transport of materials and good management practices.

5.4 In our consultation on the Scottish Climate Change Bill, we proposed that targets are specified in terms of "Scottish emissions". Scottish emissions could be defined as the emissions from goods and services produced in Scotland (direct emissions), or emissions from goods and services consumed in Scotland (indirect emissions). Direct emissions form the basis for the Greenhouse Gas Inventories and for existing international emission reduction agreements. However, as part of the global economy, most of the products Scotland consumes are produced outside Scotland. This external production activity also causes emissions, so-called indirect emissions. Such indirect emissions are not reflected in our Scottish Inventory but would be expected to appear in the inventories of other countries.

5.5 In addition to the emissions associated with the production and consumption of goods and services, we also need to consider the energy needed throughout the life of a product or service we consume. This is particularly important for non-domestic buildings which may have a long life.

5.6 Measuring direct emissions only is clearly simpler than using a more holistic approach and in regard to our overall climate change strategy, emission-based targets are a more practical option. However, the particular characteristics of buildings mean that it would be preferable to use a more holistic approach to carbon assessment, where possible, in order to avoid potentially inappropriate decisions either in terms of cost or carbon.

5.7 For example, a new building may require less energy to heat than an old building, but repairing and refurbishing an old building may require less energy and use materials that required less energy to make (known as embodied energy) than building a new building. There will also be carbon emissions associated with demolishing an old building to make way for a new one.

5.8 Where practicable, a carbon footprinting-type approach for use in specific projects and programmes (such as carbon assessment of buildings) would be compatible with, and contribute towards, meeting any statutory emissions targets.

5.9 There are ways under development to measure our overall impact on global emissions from our consumption. The most common of these is the carbon footprint. There are a number of definitions of carbon footprint but the one that is probably the most appropriate for Scotland is:

The carbon footprint is a measure of the exclusive total amount of carbon dioxide emissions that is directly and indirectly caused by an activity or is accumulated over the life stages of a product.[5]

5.10 Research is underway to develop a methodology for buildings which can be used for the assessment process. Current methodologies of this kind are not yet sophisticated enough to be used as the basis for a statutory target at this time, but it is hoped that a workable methodology can be developed to encompass the range of criteria relevant to carbon impact from buildings. At present, for new building work, covering embodied energy in building products could fall foul of the EU Construction Products Directive (CPD). However, the above research is consistent with another one of the Sullivan Report recommendations which advocates 'consideration of embodied energy within construction products in preparation for any possible change in the CPD'.

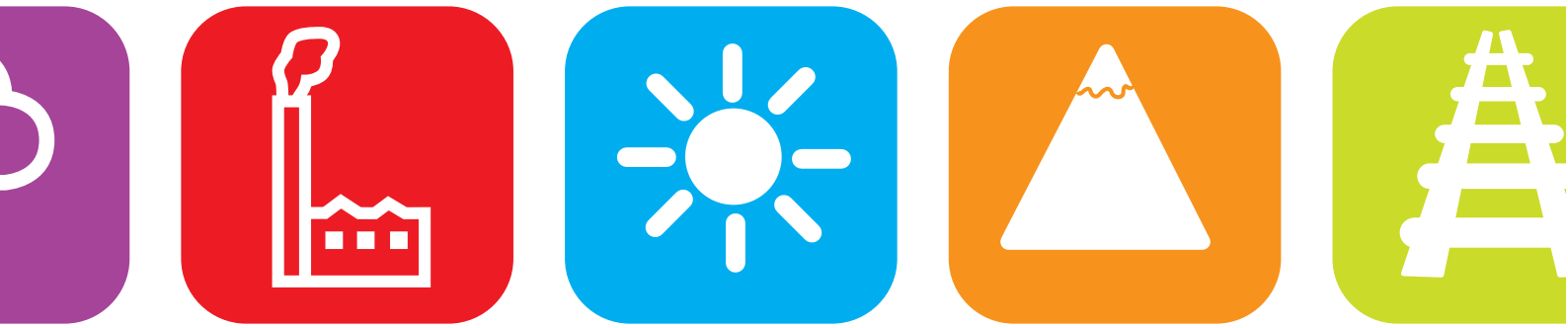
5 ISAUK Research Report 07-0, A Definition of 'Carbon Footprint', Thomas Weidmann and Jan Minx, available from: http://www.isa-research.co.uk/docs/ISA-UK_Report_07-01_carbon_footprint.pdf

Q2. Do you agree that we should seek to use a holistic approach to carbon assessment for the built environment when such methodologies are available?

Q3. How should we measure and account for our efforts in so far as they reduce indirect emissions?

5.11 Having set out the important contribution that improving the energy performance of non-domestic buildings can make to our climate change objectives; examining how this links to the Scottish Government's Purpose and the need for an appropriate approach to assessment, this consultation now shifts to consideration of the measures proposed.

06 MEASURES TO IMPROVE THE ENERGY PERFORMANCE OF EXISTING NON-DOMESTIC BUILDINGS



Background

6.1 As identified in the introduction to this consultation, The Scottish Government is already doing a great deal to promote and encourage better energy performance in the business and public sectors. However, given the challenge of climate change we need to consider other innovative options, including regulatory measures to enhance the energy performance of buildings.

6.2 The EU Directive 2002/91/EC on the energy performance of buildings (EPBD) introduced a requirement for existing non-domestic buildings to have Energy Performance Certificates (EPCs) in certain circumstances. EPCs will provide important information on the energy performance of buildings, however, the EPBD does not require any action to be taken following the EPC to improve energy performance. It relies instead on the operation of market forces and wider forces in society, such as growing awareness of the importance of climate change, to drive improvements. Building owners may consider that there is a market advantage in making energy performance improvements following an EPC, or they may wish to do so for environmental reasons, but there is no requirement for them to take action at present.

6.3 In addition, EPCs are only required at the points of sale or rental, and for large public buildings of over 1000m^2. The Scottish Government believes there is potential scope to go beyond the regime already required by the EPBD. This cannot be done using the powers contained within the European Communities Act 1972, but the proposed Scottish Climate Change Bill offers an opportunity to create the necessary primary legislation.

6.4 EPCs have a lifespan of 10 years and, in Scotland, legislation requires that all EPCs be produced using an asset rating. An asset rating is a calculated rating based on standard weather data and building use. It is similar in principle to 'typical use' consumption figures for cars and is useful when comparing two buildings with different users, i.e. provides like-for-like figures. This is not only useful for potential owners and occupiers of buildings, but also has the ability to drive those who invest in buildings, the building owners, to spend money on appropriate carbon emissions reducing building fabric and services.

6.5 The Sullivan Report on a Low Carbon Building Standards Strategy for Scotland www.sbsa.gov.uk/sullivanreport.htm includes the following recommendations concerning existing non-domestic buildings and energy performance certificates, for which there could be enabling powers included in the Scottish Climate Change Bill:

- consideration of developing practical performance standards for existing buildings (aligned with the energy performance certificates);
- the introduction of legislation to require all owners of non-domestic buildings to conduct a carbon and energy assessment and produce a programme for upgrading;
- the empowerment of local authorities, or similar public bodies, to check such assessments;
- the publication of guidance for different types of non-domestic buildings to assist in this process;
- consideration of ways to encourage owners to implement recommendations arising from the carbon and energy assessment; and
- that primary legislation is sought to allow Scottish Ministers the opportunity to extend the provision and type of Energy Performance Certificates.

In the light of their advice, the Scottish Government wishes to take this opportunity to consult publicly on these recommendations.

Proposals

6.6 New legislation could require the owners of non-domestic buildings, or persons delegated by those owners, to obtain an Assessment of the Carbon and Energy Performance (ACEP) of their building, even if they were not required to obtain EPCs under the EPBD. Following such an assessment, owners could simply be given advice or guidance to encourage them to implement the recommendations; or they could be legally required to develop a programme of cost-effective improvements to reduce emissions and improve energy performance, and thereafter to carry out any necessary improvements. The partial RIA which accompanies this consultation document sets out eight scenarios to reflect potential combinations outlining carbon dioxide measures. These measures could be developed through secondary legislation from the broad powers being sought.

6.7 It is proposed that ACEPs would have sufficient regulatory 'push' to encourage adoption of improvement measures by building owners or their delegated persons, when they consider it to be the most appropriate solution to reducing carbon emissions. Improvement measures might include insulation, measures to reduce air infiltration, equipment efficiency and equipment controls, and low carbon equipment where these are cost-effective.

6.8 Owners, or persons delegated by the owners, could be required to retain the assessment and keep a record of the improvements that are made. They could also be expected to obtain a further ACEP every 5 years (for example) and draw up a further programme of improvements. One criticism of the EPBD is that at 10 years, the lifespan of an EPC is too long and when such a certificate reaches 7-8 years, it may no longer reflect the energy performance of the building. It is therefore proposed that powers are sought to vary the lifespan of EPCs.

Q4. Should Scottish Ministers take powers that place a statutory duty on the owners, or persons delegated by the owners of non-domestic buildings, to carry out an Assessment of Carbon and Energy Performance (ACEP) other than when a building is sold or rented out?

Q5. Should Scottish Ministers be able to vary the time intervals between EPCs as a part of ACEPs?

Q6. Should it be mandatory for cost-effective improvements identified within the ACEP to be actioned by the owners, or persons delegated by the building owners, or should action be at the discretion of building owners?

6.9 Consideration could also be given to investigating the potential to extend legislation to include a requirement for operational ratings to be undertaken alongside asset-based ratings. An operational rating is based on measured energy use. It takes account of how the building is used and managed and is useful for energy managers of the building because it includes factors they control. It has the scope to drive those who manage non-domestic buildings to deliver carbon savings from the equipment already installed. With the inclusion of operational ratings, as well as asset ratings, then not only would improvements affecting comfort loads be incorporated, but also improvements that affect how the building is managed. For example, printers and photocopiers in office buildings could be included. While such a combined approach should be a more powerful driver for reduced carbon emissions than using asset-based ratings alone, this may require additional action by building owners to prevent some of the unintended consequences that could arise from the inclusion of operational ratings. For example, it could be prudent to introduce sub-metering to enabling 'comfort' energy usage to be isolated from that relating to 'business' energy usage. Sub-metering would allow energy managers to monitor which equipment in their buildings use the most energy.

Q7. Should consideration be given to extending legislation to include a requirement for operational ratings, as well as asset based ratings? If yes, should provision be made for sub-metering?

Assessment of historic and traditional buildings

6.10 The precise assessment process and any programme of improvements emerging from an ACEP would need to be specific to each building. An important issue to consider is whether or not the characteristics of historic and traditional buildings are such that an entirely different assessment process is required for them, or whether the ACEP process can be developed to enable sufficient flexibility to ensure that historic and traditional buildings are treated appropriately and that measures suitable for traditionally constructed buildings are promoted.[6] It may be necessary for any secondary legislation and guidance to take factors such as this into account and separate assessment criteria may be required for traditional and non-traditional buildings.

6.11 The term 'traditional building' is used for the purposes of this consultation to define a building of traditional construction built before around 1919. The term is not confined to listed buildings or buildings within conservation areas.[7] Many, but not all, of these are traditionally-constructed. The majority of buildings erected before around 1919 are not designated as listed buildings, however, they do function in a different way to buildings erected with more modern construction techniques and therefore need to be approached in a different way. For example, giving recognition to how traditionally constructed buildings interact with moisture in the air.

6.12 For the assessment process, taking into account the needs of traditional and historic buildings would require determining appropriate measures to reduce carbon emissions with due consideration to the historic character of the building; including the embodied energy of existing materials and any replacement materials. If replacement materials are incompatible with existing traditional materials they may damage existing building fabric and shorten the life of the building. The materials used in traditional buildings are often a key part of their authenticity.

6 Building Standards and Historic Scotland have shared interests in the sustainable management of the built environment and have worked together on projects such as "Guide for Practitioners 6 – Conversion of Traditional Buildings, Application of the Scottish Building Standards".

7 Listed buildings are buildings of special architectural or historic interest, and conservation areas are areas of special architectural or historic interest the character of which it is desirable to preserve or enhance, both designated under the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.

6.13 Any improvement programme following from the assessment would need to ensure that environmental improvements were undertaken with due consideration to:

- the historic character of a building;
- the materials used in construction and the embodied energy contained in new materials;
- appropriate improvements in management to reduce carbon emissions;
- appropriate building repair and maintenance to limit emissions; and
- recognition that traditional buildings must permit appropriate air circulation.

Q8. Should there be an entirely separate process for historic/traditional buildings to reflect their distinct characteristics, or should the requirements of such buildings be incorporated into a single assessment process which takes account of the characteristics of older buildings?

Q9. Do you agree with the suggested criteria at paragraph 6.13 that should be considered in the assessment of historic/traditional buildings?

Q10. Can you suggest additional assessment criteria and are there other criteria and actions you would like to see included? Are there criteria and actions which you think should be excluded?

Implementation

6.14 It is anticipated that the implementation of such a duty would be phased in gradually through secondary legislation, possibly starting with the largest buildings and coming down in a series of well publicised stages until all non-domestic buildings were covered. The provisions would apply to public buildings, including the Government estate. It is expected that implementation would be done over a number of years, with reappraisal being carried out at regular intervals. Such an approach would help to mitigate the impact of any financial or welfare issues that these proposed measures may have on business and public sector. Broad powers within primary legislation would enable fine-tuning to be addressed through secondary legislation. This would allow opportunities for further engagement with stakeholders and any cost-burden to be minimised.

6.15 Assessments would be targeted at building owners who frequently have complex decisions to make relating to the management of their buildings. It is proposed that building owners could delegate their ACEP responsibilities to others, for example the tenants of buildings. However, it is thought that the decision to accept such delegation should rest with the potential delegate. In this way responsibility would only be accepted when the arrangements are favourable to the person or body which is considering being the delegate. Similar duties already exist for assessment and action plans under disability discrimination and fire safety legislation. Many large companies already have begun the process of sustainability assessments and are likely to present themselves as leaders in this field (e.g. the supermarkets and leading retailers, the banks and major financial institutions). If operational ratings are adopted as well as asset ratings it is appropriate that the person who does the asset rating also completes the operational rating. However, this may cause issues in terms of legislation as responsibility for asset rating is best placed with the building owner, whereas the occupier of a building is in a better position to commission an operational rating.

6.16 The ACEP would operate alongside two key Directives:

a. Energy Performance of Buildings Directive (EPBD) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0091:EN:HTML

and

b. Energy End Use Efficiency and Energy Services Directive (ESD) http://eur-lex europa.eu/LexUriServ/site/en/oj/2006/l_114/l_11420060427en00640085.pdf.

If powers for ACEP were also to include operational ratings, the approach could be consistent with the proposed UK Carbon Reduction Commitment (CRC), with regard to the collection of data for carbon emissions from buildings. http://www.defra.gov.uk/corporate/consult/carbon-reduc/index.htm

Enforcement, contraventions and sanctions

6.17 The panel that produced the *Sullivan Report* has recommended that these ACEP assessments should be checked by local authorities or similar public bodies. Should ACEP be underpinned by an asset rating, then it is appropriate that responsibility for enforcement should rest with local authorities. Such authorities will also have an enforcement role regarding provision of EPCs in terms of the EPBD. However, if ACEP is underpinned by an operational rating, identification of appropriate enforcing bodies becomes less clear. Decisions taken in this regard would be left until the CRC comes into effect.

6.18 Key contraventions could include:

- owners of non-domestic buildings who fail to obtain an ACEP;
- providing false or misleading information in an ACEP; and
- failure to execute work identified in an ACEP.

Contraventions could be dealt with in the first instance through the service of an enforcement notice (failure to comply with such a notice being an offence), or possibly a penalty charge notice.

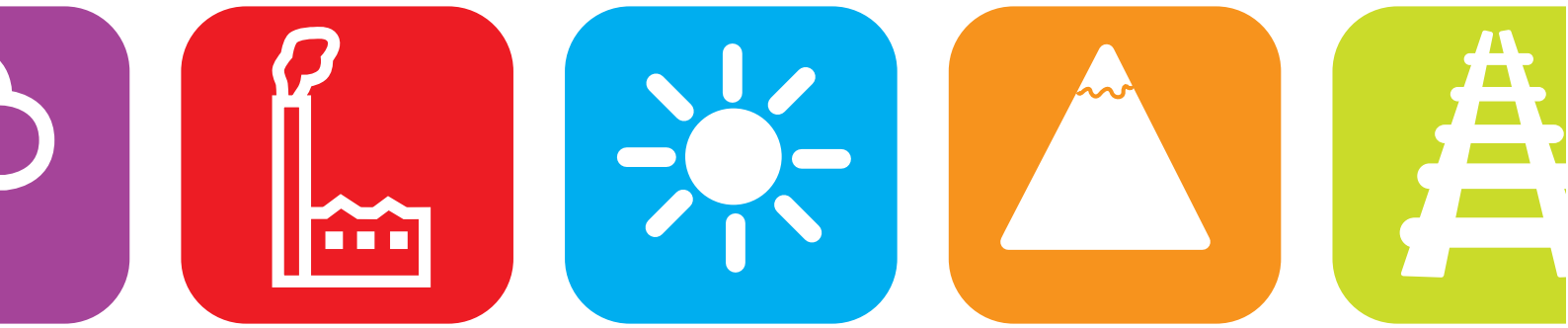
Q11. Should responsibility for enforcement rest with local authorities or should there be some other body? Please offer suggestions for appropriate bodies.

Q12. Should contraventions and sanctions apply along the lines identified above?

Q13. In many instances, the business and public sectors welcome regulation as it creates a level playing field, however, regulation needs to be proportionate and be sensitive to the needs of these sectors. As a tenant or building owner, what impact would these proposals have on you or your business? (Please indicate all positive and negative effects that you perceive may occur as a result of these proposals).

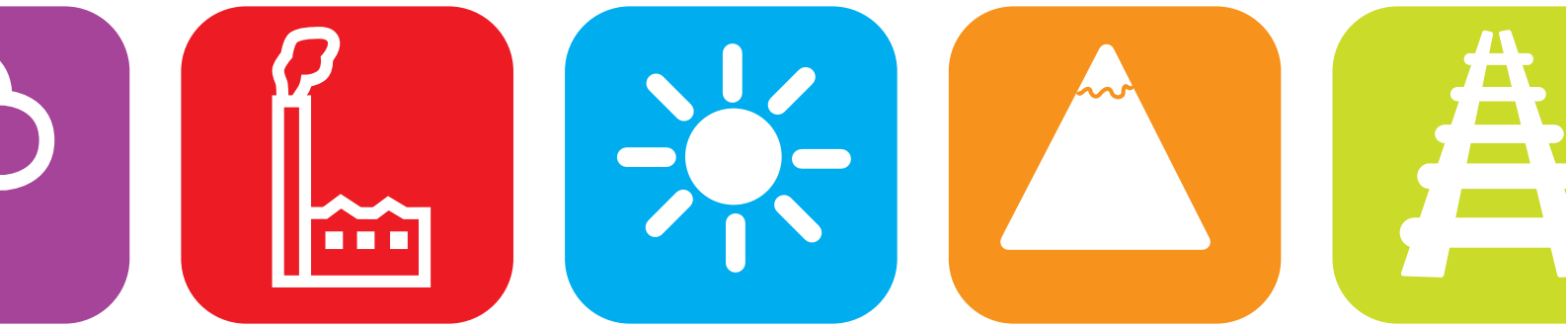
Q14. Do you have other views or issues with the proposals for existing non-domestic buildings, including those that are of historic/traditional nature?

07 STRATEGIC ENVIRONMENTAL ASSESSMENT



7.1 The Environmental Assessment (Scotland) Act 2005 ensures that all public plans, programmes and strategies (including policies) that are likely to result in significant environmental effects, are properly assessed for their impact on the environment. Those public plans, programmes and strategies that are likely to result in significant environmental effects against climatic factors must outline within a mandatory public consultation, measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects. A Strategic Environmental Assessment (SEA) has been conducted on the proposals for a Scottish Climate Change Bill. The SEA Environmental Report is available from http://www.scotland.gov.uk/Publications/2008/02/08142328/0. This Environmental Report also covers the proposals in this consultation.

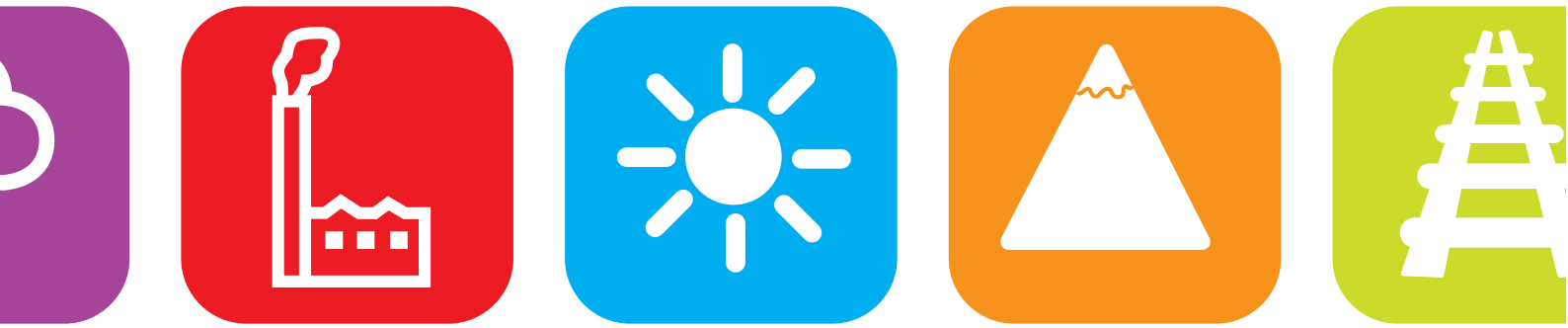
08 EQUALITY IMPACT ASSESSMENT



8.1 An Equality Impact Assessment will be carried out during the final policy development of the Scottish Climate Change Bill. We would like your views on the potential equalities implications of the proposals in this consultation to assist with this assessment.

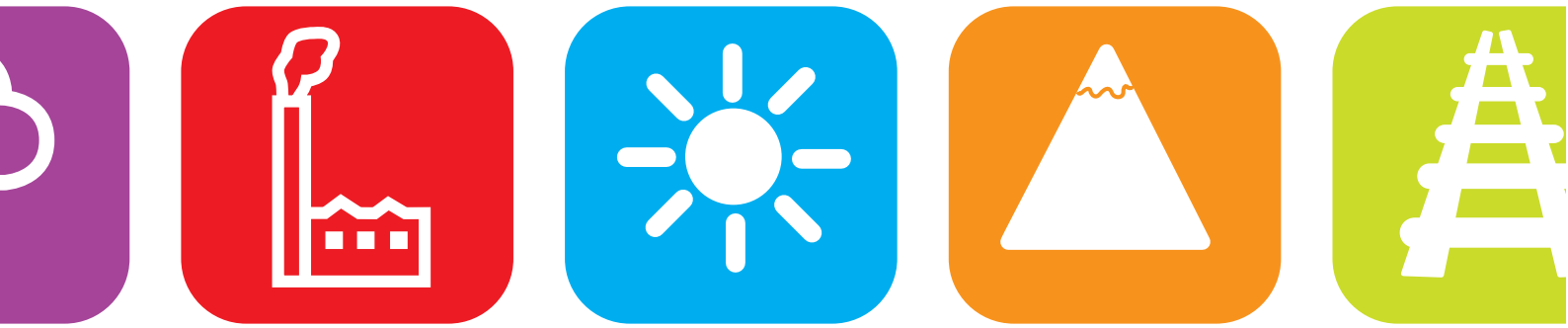
Q15. What are the equalities implications of the measures outlined in this consultation paper?

09 CONCLUSION



9.1 The responsibility of making a change falls to us all and there is already a wide range of initiatives in place to encourage and provide support. However, the challenge which lies ahead is considerable. We need to consider innovative solutions to meet this challenge and act now to start putting in place the long term response that will be needed. This consultation has sought your views on proposals for additional measures to build on the action already being taken by the Scottish Government, local authorities and many businesses. We are ambitious. We want a Scotland where our buildings deliver on climate change goals so that Scotland becomes an exemplar in terms of action on climate change.

10 GLOSSARY AND ABBREVIATIONS FOR USEFUL TERMS



Carbon dioxide (CO_2)

A chemical compound which exists as a gas in the Earth's atmosphere. It is produced by all animals, plants, fungi and micro-organisms during respiration and is used by plants during photosynthesis. Carbon dioxide is also an important greenhouse gas.

Carbon Reduction Commitment (CRC)

The Carbon Reduction Commitment is a scheme, announced in the UK Government's Energy White Paper 2007 which will apply mandatory emissions trading to cut carbon emissions from large commercial and public sector organisations (including supermarkets, hotel chains, government departments, large local authority buildings) by 1.1 MtC/year by 2020.

Climate Change Declaration

Scotland's Climate Change Declaration acknowledges the reality and importance of climate change and is a means of demonstrating local leadership and commitment to action: all of Scotland's 32 local authorities are signatories. The Declaration includes commitments both to mitigate our impact on climate change through reducing greenhouse gas emissions and to adapt to predicted climate change impacts.

Department for Environment, Food and Rural Affairs (DEFRA)

DEFRA is a UK Government Department with the aim to enable everyone in the UK to live within our environmental means. This includes tackling climate change and securing a healthy, resilient, productive and diverse natural environment.

Greenhouse Gas Inventories

The UK Government's Greenhouse Gas Inventory is the means by which the UK's progress towards achieving these targets is assessed by international bodies, as well as providing the formal reporting system for EU and UN reporting requirements.

Office of Fair Trading

The Office of Fair Trading is a non-Ministerial government department established by statute in 1973. They are the UK's consumer and competition authority who are charged with making markets work well for consumers.

Strategic Environmental Assessment (SEA)

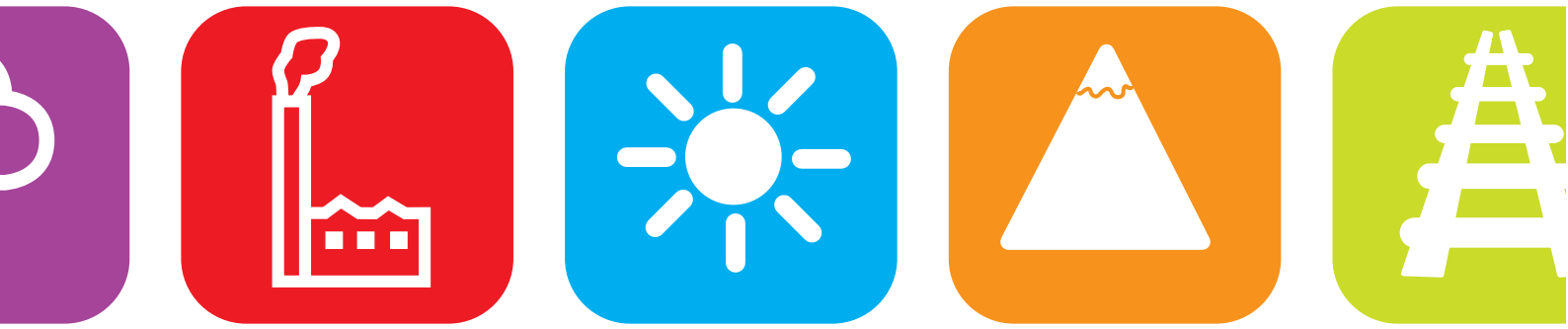
SEA is a systematic assessment (required by the Environmental Assessment (Scotland) Act 2005) of the environmental affects of strategic land use related plans, programs and strategies.

UK Climate Impacts Programme (UKCIP)

UKCIP is funded by the Department for Environment, Food and Rural Affairs on behalf of the UK Government, Scottish Government, Welsh Assembly Government and Northern Ireland Executive. In addition to research, UKCIP provides tools and datasets to support organisations and the public in understanding and adapting to the unavoidable changes in climate.

ANNEX
A

PARTIAL REGULATORY IMPACT ASSESSMENT



ACTION ON CLIMATE CHANGE: PROPOSALS FOR IMPROVING THE ENERGY PERFORMANCE OF EXISTING NON-DOMESTIC BUILDINGS

PURPOSE AND INTENDED EFFECT

Objective

1. The objective is to improve the energy performance of existing buildings as part of the Scottish Government's vision to achieve an 80% reduction in Scotland's carbon dioxide (CO_2) emissions by 2050.

Background – The need for Government intervention

2. As part of its contribution to the international effort required on climate change, the Scottish Government aims to achieve an 80% reduction in Scotland's emissions by 2050. In January this year, it launched a consultation[8] on its proposals for a *Scottish Climate Change Bill*. Allied to this, the *Sullivan Report*[9] includes recommendations to enhance energy standards in building regulations towards the goal of zero-carbon new buildings. However, given that existing buildings will make up the majority of the building stock in 2050 these require further specific measures.

3. The consultation on proposals for a Scottish Climate Change Bill set out the context and background for the Bill which, as well as setting the 2050 target, will establish a supporting framework to drive the emissions reductions necessary to meet it. Those within the Scottish Government, namely Historic Scotland (HS) and Building Standards Division (BSD) with responsibility for legislation and guidance on the existing building stock on behalf of Scottish Ministers, wish to consult on issues relating to the reduction of carbon dioxide emissions from such buildings with a view to potentially including powers in the proposed Bill to take these forward.

4. Requirements to reduce CO_2 emissions and optimise the energy performance of new buildings and new building work are included in Scottish building regulations, but no legislation is currently available to require the improvement of existing buildings. Accordingly, the *Sullivan Report* makes a number of recommendations concerning existing buildings and energy performance certificates (EPCs) for which there could be enabling powers included in the Scottish Climate Change Bill.

8 The consultation on proposals for a Scottish Climate Change Bill can be found on the Scottish Government website at: http://www.scotland.gov.uk/Publications/2008/01/28100005/0

9 A copy of the *Sullivan Report* can be found on the Building Standards Division website at: http://www.sbsa.gov.uk/sullivanreport.htm

5. Certification of the energy performance of buildings (both domestic and non-domestic buildings) based on Asset Ratings (ARs)[10] is being introduced under the Building (Scotland) Act 2003 and the European Communities Act 1972. This is to meet the EU Directive on the Energy Performance of Buildings (EPBD). However, the EPBD does not require that action is taken to improve energy performance, but relies solely on market forces and societal behaviour to promote improvements. Also, certification is only required at the points of sale or rental, and for public buildings with a floor area over 1,000m^2. The EPBD allows energy performance certificates (EPCs) to be based on either an Asset or an Operational Rating (OR),[11] and their lifespan must not exceed 10 years.[12]

6. This RIA considers extending the scope of EPCs through increasing the implementation of cost-effective energy efficiency measures in existing buildings. This is discussed further in the Options section.

CONSULTATION

Within Government

7. There has already been extensive discussion and review of the proposals by the relevant departments in HS and BSD which have responsibility for legislation and guidance on the existing building stock.

Public consultation

8. As part of the formal consultation on proposals for a Scottish Climate Change Bill, the Scottish Government held four workshops with invited stakeholders during February and March this year. Three of these were hosted in partnership with public organisations. All aspects of these workshops including; the presentations, workshop notes for participants, and detailed reports on the views expressed, were recorded and can be found on the Scottish Government website at http://www.scotland.gov.uk/Topics/Environment/Climate-Change/16327/Climate-Change-Bill/SCCBConsultation.

9. The public consultation on the Bill closed on 23rd April and the intention is to publish an analysis of the responses, and the responses themselves, in the summer of 2008.

10 An Asset Rating is a calculated rating based on standard weather data and building use. It is similar in principle to "typical use" consumption figures for cars and is useful when comparing two buildings with different users, i.e. provides like-for-like figures. This is not only useful for potential owners and occupiers of buildings, but also has the ability to drive those who invest in buildings, the building owners, to spend money on carbon reducing fabric and services.

11 An Operational Rating is based on measured energy use. It takes account of how the building is used and managed and is useful for energy managers of the building because it includes factors they control. It has the scope to drive those who manage buildings to deliver carbon savings from the equipment already installed.

12 Further details on EPCs can be found on the Building Standards Division website at: http://www.sbsa.gov.uk/epc.htm

10. Responses to the proposals in this public consultation to improve the energy performance of existing buildings can be provided by way of answers to the specific questions posed in the main consultation document. As with the Scottish Climate Change Bill responses these will be made available following conclusion of the analysis of responses.

OPTIONS

Overview

11. The *Sullivan Report* includes a number of recommendations concerning EPCs for non-domestic buildings for which there could be enabling powers included in the Scottish Climate Change Bill and which are described in the main consultation document.

12. Ostensibly they involve the need for building owners or persons delegated by the owners to obtain an Assessment of the Carbon and Energy Performance (ACEP) of their building. Following such an assessment, they could be required to develop a programme of cost-effective improvements to reduce carbon emissions and improve energy performance, and thereafter carry out any necessary improvements.

13. Improvement measures might include insulation, equipment efficiency and equipment controls, as they are generally cost-effective at present. However, as new technologies become cost-effective, the use of low and zero carbon equipment, including micro-renewables, could be adopted as part of a programme. Such a programme of improvements would be specific to each building and there would need to be sufficient flexibility to ensure that historic buildings are treated with the respect they deserve so their character and structure are not compromised. Issues pertinent to historic buildings are discussed further elsewhere in the consultation documentation.

14. There is already support available both in the form of finance and guidance that would be affected by these proposals which are described in the main consultation document. These can be used to help implement energy efficiency measures. In the non-domestic/business sector there are advice services, guidance and on-site energy audits together with interest free loans for Small and Medium Enterprises (SME) and some public sector organisations to install energy efficiency measures.

15. The options considered for the non-domestic sector have already been outlined in the main consultation document but are presented in more detail below. They extend from the 'do nothing' baseline (i.e. implementation of EPCs as required through the EPBD) to seven options of increasing scope with respect to the number of buildings addressed as well as their approach (i.e. from voluntary to mandatory). The impacts of each option are presented for non-domestic buildings.

16. This section outlines the options for extending requirements for existing buildings beyond the minimum level required to meet the EPBD for Scotland as outlined in the main consultation document which have been explicitly considered here. It also describes the assumptions made and the data sources used in assessing the costs and benefits. The approach adopted uses non-domestic stock models with broad corrections made to allow for the proportion of historic buildings (estimated using data from HS). The approach and assumptions were also checked for consistency with previous RIAs in support of the implementation of the certification requirements (Article 7) of the EPBD in both Scotland, and England and Wales.

17. As this is a strategic assessment exercise it considers a significant number of different options using a simplified modelling procedure which may not fully reflect the way in which the options might be implemented in practice. Therefore, more detailed assessment of options which are to be taken forward for further consideration will be undertaken. It is important at this stage to consider these eight options as scenarios.

Options for the Non-domestic Sector

Option 0 - Base case

EPC on sale or rent for all buildings and for larger public buildings frequently visited by the public

18. For the base case it is assumed that EPCs based on asset rating calculations will be required for non-domestic buildings on sale or rent, and all public sector buildings over 1,000m^2 which are frequently visited by the public. The EPC shall be no more than 10 years old. Further these EPCs will be accompanied by a list of recommendations relating to cost effective improvements[13] to the building envelope and services, and that this will lead to a typical potential reduction in annual energy consumption of 10% if they were implemented.[14] For historic buildings some cost effective measures may not be feasible, so here it is assumed that the recommendations will identify measures that would lead to a 5% reduction in energy consumption.

19. As uptake of these measures is voluntary it is assumed that only 10% of these savings will be realised by occupiers acting on the recommendations and that the typical payback period for measures implemented will be 4 years, and that the savings will persist for 10 years although in practice the savings will still accrue beyond 10 years.

13 Cost effectiveness has been defined in terms of simple payback; a typical payback period of 4 years has been applied to this option.

14 These energy savings are based on the known potential for energy savings across the UK stock of existing buildings which relates to improvement to the building envelope and to the heating, lighting and cooling systems, i.e. the areas/aspects of energy consumption that are addressed by EPCs.

Option 1

ACEP on sale or rent for all buildings and for larger public buildings frequently visited by the public **with additional guidance to promote uptake of recommendations**

20. Here, further to Option 0, additional guidance material is provided to promote the uptake of recommendations for all buildings. Here it has been assumed that ongoing costs to government for providing additional guidance is £250k per year. This is a nominal figure and it is envisaged that this guidance will supplement existing sources perhaps by providing a coherent framework through which to channel the advice and plugging any gaps in the current guidance.

21. It is assumed that if the additional guidance can be made sufficiently comprehensive, it will lead to a doubling in the rate of uptake of recommendations compared to Option 0, to 20%.[15, 16] As with Option 0, it has been assumed that the average payback period will be 4 years across the measures implemented.

Option 2

ACEP on sale or rent for all buildings and **all large buildings** with additional guidance to promote uptake of recommendations **and an increase in the frequency of certification**

22. This option extends the requirement for carrying out asset rating on larger public buildings to all large buildings, which will increase the number of ACEPs required. Also, for the buildings where energy certificates are required they will need to be no older than 5 years, which will increase the rate at which energy savings arising from the uptake of recommendations will be made.

Option 3

ACEP on sale or rent for all buildings and **for larger public buildings frequently visited by the public** with additional guidance, an increase in the frequency of certification, and **compulsory uptake of recommendations**

15 This is in line with the RIA in support of implementing EPCs in England and Wales.

16 "Reducing carbon emissions from commercial and public sector buildings in the UK". BRE Report for DEFRA, ref CR 211 104, 2005.

23. This option extends the scope of savings by requiring compulsory rather than voluntary uptake of the measures in the recommendations report. The coverage of buildings is the same as for Option 1, in that it only applies to larger public buildings or those on sale or rent. It has been assumed that there may be legitimate reasons why not all the recommendations will be taken up, so here it has been assumed that 75% will be taken up under this regime. Additional costs associated with publicising this requirement are estimated at £125k and enforcement costs to the government are estimated at 5% of the cost of generating an ACEP for these premises. And, although it is assumed that the savings required are still cost effective, it has been assumed that the average payback for these measures is 7 years.[17] As well as additional costs for the government there will be additional costs to the building owner to implement the measures but supplementary carbon and cost savings will arise from reduced energy consumption.

Option 4

ACEP on sale or rent for all buildings and **for all large buildings** with additional guidance, an increase in the frequency of certification, and compulsory uptake of recommendations

24. For the non-domestic sector this option extends the requirement to carry out ACEPs on larger public sector buildings that are visited by the public to all non-domestic buildings. This will increase the number of certificates required for the sector and the associated costs and savings, particularly in earlier years.

Option 5

ACEP on sale or rent for all buildings and **for all buildings** with additional guidance, an increase in the frequency of certification, and compulsory uptake of recommendations

25. For the non-domestic sector this option extends the requirement to carry out ACEPs on larger buildings to all non-domestic buildings. This will increase the number of certificates required for this sector and the associated costs and savings, particularly in earlier years.

17 The typical payback time is likely to be longer as it will require measures which are close to the cost effective limit in addition to measures which have shorter payback periods and which are more likely to be taken up voluntarily.

Option 6

ACEP and operational rating on sale or rent and for larger public buildings frequently visited by the public

26. This it the same as Option 0 except that at the same time that the asset rating is produced an operational rating will also be provided. The operational rating will, in additional to providing information on the actual fuel consumption costs, give tailored advice on energy management and energy efficient equipment, and that additional energy savings would be realised through the uptake of this advice.

27. The additional cost associated with providing an operational rating is assumed to be zero for buildings which are covered by the Carbon Reduction Commitment (CRC)[18] (as they will already be required to report carbon emissions and so have collected the relevant information) and £325 for larger buildings and £50[19] for small buildings which are not covered by the CRC. These costs assume that the person who does the asset rating also completes the operational rating. This may cause issues in terms of legislation as responsibility for asset rating is best placed with the building owner, whereas the occupier of a building is in a better position to commission an operational rating.

28. It is assumed that the recommendations will identify measures which lead to an additional 10% reduction in energy consumption,[20] or a 5% reduction for those covered by the CRC. Further, the operational rating and advice will prompt building occupiers to realise 10% of the potential operational savings. As the additional recommendations associated with the operational rating are likely to be low or no cost measures, a 2 year payback is assumed for any savings arising from the operational rating recommendations.

Option 7

ACEP and operational rating on sale or rent and for larger public buildings frequently visited by the public with additional guidance

29. This option provides additional guidance in relation to both the asset rating and operational advice. Essentially it is the same as Option 1, but with operational ratings carried out at the same time as the asset rating. The cost associated with the operational ratings are the same as those for Option 6, but the additional savings will ultimately be dependant on the quality of the guidance.

18 This covers public and commercial sector organisations with half hourly metering and an annual energy consumption of over 30,000 GWh.

19 BRE estimate.

20 These additional savings are assumed to come from improved operational practices and from the use of more efficient energy using equipment such as computers and printers.

Summary of non-domestic Options

30. The Options that have been considered here are summarised in the following table.

Option	Non-domestic Building Stock Coverage				Additional Options			
	Sale or Rent	Existing Buildings						
	All	Large Public Buildings	All Large Buildings	All Buildings	Additional Guidance	Frequency of Rating (Years)	Compulsory Uptake	Operational Rating
0	•	•				10		
1	•		•		•	10		
2	•			•	•	5		
3	•	•			•	5	•	
4	•		•		•	5	•	
5	•			•	•	5	•	
6	•	•				10		•
7	•		•		•	10		•

COSTS AND BENEFITS

Sectors and groups affected

31. The sectors and groups affected by the proposals are government, building owners, and local authorities as discussed in the Options section.

Results

32. The costs and benefits associated with each of the options described above have been calculated assuming that the policy is put in place in 2009 and remains until 2020 and include costs incurred by Government and building owners over those years. However savings arising from additional energy saving actions taken within that time period will persist beyond the 2020 and these have been taken into account by assuming that energy savings will typically persist for 10 years.[21] All monetary costs and benefits have been discounted at 3.5% in order to calculate the Net Present Value (NPV) of each of the options.

21 In practice the persistence will vary depending on the mix of measures implemented, but such detailed analysis is beyond the scope of this strategic study and so this figure has been chosen to represent a mix of long term measures (e.g. fabric insulation) and more short term measures (e.g. more efficient lamps).

33. The fuel prices and carbon emission factors used to generate the monetary and carbon savings are in the following table.

	Non-domestic sector	
	Small	Large
pence/kWh Electricity	7.00	5.50
pence/kWh Fossil	3.00	2.25
$kgCO_2$/kWh Electricity	0.43	
$kgCO_2$/kWh Fossil Fuel	0.21	

Costs and Benefits for Option 0 for Non-domestic Buildings

Non-domestic		Government	Building Owner	Total
Costs	One-off Costs - £M	£0.3	£-	£0.3
	Average Annual Cost - £M pa	£0.3	£8.0	£8.3
	Lifetime Costs - £M	£3.3	£95.7	£99.0
	Present Value of Costs - £M	-£2.8	-£79.3	-£82.1
Benefits	Average Annual Energy Savings - £M pa	£-	£4.9	£4.9
	Lifetime Energy Savings - £M	£-	£107.1	£107.1
	Present Value of Energy Savings - £M	£-	£74.7	£74.7
	Average Annual CO_2 saved - $MTCO_2$ pa	-	0.04	0.04
	Annual CO_2 saved in 2020 - $MTCO_2$ pa	-	0.07	0.07
	Lifetime annual CO_2 saved - $MTCO_2$	-	0.80	0.80
Cost Effectiveness	Net Present Value of Package - £M	-£2.8	-£4.6	-£7.4
	Net Present Value per tonne CO_2 saved - £/tCO_2	£-	-£5.8	-£9.2
	Present Value of benefits from CO_2 saved - £M	£-	£14.9	£14.9

Costs and Benefits for Option 1 for Non-domestic Buildings

Non-domestic		Government	Building Owner	Total
Costs	One-off Costs - £M	£0.5	£-	£0.5
	Average Annual Cost - £M pa	£0.5	£11.2	£11.8
	Lifetime Costs - £M	£6.5	£134.7	£141.2
	Present Value of Costs - £M	-£5.5	-£111.5	-£117.0
Benefits	Average Annual Energy Savings - £M pa	£-	£9.7	£9.7
	Lifetime Energy Savings - £M	£-	£214.2	£214.2
	Present Value of Energy Savings - £M	£-	£149.4	£149.4
	Average Annual CO_2 saved - $MTCO_2$ pa	-	0.07	0.07
	Annual CO_2 saved in 2020 - $MTCO_2$ pa	-	0.13	0.13
	Lifetime annual CO_2 saved - $MTCO_2$	-	1.60	1.60
Cost Effectiveness	Net Present Value of Package - £M	-£5.5	£37.8	£32.3
	Net Present Value per tonne CO_2 saved - £/tCO_2	£-	£23.7	£20.3
	Present Value of benefits from CO_2 saved - £M	£-	£29.7	£29.7

Costs and Benefits for Option 2 for Non-domestic Buildings

Non-domestic		Government	Building Owner	Total
Costs	One-off Costs - £M	£0.5	£-	£0.5
	Average Annual Cost - £M pa	£0.5	£13.7	£14.3
	Lifetime Costs - £M	£6.5	£164.9	£171.5
	Present Value of Costs - £M	-£5.5	-£136.6	-£142.1
Benefits	Average Annual Energy Savings - £M pa	£-	£12.7	£12.7
	Lifetime Energy Savings - £M	£-	£280.2	£280.2
	Present Value of Energy Savings - £M	£-	£195.4	£195.4
	Average Annual CO_2 saved - $MTCO_2$ pa	-	0.10	0.10
	Annual CO_2 saved in 2020 - $MTCO_2$ pa	-	0.18	0.18
	Lifetime annual CO_2 saved - $MTCO_2$	-	2.12	2.12
Cost Effectiveness	Net Present Value of Package - £M	-£5.5	£58.8	£53.3
	Net Present Value per tonne CO_2 saved - £/tCO_2	£-	£27.8	£25.2
	Present Value of benefits from CO_2 saved - £M	£-	£39.5	£39.5

Costs and Benefits for Option 3 for Non-domestic Buildings

Non-domestic		Government	Building Owner	Total
Costs	One-off Costs - £M	£0.6	£-	£0.6
	Average Annual Cost - £M pa	£1.0	£71.0	£72.0
	Lifetime Costs - £M	£8.5	£851.8	£860.2
	Present Value of Costs - £M	-£7.2	-£705.5	-£712.7
Benefits	Average Annual Energy Savings - £M pa	£-	£25.7	£25.7
	Lifetime Energy Savings - £M	£-	£565.8	£565.8
	Present Value of Energy Savings - £M	£-	£454.0	£454.0
	Average Annual CO_2 saved - $MTCO_2$ pa	-	0.19	0.19
	Annual CO_2 saved in 2020 - $MTCO_2$ pa	-	0.41	0.41
	Lifetime annual CO_2 saved - $MTCO_2$	-	4.21	4.21
Cost Effectiveness	Net Present Value of Package - £M	-£7.2	-£251.5	-£258.7
	Net Present Value per tonne CO_2 saved - £/tCO_2	£-	-£59.7	-£61.4
	Present Value of benefits from CO_2 saved - £M	£-	£86.9	£86.9

Costs and Benefits for Option 4 for Non-domestic Buildings

Non-domestic		Government	Building Owner	Total
Costs	One-off Costs - £M	£0.6	£-	£0.6
	Average Annual Cost - £M pa	£2.2	£91.5	£93.6
	Lifetime Costs - £M	£9.7	£1,097.5	£1,107.1
	Present Value of Costs - £M	-£8.4	-£909.0	-£917.4
Benefits	Average Annual Energy Savings - £M pa	£-	£33.6	£33.6
	Lifetime Energy Savings - £M	£-	£740.2	£740.2
	Present Value of Energy Savings - £M	£-	£594.0	£594.0
	Average Annual CO_2 saved - $MTCO_2$ pa	-	0.25	0.25
	Annual CO_2 saved in 2020 - $MTCO_2$ pa	-	0.54	0.54
	Lifetime annual CO_2 saved - $MTCO_2$	-	5.60	5.60
Cost Effectiveness	Net Present Value of Package - £M	-£8.4	-£315.0	-£323.4
	Net Present Value per tonne CO_2 saved - £/tCO_2	£-	-£56.3	-£57.8
	Present Value of benefits from CO_2 saved - £M	£-	£115.4	£115.4

Costs and Benefits for Option 5 for Non-domestic Buildings

Non-domestic		Government	Building Owner	Total
Costs	One-off Costs - £M	£0.6	£-	£0.6
	Average Annual Cost - £M pa	£12.4	£92.4	£104.8
	Lifetime Costs - £M	£19.9	£1,108.9	£1,128.8
	Present Value of Costs - £M	-£18.6	-£918.5	-£937.1
Benefits	Average Annual Energy Savings - £M pa	£-	£34.0	£34.0
	Lifetime Energy Savings - £M	£-	£747.4	£747.4
	Present Value of Energy Savings - £M	£-	£599.7	£599.7
	Average Annual CO_2 saved - $MTCO_2$ pa	-	0.26	0.26
	Annual CO_2 saved in 2020 - $MTCO_2$ pa	-	0.55	0.55
	Lifetime annual CO_2 saved - $MTCO_2$	-	5.64	5.64
Cost Effectiveness	Net Present Value of Package - £M	-£18.6	-£318.8	-£337.4
	Net Present Value per tonne CO_2 saved - £/tCO_2	£-	-£56.5	-£59.8
	Present Value of benefits from CO_2 saved - £M	£-	£116.4	£116.4

Costs and Benefits for Option 6 for Non-domestic Buildings

Non-domestic		Government	Building Owner	Total
Costs	One-off Costs - £M	£0.3	£-	£0.3
	Average Annual Cost - £M pa	£0.3	£8.8	£9.1
	Lifetime Costs - £M	£3.3	£105.4	£108.7
	Present Value of Costs - £M	-£2.8	-£87.3	-£90.1
Benefits	Average Annual Energy Savings - £M pa	£-	£10.2	£10.2
	Lifetime Energy Savings - £M	£-	£224.0	£224.0
	Present Value of Energy Savings - £M	£-	£156.2	£156.2
	Average Annual CO_2 saved - $MTCO_2$ pa	-	0.08	0.08
	Annual CO_2 saved in 2020 - $MTCO_2$ pa	-	0.14	0.14
	Lifetime annual CO_2 saved - $MTCO_2$	-	1.65	1.65
Cost Effectiveness	Net Present Value of Package - £M	-£2.8	£68.9	£66.1
	Net Present Value per tonne CO_2 saved - £/tCO_2	£-	£41.6	£40.0
	Present Value of benefits from CO_2 saved - £M	£-	£30.9	£30.9

Costs and Benefits for Option 7 for Non-domestic Buildings

Non-domestic		Government	Building Owner	Total
Costs	One-off Costs - £M	£0.5	£-	£0.5
	Average Annual Cost - £M pa	£0.5	£12.0	£12.6
	Lifetime Costs - £M	£6.5	£144.4	£150.9
	Present Value of Costs - £M	-£5.5	-£119.6	-£125.1
Benefits	Average Annual Energy Savings - £M pa	£-	£15.0	£15.0
	Lifetime Energy Savings - £M	£-	£331.1	£331.1
	Present Value of Energy Savings - £M	£-	£230.9	£230.9
	Average Annual CO_2 saved - $MTCO_2$ pa	-	0.11	0.11
	Annual CO_2 saved in 2020 - $MTCO_2$ pa	-	0.20	0.20
	Lifetime annual CO_2 saved - $MTCO_2$	-	2.45	2.45
Cost Effectiveness	Net Present Value of Package - £M	-£5.5	£111.3	£105.8
	Net Present Value per tonne CO_2 saved - £/tCO_2	£-	£45.4	£43.2
	Present Value of benefits from CO_2 saved - £M	£-	£45.7	£45.7

SMALL/MICRO FIRMS' IMPACT TEST

34. A Small Firms' Impact Test (SFIT) has not been undertaken at this stage given that this is a partial RIA and proposals are still subject to further development. However, as the proposals are firmed up they will be subject to a SFIT with a focus on SMEs representative of the affected sectors and groups.

LEGAL AID IMPACT TEST

35. It is too early at this stage to undertake the legal aid impact test. This will be undertaken should the proposals be further developed.

'TEST RUN' OF BUSINESS FORMS

36. This will be brought forward as part of subsequent RIAs, if proposals are further developed.

COMPETITION ASSESSMENT

37. The impact of these proposals on competition has been reviewed using Office of Fair Trading guidance and it is felt that it would not have any adverse impact on the relevant markets in terms of limiting the number of suppliers, limiting the ability of suppliers to compete and reducing incentives for suppliers to compete vigorously.

ENFORCEMENT, SANCTIONS AND MONITORING

38. Enforcement is discussed in the main consultation document which proposed that ACEP assessments would be the responsibility of the local authorities or similar public bodies as they also have an enforcement role regarding provision of EPCs in terms of the EPBD. Contraventions should be dealt with in the first instance through the service of an enforcement notice (failure to comply with such a notice being an offence).

39. Monitoring will depend ultimately on the arrangements for enforcing legislation.

IMPLEMENTATION AND DELIVERY PLAN

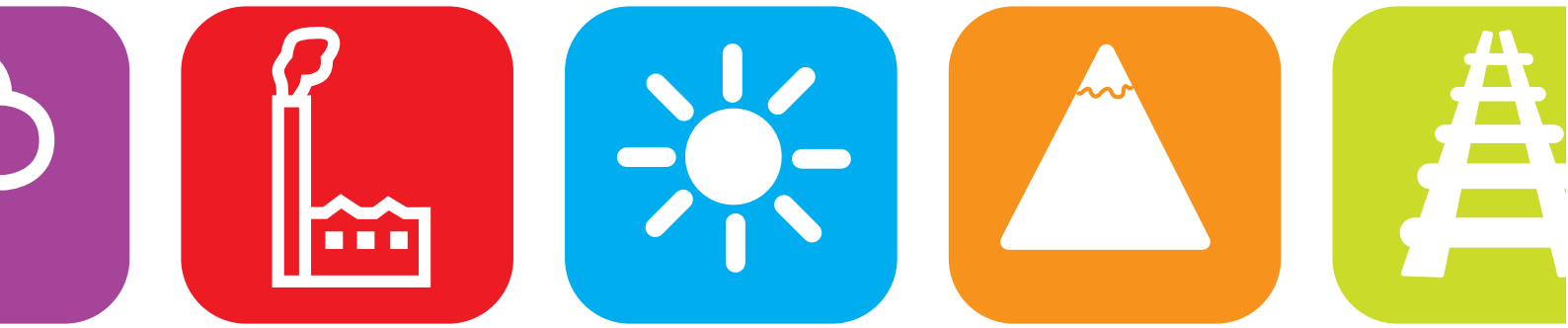
40. This will be identified in subsequent RIAs as proposals develop.

SUMMARY

41. The total carbon savings as well as the overall cost-effectiveness of each of the Options in the two sectors considered are summarised in the table below.

Sector	Option	NPV £M	CO_2 saved in 2020 $MTCO_2$ pa	Lifetime CO_2 saved $MTCO_2$
Non-domestic	Option 0	-£7	0.07	0.80
	Option 1	£32	0.13	1.60
	Option 2	£53	0.18	2.12
	Option 3	-£259	0.41	4.21
	Option 4	-£323	0.54	5.60
	Option 5	-£337	0.55	5.64
	Option 6	£66	0.14	1.65
	Option 7	£106	0.20	2.45

ANNEX B QUESTIONNAIRE



QUESTIONNAIRE

Q1. Can we achieve the significant carbon emission reductions we need from non-domestic buildings by relying on the current measures and support available?

Yes ☐

No ☐

Comments: _____

Q2. Do you agree that we should seek to use a holistic approach to carbon assessment for the built environment when such methodologies are available?

Yes ☐

No ☐

Comments: _____

Q3. How should we measure and account for our efforts in so far as they reduce indirect emissions?

Comments: _____

Q4. Should Scottish Ministers take powers that place a statutory duty on the owners, or persons delegated by the owners of non-domestic buildings, to carry out an Assessment of Carbon and Energy Performance (ACEP) other than when a building is sold or rented out?

Yes ☐

No ☐

Comments: _____

Q5. Should Scottish Ministers be able to vary the time intervals between EPCs as a part of ACEPs?

Yes ☐

No ☐

Comments: _____

Q6. Should it be mandatory for cost-effective improvements identified within the ACEP to be actioned by the owners, or persons delegated by the building owners, or should action be at the discretion of building owners?

Yes ☐

No ☐

Comments: _____

Q7. Should consideration be given to extending legislation to include a requirement for operational ratings, as well as asset based ratings? If yes, should provision be made for sub-metering?

Yes ☐

No ☐

Comments: _____

Q8. Should there be an entirely separate process for historic/traditional buildings to reflect their distinct characteristics, or should the requirements of such buildings be incorporated into a single assessment process which takes account of the characteristics of older buildings?

Yes ☐

No ☐

Comments: _____

Q9. Do you agree with the suggested criteria at paragraph 6.13 that should be considered in the assessment of historic/traditional buildings?

Yes ☐

No ☐

Comments: _____

Q10. Can you suggest additional assessment criteria and are there other criteria and actions you would like to see included? Are there criteria and actions which you think should be excluded?

Comments: _____

Q11. Should responsibility for enforcement rest with local authorities or should there be some other body? Please offer suggestions for appropriate bodies.

Yes ☐

No ☐

Comments: _____

Q12. Should contraventions and sanctions apply along the lines identified above?

Yes ☐

No ☐

Comments: _____

Q13. In many instances, the business and public sectors welcome regulation as it creates a level playing field, however, regulation needs to be proportionate and be sensitive to the needs of these sectors. As a tenant or building owner, what impact would these proposals have on you or your business? (Please indicate all positive and negative effects that you perceive may occur as a result of these proposals).

Comments: _____

Q14. Do you have other views or issues with the proposals for existing non-domestic buildings, including those that are of historic/traditional nature?

Comments: _____

Q15. What are the equalities implications of the measures outlined in this consultation paper?

Comments: _____

This document is also available on the Scottish Government website:
www.scotland.gov.uk

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