

Review of The Building (Scotland) Regulations 2004 and accompanying standards and guidance for Section 6: Energy of the Technical Handbooks - Consultation date: 14 January 2013

FINAL BUSINESS AND REGULATORY IMPACT ASSESSMENT

2012/47

Reducing Carbon Dioxide Emissions and Energy Demand – Review of The Building (Scotland) Regulations 2004 and accompanying standards and guidance for Section 6: Energy of the Technical Handbooks

Building Standards Division

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1.0 TITLE OF PROPOSAL

Reducing Carbon Dioxide Emissions and Energy Demand – Review of The Building (Scotland) Regulations 2004 and accompanying standards and guidance for Section 6: Energy of the Technical Handbooks.

2.0 PURPOSE AND INTENDED EFFECT

2.1 Background

The Building (Scotland) Regulations 2004 (as amended) set minimum energy standards applicable to the construction of new buildings and where building work is carried out to existing buildings. Regulation 3 identifies the range of buildings to which the regulations do not apply. Where regulations apply, regulation 5 identifies both the need to comply with current standards and also where a building warrant is required before commencing work. Regulation 9 sets out the functional standards applicable to construction, including standards 6.1 to 6.10 which address the carbon and energy performance of buildings.

Over recent years, staged improvements in energy standards within building regulations have been introduced in 2002, 2007 and, most recently, in 2010. These standards are delivered through amendment of the functional standards and technical guidance on energy within the Building (Scotland) Regulations 2004 and Section 6 (energy) of the supporting Technical Handbooks.

Following the 2007 changes to energy standards, Scottish Ministers appointed an expert panel to review the way forward if buildings are to continue to contribute positively to Scottish and UK targets to reduce CO₂ emissions and respond to the risk posed by Climate Change. The recommendations of this expert panel were published in December 2007 as The Sullivan Report – ‘A Low Carbon Building Standards Strategy for Scotland’¹.

This report made a range of recommendations to reduce carbon dioxide emissions from new and existing buildings. A key recommendation was the staged improvement of energy standards for new buildings, where the following proposals were made:

- for 2010, a reduction in CO₂ emissions, from 2007 levels, of 30% for domestic buildings and 50% for non-domestic buildings;
- for 2013, a reduction in CO₂ emissions, from 2007 levels, of 60% for domestic buildings and 75% for non-domestic buildings;
- delivery, in 2016/17 of net zero carbon buildings (emissions from heating, hot water, lighting and ventilation), if practicable,
- the aspiration of total life zero carbon buildings by 2030.

Following investigation into Sullivan recommendations for 2010 building standards, challenging new targets for limiting carbon emissions were introduced in October 2010. These deliver a 30% reduction in CO₂ emissions for both new domestic and non-domestic buildings, compared to 2007 levels, and broadly equivalent improvement in the energy performance of building works undertaken in existing buildings.

¹<http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/about/sullivanreport>

In November 2011, Scottish Ministers convened a Working Group to investigate the potential for further improvement in energy standards based upon those recommended for 2013 by the Sullivan Report. Research was commissioned to investigate the costs and benefits associated with further emissions reductions, of up to a 60% reduction in CO₂ emissions for domestic buildings and a 75 % reduction in CO₂ emissions for non-domestic buildings, again compared to 2007 levels.

2.2 Objective

The aim of these proposals is to investigate the potential for amendment of energy standards set by building regulations to contribute to the Scottish Government's Climate Change Programme. This would be achieved through the introduction of revised standards and guidance to reduce carbon dioxide emissions and improve energy performance of new buildings and new building work, where such work is subject to building regulations.

In achieving the above, the following objectives are identified:

- To deliver levels of performance in new buildings and from new building work to existing buildings which results in buildings which have lower CO₂ emissions and are more economical to operate due to a reduced energy demand for heating, hot water, lighting, ventilation and other fixed services.
- To encourage the development and uptake of low carbon construction solutions, including improved building fabric insulation, efficient building services with effective controls and incorporation of building-integrated low carbon equipment (LCE). All of these solutions will further the delivery of buildings with lower carbon dioxide emissions and energy demand.

2.3 Rationale for Government Intervention

"The Stern review highlighted that there is now an overwhelming body of scientific evidence showing that climate change is a serious and urgent issue. More than 40% of Scotland's carbon dioxide emissions, a major cause of climate change, come from the energy we use to heat, light and run our buildings. So it is vital to ensure that new buildings are built in a way that minimises these harmful emissions and that existing buildings are improved and refurbished so that their use results in lower carbon emissions" – The Sullivan Report.

The Scottish Government is committed to reducing CO₂ and other greenhouse gas emissions. The Climate Change (Scotland) Act 2009² introduced the most ambitious climate change legislation anywhere in the world. The Scottish Government's Climate Change Delivery Plan³ sets out how the statutory emission targets which lie at the heart of the Act will be achieved. The Act commits Scotland to reduce emissions by at least 80% from 1990 levels by 2050, with an interim emissions reduction target of at least 42% by 2020. If such levels of reduction are to be realised, measures must be taken across all sectors which contribute significantly to national CO₂ emissions.

² http://www.opsi.gov.uk/legislation/scotland/acts2009/pdf/asp_20090012_en.pdf

³ <http://www.scotland.gov.uk/Resource/Doc/276032/0082887.pdf>

In October 2010, the Scottish Government also published an energy efficiency action plan – ‘Conserve and Save: Energy Efficiency Action Plan’⁴. This document reaffirms the ambitious energy efficiency and microgeneration agenda for Scotland and is a key component of the broader approach to meeting Scotland's climate change targets and securing Scotland's transition to a low carbon economy. Chapter 5 of the document identifies actions to achieve energy efficiency through building standards.

The recast of Directive 2002/91/EC on the Energy Performance of Buildings as Directive 2010/31/EU on 19 May 2010 maintains specific requirements which are addressed through building regulations. These include: the requirement to set minimum energy performance requirements for buildings (Article 4); the use of a national methodology for calculating energy performance (Article 3); the setting of standards for new buildings (Article 6), existing buildings (Article 7), and fixed building services (technical building systems, Article 8); and the provision of energy performance certificates on construction of new buildings (Article 11).

Additionally, Article 9 of the recast Directive introduces a new requirement that, after 31 December 2018, new buildings occupied and owned by public authorities are to be nearly zero-energy buildings and, by 31 December 2020, all new buildings are to be nearly zero-energy buildings. In consultation on proposals to transpose the recast Directive⁵, it was noted that the provisions of Article 9 will be achieved through programmed review of energy standards within building regulations.

These proposals will contribute to the Scottish Government's Greener and Healthier Strategic Objectives. In particular, it will impact on the following National Outcomes:

- We reduce the local and global environmental impact of our consumption and productions; and
- We live in well-designed, sustainable places where we are able to access the amenities and services we need.

Building Regulations

Scottish building regulations address the health, safety and welfare of persons in and around buildings and further both the conservation of fuel and power and the achievement of sustainable development. Building regulations set minimum standards for new buildings and where existing buildings are altered, extended or converted. Whilst buildings can be designed and built to higher standards, in the majority of cases, the mandatory minimum standards set through building regulations are adopted. Accordingly, it is important that these minimum standards are robust enough to address both the needs of Scotland's people and to support the wider policy objective of addressing Climate Change.

⁴ <http://www.scotland.gov.uk/Publications/2010/10/07142301/0>

⁵ Energy Performance of Buildings (Recast) - Scottish Government Response - <http://www.scotland.gov.uk/Resource/0039/00396545.pdf>

Experience has shown that voluntary 'best practice' measures cannot be relied upon to deliver CO₂ reductions in the development of buildings except in situations where market forces either do not apply, or are moderated by additional conditions of development. For Government to reduce CO₂ emissions from the use of new buildings and from new building work, national energy standards have to be set at a sufficiently demanding level. Scottish Ministers have therefore committed to periodic review of these standards.

In addition to review in support of Scottish Government commitments, Directive 2010/31/EU on the Energy Performance of Buildings imposes a duty to review energy standards. Article 4 requires Member States to ensure that "minimum energy performance requirements shall be reviewed at regular intervals which shall not be longer than five years and, if necessary, shall be updated in order to reflect technical progress in the building sector".

2.4 The Risks to be addressed

The action proposed within this review is the reduction of carbon dioxide emissions from new building and new building work, to assist in the mitigation of Climate Change. Accordingly, the effect of building-related greenhouse gas emissions on Climate Change is the primary risk identified.

The reduction of CO₂ emissions from new development continues to be an essential element in the development of the Scottish and UK Governments' Climate Change Programme. Failure to achieve improvements to energy standards for new buildings and new building work will have an adverse effect on these programmes.

In addressing this primary risk, there are subsidiary risks that must also be considered. Minimum energy standards applicable to new buildings should still:

- be proposed with an understanding of the potential cost of improvement to the delivery buildings;
- remain technically feasible and deliverable using current solutions and skills;
- offer flexibility in the ways which standards can be met, to allow best value;
- avoid conflict with or duplicate other regulatory requirements; and
- be implemented with consideration of wider societal issues related to the occupation and use of buildings.

3.0 CONSULTATION

3.1 Development Phase

Before making or amending the building regulations, Scottish Ministers are required, under section 1(2) of the Building (Scotland) Act 2003, to consult "such persons as appear to them to be representative of the interests concerned".

Prior to public consultation on proposed changes to regulations, this duty is discharged through the development of proposals by a Departmental Working Group, comprising of officials and representatives of industry, together with communication with other parts of Government and representative organisations of the construction industry. This is intended to ensure that proposals are proofed against the considerations identified in item 2.4 above.

In mid-2011, Scottish Ministers approved a Departmental Working Group to consider amendments to building regulations in respect of energy. Along with government officials, the Working Group included members from local authority verifiers, designers, building services engineers, building physicists, energy modellers, academia and private sector organisations representing both commercial and domestic, manufacturing industry and those with a direct interest in energy conservation.

Over five meetings, pre- and post-consultation, this group shaped the development of proposals for consultation with both Scottish firms and other stakeholders.

3.2 Within Government

Building Standards Division has a standard distribution list for consultations. Government organisations and departments with a policy interest were contacted in respect of these proposals and consultation documents made available to these bodies.

This included direct contact and discussion with the following Divisions and Agencies during the development phase. This means that the implications of options on other policy areas are clearly understood and that proposals are developed with an awareness of similar work elsewhere within the UK.

- SG Planning and Architecture Division;
- SG Housing Sustainability and Innovative Funding Division;
- SG Housing Supply Division;
- SG Low Carbon Economy;
- SG Energy;
- SG Climate Change and Water Industry;
- SG Innovation, Investment and Industries Division;
- SG Enterprise and Cities Division;
- Historic Scotland;
- Building Regulations and Standards Division, Department for Communities and Local Government;
- Building Regulations Unit, Department of Finance and Personnel, Northern Ireland; and
- Environment and Sustainability Directorate, Welsh Government.

3.3 Business consultation

Whilst changes to building regulations affect any party who chooses to build a new building or carry out new building work to an existing building, such changes have the most significant impact on parties involved in the delivery of such building work - designers, developers, contractors and manufacturers of building products.

From January 2013, discussions took place with construction sector businesses that might be affected by the proposals set out in Option 3 (which would impose such change). It was important that this was undertaken once proposals were published for consultation, to enable full discussion on the technical and financial implications of proposed changes on Scottish firms. In addition, stakeholder events with industry were undertaken to reach a wider selection of affected and interested parties.

3.4 Public consultation

An interim version of this Impact Assessment formed part of a package issued for public consultation. Consultation sought general comment on detailed proposals which include the option of amending building standards and guidance within section 6 (energy) of the Building Standards Division Technical Handbooks, to reduce carbon dioxide emissions and energy demand in buildings.

The consultation exercise was issued to just over 500 public, private sector and third sector organisations, Non-Departmental Public Bodies (NDPB) and individuals and interested parties identified and listed on the BSD consultation inventory. The consultation documents were published on the BSD website as an electronic download, with paper copies issued to all individuals or organisations who requested a hard copy. A total of 1600 organisations and individuals who have registered with the BSD were also advised of the consultation by email. All were invited to submit comments on the proposals made in the consultation paper by 15 April 2013. In total there were 117 responses from the following organisations:

Group Type	Number	Percentage
Industry Associations/ Manufacturers	38	32%
Contractor	25	21%
Local authorities/associations	18	15%
Individuals	11	9%
Designers/Consultants	7	6%
Voluntary/environmental organisations	6	5%
Commercial organisations	3	3%
Professional bodies	2	2%
NDPB/Agencies	2	2%
Housing providers/RSLs	1	1%
Advisory bodies/Committees	1	1%
Other	3	3%
Total	117	100%

The full consultation package, together with the consultation report and Scottish Government response (July 2014) are published on the Scottish Government website at: <http://www.scotland.gov.uk/Publications/2013/01/4018>.

3.5 Notification to the European Commission

Proposals to amend regulations, functional standards or supporting guidance under the Building (Scotland) Regulations 2004 require to be notified to the European Commission under the provisions of the Technical Standards & Regulations Directive, 98/34/EC. This Directive seeks to prevent the creation of new technical barriers to trade and lays down a procedure for the provision of information in the field of technical standards and regulations.

In this respect, guidance published within the Technical Handbooks in support of mandatory functional standards is considered to be *de facto* regulation and must be notified to the Commission. A standstill period on further development of proposals imposed by the Directive until this consultation period is completed. Notification to the Commission was made in parallel with the public consultation period. Confirmation of final proposals implemented will be communicated to the Commission once Scottish Ministers have approved the Business and Regulatory Impact Assessment and amended regulations.

4.0 OPTIONS

The subject of this consultation is change to requirements for the energy performance of new buildings and new building works, as set out in the mandatory standards and guidance that supports Scottish building regulations. In considering the risk to be addressed (see item 2.4), three options are identified:

Option 1 – Do nothing.

Option 2 – Promote energy demand and CO₂ emissions reduction.
Promote energy-saving and carbon dioxide reduction measures in new building work through additional information campaigns.

Option 3 – Reduce energy demand and carbon dioxide emissions through building regulations, with revised performance measures for new buildings and, for existing buildings, as a result of new building work. Within this option, a range of improvement levels are considered.

4.1 Sectors and groups affected

Sectors and groups affected can be categorised as:

- a) Persons procuring new buildings or building work, who may need to bear any additional costs associated with delivering buildings which have improved energy performance. Whilst this relates to a specific activity, the group who may be affected at one time or another can be considered to be a large proportion of the population.
- b) Developers who, in addition to (a) above, would have to review existing building specification, construction detailing and, potentially, methods of working. This might include, where relevant, seeking amended Scottish type approvals⁶ for standard constructions, possibly sooner than otherwise intended.

⁶ The Scottish Type Approval System (STAS) operated by Local Authority Building Standards Scotland (LABSS, www.labss.org/) allows approved building types to be used throughout Scotland.

- c) Building materials and component manufacturers, who may need to review and introduce changes to products and literature to address revised performance standards.
- d) Those involved with the energy aspects of building design and construction, who would have to familiarise themselves with any revised standards and methodologies.
- e) Building services contractors, who may need to invest to increase the capacity for commissioning and testing of buildings and engineering services.
- f) Local authority verifiers, who may need to arrange training of staff on changes to energy standards and guidance, to ensure these can be verified at design submission and during construction where necessary.

4.2 Benefits

Benefits arising from policy objective

A reduction in CO₂ emissions from new buildings and new building work:

- supports the Government's agenda to tackle Climate Change and reduces the adverse effect of greenhouse gas emissions on the environment;
- as a sector where improvements are relatively straightforward to implement and to measure, provides a significant and positive contribution to Government targets set for the reduction in CO₂ emissions;
- reduces use of finite natural resources and promotes development and adoption of systems that incorporate renewable energy sources;
- reduces energy costs arising from the operation of new buildings; and
- Encourages the development of skills and resources needed to support a low carbon economy;

As is the case with current building regulations, improvements will also result in an increased benefit where buildings are altered, extended or converted and also where existing building elements and equipment are replaced, where this must be to current standards. It is considered that the costs and benefits arising from such work will be proportionate to those for new buildings.

Reducing Carbon Dioxide Emissions

Today's new buildings are tomorrow's existing buildings. The number of new buildings per annum may account for less than 1% of the entire stock, but by the year 2050, buildings built from this point onwards will account for a substantial percentage of our total building stock. It is therefore vital that new buildings continue to make a contribution to further reductions in CO₂ emissions. As noted in item 2.3, regular review of the energy standards is required by the EU Directive on the energy performance of buildings, at intervals of no more than 5 years. With the Scottish Government's commitment to an overall 80% reduction in CO₂ emissions by the middle of this century, future energy performance improvements to buildings, new and existing, will remain on the agenda.

Reduced use of resources

Reducing CO₂ emissions and energy demand in buildings are only two measures amongst many that can be considered to contribute to the delivery of more sustainable communities.

Where persons elect to carry out new building work, the outcome ought to place reasonable limits on CO₂ emissions and energy demand when the building is in use so that resources are used effectively. Adoption of low carbon and zero carbon technologies, including energy generation from renewable sources can further assist in limiting use of resources. As energy standards are improved, the need to consider and implement such solutions is strengthened.

Other than in the case of conversion of buildings (where the use of a building is changed), current standards for construction are applied only to the new work and not to the remainder of a building. The 2010 review of energy standards introduced limited provisions requiring consequential improvements when carrying out works to existing buildings. Outwith building standards, separate measures to improve the performance of existing buildings are being developed in response to sections 63 & 64 of the Climate Change (Scotland) Act 2009.

Reduced fuel bills

It is recognised that gains from reduced heating costs and attendant potential welfare savings can be relatively small given that current building standards already place significant limits on energy demand. However, gains are possible in many building types, dependent upon energy load profile, where good practice is adopted. Savings from reduced energy demand are identified, in summary within items 5.3.1 and 5.3.2.

4.3 Option 1 - Do nothing

As noted under item 2.3, the Scottish Government is committed to the delivery of an 80% cut in carbon dioxide emissions by 2050, with an intermediate target of at least 42% by 2020. Whilst building regulations have reduced carbon dioxide emissions from new buildings by approximately 70% since 1990, doing nothing offers no further contribution towards meeting national targets for emissions reduction. Accordingly, no benefits are identified which relate to the intended objective.

Adopting an option which does not mandate improved building performance and attendant costs incurred when carrying out building work may be seen as beneficial in the short term. The effect of recession on the UK construction market and on business more generally has reduced capacity to deliver development and to incur and accept additional development costs.

However, this would result in new buildings which continue to produce carbon dioxide emissions at current levels, creating a greater challenge for the future. In addition, it would not address requirements set out under Article 9 of the Energy Performance of Buildings Directive which require new buildings to be 'nearly zero energy' from 2018/20. Given Scottish Government commitment to reducing CO₂ emissions, a potential reputational risk may also arise from this option.

4.4 Option 2 - Promote energy demand and CO₂ emissions reduction.

Initiatives by the Scottish and UK Governments have resulted in an increased general awareness of climate change issues and the need to reduce emissions and save energy. However, it is considered that, as with the assessment of the previous proposed changes to building standards in 2010, the benefits from this approach remain limited and difficult to quantify.

Increased public awareness

Promotion remains important, to inform on and promote the Government agenda on limiting CO₂ emissions and reducing energy demand, and to offer advice on how this can be achieved in respect of the built environment. However, if reliance is placed solely on such activity, there is a tendency for improvement action to be taken only by those who are persuaded that energy efficiency should be high on their agenda, even above commercial considerations. For this to have broader appeal, some incentive is generally necessary.

Delivering best value

In new buildings, the financial returns from adopting energy efficiency measures greater than those within current building standards remains limited with extended payback periods, some exceeding the anticipated lifespan of the building, for the majority of solutions. Whilst there still remain very significant, effective and attractive options for improvement in older, less energy efficient existing buildings, the financial case for voluntary improvement on standards for new buildings offers far less direct benefit to building owners and occupiers. Accordingly, the issue of subsidy is not considered as, where incentives are to be offered, they should be targeted to deliver best value.

Limitations

On this basis, it is unlikely that there would be voluntary adoption of such recommendations on any great scale and certainly not to the extent that can be achieved through regulation. There is an established and proven delivery method for improvement – through building regulations. This ensures that the intended performance will be applied to all new development work.

Accordingly, in respect of new works, it is considered that whilst benefits would accrue from such an approach, the level of improvement and benefits is not possible to quantify. Any benefits and related costs would be proportionate to those identified under Option 3.

4.5 Option 3 - Regulate for energy demand and CO₂ emissions reduction through building regulations

This approach offers significant benefit in respect of the objective of this review – to reduce CO₂ emissions and energy demand arising from new buildings and new building work whilst also introducing limited measures to improve existing building performance. However, it does raise attendant costs that must be considered. Based upon a projected development profile, cumulative benefit can be assessed.

Research was undertaken on the basis of delivering a range of emissions reductions against a 2007 baseline. These (and their equivalent reduction on 2010 standards) were:

- Domestic **45% (21%)** 60% (43%)
- Non-domestic 50% (28.5%) **60% (43%)** 75% (64.5%)

Benefits in adopting this approach to reducing emissions include:

- An established delivery method - setting standards within Scottish building regulations to limit carbon dioxide emissions and energy demand has proved to be an equitable and robust way of improving the energy performance of new buildings. All new buildings which are to be heated (or cooled) or new building work within existing buildings will attract application of revised minimum standards.
- Certainty that reductions can be achieved – with this approach, in addressing the performance of buildings, building regulations offer an established and proven delivery method which offers certainty that all new building work to new and existing buildings will result in improved performance, requiring that all new building work delivers reduced CO₂ emissions with an associated reduction in energy demand. This allows a quantitative assessment of improvement, which will assist the Government in meeting its targets for carbon emissions reductions.
- Delivering the most cost-effective solutions - where subject to building regulations and a mandatory need to address improved building performance, those persons commissioning building work have the incentive to meet the regulations in the most cost effective manner possible. This is supported and encouraged by the use of functional standards and supporting guidance within building regulations, which allows flexibility in solutions and value engineering.

4.5.1 Emissions reduction

Based upon the range of emissions reductions identified above, the potential annual abatement in CO₂ associated with the occupation and use of new buildings (compared with 2007 standards) is assessed as follows:

New buildings – projected annual emissions abatement

New Dwellings	Proposed reduction	
	21%	43%
Annual abatement	4.6 kt CO ₂	9.5 kt CO ₂

New Non-domestic	Proposed reduction		
	28.5%	43%	64.5%
Annual abatement	7.7 kt CO ₂	11.6 kt CO ₂	17.4 kt CO ₂

Note: Assessment based upon projected build of 15,500 new homes per annum and projected non-domestic build of 700,000 m² per annum. Overall abatement is directly proportional to level of development occurring. Percentage in bold reflects reduction consulted upon.

The above figures are annual savings which will occur each year following the construction of a new building. In assessing cost/benefit (see items 5.3.1 and 5.3.2, a policy life of 60 years for new homes and 30 years for new non-domestic buildings is assumed.

4.5.2 Monetised Benefits

Potential savings achievable through implementation of this option are categorised as direct savings to building users and costs to Government from not taking action, as follows:

- Direct savings to building users through reduction in energy demand and reduced fuel costs.
- Emissions reductions from reduced fuel consumption are valued using the guidance provided by the UK Government publication - 'Carbon Valuation in UK Policy Appraisal: A Revised Approach'. Central price levels have been assumed.

In addition to the above, a value is identified for the avoided costs of renewables (assigned value of £18 per MWh), reflecting the high marginal cost of delivering additional energy from renewable sources. Department of Energy and Climate Change (DECC) guidance on assessing greenhouse gas policy identifies that there is uncertainty associated with this value and that, accordingly, costs/benefits analysis should be presented both with and without this factor.

The annual value of reduced emissions or energy use is calculated over a 60 year period for dwellings and a 30 year period for non-domestic buildings, discounted at 3.5% for the first 30 years and at 3% thereafter to represent net present value. A summary of these benefits is given in the cost/benefit analysis table in items 5.3.1 and 5.3.2.

5.0 Costs

5.1 Option 1 - Do nothing.

This option presents no implementation costs. The wider cost associated with doing nothing may, however, be potentially significant given that:

- emissions reductions in support of Government climate change policy would likely have to be achieved by other means at a cost to other policy areas; and
- requirements under Directive 2010/31/EU including Article 5 (cost optimal minimum standards) and Article 9 (nearly zero energy new buildings) would still apply, making future review of energy standards more challenging.

5.2 Option 2 - Promote energy demand and CO₂ emissions reduction through additional information campaigns

The development costs for production of voluntary codes of practice would form part of the ongoing work of the Building Standards Division and partner organisations. Development costs related to such documents would therefore be borne by Government, as would any cost of publishing and distribution. This option would impose costs through funding of advertising and awareness campaigns. However, these would not be borne directly by the public.

Precise values have not been assessed, as costs will be proportionate to the scale and type of publications and the extent of the advertising and publicity campaign. It is recognised that Government already funds the activity of a range of organizations including the Carbon Trust and the Energy Saving Trust who promote energy issues for owners of non-domestic and domestic buildings respectively.

For the purpose of this assessment, it is not proposed to assess any subsidy which might be offered for the delivery of new buildings to standards greater than those set through building regulations. As identified in item 4.2.3, it is suggested that Government subsidy for building improvements be targeted at existing stock where the greatest cost benefits can be realised. This is the approach presently taken.

Costs and related benefits would be proportionate to those identified under Option 3. However, as improvement is not mandated, any assessment of potential cost is not possible other than to recognise that adoption as a condition of development is practicable for publicly funded development whilst adoption of practice within the private sector will be less so.

5.3 Option 3 - Regulate for energy demand and CO₂ emissions reduction through building regulations

Costs identified to implement change through building regulations comprise of development costs (changes to construction specification, land cost and cost arising from any redesign process) and regulatory costs (training costs for local authorities). Costing research which informed this review and which forms Part 4 of the consultation package is published online and can be found at:

- [Domestic Phase 1 research](#)
- [Domestic Phase 2 research](#)
- [Non-domestic Phase 1 research](#)
- [Non-domestic Phase 2 research](#)
- [Non-domestic Phase 3 research](#)

This research was commissioned to assess the additional costs arising from the construction of buildings to improved energy standards, based upon the range of percentage emissions reductions. These (and their equivalent reduction on 2010 standards) were:

- Domestic **45% (21%)** 60% (43%)
- Non-domestic 50% (28.5%) **60% (43%)** (75% (64.5%))

Note that, based upon the recommendations of the Departmental Working Group, Scottish Ministers asked that proposals should be developed on the basis of a **45% (21% on 2010) improvement for new dwellings** and a **60% (43% on 2010) improvement for new non-domestic buildings**. Other levels of improvement investigated in research are also presented within this impact assessment. In addition to these provisions, the consultation also sought views on 17 specific topics relating to improvement in building energy performance, including extending the scope of standard 6.1 (carbon dioxide emissions) to cover large extensions to non-domestic buildings.

The following cost/benefit assessment is based upon the findings within published research reports. Costs identified are non-recurring construction costs, incurred where a new building is created. Accordingly, CO₂ savings will accrue during the life of the building with no further cost aside from those associated with building & system maintenance.

Any assessment of additional capital cost must be necessarily broad and approximate, resulting in a range. It is proposed that potential costs specific to redesign of building to revised standards and training should be recognised but not quantified as addition of these costs will not significantly affect the range identified. These costs are minimised by the practice of only reviewing building standards at regular, defined intervals (recently every three to five years) and introducing all changes arising at the same time.

The potential for improved energy standards resulting in a small increase in building footprint, particularly in housing development, is recognised. The cost of construction is assessed within published research. However, any effect on site layout and the potential reduction in the number of units that can be accommodated is not quantified as this is dependent upon solutions employed.

Life cycle costing and payback periods

Research identifies that most of the improvement scenarios investigated have a very long payback period in terms of annual energy cost savings and some, due to the high capital costs or short replacement cycles, may not pay back the original investment. However, reduction of running costs is only one consideration within an overall policy objective and it should be recognised that, for Climate Change to be addressed, actions that do not result in a direct financial benefit to building users must be considered.

5.3.1 New domestic buildings

A two phase study was commissioned to evaluate the cost of measures to reduce carbon dioxide (CO₂) emissions and energy demand for new housing in Scotland. Cost and energy models were developed for an initial six and a further eight 'baseline' dwelling types achieving the current Scottish building regulations. These were then re-specified to offer cost effective examples of design solutions which would deliver emissions reductions of 21% and 43% on current standards. The second phase of research assessed a wider range of fuel options and alternatives for flatted developments.

Research followed the presumption that, in meeting emissions targets, buildings would also meet the useful energy target set for the silver sustainability label under the guidance to standard 7.1 of the 2011 Technical Handbooks. Subsequent deliberations by the Departmental Working Group have resulted in this requirement not being carried forward within consultation proposals. Accordingly, solutions to the proposed standards may be achieved more cost effectively in some cases due to the removal of this requirement which focuses specifically on improvements in building fabric performance.

The report presents the methodology and findings from the study, along with an extrapolation of the potential national impacts of implementing two potential levels of CO₂ and delivered energy reductions.

National impact - capital cost.

Assessment is based upon an assessed split of dwelling types used in the previous 2010 review of standards and a projected build rate of 15,500 new dwellings per annum.

It should be noted that the scenarios adopted in research will not always be appropriate for all locations and that, in some cases, alternative scenarios will need to be adopted which may have higher capital costs. However, a range of tailored technical solutions that offer the same or better value than improvement scenarios are possible and it is considered that adopting these figures offers a reasonable indication of national impact.

In order to allow compilation of the national impact assessment, it has been necessary to extrapolate the data from this study to include dwelling types other than those used as baseline dwellings. It should also be noted that by its nature, the national impact assessment requires generalisations to be made, for example regarding dwelling sizes and configurations, and that there will inevitably be a margin of error with such an approach.

New domestic buildings – capital cost - national impact (annual build)

CO₂ reduction target	Annual cost - private sector (£m)	Annual cost – public sector (£m)	National annual cost – total (£m)
21%	£ 45.3m	£ 26.6m	£ 71.9m
43%	£ 89.2m	£ 52.4m	£ 141.6m

Notes: Assessment based upon projected build of 15,500 new homes per annum. Based on SG data, the public sector accounted for 37% of the total number of new dwellings completed in 2011-12. Whilst the proportion of each dwelling type constructed by the public and private sector differs slightly, this percentage is used above.

This would indicate an average additional cost of approximately £4,600 for a 21% improvement and £9,100 for a 43% improvement. Assessment of national impact was carried out as part of phase 2 domestic research (see Appendix A). Mitigation of these costs is discussed below.

Summary cost/benefit assessment, including fuel & lifecycle costs

New Dwellings (annual build)	Percentage Improvement	
	45% (21%)	60% (43%)
Additional Capital Cost of development	£ 71.9m	£ 141.6m
Energy Saving achieved	- £ 44.6m	- £ 76.7m
Sub Total	£ 27.3m	£ 64.9m
Carbon Savings - Traded	- £ 1.8m	- £ 3.8m
Carbon Savings - Non Traded	- £15.3m	- £ 29.2m
Carbon Savings Total	- £ 17.1m	- £ 33.0m
Net Cost (exc avoided Renewables)	£ 10.2m	£ 31.9m
Avoided Renewables	- £ 0.5m	- £ 0.8m
Net Cost (inc Avoided Renewables)	£ 9.7m	£ 31.1m

Note: Assessment based upon projected build of 15,500 new homes per annum

5.3.2 Non-domestic buildings

A three phase study was commissioned to evaluate the cost of measures to reduce carbon dioxide emissions and energy demand for new non-domestic buildings in Scotland. Cost and energy models were developed for a range of nine example buildings of different types. These examples are based upon the range of models used elsewhere in the UK for evaluation of energy standards within building regulations.

Phase 1 work was based upon 2010 methods of setting emissions targets to identify the implications of continuing with this practice (2002 notional building plus improvement factor). The outcome of this work was the identification, by the Departmental Working Group, that a more transparent and current method of setting targets was required. This was taken forward in phases two and three.

Following the identification of baseline levels of performance, options for the specification of a revised notional building were investigated, looking at delivering emission reductions of 28.5%, 43% and 64.5% on current standards. Options were developed on the basis of a range of achievable elemental specifications to deliver initial abatement, augmented, where necessary with the addition of low carbon equipment, in the form of photovoltaic panels, as a means to offset energy demand and further reduce emissions. Two notional building specifications were identified. Consultation proposals were taken forward using the higher specification option, to reduce the element of low carbon equipment used within target setting.

The reports present the methodology and findings from the study, along with an assessment of the national impacts of implementing various potential levels of CO₂ reduction and delivered energy reductions. National impact costs are presently based upon Phase 2 research.

Phase 3 research identified potential cost reductions arising from lower cost of photovoltaic panels as an element within design solutions. A note on this and other changes implemented, post-consultation is provided later in this section.

New non-domestic buildings - capital cost - national impact (annual build)

CO₂ reduction target	National annual cost – total (£m)
28.5%	£ 31m
43%	£ 44m
64.5%	£ 95m

Note: Assessment based upon projected build of 700,000 m² per annum. A notional build mix and fuel use was assigned. Refer to Table 16 in Non-domestic phase 2 research.

To assess the costs and benefits over the complete policy period, the total new build rate of 700,000 m² per annum was assumed for a **10 year period**. In each year the new buildings were assumed to have a lifecycle of 30 years. The costs were discounted over current prices using the Treasury Green Book discount rate to ensure that all costs are net present value (NPV).

Summary cost/benefit assessment, including fuel & lifecycle costs

New Non-domestic buildings (2014-2024)	Percentage Improvement on 2010		
	28.5%	43%	64.5%
Additional Capital Cost	£ 265m	£ 376m	£ 817m
Energy Saving achieved	£ 305m	£ 360m	£ 546m
Sub Total	- £ 39m	£ 16m	£ 271m
Carbon Savings - Traded	- £ 26m	- £ 30m	- £ 38m
Carbon Savings - Non Traded	- £ 48m	- £ 57m	- £ 88m
Carbon Savings Total	- £ 74m	- £ 88m	- £ 126m
Net Cost (exc. avoided renewables)	- £ 114m	- £ 71m	£ 145m
Avoided Renewables	- £ 1m	- £ 1m	- £ 2m
Net Cost (inc. avoided renewables)	- £ 115m	- £ 73m	£ 144m

Notes: cost/benefit presented for a 10 year period of development, adjusted for net present value.

Examples illustrating additional capital cost (below) are presently based upon Phase 3 research to recognise application of a revised notional building specification for warehousing, as set out in consultation proposals.

Illustration of additional capital cost for proposed levels of improvement

Building Type	2010 Cost (£/m ²)	Percentage Improvement on 2010		
		28.5%	43%	64.5%
Primary School	1,750	0.1%	0.6%	2.5%
Hotel	1,406	1.0%	1.8%	5.8%
Retail	2,229	2.5%	2.9%	6.2%
Supermarket	1,417	2.8%	3.4%	5.4%
Shallow Office (air con)	1,366	2.5%	4.0%	6.7%
Shallow Office (nat vent)	1,134	0.7%	1.5%	4.4%
Deep Office AC	1,590	0.8%	1.3%	2.8%
Warehouse (rooflights)	752	2.4%	3.3%	6.9%
Warehouse (no rooflights)	740	2.4%	3.4%	7.2%

Note: Information taken from Table 3 within Phase 3 non-domestic research (see links in item 5.3)

Review of impact, post consultation

In considering the impact of proposals to be taken forward, post-consultation, the following issues are noted:

- Reducing cost of low carbon technologies. Phase 3 research indicated this as an ongoing trend.
- Increase in scope of application of standard 6.1. It is noted that both emissions reduction and cost increase arising from the application of standard 6.1 to large non-domestic extensions will be equivalent to or greater than those associated with the uplift in standards for new buildings.

No further modification to the assessment of either emissions abatement or additional cost is proposed. It is considered that the cumulative effect of such changes will not materially affect the national impact reported above. This is primarily due to the limited evidence available in the overall assessment of annual non-domestic development in Scotland.

6.0 SCOTTISH FIRMS IMPACT TEST

Background

Assessment has been based on Option 3 as Options 1 and 2 propose no change to regulation and impose no actions that may incur costs for small firms, including micro-businesses (those which employ less than 10 full-time employees). Views were sought as part of on-going engagement with industry, placing proposed measures in the context of the previous 2010 review of standards. Due to the diverse nature of the construction sector, discussions were not solely in the form of formalised interviews. In addition to representation on the Working Group which took forward proposals, a number of meetings and seminars were held to engage with industry on the general scope of proposals and on specific issues, such as delivery of new homes and development in rural areas.

As was the case at that time, proposed improvements are to be delivered through existing standards and familiar processes. Stakeholders were asked where their principal concerns lay, with the key changes proposed for 2015 highlighted in discussions:

- Emissions standards for new buildings become more challenging;
- The method of setting emissions targets for new non-domestic buildings is amended;
- Elemental standards for work to existing domestic buildings being improved
- Elemental standards for work to existing non-domestic buildings remaining mainly unchanged, though proposal to treat large extensions as new buildings;
- Guidance on minimum standards for building services being presented in a new format, to harmonise with the rest of the UK; and
- Noting also that, for new buildings, the UK calculation methodology (SAP/SBEM) moves to a new edition which introduces revised values and new elements within calculations.

Views

The views expressed by those involved in discussions varied significantly depending on the stakeholder role – consultant, developer, contractor, manufacturer or verifier. Whilst a small proportion of those involved were almost wholly positive towards the proposed improvements, the majority raised concerns which related primarily to either increased cost or increased complexity arising from change. Key themes can be summarised as:

- *Positives:* Domestic changes keep same familiar format; those who have invested in low carbon skills or solutions well placed to deliver; deferral to 2015 seen as positive (though not by companies who have already invested); revised non-domestic targets look simpler and more equitable for fuels.
- *Negatives:* Change at a time of economic uncertainty; no desire to invest, resources needed elsewhere; extra cost added but no additional ‘payback’; complexity of energy standards; no need for change, standards good enough; lack of awareness and access to information, training or resources; reliance on specialists (installation and design); increased risk to designers/builders from defects; need to use particular solutions (due to lack of options).

In summary, the balance of views expressed on the proposed changes to energy standards were either negative (focussing on resource implications) or cautious (some concern but would reserve judgement). From previous consultations, it is known that there are particular challenges for smaller enterprises in the construction sector. They are more quickly affected by the impact of changes to regulations due to the more immediate and responsive nature of their workload, they are less able to retain or obtain operatives in a challenging economic climate; they are generally less well-resourced than larger organisations.

Commentary and recommendations

The size of an organisation is one of several factors that can influence the degree to which regulatory change impacts on business operations. In the case of building regulations and this review, it is noted that an increase in the cost of delivering buildings or new building work will accrue, a cost which is ultimately passed on to the building owner but which may also influence the choices of those seeking to carry out work. Given the recent economic climate, the Ministerial announcement to defer introduction of the standards until 2015 was welcomed as a measure which would assist economic recovery and deliver government objectives for increased and sustainable economic growth.

More generally, enabling stakeholders and small firms in particular to become better informed and equipped to deal with change assist in reducing the impact of changes and address a number of the concerns that those involved in discussions expressed. Within the section on ‘Eventual and Staged Standards’, the 2013 Sullivan Report Update recommended that, in support of the proposed 2015 standards, that government work with industry to assist in the delivery of these (2015 and beyond) staged improvements and that *“the Scottish Government publishes an ‘Action Plan’ setting out a range of work elements to support the successful implementation of each staged improvement”*.

Initial discussions on a joint government/industry 'action plan' process have taken place and it is intended that this will commence in August 2014 and run through to the proposed implementation date of October 2015 and beyond. It is noted that one of the challenges this process must successfully address will be to support those 'without an effective voice' and develop information and resources to support small business in their transition to more effective operation within our low carbon economy.

6.1 Competition Assessment

Having reviewed the four competition filter questions provided within the Competition and Markets Authority document 'Government in Markets', it is considered that the proposals set out in the consultation will not result in a significant impact on competition within the market place.

In support of the above, it is noted that:

- The manner in which standards for new buildings are set allows flexibility in the solutions adopted which reduces the emphasis on performance of individual products or solutions;
- The level at which performance standards are set on an elemental basis in support of overall levels of performance is heavily influenced by the practicality of delivery;
- Improved standards are a recognised driver to product improvement and to innovation and as such, an element of challenge to all parties involved in delivering products and services is expected.

No significant areas where issues of competition, restriction or imbalance will arise have been identified. However, as noted in 6.0 above, it is recognised that in the short-term the immediacy and impact of changes such as those being proposed remains greater on smaller and less well-resourced organisations that deliver buildings, services or construction products to the market and, if implementing proposals, action is needed to mitigate this.

6.2 Test run of business forms

There are no new business forms proposed within any of the options identified.

7.0 LEGAL AID IMPACT TEST

Proposals within this consultation that would be the subject of regulation follow established process and premise. It is not anticipated that there will be any greater demands placed on the legal system by this proposal. Accordingly, it is not considered that there will be any effect on individuals' right of access to justice through availability of legal aid or on possible expenditure from the legal aid fund.

8.0 ENFORCEMENT, SANCTIONS AND MONITORING

8.1 Background

The proposed changes within Option 3 will require amendment to published material forming the Building (Scotland) Regulations 2004 and the modification of the supporting guidance given within the Technical Handbooks (issued by the Building Standards Division of the Scottish Government) that support the Regulations. The Technical Handbooks list the mandatory functional standards

set out under regulation 9 of the Regulations and give guidance on ways of complying with these mandatory functional standards.

All matters relating to enforcement, sanctions and monitoring will be carried out under the existing processes, which form the building standards system in Scotland, as set out under the Building (Scotland) Act 2003. Parties responsible for operation of this system are currently the 32 Scottish local authorities, appointed as verifiers under the Act, and the Building Standards Division, on behalf of Scottish Ministers.

8.2 Enforcement and sanctions

Work subject to the Building (Scotland) Regulations 2004 generally requires that a building warrant must be obtained before work commences and to have a completion certificate accepted once works are finished. Whether or not such work requires a building warrant is set out under Regulation 5 of the Regulations, the person responsible for the building or works, the 'relevant person' as defined in section 17 of the Building (Scotland) Act 2003, is required to ensure compliance with building regulations.

Where a building warrant is required, proposals are subject to the scrutiny of verifiers prior to approval of building warrant or acceptance of a Completion Certificate. Local authorities have enforcement powers under the Act to secure compliance with approvals and the Regulations. Cases of non-compliance can be referred to the Procurator Fiscal and persons found guilty of offences in terms of the Act are liable on summary conviction to a fine not exceeding level 5 on the standard scale (currently £5,000).

8.3 Monitoring

The objective of this exercise is to determine whether proposed reductions in CO₂ emissions and associated energy demand should be delivered through changes to building regulations. Building regulations are applied within a legislative framework summarised in item 7.1 above. In line with Article 4 of Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings, any implemented changes which address this issue shall be subject to review within a 5 year period. In line with Scottish Government policy, any such review shall be accompanied by a further Impact Assessment.

9.0 SUMMARY AND RECOMMENDATION

9.1 Summary

The summary of benefits and costs remains unchanged from the intermediate BRIA and are noted in full under Items 4 & 5. Proposals have been modified in response to public consultation and are summarised in Annex B. Proposals under **Option 3 – regulation** are for a reduction in emissions over 2010 standards of 21% for new dwellings and 43% for new non-domestic buildings.

9.2 Summary costs and benefits table

Option	Total benefit per annum - economic, environmental, social	Total cost per annum - economic, environmental, social; policy & administrative
Option 1 - Do nothing	No benefits	No costs
Option 2 - Promotion Increase awareness of the need for energy efficient design reduce carbon dioxide emissions and introduce best practice guidance documents for adoption and application on a voluntary basis	Benefits wholly dependent on scale of uptake of voluntary good practice Environmental - where applied, may contribute to the delivery of reduced carbon dioxide emissions and energy demand and a more sustainable built environment. Economic - where applied, may deliver buildings that are more energy efficient and reduce running costs. Where applied, may add value to new building stock as energy efficiency is a recognised selling point, particularly in the commercial and public sector. Social - Where good practice guidance applied to older buildings, reduction in energy demand will deliver lower fuel bills, contributing to both fuel poverty and security of energy supply agendas. Proposals seek to reduce carbon dioxide emissions as part of the government's Climate Change Agenda which has a wider, long-term social remit.	£500,000 suggested Cost wholly dependent upon scale and form public awareness exercise and potential for integration with existing policies and initiatives.
Option 3 - Regulation Introduce revised and updated building standards guidance to reduce carbon dioxide emission and energy demand arising from new building work, recognising current good practice, where appropriate, for implementation within the building standards system.	Policy benefits arising from reducing energy demand and carbon dioxide emissions assessed at: <ul style="list-style-type: none"> • Domestic - £ 61.7m per annum • Non-domestic - £ 448m over 10 years Environmental – will deliver a reduction in carbon dioxide emissions and energy demand and a more sustainable built environment. Economic – will deliver buildings that are more energy efficient and reduce running costs and assist in the development of a low carbon sector within the construction industry. Direct economic benefits are outweighed by implementation costs. Primary benefit of objective is not economic, but environmental. Social – Reduction in energy demand will deliver lower fuel bills, contributing to both fuel poverty and security of energy supply agendas. Proposals will reduce carbon dioxide emissions as part of the government's Climate Change Agenda which has a wider, long-term social remit.	Implementation costs based upon 2011-12 levels of construction assessed at: <ul style="list-style-type: none"> • Domestic - £ 71.9m per annum • Non-domestic - £ 376m over 10 years

9.3 Conclusion

Considering additional information presented during consultation, it is the view that **Option 3 – Regulation** still provides the most appropriate solution to meet the objective set out in clause 1.1. To contribute to the Scottish Government's Climate Change objectives through the introduction of improved building regulations standards and guidance to reduce carbon dioxide emissions and improve energy performance of new buildings and new building work.

This option means that the intended aims can be implemented in a structured manner, as part of the existing process of statutory permissions applied where building work is carried out.

It should be noted that, as was the case with the previous review of standards, proposals do incur a high cost in terms of £ per kg.CO₂ avoided and are not intrinsically cost-effective (costs are greater than policy life benefits for domestic proposals and moderately positive for non-domestic proposals). However, application of improvements within a flexible building standards system allows the intended levels of performance to be delivered in as cost-effective a manner as is practicable. The changes proposed by regulation are commended as the appropriate level at which good practice can be applied at this time, within a mandatory framework, to deliver the objective. Option 3 is also recommended for the following reasons:

- Options 1 will not result in any further reduction in the levels of carbon dioxide emissions from new buildings and new building work and is therefore not a practical consideration. It will also adversely affect the potential to deliver on known EC obligations for 'nearly zero energy' new buildings from 2019/21.
- Option 2 may only offer a means of reducing levels of carbon dioxide emissions from new buildings and new building work but, as a voluntary code, any benefit is dependent on uptake and this cannot be guaranteed outwith a legislative framework

9.4 Recommendation

Introduce revised and updated building standards guidance to reduce carbon dioxide emission and energy demand arising from new building work, recognising current good practice, where appropriate, for implementation within the building standards system in Scotland.

It is recommended to introduce standards and guidance under the Building (Scotland) (Amendment) Regulations 2014 and the October 2015 edition of the Building Standards Division Technical Handbooks for domestic and non-domestic buildings to deliver reduction in emissions over 2010 standards of 21% for new dwellings and 43% for new non-domestic buildings.

10.0 DECLARATION AND PUBLICATION

I have read the Business and Regulatory Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) that the benefits justify the costs. I am satisfied that business impact has been assessed with the support of businesses in Scotland.

Signed by the accountable Minister.....



Derek Mackay, Minister for Local Government and Planning

Date: 12/08/14

Contact:

Steven Scott
Building Standards Division
Scottish Government - Directorate for Local Government and Communities
Denholm House,
Almondvale Business Park
Livingston
West Lothian
EH54 6GA
Telephone: 01506 600414
Email: steven.scott@scotland.gsi.gov.uk

ANNEX A - IMPLEMENTATION & DELIVERY PLAN

DELIVERY AND COMMUNICATION

The proposed changes will be taken forward in the form of guidance within the Technical Handbooks which support compliance with the Building (Scotland) Regulations 2004. This guidance will be introduced when implementing the Building (Scotland) (Amendment) Regulations 2014 and will be carried out under existing processes, which form the building standards system in Scotland, as set out by the Building (Scotland) Act 2003.

The Technical Handbooks are the primary reference source for compliance with building standards and, as such, are used by designers and others involved in the building process to ensure compliance with the Scottish Building Regulations. The guidance to the standards will illustrate the most common way of meeting the requirements of the building standards and, thus, complying with the Building (Scotland) Regulations 2004 (as amended). When carrying out work that is subject to the building standards, it is the duty of the relevant person (normally the owner of the building) to comply with the requirements of the Regulations.

Publication in this form is the established method of introducing changes to the building standards system and ensures that information on changes reaches those involved in works that are subject to building standards. This information is made available free of charge, as an electronic download from the Building Standards Division (BSD) website, www.scotland.gov.uk/BSD.

IMPLEMENTATION

The proposed changes will form part of the building standards system in Scotland, produced and maintained, on behalf of Ministers, by the BSD and operated and enforced by the 32 Scottish local authorities.

Except where identified under schedule 3 to regulation 5 of the Building (Scotland) Regulations 2004 (as amended), work which is subject to building regulations requires a building warrant to be obtained prior to commencing building work and to have a Completion Certificate accepted by the Verifier on completion of the work. Such works are subject to the scrutiny of local authorities as Verifiers of the system, who also have enforcement powers under the Act to ensure compliance with the Regulations. Where work is subject to building regulations but falls within the scope of schedule 3 to regulation 5 of the Building (Scotland) Regulations 2004 (as amended), it still requires to comply with the regulations.

IMPLEMENTATION PERIOD

The proposed changes to the guidance within the Technical Handbooks are relevant to any party responsible for a building who intends to carry out building work that is subject to building regulations.

Proposed changes will be published online in October 2014. Guidance will come into effect on the 1st of October 2015 and be applicable to all building warrant applications made on or after that date. This provides industry with approximately a year to prepare for implementation of the new provisions, well in excess of the minimum 12 week implementation period required for any such change.

Further, it is intended that government and industry will, in response to a recommendation of the 2013 update to the Sullivan Report, work together on an 'action plan' to support the successful delivery of the new standards.

PROMOTION

Any changes to the building standards system are publicised by the BSD through the website, seminars and articles in relevant publications. In addition, the BSD would seek to promote changes to the standards and guidance in association with industry organisations who have an expressed interest in building design and energy issues, together with other key stakeholders who have been involved in development of guidance and in the consultation process.

ANNEX B - SUMMARY OF PROPOSED CHANGES

Background

On 25 September 2013, Derek Mackay, Minister for Local Government and Planning, announced that revised energy standards would be introduced in October 2015. These standards would be broadly as consulted upon in early 2013 but with a deferral on 'coming into force' to give plenty of time for industry to prepare for the changes.

From October 2015, improvement to new homes will reduce carbon dioxide emissions by around 21% when compared to the current 2010 standards whilst new non-domestic buildings will see an average reduction in emissions of around 43%.

Energy standards and guidance were revised in May 2007 and October 2010, with a focus on reducing carbon dioxide emissions, in addition to the more traditional function of limiting energy demand. When this approach was introduced in 2007, it was the intent that future reviews would retain the core methodology for assessing and delivering improved building performance. This continues to be the intent, though the approach to setting emission targets for non-domestic buildings is now simpler and more transparent, aligning with practice elsewhere in the UK. Similarly, presentation of guidance on the performance of fixed building services is now aligned to the core documentation used by all four UK administrations.

Elsewhere, this review retains the familiar layout, structure and current principles applied in October 2010. Standards and guidance are updated or expanded only where this is required to assist in the delivery of an improved level of building performance, to give the intended improvement over 2010 standards or to improve clarity for users of the Handbooks.

Summary of changes

The following is a summary of the key changes proposed to current standards and guidance. Items highlighted in **bold** represent proposals amended or introduced following consultation responses.

Section 6 (Energy) – Non-domestic

- Standard 6.1 (carbon dioxide emissions) – **standard now applies to large non-domestic extensions**; guidance reflects new methodology for the calculation of carbon dioxide emissions target for all new buildings (concurrent 2015 notional building); new edition of NCM applied; improved target is set to deliver aggregate 43% emissions reduction over 2010 standards.
- Standard 6.2 (building insulation envelope) – additional guidance on delivering improvement when converting or altering existing buildings.
- Standards 6.3 (heating system), 6.4 (insulation of pipes, ducts and vessels), 6.5 (artificial and display lighting) and 6.6 (mechanical ventilation and air conditioning) – guidance has been removed and reference now made to Scottish Non-domestic Building Services Compliance Guide.
- Annex 6.C Energy performance of modular and portable buildings – TER modifying factors updated.
- Annexes 6.E and 6.F - Guidance has been removed and reference now made to Scottish Non-domestic Building Services Compliance Guide.

Section 6 (Energy) – Domestic

- Standard 6.1 (carbon dioxide emissions) – comprehensive revisions of fuel package table; new edition of NCM applied; improved target set to deliver aggregate 21% emissions reduction over 2010 standards.
- Standard 6.2 (building insulation envelope) – improved fabric backstops for new buildings and for extensions; additional guidance on delivering improvement when extending, converting or altering existing dwellings.
- Standards 6.3 (heating system), 6.4 (insulation of pipes, ducts and vessels), 6.5 (artificial and display lighting) and 6.6 (mechanical ventilation and air conditioning) – guidance has been removed and reference now made to Scottish Domestic Building Services Compliance Guide.