SUSTAINABLE AND SECURE BUILDINGS ACT 2004

PROGRESS TOWARDS THE SUSTAINABILITY OF THE BUILDING STOCK IN WALES

Contents

1. Executive Summary
2. Purpose of the report
3. The Sustainable and Secure Buildings Act 2004: Progress report to the National Assembly for Wales covering:
   3.1. Section 6(2)(a): “Building Regulations made during the period for any of those purposes”
   3.2. Section 6(2)(b): “Proposals current at the end of the period to make building regulations for any of those purposes”
   3.3. Section 6(2)(c): “Effects or likely effects of regulations or proposals dealt with in the report under paragraphs (a) and (b)”
   3.4. Section 6(2)(d): “Proposals considered by the Secretary of State during the period for the setting of targets for any of those purposes in relation to (i) buildings in England and Wales; or (ii) services, fittings or equipment provided on or in connection with such buildings”
   3.5. Section 6(2)(e): “Overall changes during the period in …”
   3.6. Section 6(3): “An estimate, as at the end of the period, of the number of dwellings in England and Wales”

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1 “Purpose” as mentioned in section 1(1)(b) to (e) of the Building Act 1984 in the context of the building stock in England and Wales (and referred to in the executive summary below).
## List of Tables

| Table 1 | Average Energy Efficiency (SAP) ratings of new homes (Wales) |
| Table 2 | Number of Loft Insulation Installations (Wales) |
| Table 3 | Number of Cavity Wall Insulation Installations by age of property (Wales) |
| Table 4 | Display Energy Certificates for (DECs) For Government Departments 2012 (UK) |
| Table 5 | Estimated total annual domestic CO2 emissions (Wales) |
| Table 6 | Estimated total annual industrial, commercial and public sector CO2 emissions (Wales) |
| Table 7 | Sources of carbon dioxide emissions, 2006-2012 (million tonnes CO2) (Wales) |
| Table 8 | Sites generating electricity from renewable sources (Wales) |
| Table 9 | Number and Capacity of Feed in Tariff installations confirmed on the Central FITs Register at the end of June 2013 (Great Britain) |
| Table 10 | Table 10: Code for Sustainable Homes Certificates and BREEAM Assessments completions (Wales) |
1. Executive Summary

Report Context

Section 6 of the Sustainable and Secure Buildings Act 2004 (the Act) requires that a biennial report is produced on the sustainability of the building stock in England and Wales. This covers progress during the preceding two years in relation to:

- Furthering the conservation of fuel and power;
- preventing waste, undue consumption, misuse or contamination of water;
- furthering the protection or enhancement of the environment;
- facilitating sustainable development.

Section 6 of the Act specifies the areas that the report must cover and these include Building Regulations made over the period and their expected impact, any planned legislation, and proposals for the setting of targets in relation to sustainable buildings. The report should also cover changes in the energy and carbon efficiency of the existing building stock, the extent to which buildings have their own facilities for generating energy, and the recycling and reuse of construction materials over the period; and an estimate of the total number of dwellings in England and Wales at the end of the reporting period.

For completeness where documents and legislation or announcements published after this period subsequently update policy or regulatory information relevant to this report appropriate references are included.

Previous versions of this report have concerned the sustainability of the building stock in both England and Wales. The first biennial report was laid before Parliament in February 2007 as part of the report ‘Monitoring the Sustainability of Buildings’ and covered progress made between 16 November 2004 and 15 November 2006. The second report was laid before Parliament in February 2010 and covers progress made in the period between 16 November 2006 and 15 November 2008. The third report covered progress made in the period between 16 November 2008 and 15 November 2010 and was laid before Parliament in July 2011.

Transfer of Functions

Building Regulations are made under powers provided in the Building Act 1984. The Welsh Ministers (Transfer of Functions) (No 2) Order 2009 transferred the Secretary of State’s powers under the Act (with some

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2 Monitoring the Sustainability of Buildings: Progress reports to Parliament on sustainability and measures to improve compliance with Part L of the Building Regulations, CLG, February 2007
3 Progress towards the sustainability of the building stock in England and Wales: Second Parliamentary Report, CLG, February 2010
4 Progress towards the sustainability of the building stock in England and Wales: Third Parliamentary Report, CLG, July 2011
exceptions) to the Welsh Ministers with effect from 31 December 2011. The transfer of Building Regulation powers occurred midway through the period covered by the fourth report.

Welsh Government and the Department for Communities and Local Government (DCLG) have therefore agreed that two separate reports will be produced to cover the period from 16 November 2010 to 15 November 2012. DCLG will draft the fourth edition of the report which will concern England and Wales from 16 November 2010 to 30 December 2011, and England only from 31 December 2011 to 15 November 2012.

This report has been produced by the Welsh Government and is specific to Wales. It covers the period 31 December 2011 to 15 November 2012. Future reports concerning the sustainability of the building stock will be produced separately, biennially, and on an England only and Wales only basis.

Legislative Changes

There were no legislative changes, relevant in terms of sustainability and applicable to Wales, made during the 11 month period covered by this report.

The following regulations were made by the Welsh Ministers after the 11 month period covered by this report:

- The Building Regulations &c. (Amendment) (Wales) Regulations 2013 (S.I. 2013/747 (W.89)) – Wales Only
- The Building (Amendment No. 2) (Wales) Regulations 2013 (S.I. 2013/2621 (W.258)) – Wales only

The following regulations were made by the Secretary of State during the period:


The key effects of these regulations are to extend the use of Competent Person Schemes into other areas of work including work linked to the Green Deal, and to improve the energy efficiency of new buildings to reduce CO₂ emissions and lessen the impact of climate change.

Climate Change and Building Sustainability

The Climate Change Act 2008 established a long-term national framework to tackle climate change. At the heart of the Act is a legally binding target to reduce the UK’s greenhouse gas emissions to at least 80 per cent below 1990 levels by 2050. As part of driving progress towards this target, the Act introduced ‘carbon budgets’ covering consecutive five-year periods, which define the emissions pathway to the 2050 target by limiting the total greenhouse gas emissions allowed in each period, beginning in 2008. The first three carbon budgets (for 2008-12, 2013-17, and 2018-22) were set in
May 2009, and require reductions in emissions on 1990 levels of 22%, 28%, and 34% respectively. The UK Government set the fourth carbon budget (for the period 2023-2027) in June 2011 and details of the agreed targets set are outlined later in the report.

This report presents changes in relation to the sustainability of buildings relation to:

- Energy efficiency
- Greenhouse gas emissions
- On-site energy generation
- Recycling and re-use of materials in construction
- The number of dwellings

Where appropriate, this report incorporates publicly available ‘official statistics’ as a source of measurement of change but the report is not an official statistics product. The statistics and information used are the latest available for the period of the report and references to source data are given. In some instances figures are only available for Great Britain or the United Kingdom.
2. Purpose of the Report

Section 6 of the Sustainable and Secure Buildings Act 2004 requires a report to be laid before Parliament once every two years on progress made with regard to sustainability in the building stock of England and Wales. In relation to Wales this requirement has been transferred to Welsh Ministers by virtue of The Welsh Ministers (Transfer of Functions) (No 2) Order 2009. Paragraph 10 of Schedule 3 of the Government of Wales Act 2006 requires the report to be laid before the National Assembly instead of Parliament.

The scope of the biennial report as set out in section 6 of the Act:

(i) The Secretary of State must –
   (a) for the period of two years beginning with the commencement of this section, and
   (b) for each succeeding period of two years,
   prepare a report on progress during the period in connection with the purposes mentioned in section 1(1)(b) to (e) of the Building Act 1984 in the context of the building stock in England and Wales.

(ii) A report under this section must deal with –
   (a) building regulations made during the period for any of those purposes;
   (b) proposals current at the end of the period to make building regulations for any of those purposes;
   (c) effects or likely effects of regulations or proposals dealt with in the report under paragraphs (a) and (b);
   (d) proposals considered by the Secretary of State during the period for the setting of targets for any of those purposes in relation to buildings in England and Wales or services, fittings or equipment provided in or in connection with such buildings.
   (e) overall changes during the period in –
      (i) the efficiency of energy use in buildings in England and Wales.
      (ii) levels of emissions from such buildings that are emissions considered by the Secretary of State to contribute to climate change.
      (iii) the extent to which such buildings have their own facilities for generating energy.
      (iv) the extent to which materials used in constructing, or carrying out works in relation to, such buildings are recycled or re-used materials.

A report under this section must contain an estimate, as at the end of the period, of the number of dwellings in England and Wales.

The purposes mentioned in section 1(1)(b) to (e) of the Building Act 1984 are:
(i) Furthering the conservation of fuel and power;
(ii) Preventing waste, undue consumption, misuse or contamination of water;
(iii) Furthering the protection or enhancement of the environment;
(iv) Facilitating sustainable development.

Building Regulations are made under powers provided in the Building Act 1984. The Welsh Ministers (Transfer of Functions) (No 2) Order 2009 transferred the Secretary of State’s powers under the Act (with some exceptions) to the Welsh Ministers with effect from 31 December 2011.

The transfer of Building Regulation functions occurred midway through the period to be covered by the fourth report. Welsh Government and the Department for Communities and Local Government (DCLG) have therefore agreed that two separate reports will be produced to cover the period from 16 November 2010 to 15 November 2012. DCLG will draft the fourth edition of the report which will concern England and Wales from 16 November 2010 to 30 December 2011, and England only from 31 December 2011 to 15 November 2012.

This report has been produced by the Welsh Government and is specific to Wales. It covers the period 31 December 2011 to 15 November 2012. Future reports concerning the sustainability of the building stock will be produced separately, biennially, and on an England only and Wales only basis.

This is the first report to the National Assembly and is specific to Wales. It covers the period from 31 December 2011 to 15 November 2012. Where documents or announcements published after this period subsequently update policy or regulatory information relevant to this report appropriate references are included together with up-to-date and explanatory narrative where required. The report is structured in accordance with the paragraphs of Section 6 of the Act.

3.1 Section 6(2)(a): “building regulations made during the period for any of those purposes”

There were no Building Regulations made in Wales during the period covered by this report.

The following Regulations, relevant in terms of sustainability, were in development during the period covered by this report. Their intended effects are discussed in 3.3.

The Building Regulations &c. (Amendment) (Wales) Regulations 2013 (S.I. 2013/747 (W.89)) – Wales Only

These regulations transposed the EPBD recast in respect of buildings on construction. In particular the regulations clarify the energy efficiency requirements for renovation of the thermal elements of a building and introduce a requirement for new buildings that an analysis of the feasibility of using high-efficiency alternative systems is undertaken and that all new buildings must be nearly zero-energy buildings (coming into effect from 2019). It also strengthened the provisions on the recommendation report that must accompany an energy performance certificate. These regulations also introduce new types of work that may be undertaken by competent person schemes and extend a number of competent schemes to support the energy efficiency measures in the Green Deal.

The Building (Amendment No. 2) (Wales) Regulations 2013 (S.I. 2013/2621 (W.258)) – Wales only

These regulations extended competent person self-certification schemes to support uptake of and compliance with the installation of energy efficiency, micro-generation and renewable technologies measures in the Green Deal.

Although not Building Regulations, the following regulations to implement other aspects of the EPBD recast were made by the Secretary of State for England and Wales (SI 2012/3118).

These regulations consolidated earlier regulations on the energy performance of buildings, all of which have now been revoked. They also transposed the requirements of Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (EPBD recast) as required for the sale or rental of existing buildings.

Although not Building Regulations, these changes implemented other aspects of the EPBD recast. The main provisions were:

- introduction of a comparative methodology enabling relative performance of Member States in improving the energy efficiency of their buildings to be benchmarked;
- requirement for new buildings developed after 2020 to be nearly zero energy buildings, with an earlier deadline of 2019 for some public buildings;
- property advertisements to include details of the EPC rating where available;
- extension of the current requirement for a DEC in large public buildings to public buildings above 500m² with a further reduction to 250m² by 2015;
- EPC to be displayed in commercial premises larger than 500m² where an EPC has previously been issued.

3.2 Section 6(2)(b): “proposals current at the end of the period to make building regulations for any of those purposes”

The 2011 Programme for Government committed Wales to amending the Building Regulations to move towards zero carbon buildings by improving the energy performance of new housing by 55% against 2006 standards (representing a 40% increase on 2010 standards). Following discussions with BRACW and other external partners, the Welsh Government published their consultation on proposed changes to Part L in July 2012.

The consultation included proposals for new housing, providing two options of 25% and 40% compared to 2010 standards. However, as a result of concerns about the depressed housing market and the implications of higher costs of the proposals, along with other regulatory changes upon the construction sector in Wales, the Welsh Ministers have decided to implement a lower improvement target of 8% on 2010 standards. The revised target provides regulatory backing to energy efficiency targets which are currently sought

5 Programme for Government, Welsh Government, 2011 Available at: http://wales.gov.uk/about/programmeforgov/?lang=en
through planning guidance, while also having a broadly cost neutral effect upon construction costs.

For existing housing, the Welsh Ministers have taken the decision to introduce ‘Consequential Improvements’ for any property undergoing renovation or extension. This means that in any situation where the footprint of a building has been increased as a result of building work, homeowners will be required to undertake improvements based on three cost effective solutions where suitable:

- Minimum standard of loft insulation;
- Cavity wall insulation; and
- Minimum standard of hot water cylinder insulation.

All three measures will be eligible for funding under the UK government’s Green Deal Scheme.

For Non-Domestic Buildings, the Welsh Government will implement changes, as proposed in the consultation, intended to achieve a 20% reduction in green-house gas emissions compared to 2010 standards. The improvements in energy efficiency will be achieved through a mixture of improved building fabric, services standards and in many cases the use of renewable technologies such as solar panels.

The Welsh Government have also committed to a further review of Building Regulations Part L in 2016. This will provide the opportunity to set the requirements necessary to comply with the European Directive for all new buildings to be nearly zero energy by 2019 and 2021.

Following the devolution of the Building Regulations to Wales, the Welsh Ministers established the Building Regulations Advisory Committee for Wales (BRACW). Under the section 14 of the Building Act 1984, the Welsh Ministers have a statutory obligation to appoint and consult BRACW regarding any proposed changes to the Building Regulations. The committee was appointed on 1 January 2012 and consists of eight members representing various roles within the construction sector.

3.3 Section 6(2)(c): “effects or likely effects of regulations or proposals dealt with in the report under paragraphs (a) and (b)”


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The Building Regulations &c. (Amendment) (Wales) Regulations 2013 (S.I. 2013/747 (W.89))

The recast of the Energy Performance of Buildings Directive is an EU measure that was implemented to timetable by 9 January 2013. It built on the
existing Energy Performance of Buildings Directive and its objective is to reduce carbon emissions from buildings and increase their energy efficiency. The recast complements the 2008 Climate Change Act which requires a reduction in carbon emissions by 80% on 1990 levels by 2050. Emissions from buildings account for 40 to 45% of all CO₂ emissions in the UK so this recast is designed to make existing buildings more energy efficient, and to ensure that new buildings are designed and built with high levels of energy efficiency and consequently reduce CO₂ emissions and lessen the impact of climate change.

The amendments to the 2010 Regulations made by S.I. 2013/747 (W.89) were also in relation to competent person self-certification schemes where new requirements were added for certificates to contain Green Deal information and for local authorities to store certificates in a retrievable form. There was also authorisation of new types of work and extensions of types of work for competent person schemes again principally to support the Government’s Green Deal initiative, designed to reduce costs, make building easier and incentivise people to take up sustainability-based options for housing works.

The Building (Amendment No. 2) (Wales) Regulations 2013 (S.I. 2013/2621 (W.258)) – Wales only

These Regulations extended the use of self-certification of notifiable building work through authorising new competent persons schemes and extending the scope of existing schemes, especially those associated with the Green Deal. The objective and expected impact is to make work under the Green Deal easier, cheaper and more efficient whilst ensuring that it fully complies with the relevant requirements in the Building Regulations.

Other Policy or Legislative Changes – Energy Efficiency

The Energy Act 2011 – England & Wales

The Energy Act has three principal objectives:

- To tackle barriers to investment in energy efficiency;
- to enhance energy security; and
- to enable investment in low carbon energy supplies.

The Act contains powers

- To create the Green Deal and Energy Companies Obligation;
- to regulate the private rented sector for minimum standards of energy efficiency from 2018;
- to bring forward the roll-out of smart metering; and
- for the DECC Secretary of State to require energy companies to provide information on the cheapest tariff on energy bills.
Improvements in home energy efficiency were previously dealt with under the Home Energy Conservation Act 1995 (HECA). Under the Energy Act 2011, HECA ceased to have effect in Wales.

**The Green Deal and the Energy Companies Obligation (ECO) – England & Wales**

The Green Deal is a financial mechanism through which people can invest in home energy efficiency improvements at no upfront cost. Finance plans became available from January 2013.

Householders will pay back the cost of the improvements through their electricity bill, subject to a “Golden Rule” that the estimated bill savings over the lifetime of an energy efficiency measure must equal or exceed the cost of its installation.

The ECO is an estimated £1.3 billion per annum to support Green Deal delivery for households in fuel poverty and “hard to treat” homes (i.e., properties which require energy efficiency measures which would not meet the Green Deal’s “Golden Rule”)

ECO has replaced two previous supplier schemes, the Carbon Emissions Reduction Target (CERT) and the Community Energy Saving Programme (CESP). It is regulated by Ofgem and is split into three strands:

- Carbon Saving (approx £760 million per annum for “hard to treat” properties)
- Carbon Saving Communities (£190 million per annum for low income households including a 15% provision for rural locations)
- Affordable warmth (£350 million per annum for vulnerable consumers (those in private tenure who are in receipt of certain benefits).

The Department for Energy and Climate Change has recently consulted on proposals to amend and extend the ECO scheme to 2017. The proposals aim to reduce pressures on consumer bills and ensure ECO provides value for money for energy consumers, whilst continuing to help tackle fuel poverty, support the development of a sustainable energy efficiency supply chain and improve the energy efficiency of our housing stock.

**Energy Efficiency Directive (EED) – England & Wales**

The EED came into force in December 2012 and must be transposed by June 2014. The Directive introduces measures for energy efficiency on the public sector and industry and covers the entire energy chain from generation and transmission to end use.

The EED requires Member States (MS) to set an indicative target for energy consumption by 2050, improve the energy efficiency of Government Estates and set out a “roadmap” or long term strategy for renovating their building stock.
The UK Government is working on the overall transposition of the Directive, which also includes, amongst other things, measures on energy audits and energy management for large firms, cost-benefit analysis for the deployment of combined heat and power generation, heat metering and public procurement.

Article 5 sets requirement for Member States to renovate 3% of public buildings every year that are below minimum energy performance standards. Article 8 provides that large organisations undergo an energy audit at least every 4 years. The Government is also considering overlaps with other existing schemes such as Display Energy Certificates.

Arbed - Strategic energy performance investment programme - Wales

Arbed is an area-based strategic energy investment scheme that improves the homes of households in all tenures living in the most deprived areas of Wales.

Arbed 1 (and its subsequent extension) focused on providing support to Registered Social Landlords (RSLs) and Local Authorities to deliver energy performance projects both to their own properties and to some privately owned properties. The project enabled over 7,400 homes to be improved.

The Arbed 2 ERDF project builds upon Phase 1 and runs from 2012 to 2015. It is primarily funded through the European Regional Development Fund with match funding being provided from the Natural Resources & Food and Housing & Regeneration budgets. The project will invest £45 million installing energy efficiency measures and renewable energy technologies to a minimum of 4,800 existing homes in deprived areas of Wales. Arbed 2 is being delivered by two contracted scheme managers, with Melin Homes covering South Wales and Willmott Dixon covering North Wales.

Nest - Wales

Nest is the Welsh Government’s demand-led scheme to tackle fuel poverty in Wales. A Nest whole house assessment is available to people in Wales who are in receipt of a means tested benefit and living in the hardest-to-heat homes. Up to £100 million is expected to be invested in Nest between April 2011 and March 2016.

From April 2011 until 31 March 2014 over 13,000 householders who have met Nest’s eligibility criteria have had free energy efficiency measures installed whilst over 55,000 householders have been provided with a range of energy efficiency advice and support services to help them reduce their fuel bills.

3.4 Section 6(2)(d): “proposals considered by the Secretary of State during the period for the setting of targets for any of
those purposes in relation to (i) buildings in England and Wales; or (ii) services, fittings or equipment provided on or in connection with such buildings”

The Climate Change Act 2008 and Carbon Budgets

The Climate Change Act commits Government to reducing greenhouse gas emissions by at least 80% on 1990 levels by 2050. It established a system of statutory carbon budgets as steps to meeting this target.

Four carbon budgets have been set, for the years 2008-12, 2013-17, 2018-22 and 2023-27.

The first three carbon budgets were set in May 2009. These respectively require emissions reductions below 1990 levels of 22%, 28% and 34%.

The Government’s latest emission projections indicate that the first three carbon budgets for 2008-12, 2013-17 and 2018-22 will be met and that emissions will be reduced below each respective carbon budget by 96, 132 and 87 MtCO2e. However, current policies will not be sufficient to meet the fourth carbon budget (2023-2027) and additional abatement will be necessary to keep the UK on track to meet the fourth budget⁶.

The UK Parliament agreed in June 2011 a fourth budget (for the period 2023-2027) of 1,950 MtCO2e – representing a 50% reduction in emissions on 1990 levels by 2025. The government will review progress towards the EU emissions goal and review the fourth carbon budget if necessary to ensure consistency with the EU Emissions Trading System (ETS).

The review has found that there has been no significant change in the circumstances upon which the fourth carbon budget (2023 – 2027) was originally set in 2011. Therefore, the budget should not and cannot be changed under the terms of the Climate Change Act.

The UK remains committed to the currently legislated fourth carbon budget in order to support the devolved administrations in the delivery of emissions reductions against ambitious targets.

The Welsh Government’s Climate change annual report.

The Welsh Government’s second Climate change annual report was published in December and set out the key action that the Welsh Government

has taken to tackle the causes and consequences of climate change in Wales since the publication of its Climate Change Strategy in 2010.

Wales has exceeded its 3% annual emission reduction target for 2011 with an overall decrease of 10%. The two emissions sectors that relate to the sustainability of our building stock; the Business Sector and Residential sector, have shown a 13.3% reduction and 16.5% reduction in emissions for 2011 data respectively.

According to the most recent published 2012 data, Wales has made progress in reducing its emissions by nearly 18% against the 1990/1995 greenhouse gas baseline. However on current trends Wales has more work to do to meet its target of a 40% reduction in emissions by 2020, meaning further action across all sectors and further decreases in emissions from our building stock, is required.

**Code for Sustainable Homes**

The Minister for Housing & Regeneration, Carl Sargeant released written statements in July and September 2013 which reiterated The Welsh Ministers’ commitment to meeting the EU Directive for all new buildings to be nearly zero energy by 2019 and 2021. Improved standards of energy efficiency for Buildings in Wales were introduced following amendments made to Building Regulations Part L (Conservation of Fuel and Power) in January 2014. The Welsh Ministers intend to review Building Regulation Part L again in 2016.

Although not part of Building Regulations, the Code for Sustainable Homes (the Code) is an outcome-based standard managed by Department of Communities and Local Government for designing and assessing sustainable homes. Statistics on Code design and completion certifications are published quarterly on the DCLG website. As of March 2011, there were over 25,000 post construction certificates issued across all Code levels and over 58,000 design stage certificates issued in England and Wales.

In June 2010 national planning policy on sustainable buildings in Wales was incorporated into Planning Policy Wales (PPW). The Welsh Government published Technical Advice Note 22 (TAN22) which provided guidance for developers on how to meet the new requirement that all new homes in Wales comply with a minimum Code for Sustainable Homes rating of level 3.

Building Regulation Powers were devolved to Wales on 31 December 2011. In July 2012 the Welsh Government consulted on proposed changes to Building Regulations Part L. The consultation contained a section on reviewing the national planning policy and proposed the removal of the

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minimum Code/BREEAM standards. The subsequent 2014 amendments to Part L in Wales aligned or improved upon the existing Planning policy.

On 4 June 2014 the Minister for Housing & Regeneration announced the Welsh Minister’s intention to amend PPW by deleting the national development management policy, requiring an overall minimum Code for Sustainable Homes/BREEAM standard and to cancel TAN22 following the coming into force of changes to Building Regulations Part L in Wales on 31 July 2014.

All new buildings which are subject to Welsh Government funding must achieve either a Code for Sustainable Homes rating of level 3 (With 10% recycled content), or a BREEAM rating of Excellent. This currently remains a core condition of funding for all Welsh Government funded projects following the withdrawal of TAN22.

**Welsh Housing Quality Standard**

The benefits of good housing extend well beyond the basic requirement for somewhere to live. Improving homes and local environments affect many aspects of people’s lives. It improves health and well being, supports independence and reduces inequality and poverty. It also helps create safer and more sustainable communities and better quality of life. Social landlords achieve these benefits by providing good quality housing built and maintained to standards set by Welsh Government, Welsh Housing Quality Standard (WHQS) for existing social homes and Development Quality Requirements for new build social homes.

Progress monitoring based on statistical returns from all social landlords shows that as at 31 March 2013, 60 per cent of all social housing dwellings were compliant with the WHQS (including acceptable fails). However levels of compliance are much higher for individual components within dwellings. For example the WHQS includes challenging energy efficiency targets for older homes. As of the 31 March 2013, around 172,500 dwellings (78% of social housing) achieved an energy performance SAP (Standard Assessment Procedure) rating of 65 or above, out of 100 (including acceptable fails) (SAP65 is equivalent to an Energy Performance Certificate (EPC) D rating on a scale of A to G).

3.5. Section 6(2)(e): “Overall changes during the period in …”

The Act does not stipulate how to measure the factors listed in subparagraphs (i) to (iv) of section 6(2)(e). Where appropriate this report incorporates publicly available ‘official statistics’ as a source of measurement of change but the report is not an official statistics product. The statistics and information used are the latest available for the period of the report and references to source data are given. Where relevant official statistics are not

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9 Data source StatsWales at the following link: https://statswales.wales.gov.uk/Catalogue/Housing/Social-Housing-Quality
available to provide measurement of overall change the report relies on alternative data sources that have been judged fit for purpose. Some of the statistics used in this report have been drawn from new data sources not available for the Second and Third report. This will mean some discontinuity in the data provided in this report from the previous reports. Where possible, historic data for the periods covered by the First and Second reports has been provided.

(i) “the efficiency with which energy is used in buildings in England and Wales”

Domestic Properties / Dwellings
Since April 2008 all new homes have had to have an Energy Performance Certificate (EPC). EPCs provide a rating of the energy use of the home, using the Standard Assessment Procedure (SAP) which is the Government’s methodology for assessing and comparing the energy and environmental performance of dwellings. Its purpose is to provide accurate and reliable assessments of dwelling energy performances that are needed to underpin energy and environmental policy initiatives.

SAP quantifies a dwelling’s performance in terms of a fuel cost based energy efficiency rating - the SAP rating. This is taken from energy costs associated with space heating, water heating, ventilation and fixed lighting less cost savings from energy generation technologies.

SAP rating is expressed on a scale from 1 (highly inefficient) to 100 (highly efficient with 100 representing zero energy cost).

Since the beginning of 2010 the Government has used the average SAP ratings of new homes as its measure for the efficiency with which energy is used in new homes. The data series begins with [fourth quarter] October-December quarter of 2008.

Table 1: Average Energy Efficiency (SAP) ratings of new homes (Wales)

<table>
<thead>
<tr>
<th></th>
<th>Average SAP rating for new homes at Q4 2008 (earliest available data)</th>
<th>Average SAP rating for new homes at end Q4 2010</th>
<th>Average SAP rating for new homes at end Q1 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wales</td>
<td>77.8</td>
<td>80.6</td>
<td>80.2</td>
</tr>
</tbody>
</table>

10 Code for sustainable homes and energy performance of buildings data: December 2013, DCLG, Feb 2014
There has been an improvement of 2.3 SAP points during the whole period for new homes in Wales.

Since the last report the ratings have decreased. The average SAP rating reflects the average energy efficiency standard to which new homes are being built. The average will therefore be affected by changes in the build mix for new homes.

**Heating and Insulation Measures**

For a dwelling to provide optimum energy performance, a high level of thermal insulation needs to be present alongside an efficient heating system. The Energy Saving Trust’s (EST) Home Energy Efficiency Database (HEED) is a national database which contains data relating to property characteristics, heating systems, insulation measures and micro-generation. This report utilises the HEED installations data, which is collected by EST as they monitor the impact of UK government initiatives, such as the Carbon Emissions Reduction Target (CERT) or Green Deal. Further details of the data sources which are used by HEED can be found at:


The installation data contained within HEED is collected by EST when new energy efficiency measures are installed in a property. The data used within this report is intended to provide an indication of how the uptake of new cavity wall and loft insulation measures has varied from 2008 to 2012.

**Loft Insulation**

The table below shows that the total number of loft insulation installations in Wales fell annually between 2008 and 2010. Whilst the number of installations increased in 2011 there was still a fall of 2 per cent compared with 2008. In 2012 the number of installations were up by 13 per cent compared with 2008.

**Table 2: Number of Loft Insulation Installations (Wales)**

<table>
<thead>
<tr>
<th>Loft Insulation Installations in Wales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>47,426</td>
</tr>
</tbody>
</table>

11 Energy Saving Trust, Home Energy Efficiency Database. Available at:
Cavity Wall Insulation

The table below shows the number of cavity wall installations by age of property in Wales each year from 2008 to 2012. Where possible, the age of a property is given as either pre1976 or post 1976. This is because thermal efficiency requirements were introduced to the Building Regulations in 1976 which increased the uptake of cavity wall construction. Therefore properties built after 1976 tend to be more suited to the retrofitting of cavity wall insulation.

The data suggests that although the uptake of cavity wall insulation in properties built after 1976 has fluctuated each year from 2008 to 2012, the overall trend has shown an increase in the number of installations. In 2012 there were 17 per cent more installations than in 2008.

However for properties built before 1976, the uptake of cavity wall installation has fallen substantially since 2008, with over a third (36 per cent) fewer installations in 2012 than during 2008. This may be due to consumer concerns surrounding the correct installation of cavity wall insulation in older properties, or due to the diminishing availability of suitable dwellings. Overall, the number of cavity wall installations has fallen in Wales since 2008.

Table 3: Number of Cavity Wall Insulation Installations by age of property (Wales)¹¹

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cavity Wall Insulation (pre 1976)</td>
<td>23,950</td>
<td>20,574</td>
<td>12,307</td>
<td>15,816</td>
<td>15,300</td>
</tr>
<tr>
<td>Cavity Wall Insulation (post 1976)</td>
<td>5,607</td>
<td>6,005</td>
<td>5,878</td>
<td>7,023</td>
<td>6,534</td>
</tr>
<tr>
<td>Cavity Wall Insulation (Unknown Property Age)</td>
<td>4,317</td>
<td>4,804</td>
<td>3,960</td>
<td>1,844</td>
<td>1,903</td>
</tr>
<tr>
<td>Total</td>
<td>33,874</td>
<td>31,383</td>
<td>22,145</td>
<td>24,683</td>
<td>23,737</td>
</tr>
</tbody>
</table>

Table 4: Display Energy Certificates for (DECs) For Government Departments 2012 (UK)¹²

<table>
<thead>
<tr>
<th>Number of properties with a DEC</th>
<th>Percentage of properties with a DEC that have Operational Rating*</th>
</tr>
</thead>
<tbody>
<tr>
<td>851</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

* The Operational Rating is a numerical indicator of the actual annual carbon dioxide emissions from the building, which is shown on a scale from A to G, where A is the lowest (best) and G is the highest (worst).

(ii) “levels of emissions from such buildings that are emissions considered by the Secretary of State to contribute to climate change”

Table 5: Estimated total annual domestic CO2 emissions (Wales)¹³

<table>
<thead>
<tr>
<th>Total domestic emissions (million tonnes CO2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
</tr>
<tr>
<td>Wales</td>
</tr>
</tbody>
</table>

Table 6: Estimated total annual industrial, commercial and public sector CO2 emissions (Wales)¹³

<table>
<thead>
<tr>
<th>Total industrial, commercial &amp; public sector emissions (million tonnes CO2)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
</tr>
<tr>
<td>Wales</td>
</tr>
</tbody>
</table>

* Data excludes carbon emissions resulting from large industrial installations and agricultural combustion.

The above data are the most up to date for Wales.

Table 7: Sources of carbon dioxide emissions, 2006-2012 (million tonnes CO2) (Wales)¹⁴

<table>
<thead>
<tr>
<th>Sources of carbon dioxide emissions in Wales (million tonnes CO2)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
</tr>
<tr>
<td>Energy Supply</td>
</tr>
<tr>
<td>Transport</td>
</tr>
<tr>
<td>Residential</td>
</tr>
<tr>
<td>Business</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

*Excludes international aviation and shipping

(iii) “the extent to which such buildings have their own facilities for generating energy”

Department of Energy and Climate Change (DECC) produces statistics on the number of sites generating electricity from renewable sources:

¹³ 2011 Carbon Dioxide Emission Estimates at Local Authority and Regional Level, DECC, 2014. Available at: https://www.gov.uk/government/publications/local-authority-emissions-estimates

Table 8: Sites generating electricity from renewable sources (Wales)\textsuperscript{15}

<table>
<thead>
<tr>
<th>Number of sites generating electricity from renewable sources</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wales</td>
<td>246</td>
<td>306</td>
<td>419</td>
<td>1,511</td>
<td>16,998</td>
<td>27,667</td>
</tr>
</tbody>
</table>

The above data includes major renewable electricity installations, as well as smaller–scale installations, including those supported by the Feed in Tariff scheme. The main reason for the dramatic increase in the number of sites in 2011 and 2012 was due to the huge explosion in the number of domestic solar PV installations, as a result of the sudden fall in the cost of PV systems. In addition to the above figures, there are a number of sites in Great Britain, mainly solar PV, that DECC currently does not have regional information for – in 2012, these amounted to over 38,000.

The Feed in Tariff scheme was introduced on 1 April 2010 and is a financial support scheme for eligible low-carbon electricity technologies, aimed at small-scale installations up to a maximum capacity of 5 Megawatts (MW). Quarter 2 2013 was the thirteenth quarter of the Feed in Tariff scheme. At the end of this quarter, 1,918 MW of capacity across 398,198 installations had been included under the Feed in Tariff scheme. This is an increase in capacity of 51 per cent on the total at the end of 2012 Q2 (1,267 MW), and 7 per cent more than the amount included at the end of 2013 Q1 (1,791 MW).

The 1,918 MW was split by technology as follows: 1,684 MW of Solar Photovoltaics, 151 MW of Wind, 37 MW of Hydro capacity, 46 MW of Anaerobic Digestion, and 0.5 MW of Micro Combined Heat and Power. Of the total capacity, 1,286 MW of this was in the domestic sector, while 632 MW was in non-domestic sectors (Commercial, Industrial and Public Sector). Of the total number of schemes, 384,371 (97 per cent) were domestic installations, with 13,827 non-domestic (3 per cent).

The table below shows the number and capacity of Feed in Tariff installations at the end of Q2 2013.

\textsuperscript{15} Regional Renewable Energy Statistics. DECC, 2013 Available at: https://restats.decc.gov.uk/cms/regional-renewable-statistics/
Table 9: Number and Capacity of Feed in Tariff installations confirmed on the Central FITs Register at the end of June 2013 (Great Britain)\(^{16}\) *

<table>
<thead>
<tr>
<th>Technology</th>
<th>Number</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Anaerobic Digestion</td>
<td>53</td>
<td>0</td>
</tr>
<tr>
<td>Hydro</td>
<td>390</td>
<td>0</td>
</tr>
<tr>
<td>Micro Combined Heat and Power</td>
<td>454</td>
<td>0</td>
</tr>
<tr>
<td>Photovoltaics</td>
<td>392,470</td>
<td>99</td>
</tr>
<tr>
<td>Wind</td>
<td>4,831</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>398,198</td>
<td></td>
</tr>
</tbody>
</table>

* Data relates to applications between 1\(^{st}\) April 2010 and 30\(^{th}\) June 2013.

Table 10: Code for Sustainable Homes Certificates and BREEAM Assessments (Wales)\(^{17}\) 18

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code for Sustainable Homes (^{(a)})</td>
<td>182</td>
<td>927</td>
<td>909</td>
<td>1,452</td>
</tr>
<tr>
<td>BREEAM (^{(b)})</td>
<td>16</td>
<td>43</td>
<td>87</td>
<td>103</td>
</tr>
</tbody>
</table>

\(^{(a)}\) Number of post construction certificates issued.
\(^{(b)}\) Number of BREEAM certified assessments.

Following the publication of TAN 22 in June 2010, the number of completed buildings which have been assessed via the Code for Sustainable Homes and BREEAM has increased significantly.

(iv) “the extent to which materials used in constructing, or carrying out works in relation to, such buildings are recycled or re-used materials”

Construction and Demolition Waste

The EU has identified construction and demolition waste as a priority waste stream. Many of its components have a high resource value and there is high potential for recycling. This type of waste is also one of the heaviest and most voluminous waste streams generated in the EU. Under the Revised Waste Framework Directive, the EU has set a target for 70% of Construction and Demolition (C&D) waste to be prepared for reuse, recycled or recovered from landfill by 2020. However, ‘Towards Zero Waste’ the national waste strategy for Wales sets a target of 90% by 2020. In addition, the waste strategy sets out a target to reduce waste arisings for this sector by 1.5% (of the 2005 baseline) each year.


\(^{18}\) BRE Global Report to National Assembly for Wales, May, 2014
In a survey published by Natural Resources Wales in 2014, the total amount of C&D waste produced in Wales in 2012 was estimated to be 3.4 million tonnes. 83% of this waste consisted of soils and aggregates, the majority of which was reused on and off site, or recycled. 19% of the total waste arising was sent to landfill19.

Using the Ecological Footprint as an indicator for the environmental impact of waste, the Welsh Government has identified a number of ‘priority’ materials. These were determined by applying the embodied footprint per tonne of each waste type and the management impacts of different management methods, to the arisings and management data from the survey. For C&D waste, priority materials are: wood, plastic, insulation & gypsum products, hazardous wastes and metals. Therefore, the Welsh Government will encourage the C&D sector in Wales to focus particularly on reducing the production of these waste streams, and where they are produced, look for reuse and recycling options.

As part of the revised 2008 Waste Framework Directive requirement for all EU members to produce waste management plans, the Welsh Government has produced a suite of documents including several sector plans and a Waste Prevention Programme. A Construction & Demolition Sector Plan was published in November 2012 which contains a number of actions for key stakeholders to take in respect of the management of construction and demolition waste to achieve more sustainable and affordable outcomes20. It focuses on the key role that the C&D sector plays through working with their clients, customers, suppliers, trades people and the wider communities to achieve the twin goals of ‘One Planet Living’ and zero waste. A delivery organisation (‘Constructing Excellence in Wales’) is leading for the Welsh Government on the delivery of the majority of these actions.

3.5. Section 6(3) “an estimate, as at the end of the period, of the number of dwellings in Wales”

The estimated number of dwellings in Wales stood at 1,394,464 at 31 March 2013, an increase of 1.4% compared with the position on 31 March 2010.


23
References

1 The Building Act 1984 s(1)(1)(b) to (e)

2 Monitoring the Sustainability of Buildings: Progress reports to Parliament on sustainability and measures to improve compliance with Part L of the Building Regulations, CLG, February 2007

3 Progress towards the sustainability of the building stock in England and Wales: Second Parliamentary Report, CLG, February 2010

4 Progress towards the sustainability of the building stock in England and Wales Third Parliamentary Report, CLG, July 2011

5 Programme for Government, Welsh Government, 2011 Available at: http://wales.gov.uk/about/programmeforgov/?lang=en


9 Data source Stats Wales at the following link: https://statswales.wales.gov.uk/Catalogue/Housing/Social-Housing-Quality


12 2011 Carbon Dioxide Emission Estimates at Local Authority and Regional Level, DECC, 2014. Available at: https://www.gov.uk/government/publications/local-authority-emissions-estimates


17 *BRE Global Report to National Assembly for Wales*, May, 2014
