Ministry of Housing, Communities and Local Government

Sustainable and Secure Buildings Act 2004

Progress towards the Sustainability of the Building Stock in England: Sixth Parliamentary Report

Presented to Parliament persuant to Section 6(4) of the
Sustainable and Secure Buildings Act 2004

July 2018

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Report Context

Section 6 of the Sustainable and Secure Buildings Act 2004 (the Act) requires a biennial report on the sustainability of the building stock in England. 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.

This sixth report covers the period between November 2014 and the end of 2016. Its publication was overtaken by the events of the 2017 general election and the Grenfell Tower fire tragedy. Therefore, it has been updated to reflect where consultations have been concluded since the beginning of 2017 and latest data. Otherwise the report represents a snapshot at the end of 2016. The next report will reflect any updates resulting from review that Dame Judith Hackitt conducted into building regulations and fire safety.

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 also covers 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 at the end of the reporting period.

This report covers England only.

Legislative Changes

The following legislative changes to Building Regulations, relevant in terms of sustainability, were made or planned in the two year period of this report – details of these changes are set out in section 3.1 of this report

- Building Regulations &c. (Amendment) Regulations 2015 (S.I. 2015 No. 767)
- The Energy Performance of Buildings (England and Wales) (Amendment) Regulations 2016 (SI 2016/284)
- Building Regulations &c. (Amendment) Regulations 2016 (S.I. 2016 No. 285)
- The Energy Performance of Buildings (England and Wales) (Amendment) (No. 2) Regulations 2016 (SI 2016/888)

Statistical report

The statistical report presents data on the sustainability of buildings in England up to end 2016 (unless otherwise stated) covering:

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

This report is not a statistical product but it incorporates publicly available 'official statistics' as a source of measurement of change for the above where the latest available for the period of the report are used. 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.

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

(1) 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 up to the transfer of powers order in 2011 and England only thereafter.

(2) 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 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.

(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.

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

(4) The Secretary of State must lay before Parliament each report he prepares under this section.

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.

3. Sustainable and Secure Buildings Act 2004: Biennial Report to Parliament

This sixth report covers the two year period up to the end of 2016. Where documents or announcements published after this period subsequently update policy or information about regulations 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"

The following changes to Building Regulations, relevant in terms of sustainability, were made or planned in the two year period of this report. Their effects or likely effects are then discussed in section 3.3 of the report.

- Building Regulations &c. (Amendment) Regulations 2015 (S.I. 2015 No. 767)
- The Energy Performance of Buildings (England and Wales) (Amendment) Regulations 2016 (SI 2016/284)
- Building Regulations &c. (Amendment) Regulations 2016 (S.I. 2016 No. 285)
- The Energy Performance of Buildings (England and Wales) (Amendment) (No. 2) Regulations 2016 (SI 2016/888)

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

No proposals were current at the end the period

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

Building Regulations &c. (Amendment) Regulations 2015 (SI 2015 No. 767)

These regulations added an optional requirement for the water efficiency of newly erected dwellings and for most dwellings created through a material change of use. This allowed a local authority to require that new dwellings should meet a water use requirement of 110 litres per person per day as opposed to the basic minimum requirement of 125 litres per person per day, where this is justified by need and the viability of new development is not compromised. This optional requirement would be imposed as a condition of planning permission. The optional requirement was introduced using powers in the Building Act as amended by S 42 of the Deregulation Act 2015. Approved Document G (Sanitation, hot water safety and water efficiency) was amended to give guidance on complying with the new optional requirement.

The Energy Performance of Buildings (England and Wales) (Amendment) Regulations 2016 (SI 2016 No. 284)

These regulations made provision in respect of Energy Performance Certificates, Display Energy Certificates and the recommendation reports accompanying those certificates, to the effect that none of those documents should be entered on the register in respect of 'excluded' buildings; examples include prisons and buildings used by any of the armed forces. The other major change consolidated Regulation 29 of the Building Regulations 2010, as a new regulation. This requires persons carrying out building work consisting of the erection of a building, or certain conversions

of buildings, to give an energy certificate to the building owner, and notify their local authority to that effect. There were no changes to the substantive requirements in the regulations. These regulations amend the wording of the statutory definitions and the requirements for the registration, disclosure and publication of data by the keeper of the register and changes to the fees for entering data onto the register.

Building Regulations &c. (Amendment) Regulations 2016 (SI 2016 No. 285)

These Regulations made technical changes to the wording of some of the definitions in Regulation 2 and of the requirements in Part 6 of the Regulations as regards the energy efficiency requirements in the Regulations. There were no substantive changes to the requirements. Approved Documents L1A, L2A, L1B and L2B were amended to reflect the changes in the wording of the statutory definitions and requirements.

The Energy Performance of Buildings (England and Wales) (Amendment) (No. 2) Regulations 2016 (SI 2016/888)

These Regulations updated references that were overlooked in earlier amendments to the 2012 Regulations on the disclosure of data for stated purposes. There were no substantive changes to the requirements. There were minor technical changes to the 2012 Regulations of items of bulk access data that may be published on a website by virtue of regulation 30A(1) of those Regulations.

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 (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. Five carbon budgets have been set, for the years 2008-12, 2013-17, 2018-22, 2023-27 and 2028-32.

The first three carbon budgets were set in May 2009 and the fourth carbon budget was set in June 2011. These respectively require emissions reductions to 3,018 million tonnes of carbon dioxide equivalent (MtCO2e) over the first carbon budget period, 2,782 MtCO2e in the second, 2,544 MtCO2e in the third and 1,950 MtCO2e in the fourth.

In June 2016, the Government set the level for the fifth carbon budget (2028-2032) at 1,725 MtCO2e – representing a 57% reduction in emissions on base year levels.

The final statement for the first carbon budget period confirmed that the UK had met its first carbon budget with emissions 36 MtCO2e below the target level.

The latest emissions projections show that the UK is on track to meet the second (2013-2017) and third carbon budget (2018-2022). However, current policies are unlikely to be sufficient to meet the fourth carbon budget (2023-2027) and additional abatement will be necessary to keep the United Kingdom on track to meet this budget.

Energy Efficiency (Private Rented Property) Regulations

The Energy Efficiency (Private Rented Property) (England and Wales) Regulations were made in March 2015, and fulfil a duty in the 2011 Energy Act. They contain two key provisions relating to energy improvements in the private rented property sector end England and Wales:

- Tenants' energy efficiency improvement provisions - from April 2016 domestic tenants were enabled to ask landlords to install reasonable energy efficiency improvements in the property. The current regulations only require landlords to install those measures that can be funded using subsidy. The government is currently considering whether amendments should be made to these Regulations
- Minimum level of energy efficiency provisions - from April 2018 domestic and non-domestic privately rented properties in England and Wales must meet a minimum energy efficiency standard of Energy Performance Certificate (EPC) rating E in order to be let. Under these Regulations landlords are only required to do what is cost-effective: in the non-domestic sector, the Regulations only require landlords to install those measures that pay back within 7 years. On the domestic side, the current Regulations only require landlords to install those measures that can be funded using subsidy. The government consulted in 2017 on proposals considering whether amendments should be made to the domestic provisions to introduce a potential landlords' contribution for meeting some or all of the cost of any improvements required.

Fuel Poverty Strategy

In December 2014, the previous government introduced the **Fuel Poverty (England) Regulations 2014**[1]. These regulations created the statutory fuel poverty target for England to 'ensure as many fuel poor homes as reasonably practicable achieve a minimum energy efficiency rating of a Band C by 2030'.

In 2015 the previous government published '**Cutting the cost of keeping warm: a fuel poverty strategy for England**[2]**.**' This strategy set out interim milestones to support the achievement of the statutory fuel poverty target, with milestone to ensure that so far as is reasonably practicable fuel poor households are improved to a minimum energy efficiency rating of a:

- Band E by 2020, and;
- Band D by 2025.

The strategy also launched a £25m **Central Heating Fund**. Twelve Local Authority partnerships were successful in being allocated a share of the fund to install up to 8,000 central heating systems in the homes of low income households who are reliant upon expensive forms of heating, such as plug in electric convection heaters.

The Future of Heat

- Non-Domestic Buildings

A Call for Evidence seeking industry views to help develop future policy options on building performance and heating non-domestic buildings ran between 16th November 2016 and 27th

1 http://www.legislation.gov.uk/ukdsi/2014/9780111118900/pdfs/ukdsi_9780111118900_en.pdf
2 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/408644/cutting_the_cost_of_keeping_warm.pdf

January 2017. These views helped shape and feed into proposals for improving energy efficiency in businesses in the government's Clean Growth Strategy published in October 2017.

- Domestic buildings

A consultation on proposed changes to heating homes, including increased efficiency and controls standards for domestic boiler installations ran between 8th December 2016 and 27th January 2017. The government's response was published in October 2017.

Standard Assessment Procedure (SAP) consultation

A consultation on proposed changes to the national calculation methodology for the energy performance of dwellings (SAP) ran between 16th November 2016 and 27th January 2017. This consultation, among other things, included a proposed updating of fuel emission factors and proposed technical changes to SAP, to ensure that the SAP model aligns with the latest evidence and data. The government's response was published in November 2017.

Zero Carbon Homes

In the Productivity Plan[3], "Fixing the Foundations", of July 2015, the government announced that it would not proceed with the zero carbon allowable solutions carbon offsetting scheme, or the proposed 2016 increase in on-site energy efficiency standards. Rather it committed to keep energy efficiency standards under review, recognising that existing measures to increase energy efficiency of new buildings should be allowed time to become established. This was because zero carbon standards would have placed a significant regulatory burden on house builders and developers; and the carbon offsetting element would have added cost but have no benefit to the home buyer.

This means that measures to give effect to allowable solutions in section 37 of the Infrastructure Act 2015, which would have amended the Building Act 1984, will not be commenced. Also, the government has not commenced the provison in S42 of the Deregulation Act 2015 to amend the Planning and Energy Act which the previous government had intended as part of its zero carbon homes policy.

Rather it committed to keep energy efficiency standards under review, recognising that existing measures to increase energy efficiency of new buildings should be allowed time to become established. This was because zero carbon standards would have placed a significant regulatory burden on house builders and developers; and the carbon offsetting element would have added cost but have no benefit to the home buyer.

Roll out of Smart Meters

The Government is committed to ensuring that every home and small business in the country is offered smart meters by the end of 2020, delivered as cost effectively as possible. The roll-out of smart meters is an important national modernisation programme that will save Great Britain £5.7 billion by modernising our energy system and helping customers avoid wasting energy and money. It will contribute to the sustainability of housing stock in England as all domestic households will be offered an In-Home Display (IHD) enabling them to see what energy they are using and how much it is costing in near real time. Energy suppliers are required to provide energy efficiency advice during smart meter installations.

BEIS in partnership with IPSOS Mori and the Energy Saving Trust has published materials to

3 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/443898/Productivity_Plan_web.pdf paragraph 9.17

support delivery of tailored energy efficiency advice to domestic households, which includes a toolkit guide to help energy suppliers develop their training and guidance for their installers and ten factsheets covering a range of energy advice that installers can pick from to match customers' circumstances[4]. By the end of 2016 nearly 5 million smart and advanced meters were operating in homes and businesses across Britain.

The Green Deal

The Green Deal has enabled households to take out loans ("Green Deal Plans") to pay for energy efficiency improvements in their homes, with repayments made through their energy bill. Repayments are made on a "Pay As You Save" (PAYS) basis: after the improvement has been made, the household begins to save energy, their energy bills are less than they would have been without the improvement, and these savings are used to repay the loan. In July 2015, the Government announced that no further public money would be invested in the Green Deal Finance Company (GDFC). The volume of new Green Deal Plans created subsequently reduced to minimal levels with 75 privately financed Plans created in the 12 months to November 2016. In January 2017, the business and assets of the GDFC were purchased by private investors who have indicated that they intend to resume lending through the framework. As of November 2016, 13,759 Plans were either still live or had at some stage been live.

Energy Company Obligation

The Energy Company Obligation is a statutory obligation on energy suppliers to make reductions in their carbon emissions. The programme is delivering domestic energy efficiency measures, such as insulation and heating improvements, to households in fuel poverty or in areas of low income, or homes which are particularly hard to treat with regards to insulation.

The Energy Company Obligation scheme was launched in January 2013. As of November 2016, it has delivered over 2 million measures in about 1.6 million properties in Great Britain. The Government's Spending Review 2015 announced plans for a supplier obligation to run for five years from April 2017 at an estimated level of £640m per year, rising with inflation.

A reformed ECO scheme will be extended from April 2017 to September 2018, before a new longer term scheme is developed. The scheme extension will be the primary vehicle through which the Government meets its manifesto commitment to insulate a million more homes over this Parliament, supporting its commitment to tackle fuel poverty, and those on low income.

Energy Efficiency Directive

Until the UK leaves the EU, EU law continues to apply to and within the UK. The European Union Energy Efficiency Directive was agreed in 2012 and Member States were required to transpose its provisions into national law by June 2014. The Directive was introduced to help ensure the EU meets its target to reduce primary energy consumption by 20% by 2020, compared to a 2007 business-as-usual projection. It contains a broad range of requirements, which extend to energy efficiency in the public sector and industry and covers the entire energy system, from generation and transmission to final energy use. From the UK's perspective, the most notable requirements of the Directive are:

Article 3: to set a non-binding national energy efficiency target for 2020, taking into account the EU's overarching 2020 target. The UK Government notified the Commission of its target on 30 April 2013, which was set at the level of an 18% reduction in final energy consumption (equivalent

4 https://www.gov.uk/government/publications/best-practice-guidance-for-the-delivery-of-energy-efficiency-advice-to-households-during-smart-meter-installation-visits

to a 20% reduction in primary energy consumption). The UK is on track to achieve its target.

Article 4: to establish a long-term strategy for mobilising investment in the renovation of residential and commercial buildings. The UK Government published its Building Renovation Strategy in April 2014, in accordance with the Directive's requirements.

Article 5: to meet a binding target to renovate 3% of the total floor area of heated and/or cooled buildings owned and occupied by central government buildings each year to meet the minimum energy performance requirements set out in the application of Article 4 of the Energy Performance of Buildings Directive or to introduce alternative measures which will deliver equivalent energy savings by 2020. The UK is on track to achieve this target.

Article 7: a binding cumulative end-use energy savings target by December 2020 equivalent to 1.5% of annual energy sales to final energy users relative to the average energy sales over the period 2010-12. The UK is on track to achieve this target.

Article 8: all "large enterprises" undertake an energy audit by 5 December 2015 and every four years thereafter. The Government has introduced the Energy Savings Opportunity Scheme to comply with this requirement. The scheme will capture around 10,000 of the UK's largest enterprises.

The UK Government formally notified the Commission of its approach to transposing the Directive in June 2014.

In November 2016 the Commission issued a legislative proposal to update the Energy Efficiency Directive. This proposes raising the EU's energy efficiency target for 2030 from 27% to 30% and making it binding at EU level (Article 3). It also proposes extending the application of a binding national energy saving target (Article 7) to 2030 and proposes changes to existing provisions on metering and billing of heating and cooling. The proposal is currently under negotiation.

Energy Performance of Buildings Directive

Article 19 of the Energy Performance of Buildings Directive requires the European Commission to carry out a review of the implementation of the Directive 'by the 1 January 2017 at the latest, in the light of the experience gained and progress made during its application, and if necessary, make proposals'. The Commission undertook a review in June 2015, which included a broad public consultation, studies, and meetings with stakeholders. The review found that there was scope to improve the functioning of certain provisions in the Directive and take advantage of technological progress to accelerate the decarbonisation of buildings. It indicated that amendments should be made to the Directive to strengthen the current provisions and to simplify certain aspects. It found that the overall architecture of the Directive was found to be working, in particular for new buildings, but "the transformation of the building stock is still proceeding at a relatively slow pace".

On 30 November 2016 the Commission published its proposals to further amend the Energy Performance of Buildings Directive as part of a wider package of proposals – the 'Clean Energy for All Europeans' package[5] - to support the achievement of its commitments to further reduce greenhouse gas emissions by at least 40% by 2030 compared to 1990. The Commission states that main objective of the proposals on the EPBD is to accelerate the cost-effective renovation of existing buildings, it also proposes to introduce for the first time into the Directive requirements on 'electro-mobility' which aim to increase electric vehicle charging infrastructure for buildings with more than 10 parking spaces.

5 Full details of the 'Clean Energy for All Europeans' package including the proposed amendments to the Energy Performance of Buildings Directive and associated documents can be found at: https://ec.europa.eu/energy/en/news/commission-proposes-new-rules-consumer-centred-clean-energy-transition

In June 2017 the European Council reached a political agreement on the proposals.

Sustainable Drainage Systems

With effect from 6 April 2015, national planning policy in England was strengthened to make clear that sustainable drainage systems should be provided in all major new developments (10 dwellings or more, or equivalent non-residential or mixed), unless demonstrated to be inappropriate, with expectations on operational standards and maintenance requirements. This is in addition to the existing policy expectation that sustainable drainage systems should be given priority in developments in areas at risk of flooding.

Section 171 of the Housing and Planning Act 2016[6] introduced a new obligation for the Secretary of State to carry out a review of planning legislation, government planning policy and local planning policies concerning the provision of sustainable drainage in developments. This review is being taken forward by MHCLG, working closely with Defra and the Environment Agency and will report in 2018.

6 http://www.legislation.gov.uk/ukpga/2016/22/part/6/crossheading/sustainable-drainage/enacted

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

The Act does not stipulate how to measure the factors listed in sub-paragraphs (i) to (iv) of section 6(2)(e). Where appropriate this report incorporates publicly available ‘official statistics’ as a source 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 available, the report relies on alternative data sources that have been judged fit for this purpose.

Some of the statistics used in this report have been drawn from new data sources not available for previous reports. 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 previous reports have been provided.

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

Domestic Properties / Dwellings

Since April 2008 all new homes have had to have an Energy Performance Certificate. They provide a rating of the energy use of the home, using the Standard Assessment Procedure 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. The Standard Assessment Procedure quantifies a dwelling’s performance in terms of a fuel cost based energy efficiency rating. This is taken from energy costs associated with space, heating, water heating, and ventilation and fixed lighting less cost savings from energy generation technologies. This 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 Standard Assessment Procedure ratings of new homes as its measure for the efficiency with which energy is used in new homes. The data series begins with October-December quarter of 2008.

Table 1: Average Energy Efficiency Ratings of New Homes (England)

	Average Rating for New Homes (%)								
	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
England	79.0	79.4	80.8	80.6	80.6	81.2	81.6	81.7	81.4

Source http://webarchive.nationalarchives.gov.uk/20160130204727/http://www.ons.gov.uk/ons/rel/wellbeing/sustainable-development-indicators/july-2015/rft---sustainable-development-indicators--july- 2015.xls Table 28

There has been an improvement of 2.6 percentage points for new homes in England since the method of measuring it using SAP ratings was introduced. There was a small decline in the average energy ratings shown in the middle years of this data-set but they have increased again to reach a new peak level in 2014. This fluctuation reflects the average energy efficiency standard to which new homes are being built and is therefore affected by changes in the build mix for new homes and the time-lag between new Building Regulation standards coming into force and them then becoming the main standard against which private sector new homes will be being built.

Table 2: Average Energy Efficiency Rating of all dwellings in England

Average Rating for all Dwellings (%)													
	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
England	48.7	49.4	50.2	51.5	52.7	54.1	55.6	56.9	58.6	59.7	60.9	62.0	62.0

Source: English Housing Survey 2014-15 Headline Report. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/501065/EHS_Headline_report_2014-15.pdf

In England there has been an improvement of 4 percentage points since 2011 and 12.2 percentage points over the period since the introduction of the Sustainable and Secure Buildings Act in 2004.

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 English Housing Survey collects information about insulation measures, double glazing and boiler types.

The table below, taken from data in the English Housing Survey Headline Report 2014/15, shows the changes in the percentage of dwellings with given insulation measures in England from 2005 to 2014 which have all shown year on year improvements:

Table 3: Percentage of Homes with Insulation Measures

	Percentage of Homes with Insulation Measures										
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2016**
Cavity walls with evidence of insulation	27.4	30.2	32.7	33.4	34.5	37.1	38.4	40.1	41.2	44.0	49.0
200mm or more of loft insulation	13.4	16.0	19.2	21.1	24.0	26.7	30.1	34.1	37.2	38.5	37.0
Entire house double glazed	61.9	63.3	66.9	70.8	72.9	74.2	76.3	78.8	80.0	80.8	83.0

Source: English Housing Survey 2014-15 Headline Report. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/501065/EHS_Headline_report_2014-15.pdf

Table 4: Percentage of Homes with Boilers in England

	Percentage of Homes by Type of Boiler											
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Standard boiler (floor or wall)	43.3	41.0	39.6	36.3	32.7	29.2	26.1	24.3	22.6	20.0	17.5	15.3
Back boiler (to fire or stove)	10.0	9.7	8.8	7.6	6.6	5.7	5.1	4.2	3.4	3.2	2.7	2.3
Combination boiler	28.7	28.7	28.3	27.3	24.6	21.6	19.4	16.8	14.1	12.8	10.9	9.3
Condensing boiler	1.4	2.1	3.1	4.3	6.0	7.9	9.6	11.9	13.5	14.5	16.4	17.9
Condensing-combination boiler	3.3	5.9	8.3	12.5	18.2	23.7	28.3	31.6	35.2	39.0	42.4	44.8
No boiler	13.3	12.6	11.9	12.0	11.9	11.8	11.5	11.2	11.2	10.5	10.1	10.4

Source: English Housing Survey 2013-14 Headline Report https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/501065/EHS_Headline_report_2014-15.pdf

Condensing boilers are generally the most efficient boiler type and are recommended for new and replacement boilers. The table above, taken from data in the English Housing Survey Headline Report 2014/15, shows the changes in the percentage of dwellings with different boiler types in England from 2005 to 2014. It shows the less efficient standard and back boilers decreasing over the period and the percentage of dwellings with combination boilers has fallen from a peak of 28.7% in 2006 to 12.8% in 2014. The percentage of dwellings with condensing, and particularly, condensing-combination boilers continued to increase and, by 2014, 53.5 percent of the housing stock had one of these types of boiler.

Table 5: Display Energy Certificates for Government Departments 2014-16

Number of properties with a DEC	**Percentage of properties with a DEC that have Operational Rating**						
	A	B	C	D	E	F	G
1,246	0	4	24	34	18	8	11

Source: Government Property Unit, Cabinet Office, March 2017

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).

Data for Display Energy Certificates for the Government Estate is collected via the e-PIMS™ system, but historically it has not been mandatory. The figures on March 2017 are broadly comparable to those published for the 2014-16 report, although using a different source. The DEC data on e-PIMS™ is incomplete but as of March 2017, it has become mandatory for departments to post up-to-date DEC data on e-PIMS™ for all qualifying properties. DECs are required for buildings with total useable floor area of more than 250m² and frequently visited by members of the public.

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

Table 6: Estimated total annual domestic carbon dioxide emissions, 2005 to 2015 (England)

	Total domestic emissions (million tonnes CO_2)										
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
England	126.9	126.8	122.8	123.2	111.3	119.6	104.3	112.2	109.3	91.4	88.0

Source: Department of Business, Energy and Industrial Strategy
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/623015/2005_to_2015_UK_local_and_regional_CO2_emissions_statistical_release.pdf

Table 7: Estimated total annual industrial and commercial sector carbon dioxide emissions, 2005 to 2015 (England)

	Total industrial and commercial sector emissions (million tonnes CO_2)										
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
England	191.0	190.5	184.9	179.2	154.4	160.4	145.2	156.4	152.2	133.2	120.7

Source: Department of Business, Energy & Industrial Strategy https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/623015/2005_to_2015_UK_local_and_regional_CO2_emissions_statistical_release.pdf

Table 8: Sources of UK carbon dioxide emissions, 2005 to 2015 (UK)

	Sources of UK Carbon Dioxide Emissions (million tonnes CO_2)										
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Energy supply	219	224	219	213	190	197	182	193	181	156	136
Transport	129	129	131	125	120	119	117	117	115	117	119
Residential	82	80	76	78	75	84	64	74	74	61	63
Business	97	94	92	89	76	78	73	73	73	71	69
Other	28	25	25	24	17	18	17	18	19	17	17
Total	**555**	**553**	**544**	**529**	**478**	**497**	**454**	**474**	**462**	**421**	**404**

Note: Figures may not sum up due to rounding

Source: Final UK greenhouse gas emissions national statistics 1990-2015 Excel data tables (Table 4), Department for Business, Energy & Industrial Strategy. https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-2015

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

The Department for Business, Energy and Industrial Strategy produces statistics on the number of sites generating electricity from renewable sources:

Table 9: Sites Generating Electricity from Renewable Sources in England

	Sites Generating Electricity from Renewable Sources in England									
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
England	2,553	3,454	5,408	24,812	177,276	314,944	394,681	550,554	644,924	682,705

Source: Energy Trends article "Renewable electricity in Scotland, Wales, Northern Ireland and the regions of England" (published annually by Department for Business, Energy and Industrial Strategy, September 2017)
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/647344/Regional_renewable_electricity_2016.pdf

The data above 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 was due to the large expansion in the number of

domestic solar photo-voltaic installations, as a result of the introduction of the Feed in Tariff scheme in April 2010, and the subsequent sudden fall in the cost of these systems. In addition to the above figures, there are a number of sites in Great Britain, mainly solar photo-voltaic, that the Department for Business, Energy and Industrial Strategy currently does not have location information for. At the end of 2015, these amounted to over 80,000.

Table 10: Number and Capacity of Feed in Tariff installations confirmed on the Central Feed in Tariffs Register (Great Britain) at the end of 2016.

Technology	Number		Capacity	
	Number	Percentage	kW	Percentage
Anaerobic digestion	366	0	249,404	4
Hydro	974	0	175,773	3
Micro Combined Heat and Power	517	0	546	0
Photovoltaics	788,048	99	4,539,481	80
Wind	7,415	1	684,186	12
Total	797,320	100	5,649,390	100

Source: Monthly Central Feed-in Tariff Register Statistics, Department for Business, Energy and Industrial Strategy – percentages have been rounded.

Note: not all these installations will be on or in buildings, but all micro-Combined Heat and Power, most solar Photovoltaic and some wind and hydro will be.

The regional statistics can be found on the United Kingdom Government website: https://www.gov.uk/government/statistical-data-sets/sub-regional-feed-in-tariffs-confirmed-on-the-cfr-statistics should readers be interested in breakdown by region, local authority or Parliamentary constituency.

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. At the end of 2016, 5,649 Megawatts of capacity across 797,320 installations had been included under the Feed in Tariff scheme. This is an increase of 42% in number of installations and 89% in capacity compared with the total reported in the fifth report, which reflected the position at the end of 2014.

Domestic schemes represent 48 per cent (2.70 GW) of total capacity and 96 per cent (764,367) of installations.

(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

Table 11: Recovery Rate from Non-Hazardous Construction and Demolition Waste, England, 2010-14

Year	Generation (Million Tonnes)	Recovery (Million Tonnes)	Recovery Rate (%)
2010	43.9	39.7	90.5
2011	44.1	39.9	90.6
2012	45.3	41.3	91.1
2013	46.3	42.1	91.1
2014	49.1	44.9	91.4

Source: Defra statistics https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/683051/UK_Statisticson_Waste_statistical_notice_Feb_2018_FINAL.pdf
Excludes excavation waste
Estimates for 2010-12 have been revised since previous publications following methodological improvements

The European Union has identified construction and demolition waste as a priority waste stream as a many of its components have a high resource value and there is high potential for recycling and this type of waste is one of the heaviest and most voluminous waste streams generated in the European Union.

UK estimates of recovery rates from non-hazardous construction & demolition waste have been calculated for reporting against the Waste Framework Directive. Under this directive there is a target for the UK to recover at least 70 per cent of non-hazardous Construction and Demolition waste by 2020, a target which the UK has exceeded every year since the directive came into force in 2010. England is responsible for the majority of generation and treatment of UK C&D waste. The most recent figures are for 2014.

3.6. Section 6(3) "an estimate, as at the end of the period, of the number of dwellings in England"

There were 23.7 million dwellings in England at 31 March 2016, an increase of 190,000 dwellings (0.81%) on the same point the previous year.

Source: https://www.gov.uk/government/statistical-data-sets/live-tables-on-dwelling-stock-including-vacants

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