

UNITED KINGDOM

1. CONTEXT OF THE BUILT ENVIRONMENT

Urban population

Total population	Functional Urban Area population*	Share of urban population	Average urban growth
66.972 million (2020)	59.730 million (2020)	89% (2020)	3% (2015-2020)

*Data source: European Commission (2023), FUA and eFUA methodology: OECD/European Commission (2020)¹

Building data

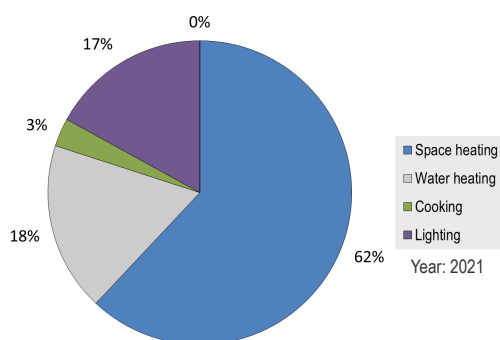
	Building stock	Built before 1981	Annual construction	Annual construction rate
Residential	29,000 thousand dwellings (2022)	72%	261.3 thousand dwellings (2022)	0.9%
Non-residential	617.7 million m ² (2023)		N/A million m ²	

Energy & emissions data

Residential buildings**	1990	2021	+/- rate	Non-residential buildings	2021
Final energy consumption (PJ/year)	1,562	1,585	1.5%	Final energy consumption (PJ/year)	760.6
	1990	2021	+/- rate		2021
GHG emissions (MtCO ₂ /year)	75.75	66.19	-12.6%	GHG emissions (MtCO ₂ /year)	36.9

**Data source: IEA Countries & Regions²

Energy consumption by end-use (Residential)



Heating degree days***

2,406.8

Degree (°C) Days (2020)

Reference degree day: 16 degree (°C)

Cooling degree days***

12.3

Degree (°C) Days (2020)

Reference degree day: 21 degree (°C)

***Data source: IEA Weather, Climate and Energy Tracker³

¹ <http://data.europa.eu/89h/2ff68a52-5b5b-4a22-8f40-c41da8332cfe>, <https://doi.org/10.1787/d58cb34d-en>

² <https://www.iea.org/countries>

³ <https://www.iea.org/data-and-statistics/data-tools/weather-climate-and-energy-tracker>

2. GOVERNANCE AND CAPACITY BUILDING

Who does what

Ministries/Agencies responsible for BEE (building energy efficiency) and related policies

A Department of Levelling Up, Housing and Communities (DLUHC)	B Department of Energy Security & Net Zero (DESNZ)	C Department for Environment, Food & Rural Affairs (DEFRA)	D	E
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Ministries/Agencies responsible for each policy area

Building code	Governmental buildings	Housing policy in general	Financial incentives for BEE	Behaviour change for BEE
A B C D E	A B C D E	A B C D E	A B C D E	A B C D E
BEE standard	Act/law for BEE regulation	Whole life carbon	Energy policy in general	NDC
A B C D E	A B C D E	A B C D E	A B C D E	A B C D E

Local governments' authority to customise BEE standards

—	Local governments can customise national standards.
—	Local governments cannot adjust national standards, but the standards differ across regions depending on the local climate.
✓	Local governments cannot adjust national standards. All building codes, standards or requirements are uniform across the entire country.
✓	Neighbourhood level approach/planning
✓	The national government is tracking progress on decarbonisation efforts at the local level
✓	More ambitious policy instrument by local governments In March 2021, the Senedd passed a suite of regulations to set a Net Zero Wales 2050 target, increased Wales decadal emissions targets, and set Wales Carbon Budget 2 and 3 in line with them. Scotland aims to reach Net Zero by 2045 "The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, amends the Climate Change (Scotland) act 2009, sets targets to reduce Scotland's emissions of all greenhouse gases to net zero by 2045 at the latest, ahead of the 2050 UK-wide target"

Capacity building

Government funding programmes to train/enhance skills for SMEs

Designing for ZEB	—	Insulation	✓
Calculation for energy performance of buildings	—	Installation of energy efficient equipment	✓
Calculation for life cycle CO2 of buildings	—	Other	—

Actions undertaken by the national government to support local governments for BEE policy implementation

Co-ordinating regional networks for knowledge exchange and support	-
Providing funding for training	✓
Distributing toolkits and guidelines	-
Developing online platforms to share best practices	Priority ✓
Hosting annual conferences focused on BEE policy implementation	-
Offering grants to hire consultants	-
Collaborating with research institutes offering specialised courses on BEE practices	Priority ✓
Creating incentive programmes to reward local governments	-
Supporting the Implementation of local regulations	-
Establishing mentorship programmes	-
Other	-

3. GOALS AND POLICY FOCUS

Policy areas covered in the goals and existing commitments

	Zero emission for new buildings	Zero emission for existing buildings	Renewable energy for new buildings	Renewable energy for existing buildings	Whole-life cycle carbon reduction
NDC	✓	✓	-	-	-
LT-LEDS	-	-	-	-	-
Ministerial plan	✓	-	✓	✓	-

Quantitative targets included in long-term goals

Fossil fuel-free buildings	District heating/cooling
Insulation	Heat pumps 600,000 installations a year by 2028
Rooftop PVs	Solar heating of water
Other renewable energy	Other The fuel poverty target is to ensure poor homes to achieve EPC C by 2030

Policy focus for decarbonising buildings (Top 3)

Current focus

Passive design to reduce heating demand	<input type="radio"/>
Energy efficiency on heating	<input checked="" type="radio"/>
Passive design to reduce cooling demand	<input type="radio"/>
Energy efficiency on cooling	<input type="radio"/>
Switching energy to sustainable energy	<input checked="" type="radio"/>
Renewable energy	<input checked="" type="radio"/>
Embodied carbon	<input type="radio"/>
Circularity of building materials	<input type="radio"/>



Future priorities

Passive design to reduce heating demand	<input type="radio"/>
Energy efficiency on heating	<input type="radio"/>
Passive design to reduce cooling demand	<input checked="" type="radio"/>
Energy efficiency on cooling	<input type="radio"/>
Switching energy to sustainable energy	<input checked="" type="radio"/>
Renewable energy	<input checked="" type="radio"/>
Embodied carbon	<input type="radio"/>
Circularity of building materials	<input type="radio"/>

Energy poverty

Strategies to reduce poverty and inequality via decarbonising buildings



Stronger financial support for decarbonising public housing for low-income people					<input checked="" type="checkbox"/>
Financial support to buy zero-energy/emission homes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Financial support to renovate their homes to zero-energy/emission	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Allowing partial retrofits to ease financial burden on upfront cost	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Provide energy efficient appliances (e.g. LED)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Energy bill coupon	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Energy coach/consultation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note: Policies targeting specific households Low-income Elderly Households with more than 3 children Other

4. DEVELOPMENT OF POLICY INSTRUMENTS

Standards and regulations for decarbonising buildings

Building codes	National level	<input checked="" type="radio"/>
	State level	<input type="radio"/>
	Local level	<input type="radio"/>

Type of buildings covered by the mandatory energy efficiency code

Residential buildings

New	<input checked="" type="checkbox"/> All	<input type="checkbox"/> Only large units
Renovated	<input checked="" type="checkbox"/> All	<input type="checkbox"/> Only large units

Non-residential buildings

New	<input checked="" type="checkbox"/> All	<input type="checkbox"/> Only large units
Renovated	<input checked="" type="checkbox"/> All	<input type="checkbox"/> Only large units

Elements of building codes (new buildings)

Insulation/heat transmission coefficient	<input checked="" type="checkbox"/>
Primary energy consumption	<input checked="" type="checkbox"/>
Primary fossil-fuel energy consumption	<input type="checkbox"/>
Energy efficiency of equipment	<input checked="" type="checkbox"/>
Operational carbon reduction	<input checked="" type="checkbox"/>
Whole life cycle carbon	<input type="checkbox"/>
Comprehensive green building assessment	<input type="checkbox"/>
Other	<input type="checkbox"/>

Stricter standards for public buildings than private buildings

🏠 For new construction 🔧 For renovation

	Public buildings	Public housing
Energy efficiency	🏠 🔧	🏠 🔧
Zero energy/emission	– –	– –
Renewable energy	– –	– –
Embodied carbon/life cycle	– –	– –
Locally sourced & recycled materials	– –	– –

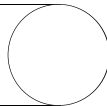
Certificates/labeling programme for built environment

Types of certificates/programme

Energy Performance Certificate (EPC)	<input checked="" type="checkbox"/>
Energy labelling on passive house	<input type="checkbox"/>
Energy labelling on annual energy consumption	<input type="checkbox"/>
Comprehensive built environment certification	<input type="checkbox"/>
Labeling for whole life carbon emissions	<input type="checkbox"/>

Target for Mandatory EPC

New buildings (residential)	<input checked="" type="checkbox"/>
New buildings (non-residential)	<input checked="" type="checkbox"/>
Existing buildings for renovation	<input type="checkbox"/>
Existing buildings for sales/rent	<input checked="" type="checkbox"/>

Standardised calculation methods for embodied carbon/LCA


Database of CFP/EPD	<input type="checkbox"/>	<input type="checkbox"/> Governmental	<input type="checkbox"/> Non-governmental
Grant for using the following materials	<input type="checkbox"/>	<input type="checkbox"/> Low-carbon	<input type="checkbox"/> Bio-based <input type="checkbox"/> Reused
Policy tools for reusing building materials	<input type="checkbox"/>		
Mandatory declaration	<input type="checkbox"/>	<input type="checkbox"/> Public	<input type="checkbox"/> Residential <input type="checkbox"/> Non-residential
Limit value on CO2 emissions	<input type="checkbox"/>	<input type="checkbox"/> Public	<input type="checkbox"/> Residential <input type="checkbox"/> Non-residential

Minimum energy performance standards (MEPS) regulation for existing buildings


<input type="checkbox"/> All buildings	<input checked="" type="checkbox"/> Residential (rent)	<input type="checkbox"/> Residential (sale)
<input type="checkbox"/> Office (rent/sale)	<input type="checkbox"/> Public buildings	<input checked="" type="checkbox"/> Other

Climate resilience

🔥 Extreme heat adaptation measures implemented in the building sector

Strategic orientation of main building facades	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Light coloured and reflective materials	<input type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Green roof	<input type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Green facades	<input type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Other	<input checked="" type="checkbox"/>		

🌊 Floods/storms adaptation measures implemented in the building sector

Lowest liveable floor above ground level	<input type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Roof drainage system	<input type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Hip-roof	<input type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Hurricane straps	<input type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Impact-resistant glass	<input type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Backup generators	<input type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Microgrids	<input type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives

Publicly available geographic database with climate risk information

Flood risk	<input checked="" type="checkbox"/>
Heat wave	<input checked="" type="checkbox"/>
Storm	<input checked="" type="checkbox"/>
Wild fire	<input type="checkbox"/>
Other	<input checked="" type="checkbox"/>

Building certificate system on climate resilience

Resilience to flood risk	<input type="checkbox"/>
Resilience to heat	<input type="checkbox"/>
Other	<input type="checkbox"/>

This survey is designed for national governments.