A WINDOW OF **OPPORTUNITY**

The UK has the least efficient housing stock in Western Europe.

3x
LESS
energy efficient housing stock than Germany

80
MILLION
windows are in need of replacement to current standards

£467
SAVING
per household per year with new windows to current standards (at current capped rates)

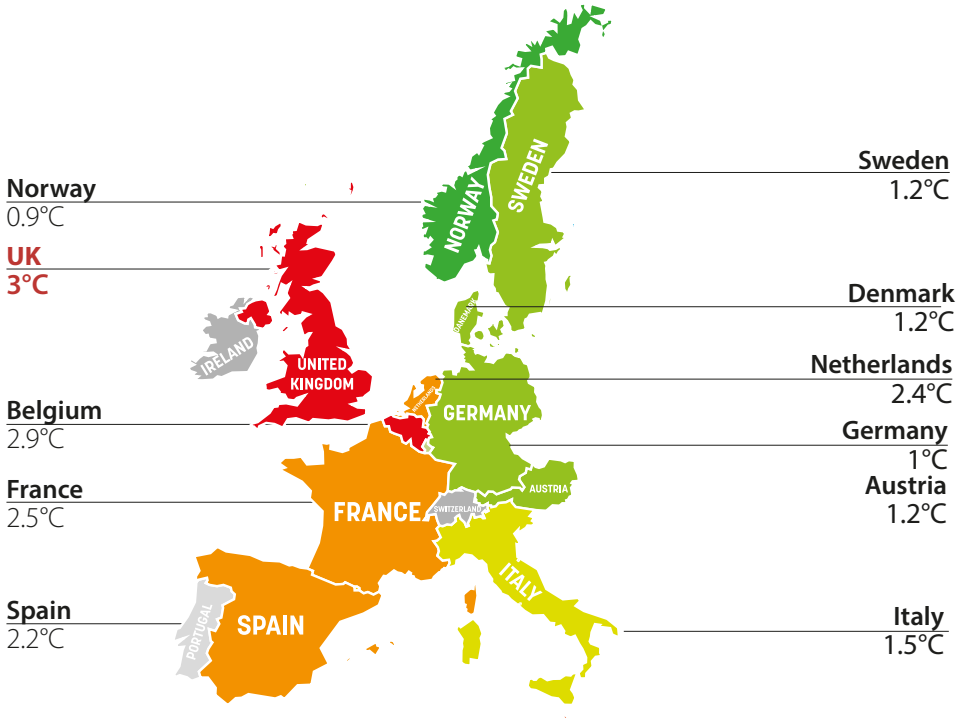
22%
HEAT SAVING
could be achieved by replacing windows in properties that have already been insulated to best practice

1.88
MILLION
cars could be taken off the road in equivalent CO_2 savings by replacing old double glazing with new double glazing

A fabric-first approach is the most practical way to achieve Net Zero.

Property heat loss after 5 hours

The UK is the worst performing country in western Europe in terms of heat loss, and is 3x less energy efficient than Germany.



Source: UK homes losing heat up to three times faster than European neighbours, tado°, 2020: https://www.tado.com/gb-en/press/uk-homes-losing-heat-up-to-three-times-faster-than-european-neighbours

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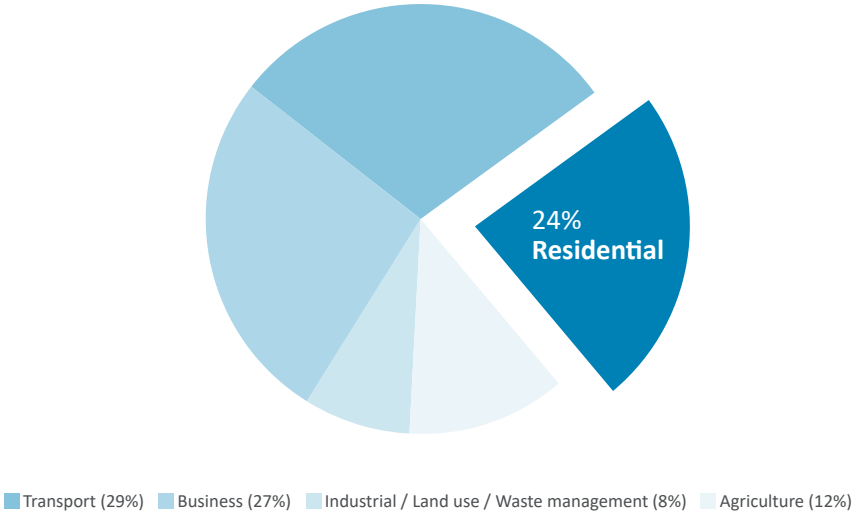
The scale of the opportunity

Share of emissions vs major sectors

- Residential emissions are still significant source of carbon emissions.
- The residential sector has seen one of the slowest declines in carbon emissions over the last 30 years.
- Reducing emissions from households is crucial to achieving Net Zero by 2050.



Source: UK territorial greenhouse gas emissions national statistics
(www.gov.uk/government/collections/uk-territorial-greenhouse-gas-emissions-national-statistics)

UK FACTS

28m
dwellings

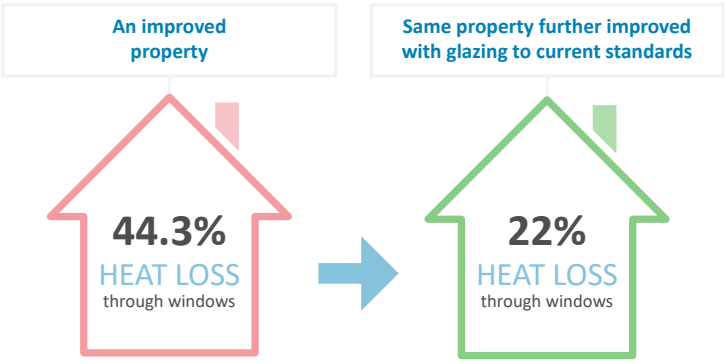
>290m
windows

10.5
windows per dwelling (average)

Percentage of UK dwelling type

Dwelling	%
Terrace	27.4%
Semi-detached	25%
Flat	20.9%
Detached	17.9%
Bungalow	8.8%

Replacing the windows in an already improved property reduces the heat loss by half



When other energy loss prevention measures* are taken. Glazing is now the point of least resistance.

This shows how double glazing has progressed and the impact upgrading windows has on the average household.

*loft/floor/wall insulation, draught proofing, low energy lighting, solar water heating

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The state of play

BFRC Window Energy Rating BFRC = British Fenestration Rating Council	Glazing type	Market share per glazing type
A++	Triple glazing	<1%
A+		
A		
B (CURRENT BUILDING REGULATIONS)	Double Glazing Installed after 15/06/2022	<1%
C	Double Glazing Installed after 2002	70%
D		
E	Double Glazing Installed pre 2002	23%
UNCLASSIFIED	Single Glazing	5%

BFRC ratings vary according to the glazing specification and window components. The Building Regulations prescribe the minimum U values that can be installed and does not mean that windows with lower U values and which are more energy efficient are not being installed.

98%

of windows do not meet current building regulations for energy efficiency

Whilst the minimum U Value in the current Building Regulations is 1.4, windows with U values of less than 1.0 are commercially available in preparation for the Future Homes Standard, PassivHaus and low / zero energy homes.

Equating to

~288m

windows would benefit from being replaced

What is a U-value?

The U-value states how efficient a material is at insulating. The lower the better.

Typical U values

- Triple Glazing **1.0**
- Double Glazing installed after 15/6/2022 **min 1.4**
- Double glazing installed after 2002, **2.0 – 2.4**
- Double Glazing installed pre 2002, **2.8 – 3.2**
- Single glazing, **4.8 – 5.8**

The U values above are for the complete window.

What is a window energy rating?

Window Energy Ratings show how energy efficient a window is by taking into account thermal heat loss, solar gain and the air leakage of the window. Windows are rated using an A++ to E scale to symbolise the total energy efficiency of the windows. The higher the rating the better the performance. Windows and doors with an energy ratings A to A++ are considered to be energy positive.

Installations

Over 80m windows (BFRC rated E or Unclassified) would benefit from immediate replacement as they are inefficient and at least 20 years old.

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The savings to be made

Reduced Emissions

Replacing single glazing with double glazing to current standards = 2.8M TONNES CO_2 per year OR 1.66M Cars

Replacing pre 2002 double glazing with new double glazing to current standards = 3.16M TONNES CO_2 per year OR 1.88M Cars

Return on the investment

£467

Average annual saving per household

Upgrading from pre-2002 to current standards

£4.1b

Annual saving if all pre 2002 windows replaced

Upgrading from pre-2002 to current standards

£14.5b

Total annual saving if all windows replaced to current standard

Upgrading from pre-2002 to current standards

Key points

- The UK housing stock has the worst heat loss performance in Western Europe and has seen one of the worst carbon reductions of all sectors since 1990.
- Windows installed today perform 50% better than older double glazing and 70% better than single glazing.
- Incentivising homeowners to increase the energy rating of windows is necessary (especially those with an energy rating of E and Unclassified which are over 20 years old).
- Replacing windows should be front and centre of future energy efficiency schemes and could reduce heat loss by 22% on the average house.
- Windows not only provide energy efficiency but also reduce noise transmission and provide enhanced security.

This document has been developed by British Glass and the Glass & Glazing Federation. These organisations represent the Glazing industry from glass and framing production through to installation and recycling. The industry is worth £4billion per annum to the UK economy and employs over 100,000 individuals.

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