

The need for energy conservation and sustainability

Oxford Civic Society

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Low Energy Seminar

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Emeritus Fellow

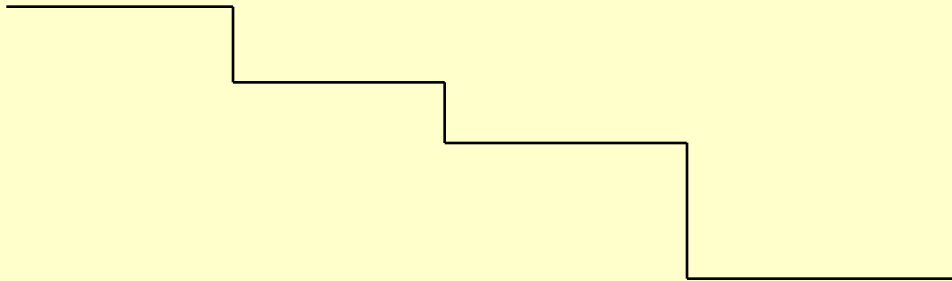
Lower Carbon Futures

Environmental Change Institute

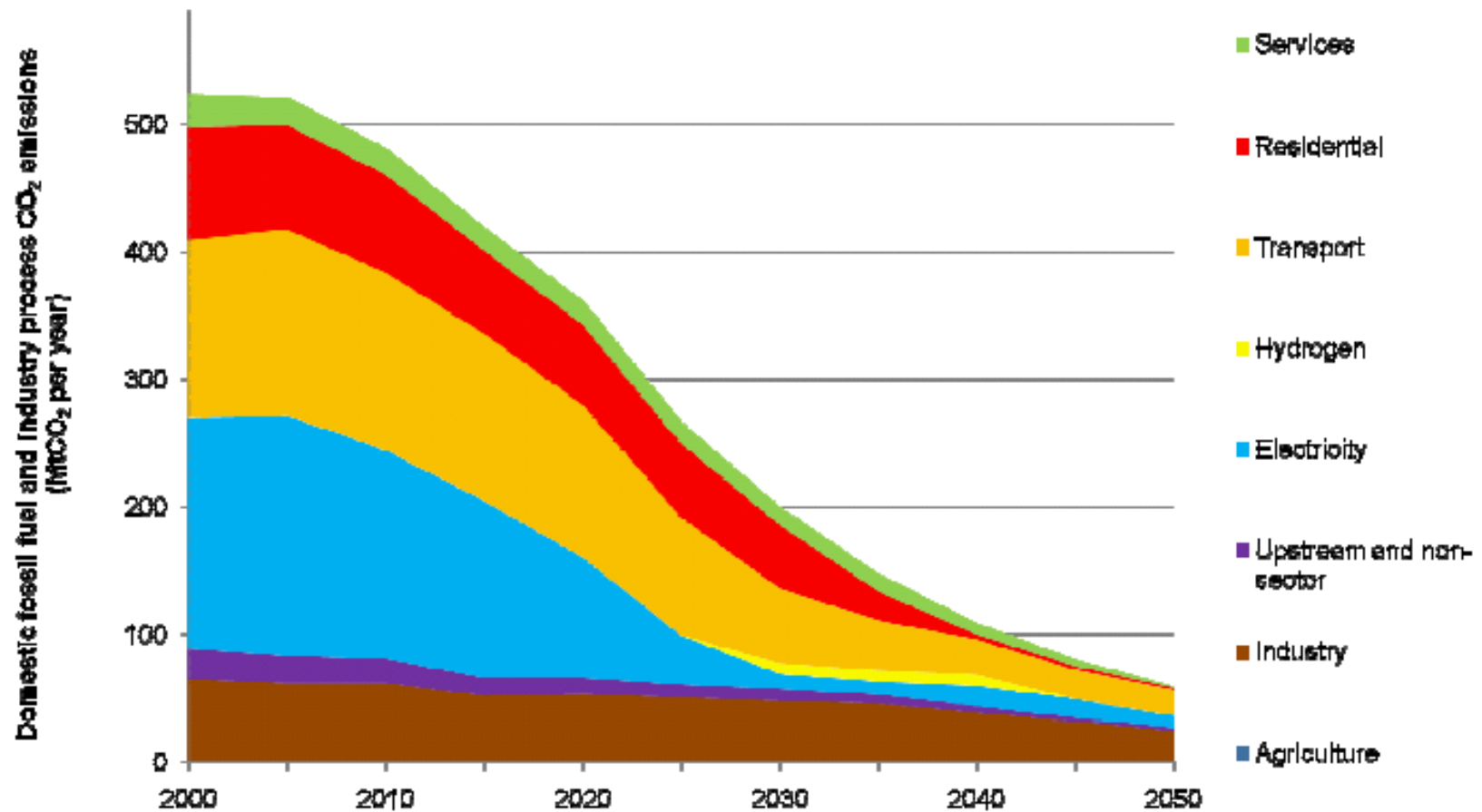
University of Oxford

Climate Change Act 2008

- Important legislation
- To avoid 2°C warming
- 80% GHG reduction by 2050, over 1990
- 5-yearly budgets, reducing
- 2008-12 is first
- 34% cut by 2020, over 2005



UK sectoral emissions on an 90% reduction path



Savings potential

Personal air travel	Personal surface travel	Household energy use
Lower C fuels	Lower C fuels	Lower C fuels
Improved energy efficiency	Improved energy efficiency	
Fewer flights	Less car use	Improved energy efficiency
		lower energy services



Carbon emission factors

	gCO₂/kWh
Gas	190
LPG	250
Oil	270
Coal	290
Electricity - 2008	540
Electricity - 2030	50

Energy Performance Certificate

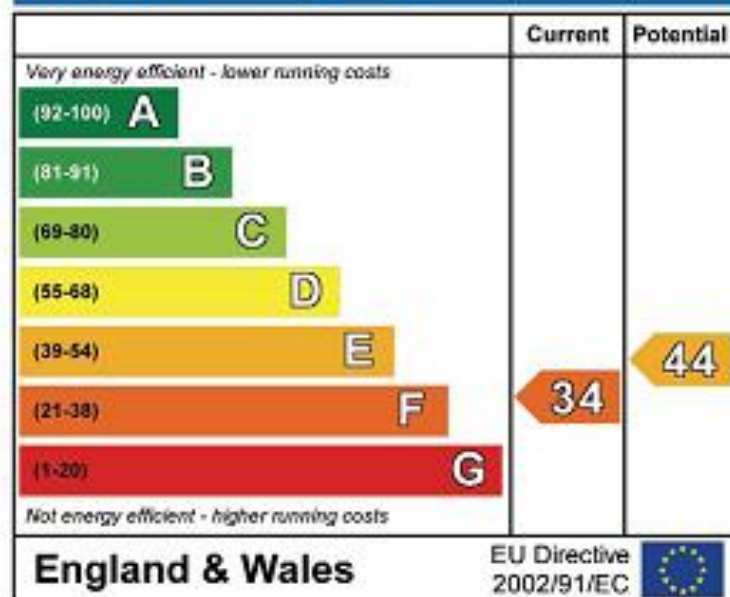


[address]

Dwelling type: Semi-detached house
 Date of assessment: 15 May 2008
 Date of certificate: 16 May 2008
 Reference number: 0000-0000-0000-0000-0000
 Total floor area: 69 m²

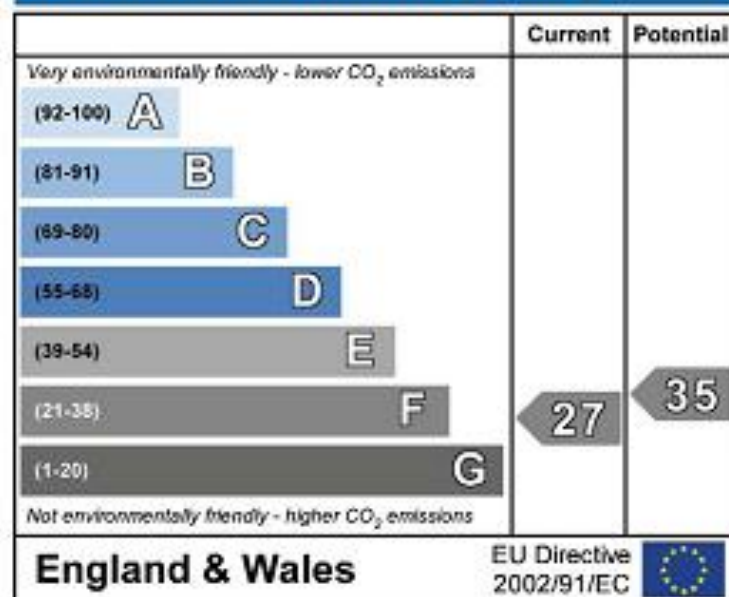
This home's performance is rated in terms of the energy use per square metre of floor area, energy efficiency based on fuel costs and environmental impact based on carbon dioxide (CO₂) emissions.

Energy Efficiency Rating



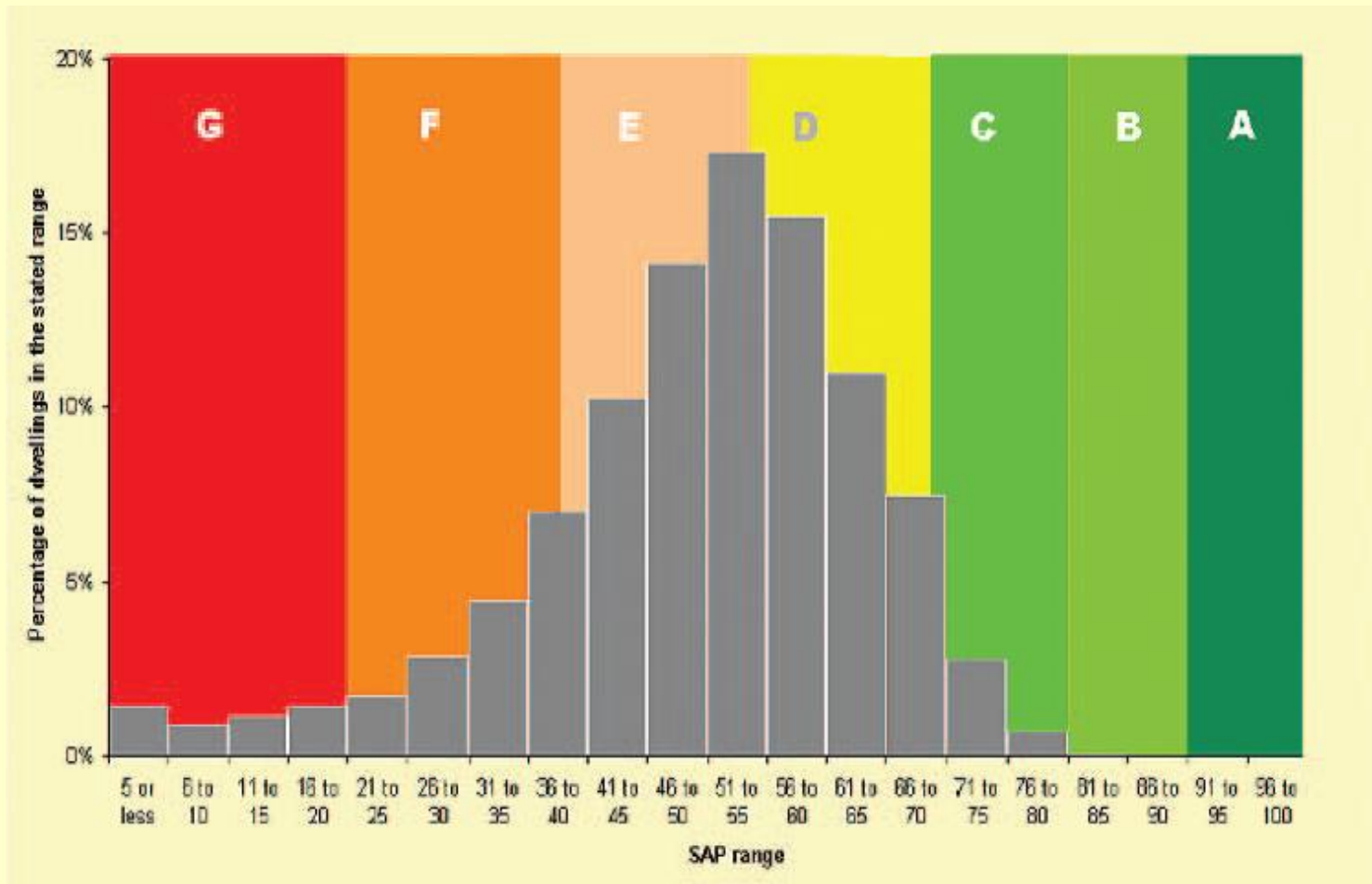
The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills will be.

Environmental Impact (CO₂) Rating

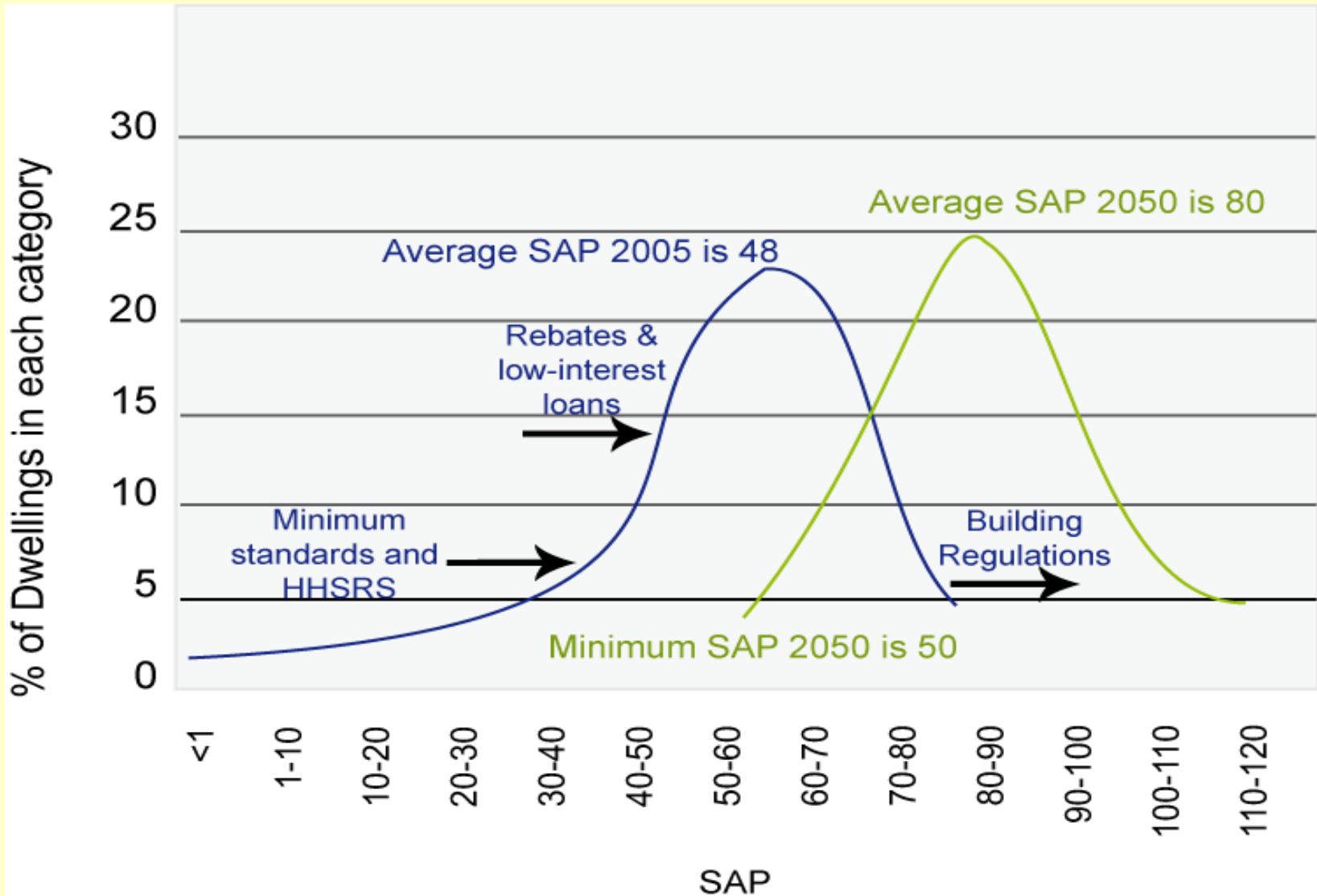


The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO₂) emissions. The higher the rating the less impact it has on the environment.

Distribution of efficiency



Transforming housing

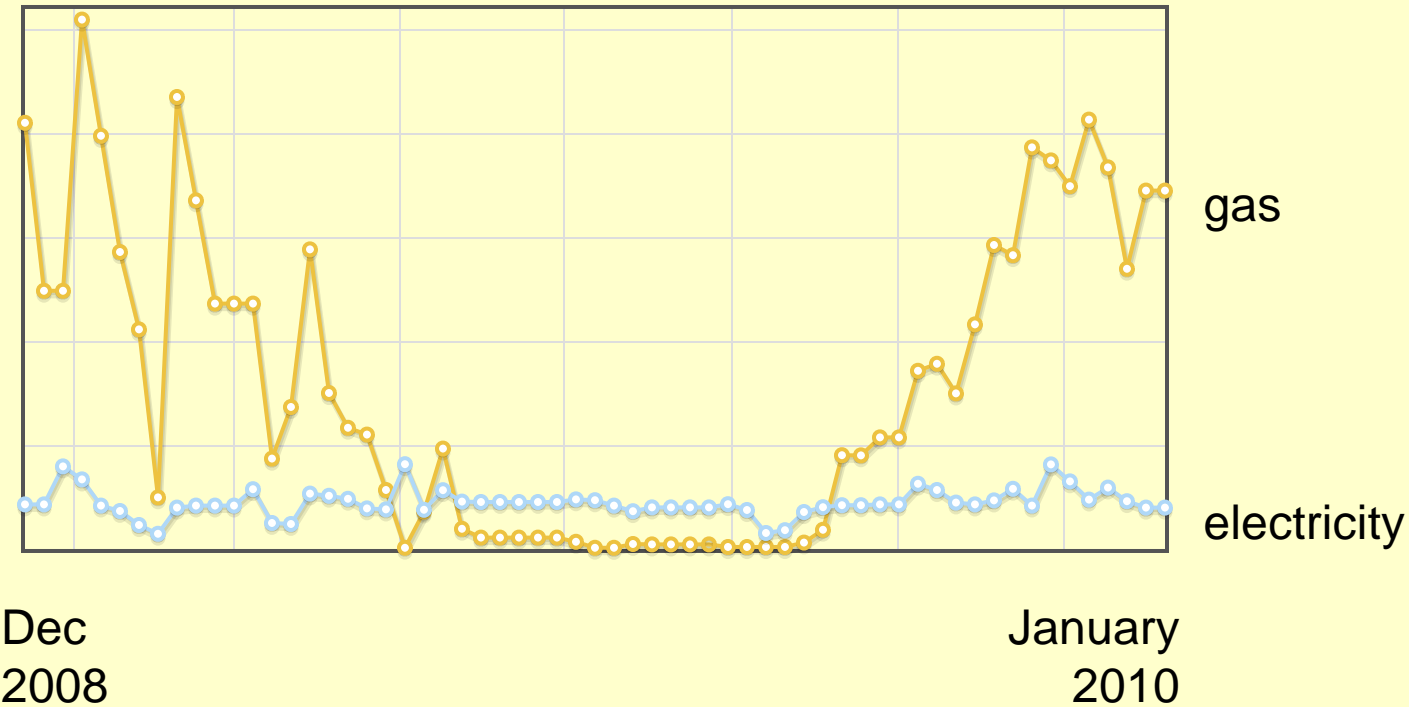


Income + housing

	Low income			High income
Energy inefficient housing				
Energy efficient housing				

Read your meter

- Average UK home uses 10 kWh of electricity per day in lights and appliances
- Get your household down to
5 kWh a day



Boardman household

your energy use
imeasure.co.uk or
smeasure.co.uk

Synergies: fuel poverty and climate change

In UK:

- Poorest people concentrated in worst housing
- Upgrade to super energy-efficient, low-carbon housing
- Fuel poverty = SAP 81 @ 850,000 pa
- Climate change = SAP 100 @ 650,000 pa

Thank you

www.eci.ox.ac.uk