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# EPC and value

Chris Jofeh, Chair, WLZCH

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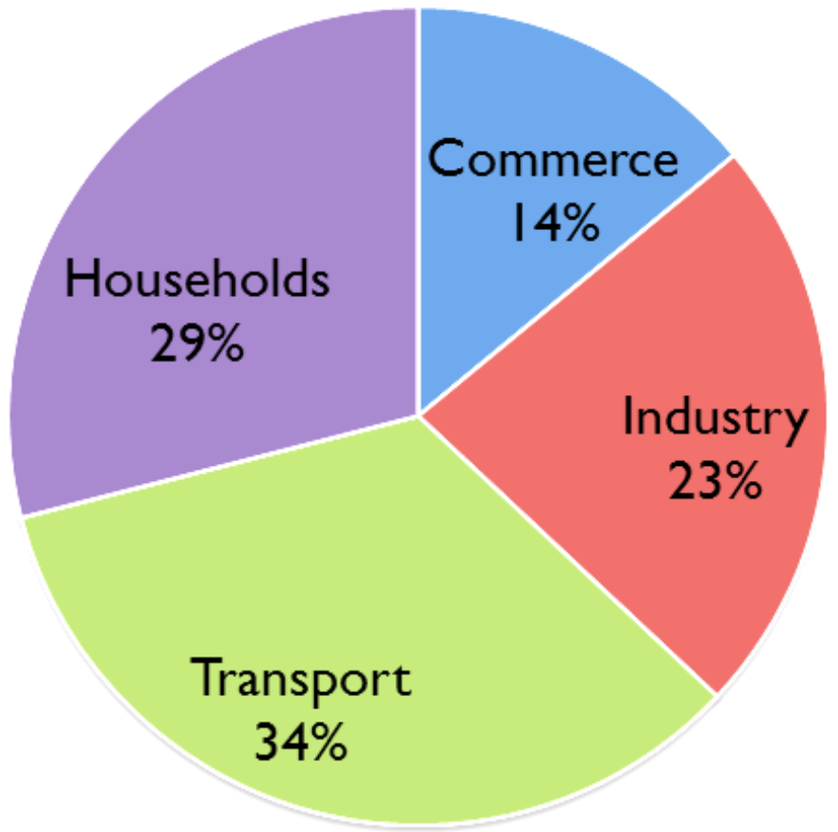
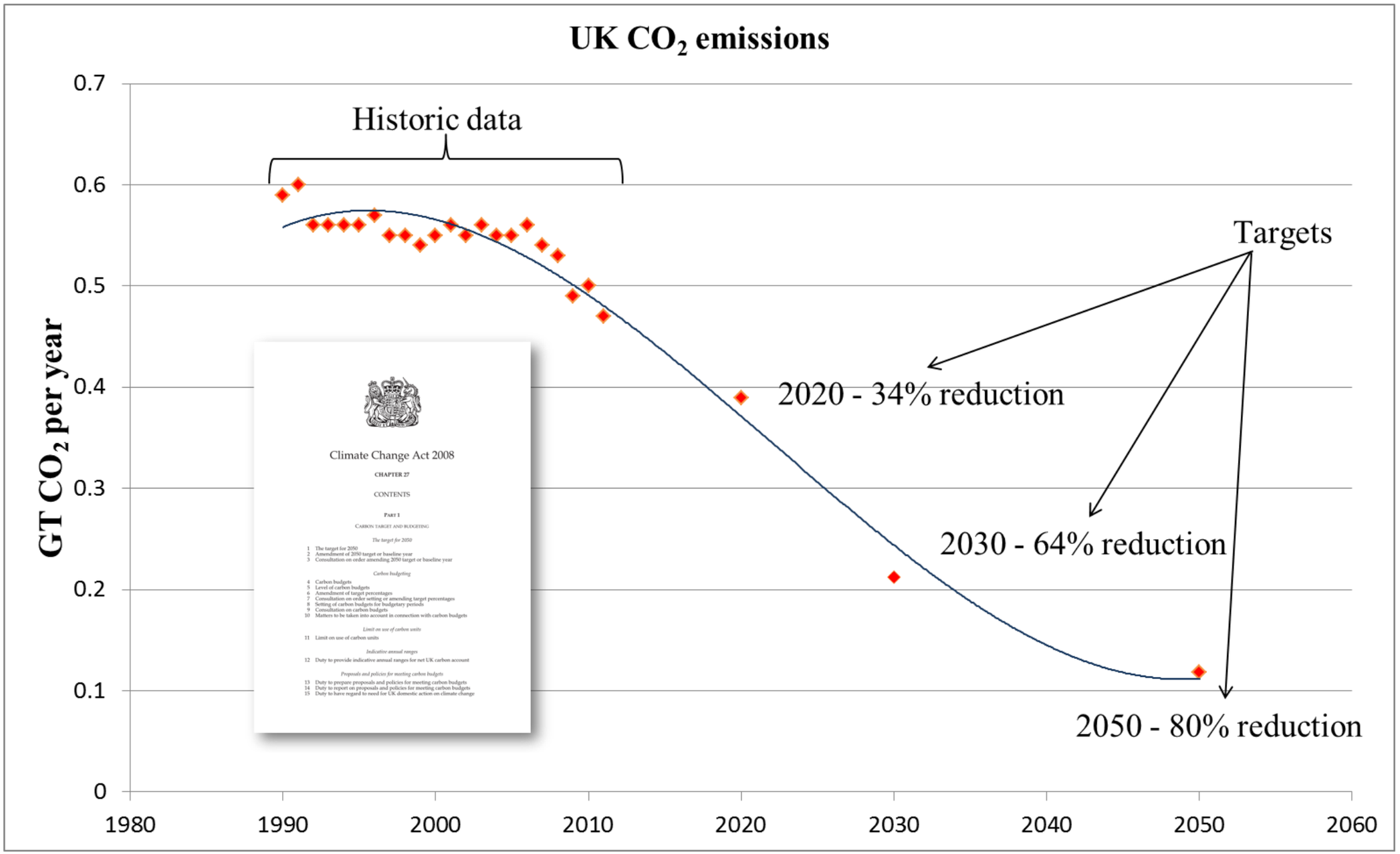
# UK energy consumption by sector




- Households consume 29% of total energy
- Average energy consumption per dwelling ~18 000kWh

*Source: Eurostat*


UK $CO_2$ emissions
GT $CO_2$ per year
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1980
1990
2000
2010
2020
2030
2040
2050
2060
Historic data
Targets
2020 - 34% reduction
2030 - 64% reduction
2050 - 80% reduction
Climate Change Act 2008
CHAPTER 27
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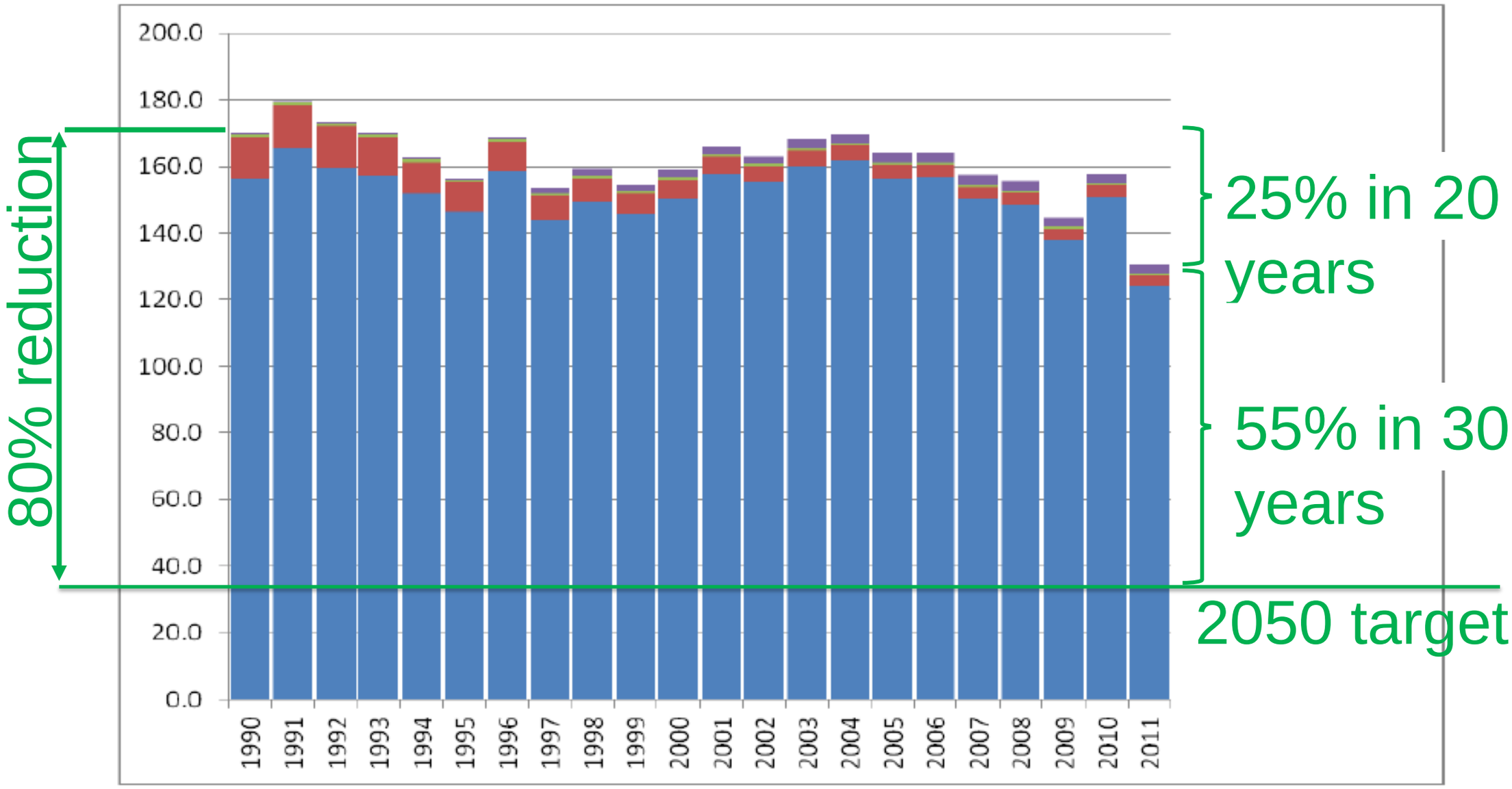
PART 1
CARBON TARGET AND BUDGETING
The target for 2050
1 The target for 2050
2 Amendment of 2050 target or baseline year
3 Consultation on order amending 2050 target or baseline year
Carbon budgeting
4 Carbon budgets
5 Level of carbon budgets
6 Amendment of target percentages
7 Consultation on order setting or amending target percentages
8 Setting of carbon budgets for budgetary periods
9 Consultation on carbon budgets
10 Matters to be taken into account in connection with carbon budgets
Limit on use of carbon units
11 Limit on use of carbon units
Indicative annual ranges
12 Duty to provide indicative annual ranges for net UK carbon account
Proposals and policies for meeting carbon budgets
13 Duty to prepare proposals and policies for meeting carbon budgets
14 Duty to report on proposals and policies for meeting carbon budgets
15 Duty to have regard to need for UK domestic action on climate change

*Source: DECC*

***Figure 12: Greenhouse gas emissions from the residential sector, 1990-2011 ($MtCO_2e$)***




*Source: DECC*

WLZCH is promoting a programme to create the conditions in which every home in Wales will be retrofitted for energy efficiency in the next 25 years

- Very large-scale retrofit action is needed to achieve the necessary reductions in energy consumption and GHG emissions.
- Significant cost reductions are needed for large-scale retrofit to occur.
- By procuring standard solutions intelligently at very large scale, significant cost reductions can be achieved.
- For homeowners a powerful incentive will be the establishment of a link between energy efficiency and property value.

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# Very large-scale action

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# Benefits for Wales and the UK of a very large scale retrofit programme

## Reduced

- Energy demand
- GHG emissions
- Fuel poverty
- Demand on the NHS
- Unemployment

## Increased

- Economic activity
- VAT receipts
- Energy security
- Global reputation
- Global green business opportunities

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# Standard solutions

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# A controlled monitoring and evaluation study on a section of Arbed Phase 2

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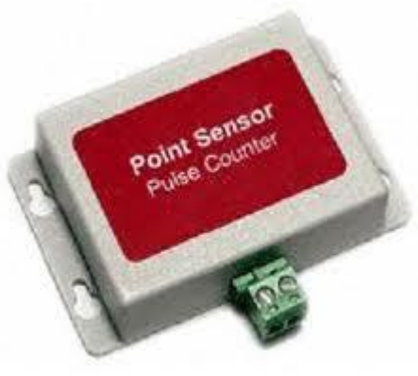
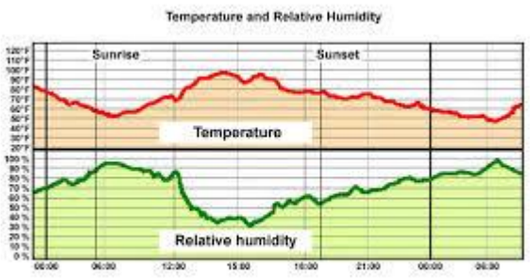
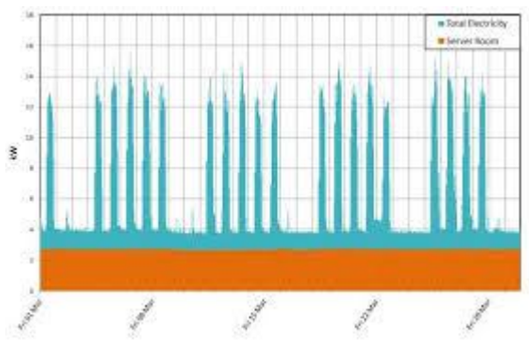
# Study objectives include



- Install monitoring equipment to establish pre-improvement energy consumption, humidity levels and temperature settings.
- Post completion monitoring and evaluation of the reduction in running costs, humidity levels and temperature settings within the properties in the study.
- Devise a standardised approach to establish the refurbishment measures most suited to the typical valleys solid wall property types (the most common solid wall property type in Wales)

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# Solid wall properties app

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# Retrofit app for solid wall properties


- Images of typical houses of different periods
- List of opportunities for improvement of walls, windows, lofts, and floors
- Direct users to more information on how to manage and deal with the risks

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# Green mortgages

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# Energy Performance Certificate (EPC)

SAP
© Crown copyright 2009

**17 Any Street, District, Any Town, B5 5XX**

**Dwelling type:** Detached house
**Date of assessment:** 15 August 2011
**Date of certificate:** 13 March 2012
**Reference number:** 0919-9628-8430-2785-5996
**Type of assessment:** RdSAP, existing dwelling
**Total floor area:** 165 m²

## Use this document to:

- Compare current ratings of properties to see which properties are more energy efficient
- Find out how you can save energy and money by installing improvement measures

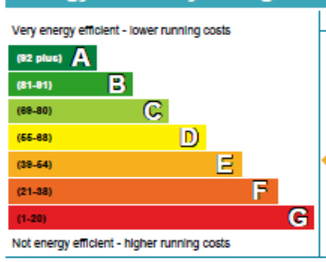
| | |
|---|---|
| **Estimated energy costs of dwelling for 3 years** | **£5,367** |
| **Over 3 years you could save** | **£2,865** |

## Estimated energy costs of this home

| | Current costs | Potential costs | Potential future savings |
|---|---|---|---|
| **Lighting** | £375 over 3 years | £207 over 3 years | You could save £2,865 over 3 years |
| **Heating** | £4,443 over 3 years | £2,073 over 3 years | |
| **Hot water** | £549 over 3 years | £222 over 3 years | |
| **Totals:** | **£5,367** | **£2,502** | |

These figures show how much the average household would spend in this property for heating, lighting and hot water. This excludes energy use for running appliances like TVs, computers and cookers, and any electricity generated by microgeneration.

## Energy Efficiency Rating




The graph shows the current energy efficiency of your home.

The higher the rating the lower your fuel bills are likely to be.

The potential rating shows the effect of undertaking the recommendations on page 3.

The average energy efficiency rating for a dwelling in England and Wales is band D (rating 60).

## Top actions you can take to save money and make your home more efficient

| Recommended measures | Indicative cost | Typical savings over 3 years | Available with Green Deal |
|---|---|---|---|
| 1 Increase loft insulation to 270 mm | £100 - £350 | £141 | ✓ |
| 2 Cavity wall insulation | £500 - £1,500 | £537 | ✓ |
| 3 Draught proofing | £80 - £120 | £78 | ✓ |

See page 3 for a full list of recommendations for this property.

To find out more about the recommended measures and other actions you could take today to save money, visit **www.direct.gov.uk/savingenergy** or call **0300 123 1234** (standard national rate). When the Green Deal launches, it may allow you to make your home warmer and cheaper to run at no up-front cost.

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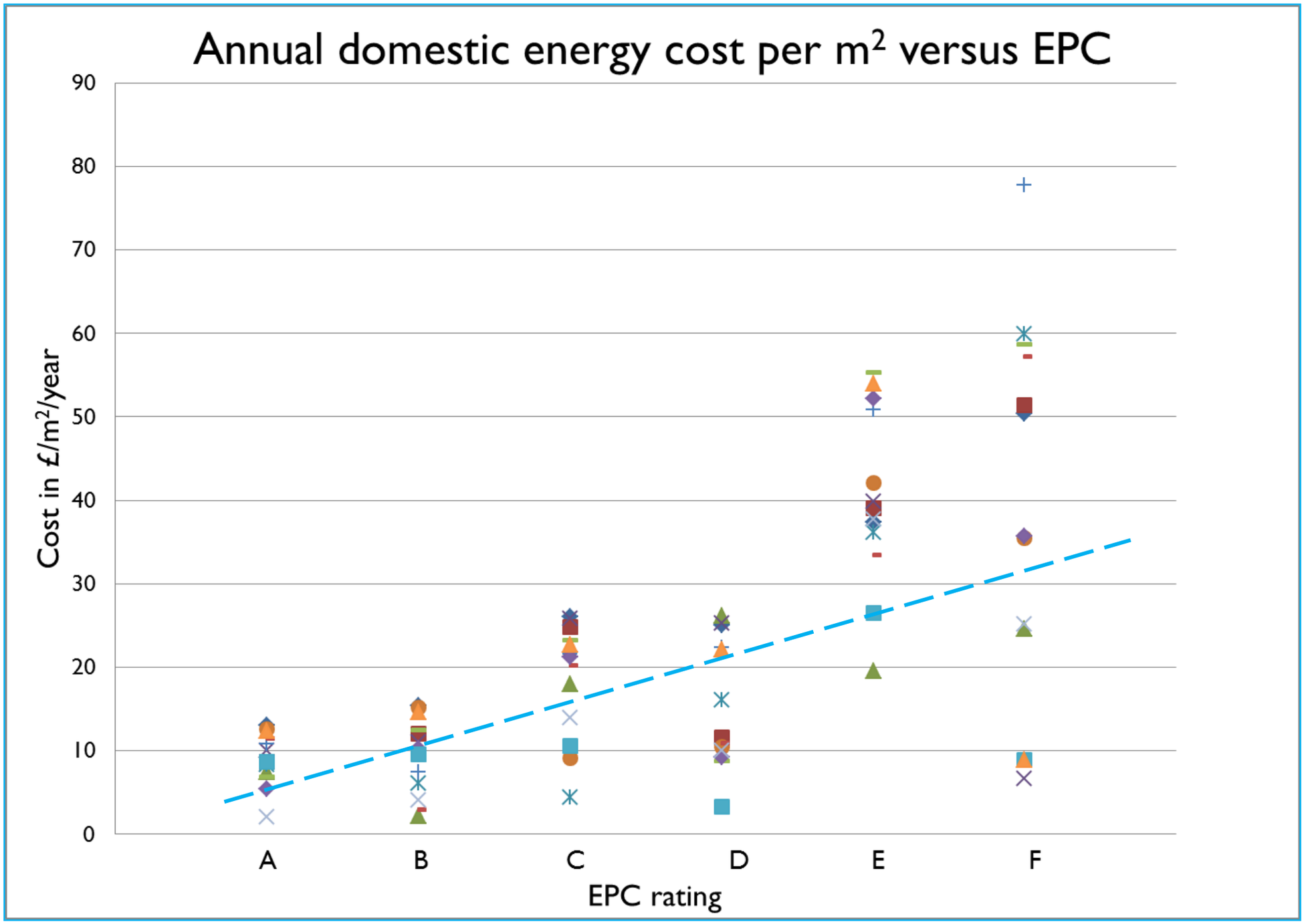


*Source: IMUD, 2014*

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# Commercial property in Australia

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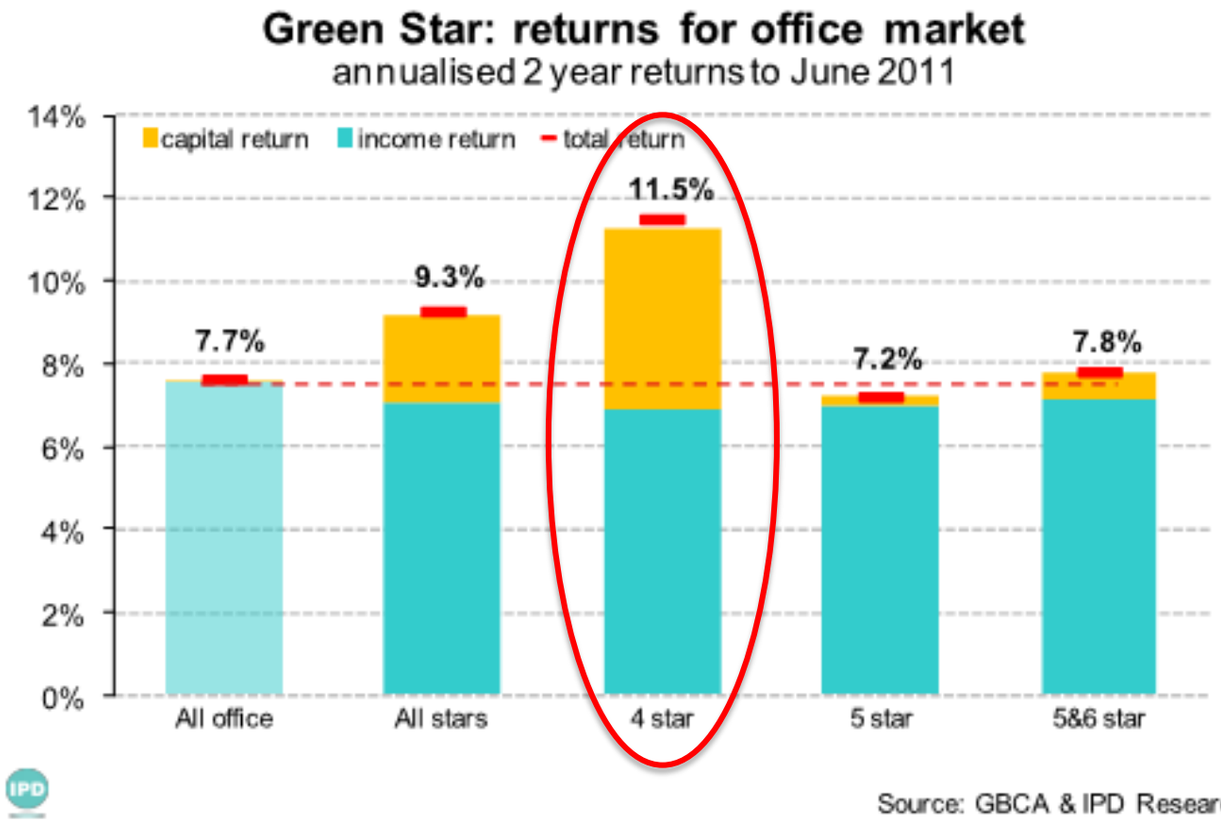
## Returns for Green Star rated buildings

On the pulse of the property world IPD

### Green Star rated buildings deliver higher returns than non-rated buildings




Source: GBCA & IPD Research.

- The return spread between Green Star rated and all office buildings is c160bps.
- The outperformance of 4 Star rated buildings to 5 & 6 Star may reflect: a) a lower construction cost; hence its payback profile will be shorter; or b) a more robust tenancy profile especially when market conditions are sluggish.

# Commercial property in the USA



**Portfolio Greenness and the Financial Performance of REITs**

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October 2011

There is an increasing body of evidence on the financial performance of "green" commercial properties, but not much is known about the implications of investments in such buildings for property companies. This paper investigates the effects of the energy efficiency and sustainability of commercial properties on the operating and stock performance of a sample of US REITs, providing insight into the net benefits of "green" buildings. We match data on LEED and Energy Star certified buildings with detailed information on REIT portfolios and calculate the share of "green" properties for each REIT over the 2000-2011 period. In order to control for the endogeneity between environmental and financial performance, we use two instrumental variables – locational greenness and local environmental government policies. We estimate a two-stage regression model and document that the greenness of REITs is positively related to three measures of operating performance – return on assets, return on equity and the ratio of funds from operations to total revenue. We also document that there is no significant relationship between the greenness of property portfolios and abnormal stock returns, suggesting that stock prices already reflect the higher cash flows deriving from investments in more efficient properties. However, REITs with a higher fraction of "green" properties display lower market betas, which may be related to their reduced exposure to shocks in energy prices and environmental legislation.

JEL Codes: G51, M14, D92

Keywords: Energy Efficiency, Real Estate, REITs, LEED, Energy Star, Financial Performance

Financial support for this research was provided by ECCE, the European Centre for Corporate Engagement, and METEOR, the graduate school of Maastricht University's School of Business and Economics. Kok is supported by a VENI grant from the Dutch Science Foundation (NWO).

Portfolio 'greenness'

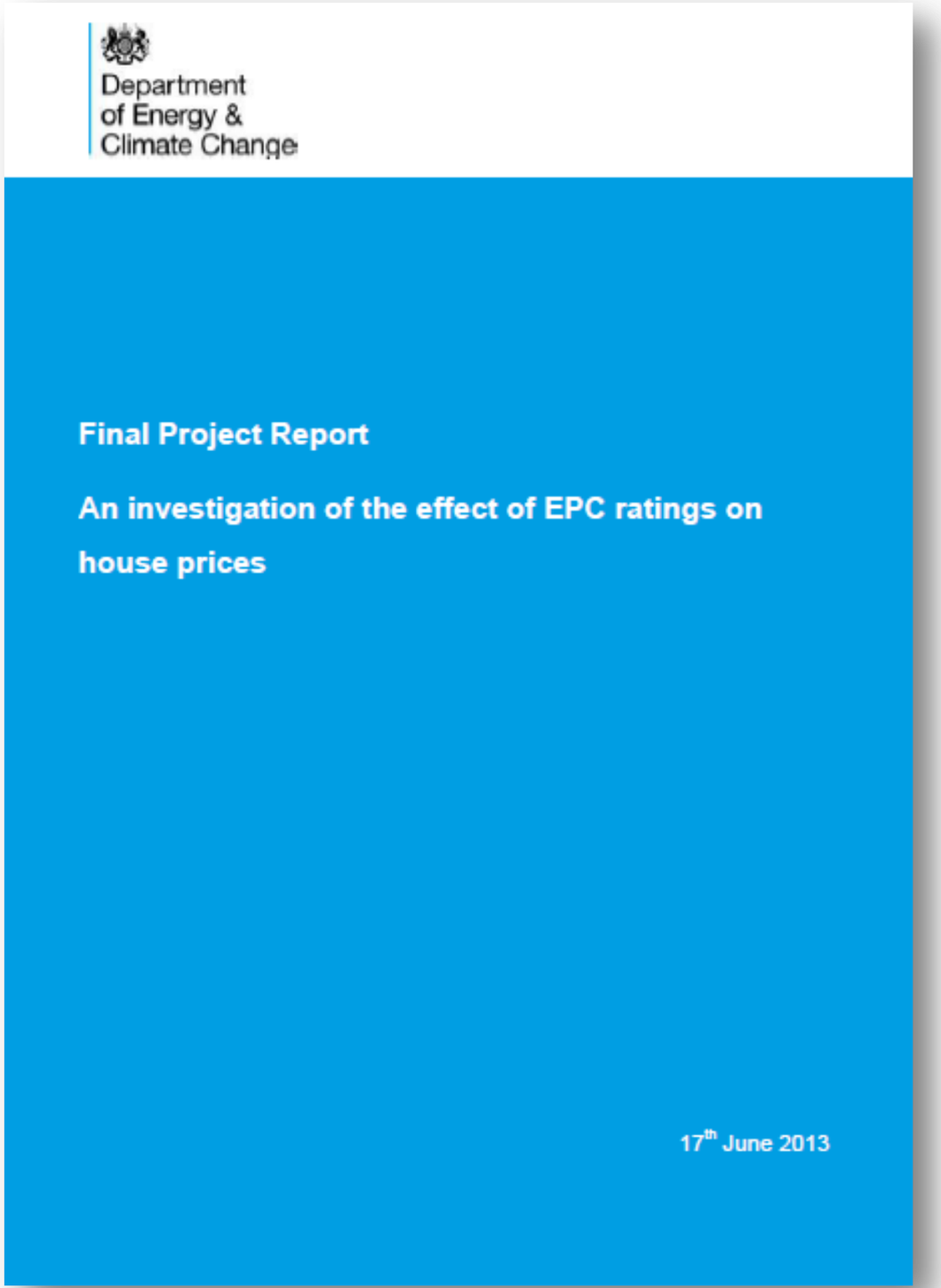
→Improved operating performance

→ Reduced risk

# Domestic property in Europe


"The analysis of property transactions and listings from residential property markets in Austria, Belgium, France, Ireland and the UK, both sales and lettings, overwhelmingly points to energy efficiency being rewarded by the market."

# Domestic property in England




| EPC band | Price/m$^2$ |
|---|---|
| A/B | 114 |
| C | 110 |
| D | 108 |
| E/F | 106 |
| G | 100 |

Wales needs a programme to create the conditions in which every home in Wales will be retrofitted for energy efficiency in the next 25 years

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# Thank you

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