

# Part L 2010

An outline of the key technical changes  
- with a focus on non-domestic

Steve Irving – Faber Maunsell

## Part L 2010 – the key issues

- Setting a robust CO<sub>2</sub> target
  - Avoiding unforeseen consequences
- Reduce energy consumption as well as CO<sub>2</sub> emissions
  - Security of supply is an important policy goal
- Improving levels of compliance
  - Improvements in actual rather than predicted performance
- Recognising it is one step on a longer journey

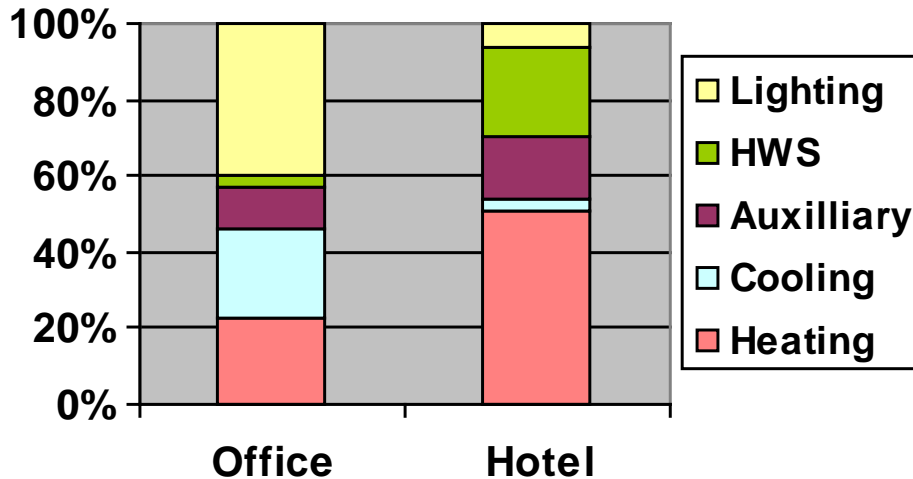
## New build - the 5 compliance steps

- BER ≤ TER
- Limits on design flexibility
- Limiting the effects of solar gains in summer
- Quality of construction & commissioning
- Providing information / O&M instructions

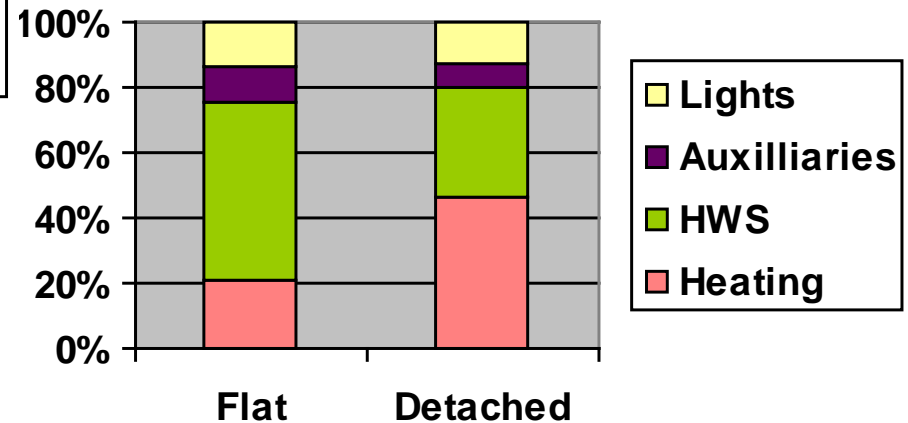
**No change proposed**

# Criterion 1: impact of varying end-uses

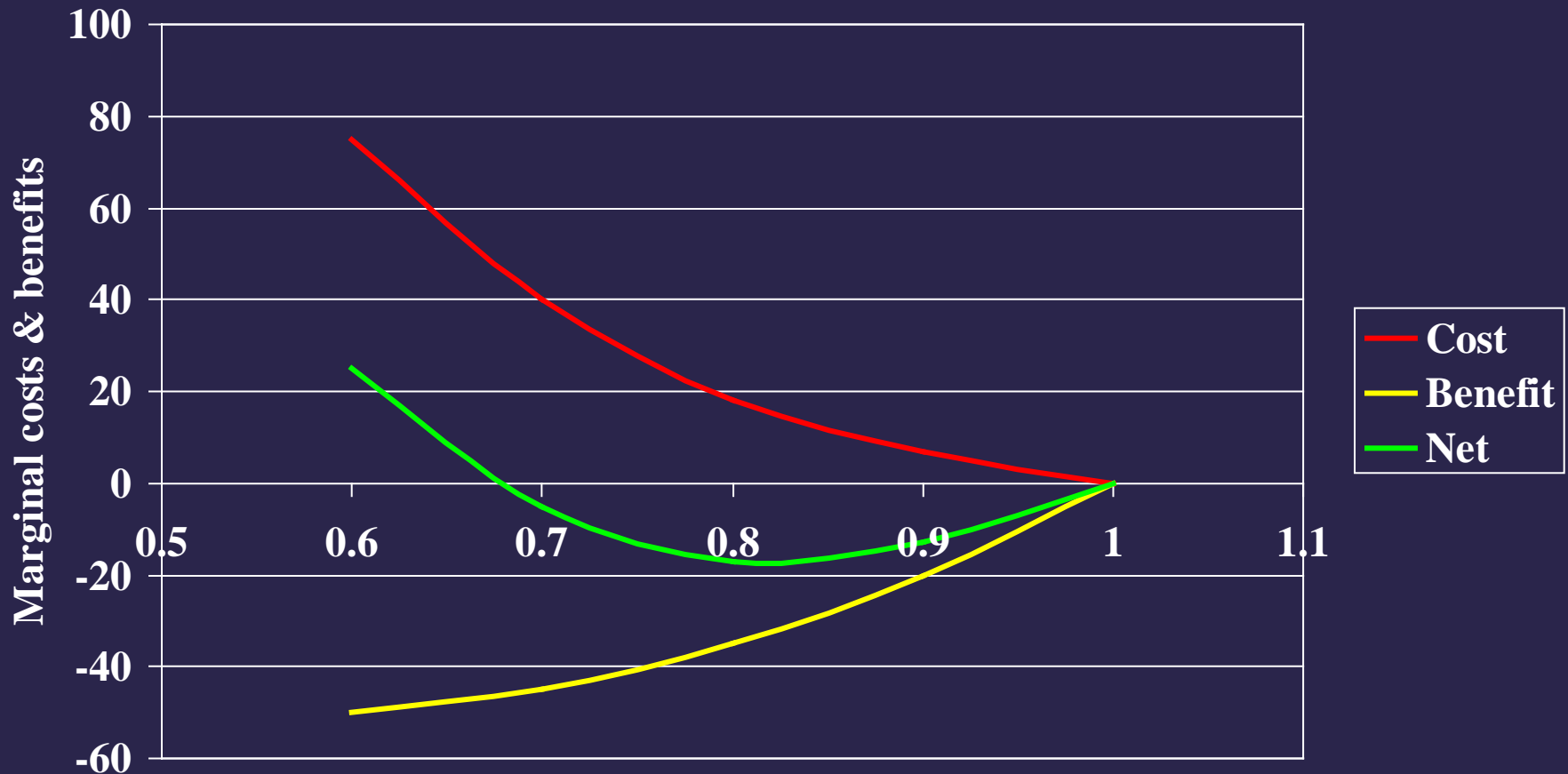
Relative proportion of end-use energy demands (non-domestic)



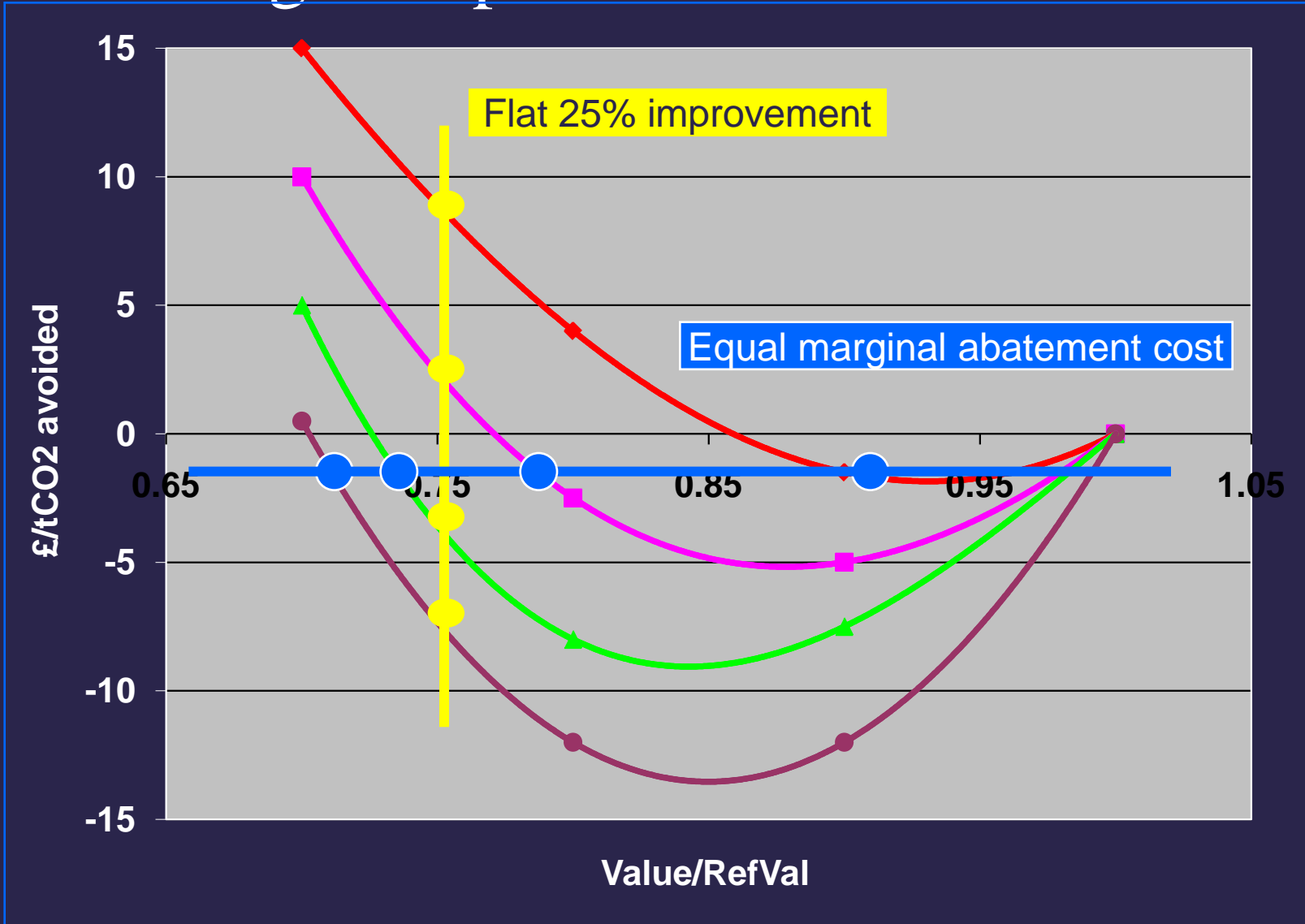
Relative proportion of end-use energy demands (dwellings)



# Cost benefit of energy efficiency measures

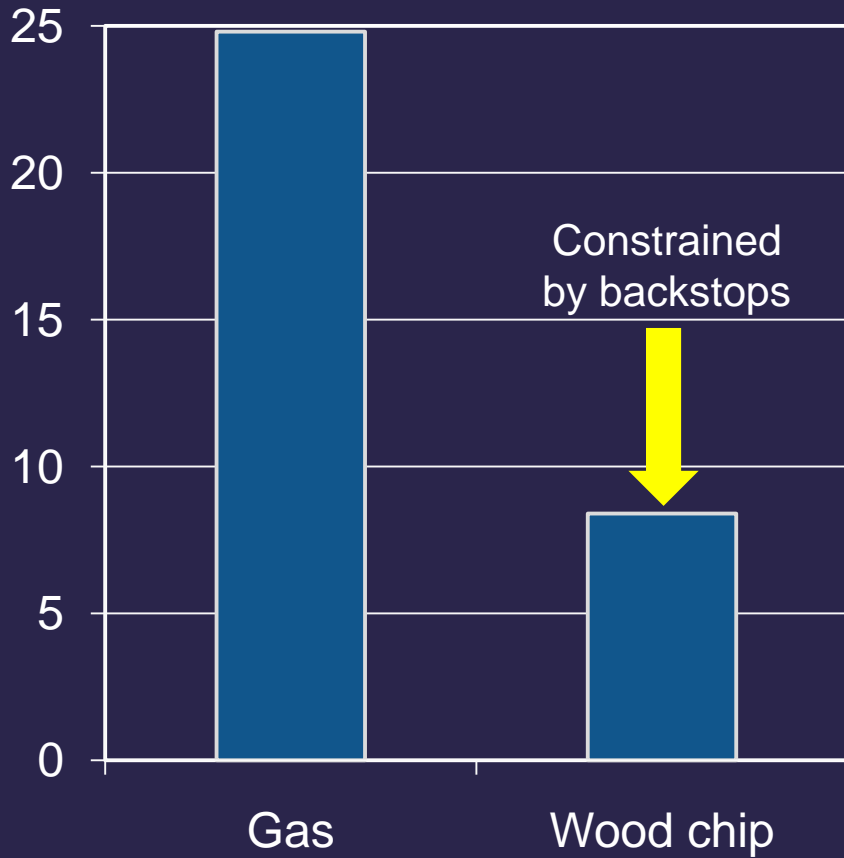


# Determining the specification

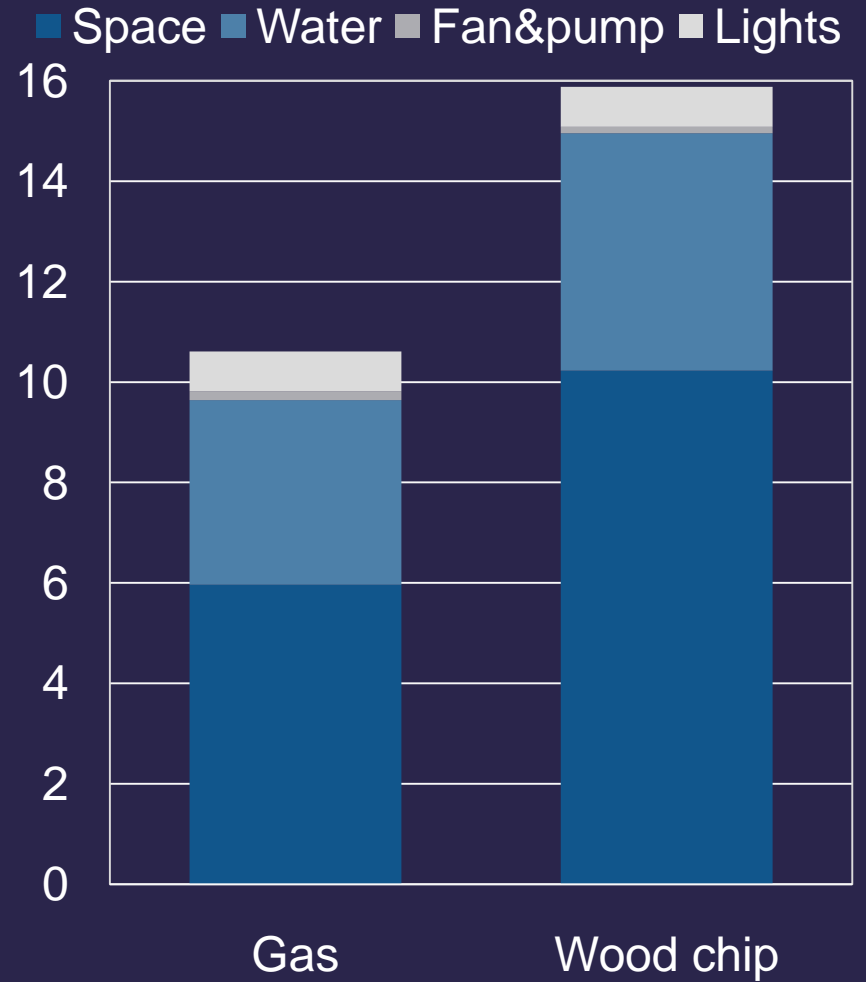


# Biomass heating

### DER

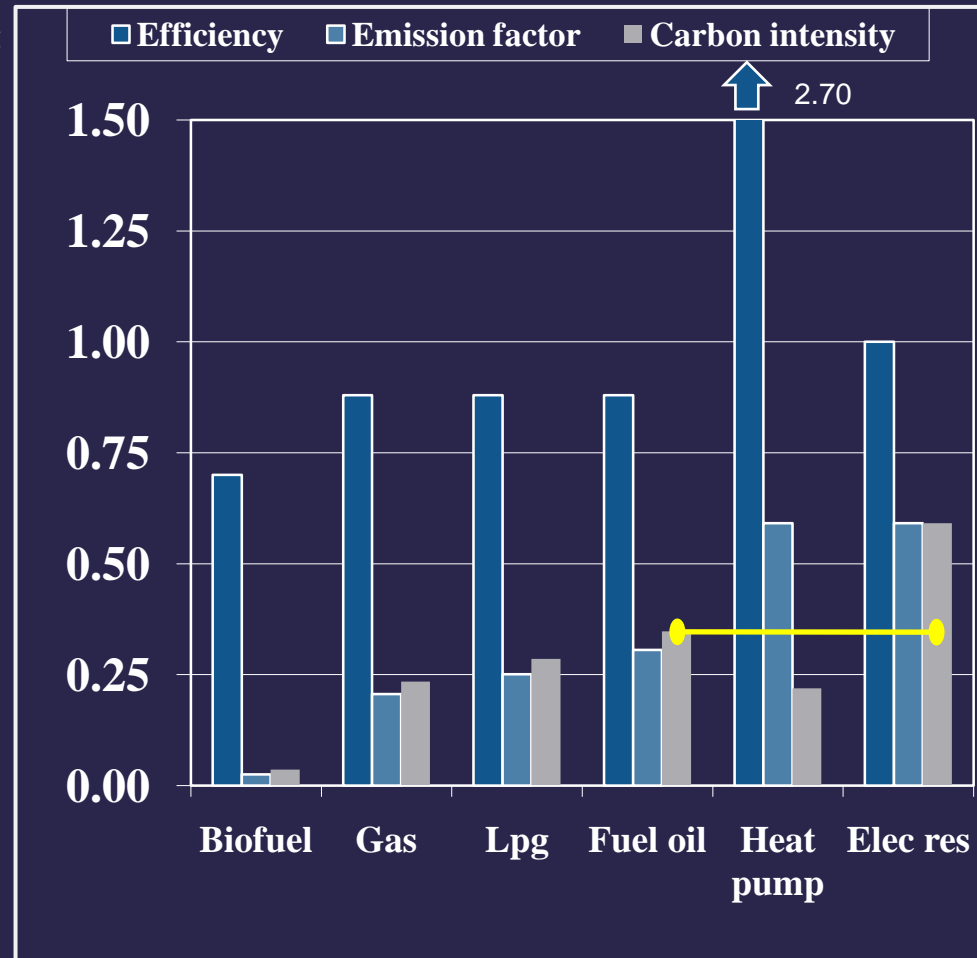


### Energy



# Fuel based TER achieves similar energy demand

- Common 2010 fabric spec
- Separate emission factor & efficiency depending on actual heating fuel
- New emission factors
  - All greenhouse gases
  - Life cycle analysis
  - Same value for grid supplies & on-site generated
  - See DECC consultation



# Improving compliance: the responsibility chain

- Energy Assessor checks component specification is consistent with claimed performance
  - U-values, plant efficiencies etc.
- Software does detailed technical check that inputted performance parameters satisfies criteria 1, 2 & 3.
- BCB checks *specification* against as-built
  - Key features list provided with design stage submission will help to prioritise inspections
- Developer confirms as-built conforms to as-built BER

## Criterion 3 – Effects of solar gain (non-dom)

- Current procedure cannot guarantee avoidance of overheating
  - Internal gains from activity database might not be appropriate in particular case (adaptation opportunities)
  - Uncertainty over provision of purge ventilation
  - Impact of climate change
  - Client/Design-construct team + occupier responsibility to ensure satisfactory internal environment
- Specify solar gain limit
  - For both ac and nv spaces
  - Expressed as
    - Not more solar than admitted by reference glazing of specified g-value during period April - October
      - 40% East facing vertical glazing (10% framing); OR
      - 15% horizontal glazing (25% framing)

# Criterion 4 – Building performance consistent with BER

- Issues that need to be considered Compliance
  - Does what is calculated/specified conform to standards in AD?
    - U-values of windows (glass or glass+frame)
  - Is what is calculated/specified actually constructed?
    - Product substitution
  - Does what is constructed deliver the intended performance?
    - Poor installation practice / inappropriate application
  - Is what is calculated what actually happens in practice?
    - Party wall thermal bypass

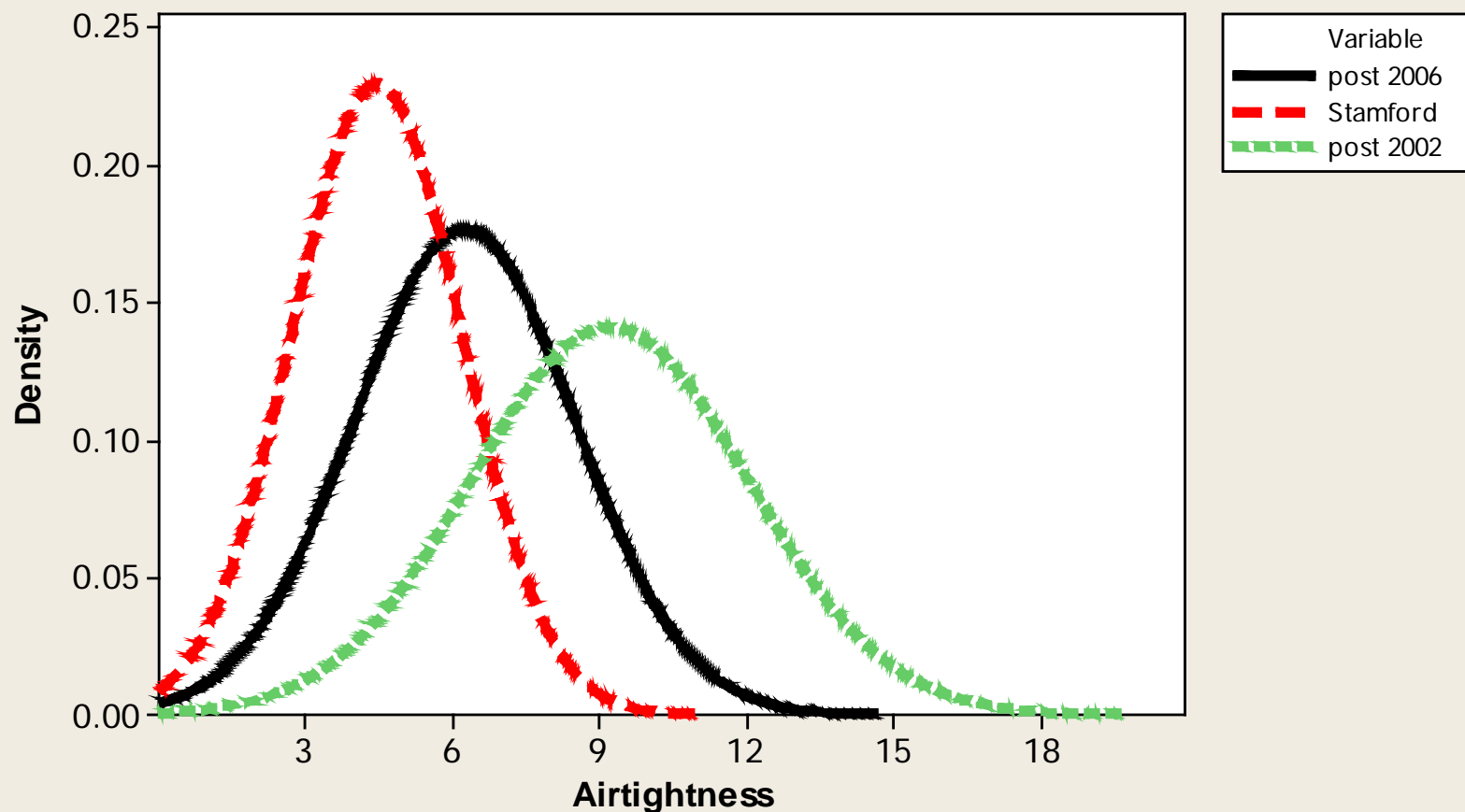
Need to recognise there are 2 “credibility gaps”

Performance

# Criterion 4 – some success

airtightness distribution (2006, Stamford Brook and post 2002)

Normal



# Quality of construction & commissioning

- Linear thermal transmittances
  - IP 1/06 & BR 497 for standard & methodology
    - ACD scheme(s) (no margin added)
      - Calculation of  $\psi$ -value by “accredited expert” calculator
      - Assessment of buildability & robustness
      - Sample inspection & feedback loop
    - Unaccredited detail/accredited calc: +25%
    - No accreditation: generic from IP 1/06 + 50%
  - Similar arrangement for U-values?
- Commissioning plan
  - Provided to BCB with deposit of plans

# Existing buildings

- General review of standards
- Revised definition of *renovation* in relation to thermal elements
- New guidance on
  - Historic buildings
  - First fit-out of shell and core
- Potential de-exemption of conservatories
  - Thermal separation to standard of existing building
  - Independent temp & (automatic?) on/off controls
  - Elemental standards as for conventional extension
  - Secure ventilation openings (inc. minimum at high level)

# Consequential improvements

- Eliminate 1,000m<sup>2</sup> threshold
  - So would apply to dwellings and small non-domestic
- Additional “trigger” of increase in habitable (conditioned) area
  - To pick up loft / garage conversions
- Improvements taken from EPC list
  - Specific to building if available
  - SAP/SBEM auto list if not.
- Planned work can satisfy consequentials

# Conclusions

- Proposals for consultation
  - Your opportunity to influence final documents
    - If you don't like it (and if you do!) let us know;
      - What's wrong & how it can be improved
- Many other changes of detail
  - Download the consultation package
    - 4 draft ADLs and an ADF, 3 compliance guides, Impact Assessment, Changes to NCM, Improving compliance, Proposed ACD scheme, Future thinking paper, Dissemination & training
- Happy reading!!