Good Homes Alliance workshop
Are regulations fit for purpose?

Energy and Carbon

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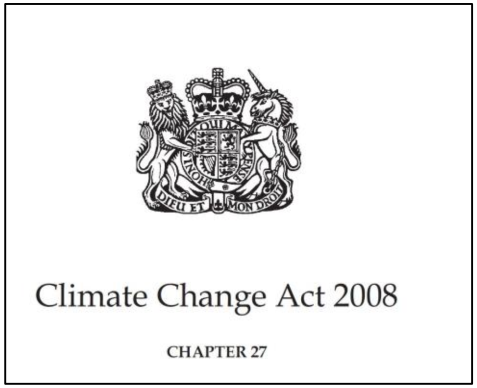
What do we want to achieve ?


Climate Change Act 2008

CHAPTER 27

Climate Change Act: 80% reduction by 2050

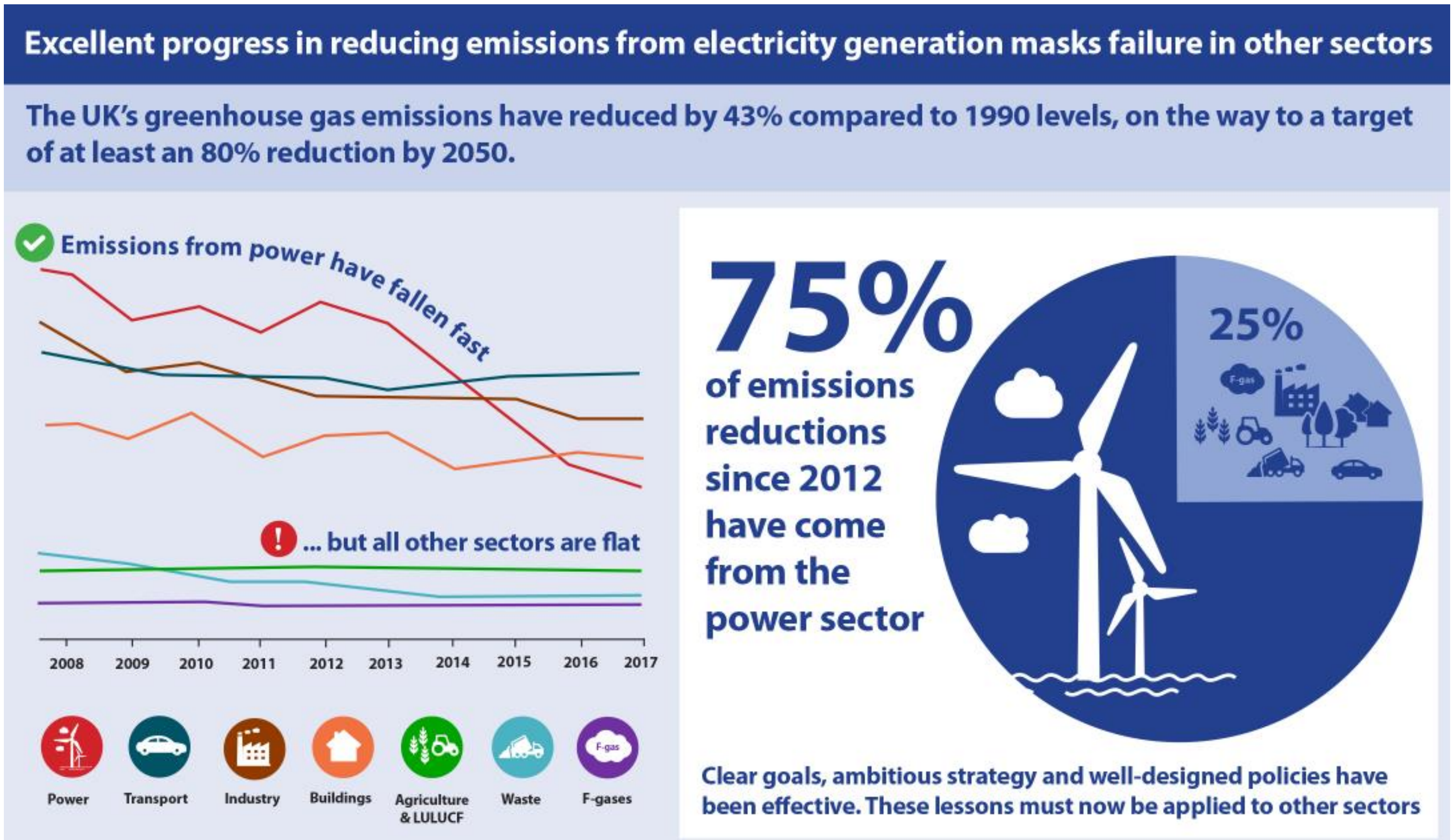
Ideally more, for the Paris Agreement

Clean Growth – Grand Challenge:

- ➢ at least halve the energy usage of new buildings by 2030
- ➢ halve costs of reaching the same standard for existing buildings

- ➢ Growing consensus for zero carbon new build by 2030

Committee on Climate Change - Buildings



What do we need?
Committee on Climate Change recommendations

Firm **policy commitments**

Compliance and enforcement: beyond fire

New build

- Low-carbon and ready for changing climate
- Trajectory for tightening standards

Energy efficiency in existing buildings:

- **Urgent** policy need e.g. Scotland

Shift to **operational savings and reporting**

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What do we need?
Good regulations and objectives

National Audit Office

“

Goals and objectives need to be clear, with appropriate arrangements for reviewing performance data, and mechanisms for ensuring that action is taken if performance is poor.
“

…. and **ENFORCED**

Not covered today, but an obvious priority to improve

Questions

- Carbon *vs* Energy
- Regulated *vs* Total
- Asset *vs* In-use
- Performance-based *vs* Prescriptive
- Relative *vs* Absolute

Carbon vs Energy

- Current Part L: $kgCO_2/m^2$

- EU Energy Performance of Buildings revision: primary energy

- Consumers: Metered energy

Performance-based vs Prescriptive

Performance based approach:

- More design flexibility
- Forces a whole building approach
- More reliance on whole-team responsibility
- More reliance on competence
- Less opportunity for checking the basics

➢ Retain current approach in Part L (& Passivhaus)
i.e. overall target + some minima

➢ Alternative route for simpler buildings ?

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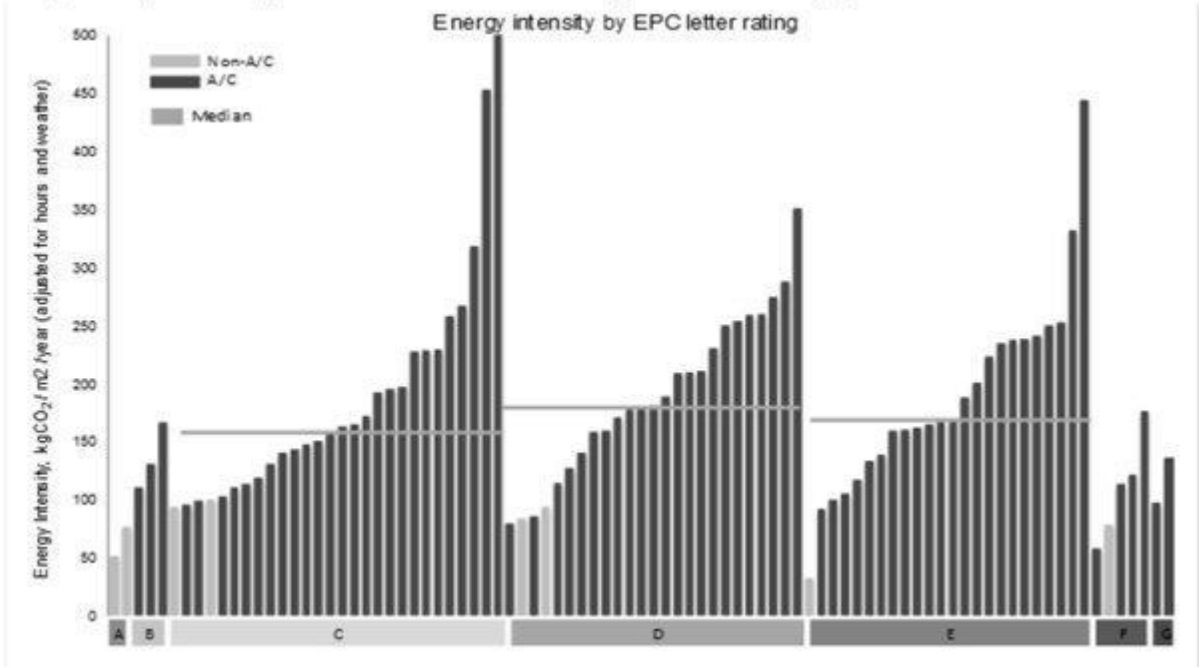
Asset vs in-use

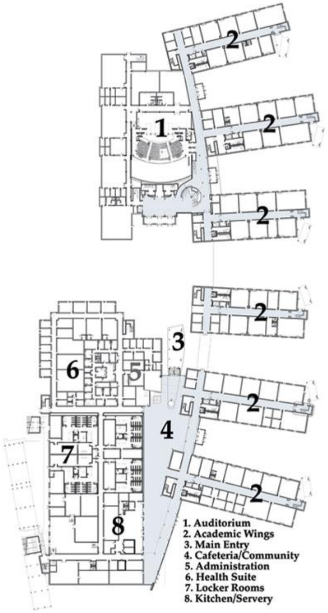
Graph 2 (courtesy of the Better Buildings Partnership):

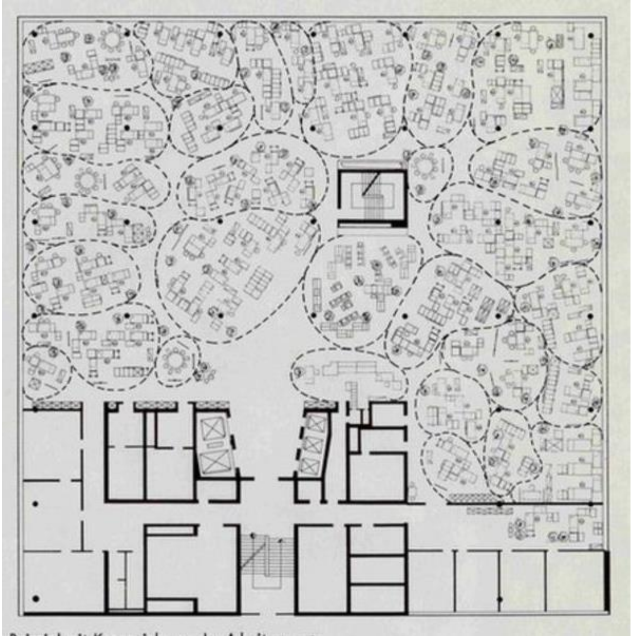


- Homes and tenanted buildings ? Core & shell buildings ?
- Predict better
- More attention to performance in use

Relative vs absolute

0 = 0

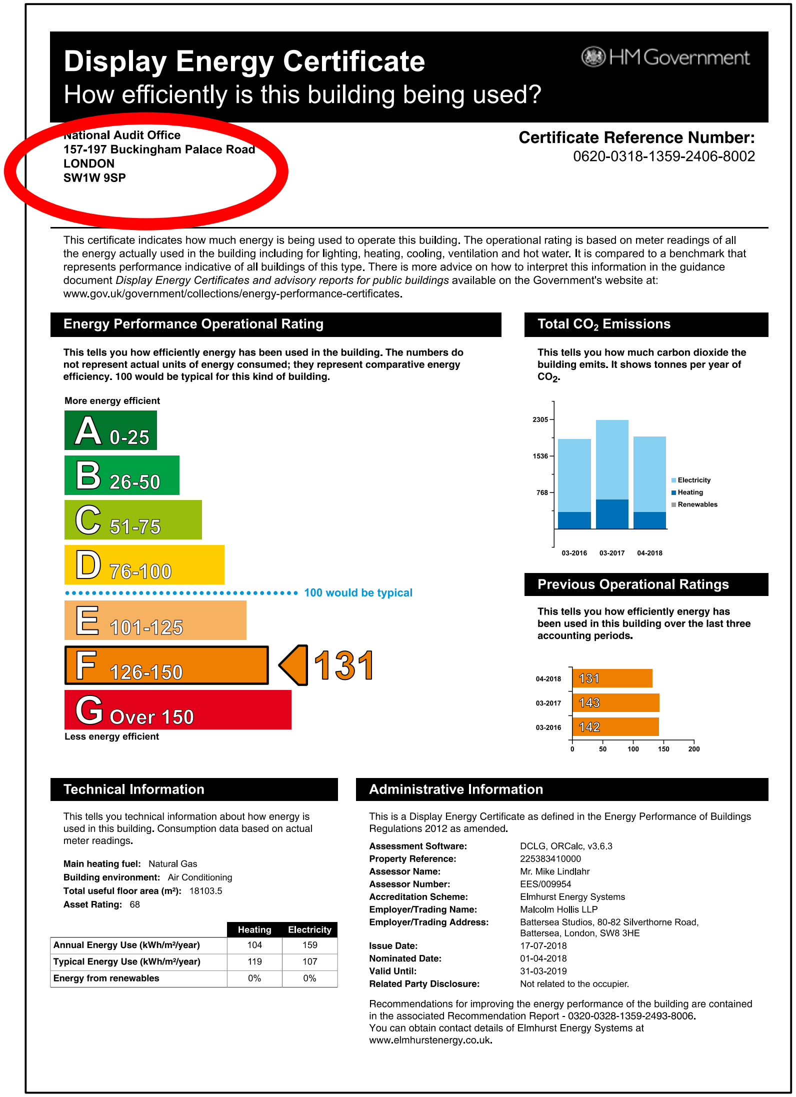




- ➢ Encourage ALL steps of passive design and efficiency
- ➢ Move towards absolute targets

Data-based ?

National Audit Office



Display Energy Certificate
How efficiently is this building being used?

HM Government

National Audit Office
157-197 Buckingham Palace Road
LONDON
SW1W 9SP

Certificate Reference Number:
0620-0318-1359-2406-8002

This certificate indicates how much energy is being used to operate this building. The operational rating is based on meter readings of all the energy actually used in the building including for lighting, heating, cooling, ventilation and hot water. It is compared to a benchmark that represents performance indicative of all buildings of this type. There is more advice on how to interpret this information in the guidance document *Display Energy Certificates and advisory reports for public buildings* available on the Government's website at: www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Operational Rating

This tells you how efficiently energy has been used in the building. The numbers do not represent actual units of energy consumed; they represent comparative energy efficiency. 100 would be typical for this kind of building.

More energy efficient

A 0-25
B 26-50
C 51-75
D 76-100
100 would be typical
E 101-125
F 126-150 — 131
G Over 150

Less energy efficient

Total CO_2 Emissions

This tells you how much carbon dioxide the building emits. It shows tonnes per year of CO_2.

Previous Operational Ratings

This tells you how efficiently energy has been used in this building over the last three accounting periods.

Technical Information

This tells you technical information about how energy is used in this building. Consumption data based on actual meter readings.

Main heating fuel: Natural Gas
Building environment: Air Conditioning
Total useful floor area (m²): 18103.5
Asset Rating: 68

	Heating	Electricity
Annual Energy Use (kWh/m²/year)	104	159
Typical Energy Use (kWh/m²/year)	119	107
Energy from renewables	0%	0%

Administrative Information

This is a Display Energy Certificate as defined in the Energy Performance of Buildings Regulations 2012 as amended.

Assessment Software: DCLG, ORCalc, v3.6.3
Property Reference: 225383410000
Assessor Name: Mr. Mike Lindlahr
Assessor Number: EES/009954
Accreditation Scheme: Elmhurst Energy Systems
Employer/Trading Name: Malcolm Hollis LLP
Employer/Trading Address: Battersea Studios, 80-82 Silverthorne Road, Battersea, London, SW8 3HE
Issue Date: 17-07-2018
Nominated Date: 01-04-2018
Valid Until: 31-03-2019
Related Party Disclosure: Not related to the occupier.

Recommendations for improving the energy performance of the building are contained in the associated Recommendation Report - 0320-0328-1359-2493-8006.
You can obtain contact details of Elmhurst Energy Systems at www.elmhurstenergy.co.uk.

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In summary

- Carbon + Energy
- Regulated - broader + Total - allowance
- Asset + Better prediction +
  + Operational disclosure & enforcement (byond Building Regs?)
- ~~Relative~~ >> Absolute
- Performance-based *and/or* Prescriptive

Looking ahead

- Mandatory disclosure ?
- Peak demand limits? Or at least disclosure ? Other demand management measures ?

Other issues

- **Site context** not accounted for, nor usually at planning:
    - External noise vs ventilation and overheating
    - Urban heat island
    - Immediate site surroundings – green vs hard areas …
    - Outdoor air quality
- Inappropriate **overheating** test *– review expected*
- Part F focus on ventilation, not air quality *– review expected*

Thank you

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