

# **Carbon Path to 2020**

**Alan Aldridge**

**Executive Director**

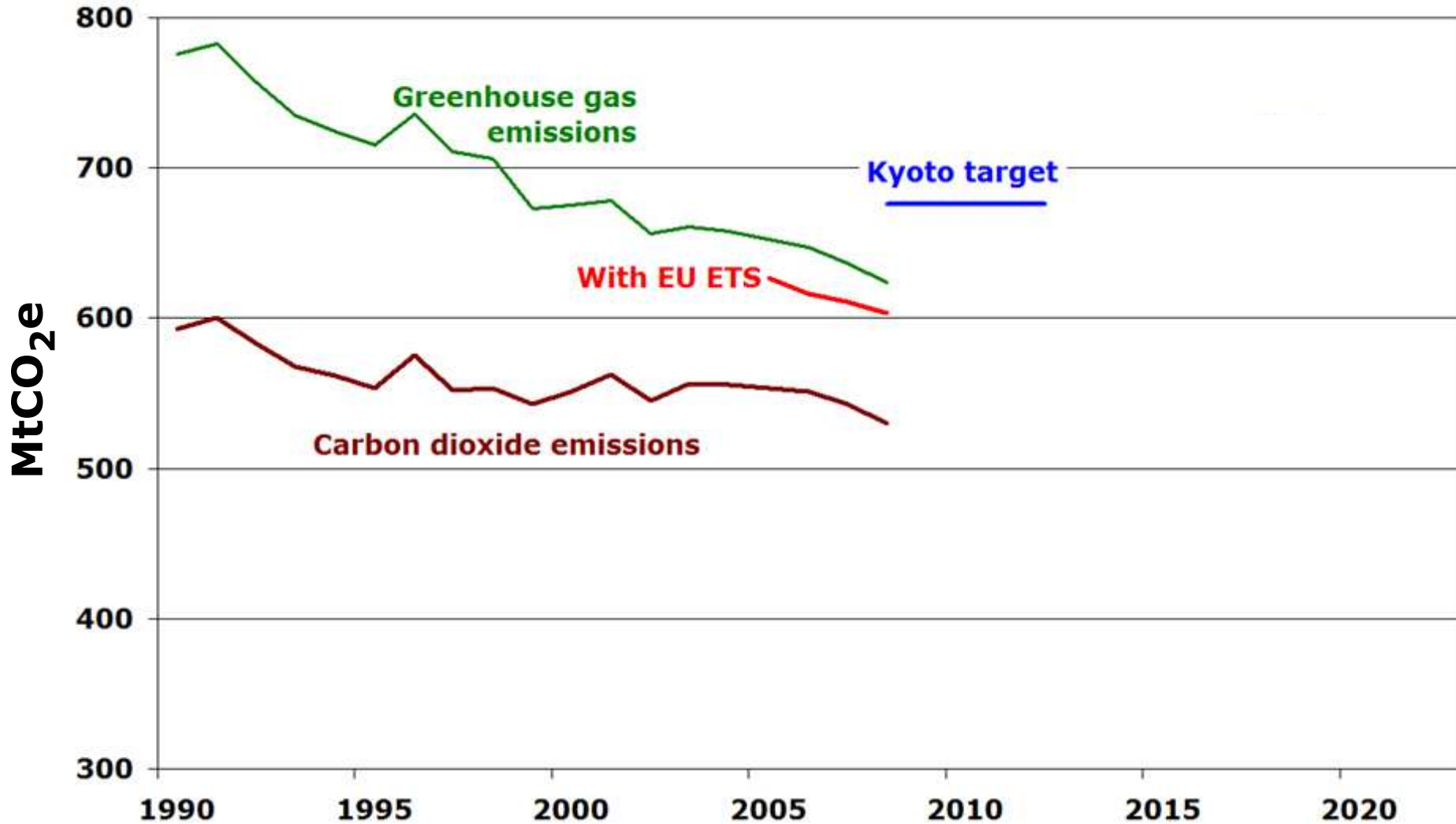
**Energy Services and Technology Association**

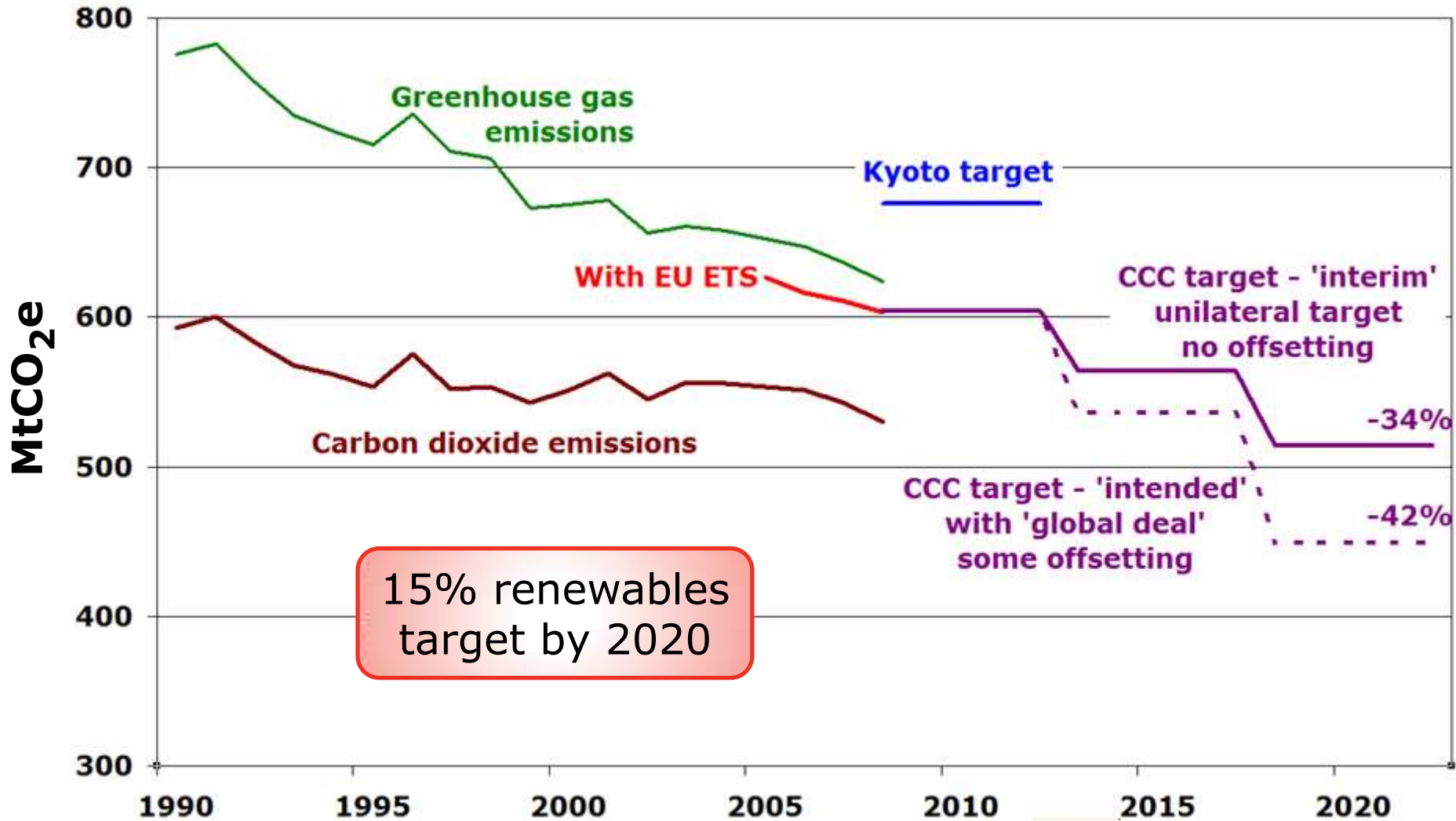
**ESTA  
PO Box 77  
Benfleet  
Essex SS7 5EX**

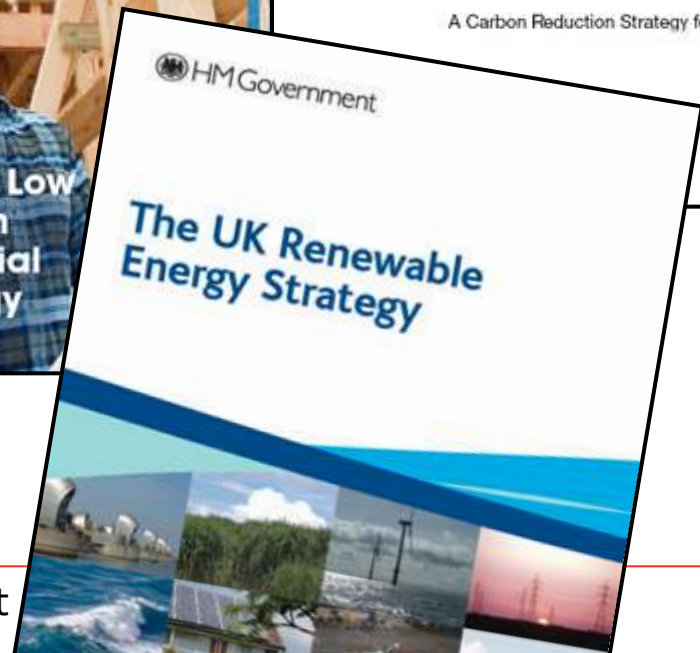
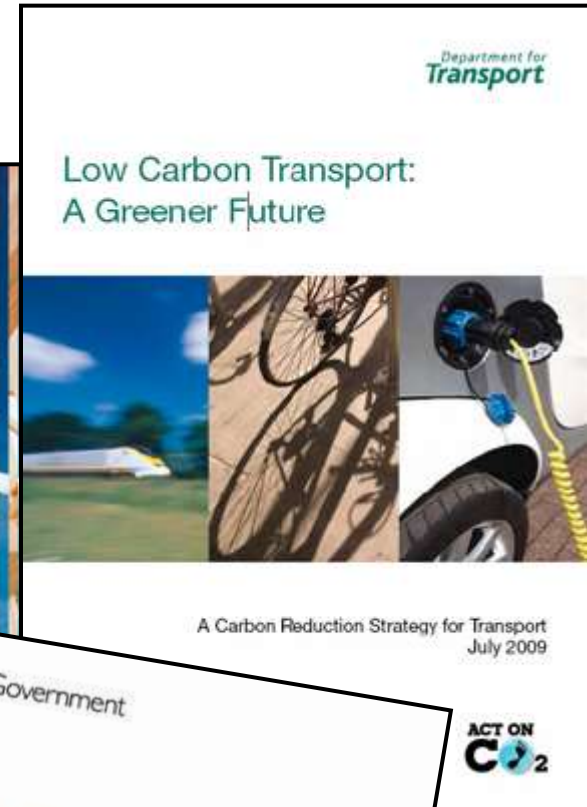
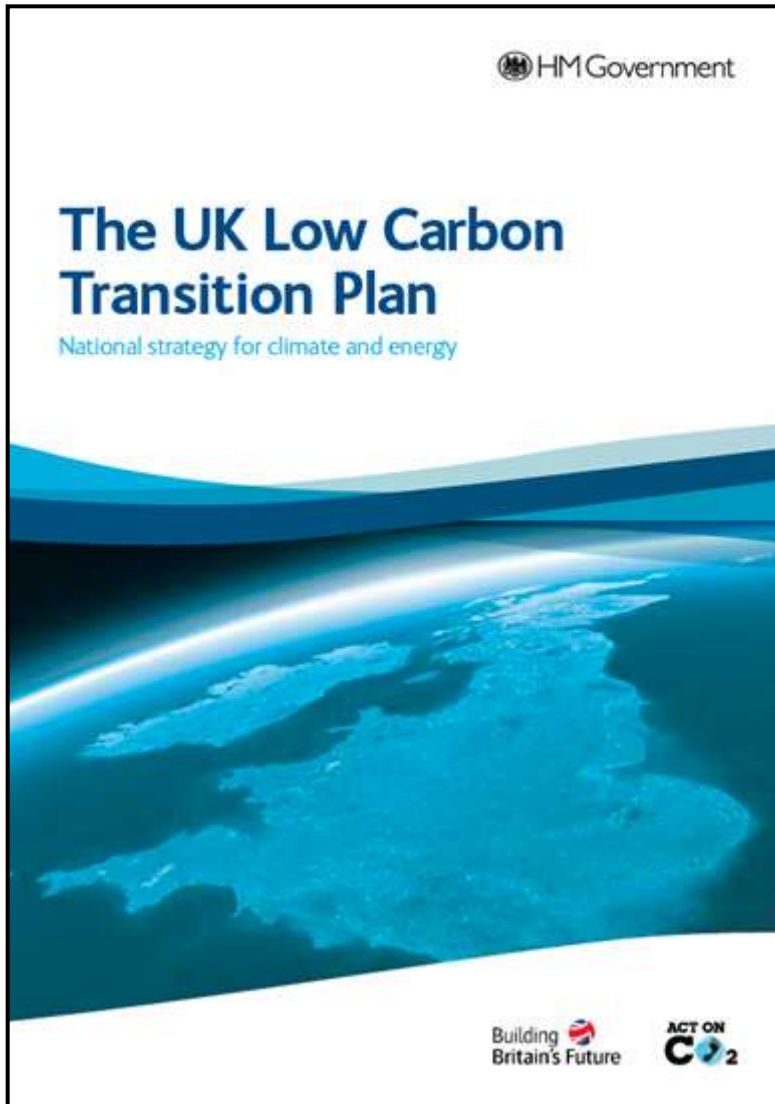
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- ▶ **Backing for limit of 2 degC on global warming**
- ▶ **Financial support to developing countries**
  
- ▶ **List each country action – carbon reduction commitments [92 countries to date = over 90% CO<sub>2</sub>]**
- ▶ **Scrutiny / transparency**
  - ▶ Reporting every 2 years for developing countries
- ▶ **\$30bn short term funding; \$100bn by 2020**
  
- ▶ **Next negotiation COP16 Mexico December 2010**

- ▶ **20 / 20 / 20 target by 2020** confirmed following Copenhagen
  - ▶ Reduce carbon emissions/improve energy efficiency/renewables
- ▶ **Energy Performance in Buildings**
  - ▶ Current [2006] plus EPBD2 [soon]
- ▶ **Energy Services Directive**
  - ▶ Metering and billing / improve by 1% pa / public sector
- ▶ **EU Emissions Trading Scheme**
- ▶ **Energy Using Products Directive** [direct implementation]
  - ▶ Office lighting / motors / refrigeration / freezers







- ▶ **Climate change levy / climate change agreements**
- ▶ **Energy Performance of Building Directive / EPBD2**
  - ▶ Planning / Building regulations – Section 6 Energy
  - ▶ Energy Performance Certificates [Display Energy Certificates]
- ▶ **CRC Energy Efficiency Scheme**
- ▶ **Roll-out of smart and advanced meters**
- ▶ **Using renewables and Heat**
  - ▶ Feed-in Tariffs / on-site renewable [from 1 April 2010]
  - ▶ RHI Renewable Heat Incentive [current consultation]

- ▶ **Mandatory 80% reduction in GHG by 2050**
- ▶ **Mandatory 42% target by 2020**
- ▶ **Minister duty to regularly report progress**
- ▶ **Duties on Public Bodies re: emissions reduction**
- ▶ **Requirements for energy efficiency:**
  - ▶ **Council tax discount scheme/possible non-domestic rate discount**
- ▶ **Planning process to include zero/low carbon options**
- ▶ **Includes international aviation and shipping**



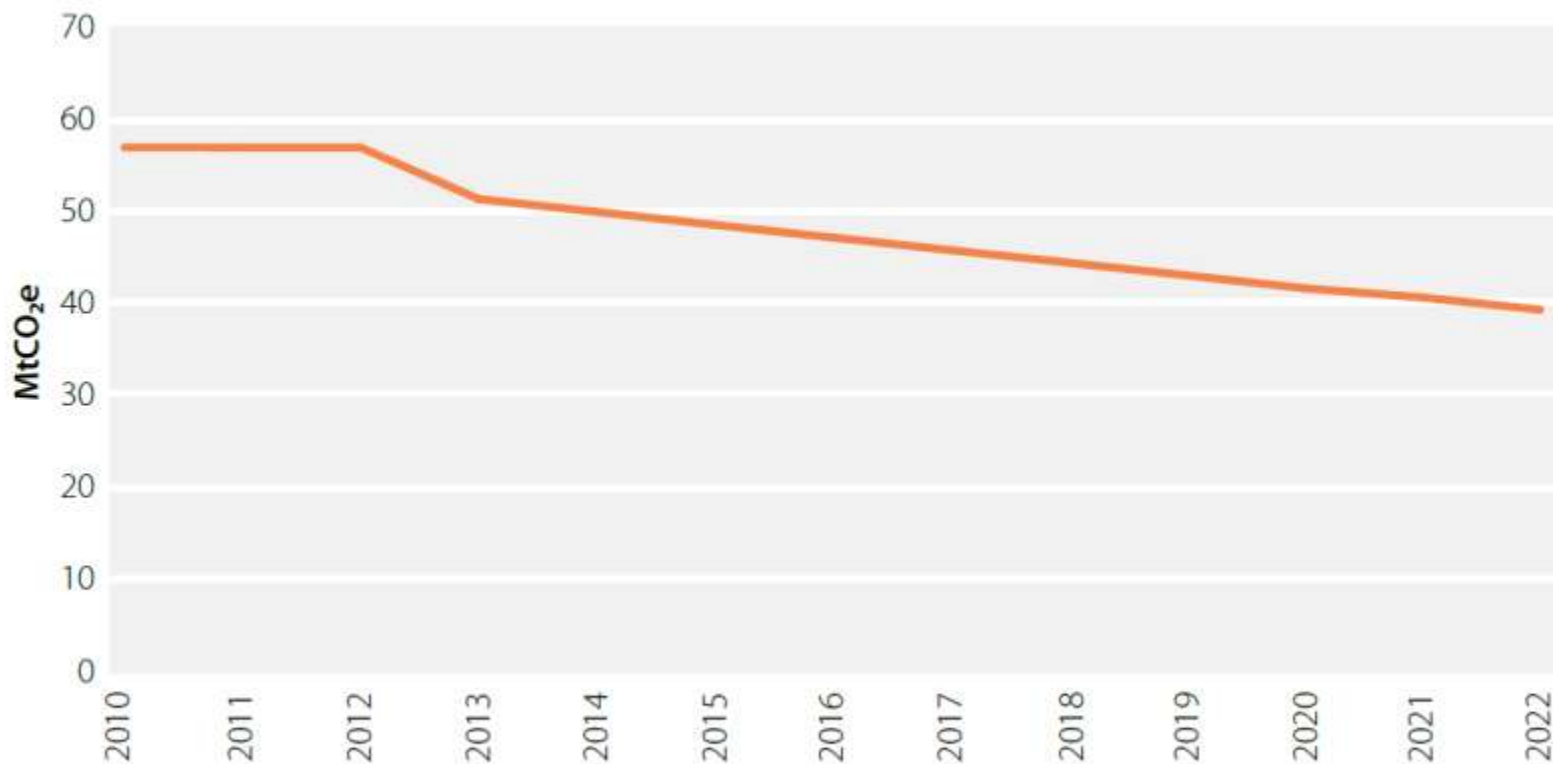
## Buildings and Industry

- Promote energy efficiency uptake – e.g. Energy Assistance Package, Home Insulation Scheme
- Complement UK funding – e.g. boiler scrappage initiative
- Roll-out Display Energy Certificates
- Set stretching targets for public buildings

## Renewable Heat

- Support uptake incentivised by UK policy framework – e.g. Heat-mapping and support for supply chains

**Figure 5.2** Indicative economy-wide emissions trajectory for Scotland to reach a 42% 2020 target under a 30% EU target (2010-2022)



**Source:** CCC modelling.

**Note:** The trajectory under a 20% EU target would be the same to 2012 (during Phase II of the EU ETS), then diverge from 2013 due to differences in the Phase III cap. The trajectory above can only be considered indicative until the EU package for a 30% target is confirmed.

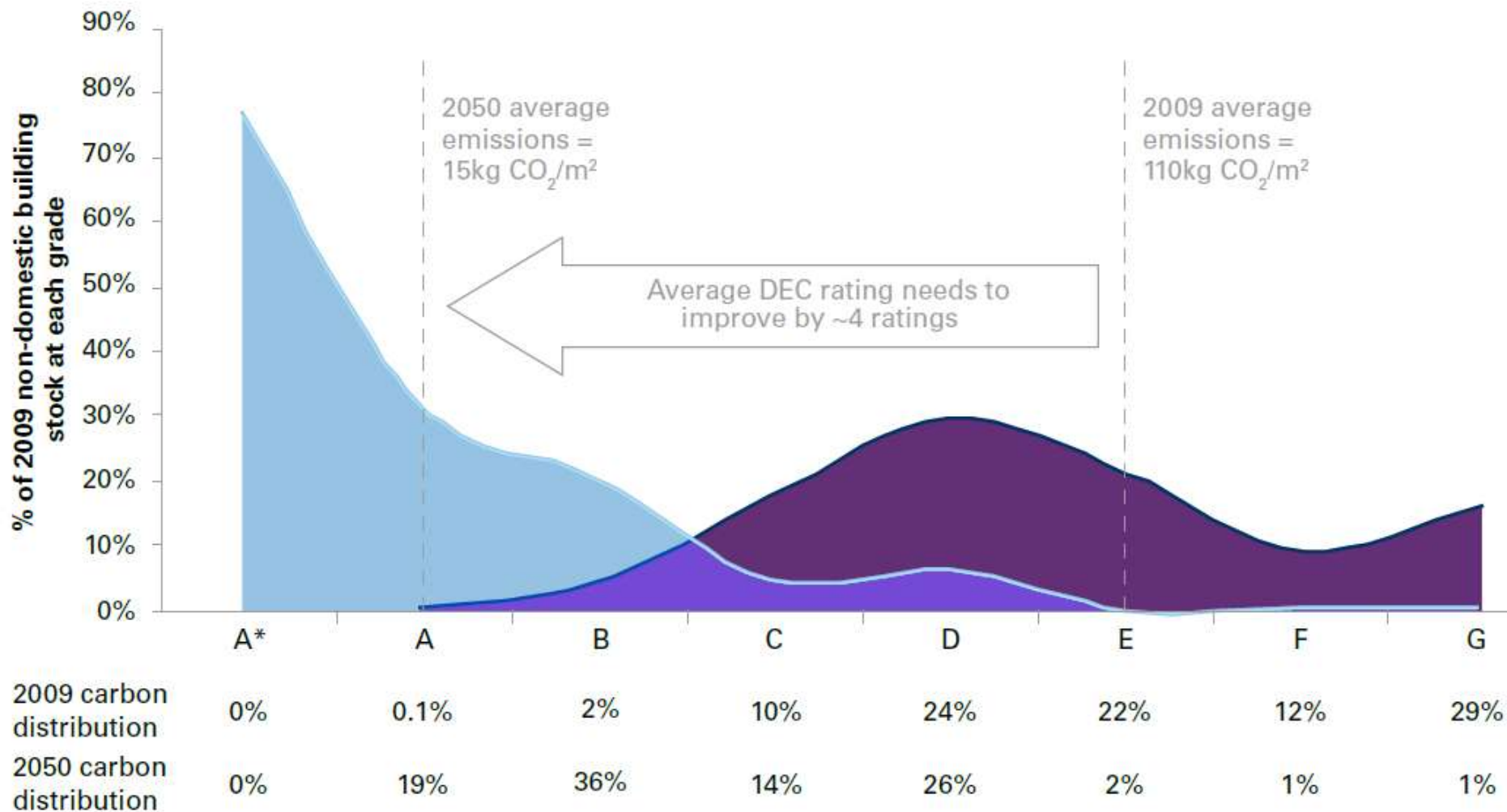


## To achieve 2020 target:

- **Implement ALL available policies**
- **Implement ALL available measures**
- **Display Energy Certificates for ALL non-domestic buildings**

## To achieve 2050 target:

- **Decarbonise electricity supply**
- **Innovation in building design**



Source: Department for Communities and Local Government data for public sector buildings (August 2009); Carbon Trust analysis

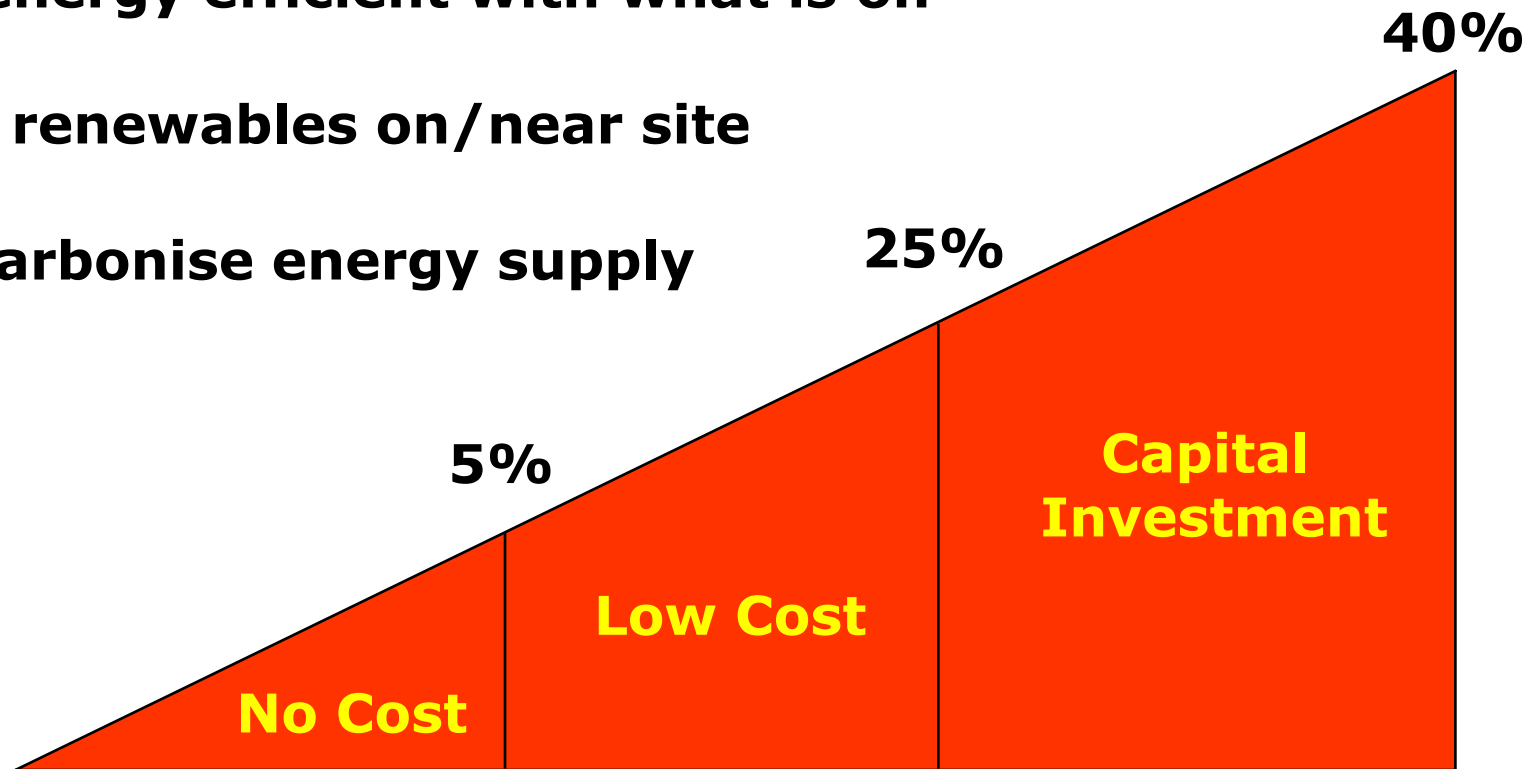
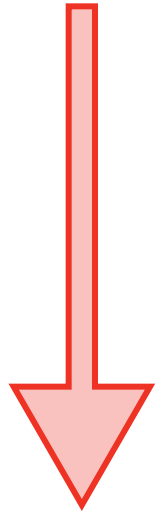
## Priorities

Turn off when not needed

Be energy efficient with what is on

Use renewables on/near site

Decarbonise energy supply



- ▶ **Agreed – waiting to be formally approved**
- ▶ **Energy calculation methodology**
  - ▶ Consider 'cost optimal' solutions = updated SBEM
- ▶ **Minimum building standards**
  - ▶ Further review of Part L / Section 6 to achieve 25% saving
  - ▶ Trajectory to achieve zero carbon buildings in 2019
- ▶ **Energy Performance Certificates**
  - ▶ DEC for public sector = 500 sq.m in 2012; 250 sq.m. in 2017
  - ▶ DEC for private sector to 500 sq.m. by 2012
- ▶ **Air conditioning inspections**
  - ▶ CLG considering formal registration of compliance

## Energy Performance Certificate

Non-Domestic Building

Jubilee House  
High Street  
Anytown  
A1 2CD

Certificate Reference Number:  
1234-1234-1234-1234

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This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information on the Government's website [www.communities.gov.uk/epbd](http://www.communities.gov.uk/epbd).

**Energy Performance Asset Rating**

More energy efficient

A+

Net zero CO<sub>2</sub> emissions

A 0-25

B 26-50

C 51-75

D 76-100

D 76-100

E 101-125

F 126-150

G Over 150

◀ 92

This is how energy efficient the building is.

100 would be typical

**Technical information**

Main heating fuel: Gas  
Building environment: Air Conditioned  
Total useful floor area (m<sup>2</sup>): 2027  
Building complexity (NBS level): 4

**Benchmarks**

Buildings similar to this one could have ratings as follows:

newly built

if typical of the existing stock

## Display Energy Certificate

How efficiently is this building being used?

A Government Dept  
12<sup>th</sup> & 13<sup>th</sup> Floor  
Jubilee House  
High Street  
Anytown  
A1 2CD

Certificate Reference Number:  
1234-1234-1234-1234

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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. 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 on the Government's website [www.communities.gov.uk/epbd](http://www.communities.gov.uk/epbd).

**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 size of building.

A 0-25

B 26-50

C 51-75

D 76-100

D 76-100

E 101-125

F 126-150

G Over 150

◀ 108

100 would be typical

**Total CO<sub>2</sub> Emissions**

This tells you how much carbon dioxide the building emits. It shows tonnes per year of CO<sub>2</sub>.

**Technical information**

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

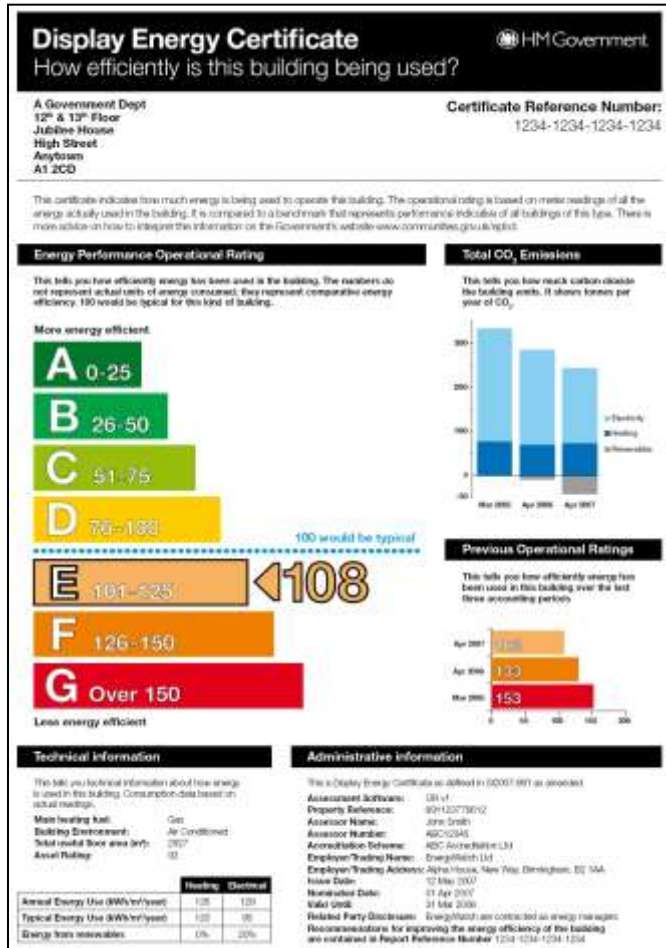
Main heating fuel:	Gas
Building environment:	Air Conditioned
Total useful floor area (m <sup>2</sup> ):	2027
Asset Rating:	92

**Administrative information**

This is a Display Energy Certificate as defined in SI2007/961 as amended.

Assessment Software: Q&V1  
Property Reference: 081123776612  
Assessor Name: John Smith  
Assessor Number: ABC12345  
Accreditation Scheme: ABC Accreditation Ltd  
Employer/Trading Name: EnergyVision Ltd  
Employer/Trading Address: Alpha House, New Way, Birmingham, B2 1AA  
Issue Date: 12 May 2007  
Renewal Date: 01 Apr 2007  
Valid Until: 31 Mar 2009  
Related Party Disclosures: EnergyVision are contracted as energy managers. Recommendations for improving the energy efficiency of the building are contained in Report Reference Number 1234-1234-1234-1234

Building | Industry | Measurement | Management | Control



## EPBD2 - provisional

- ▶ From 2012 - public access
  - ▶ Public to 500 sq.m.
  - ▶ Private sector to 500 sq.m.
- ▶ From 2017 - Public to 250 sq.m.
- ▶ CT recommending ALL non-domestic buildings to have annual DEC by 2020
- ▶ Encourage voluntary use NOW
- ▶ New language for Facility Managers
- ▶ 1 band improvement
  - = about £5/sq.m. pa energy saving
- In 10,000 sq.m. building over 2 years payback = £100,000 investment

- ▶ **Read and store interval data: 30E / 60G minutes**
- ▶ **Import / export [electricity]**
- ▶ **AMR automatic meter reading - remote**



**SMART**



**ADVANCED**

**2 way communication**  
**Remotely adjust tariffs**  
**More tariff bands**  
**Local display**  
**Remote disconnection??**  
**Prepaid options**

**Demand control via meter**

**1 way communication?**

**Local display for smaller sites**

**Demand control via internet  
and site systems**

- ▶ **Larger non-domestic 'advanced' meters:**
  - ▶ E: load profile 5 and above; G: above 732 kWh pa.
- ▶ **Smaller non-domestic choice of smart or advanced:**
  - ▶ Up to 2014 - then limited exclusions for advanced
  - ▶ Must have technical or contractual reasons for advanced.
- ▶ **Domestic: E: load profile 1-2 Gas - domestic use**
  - ▶ Smart with Central Communications Provider
- ▶ **ESTA view:**
  - ▶ Ensure all non-domestic has choice beyond 2014
  - ▶ Consumer must OWN the metered data
  - ▶ Acknowledge that 'advanced' meters can support smart grid
- ▶ **Ofgem eServe project:**
  - ▶ Considering and consulting on structures and approaches
  - ▶ Consultation on implementation plan summer 2010

- ▶ **Automated meter reading Service Providers Code of Practice for the GAS market**
- ▶ **Create customer confidence in provision of AMR services:**
  - ▶ Known documented procedures CoP
  - ▶ Accreditation of AMR Service Providers
  - ▶ Integrity and accuracy of data provided for billing and energy and carbon management
- ▶ **Expand the market for AMR and downstream value added energy management services**
- ▶ **To establish certainty of processes and approach for AMR Service Providers**
- ▶ **To contribute to the UK's aim for substantial reductions in carbon emissions**
- ▶ **Visit [www.esta.org.uk/ASPCoP](http://www.esta.org.uk/ASPCoP) for details**

- ▶ **Increasing energy prices**
- ▶ **Tighter targets on all policy instruments**
  - ▶ CRC carbon cap / Section 6 Energy
- ▶ **More focus on compliance**
- ▶ **Adjustments to policy**
  - ▶ E.g. proposal to remove CCL on consumers and place on energy suppliers [Conservatives]
  - ▶ Full roll-out of DECs / Business rates related to DEC rating??
  - ▶ Lowering of CRC threshold to 3,000 MWH??
- ▶ **Resolve specification of 'smart' metering and roll-out programme - Summer 2010**

**Energy and Facility Managers:**

**Use legislation to advantage. Your best opportunity to date!**