

Low carbon lifestyle - a new way in the UK

Vienna 24.10.05

Dr Brenda Boardman, MBE

Lower Carbon Futures
Environmental Change Institute
University of Oxford

Hierarchy of targets

Kyoto: 5.2% drop in GHG emissions by 2008-12

EU: 8% cut in GHG emissions by 2008-12

UK: 12.5% drop in GHG emissions by 2008-12

UK: 20% reduction in CO₂ by 2010

UK: 60% reduction in CO₂ by 2050

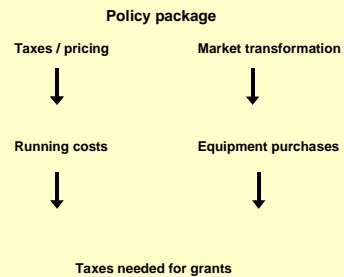
EU Emissions Trading Scheme: non-domestic

Aviation? Methane? Domestic? Regional?

Long-term carbon targets

Country	CO ₂ reduction targets
Czech Republic	30% per capita by 2020 (vs 2000) 25% in aggregate
France	1.8tCO ₂ per capita by 2050 (75%)
Germany	45-60% by 2050 (vs 1990) [40% by 2020 if EU is 35%]
Netherlands	40% by 2030 60% by 2050
Poland	40% by 2020 (vs 1988)
Sweden	50% by 2050, all GHG
UK	60% by 2050

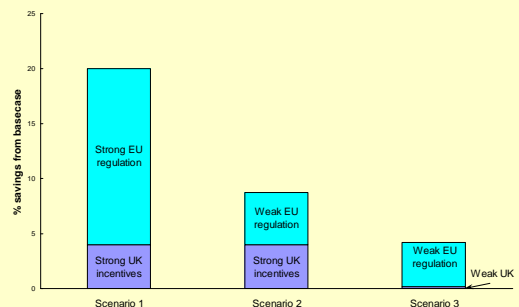
Prices and products



European legislation

- Energy Performance in Buildings Directive 2002/91/EC
- Eco-design Directive 2005/32/EC. Minimum Efficiency Performance standards for 12 product groups (domestic and non-domestic)
- Energy End-use Efficiency and Energy Services Directive – British Presidency priority
- Energy Labelling – soon?

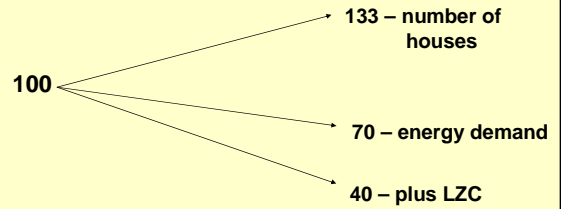
Influence of EU vs Member States



60% less carbon scenarios, UK 2050

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Change in demand	0	-36%	-36%	-47%
Total renewables	53GW	45GW	25GW	20GW
Nuclear /carbon recovery	52GW	0	19GW	0
Fossil fuels	106GW	106GW	106GW	106GW

Residential carbon reduction from 1996 to 2050, UK



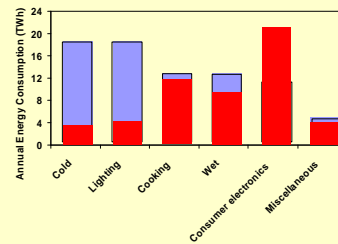
Energy services, 2050

per person:

- More space
- More hot water
- Indoor temperatures rise to 21°C in living area, 18°C in rest of home (24-hour average)
- Appliance ownership rises
- No air-conditioning

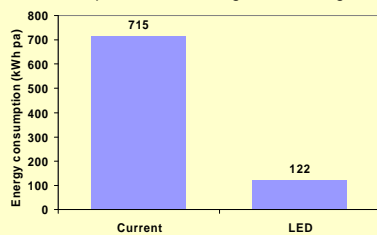
Residential lights and appliances – UK, 2050

40% House energy consumption
Annual UK residential sector energy consumption 2004



LED lighting

Impact of LED's on residential lighting consumption for the average UK dwelling, 2050



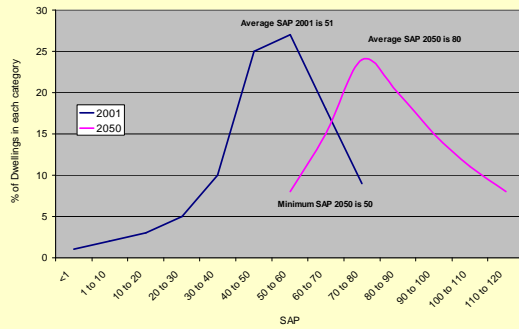
Plasma TV

fabulous flatscreen

WAS £7099
NOW £5214
SAVE £1885
for you

PREVIEW
This Sanyo 42" high-definition plasma TV comes complete with DVD player, stylish speakers and a fantastic table top stand. Modern features, superb quality and classic design simply make this package a must have! And with a fabulous saving of £1,885 exclusively for you, FREE delivery and FREE installation, it looks even more attractive!

Transforming the housing stock



Low- and Zero-Carbon technologies (LZC)

	Heating only	Heating & electricity	Electricity only
Low-carbon	Heat pumps	Combined heat & power (CHP)	-
Zero-carbon	Solar thermal, biomass boiler/stove	CHP using energy from waste or biomass	Solar PV, Micro wind

LZC ownership, 2050

- 60% of homes on combined heat and power (local and micro)
- 30% of homes with photovoltaics
- Almost all homes generating electricity
- Reduce peak demand by 25GW in 2050
- Net exporter of electricity from 2045
- 60% of homes have solar thermal
- Around two LZCs per house

Personal carbon allowances (or tradable domestic quotas)

THE alternative to taxation
 Equal allowance of carbon for every adult
 Can be traded
 Allowance reduced each year
 All gas, electricity, petrol and aviation
 Parallels non-domestic Emissions Trading Scheme, Climate Change Levy

The 40% house

www.eci.ox.ac.uk

Oxford University is the 9th largest purchaser of green electricity in Europe