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“Low carbon economy – achieving the necessary step change” – ENVEC 2007



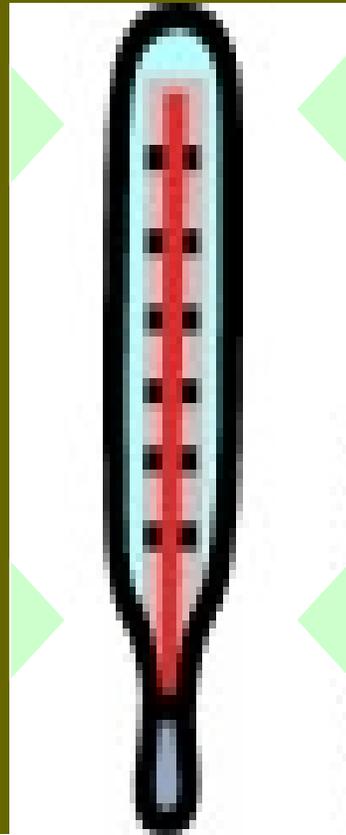
TOMORROW'S CLIMATE
Today's Challenge™

defra
Department for Environment
Food and Rural Affairs

Stern review on the economics of climate change: to avoid the worst impacts we need to stabilise emissions at concentrations of 450-550ppm CO₂e

By **2100**, business as usual means 50:50 chance of 5°C temperature increase

By **2035**, business as usual means at least 2°C warming by around the end of the century



5°C

Impacts are greater and less certain:

- At least 150m additional people at risk of hunger
- Increased security risk through migration and scarce resources
- Sea level threatens London, New York and Tokyo

2°C

40-60m more people exposed to malaria in Africa

15-40% of species facing extinction

.... taking action is cost effective, compared to the cost of doing nothing

Do nothing



**Costly and dangerous:
more than 2 World Wars
and Great Depression put
together – as much as
20% reduction in global
GDP by 2020**

**Tackling the problem now by
putting the right policies in place**



**Still serious and widespread
impacts, but costs of estimated
at between 1% and 3% of global
GDP in 2050**

To achieve Stern's recommendations global emissions of greenhouse gases need to peak in the next 12 years

UK Climate Change Programme & Energy White Paper reflect the policy framework set out in Stern

- Putting a price on carbon through:
 - emissions trading
 - taxation
 - regulation
- Technology transformation
- Mobilising behaviour change
- Long-term legal framework - role of the Climate Change Bill

Putting a price on carbon

Emissions trading

- Central component in the policy framework
- Nearly half of the UK carbon dioxide emissions are covered by the EU emissions trading scheme (EU ETS)
- Want to reform the EU ETS to provide certainty on its future beyond 2012 with aviation included as soon as possible and surface transport under consideration
- The Carbon Reduction Commitment to cover large business and public sector organisations not within the EU ETS

Putting a price on carbon

Fiscal measures & regulation

- Climate Change Levy - a tax on energy use, with rebates available in some sectors through Climate Change Agreements
- Tax incentives for specified energy efficient investments
- Company Car Tax and Vehicle Excise Duty
- Zero Carbon Homes
- Renewable Transport Fuel Obligation (RTFO)

Technology transformation

- Barriers impede the development and application of technologies, even with carbon pricing
- Already investing in research and supporting technologies to reach the market:
 - Carbon Trust
 - Environmental Transformation Fund
 - Energy Technologies Institute

Technology transformation

- Distributed Generation package
- Biomass
- Carbon Capture and Storage
- Renewables, e.g Renewables Obligation, Wave hub

Changing behaviour

Citizens:

Climate change communications
Act on CO₂ calculator

Business:

Supplier obligation
Product standards

The public sector:

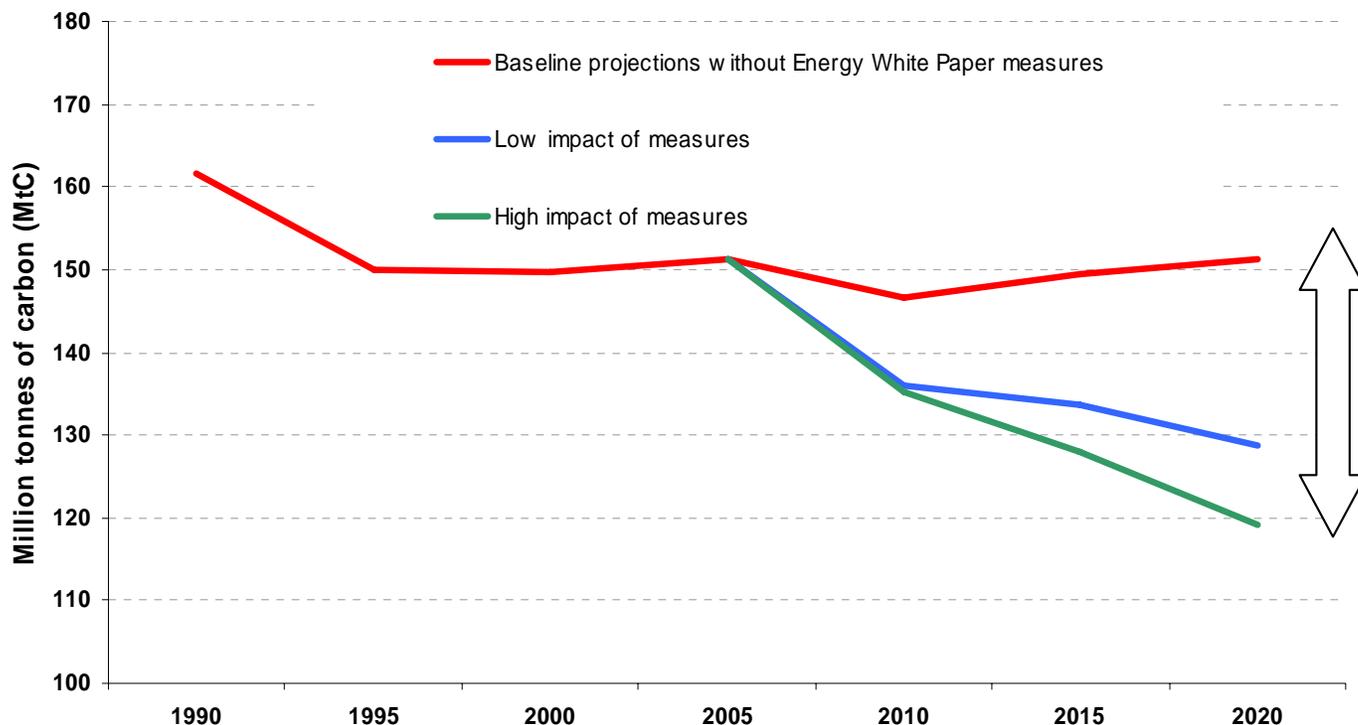
Government estate targets
Salix Finance

Long-term legal framework – Climate Change Bill

- Legally binding targets to reduce carbon dioxide emissions by 2020 (by 26-32 %) and by 2050 (by 60%)
- Carbon budgets - capping emissions over five-year periods – with three budgets set ahead to help businesses plan and invest with increased confidence
- Committee on Climate Change - to advise on the setting of carbon budgets and to report on progress
- Enabling powers to make future policies to control emissions quicker and easier to introduce
- New system of reporting to Parliament, including on climate change adaptation policies
- Climate Change, Planning and Energy Bill – three legislative pillars

Bringing it all together - historic and projected UK emissions projections

Projected carbon emissions and carbon impact of our proposals



Together with the EU ETS, we estimate our measures will save 23-33 million tonnes of carbon in 2020

In summary

- A long-term international framework to tackle climate change
- Legally binding carbon targets for whole UK economy
- Importance of carbon pricing
- More energy saving
- More support for low-carbon technologies