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MEETING THE  
ENERGY CHALLENGE

A White Paper on Energy

MAY 2007

# Our key long term challenges

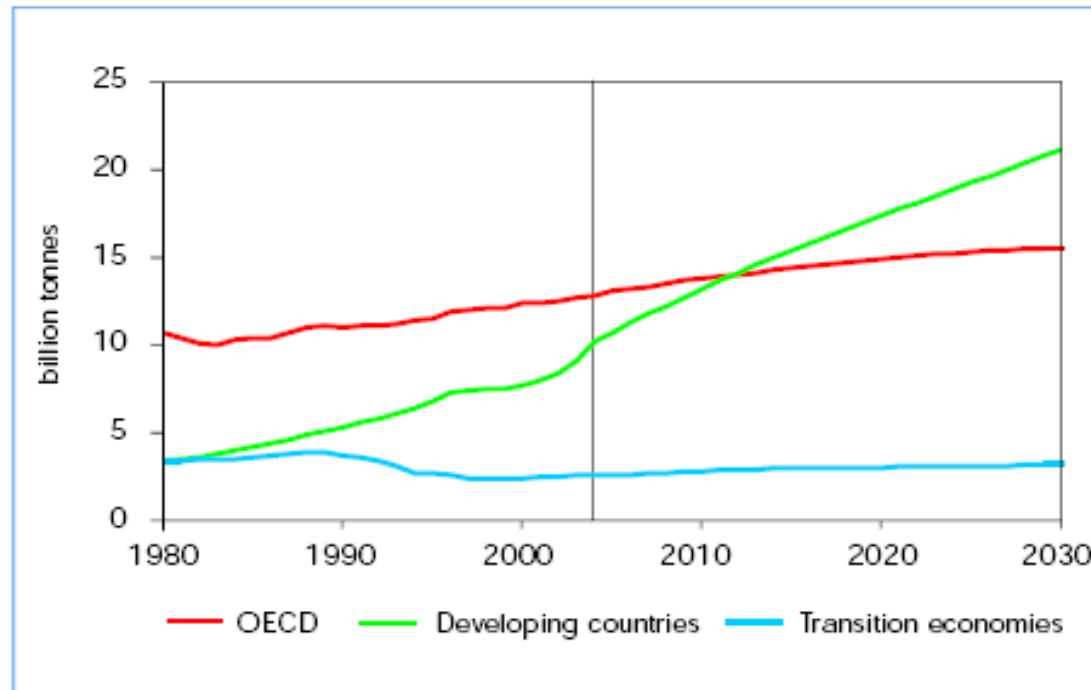
- Tackling climate change
- Ensuring secure, clean and affordable energy as we become increasingly dependent on imported fuel

# Context

- Growing evidence of the impact of climate change and need for international effort to tackle it
- Rising fossil fuel prices and slower than expected EU liberalisation
- Awareness of risks from concentration of oil and gas reserves as we become import dependent
- In the UK the need to invest in new energy infrastructure

# The climate change challenge I

Energy-Related CO<sub>2</sub> Emissions by Region in the Reference Scenario (IEA, WEO 2006)



Note: Excludes emissions from international marine bunkers.

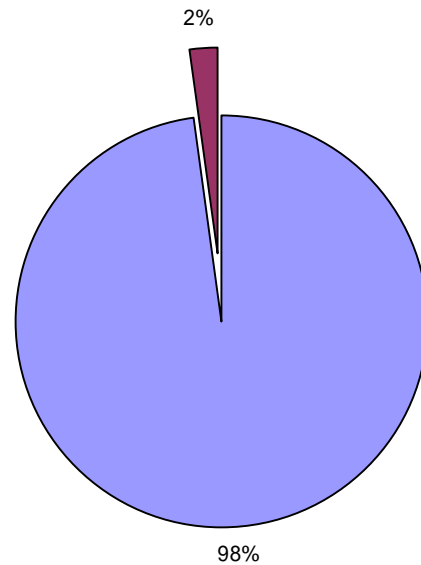
Global primary energy demand will rise by 53% by 2030, leading to a 55% increase in global carbon dioxide emissions.

Over 70% of the increase in energy demand will come from developing countries

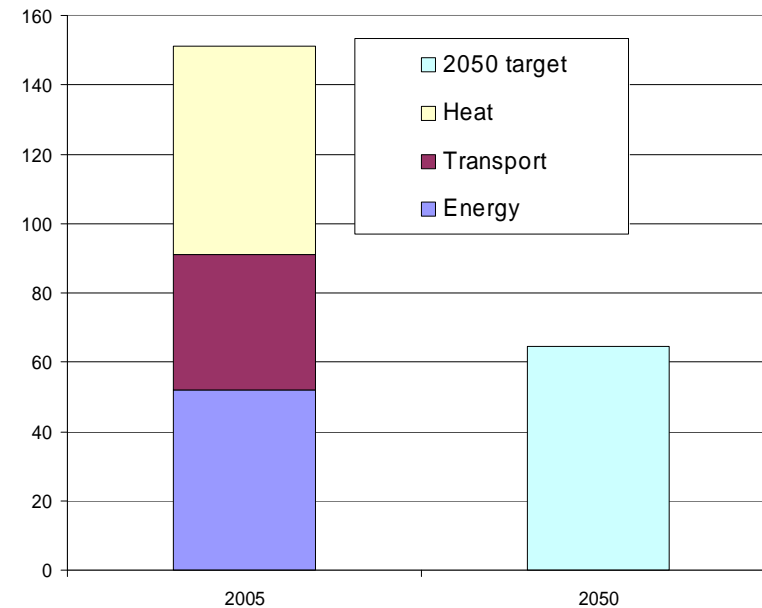
The share of developing countries in world emissions rises from 39% at present to 52% by 2030.

# The climate change challenge II

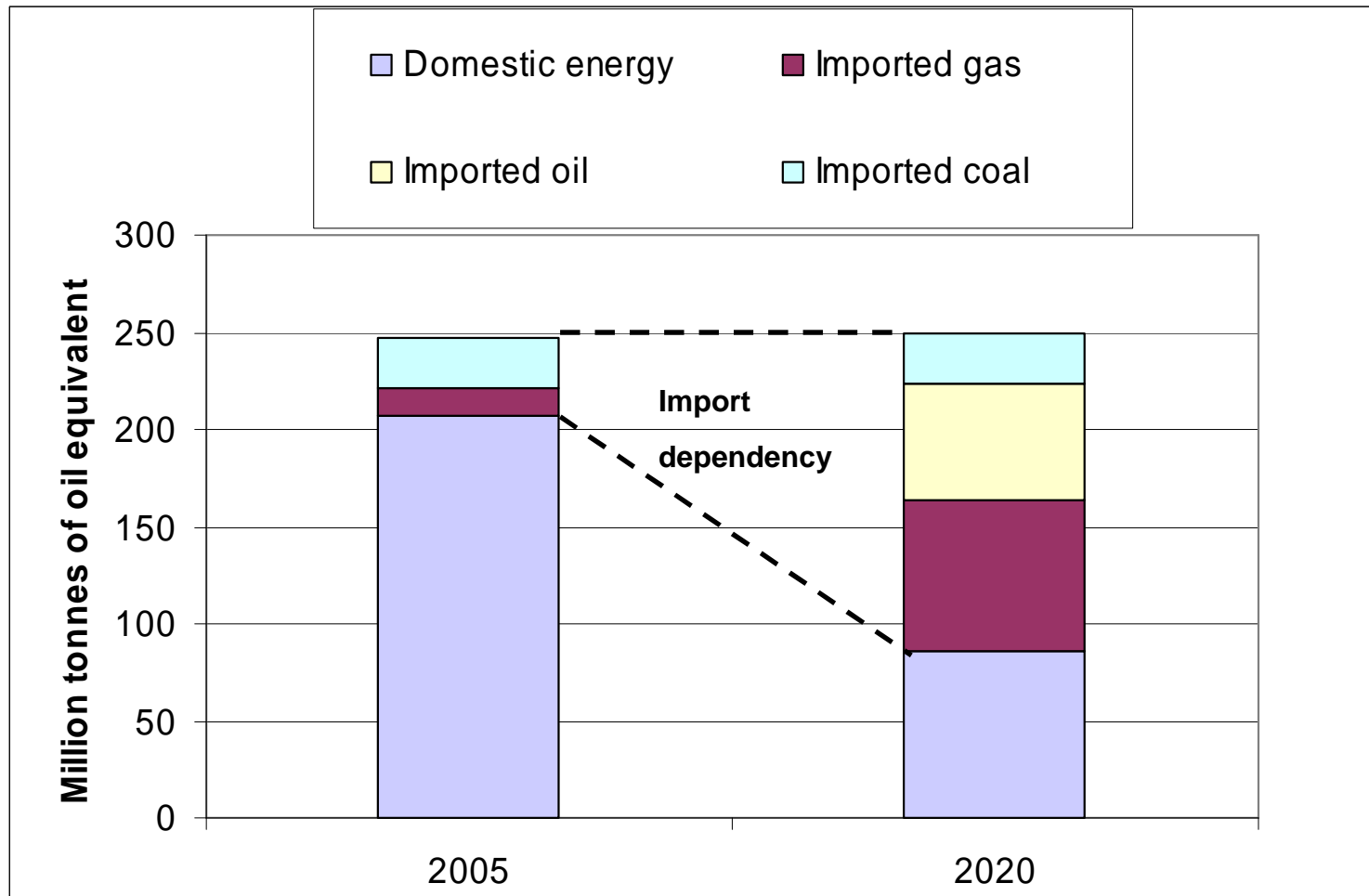
The UK accounts for around 2% of global carbon emissions



Our goal is to put the UK on a path to cutting carbon dioxide emissions by at least 60% by about 2050



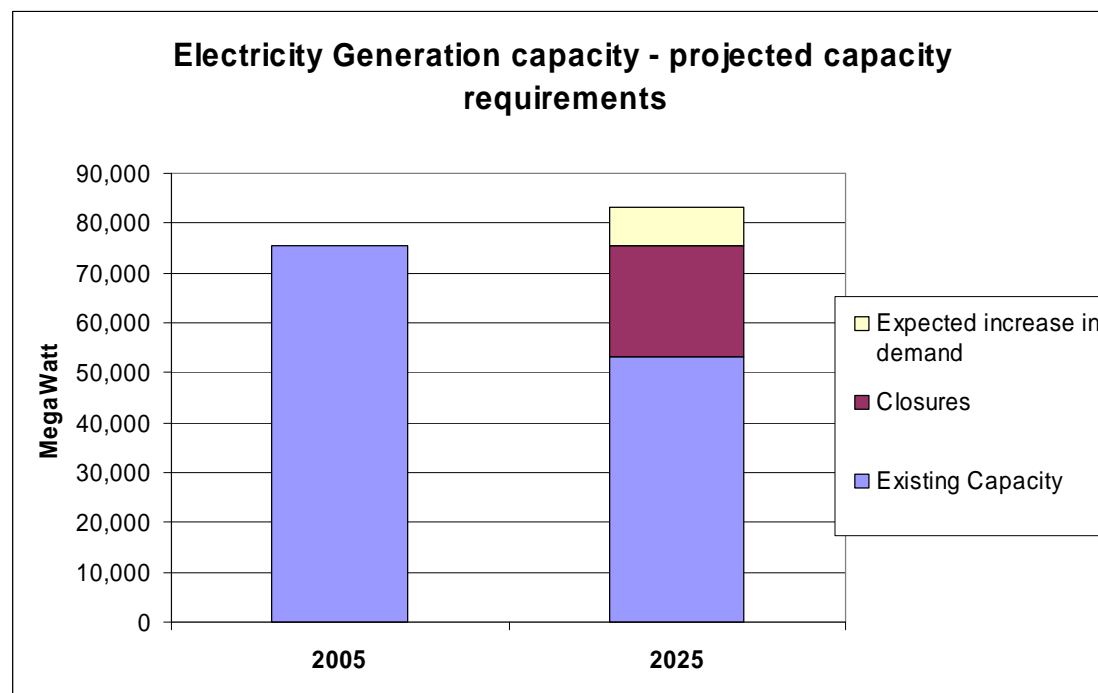
# The security of supply challenge: I



# Security of Supply challenge: II

Substantial investment needed in:

- **Electricity power stations and networks**
- **Gas import and storage infrastructure**



# The Framework

## Principles

- Climate change and energy security are international issues, requiring international action as well as in the UK
- Independently regulated competitive markets are the most cost-effective and efficient way to deliver our goals
- Correcting market failures to align the objectives of market participants with our energy policy goals, e.g. through a carbon price



# The Framework

## Action

- An international framework to tackle climate change
- Legally binding carbon targets for whole UK economy
- More progress in achieving competitive and transparent international markets
- More energy saving
- More support for low carbon technologies
- Right conditions for investment

# International energy and climate strategy

Our international energy and climate change strategy is designed to ensure security of energy supply and accelerate the transition to a low-carbon economy.

Our international strategy is built around four main elements

- Promote open, competitive markets
- Take action to put a value on carbon emissions
- Drive investment to accelerate the deployment of low carbon technologies
- Promote policies to improve energy efficiency

## We need to:

- Save energy
- Develop cleaner energy supplies
- Secure reliable energy supplies at prices set in competitive markets

# Save energy - households

## Improving information and advice

- Better Billing
- Smart meters and real time displays
- CO<sub>2</sub> calculator

## Regulation

- Zero carbon new homes
- Improvements to energy efficiency of appliances
- Doubling of suppliers' obligation to reduce carbon emissions
- Energy Performance Certificates for households

# Saving energy

## **Businesses and the public sector**

- Carbon Reduction Commitment
- Energy Performance Certificates
- Smart Meters

## **Transport**

- Support EU mandatory targets to improve car fuel efficiency
- Inclusion of aviation in the EU ETS

## Cleaner energy: heat and distributed energy

- Distributed Generation package
- Biomass strategy
- Further work on heat options

# Cleaner energy: Electricity Renewables

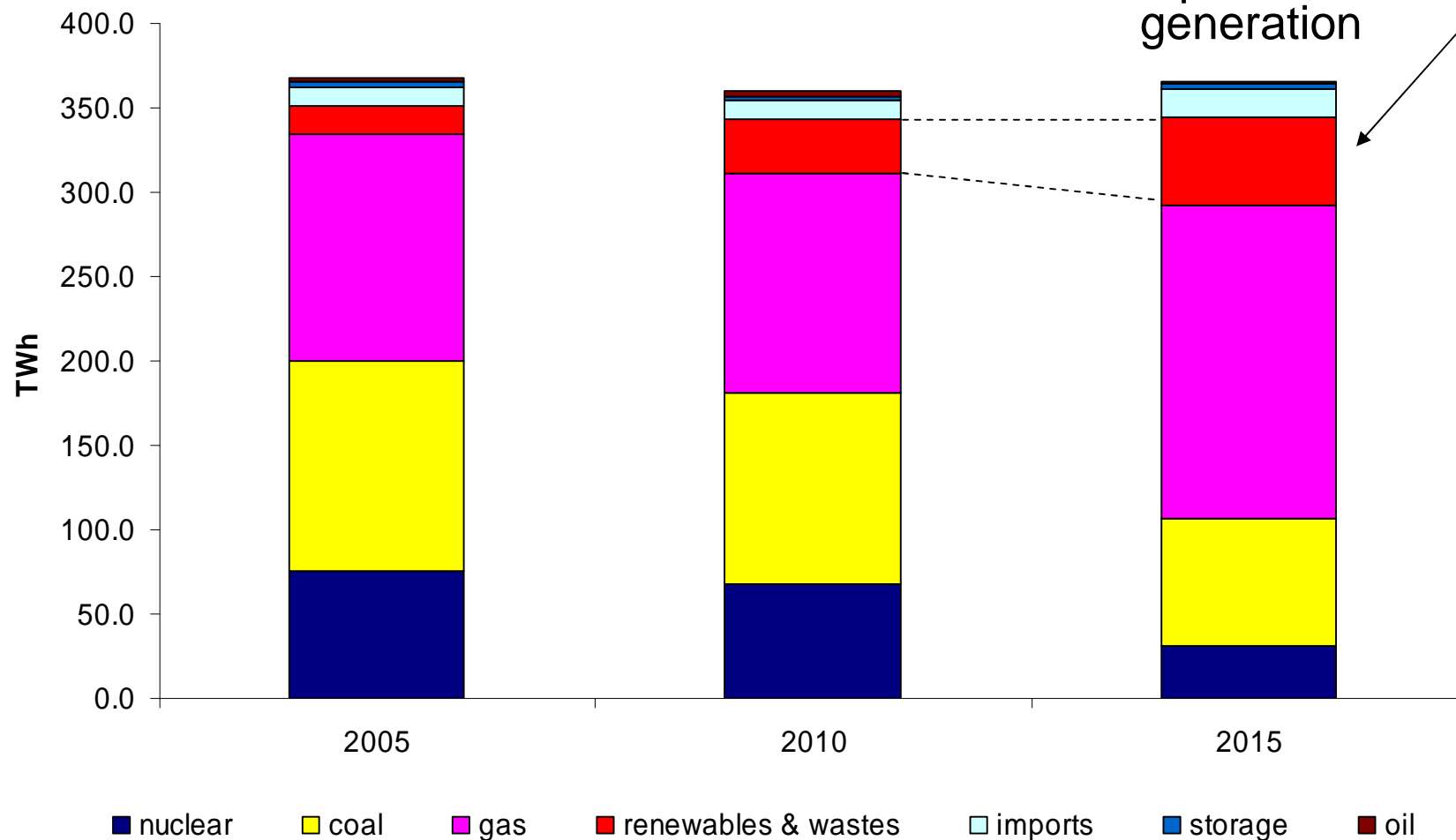
- Renewables Obligation
  - Increasing Obligation to 20% on a ‘headroom’ basis
  - Banding to encourage deployment of broader range of renewable technologies
- Expect tripling of electricity supplied from renewable sources between now and 2015

# Cleaner energy: Electricity Carbon Capture and Storage

- Potential to reduce fossil fuel power station emissions by 90%
- Competition to demonstrate commercial CCS in the UK to be launched in November 2007 with the aim of having demonstration operational between 2011 and 2014
- Taskforce established to examine the regulatory framework – consultation on options for the regulation of CCS
- Capture-ready and regulatory consultations will be launched later this year



# Cleaner energy: electricity generation – to 2015



## Cleaner energy : Electricity (cont...)

- After 2015, the generation mix could become even more diverse:
  - Depending on the outcome of the consultation, nuclear new build
  - Support for new technologies
  - CCS on a commercial scale

## Clean energy supplies: Electricity (cont..)

### Consultation on new nuclear power

- Launching a consultation alongside the White Paper on whether it is in the public interest to give companies the option to invest in new nuclear power stations
- Taking forward, on a contingent basis, facilitating actions to reduce regulatory and planning risks to prepare for the possibility of new nuclear power.

## Cleaner energy: Energy technology support

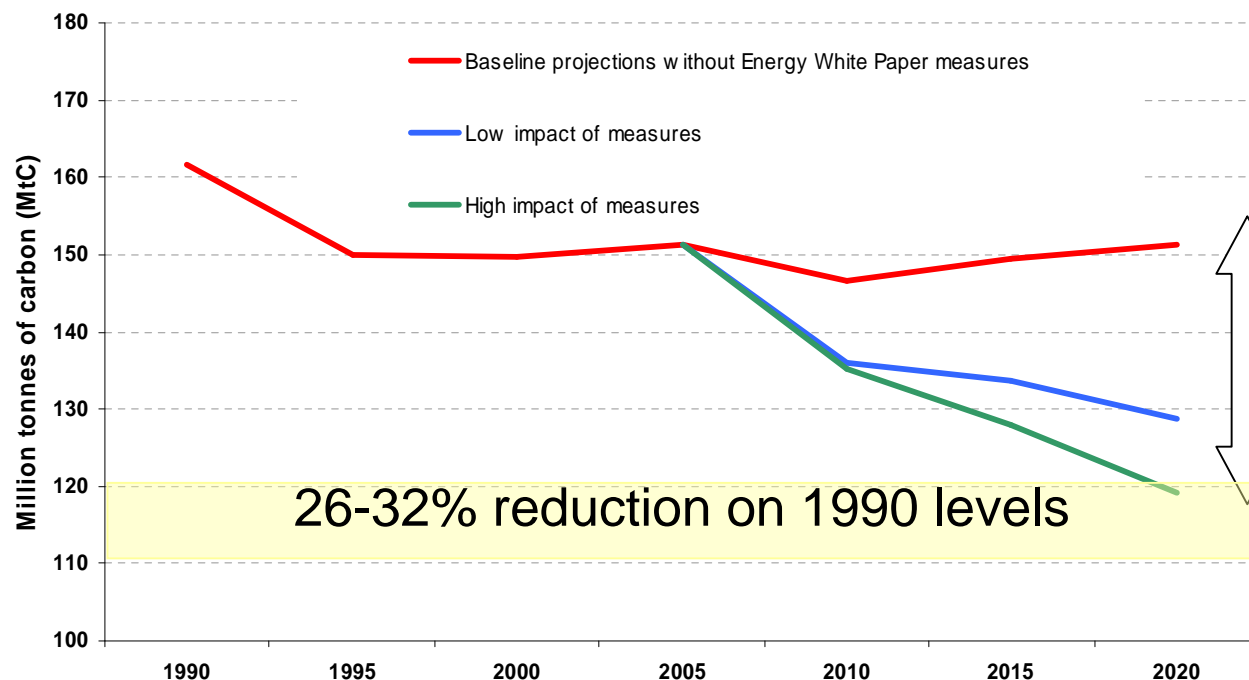
- In summer 2007 we will launch the new **Energy Technologies Institute** for R&D into low carbon energy - minimum budget of around £600m
- The **Environmental Transformation Fund** will be established from April 2008 for UK and international demonstration and deployment of new energy technologies and energy efficiency
- The ETF international element is £800m

# Cleaner energy: transport

- **Low Carbon Transport Innovation Strategy**
- **Renewable Transport Fuel Obligation**
  - 5% by 2010-11
  - Potential for higher Obligation later if sustainable

# Impact of our measures – climate change challenge

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

# Next Steps

- Consultations
- Legislation
- Implementation