



## Providing Solutions for Climate Change

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## Lower carbon growth



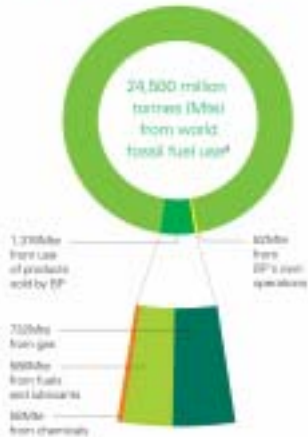
BP's role is to provide the energy that the world needs.

But the company is also committed to balance the increasing need for affordable energy with respect for people and the environment.

## BP in a global energy context



Where do greenhouse gas (GHG) emissions come from?

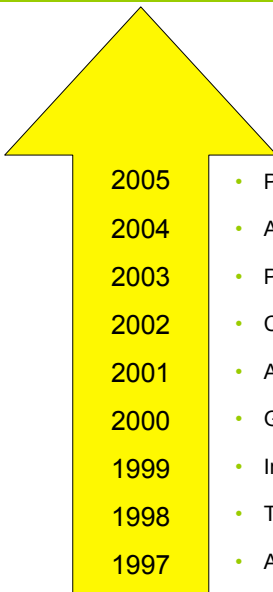


\* International Energy Agency (IEA), U.S. Energy Information Administration

- World's estimated annual emissions from hydrocarbon consumption is equivalent to 24 billion tonnes of CO<sub>2</sub>
- Emissions from BP's products are about 17 times larger than the emissions from our operations
- Our forward plans focus on our products as well as operations

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## BP and climate change – a history of leadership



2005

- Plan Hydrogen power plant including carbon capture and storage

2004

- Achieve GHG reduction over 4 million tonnes since 2001

2003

- Plan Long-term business based on stabilisation of GHG

2002

- Commit to stabilise emissions to 2012

2001

- Achieve GHG emissions reduction target

2000

- Green Operation Network / energy efficiency

1999

- Internal emissions trading system

1998

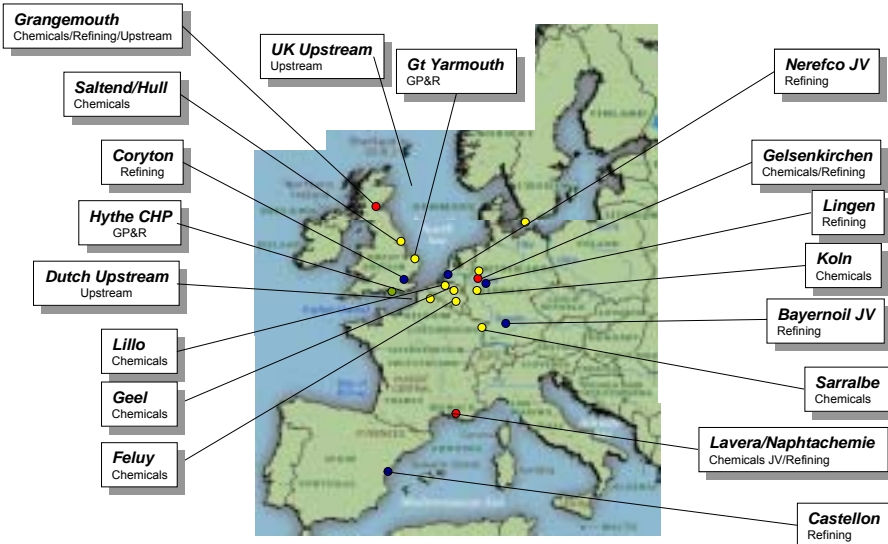
- Target 10% GHG reduction from 1990 baseline

1997

- Advocate precautionary action

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## BP/Innovene EU ETS installations



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## Choice of Policy Instruments



- Command and control policy
- Economic instruments
- Taxes / fees
- Voluntary agreements

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## Key Principles for an ETS



- Harmonization: rules and definitions among EU member states
- Simplicity: limitation of special rules and exemptions
- Liquidity: trading of a great volume of allowances, realistic threshold for exclusion of small installations
- Cost-effectiveness:
  - low transaction costs
  - simple monitoring and reporting requirements

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## BP and Climate Change – .....and Future Vision

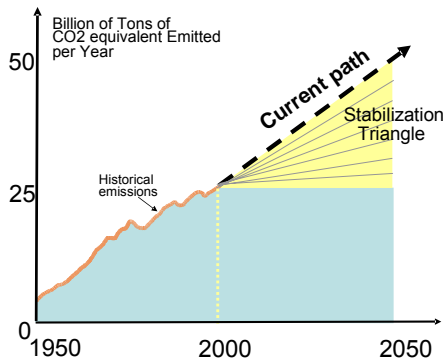


**Tackling the risk of climate change** will require less GHGs to be emitted in future, on a global basis. This can be achieved by a combination of:

- ➔ Using energy more efficiently, thus reducing energy use per unit of activity
  - e.g. helping our customers use BP products more efficiently
  - Increased BP market share
- ➔ Using lower carbon energy, thus emitting less CO<sub>2</sub> per unit of energy consumed
  - e.g. reducing the carbon content of the products we sell
  - Solar and renewables
- ➔ Capturing and storing CO<sub>2</sub>, until renewable, or zero carbon energy is economic

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# The Climate Challenge

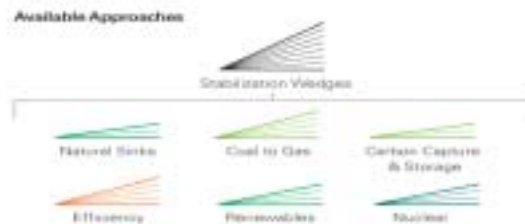


- In next 50 years, global emissions will double unless action is taken
- The challenge is how to stabilize atmospheric concentrations of greenhouse gases while still providing society with the energy it needs
- A simple model that illustrates a series of actions ('wedges') that could each reduce annual emissions by 3.5 billion tonnes of CO<sub>2</sub> by 2050
- Examples of a 'wedge' include:
  - doubling the fuel efficiency of 2 billion cars
  - gas replacing coal in 1,400 large new power stations
- The technologies are known today

# Efficiency gains and the 'Wedges'

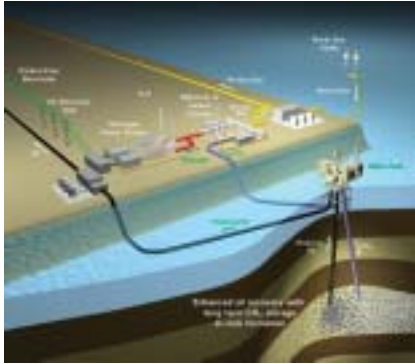


Research at Princeton University supported by BP has identified many available approaches that could all contribute "wedges" of carbon reductions.



Energy Efficiency technologies and interventions could deliver around 50% of the emissions reductions required to bring global emissions back down to today's levels by 2050.

## De-carbonised power: the future?



- BP announced de-carbonised 350 MW electrical plant in Scotland on June 30<sup>th</sup> 2005
- It will convert natural gas to hydrogen and CO<sub>2</sub>:
  - Hydrogen will be used for power generation
  - CO<sub>2</sub> will be exported to a North Sea oil reservoir
- \$600m investment, 2009 start-up
- CO<sub>2</sub> emissions reduced by 90% compared to gas fired power generation

The project is expected to capture and store around 1.3 Mte CO<sub>2</sub> each year and provide 'carbon-free' electricity to the equivalent of 250,000 UK homes.