



Doosan Babcock Energy

Official Opening of the OxyCoal™ Clean Combustion Test Facility

Technical Seminar

Date: 24 July 2009



Doosan Babcock Energy

Introduction

Official Opening of the OxyCoal™ Clean Combustion
Test Facility
Technical Seminar

Dr Dave Fitzgerald
Date: 24 July 2009

Programme

- Introduction Dr Dave Fitzgerald
- Advanced Supercritical Boiler Technologies Dr David Smith
- Post Combustion Capture Technology Chris Behan
- Oxyfuel Combustion Technology David Sturgeon

Global – Coal Utilisation and Climate Change

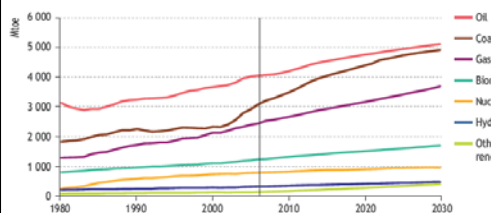
The Challenge – The IEA forecast that the world demand for energy from coal will continue to rise beyond 2030.

However, if the world continues to emit greenhouse gases at today's levels then average global temperatures could rise by up to 6°C by then end of this century...

To avoid the most dangerous impacts of climate change, average global temperatures must rise no more than 2°C, and that means global CO₂ emissions must start to fall before 2020 and then fall to at least 50% below 1990 levels by 2050.

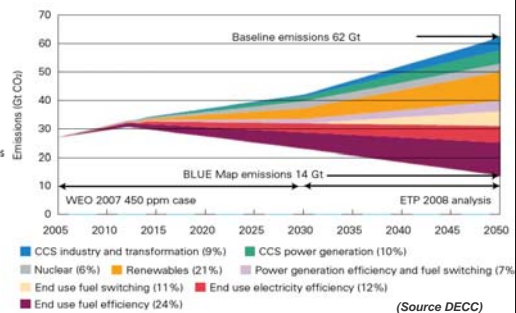
Global Leaders meeting in Copenhagen in December 2009 to discuss replacement for Kyoto protocol.

World Primary Energy Demand by Fuel Type



(Source IEA Energy Outlook 2008)

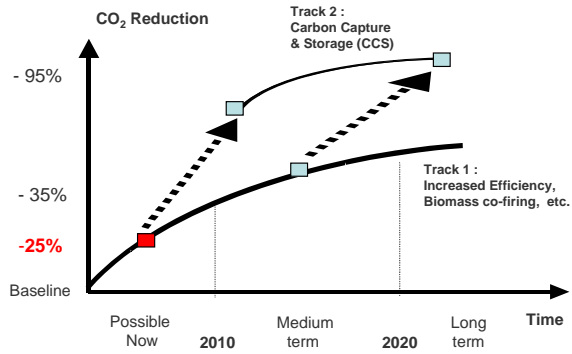
Contribution of Global Emission Reduction Options 2005-2050



(Source DECC)

CO₂ Reduction Strategies

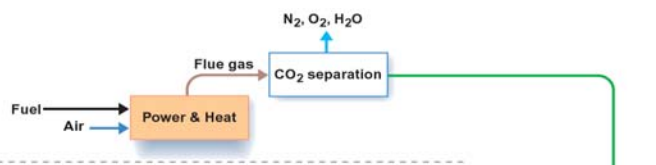
- Two track approach
 - Power plant efficiency improvement
 - Carbon dioxide capture and storage (CCS)
- Approaches are fully complementary
- Power plant efficiency improvement is available now using supercritical boiler/turbine technology
- CO₂ Capture is under development
- CCS can be retrofitted to PF fired plant
- Both approaches are necessary on the route towards zero emissions



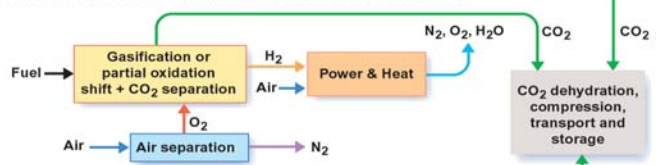
CO₂ Capture Technology – Leading Technologies

There are three main pathways to the capture of CO₂ from coal-fired power generation

Post-combustion capture



Pre-combustion capture



O₂/CO₂ recycle (oxyfuel) combustion capture

