European Policy Developments and the Coal Industry’s Response
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- Coal in Europe
- The EU Energy Green Paper
- Impact of EU Policy Instruments
  - Large Combustion Plants Directive and Emissions Trading
- Building a Sustainable Future for Coal in Europe
  - 7th Framework Programme and the ZEP Technology Platform
- Conclusions – Policy Requirements
Europe is the world’s third largest consumer of coal behind China and the US.

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provisional/forecast (Data as per: 03/2006)
+2003/2004
Coal is important in EU power generation …

Power-generation structures in selected EU-25 states

<table>
<thead>
<tr>
<th>Country</th>
<th>Share of Coal in %</th>
<th>TWh</th>
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<tbody>
<tr>
<td>EU 25</td>
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<td>3,179</td>
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<tr>
<td>Poland</td>
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<td>Romania</td>
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</tbody>
</table>

Data as per: 08/2006
Source: EUROSTAT – Energy / Yearly Statistics 2004
... with indigenous coal supply making a major contribution

EU25 Solid Fuel Supply 2005 (adjusted for calorific value)

- Lignite production: 399 Mt (26%)
- Hard coal production: 171 Mt (33%)
- Hard coal imports: 215 Mt (41%)

Source: European Commission / Euracoal
European coal and lignite production is widespread in the EU-25

Source: IEA
New European energy policies are emerging

- Energy Green Paper published March 2006
  - Security – Sustainability – Competitiveness

  Consultation

- Strategic Energy Review
- Communication on Sustainable Coal

Early 2007
The Green Paper was largely preoccupied with non-coal issues...

"Coal and lignite, for example, presently account for around one third of the EU’s electricity production: climate change means that this is only sustainable if accompanied by commercialised carbon sequestration and clean coal technologies on an EU level."

Barroso's big idea: Energy proposal explained

European Commission President José Manuel Barroso sees his big idea as ensuring the continent’s energy diversification: remove George Putin from Moscow. His energy green paper includes plans for a deal with Russia. Barroso’s big green supplier, Mr Barroso will make his energy plans on Moscow amends, where he will urge President Vladimir Putin to see even greater energy deals with Russian suppliers. France and Spain, however, have tried to head off Russian bids to nationalize energy companies by foreign holders. Mr Barroso said this was "anti-competition". He added: "As we do not have the political will to change a European common energy strategy?"
...but coal responds well to the Green Paper priorities (1)

- **Energy for growth and jobs in Europe: Completing the internal European electricity and gas markets**
  - Coal already has a fully functioning market – aiding competitiveness

- **Tackling security and competitiveness of energy supply: towards a more sustainable, efficient and diverse energy mix**
  - Coal provides a unique contribution to security of supply
  - Reasonable and relatively stable prices of coal help competitiveness

- **An integrated approach to tackling Climate Change**
  - Continuous modernisation and major efficiency improvements help reduce emissions significantly in the short and medium term
  - Carbon Capture and Storage in coal-fired power plants and geological storage to be developed for 2020 and beyond
Coal responds well to the Green Paper priorities (2)

- Encouraging innovation: a strategic European energy technology plan
  - The coal industry backs the ZEP and SMR Technology Platforms
  - EURACOAL welcomes planned coal-based pilot and demonstration plants with CO₂ Capture and Storage

- Towards a coherent external energy policy
  - Indigenous coal reduces import dependency
  - Imports are from diverse sources

- An internal market that guarantees security of supply: solidarity between member states
  - Coal can be safely transported and stored and is not subject to the major foreign policy concerns of oil and gas
Significant capacity needs to be replaced in the EU-25 in the short to medium term

Lifetime Assumptions:
- OIL: 30 years
- GAS: 30 years
- LIGNITE: 40 years
- COAL: 40 years
- NUCLEAR: 40 years

Source: Prognos
EU Large Combustion Plant Directive will lead to closure of some plant

- Large Combustion Plants Directive (LCPD) imposes strict constraints on SOx and NOx from 2008 with further tightening on NOx from 2016

- Plant not fitting flue gas desulphurisation (FGD) limited to 20,000 hours of operation from 2008 and must close by end-2015
  - Eg about 8 GW of UK coal-fired capacity ‘opted out’

- Retrofitted plants likely be operated in the long-term

- The gap to be filled by nuclear, gas, renewables or clean coal
  - Opted out plants are good candidates for supercritical retrofit
EU emissions trading regulators did not foresee the major divergence of coal and gas prices.
EUETS can only drive investment if there is longer term certainty

- CO2 reduction through fuel switching has become increasingly expensive and risks jeopardising European competitiveness.

- Technologies for CO2 capture in fossil-fuel power plants and CO2 sequestration could be exploited in the longer term.

- Significant CO2 reductions can be achieved in the meantime with more efficient capacity replacing life-expired plants.

- The Emissions Trading Scheme is the main reason for a lack of investment in coal-fired power plants in many EU Member states.

Fuel specific benchmarks are needed together with longer term certainty as in the German model.
Emission trading regime in Germany gives longer term certainty

Section 10, NAP-G (National Allocation Plan Act):

Trading period 2005/07 | Trading period 2008/12

New installations
Full allocation
installation-related benchmarks*

Kyoto

Post-Kyoto

2005 2010 2015 2020 2025 2030

14 years
Compliance factor 1
New plant

*(Benchmark Coal 750 gr/kWh; insufficient for Lignite)
Clean coal comes in three stages

**Clean coal I**
Retrofit and new-build in line with state of the art, increase in efficiency, reduction of $\text{SO}_2$, $\text{NO}_x$ and dust

**Clean coal II**
Research and development for increase in efficiency to $>50\%$

**Clean coal III**
$\text{CO}_2$ capture and storage

Investment in ultra-modern technology
Continuous modernization and increased efficiency is a pre-requisite to CCS...

The right approach: continuous power plant modernization/renewal
FP 7 can create a framework for demonstration and deployment of clean coal in Europe

- Exact volume of the Framework Programme and particularly the funding for specific research packages still to be decided on

- Clean Coal Technologies as well as Carbon Capture and Storage are 2 out of 9 major issues for public funding in the energy field

- The Zero Emission Fossil Fuels Power Plants (ZEP) Technology Platform enables industry to inform EU policy
  - Strategic Research Agenda and Strategic Deployment Document launched in September 2006

- The Commission as well as Parliament back the Technology Platform
ZEP Technology Platform proposes 10-12 large scale CCS projects

- Kick-start the CO\(_2\) value chain with urgent short and long term commercial incentives
  - Inclusion in EUETS
  - Clarification of state aid issues
  - Early mover funding mechanisms for pilot projects
  - Long term sustainable mechanisms for full deployment

- Establish a regulatory framework for geological storage of CO\(_2\)

- Gain public support via a comprehensive public information campaign

- Establish robust R&D funding under FP7 and National programmes
Political as well as technological action is needed to make CCS a reality

- EU - Elements of a Directive on CCS
  - Management of the environmental risks associated with CCS
  - Effective and reliable permitting of storage sites
  - Incentives for CCS activities (e.g. inclusion in EUETS)
  - Liability for CCS activities

- International maritime and national legal frameworks

- Public Acceptance
  - Less than 10% heard of CCS – Before explanation only 13% were positive, after explanation 55% agreed.
Coal Industry’s Policy Requirements

- Acknowledge the unique role of coal to security of supply and its contribution to competitiveness
- Further commitment to the vision of CCS including financial support of pilot and demonstration plants
- Support adoption of a legal framework for CO2 storage
- Recognise that increased plant efficiency and continuous modernisation have the potential to preserve resources and reduce CO2 in the short and medium terms
- Acknowledge efficiency increase as a pre-requisite of CCS

Coal as a sustainable part of the EU energy mix
Thank you