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European Association
for Coal and Lignite



Dimensions of Hard Coal as Energy Source for Europe

European Coal Mining Forum
Bochum – 30th October 2006

Nigel Yaxley
President

Dimensions of Hard Coal as Energy Source for Europe

- EURACOAL – the voice of coal in Europe
- Coal in a world context
- Coal in Europe
- Coal and the EU Energy Green Paper
- Clean Coal
- Building a sustainable future for coal in Europe

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EURACOAL's Targets and Tasks

- Securing coal's position in the European energy mix through appropriate regulations
- Cooperating in achieving equilibrium between
 - energy policy requirements,
 - market and
 - environmental policy initiatives (coal mining and coal utilisation)
- The voice of coal in Europe
 - Hard Coal – Lignite – Imported Coal

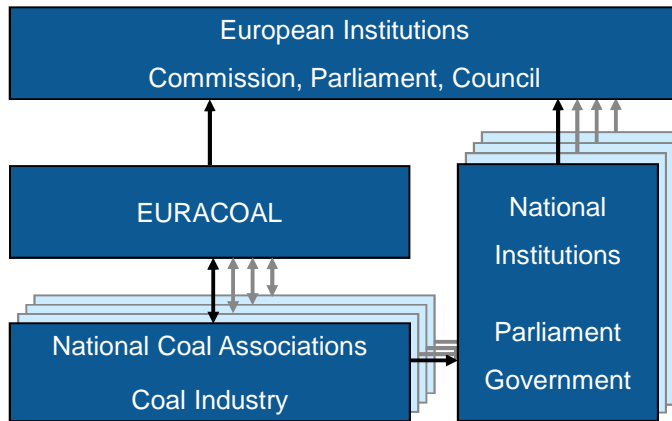
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EURACOAL Members

- | | |
|--|---|
| ■ DEBRIV - Deutscher Braunkohlen-Industrie-Verein (GER) | ■ MATRA - Matra Erömu Rt (HUN) |
| ■ GVSt - Gesamtverband des deutschen Steinkohlenbergbaus (GER) | ■ PATROMIN - Federation of the Romanian Mining Industry (ROM) |
| ■ COALPRO - Confederation of the UK Coal Producers (UK) | ■ VDKI - Verein der Kohlenimporteure (GER) |
| ■ CdF - Charbonnages de France (FRA) | ■ Hornonitrianske Bane Prievidza (SVK) |
| ■ PPC - Public Power Corporation (GR) | ■ Banovici Coal Mine (BOS) |
| ■ ZPWGK - Polish Hard Coal Employer's Association (POL) | ■ EPS - Electric Power Industry of Serbia (SER) |
| ■ CARBUNION - Federation of Spanish Coal Producers (ESP) | ■ ISSeP - Institut Scientifique de Service Public (BEL) |
| ■ ZSDNP - Czech Confederation of Coal and Oil Producers (CZR) | ■ University of Nottingham (UK) |
| ■ PPWB - Confederation of the Polish Lignite Industry (POL) | ■ IMCL - International Mining Consultants Ltd. (UK) |
| ■ Mini Maritza Istok AG (BUL) | ■ Coaltrans Conferences Limited (UK) |
| | ■ Euriscoal (BEL) |
| | ■ Fachverband Bergbaumaschinen im VDMA (GER) |

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EURACOAL: Contact Point and Interest Representation of Coal in Brussels



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Perceptions of coal are changing...



The Economist - July 2002

Coal-fired electricity
The future is clean

Coal is costly, but coming back into favour—and cleaner

The Economist - September 2004

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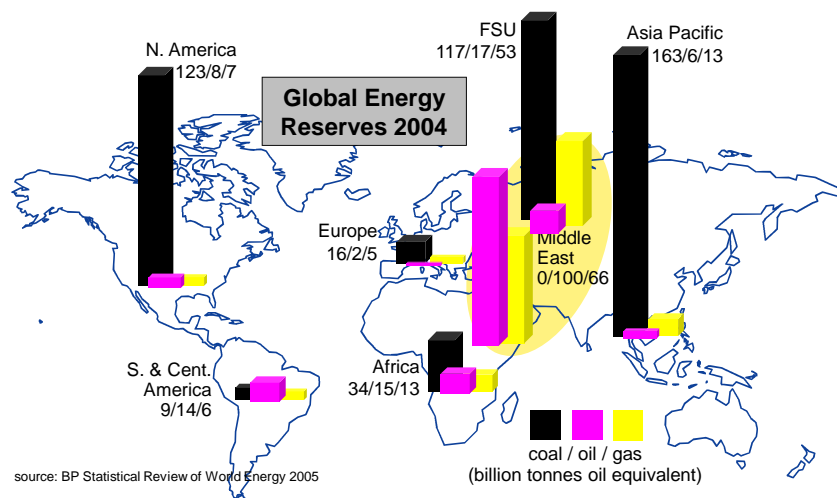
...as they are for gas!

"For us, our contracts
are like a Holy Bible"
(Alexander Medvedev, Gazprom
Deputy CEO)



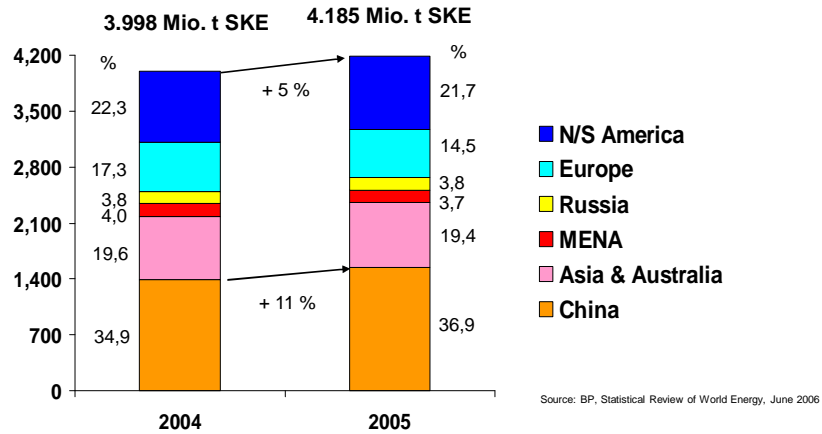
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Reserves of coal are evenly distributed around the globe



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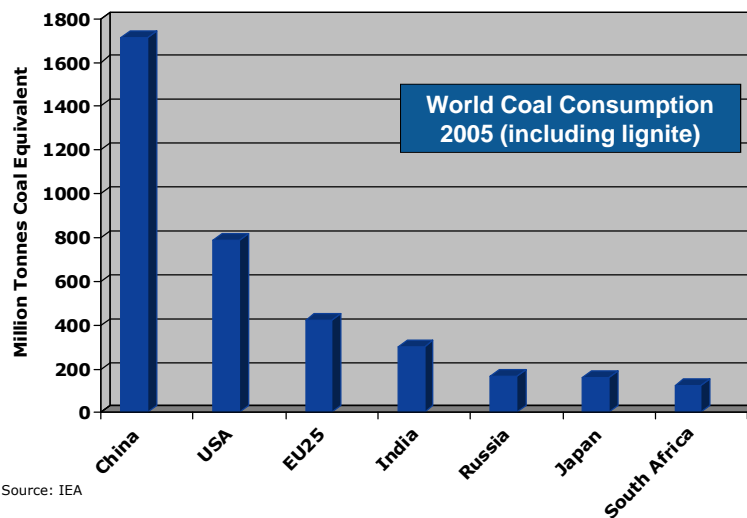
World coal consumption is increasing



China, India and the developing world are basing their growth on coal – Europe must help make clean coal part of the solution to climate change

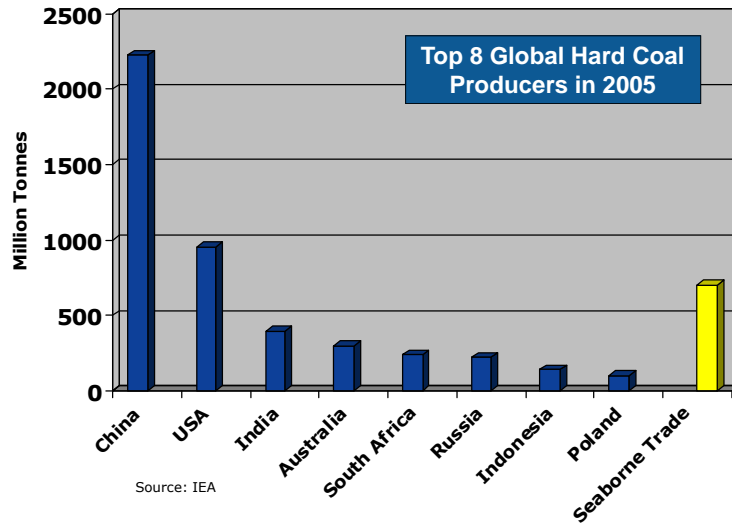
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China already dominates world demand...



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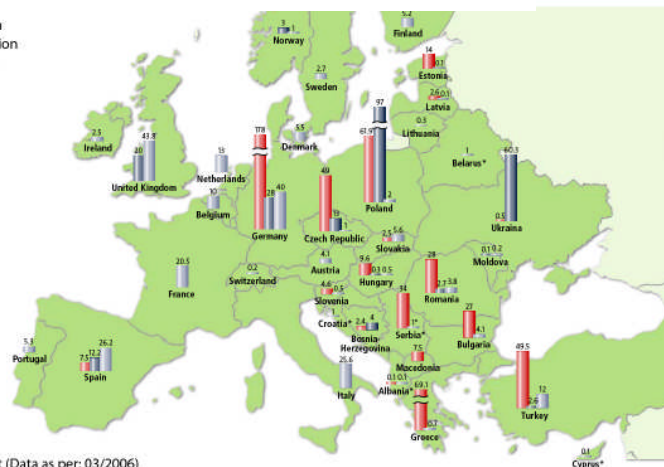
...and most of the world's coal is produced 'at home'



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Europe is the world's third largest consumer of coal behind China and the US

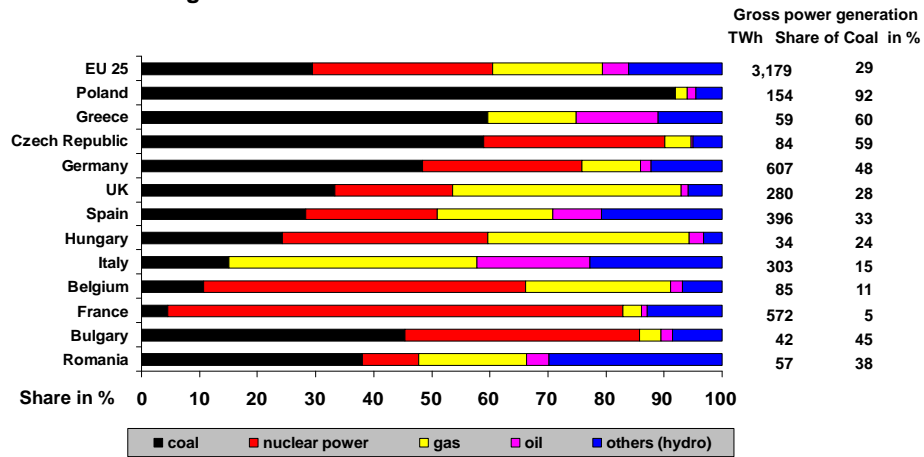
- Lignite production
- Hard coal production
- Hard coal imports



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Coal is important in EU power generation ...

Power-generation structures in selected EU-25 states



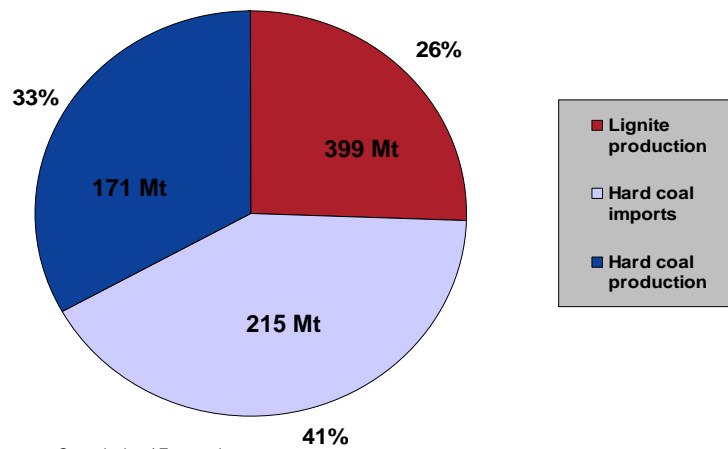
Data as per: 08/2006

Source: EUROSTAT – Energy / Yearly Statistics 2004

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... with indigenous coal supply making a major contribution

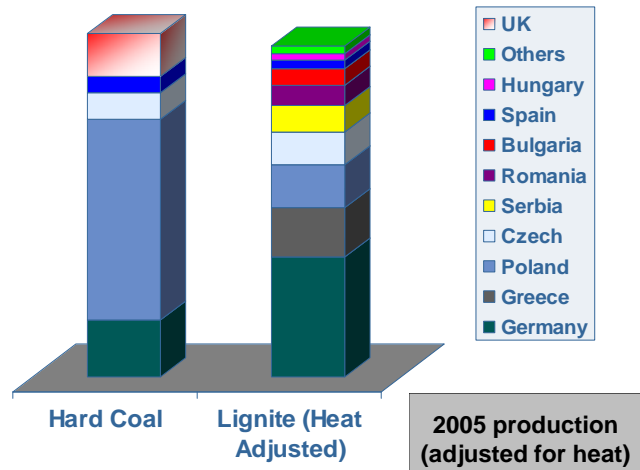
EU25 Solid Fuel Supply 2005 (adjusted for calorific value)



Source: European Commission / Euracoal

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Coal and lignite production is widespread in Europe



Source: IEA

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Indigenous coal has clear benefits

- The use of domestic coal deposits reduces import dependence, thereby increasing security of energy supply
- Regional prosperity and employment are created
 - A 500 MW power station operating 7000 h/p.a. and selling electricity for 40 €/MWh anchors 3 bn € in the region over 20 years
 - With indigenous coal, the added value remains in the region
- The additional economic prosperity enables the regions to develop their economic structure without any disruptions, but with a long term vision

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New European energy policies are emerging

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

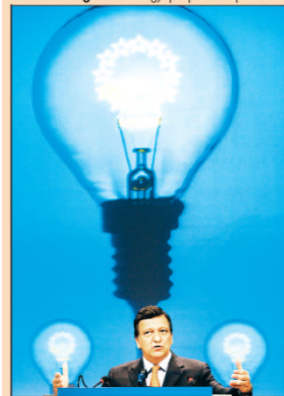
Consultation

- Strategic Energy Review
 - Communication on Sustainable Coal
- Early 2007

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

Barroso's big idea Energy proposal explained



European Commission president Josep Barroso says the big idea for revamping the continent's energy distribution is from George Orwell in his novel '1984'. Barroso says the idea is to have a 'big idea' which will be the 'big idea' for the continent's energy future.

“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”

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...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
- 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
- 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

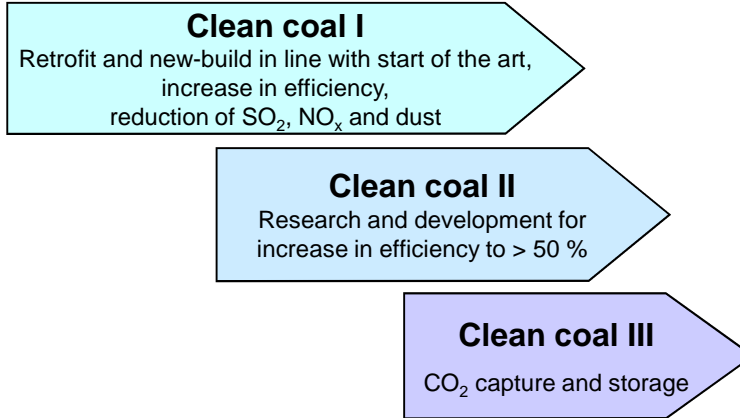
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Coal responds well to the Green Paper priorities (2)

- 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
- 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

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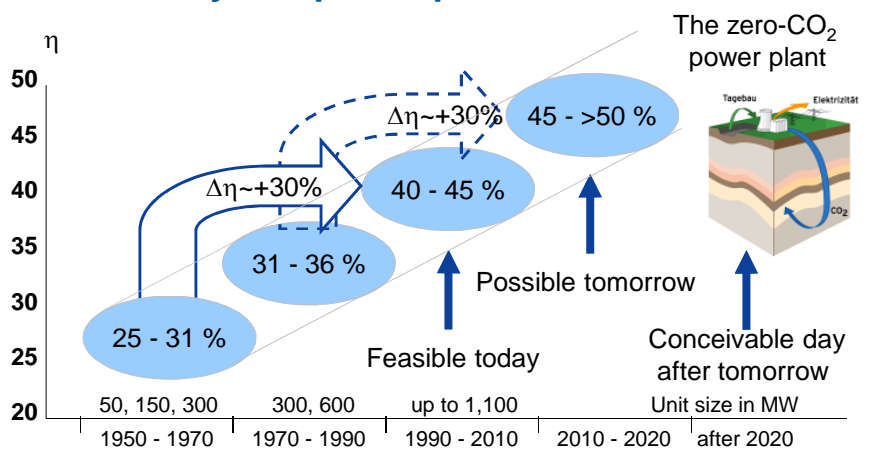
Clean coal comes in three stages



Investment in ultra-modern technology

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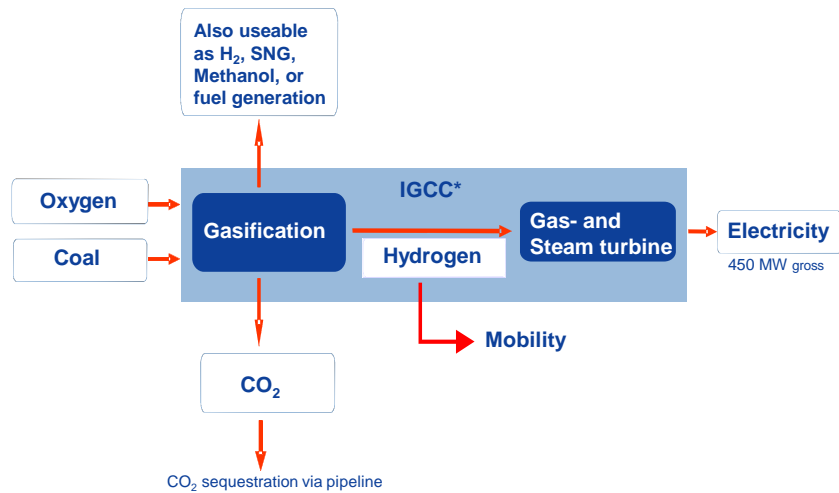
Continuous modernization and increased efficiency is a pre-requisite to CCS...



The right approach: continuous power plant modernization/renewal

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...ultimately leading to the “hydrogen economy”



*IGCC = Integrated Gasification Combined Cycle

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ZEP Technology Platform proposes 10-12 large scale CCS projects

- Several coal projects are already planned
 - RWE (UK and Germany) – E.ON (UK) – GE (Poland)
 - Vattenfall (Germany) – Powerfuel (UK) – etc
- Necessary to provide urgent short and long term commercial incentives for these to go ahead
 - Inclusion in EUETS
 - Clarification of state aid issues
 - Early mover funding mechanisms for pilot projects
 - Long term sustainable mechanisms for full deployment
- Establish robust R&D funding under FP7 and National programmes

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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
 - 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
 - An early information campaign is necessary to get public support for the large scale implementation of CCS

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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

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Thank you

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Bochum – 30th October 2006**

**Nigel Yaxley
President**