

Coal: A sustainable energy source with long-term reliability

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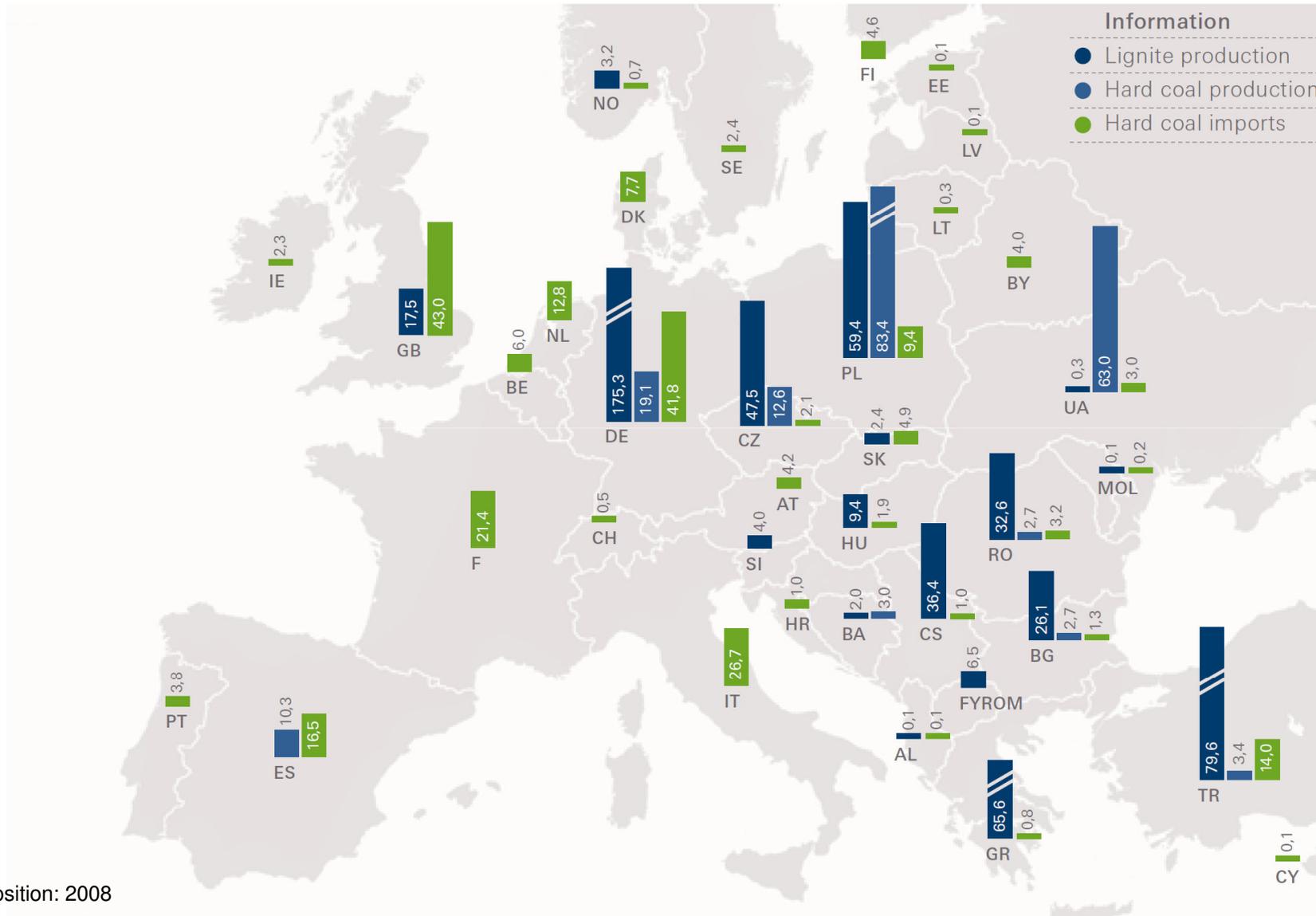
Structure

- Why do we need coal?
- How can we move into a low-carbon energy system?
- Is coal a sustainable resource?

Coal is secure, reliable, affordable and sustainable

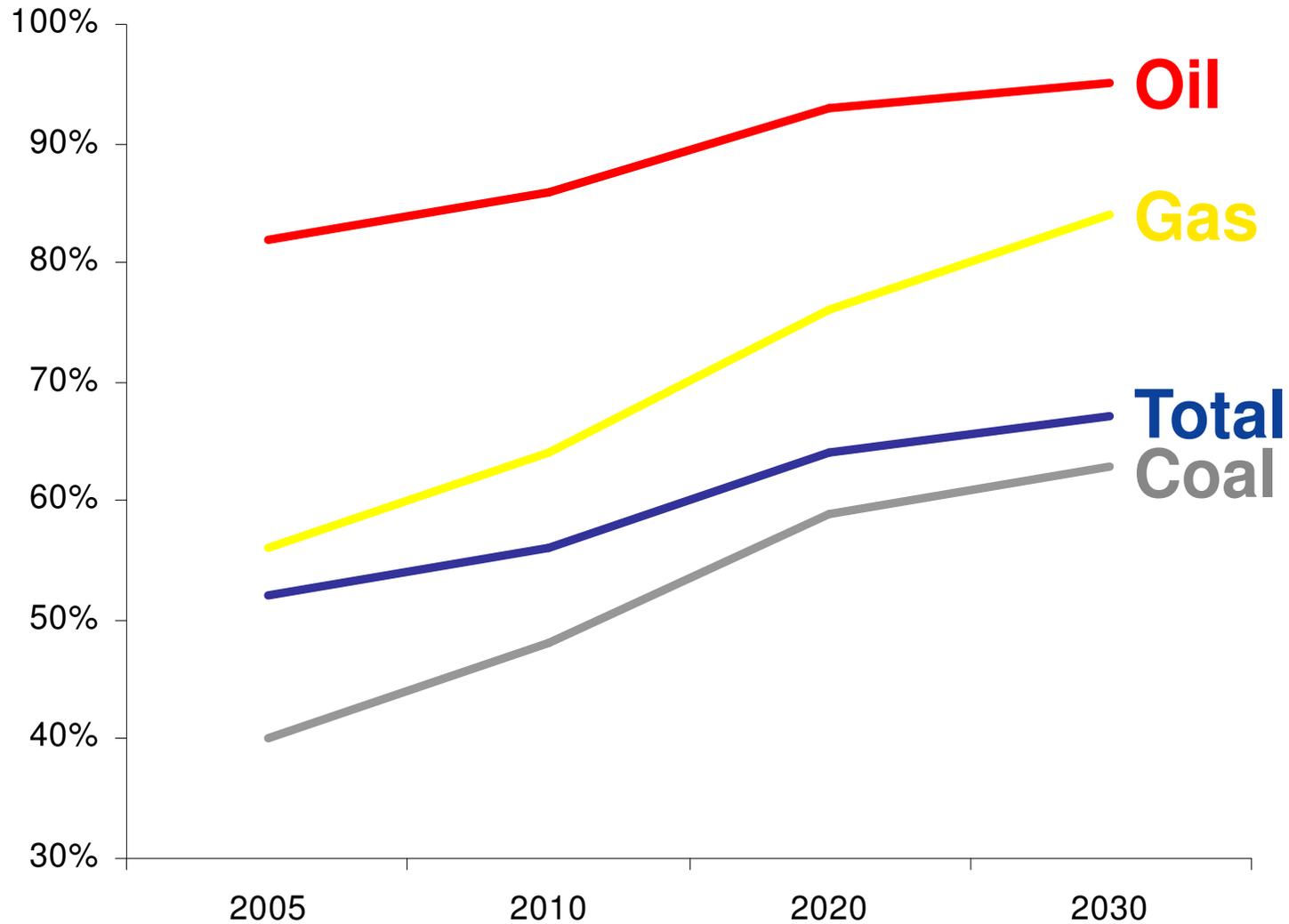
- Coal is the world's fastest-growing source of primary energy and the No.1 fuel for power generation
- Hard coal and lignite represent almost 80% of EU-27 domestic fossil fuel reserves.
- Coal balances the EU energy mix and avoids supply and price risks.
- Coal mining and value chain create wealth in the EU, particularly in a number of disadvantaged regions.
- The coal industry employs around 280,000 people (indirect: 700,000)

Coal is widely used in most EU Member States



Position: 2008

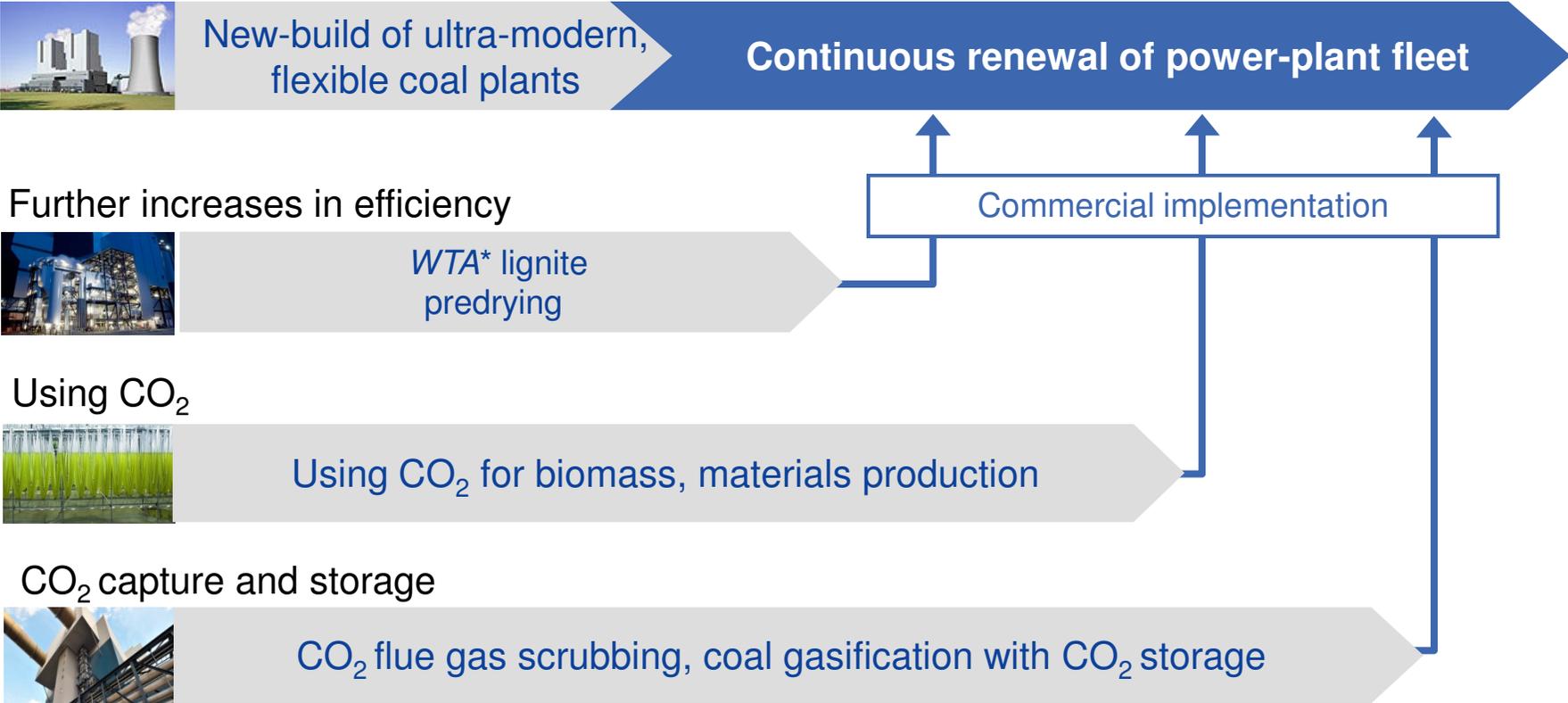
The use of coal helps to limit total import dependence



source: *EU Trends to 2030*, 2007 update, European Commission

The path to low-CO₂ coal-based power generation of the future at RWE Power

Efficiency increase and higher flexibility thanks to continuous renewals



* WTA – fluidized-bed drying with internal waste heat utilization; innovative process to increase efficiency by predrying lignite.

Continuous power-plant renewals in the Rhenish lignite-mining area

BoA 1 at the Niederaussem power plant

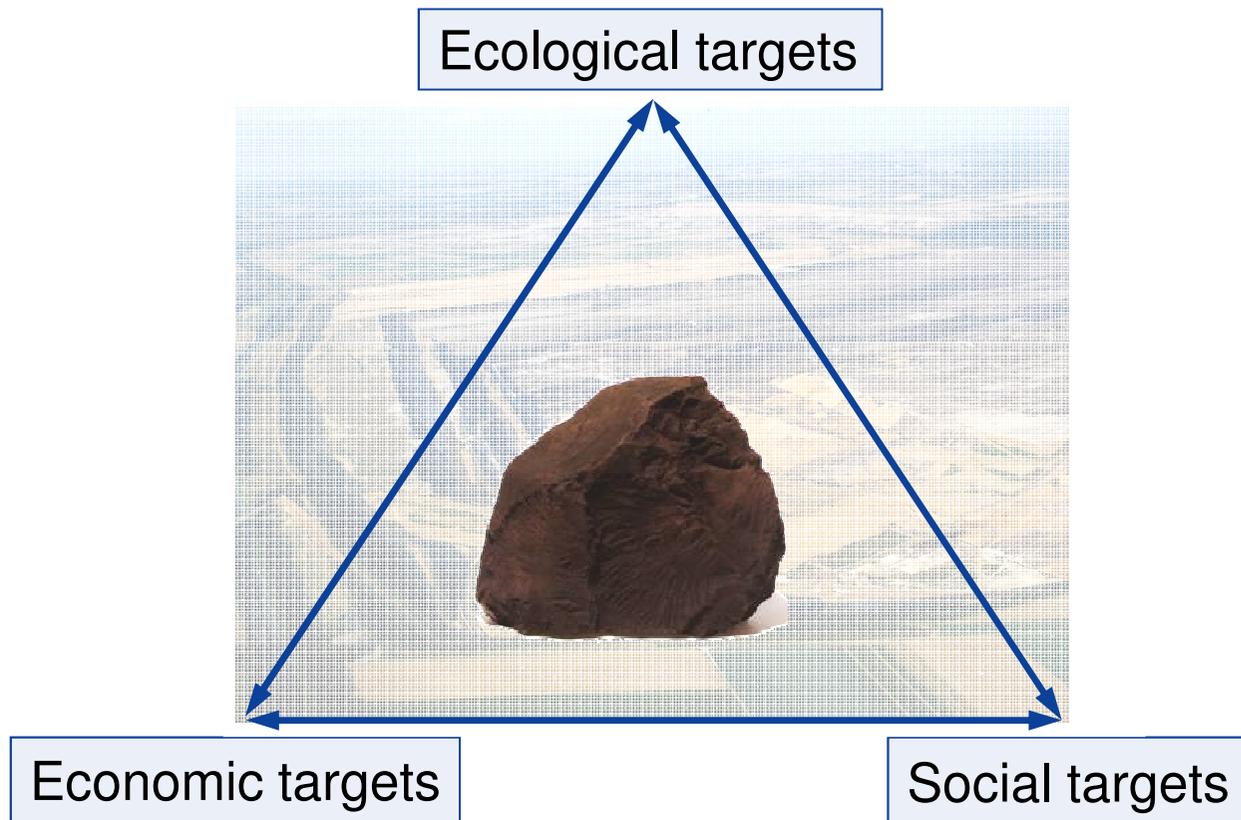


New-build: *BoA 2&3 (Neurath pp)*



- *BoA* technology as worldwide efficiency standard in lignite-based power generation:
 - Efficiency increases of 12 percentage points compared with old systems
 - Reduction in CO₂ emissions by some 30% or nearly 3 million tonnes per 1,000 MW annually
- *BoA 1* with 944 MW commissioned in 2003
- New-build *BoA 2&3*, commercial operations planned for 2011

Sustainable coal mining and utilization in Europe



Sustainable coal mining and utilization in Europe

Ecological targets

- **Low-CO₂ generation options**
- **Flexible power plants as partner to renewable resources**
- **Environmentally compatible mining on a continuous basis**
- **Recultivation and water-management measures are reliable and effective and are setting standards**

Economic targets

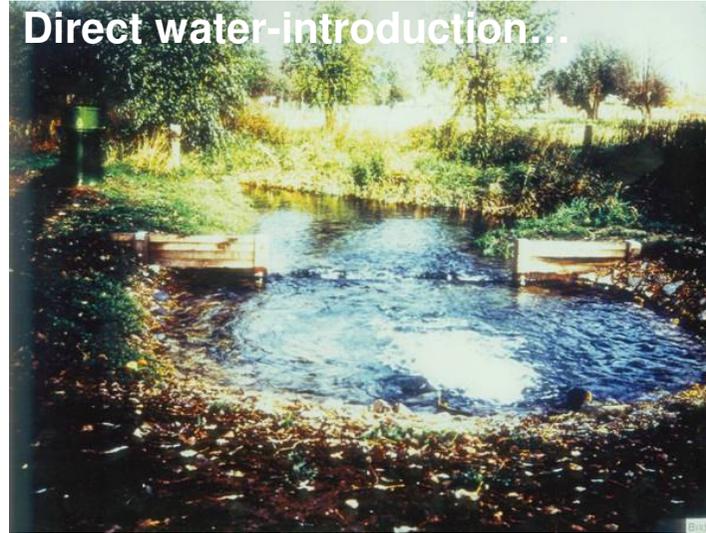
Social targets

Recultivation and water-management

Relocation of the Inde river



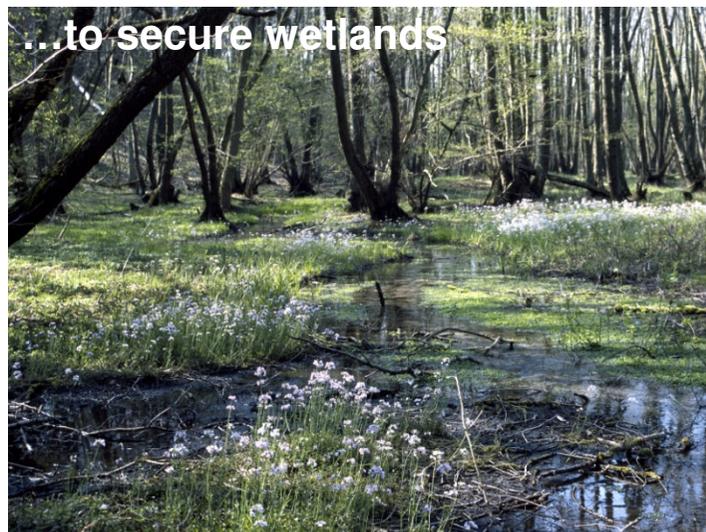
Direct water-introduction...



Blausteinklake with green corridors



...to secure wetlands



Sustainable coal mining and utilization in Europe

Ecological targets

- **Future-proof apprenticeships and jobs**
- **High standard of occupational health and safety**
- **High value-added in the region**
- **Well-functioning stakeholder dialogue for the necessary general acceptance in the region**
- **Socially compatible resettlement**

Economic targets

Social targets

Socially compatible resettlement



Sustainable coal mining and utilization in Europe

Ecological targets

- **Security of supply**
- **Predictable low costs of power-generation in the long term**
- **Basis for technology transfer**
- **Attractive refined products for the heat market and environmental applications**

Economic targets

Social targets

Sustainable coal mining and utilization in Europe

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Economic targets



Dust, Activated Carbon



Briquettes

In summary

- Security of energy supply:
 - Coal limits import dependence.
- Climate protection:
 - Cost-efficient climate protection from power-plant renewals/modernization, increases in efficiency and CCS / CCU
 - Coal is backup capacity for renewables
- Sustainable development
 - Climate protection, economic efficiency and security of supply must guide the balanced development of future energy supplies
 - Major contribution to regional development with value-adding jobs
 - Mining is sustainable from planning through to land restoration

▶ Coal is secure, reliable, affordable and sustainable