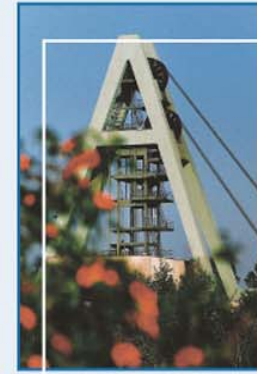


EURACOAL

European Association
for Coal and Lignite



THE ROLE OF COAL IN EUROPE

World Mining Congress 2008

Dr. Maksymilian Klank
President

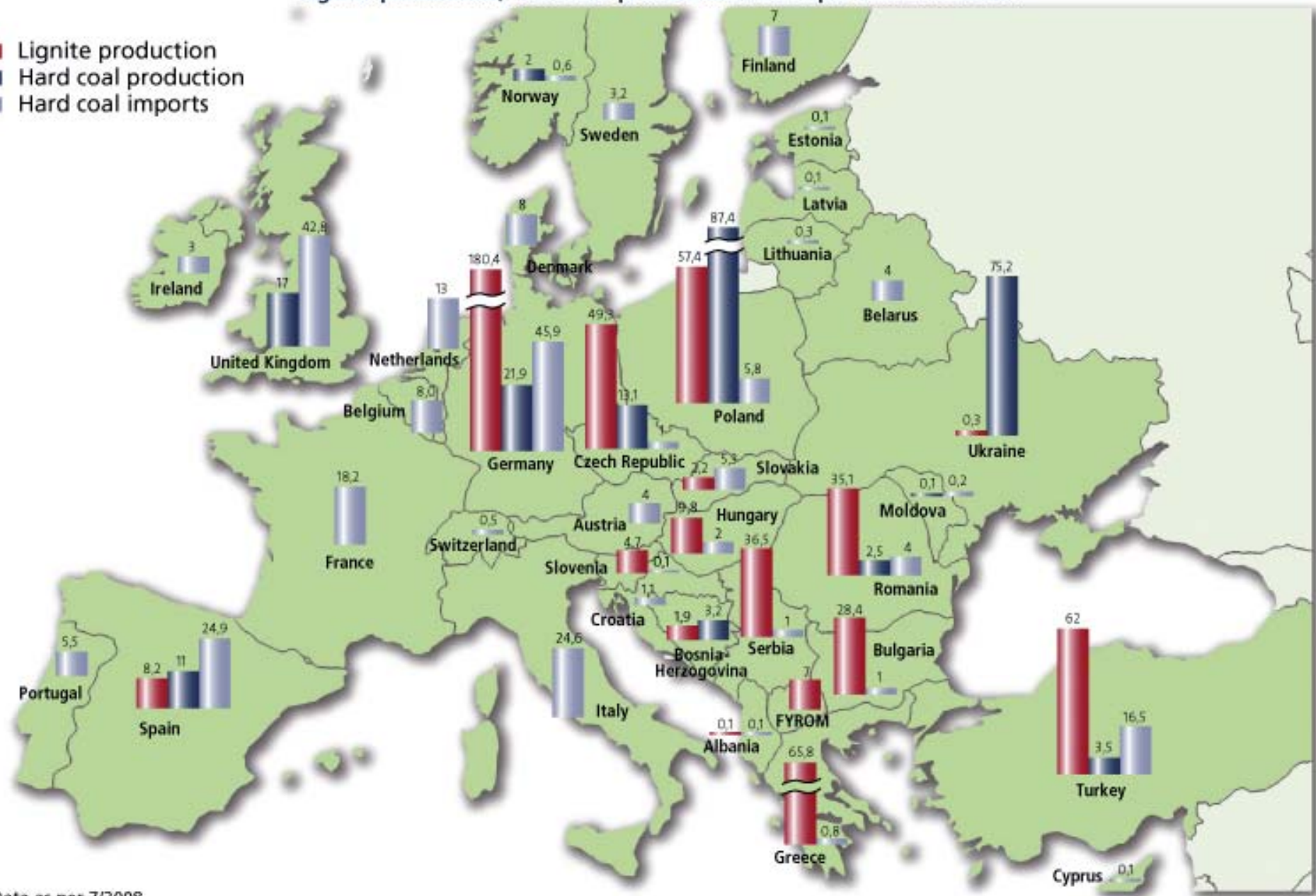
EURACOAL Members

- DEBRIV - Deutscher Braunkohlen-Industrie-Verein (GER)
- GVSt - Gesamtverband des deutschen Steinkohlenbergbaus (GER)
- COALPRO - Confederation of the UK Coal Producers (UK)
- ZPWGK - Polish Hard Coal Employers' Association (POL)
- PPWB - Confederation of the Polish Lignite Industry (POL)
- PPC - Public Power Corporation (GR)
- ZSDNP - Czech Confederation of Coal and Oil Producers (CZR)
- CARBUNION - Federation of Spanish Coal Producers (ESP)
- MATRA - Matra Erömu Rt (HUN)
- Mini Maritza Istok AG (BUL)
- PATROMIN - Federation of the Romanian Mining Industry (ROM)
- Banovici Coal Mining (BHZ)
- VDKI - Verein der Kohlenimporteure (GER)
- COALIMP - Coal Importers' Association (UK)
- Swedish Coal Institute (SWE)
- HBP - Hornonitrianske Bane Prievidza AG (SVK)
- Premogovnik Velenje (SLO)
- EPS - Electric Power Industry of Serbia (SER)
- BRGM - Bureau de Recherches Géologiques et Minières (FRA)
- ISSeP - Institut Scientifique de Service Public (BEL)
- University of Nottingham (UK)
- Rock Mechanics – Int. Mining Consultants Ltd. (UK)
- ISFTA - Institute for Solid Fuels Technology & Applications (GR)
- Coaltrans Conferences Limited (UK)
- All-Ukrainian Coal Employers' Association (UKR)
- Euriscoal (BEL)
- CMC KOMAG (POL)

Coal in Europe

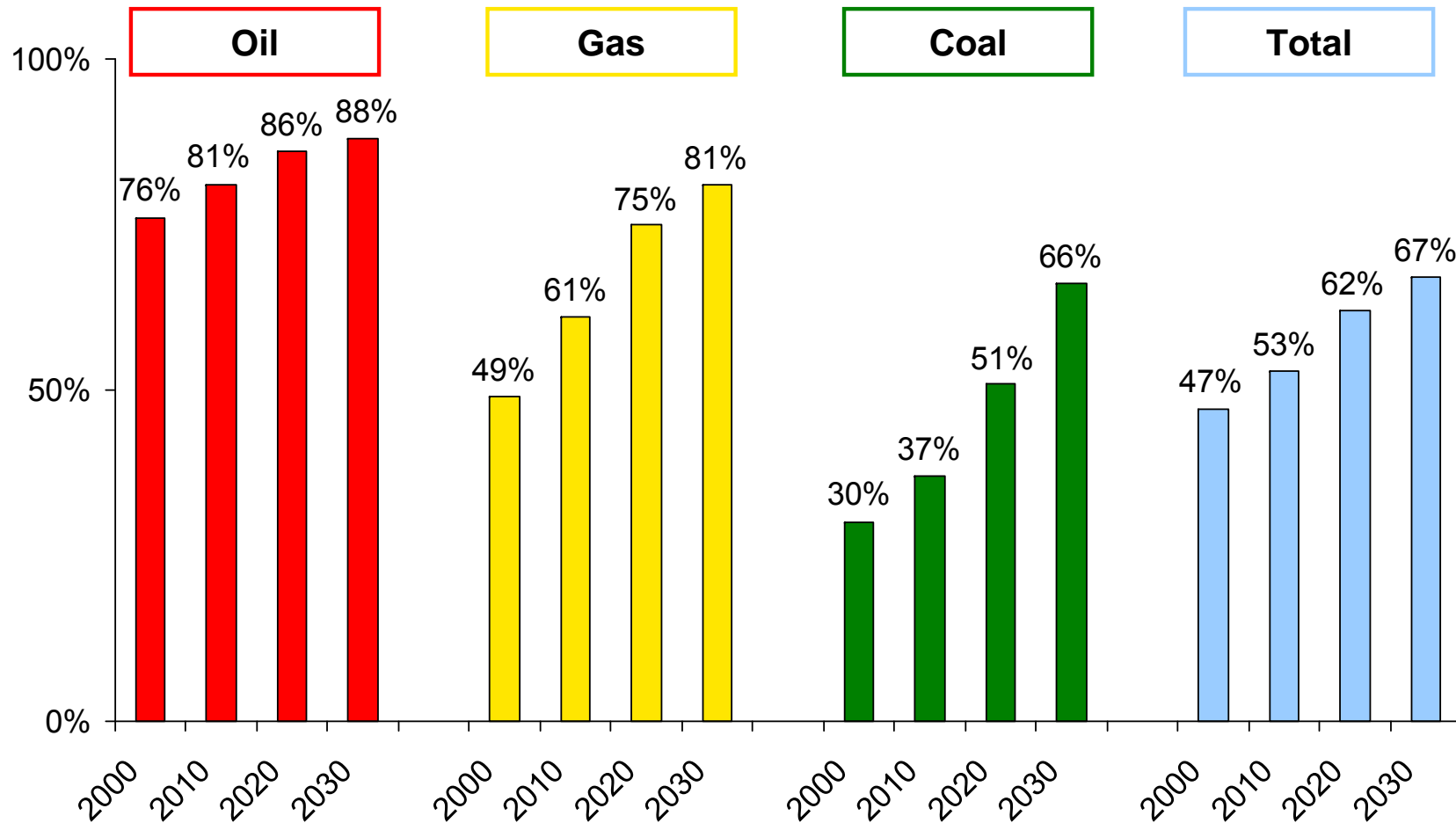
Lignite production, hard coal production and imports in Mt in 2007

- Lignite production
- Hard coal production
- Hard coal imports



Data as per 7/2008

EU dependence on energy imports will increase



Source: European Commission

Use of domestic coal reduces import dependence

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 SO₂, NO_x and dust

Clean coal II

Research and development for increase in efficiency to > 50 %

Clean coal III

CO₂ capture and storage

Investment in ultra-modern technology

Polish Coal Basins and Reserves



**DZW Lower
Silesia Coal Basin**

**GZW Upper
Silesia Coal Basin**

**LZW Lubelskie
Coal Basin**

- **Viable reserves** 16.050 million t
- **Industrial reserves** 6.725 million t
- **Operational reserves** 4.800 million t
- **Easily accessible reserves** 2.750 million t

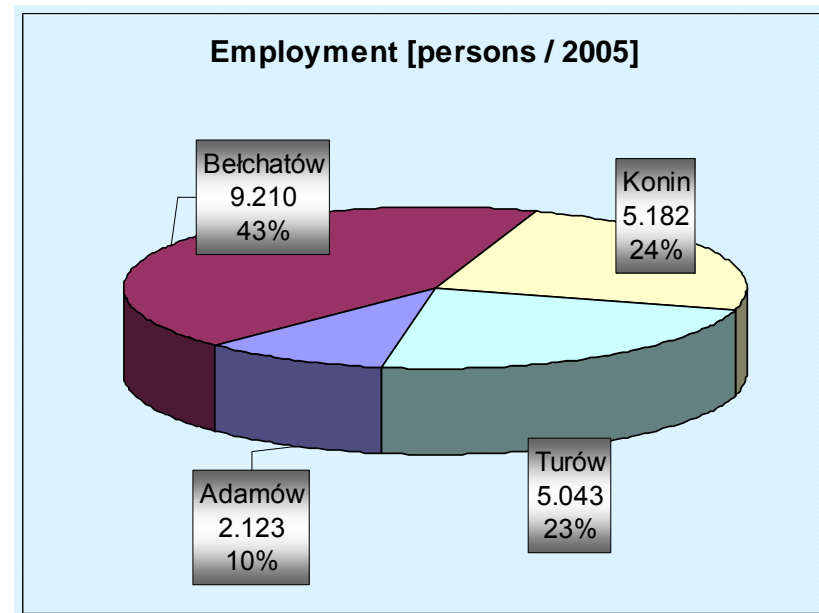
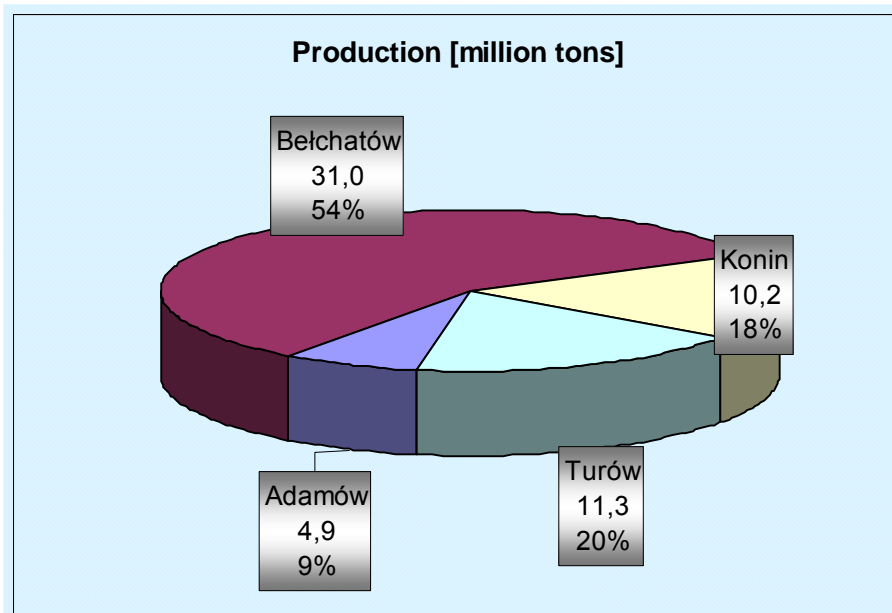
Source: ZPGWK

Export developments, Poland 2004 - 2006

	2004	2005	2006
Hard coal output	99 Mt	97 Mt	94 Mt
Hard coal exports	21 Mt	19 Mt	16 Mt
Steam coal	18 Mt	16 Mt	13 Mt
Coking coal	3 Mt	3 Mt	3 Mt
Coking exports	5 Mt	4.5 Mt	6.3 Mt
Export rate	28 %	25 %	26 %
Major important countries/regions			
EU-15 after 2004: E-25	17.5 Mt	17.1 Mt	15.9 Mt

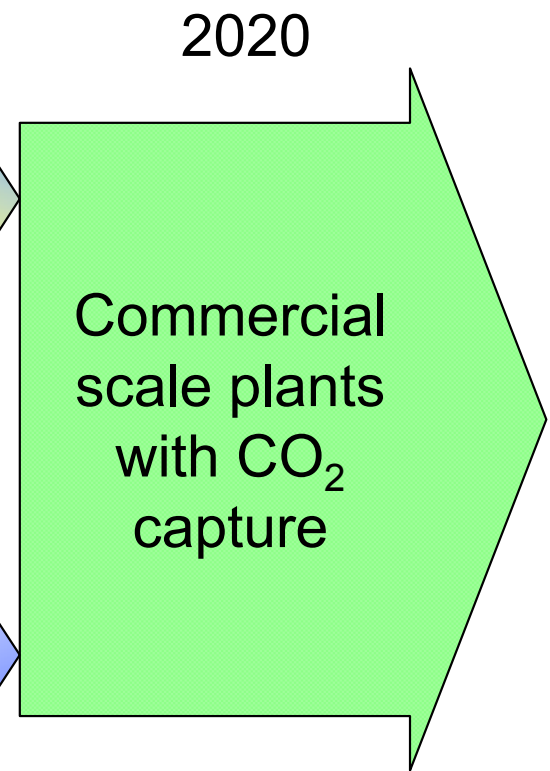
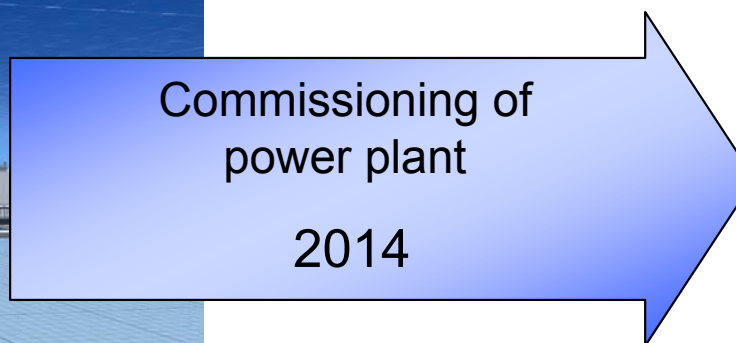
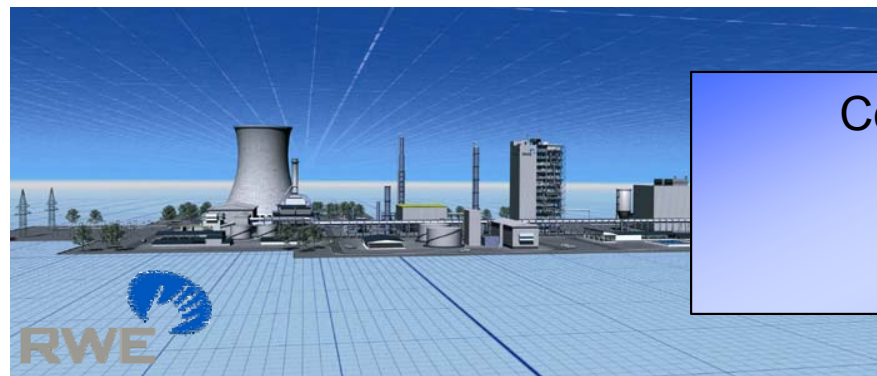
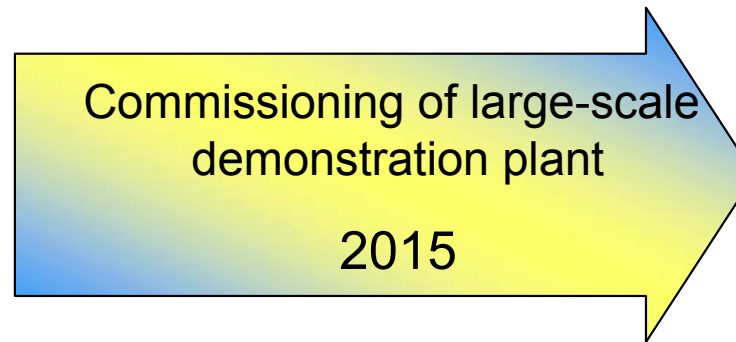
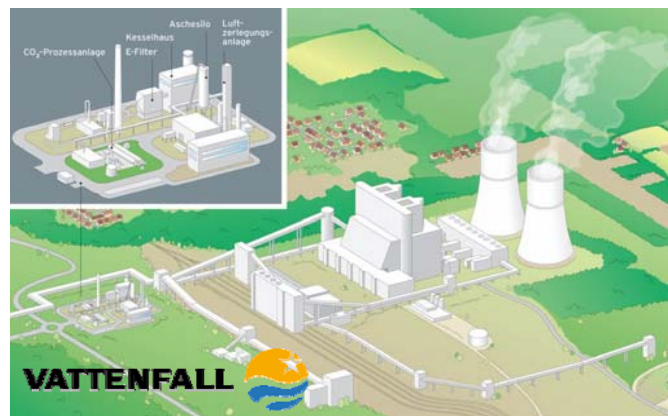
Brown coal industry in Poland in 2007

- The 2007 production of brown coal was 57,4 million tons.
- The employment in brown coal industry amounts to about 20.000 persons.



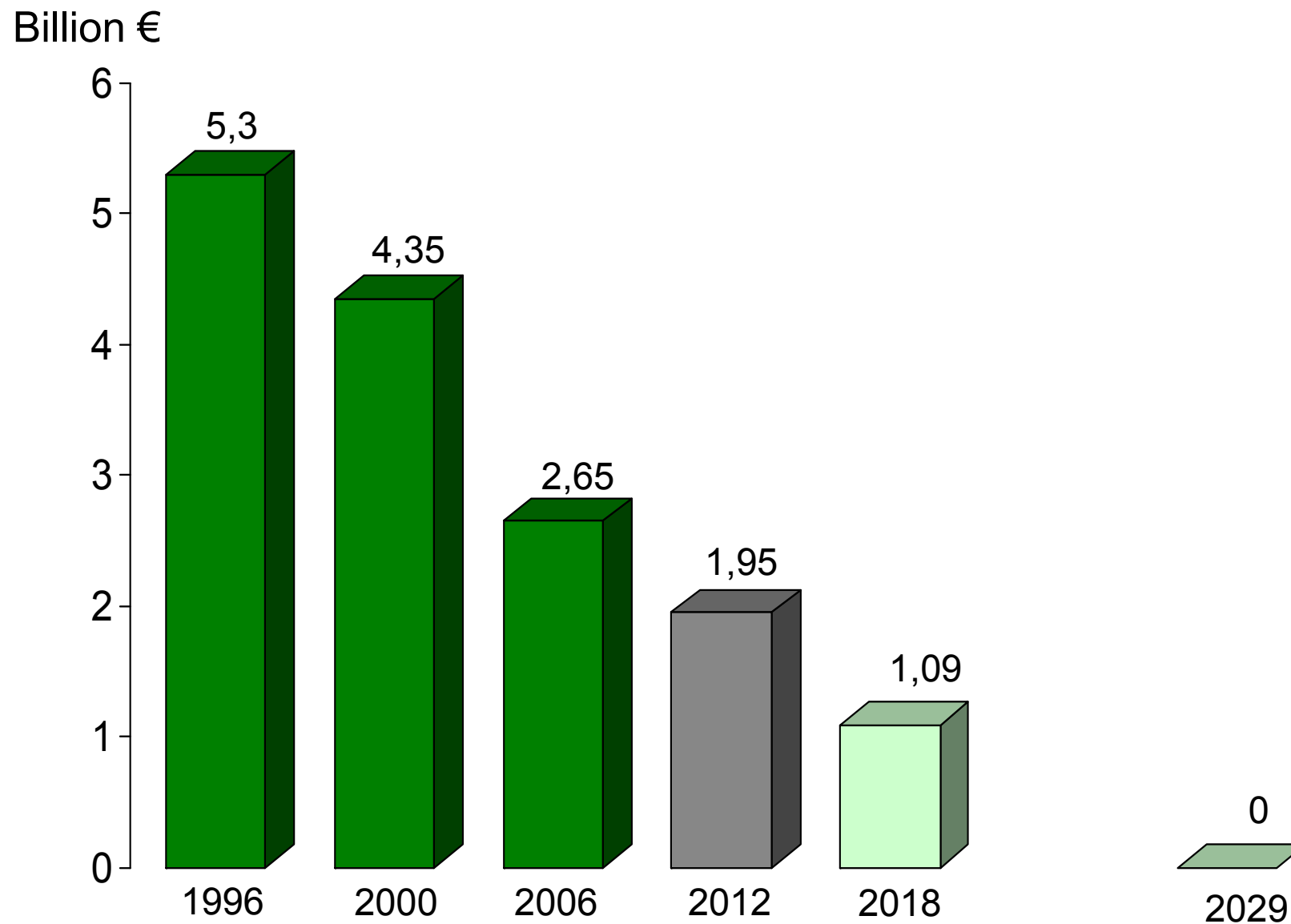
Source: ZPGWK

German Lignite: two projects, one goal - the low-emission lignite-fired power plant



Conclusion: Carbon Capture & Storage opens up the use of fossil energy sources with dramatically reduced emissions, after 2020

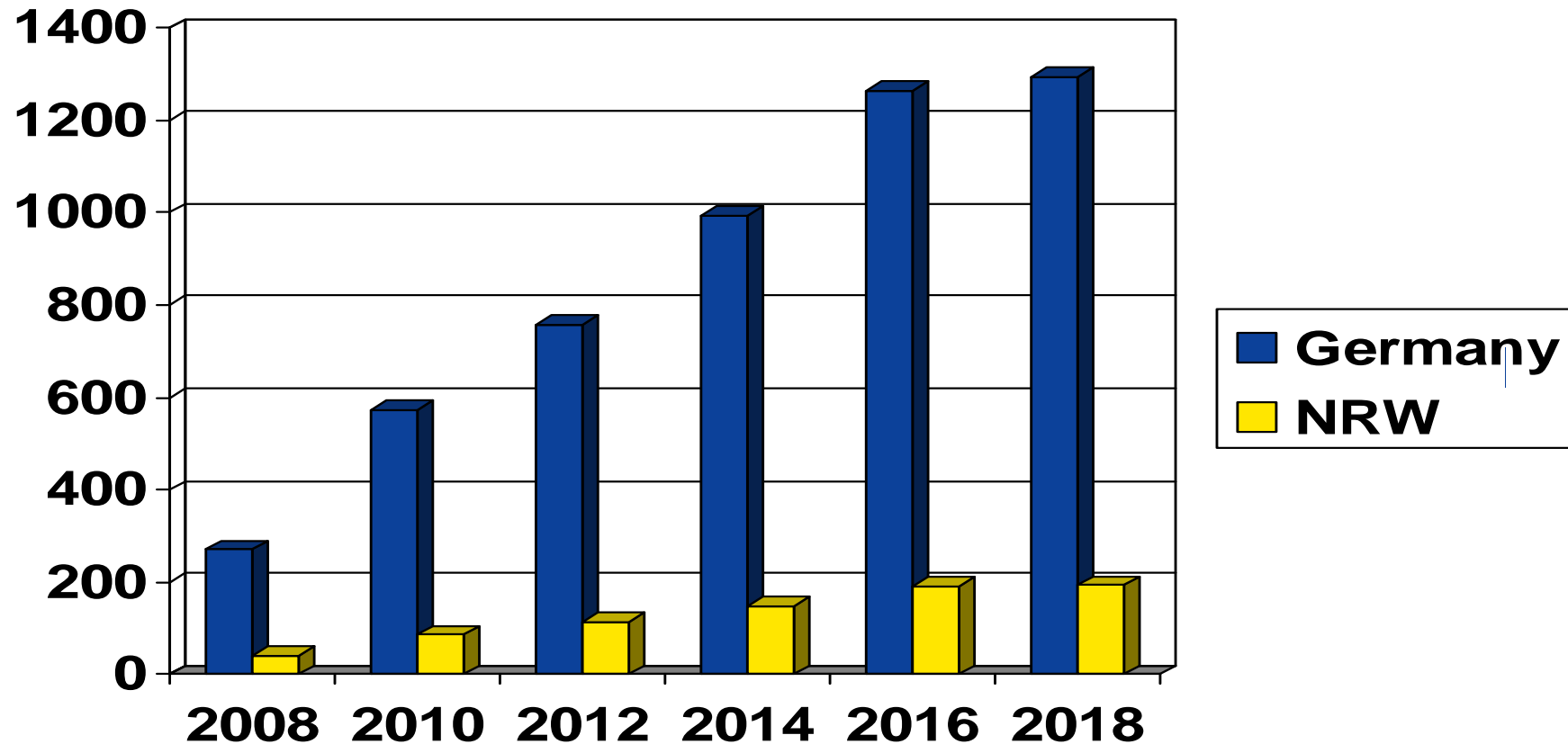
Financial aid for German hard coal



Including RAG's own contribution. Till 2006: according to coal-policy agreements (without consideration of the shift in time for payments); from 2012: according to framework agreement 2007; 2018 subject to review in 2012; from 2019: no aid.

Additional fiscal costs in case of stopping German hard coal mining by 2018

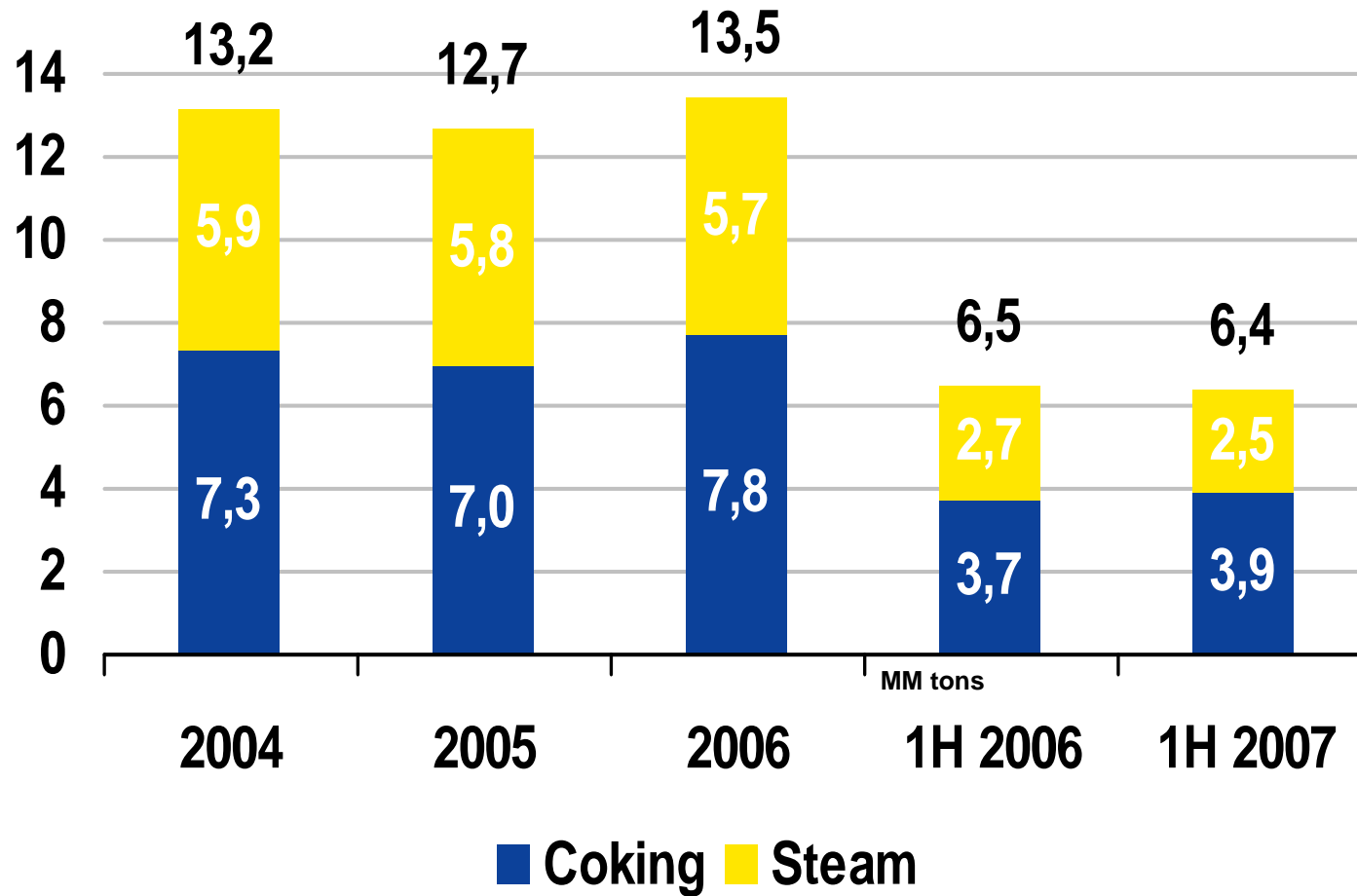
Million € per year*



* Less income / more expenditure of all public budgets, only Ruhr mining region

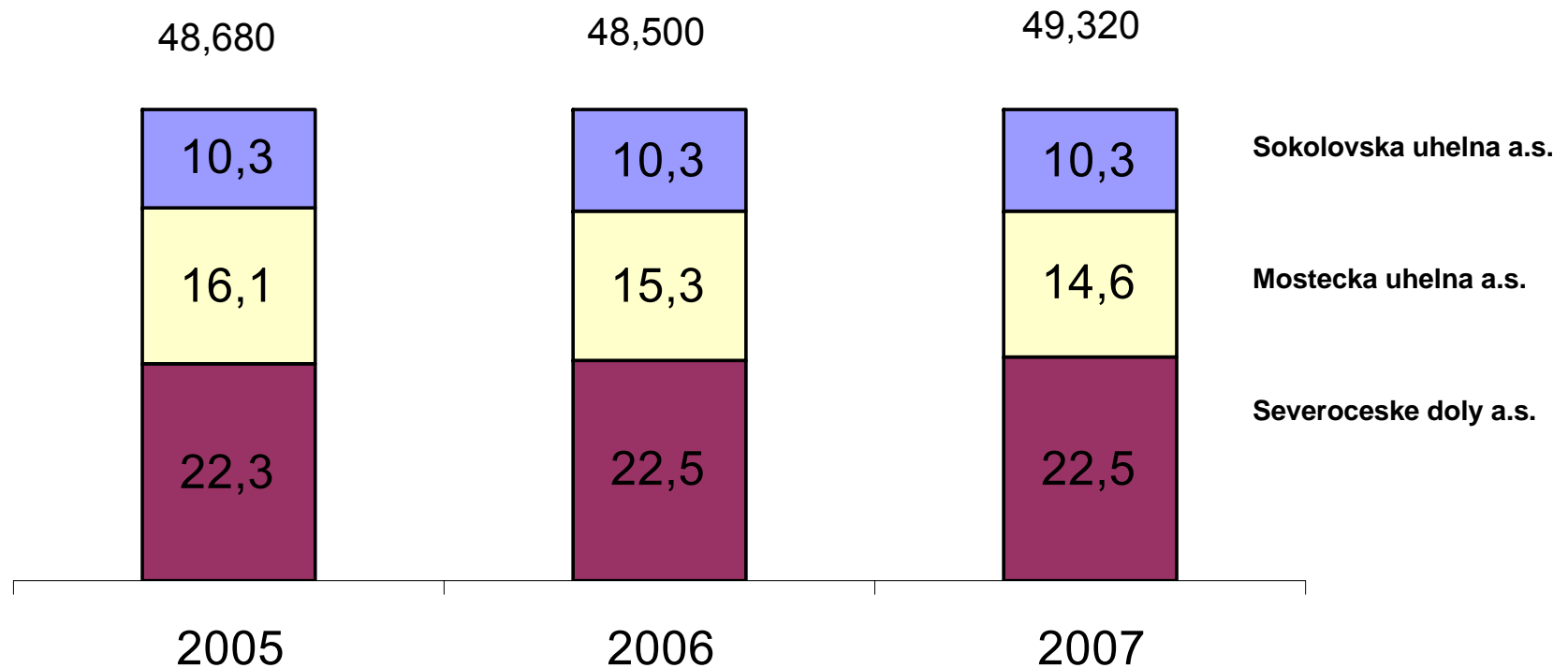
Source: Prognos, 2007

Czech Republic: OKD hard coal sales



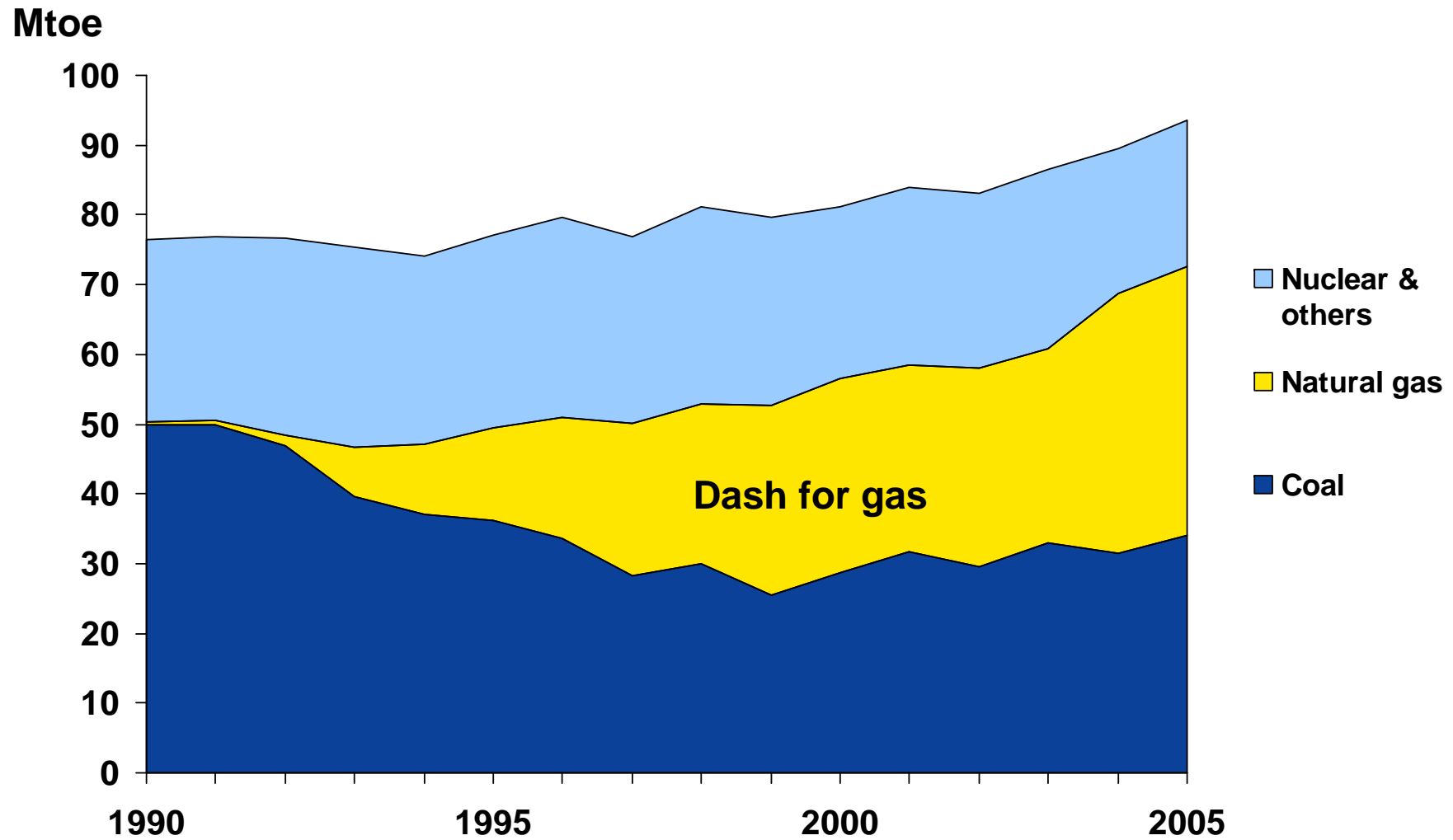
Czech Republic - Lignite

Stable brown coal and lignite production



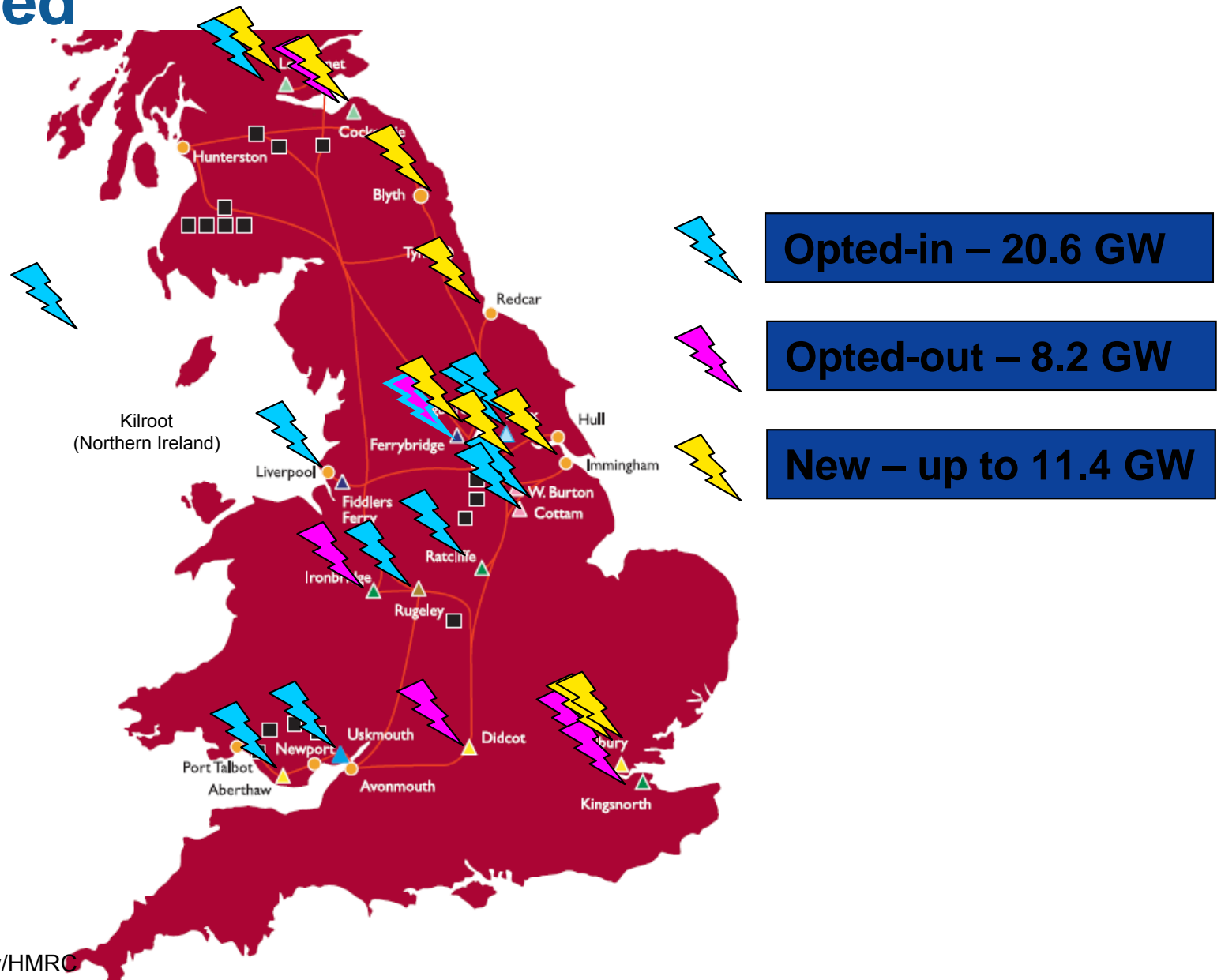
Source: ZSDNP

Fuel Input for Power Generation in UK



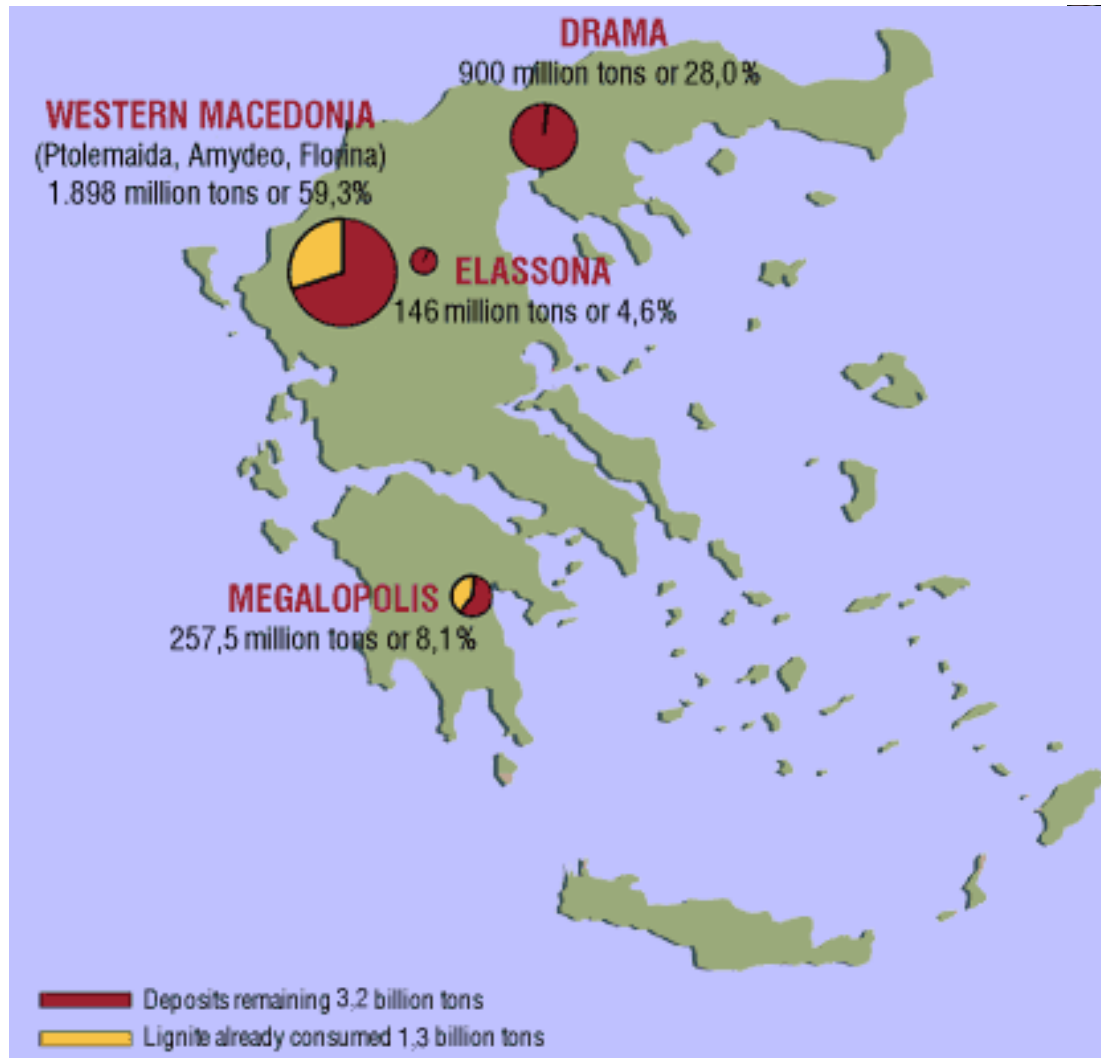
Source: EUROSTAT

United Kingdom: Over 11 GW new coal plant is proposed



Source – EWS Energy/HMRC

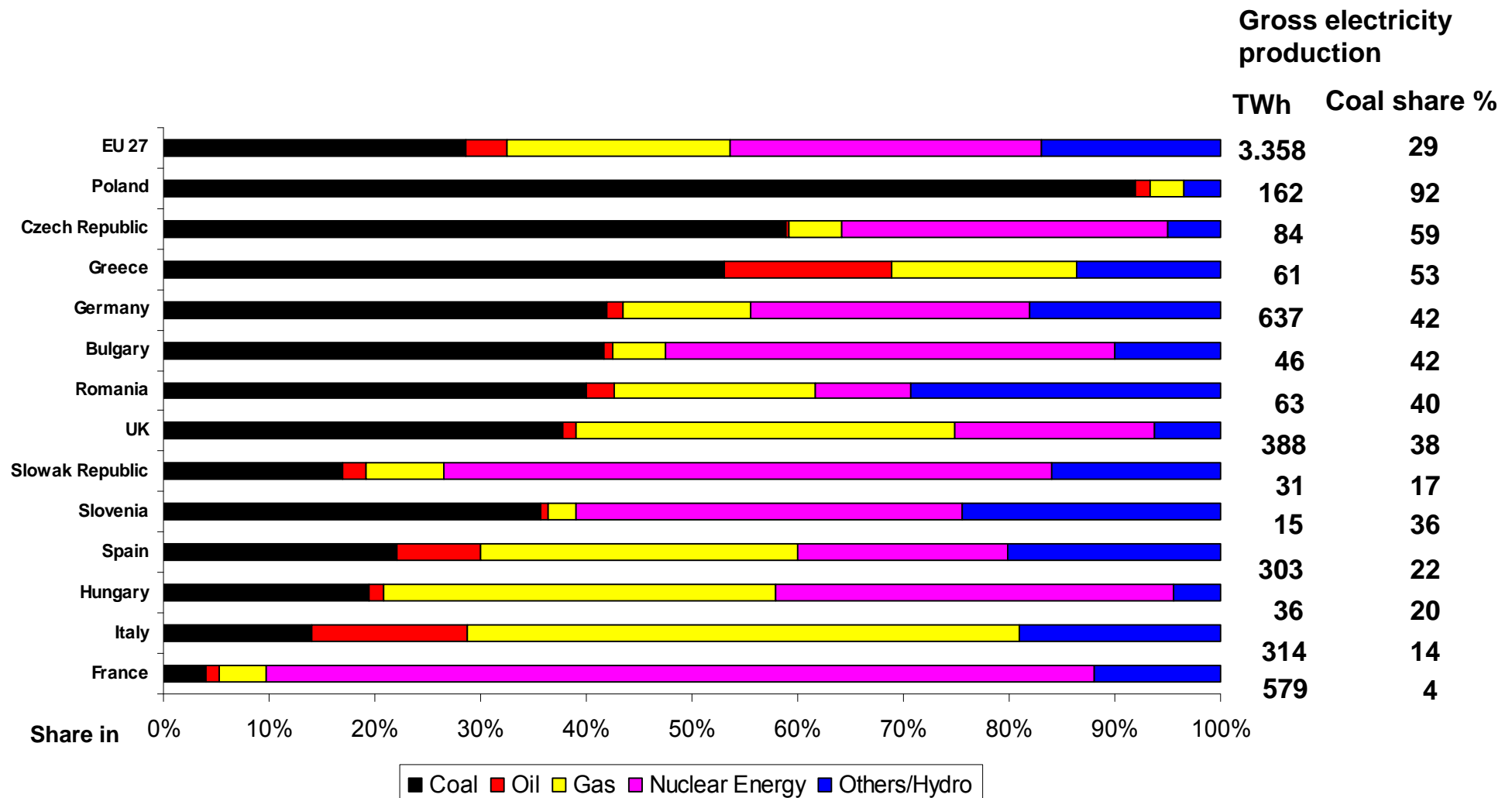
Coal in Greece - Dominant in Electricity



Greek lignite (reserves)

DEPOSIT	EXPLOITABLE RESERVES (5Mt)	STRIPPING RATIO	ASH CONTENT (DRY BASIS)	HEATING VALUE (MJ/kgr)
PTOLEMAIS-AMYNTEON	1 595	5,3	29,2	5 650
FLORINA	325	7,8	39,6	8 180
MAGALOPOLIS	237	2,3	32,6	4 350
ELASSONA	169	5,0	34,8	8 300
DRAMA	900	6,0	39,0	4 370

Power generation structure in selected EU-27 Member States - 2006



Source: EUROSTAT, Yearly Statistics 2007, as at 06/2008

Current challenges with regard to coal

■ Access to Resources

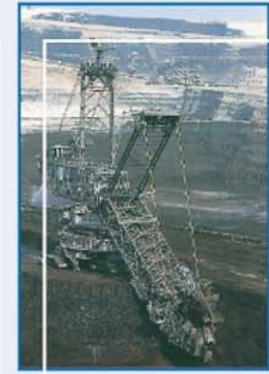
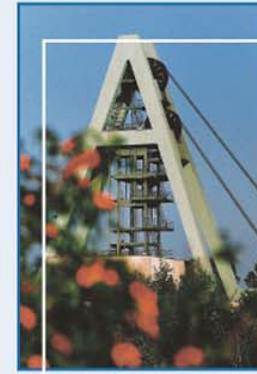
- No close down of mines based on short term considerations
- The legal system must – also in practice – further allow reasonable planning permission delays for coal and lignite production

■ Industry to continuously modernise coal-fired power plants, increase efficiency and to develop/deploy CCS; policy makers to help by delivering investment security

■ The EU ETS as from 2013 – Fuel specific benchmarks with load factors offer incentives to modernise power plants. They are also an option for other industrialised and threshold countries.

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Thank you

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Cracow - September 2008

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