



European Union recent developments in policies and strategies related to the use of coal

Dr. Marion Wilde

Unit International Relations
Directorate- General for Energy

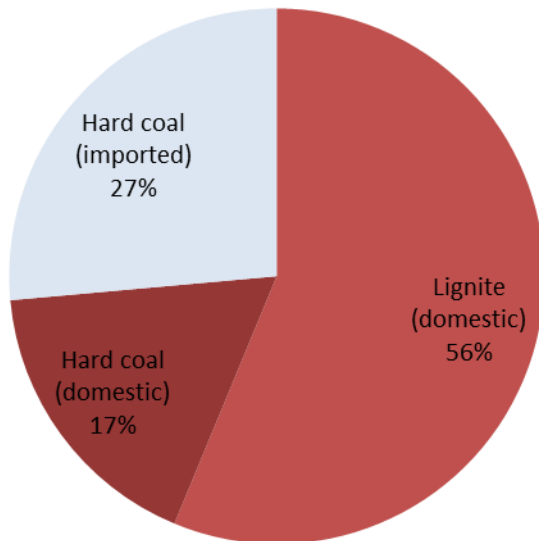
13 May 2013

The role of coal in the EU

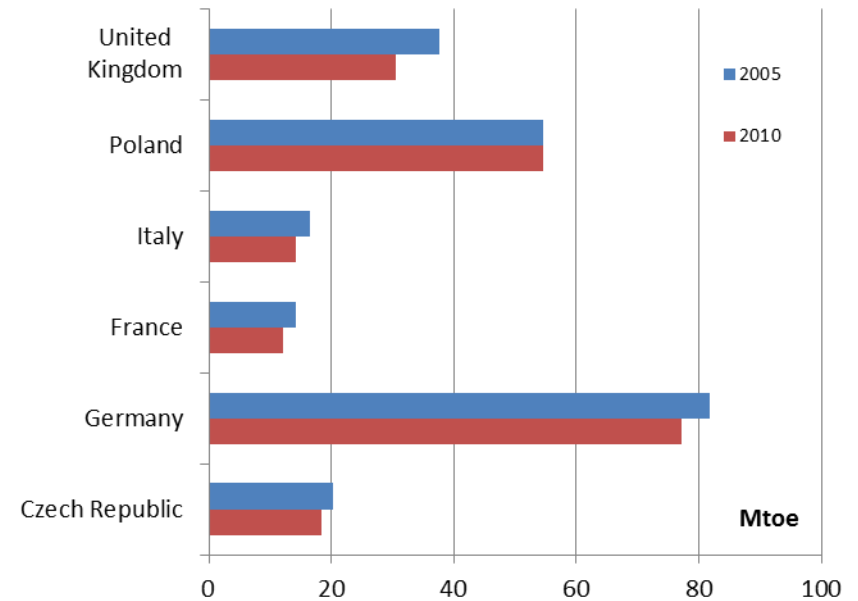
- EU is the fourth largest consumer behind China, USA and India (303 Mt hard coal and 415 Mt lignite in 2010)
- Coal use accounts for 16% of EU-27 total energy consumption and 25% of EU-27 electricity generation in 2010
- Coal use accounts for 28 % of global primary energy use and 40 % of electricity output in 2010
- EU domestic coal production in 2010:
 - *412 Mt brown coal/lignite (99 % of total EU lignite consumption)- Trend stable production*
 - *130 Mt hard coal (42 % of total EU hard coal consumption) Trend decreasing production and increasing imports from Russia, Columbia, US, Australia*
- Coal industry important for jobs with 260 000 direct employees and major component in a number of regional economies

Coal use in the EU

Coal use in the EU, 2010



Main EU coal consumers, 2010



Energy policy development



**Third Internal
Energy Market
Package**

European
Energy Programme
for **Recovery**

EEPR

2009

**Regulation on
security of gas
supply**

**Energy Strategy
2020**



**Energy Infrastructure
Package**

2010

Energy Efficiency Directive

**Energy Infrastructure
Legislative Proposal**

**External Energy Policy
Communication**

Communication Smart Grids

**Communication on
Renewable Energy**

**Energy 2050 Roadmap -
2030 Framework**

2011-13

Second Strategic Energy Review – Best Use of Indigenous Fossil Fuels

- It recognised the potential contribution of EU's indigenous energy resources to energy security
- Role of coal in the domestic energy supply as an important complement to oil, gas as well as renewables
- Long-term use of coal requires:
 - *Highly-efficient plants and wide availability of CCS*
 - *Competitive and environmental acceptable coal production*

Energy Roadmap 2050 – COM (2011)885

- *Current situation: 187 GW installed coal capacity*
- *Current policy initiative projection until 2050: 104 GW*
- *Decarbonisation scenario (Diversified supplied scenario) projection until 2050: 84 GW*
- *Coal in the EU adds to a diversified energy portfolio and contributes to security of supply. With the development of CCS and other emerging clean technologies, coal could continue to play an important role in a sustainable and secure supply in the future*
- ***The long-term future of coal use requires the utilisation of CCS***

● **2030 Framework for Climate and Energy Policy**

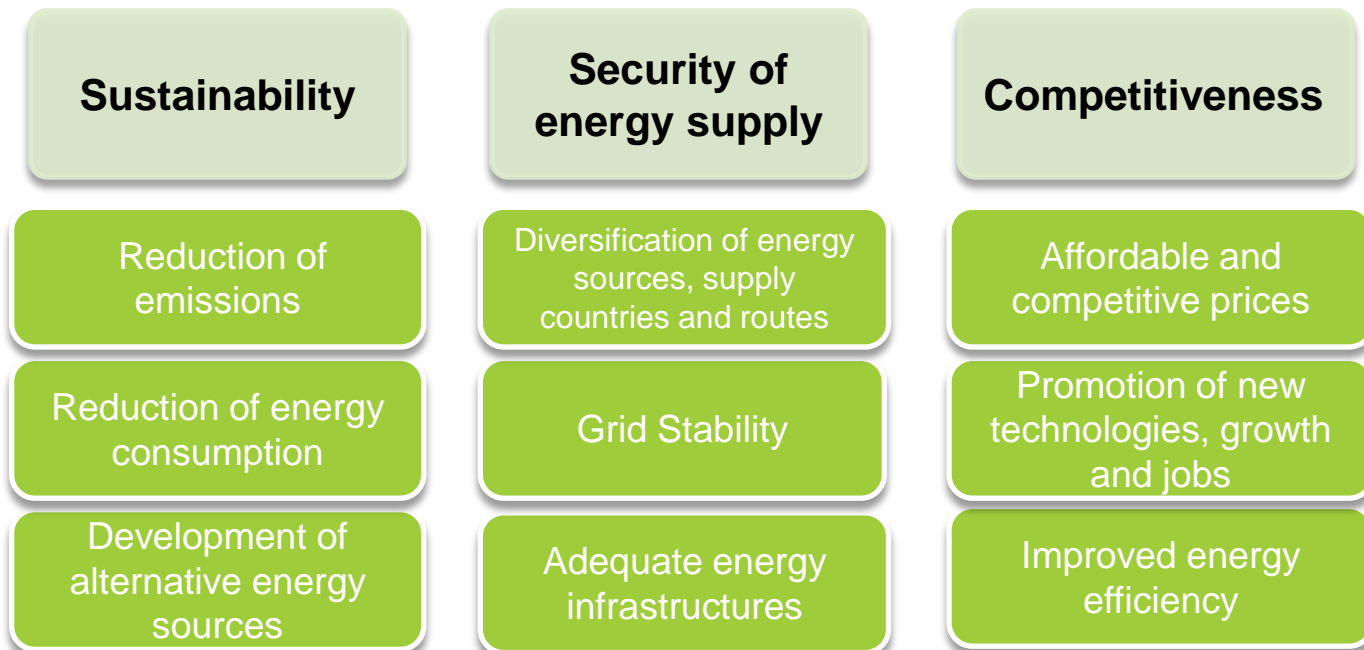
- *Consultative Green Paper adopted on 27 March 2013*
- *Concrete proposals by the end of 2013*





European
Commission

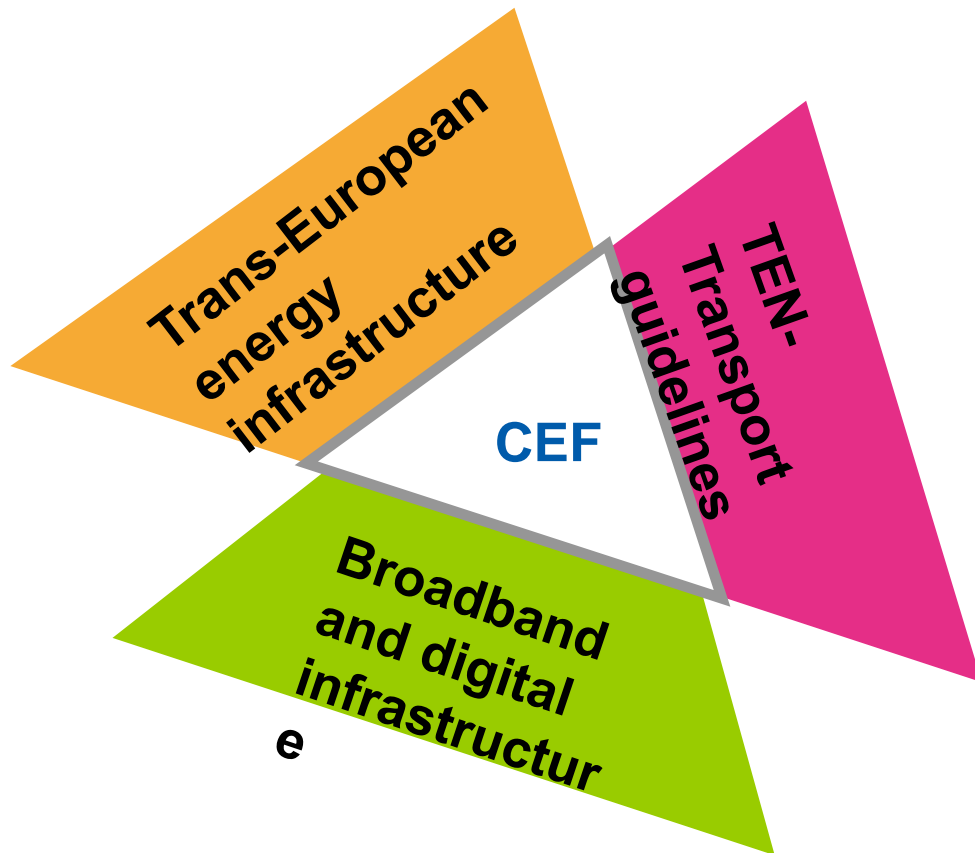
● The 2030 framework must ensure progress towards three objectives



The 2030 policy framework should take into account lesson learnt from the 2020 framework and the economic and political context of today

Energy Infrastructure Package October 2011

Regulation on Guidelines TEN infrastructure - 17 April 2013

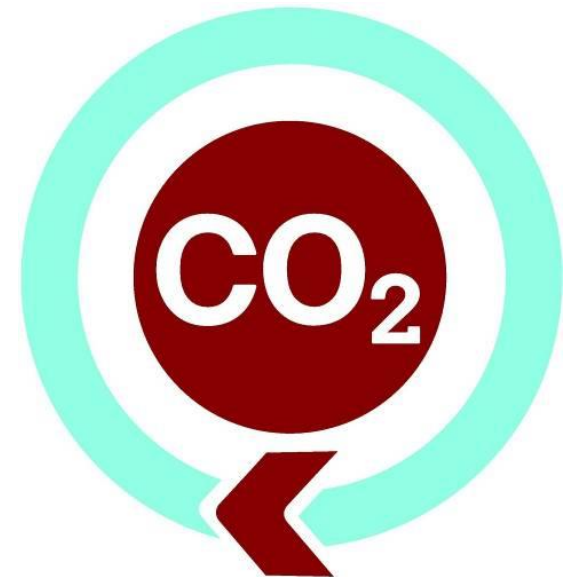


Financial Regulation Connecting Europe Facility (CEF)

- Budget of 50 bn EUR
- Energy – 9.1bn
- Transport – 31.7bn
(incl 10bn cohesion)
- ICT – 9.2 bn
- Project Bond *Pilot*

Six Conditions for successful CCS

- 1) *Legislative Framework*
- 2) *Successful Demonstration*
- 3) *Commercial Viability*
- 4) *Public Acceptance*
- 5) *Infrastructure*
- 6) *Innovation*



Brief gap assessment

| Condition | OK? | Comments: |
|-----------------------------|-----|---|
| 1) Legislative Framework | Yes | Storage is enabled by the CCS Directive (2009/31/EC) |
| 2) Successful Demonstration | - | 20 large scale demos running, but none in the EU (none from EEPR or NER300) |
| 3) Commercial Viability | No | ETS price too low |
| 4) Public Acceptance | - | Challenges particularly on storage on land |
| 5) Infrastructure | Yes | Guidelines for Trans European Infrastructure |
| 6) Innovation | Yes | Horizon 2020, The European Industrial Initiative on CCS (the SET plan) |



Consultative Consultation of the future of CCS Communication (2013)180 from 27 March 2013

More information:

http://ec.europa.eu/energy/coal/ccs_en.htm

Contributions should be sent **by 02/07/2013** to
European Commission
Directorate General Energy
Unit C1 – Renewables and CCS
Rue De Mot 24, B-1049 Bruxelles, Belgium

E-mail : ENER-CCS-COMMUNICATION@EC.EUROPA.EU

CCS and CCT in Framework Research Programme FP 7 until 2013

Overall Aim:

- **To support R&D needed for**
successful demonstration projects in Zero Emission Power
Plants by 2015, and
for commercial adaptation from 2020 onwards

Prerequisites:

- Efficiency increase in coal combustion processes
- Development of value chains for by-products
- Definition of supportive policies / regulatory aspects
- Address public awareness

OPTIMASH - Optimizing gasification of high-ash content coals for electricity generation

- Project managed by Centre National de la Recherche Scientifique (FR) with Indian and Turkish partners
- Project started 1/11/2011- Duration 48 months
- **Objectives**
 - Optimise efficiency and reliability of gasifiers by minimizing the steam use
 - High Pressure Circulating Fluidized Bed gasifiers – to develop a pilot gasifier

EU FP7 call NMP 2012: Materials and new Production Technologies – CO₂ Utilisation

- Call FP7- NMP Small 2012 - 2.2.-3 Advanced materials for high temperature power generation including coal-fired plants
- Call FP7 – NMP Small 2012 – 2.1.-2 Fine Chemicals from CO₂ including further products from CO₂
- Budget for NMP SMALL 2012 – 124 M€

Research Fund for Coal and Steel (RFCS)

- Budget of ~15 M€/year on industrial research
- Covers the entire value chain, from coal mining operation, conversion and processing, to CCT and CCS
- Open call for proposals, cut-off date 15th September every year
- Participants from third countries are welcome but not eligible for funding
- Flagship projects includes COMPTES700 (test facility for 700C power plant; 15M); ECLAIR (emission free chemical looping; 6.4M) and ENCIO (pilot to demonstration for 700 C technology)
- More details on: <http://cordis.europa.eu/coal-steel-rtd/>

Horizon 2020

- Commission proposal for a 80 bnEuro Research and Innovation funding programme (2014-20)~ 5. 8 bn€ for secure, clean and efficient energy
- Following and extending the ideas of FP7
- Fosters the EU's strategy for growth and job creation
- Research and innovation are the key drivers
- A huge technology shift is necessary to meet the targets of 2020 and moreover 2050
- Support for CCS technology and demonstration is one of the priorities

Horizon 2020 COM Proposals 30. 11. 2011

- *Communication Horizon 2020 – The Framework Programme for Research and Innovation 2014- 2020 - COM(2011)808 final*
- *Regulation Horizon 2020 establishing Horizon 2020 – COM (2011) 809 final*
- *Regulation laying down the rules for the participation and dissemination in Horizon 2020- the Proposal Specific Programme Horizon 2020 – COM (2011)810 final*
- *Council Decision establishing the Specific Programme Implementing Horizon 2020 – COM (2011) 811 final*

International dimension of Horizon 2020 – Communication on international cooperation (COM(2012)497

- ***New approach enhancing and focussing EU international cooperation in research and innovation***
- *Strategic choice of partner countries and regions with more targeted actions based on common interest and mutual benefit*
- *More strategic use of S&T agreements with key third countries*
- *Internationalisation of programmatic approaches*
- *Rationalised set of instruments like joint and targeted calls and co-funding of programmes*

- Ongoing:** Parliament and Council negotiations on the basis of the Commission proposals
- Ongoing:** Parliament and Council negotiations on EU budget 2014-2020 (including overall budget for Horizon 2020)
- July 2012:** Final calls published under 7th Framework Programme for research to bridge gap towards Horizon 2020- Project negotiated
- July 2013:** Adoption of legislative acts by Parliament and Council on Horizon 2020
- 1/1/2014:** Horizon 2020 starts, launch of first calls

Thank you for your attention !

More information:

http://ec.europa.eu/energy/index_en.htm

http://ec.europa.eu/energy/coal/ccs_en.htm

http://ec.europa.eu/energy/technology/strategy/strategy_en.htm

<http://ec.europa.eu/research/iscp/index.cfm?pg=strategy>