Steel and Coal: a new perspective
Covent Garden
Brussels

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Chairman of the Board, PGG
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European Coal: technological and socio-economic challenges
The EU coal sector creates a triangle of values and challenges, e.g. PGG in Poland

- Co-operation with scientific and research institutes
- €181 million per annum on machines and equipment
- Over 3.5 thousand contractors
- 12 R&D projects
- 200 thousand jobs in the region
- Salaries 50% higher than average in Silesia
- €1.8 million to improve qualifications of employees

- €719 million fiscal payments to the central government budget for 2018
- €40 million payments to local government budget for 2018
Current EU climate policy challenges the triangle of values created by the coal sector

**IMPACT OF THE TRANSITION TO CLIMATE NEUTRALITY EMISSIONS ECONOMY ON JOBS**

The climate and energy has the potential to create more than 1 million additional jobs

**TODAY: 4 MILLION “GREEN JOBS”**

**POTENTIAL INCREASE OF JOBS**

- Construction
- Agriculture
- Renewable energy sector

**BY 2050:**

**POTENTIAL DECREASE OF JOBS**

- Mining & extraction

**JOB TRANSITIONS**

SERVICES & ENERGY-INTENSIVE SECTORS: NO MAJOR INCREASES OR DECREASES EXPECTED, BUT SEVERAL JOBS WILL GRADUALLY BE TRANSFORMED
The solution is a well-prepared transition with support for new technologies

CoalTech2051

A two-pronged strategic research agenda:

- focus on research activities that support EU policy objectives;
- plus research activities that promote the necessary global response to the ongoing coal use outside of the EU.

The CoalTech2051 project has received funding from the Research Fund for Coal and Steel under grant agreement No. 794369.
CCS is needed, works and will become cheaper

1st INTEGRATED LARGE-SCALE POST-COMBUSTION CCS FACILITY

The CCS installation at Boundary Dam coal power plant in Canada has been in operation since 2014 and captures *circa* one million tons of CO₂ annually. CCS plants can capture up to 97% of the CO₂ in flue gases and second generation plants will be 67% less expensive (per ton of CO₂).
Clean coal technologies for lower emissions

- Low-emission power plants and clean coal technologies
  - 30% lower CO$_2$ emissions
  - on the agenda of the US Department of Energy
  - important in China and India

- Preparing for the commercial demonstration of coal power plants operating at 700°C
  - RFCS projects: COMTES 700, ENCIO, NIBALO725, DP700-PHASE1

- Possibilities for the future:
  - Power plant efficiencies of up to 50% (c.f. global average of 35%)
  - Potential to reduce global emissions by >3 GtCO$_2$ per year

With 46% (LHV) electrical efficiency, the 750 MW Lünen power plant in Germany is one the most efficient coal-fired power plants in the world.

The Lagisza Power Plant in Poland features a 460 MWe Amec Foster Wheeler supercritical, vertical-tube CFB boiler.
Coal and municipal waste gasification are great examples of the circular economy, offering a solution to the waste management problem

- 80% coal / 20% waste
- biomass and biomass wastes
- a project of Polish Mining Group (PGG)

Possibilities for the future:

- Even more municipal waste in the process

Project of Polish Mining Group (PGG):

- big plant with Best Available Technology and a low-emission footprint
- the project has passed the initial screening phase
- partner – Central Mining Institute (GIG)
- €500 million CAPEX
- 619,000 tonnes p.a. methanol production
- 150,000 tonnes p.a. avoided CO₂ emissions
Coal R&D in support of EU policy objectives

- Coal gasification and the circular economy

- Carbon capture, use and storage (CCUS)

- Energy storage to back up RES

- Geothermal energy and other renewable energy projects at mine sites

- Integrated hydrogen production

- Non-energy uses of coal and lignite

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Recommendations

- The outline strategic research agenda shows that there are a number of key research topics to be pursued as part of a coherent response to the climate challenge within an international context.

- Stakeholders should unite behind a strategic support programme, managed by the Research Fund for Coal and Steel.

- Financing is needed – currently 40% of the world’s 40 largest investment banks and 20 global insurers together managing funds of $6 trillion have adopted policies to limit their investments in the coal sector.

- Protection of triangle of values – is most important during the transition process and should be pursued by those companies who are on the front line of change.
Coal and steel video

PGG -film eng.mp4

https://youtu.be/2s8OVWwOseY
Thank you!