Recent developments in EU policy related to coal and outcomes of the CoalTech2051 project
EURACOAL: 25 members and observers from 14 countries

- DEBRIV – Deutsche Braunkohlen-Industrie-Verein (DEU)
- ZSDNP – Czech Confederation of Coal and Oil Producers (CZE)
- PPC – Public Power Corporation (GRC)
- PGG – Polska Grupa Górnicza S.A. (POL)
- PPWB – Confederation of Polish Lignite Producers (POL)
- GIPH – Górnicza Izba Przemysłowo-Handlowa (POL)
- PATROMIN – Asociația Patronală Minieră din Romania (ROU)
- BAZ – Borsod-Abáuj-Zemplén County Government (HUN)
- MMI – Mini Maritza Istok (BGR) – observer
- GIG – Central Mining Research Institute (POL)
- CPERI/CERTH – Chemical Process and Energy Resources Institute (GRC)
- BSN – Branchenverband Steinkohle und Nachbergbau (DEU)
- DTEK (UKR)
- Donetsksteel (UKR)
- Lubelski Węgiel „Bogdanka” S.A. (POL)
- Premogovnik Velenje, d.o.o. (SVN)
- HBP – Hornonitrianske bane Prievidza, a.s. (SVK)
- EPS – Electric Power Industry of Serbia (SRB)
- TKI – Turkish Coal Enterprises (TUR) – observer
- RMU “Banovići” d.d. (BIH)
- KOMAG Institute of Mining Technology (POL)
- IMG-PAN Strata Mechanics Research Institute (POL)
- Geocontrol S.A. (ESP)
- Subterra Ingeniería S.L. (ESP)
- DMT GmbH & Co. KG (DEU)
Coal in Europe 2020
lignite production, hard coal production & imports

EU-27 million tonnes

- lignite 244
- hard coal 57
- imports 89

production
imports
supply

-19%
-22%
-30%

Source: EURACOAL members – * 2019 data
Note: bars show million tonnes of coal equivalent (Mtce) while figures at top of bars show millions of physical tonnes (Mt)
European coal production 1800-2020 and forecast to 2100

- Great Depression
- WWI
- WWII
- 1990: collapse of the Eastern Bloc
- oil shocks
- SARS-CoV-2 pandemic

Note: includes production in the EU, Turkey, Ukraine and Western Balkans.
Since 1990, coal-related CO₂ emissions have decreased by over 70%.

Successful climate policy must be globally co-ordinated.

Security of supply must be guaranteed during the transformation.

Member States’ energy choices must be respected.

Meeting the Paris Agreement targets will have very different impacts on different Member States.

Coal-intensive regions need adequate compensation, including to those companies who must restructure and transition to new activities.
GHG emission reduction over the 10 years from now to 2030 has to be much faster (c.3×) than the reduction over the 30 years 1990-2020.
Coal in EU electricity generation, 2019

EU average 16.9%

Global average 38%

Source: Eurostat database, nrg, bal, peh, last update 06.06.2021 (n.b. coal includes peat* and oil shale**)
ETS and effort sharing on the road to Paris

- Different sectors react differently to carbon prices.
- Large electricity consumers can simply move outside the EU.
- For EU ETS sectors: let the system do its job, without political interventions.
- Other, non-ETS sectors will need a separate, differentiated CO$_2$ pricing or trading system.
- The “Fit-for-55” policy package was launched on 14 July 2021.
- European Commission proposes a new, separate trading system for buildings (heating & cooling) and road transport.

Wealth redistribution is an element of the European Commission’s proposal – to avoid more *gilets jaunes* – thus straying into fiscal policy.
Is the EU ETS just and fair for participating countries?

On a purchasing power parity (PPP) basis, the price of carbon across the EU is very different – poorer Member States pay up to 150% more than richer Member States!
Coal, peat & oil shale phase-out plans in EU Member States

- No phase-out plans announced

2020
2030
2040
2050
- Utilities will diversify.
- Mining companies will use their assets: land and infrastructure.
- Reskilling and upskilling of workers is vital.
- Case-by-case evaluations needed: new and alternative energy projects, energy storage projects, critical and new raw materials, re-purposing.
- A “Just Transition”
A just energy transition with support for new technologies

A two-pronged strategic research agenda for coal R&D:

- coal-related research in support of EU policy objectives;
- coal-related research with an international outlook

The CoalTech2051 project has received funding from the RFCS under grant agreement No. 794369.
Coal-related research in support of EU policy

- Improving health and safety
  ISSA mining section VISION ZERO

- Minimising the environmental impacts of coal mines in transition
  methane control, managing mining waste, coal ash in construction, land reclamation and for rare earths, mine drainage, post-mining opportunities and challenges, avoiding subsidence damage

- Supporting the just transition of the coal sector and regions
  CCS, energy storage, $H_2$ production, geothermal energy, non-energy uses of coal/lignite in support of a circular economy, co-firing coal with biomass and conversion of power plants to biomass

An immersive experience of work in a coal mine via virtual reality using WorksiteVR™

CFOAM® material systems replace conventional building and insulation materials and X-MAT prototype first-generation X-TILE™

Fish farming at Handlová coal mine in Slovakia
Coal-related research with international outlook

- **Coal gasification and the circular economy**
  - Diagram showing the integration of coal gasification with hydrogen production, methanol synthesis, carbon capture, and power plant.

- **CCS: an opportunity for global deployment**
  - Key to reducing global CO₂ emissions from coal, natural gas, and industry.

- **Power plant flexibility**
  - "Deep modernisation" of existing coal power plants with state-of-the-art HELE technologies.

- **Clean coal technologies for lower emissions**
  - Coal gasification with fuel cells in Japan boosts efficiency with near-zero emissions.

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Oxygen plant at the Vresová IGCC power plant in the Czech Republic

CO₂ capture plant at the 2 600 MW Brindisi Sud coal-fired power plant operated by ENEL in Italy

Osaki CoolGen integrated coal gasification fuel cell combined cycle (IGFC) with CO₂ capture demonstration project in Japan
Other ways of using carbon...

- Copper replaced by carbon nanotubes
- Glass replaced by diamond!

Coal can do all this and more. What are we waiting for?
RFCS Modernisation Package came into force August 2021

- A €1.6 billion “trust fund” (UK’s €250m)
- Revised legal basis COM(2020) 319
- Technical guidelines COM(2020) 320
- Financial guidelines COM(2020) 321
- Annual call €40 million (was €60 million)
- New “Big Ticket” annual call worth €71 million
- Research programme managed by Research Executive Agency since 1 April 2021
- No funding for UK partners!

<table>
<thead>
<tr>
<th>Indicative Annual Budget (EUR million)</th>
<th>Deadline(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFCS Annual Call</td>
<td>40</td>
</tr>
<tr>
<td>Clean Steel Partnership Call</td>
<td>52</td>
</tr>
<tr>
<td>Coal Regions in Transition Call</td>
<td>19</td>
</tr>
<tr>
<td>Overall indicative annual budget</td>
<td>111</td>
</tr>
</tbody>
</table>

Revision of coal and steel research objectives

C.350 M 2021-2027 Breakthrough Clean Steel projects

C.130 M 2021-2027 Large coal projects Just Transition Mechanism
RFCS proposal deadline: 22 September 2021
https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/rfcs2027

Thank you!

EURACOAL aisbl
Rue Belliard 40
1040 Brussels
Belgium
euracoal@euracoal.eu
www.euracoal.eu