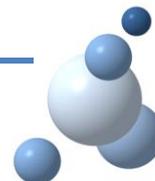


Annual Report 2019



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MESSAGE FROM THE PRESIDENT

Tomasz Rogala



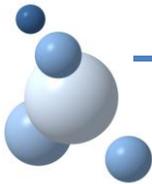
The current health and economic crisis has further heightened the challenge of transforming Europe's energy sector. While governments prepare aid packages and debate new economic directions, conventional energy production is under pressure at the national and European levels. During this period of transition, EURACOAL will continue to draw attention to the fact that coal can be an ecologically friendly, safe and economically accessible fuel that complements less secure and less reliable sources. We want to promote the coal sector's long value chain that supports the EU economy and society, especially at the regional level. This chain is built on the development of knowledge, technologies and human capital; it is a source of income for both central and local governments. Over the past two years, we have demonstrated the importance of this value chain to many political stakeholders and our message has been well received.

Decarbonisation has become a reality in Europe. Several EU member states have agreed upon national coal phase out plans. Nevertheless, some member states are more cautious. Bulgaria, Poland, Romania and Slovenia have not proposed a coal exit, because coal remains such an important component of their energy mixes and supports regional economies. In Germany, the

national compromise envisages closing all coal- and lignite-fired power plants by 2038. Spain intends to reduce its coal-fired power generation capacity to 2 GW by 2025, ahead of a full phase-out. In the Czech Republic, a "Coal Commission" based on the German model is examining the conditions for an end to coal combustion. Meanwhile, pressure is building in Brussels to once again revise and tighten the Emissions Trading System Directive. The European Commission is looking at a methane strategy – first envisaged in 1996 – that would cover the gas sector and perhaps also deep coal mines. In addition, a revision of the Water Framework Directive is currently under discussion. For industry, after twenty years of considerable improvements to water quality, it is very important to have a reliable regulatory framework during the transition.

While the European Commission is developing the details of its climate strategy to 2050, EURACOAL has continued to present its positions and priorities in Brussels. In particular, the resources available for a "just transition" in the coal regions have increased from the initially proposed €4.8 billion to a mechanism totalling at least €100 billion. The response to the coronavirus pandemic gives more scope to now make a material impact in the coal regions. However, the exclusion of coal, gas or nuclear projects from the Just Transition Mechanism raises the question of how companies will be able to participate in the necessary investments. We must identify the real costs of transition in each member state and convince relevant stakeholders that adequate support is needed in the coal regions. Special economic zones could be an important element in the regional transformation, moving away from the traditional coal industry.

Looking outside Europe, the global trend still favours coal. Global coal production increased by an estimated 3% in 2019 to 7 300 million tonnes. China, India and the United States are the biggest markets, with China alone accounting for about half of global production and consumption. Australia and Indonesia are the most important coal exporters, followed by Russia which is the main exporter to the EU where production



decreased sharply in 2019. Total hard coal supply in the EU was 200 million tonnes in 2019 – 67 million tonnes of indigenous production plus 134 million tonnes imported. A further 308 million tonnes of lignite was mined in nine member states. For comparison, China’s hard coal production *increased* by an estimated 200 million tonnes in 2019 – the same as the EU’s *total* supply.

Climate policy should concentrate not only on coal, although our sector undoubtedly faces the biggest pressure. We cannot ignore all the other sectors that have climate impacts. For example, the imports of products from countries that do not have comparable climate policy objectives leads to a demand for safeguards to prevent “carbon leakage”. Leaders propose and policymakers debate the introduction of carbon border taxes or similar measures on imported goods, or tax exemptions for EU producers in order to help maintain their economic competitiveness. At every opportunity, EURACOAL will raise our key concerns in this debate and continue to be an active policy shaper. In particular, we will strengthen our message that the coal sector is open to constructive change, and that innovation is crucial in the search for ever-cleaner energy and new applications for coal.



MEP Grzegorz Tobiszowski (left) and the EURACOAL President present the Energy Summit 2019 declaration.

Energy Summit 2019



EURACOAL President, Mr. Tomasz Rogala opens the Energy Summit 2019 in Warsaw on 1/2 October 2019.

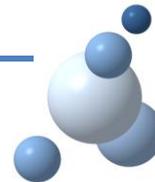
Energy Summit 2019 on “the conditions for a sustainable energy transition” took place in Warsaw at the beginning of October, organised by the Polish Ministry of Energy, EURACOAL and the Polish Mining Group (PGG). Coal industry leaders from across Europe participated to discuss topics of importance. The summit was opened by the President of EURACOAL, Mr. Tomasz Rogala, who is also Chairman of the Board at PGG – the biggest hard-coal producer in Europe.

The Polish government was well represented by Mr. Krzysztof Tchórzewski, Minister for Energy, Mr. Adam Gawęda, Secretary of State and Government Plenipotentiary for the Restructuring of Coal Mining as well as Mr. Gawęda’s predecessor, MEP Grzegorz Tobiszowski, who now sits in the European Parliament where he is a member of the influential industry committee (ITRE).

Endorsed by the Polish Prime Minister, Mr. Mateusz Morawiecki, this major event was divided into four thematic discussions panels covering:

- natural environment and climate change,
- security of raw materials supplies,
- society and human capital, and
- industry expectations for the energy transition.

In the closing session, the EURACOAL President presented the meeting’s declaration which sets out the conditions for a sustainable energy transition, published by EURACOAL in Polish and English.



COMMITTEE ACTIVITIES: Energy and Environment Policy Committee

Dr. Thorsten Diercks, Chairman

The EURACOAL Energy and Environment Policy Committee deals mainly with energy, climate and environmental matters of concern to the coal sector, with a focus on EU policy initiatives. Given the importance of member state policies, an exchange of views on these is another essential element of the committee's work. Issues are analysed, discussed and conclusions agreed on appropriate actions. The Committee's position papers are used to inform opinion leaders and decision-makers in Brussels and beyond.

The Committee held two formal meetings in 2019 and worked actively on several files of crucial importance to members of the association.

The April meeting was followed by an audience with the then Polish vice minister for energy, Mr. Grzegorz Tobiszowski, and representatives from Silesia. Members discussed general energy issues and EU policies related to coal. In May 2019, Mr. Tobiszowski was elected to the European Parliament where he champions energy-supply security and European industrial competitiveness.

Large Combustion Plants BREF

In November 2017, EURACOAL contested the European Commission's decision on a revision of the Large Combustion Plants reference document which sets pollutant emission limits based on best available techniques (BAT). In summary, our pleas were:

- BAT emission limits for NO_x and mercury not derived according to best available techniques;
- last-minute amendment to the draft BAT conclusions tabled in violation of mandatory time limits;
- Commission did not seek the widest possible support among member states, in violation of comitology procedures; and
- discussion in comitology took place *after* voting, ignoring earlier requests to speak and disregarding comitology procedures.

The Court of Justice of the European Union (CJEU) did not admit the case, as it claimed EURACOAL members were not directly affected. We duly appealed in February 2019 and, by May, had applied to the Court to submit a considered response to the Commission's plea. This was again dismissed, thus terminating the written procedure. In July 2019, EURACOAL lawyers sought an oral hearing. Throughout 2019, there was no news on a related case brought by Poland as a member state.

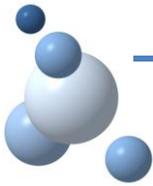
Water Framework Directive

According to the Water Framework Directive (WFD) of 2000, all water bodies should reach "good status" by 2027. The European Commission is concerned this target will not be reached. For industry, the non-deterioration principle is troublesome, as it is not properly defined. A CJEU ruling (the Weser case) interprets deterioration as a fall in any one water-body parameter if the water quality is unfavourable, even if all others improve. For now and until 2027, member states may decide on less stringent requirements for a particular water body, but rarely do. If there is no possibility of achieving good status for all water bodies, then exemptions are occasionally allowed. As the relevant rule may not be applicable for all cases, a clarification is needed.

EURACOAL position on WFD

The Energy and Environment Policy Committee prepared a detailed EURACOAL position paper on the Water Framework Directive in March 2019. In summary:

- No clear definition of "non-deterioration principle" – the central legal term "deterioration" needs to be defined practicably and proportionately (WFD Article 4.1).
- Time extensions beyond 2027 are needed to balance water quality objectives with ongoing water management at mines and power plants (WFD Article 4.4).
- The limited exemption clause should be reviewed, so that it can be more widely applied (WFD Article 4.7).



The European Commission has been working on a scheduled review of the Water Framework Directive (a.k.a. a “fitness-check” review under the Better Regulation Initiative). EURACOAL took part in the many stages of public consultation. A number of other industry associations share our concern on the future of the WFD, so together prepared a common letter to the European Commission and Parliament. This letter points to the urgent need for a stable regulation on industrial water use post 2027.

A Commission staff working document of December 2019 reports on the fitness-check review of a number of water-related directives. The Commission states that the WFD objectives are suitable; they have led to more water protection, but should be better implemented as less than half of EU waterbodies achieved good status (despite a 2015 deadline), and not all waterbodies will achieve good status before 2027. Apparently, member states have not invested enough, relying on point-source pollution control, while leaving diffuse sources unaddressed, and not making good use of cost-recovery principles and green infrastructure. The Commission reports no deficiencies in the legislation itself.

The 2027 question remains unresolved, leaving the EU mining sector wondering how future operations can be best secured if the WFD is not amended. Authorities in mining regions where good status cannot be achieved in all waterbodies should update existing water management plans to clarify that further exemptions are needed. As from 2022, every new six-year plan should address permitting beyond 2027.

“Clean Planet for All”

A EURACOAL position paper on the European Commission’s long-term strategic vision for EU climate and energy policy to 2050 was finalised and published with six key messages having previously been discussed also at EURACOAL Executive Committee meetings:

1. The climate challenge requires global solutions, with similar ambitions everywhere.
2. Climate neutrality by 2050 is highly ambitious; the EU coal sector has halved its CO₂ emissions

since 1990 and, under the EU ETS, will continue to reduce its emissions cost-effectively.

3. Without large-scale energy storage, conventional thermal power generation will still be needed.

4. To gain public support and to maintain EU competitiveness, solutions have to be affordable.

5. EU member states should remain free to choose their own (different) energy mixes.

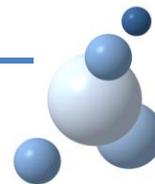
6. Coal contributes to affordable and competitive electricity prices, reinforcing the EU as a place to do business and thereby contributes to EU prosperity.

Mining Waste BREF

The European Commission has expressed dissatisfaction with the Management of Waste from Extractive Industries Directive. It would like to redefine waste and by-products – a key point of discussion for the mining industry over the last twenty years. Industry, on the other hand, supports the current definition of by-products. Meanwhile, the Commission is exploring financial guarantees and a non-binding, international standard on the correct handling and storage of mine tailings. EURACOAL monitors these developments which would affect the whole mining sector.

Coal Regions in Transition Platform

During 2019, there were three working group meetings of the Coal Platform, all in Brussels, and a political dialogue in Görlitz, Germany. All were well-attended by EURACOAL members, with numerous presentations including by President Rogala. The general direction of this important initiative of the European Commission was confirmed and announcements made on working group meetings in 2020 as well as a political dialogue in Asturias, Spain. The possibility of a dedicated fund for a “just transition” took shape and was included in the European Green Deal – a roadmap to make the EU economy sustainable, turning climate and environmental challenges into opportunities across all policy areas and making the transition just and inclusive for all, leaving nobody behind.



In September, EURACOAL members attended a preparatory meeting in Natolin on the outskirts of Warsaw to establish a sister coal platform for the Western Balkans and Ukraine. For non-EU members of EURACOAL, this is a very welcome initiative in co-operation with the Energy Community and the World Bank.



Dr. Thorsten Diercks (left), chair of the EURACOAL Energy and Environment Policy Committee, and Dr. Jan Bondaruk, Deputy Director of the Central Mining Institute (GIG) in Poland, at the 6th Working Group meeting of the Coal Regions in Transition Platform, Brussels, 16/17 October 2019.

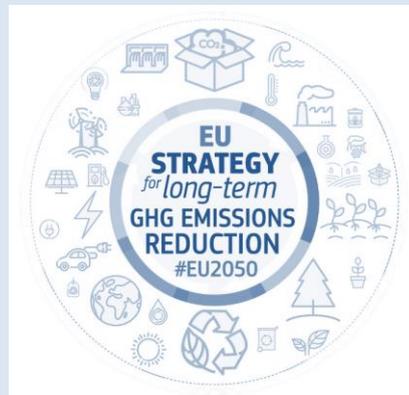
Communications Working Group

EURACOAL, following successful events in 2018, decided to formalise the group that contributed to those and so have a structured work programme for communications activities. Mr. Łukasz Mazanek of the Polish Mining Group chaired three meetings of the Communications Working Group in 2019. A highlight of the group’s work was the Energy Summit 2019.



Mr. Krzysztof Tchórzewski, Minister for Energy, at Energy Summit 2019 in Warsaw on 1/2 October 2019.

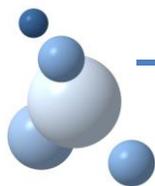
European Green Deal



In July 2019, the President-elect of the European Commission presented her 2019-2024 political agenda to the European Parliament. In a radical departure from free-market economics, a European Green Deal is proposed that will affect all areas of life in Europe. Meanwhile, the Commission proposed:

- a 50% greenhouse gas reduction target by 2030;
- the first climate-neutral continent by 2050;
- an extension of the EU ETS to cover maritime, traffic and construction;
- a Carbon Border Tax to avoid carbon leakage;
- a review of the Energy Taxation Directive;
- a Circular Economy Action Plan and decarbonisation of energy-intensive industries;
- a zero-pollution ambition (e.g. air and water quality, industrial emissions and plastics);
- a Biodiversity Strategy for 2030;
- a Farm-to-Fork Strategy for sustainable food;
- a European Climate Pact for the regions, local communities, civil society, industry and schools;
- a new Just Transition Fund so that nobody in any region is left behind, with targeted support to industrial, coal and energy-intensive regions and energy islands; and
- a ten-year, €1 trillion Sustainable Europe Investment Plan led by the European Investment Bank.

A large majority of member states fully endorsed the EU objective of climate neutrality by 2050.



COMMITTEE ACTIVITIES:

Market Committee

Prof. Franz-Josef Wodopia, Chairman

The aim of the Market Committee is to deliver accurate, consistent and timely data on production, imports and consumption of hard coal and lignite in Europe, and to publish such data in regular market reports. These reports have a wide circulation beyond the EURACOAL membership and include, each year, the first aggregated annual data for the EU.

In 2019, the committee held two meetings, in April and October. Special topics included a presentation by Mike Bostan of the European Federation for Energy Traders on the changes taking place in European power markets. In July, the President-elect of the European Commission outlined the European Green Deal and this proposal was duly examined at October's committee meeting. Members also discussed the role of imported coal in the EU energy mix, in particular the contribution it makes to energy security alongside indigenous coal. EURACOAL issued two coal market reports in 2019: one in May, accompanied by a "Coal in Europe" map, and another in November.

In 2020, the Covid-19 pandemic has badly affected the coal industry. In Europe, Q1 reporting suggests a 30% reduction in coal demand. The crisis has further depressed coal prices, below marginal supply costs for many producers. China's domestic coal production was initially disrupted, but many coal mines were reportedly back in production by the end of February. In December 2019, China's coking coal imports suddenly collapsed, with almost none delivered from Australia. Then, in early 2020, Mongolia closed its border with China to prevent the spread of Covid-19. This meant trucks carrying coking coal were prevented from using the Gants Mod and Ceke border crossings into China, leading to some recovery in seaborne coking coal import demand.

The prospects for coal producers and traders are very uncertain; the duration and general economic impacts of the pandemic, the priority to

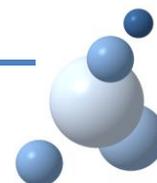
keep coal miners healthy and the true situation in China are all of concern. As the world's largest coal importer, the largest oil importer and set to become the largest LNG importer in 2022, China's energy supply and demand balance will be the major determinant of future global energy trade. With up to 38 bcm of Russian gas via the new Power of Siberia pipeline which opened in December 2019, the country's energy supply now appears to be well-diversified in an uncertain world.

World Coal Market Developments

In 2019, global hard coal production reached 7.3 billion tonnes, a 3% year-on-year increase according to estimates by the Coal Importers Association (VDKi), with China adding 200 million tonnes (Mt) and Indonesia 55 million tonnes to meet strong Asian demand, notably in China itself which accounts for more than half of global coal consumption.

Production fell at Western producers, especially in the US where the availability of cheap fossil gas, including shale gas, has quickly reduced the use of coal for power generation. On top of this inter-fuel competition, US coal exports fell by a massive 20 million tonnes in 2019 as international coal prices collapsed, resulting in several US coal companies filing for Chapter 11 bankruptcy. Being a swing supplier, the US saw production decline by 46 million tonnes in response to the dramatic fall in coal prices. A strong US dollar, falling demand in Europe (traditionally the destination for US coal exports), and a lack of infrastructure on the US west coast (nearer to Asian markets) have all added to the difficulties facing US producers. US coking coal exports fell 10% to about 50 million tonnes in 2019 on falling prices.

The six major coal producers – accounting for close to 90% of production in 2019 – were China (3 746 Mt, +6% compared with 2018), India (711 Mt, -0.7%), the US (639 Mt, -7%), Indonesia (526 Mt, +9%), Russia (437 Mt, +1%) and Australia (465 Mt, -7%). In Australia, Adani Group expects to open its 10-15 Mtpa Carmichael mine in 2021, further cementing the country's leading position as an exporter of high-quality steam and coking



coal. South African output grew slightly (254 Mt, +0.4%), but at 78.5 million tonnes, its exports remained well below the capacity of Richards Bay Coal Terminal.

Overall, the international hard coal market – steam coal and coking coal – can be broken down as follows: Australia and Indonesia each supply around one third; Russia, the US, South Africa and Colombia together supply the remainder. Seaborne hard coal trade increased by less than 1% to 1 220 million tonnes in 2019, slower than production as China’s consumption growth was mainly met by increased domestic production. Developing Asia – led by India – drove coal trade higher, offsetting lower demand in Europe, Japan, South Korea and Taiwan.

Hard coal exports in 2019 were dominated by Australia (395 Mt) and Indonesia (372 Mt), followed by Russia (207 Mt, of which 171 Mt seaborne), the US (79 Mt, excluding to Canada), South Africa (79 Mt) and Colombia (76 Mt). Including lignite exports of 84 million tonnes would place Indonesia as the top coal exporter, despite a domestic market obligation whereby producers must sell at least 25% of their output on the domestic market at capped prices. As with production, changes in export volumes were positive for Indonesia (+29 Mt or +9%) and negative for the US (–21 Mt, –21%).

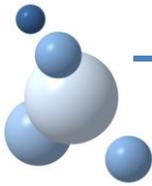
Despite trade disputes with China, which delayed customs’ clearances by up to forty days, Australian exports grew to 395 million tonnes in 2019 (+9 Mt, +2%), while Colombia benefitted with better access to China, but saw its overall exports fall from 80 million tonnes in 2018 to 76 million tonnes in 2019 (–4 Mt, –5%) as dust-control measures during periods of dry weather constrained production. A lack of investment in Colombia’s coal sector in recent years and falling coal consumption in Europe are expected to limit export growth. Most of Colombia’s coal mines are on the Caribbean coast, so producers face relatively higher shipping costs to the growing demand centres in Asia. The natural exporters to the European market – namely the US, Colombia and South Africa – all saw exports decline.

Russia plans to increase coal production and has been investing heavily in transport infrastructure to the country’s eastern ports – targeting the Asian premium market where Japan’s utilities are diversifying their sources of supply, and South Korea’s new regulations are increasing demand for Russian low-sulphur coal. The weak rouble has also helped Russian coal miners. In September 2019, a third coal loader was commissioned at Vostochny port, expanding the capacity of Russia’s largest coal port from 22 Mtpa to 40 Mtpa. However, Russia’s coking coal exports remained largely unchanged in 2019 at around 26 million tonnes.

China imported an estimated 300 million tonnes of coal in 2019 – 225 million tonnes of steam coal, up around 5% on 2018, and 75 million tonnes of coking coal – so above the unofficial 280 million-tonne cap. China has many coal-fired power stations planned, following approvals of new capacity between September 2014 and March 2016 when the central government delegated permitting to provincial authorities who were then keen to meet economic targets. China currently has 1 003 GW of coal-fired power generation with a further 153 GW under construction and 270 GW in planning. By comparison, the EU’s total coal-fired capacity is 152 GW.

India is the world’s second largest thermal coal importer and consumer. After declining in 2015 and 2016, India’s steam coal imports recorded their third consecutive annual increase in 2019, rising 12% to a record high of 211 million tonnes. In August 2019, the government opened up the country’s coal sector to 100% foreign direct investment. Later, in January 2020, reforms were introduced including an end to the restrictions on open-market sales by “captive producers” who previously could only sell to private users such as electricity generators.

As the world’s third largest coal importer – an estimated 182 million tonnes of coal in 2019 – Japan has long been an important player who has set benchmark prices. There is around 6 GW of new coal-fired coal capacity under construction and the future availability of Japan’s nuclear power plants will have a decisive impact on future coal demand.



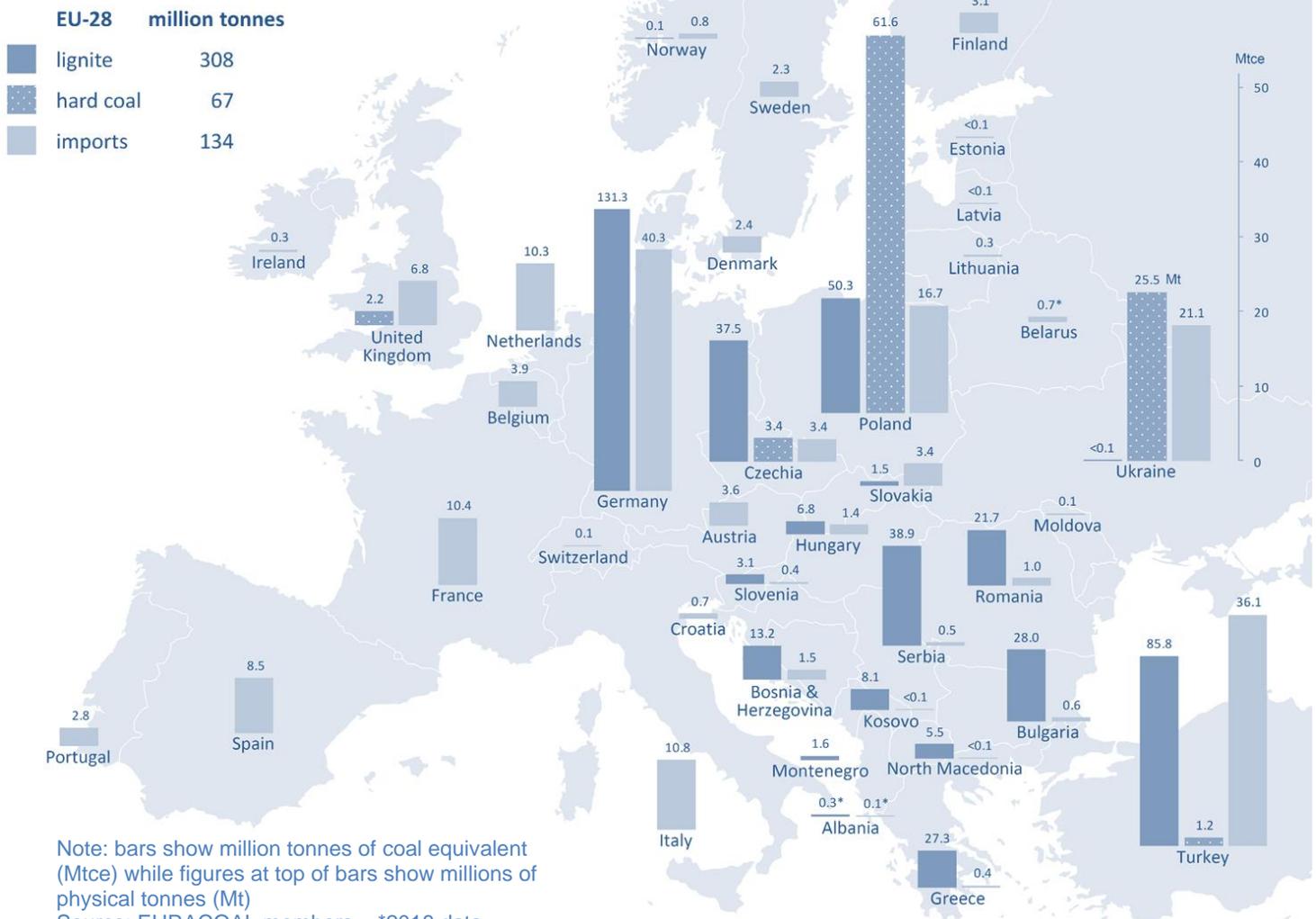
In fourth position, South Korea imported an estimated 136 million tonnes of coal in 2019. The country plans to shift away from nuclear and coal towards renewables and gas. Already, there are high taxes on coal use.

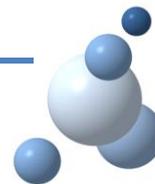
In Ukraine, run-of-mine coal production was 33 million tonnes in 2019, yielding an estimated 26 million tonnes saleable output, so 2.3% lower than in 2018. Since 2005, inefficient state-owned mines have absorbed heavy subsidies and remain problematic, despite only producing 3.6 million tonnes in 2019 from thirty-three mines, most of which are loss-making. The Ukrainian government

has decided to revise its energy strategy to 2035 and also to agree a target for carbon neutrality by 2070.

Turkish lignite production grew by 0.7% in 2019 to 86 million tonnes, of which 70 million tonnes or 81% was delivered to power plants for electricity generation. Hard coal production from the Zonguldak basin on the Black Sea coast is not significant, but grew 8.6% in 2019 to 1.2 million tonnes with good output from private mines. Turkey is Europe's second largest coal importer after Germany and is likely to become the top importer in 2020. Imports fell 2.8% in 2019 to

European hard coal production, lignite production and coal imports, 2019





36 million tonnes, mostly from Russia and Colombia. Steam coal imports are expected to rise from the 30 million tonnes in 2019 with the addition of new coal-fired power plants and a still growing economy. For example, the 1 320 MW Hunutlu coal power plant in Adana province, which EMBA Elektrik Üretim A.Ş. owns in a joint venture with Shanghai Electric Power, is expected to come online by the end of 2022, consuming 3.5-4.0 million tonnes annually. Around one third of steam coal imports went to industrial users, including cement makers.

At a time when the EU is importing record volumes of pipeline gas and LNG, the Turkish energy sector has not embraced this fossil fuel. However, with the first deliveries of Russian gas via the new TurkStream pipeline in January 2020, the picture could change – depending on gas prices in terms of the devalued Turkish Lira.

European Union Coal Market

In 2019, hard coal production in the European Union fell to 67.2 million tonnes (-8.5 Mt or -11.1% compared with 2018), making little difference to the overall global picture of strong coal demand. Coal imports were also lower at 133.7 million tonnes, a massive 19.3% less than in 2018. Steam coal demand suffered as less coal was used for power generation – a direct result of high EU ETS allowance prices. For the same reason, lignite production fell by 16.2% to 307.5 million tonnes in 2019 as operators mothballed plants.

Lignite production in **Bulgaria** fell 7.6% in 2019 to 28.0 million tonnes. Mini Maritsa Iztok EAD, a subsidiary of the state-owned Bulgarian Energy Holdings EAD, is by far the country's largest coal producer. The company's business plan foresaw lignite production of 27.5 million tonnes in 2019.

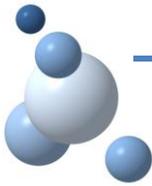
In the **Czech Republic**, hard coal production decreased to 3.4 million tonnes (-23%) in 2019 on low demand. Of this, 2 million tonnes was coking coal. Imports increased 3.1% to 3.4 million tonnes, from Poland, Canada and the US. For the first time in the Czech Republic, imports of both steam coal and coking coal matched domestic production of

each commodity. Output of brown coal decreased by 4% to 37.5 million tonnes in 2019 as warm weather reduced demand. Since August 2019, the Czech Coal Commission has been examining the conditions and timetable for an end to coal combustion, although not coal mining. Fast (2030-2035), medium (2035-2045) and slow (2045-2050) scenarios are under consideration, with results expected in September 2020.

Hard coal demand for heat and power generation in **Germany** fell by over one third due to competition from fossil gas, significantly higher EU ETS allowance prices and higher feed-in of renewables. Hard coal imports into Germany have fallen steadily since 2016, and fell 9.4% to 40.3 million tonnes in 2019. The loss of German hard coal production at the end of 2018 and stock build cushioned the impact of falling domestic demand on coal importers. Russia took a 51% share of the German hard coal import market in 2019. Lignite production fell dramatically in 2019, by 21.0% to 131.3 million tonnes, with restrictions at Hambach mine and a sharp drop in demand. Nevertheless, lignite accounted for 33.2% of indigenous energy production and 18.8% of power generation, while hard coal had a 9.4% share of power generation.

A detailed, unit-by-unit phase-out plan for lignite-fired power generation by 2038 was agreed politically in January 2020 and is now included in a draft Coal Exit Law approved by the Cabinet of Germany, following the final recommendations of the Commission on Growth, Structural Change and Employment (*Kohlekommission*) published in January 2019. Legally binding public contracts between the lignite companies and the Federal government are under negotiation in H1 2020, with draft agreements expected by 30 June that include compensation conditions for employees.

In **Greece**, lignite production was 25.6 million tonnes (-26%) in 2019, excluding c.2 million tonnes from small, independent mines. The production plan for 2020 calls for 21.9 million tonnes, but demand is likely to fall to 20 million tonnes on account of the Covid-19 crisis. Having produced over 70% of its electricity needs as recently as 2013, Greece has become heavily



dependent on imports of oil, gas and electricity for its power supply. Indigenous sources accounted for 50% in 2019 and may fall to just 43% in 2020. In April 2020, only three of PPC's twelve lignite-fired power plants were operational – all at low levels to maintain district heat supply. In January 2020, PPC submitted a decommissioning plan to the Greek TSO and the Regulatory Authority for Energy for the phase-out of existing lignite-fired power plants by 2023. The new 660 MW Ptolemais V should be operational in 2021, although commissioning is delayed during the Covid-19 pandemic. The unit will operate on lignite to 2028.

In **Hungary**, annual lignite production from the Visonta and Bükkábrány mines had been around 8 million tonnes, but declined 13% in 2019 to 6.8 million tonnes. Black coal production was insignificant at Pécs-Vasas and brown coal production was <100 kt. The Mátra lignite-fired power plant, dating from the 1960s, provided a significant 12% of total Hungarian electricity production in 2019, despite its output falling by 14.7% in a growing market. On 26 March 2020, state-owned utility MVM purchased Status Power Invest Kft. for c.€50 million, being the owner of Mátra power plant and the adjacent Geosol biomass fuel processing plant. The new owner aims to transform the power plant and lignite mines into a low-carbon power generation complex, including solar PV and batteries, in line with the Hungarian national energy strategy and the European Green Deal.

Poland's hard coal production declined slightly in 2019 to 61.6 million tonnes, 1.8% lower than 2018 and continuing a decade-long trend. Coking coal production was unchanged at 12.1 million tonnes whereas steam coal output fell 3.5% to 49.5 million tonnes. Hard coal exports from Poland fell to 3.7 million tonnes (-5.1%). While export sales of housecoal to the UK and Ireland have fallen away, the Polish market has been buoyant during the Covid-19 crisis. The virus has caused major complications for coal producers in 2020. Coal imports, after a record year in 2018, fell back in 2019 to 16.7 million tonnes (-3.0 Mt or -15%) of which 13.3 million tonnes was steam coal. Russian coal dominated, with a 65% share.

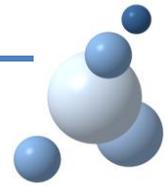
Lignite production in Poland has been stable since 1991 at approximately 60 million tonnes, but fell by 8.4 million tonnes in 2019 to 50.0 million tonnes, -14% lower than in 2018. The new 450 MW PGE Turów lignite-fired unit, to be commissioned in 2020, will help to rebalance the trend of rising electricity imports needed to meet power demand. With overall output falling from the Adamów, Konin and Bełchatów mines, steeply after 2030, new mines are needed. Without these, lignite production will end around 2045. The government's base scenario assumes the opening of three new deposits: Żłoczew (18-20 Mtpa), Gubin (18-20 Mtpa) and Ościśłowo (3 Mtpa), with planning work underway on the Żłoczew mine.

In 2019, lignite production in **Romania** declined 8.4% to 21.7 million tonnes. Complexul Energetic Oltenia (CEO) is the main electricity producer in Romania with 3 240 MW installed capacity and a market share of 24% in 2019. In 2018, the company was faced with a huge EU ETS problem when it had to pay out close to 45% of its turnover to buy allowances. In 2019, it was 49% and in 2020 it is expected that 52% of turnover will be spent on allowances. At the same time, salaries have to be paid and recurring maintenance costs covered, as well as long-term investments. Temporary solutions to this crisis include government-backed loans prior to longer-term restructuring of CEO to reduce its specific carbon emissions.

Coal mining in **Slovakia** at the Baňa Handlová and Baňa Nováky mines in Upper Nitra, plus the small Baňa Čáry mine in the Záhorie region, had a combined annual production of 1.5 million tonnes in 2019, supplying a heat and power plant at Nováky mine.

The only operating lignite mine in **Slovenia** is owned by Premogovnik Velenje d.o.o. – a subsidiary of the state-owned utility, Holding Slovenske elektrarne d.o.o. (HSE). In 2019, lignite production in Slovenia fell by 2.3% to 3.1 million tonnes. The company plans to mine lignite, which is mainly used for electricity generation at an adjacent power plant, until 2054.

Coal production in **Spain** largely ceased in 2018. Insignificant production comes from the small San



Nicolás underground coal mine near Mieres in Asturias. Coal imports fell in 2019 by 46% to 8.5 million tonnes.

In 2019, the **United Kingdom** coal market totalled 7.9 million tonnes, mainly for steel making and power generation. However, only 2.3% of total power generation was from coal in 2019; output from coal power plants fell 59% compared with 2018. Coal stocks at power stations were drawn down, thus reducing imports to 5.5 million tonnes in 2019, mainly from Russia and the US. UK coal production in 2019 was 2.2 million tonnes (-28%). The UK government will consult on bringing forward the country’s coal phase-out to 1 October 2024.

Coal and Coke Prices

Steam coal prices collapsed at the end of Q1 2019, especially on the Atlantic market, before stabilising for the rest of the year at around 60 US\$/tonne CIF ARA. Pacific market prices held a little firmer, with growing demand from South East Asia, despite import restrictions by China to maintain higher prices on its domestic market. Policy measures have been used to keep domestic steam coal prices within a price band of RMB 500 to RMB 570 per tonne to favour Chinese coal producers while still being acceptable to power utilities and other coal users.

Lower coal prices might have brought some market relief, if gas prices were not also so very low. Occasionally in 2019, LNG prices were lower than coal prices on an energy basis, leading to coal-to-gas switching in many countries.

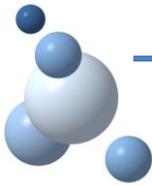
High-quality coking coal prices followed a similar trend to steam coal, with prices drifting down in 2019, although not as dramatically because the coking coal market is less competitive. Prices started the year at above 200 US\$/tonne FOB for Australian prime hard coking coal and ended the year at around 135 US\$/tonne. Demand was tempered by a slowdown in global economic growth and weak steel production outside of China. India – the world’s second largest steel producer – saw the growth in steel output slow right down, leading to flat coking coal imports of 53 million tonnes.

At the same time, new supply capacity came on stream in Australia and Russia. Mongolia, which at 31 million tonnes was the third largest coking coal exporter in 2019 after Australia (184 Mt) and the US (50 Mt), plans to develop Tavan Tolgoi – the world’s largest undeveloped coking coal mine. A 30 Mtpa railway from the mine to the Chinese border is currently under construction. At less than 40 US\$/tonne, Mongolia enjoys the lowest coking coal production costs.

Steam coal import prices at ARA ports in northwest Europe (NWE) & Qinhuangdao port in China, 2005-2020
Source: IHS McCloskey Coal Report

US\$/tonne





EURACOAL Communications Working Group meets in Berlin, 16 December 2019.

Freight Rates

Freight rates recovered somewhat in the first three quarters of 2019, but subsequently fell to extremely low levels, leading to some counter-intuitive outcomes (e.g. the API 2 coal price at Amsterdam port quoted *below* API 4 at Richards Bay coal terminal in South Africa). With a growing seaborne coal market, a cyclical increase should be anticipated from the lows of 3-6 US\$/tonne FOB from Murmansk and Puerto Bolivar to northwest European ports seen in Q1 2020.

The Baltic Dry Index (BDI) averaged 1 352 in 2019 – the same as in 2018. However, the index was anything but stable as it varied from a low of 595 to a high of 2 518 in early September, before closing the year at 1 090. The BDI is a weighted composite of Capesize (40%), Panamax (30%) and

Supramax (30%) average time-charter rates and is reported as a proxy indicator for the dry bulk shipping market.

The total combined fleet capacity of all dry bulk vessels stood at 879 million dead-weight tonnes (dwt) at the end of 2019, with Panamax and Capesize carriers accounting for the greatest share of this total, followed by Handymax and Handysize. The fleet has grown by almost 90% since 2010, outstripping shipping demand and leaving much overcapacity, especially in 2020 with the slump in dry bulk shipping due to the Covid-19 pandemic.

Carbon Prices

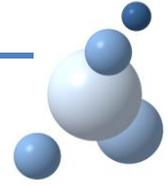
Allowance prices under the EU emissions trading system (ETS) continued to rise in 2019, following a revision of the ETS Directive which introduced a market stability reserve in January 2019. Prices peaked at 27 €/EUA towards the end of July 2019, having risen from around 20 €/EUA at the start of the year. The average price over the calendar year was 25 €/EUA. In Q1 2020, the EU carbon prices collapsed to 15 €/EUA, leading to calls for further interventions in this supposedly market-based system.

In the UK, the high carbon price floor and extremely low gas prices continued to leave coal uncompetitive in 2019, with negative clean-dark spreads. In contrast, Germany enjoyed lower carbon prices under the EU ETS which allowed coal spreads to be sometimes positive, although still not competitive against gas.

Baltic Dry Index (BDI) 2005-2020

Source: Baltic Exchange Information Services Ltd.





Coal versus Gas Competition

A number of factors have put downward pressure on liquefied natural gas (LNG) prices which reached a record low on the Asian market of 2.68 US\$/mmBtu in February 2020. Global LNG capacity has grown over the last two years, with new projects coming on stream in Australia, the US and Russia. At the same time, Asian demand growth has slowed, exacerbated by a warm winter in the northern hemisphere and the Covid-19 pandemic. In 2019, LNG trade totalled an estimated 348 million tonnes, an increase of 38 million tonnes or 12% compared with 2018. Supply capacity has grown faster than demand, leading to an oversupply that will likely persist in the short-term, to the disadvantage of coal.

Europe’s imports of LNG, including by Turkey, have been steadily increasing since October 2018, and reached a new monthly record of 400 mcm/day in December 2019, with new supplies coming from the US and Russia. US LNG imports have grown from near zero to take the largest share in just two years. Following a record 85 million tonnes in 2019, LNG imports are likely to rise to 100 million tonnes in 2020 – equivalent to 195 million tonnes of steam coal.

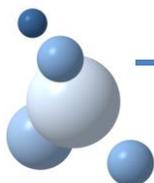


In December 2019, additional US sanctions meant the Swiss-owned Allseas “Solitaire” pipe-laying vessel stopped work on Nord Stream 2. The Russian-flagged “Akademik Cherskiy” is now expected to complete the missing 160-km section of the 1230-km pipeline.

With spot prices of around 12 €/MWh (4 US\$/mmBtu) in 2019, LNG is attractive for power generation.¹ Russia’s Gazprom, the largest pipeline exporter to Europe, after a record high in 2018, delivered almost 200 bcm in 2019 – equivalent to 290 million tonnes of steam coal. With gas from Norway, the overall imports of gas from all sources into the EU were an estimated 490 bcm in 2019 – the equivalent of 700 million tonnes of steam coal.

¹ On an energy basis, this is equivalent to a steam coal price of 105 US\$/t. With a gas plant efficiency of 50%, a coal plant efficiency of 35%, and a carbon price of 30 €/tCO₂, steam coal would have to be around 40 US\$/t to be competitive.





COMMITTEE ACTIVITIES: Technical Research Committee

Dr. Alicja Krzemień, Chairwoman

The Technical Research Committee is the longest-established of the EURACOAL committees. It provides networking opportunities for members interested in submitting proposals to research programmes supported by the European Union. In addition, it advocates for favourable European policies towards coal-related research.

The first activity of the Committee in 2019 was to host a EURACOAL workshop on 5-6 March in Katowice. Twenty-five participants brought thirty-seven new research ideas to the table, leading to eleven potential joint projects on: sustainable energy, advanced monitoring via the internet of things (IoT), gas hazards, geoengineering, post-mining hazards, water hazards, occupational health, coal combustion, mine waste processing and dust control, as well as projects linked to the coal regions in transition. Thanks to the support of Prof. Prusek, Director of the Central Mining Institute (GIG), the meeting was well-prepared by his staff and a great success. Three of the project proposals initiated during the workshop went on to win funding under the research programme of the EU Research Fund for Coal and Steel (RFCS) following a competitive call.

On 22 May 2019, members of the Committee presented a portfolio of “emblematic” projects to the European Commission – ones that could be financed from a part of the assets of the European Coal and Steel Community in liquidation (“ECSC i.L.” since 2002). The meeting was attended by the Head of Unit responsible for the Research Fund for Coal and Steel. The fund uses these assets to fund R&D projects which benefit the coal and steel industries – the source of the assets. The Ideas presented at the meeting were based on the contents of the published CoalTech2051 brochure “Changing the face of coal – an outline strategic research agenda for future coal related RTD in the European Union”.

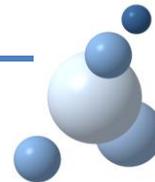
A day later, on 23 May 2019, the European Commission hosted a joint meeting of the Coal



EURACOAL President, Mr. Tomasz Rogala, and Ms. Signe Ratso, Deputy Director-General of DG Research and Innovation at the RFCS Steel and Coal seminar, Brussels, 28 March 2019.

Advisory Group (CAG) and the Steel Advisory Group (SAG). In preparation for that meeting, EURACOAL hosted a dinner for all participants. Background information was shared on a new European Parliament pilot project covering “Research on reduction of CO₂ emissions in steel production”. For more than two years, the steel community had been working with the European Commission on the possible financing of “big-ticket” projects and had come to the conclusion that it would be beneficial for the steel sector to access their share of the ECSC i.L. assets which total c.€1.6 billion of which 27.2% are dedicated to coal and 72.8% to steel.

The Commission’s resulting proposal to revise the legal basis of the RFCS would see annual calls for proposals with a total value of €40 million or more after 2020, funded by drawing down the ECSC i.L. assets which can no longer support the research programme from interest alone. The intention was to agree a revision of the RFCS before the end of 2019 so that changes could be implemented before 2021. A CAG-SAG orientation paper on the future of the RFCS and opening the ECSC i.L. assets was discussed. This paper was further shaped by members of the advisory groups in discussion with Commission representatives. The orientation paper explores the necessary procedures to change the RFCS legal basis.



The Technical Research Committee met again on 13 June 2019 in Dnipro, Ukraine at a side event of the 3rd International Coal Conference hosted by EURACOAL member DTEK. The topic dominating the Committee's discussions was the European Commission's proposal to open the ECSC i.L. assets and modify the RFCS legal basis.

On 2 December 2019, another meeting of the Committee took place in Brussels. The *RFCS Monitoring and Assessment Report 2011-2017*, prepared by a high-level panel of experts, was presented and discussed, as well as the final budget for the RFCS 2019 call and issues related to the RFCS legal basis. Members also explored the possible activities of the EURACOAL post-mining working group.

At the December meeting, members also discussed a disturbing new report prepared by the European Court of Auditors (Review No. 10/2019). It concludes that the ECSC i.L. assets are being wound-up according to plan, but that funding for coal and steel research is no longer financially sustainable. The report assesses the management of the ECSC i.L. assets and gives an opinion on the financing formula for the RFCS research programme which, the auditors believe, had reached its limits, given the now extended period of low interest rates. The European Court of Auditors states that its review presents facts and analysis, but is not an audit.

On 3 December 2019, the European Commission hosted an annual meeting of the Coal Advisory Group to take advice on current issues, including the research priorities for the RFCS 2020 call and amendments to the RFCS research programme objectives.

CoalTech2051 project

This RFCS Accompanying Measure on "European coal research in light of EU policy objectives to 2050 and future global trends in coal use" was active in 2019, with EURACOAL a project partner.

- A well-attended workshop was held on 7 March 2019 at GIG in Katowice. Using information gleaned from the many, high-quality presentations from researchers and engineers working on demonstration projects, the outline

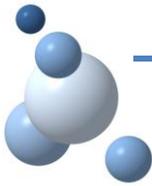
strategic research agenda in the "Changing the face of coal" brochure was substantially revised. The workshop was accompanied by a site visit to the new supercritical 910 MW unit at Tauron's Jaworzno III power plant just prior to its commissioning.

- A dedicated session on the CoalTech2051 project was included in the IEA Clean Coal Technologies Conference held in Houston on 3-7 June 2019 (CCT 2019), attended by a European Commission representative and EURACOAL First Vice President, Vladimír Budinský. This conference is held every two years and, with the good support of the US Department of Energy (DOE), CCT 2019 saw a record number of participants. The DOE invests \$400 million each year in coal technology research.

Two site visits followed the CCT 2019 conference. Petra Nova is a fully operational CO₂ capture and storage (CCS) installation at a coal-fired power plant where 1.5 Mtpa of capture CO₂ is used for enhanced oil recovery. Nearby, the NetPower project demonstrates a pilot 50 MW Allam cycle using CO₂ as the working fluid. Private investors are excited that the Allam cycle can deliver electric power and pure CO₂ from fossil gas combustion in oxygen using equipment with a very high-power density, so perhaps ten times smaller than conventional steam plant. With coal gasification, this technology could also be a more economic route for zero-emission, coal-fired power generation.



Visitors (*goście*) overlooking the new 910 MW coal-fired Jaworzno III power plant following a CoalTech2051 workshop in Katowice, 7 March 2019.



EURACOAL ACTIVITIES: serving the interests of the European coal industry

The European Association for Coal and Lignite – EURACOAL – is the umbrella organisation of the European coal industry. EURACOAL evolved in 2002 from the European Solid Fuels’ Association – CECISO – after the expiry of the Treaty establishing the European Coal and Steel Community.

EURACOAL has 23 members including national coal associations, importers associations, research institutes and individual companies. Members come from 12 countries: Bosnia-Herzegovina, the Czech Republic, Germany, Greece, Hungary, Poland, Romania, Serbia, Slovakia, Slovenia, Spain, and Ukraine.

EURACOAL’s mission is to highlight the importance of coal to security of energy supply in the EU, to energy price stability, to economic added value and to environmental protection. EURACOAL seeks to be an active communicator, with the aim of creating an appropriate framework within which the European coal industry and coal consumers can operate.

EURACOAL has three committees:

- Energy and Environment Policy Committee
- Market Committee
- Technical Research Committee

EURACOAL is officially represented in the European Commission RFCS Coal Advisory Group (DG Research & Innovation).

EURACOAL participates in the European Commission Social Dialogue (DG Employment, Social Affairs & Inclusion).

EURACOAL supports the *Coal Regions in Transition Platform*, an initiative of the European Commission led by DG Energy.

EURACOAL co-operates with Members of the European Parliament in the cross-party European Round Table on Coal and European Energy Forum.

EURACOAL organises meetings and workshops, such as the Energy Summit.

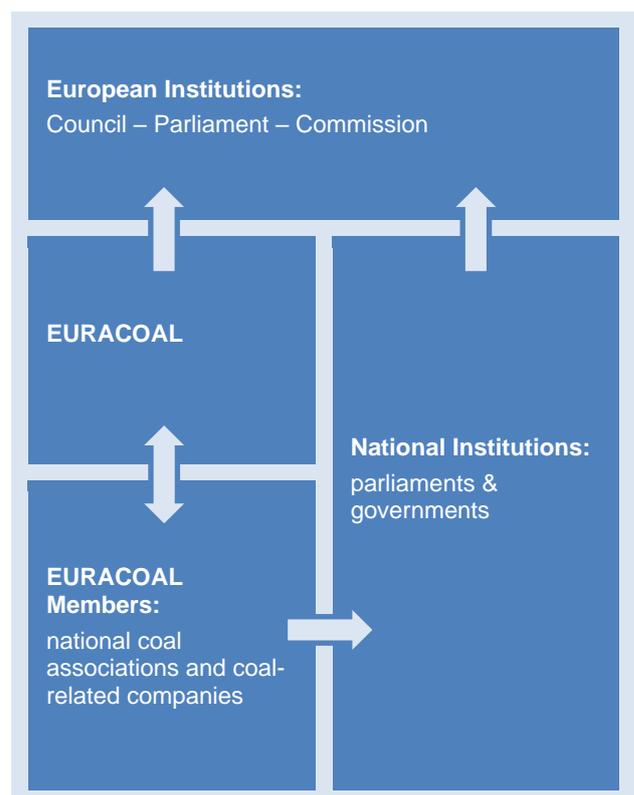
EURACOAL informs and works with many stakeholders, notably:

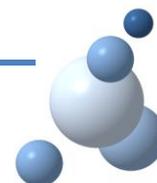
- European Commission (DG Competition, DG Energy, DG Research & Innovation and DG Employment, Social Affairs & Inclusion)
- European Parliament (ITRE, ENVI and REGI committees)
- European Economic & Social Committee (CCMI – Consultative Commission on Industrial Change)
- International Energy Agency
- World Coal Association

FINANCIAL REPORT FOR 2019

Total income (a):	426 952 €
membership fees:	369 700 €
office sub-let, RFCS grant & other:	57 252 €
Total operating costs & write-downs (b):	485 955 €
Net deficit (a – b):	-59 003 €

Accounts for 2019, prepared on the basis of Belgian accounting standards, were audited by RSM InterAudit. The income statement showed a net deficit of €59 003 for the year and total assets amounted to €444 248 at year end.





General Assembly

coal producers, importers, traders, coal-based power utilities, R&D institutes

Executive Committee

discussions, opinion forming, work programme, lobbying positions

President

Mr. Tomasz Rogala – PGG

First Vice President

Mr. Vladimír Budinský – ZSDNP

Senior Vice President

Dr. Wolfgang Cieslik – VDKi

Vice President

Dr. Lars Kulik – DEBRIV

National Delegations

23 members from 12 countries

Brussels Secretariat

Secretary-General: Mr. Brian Ricketts
Policy Manager: Mr. David Bonson-Hesener

Committees & Chairs

Energy and Environment Policy Committee

Dr. Thorsten Diercks – DEBRIV

Market Committee

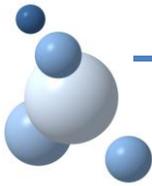
Prof. Dr. Franz-Josef Wodopia – VDKi

Technical Research Committee

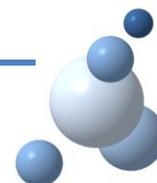
Dr. Alicja Krzemień – GIG

EXECUTIVE COMMITTEE

Members	Country	Affiliation	as at 1 June 2020
Mr. Tomasz ROGALA	Poland	President of EURACOAL and Chairman of the Board, PGG – Polska Grupa Górnicza S.A. (Polish Mining Group)	
Mr. Vladimír BUDINSKÝ	Czech Republic	First Vice President of EURACOAL and Foreign Affairs Advisor, Severoceske doly a.s.	
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Mr. Konstantinos ARAMPATZIS	Greece	Director – Lignite Generation Business Unit, PPC – Public Power Corporation S.A.	
Ing. Zdeněk BUČKO	Czech Republic	Specialist – Technical Department, Sokolovská uhelná pravni nastupce a.s.	
Mr. Munever ČERGIĆ	Bosnia-Herzegovina	Chief Executive, RMU “Banovići” d.d. Banovići	
Mr. Iurii CHEREDNYCHENKO	Ukraine	General Director, DTEK Dobropolyeugol	
Ms. Lacramioara DIACONU	Romania	Director for Strategy, Complexul Energetic Oltenia S.A. (Oltenia Energy Complex)	
Dr. Armin EICHHOLZ	Germany	Chairman of the Board, MIBRAG mbH	



Dr. Renata EISENVORTOVÁ	Czech Republic	European Affairs Manager, Sev.en Energy Group
Bánné dr. Boglárka GÁL	Hungary	President of Borsod-Abaúj-Zemplén County Government
Dipl.-Ing. Uwe GROSSER	Germany	Member of the Board – Director of Mining, LEAG – Lausitz Energie Bergbau AG & Lausitz Energie Kraftwerke AG
Mr. Milan JAKOVLJEVIĆ	Serbia	Head of Mining Efficiency Improvement and Environmental Protection, EPS – Elektroprivreda Srbije (Electric Power Industry of Serbia)
Ing. Rastislav JANUŠČÁK	Slovak Republic	Director of Strategy and External Affairs Department, HBP – Hornonitrianske bane Prievidza, a.s.
Dr. Nikolaos KOUKOUZAS	Greece	Director of Research, CERTH/CPERI – Chemical Process & Energy Resources Institute
Dr. Roger MIESEN	Germany	Chief Executive Officer & Chief Operating Officer, RWE Generation SE
Mr. Janusz OLSZOWSKI	Poland	President, GIPH – Górnicza Izba Przemysłowo-Handlowa (Mining Chamber of Industry and Commerce)
Mr. Rafał PATYK	Poland	Director of Investor Relations, PGG – Polska Grupa Górnicza S.A. (Polish Mining Group)
Prof. Stanisław PRUSEK	Poland	Director, GIG – Główny Instytut Górnictwa (Central Mining Institute)
Dr. Janez ROŠER	Slovenia	General Director, Premogovnik Velenje, d.d. (Coal Mine Velenje)
Dr. Christos ROUMPOS	Greece	Head of Mining Engineering Unit, PPC – Public Power Corporation S.A.
Mr. Ildar SALEEV	Ukraine	Chief Executive Officer, PRJSC Donetsksteel
Mr. Aleksandr SELISCHEV	Ukraine	Head of Strategic Planning & Analysis Department, DTEK
Ing. Radim TABÁŠEK	Czech Republic	Executive Director, OKD, a.s.
Dipl.-Ökonom Dr. Kai VAN DE LOO	Germany	Head of Economic Affairs, GVSt – Gesamtverband Steinkohle e.V. (German Coal Association)
Mr. Artur WASIL	Poland	President of the Board, Lubelski Węgiel „Bogdanka” S.A.
Mr. Michael WEBERINK	Germany	Managing Director, GVSt – Gesamtverband Steinkohle e.V. (German Coal Association)
Mr. Sławomir WOCHNA	Poland	President, PPWB – Porozumienie Producentów Węgla Brunatnego (Confederation of Polish Lignite Producers) and Director – Kopalnia Węgla Brunatnego Turów, PGE GiEK S.A.
Prof. Dr. Franz-Josef WODOPIA	Germany	Managing Director, VDKi – Verein der Kohlenimporteure e.V. (Coal Importers' Association)



EURACOAL MEMBERS & OBSERVERS: an international partnership

Country	Member Association / Company	as at 1 June 2020
Bosnia-Herzegovina	RMU "Banovići" d.d. Banovići	
Bulgaria	MMI – Mini Maritsa Iztok EAD	
Czech Republic	ZSDNP – Zaměstnavatelský svaz důlního a naftového průmyslu (Employers' Association of Mining and Oil Industries)	
Germany	DEBRIV – Deutscher Braunkohlen-Industrie-Verein e.V. (German Association of Lignite Producers) DMT GmbH & Co KG GVSt – Gesamtverband Steinkohle e.V. (German Coal Association) VDKi – Verein der Kohlenimporteure e.V. (Coal Importers' Association)	
Greece	PPC – Public Power Corporation S.A. CERTH/CPERI – Chemical Process and Energy Resources Institute	
Hungary	Borsod-Abaúj-Zemplén County Government	
Poland	GIPH – Górnictwa Izba Przemysłowo-Handlowa (Mining Chamber of Industry and Commerce) PPWB – Porozumienie Producentów Węgla Brunatnego (Confederation of Polish Lignite Producers) PGG – Polska Grupa Górnictwa S.A. (Polish Mining Group) Lubelski Węgiel „Bogdanka” S.A. GIG – Główny Instytut Górnictwa (Central Mining Institute) KOMAG Institute of Mining Technology	
Romania	PATROMIN – Asociația Patronală Minieră din Romania (Mining Employers Association of Romania)	
Serbia	EPS – Elektroprivreda Srbije (Electric Power Industry of Serbia)	
Slovak Republic	HBP – Hornonitrianske bane Prievidza a.s.	
Slovenia	Premogovnik Velenje d.d.	
Spain	Geocontrol S.A. SUBTERRA Ingeniería S.L.	
Turkey	TKİ – Turkish Coal Enterprises	
Ukraine	DTEK PRJSC Donetsksteel	

June 2020

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