



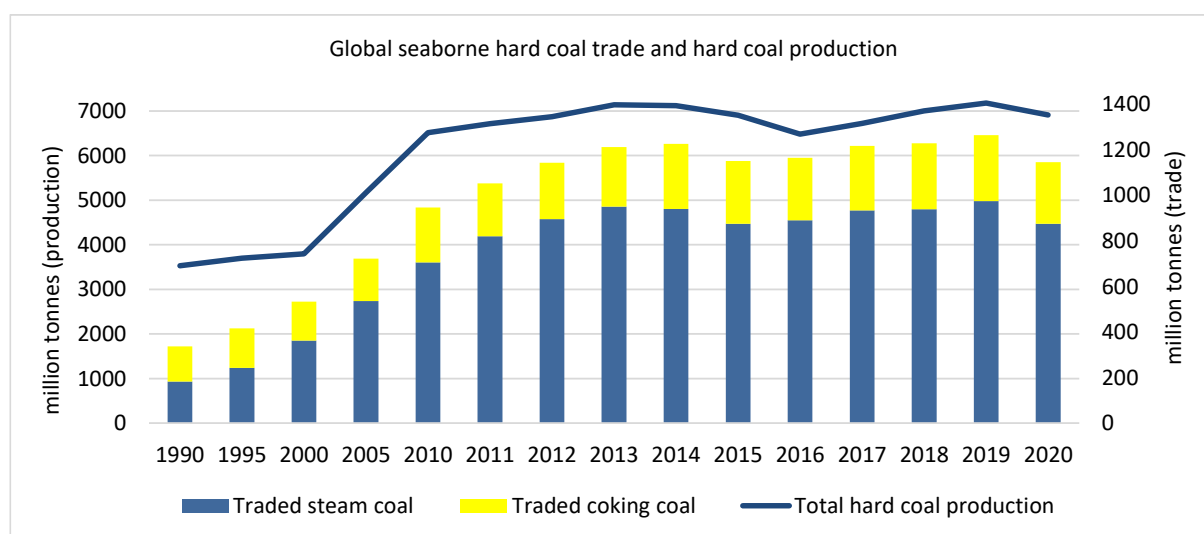
## EURACOAL Market Report 2021 no.1

May 2021

### WORLD COAL MARKET DEVELOPMENTS

#### Global Coal Trade

Global hard coal production fell 4% to an estimated 6.9 Gt in 2020 as the SAR-CoV-2 virus spread around the world leading to a pandemic and lockdowns that hit demand for fossil fuels and electricity, although with very different regional impacts. The Western world saw a sharp contraction of coal demand, notably in the EU where coal supply was 22% down on 2019 – an even greater shock than the Great Depression. In contrast, Asian coal demand remained buoyant in 2020. Coal production in China, at 3 690 Mt (-0.1%) was barely affected by the pandemic which began in Wuhan; demand recovered quickly in Q2 2020 from the disruptions seen earlier in the year. The International Energy Agency forecasts a strong rebound in 2021 with global coal demand rising 4.5% to above 2019 levels. Such a recovery trend has been visible in the EU during Q1 2021.



Sources: IEA; IHS Markit

Already the second largest coal producer in the world, with 743 Mt in 2020 (-5.1%), India aims to boost coal mining by private companies, after the first drop in coal production since 1998. The state-owned Coal India Limited (CIL) has been instructed to replace 100 Mt of imports with domestic production by 2021 which may include the transfer of some activities to private companies.

After record coal and lignite production of 616 Mt in 2019, depressing coal prices, Indonesian output fell back to 529 Mt in 2020 (-14.1%), but still above the government's 480 Mt target of which 25% is earmarked for the domestic market. The Indonesian Coal Mining Association (APBI-ICMA) lobbied to have this obligation removed as weak domestic demand made it difficult to fulfil. In June 2020, a

relaxation of environmental requirements for mining allowed the Ministry of Energy and Mineral Resources to set a production target of 609 Mt for 2021, but later lowered this target to 550 Mt.

The largest falls in coal production in 2020 were seen in the US (-24.4%) and the EU (-19.3%). US production fell a massive 156 Mt as coal-fired power generation contracted sharply and coal exports declined to 62.7 Mt, a 26.3% decrease from the 85.1 Mt in 2019, of which 4.2 Mt went to Canada. Steam coal exports, which accounted for 40% of the total, declined by more than one-third, while coking coal had a smaller, but still significant, decrease of 20%. The COVID-19 pandemic not only slowed global demand for coal, but forced some US coal mines to idle for extended periods to slow the spread of the virus.

In Australia, production is expected to recover in 2021 after dropping 29 Mt to 434 Mt in 2020 (-6.3%). The coal sector fared well in H1 2020, but Chinese import quotas and customs clearance difficulties forced exporters to look elsewhere in H2 2020, notably India. The import restrictions imposed by China in H2 2020 protected its domestic coal industry from more competitive imported coal.

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 decreased by 120 Mt or 9.5% to 1 147 Mt in 2020, as shown in Tables 2 and 3, with the slump in EU import demand accounting for 40 Mt or one third of this fall. Australia dominated this seaborne export trade with 371 Mt (-6.5%) of steam and coking coal, followed by Indonesia with 342 Mt (-8.9%) of only steam coal. Adding Indonesia's lignite exports of 65.3 Mt (-22.4%) positions this country as the world's top coal exporter.

Across the seaborne steam coal market, the pain of falling demand was spread fairly evenly, with reduced exports from Australia 198.7 Mt (-6.2%), Russia (169.1 Mt, -5.6%) and South Africa (74.8 Mt, -4.6%). Disruptions to coal production in Colombia meant its coal exports of 52.1 Mt were well below 2019 levels (-24.3 Mt or -31.8%). Forecasts to 2026 by the Australian Department of Industry, Science, Energy and Resources, show some growth, perhaps +6% by 2023, as COVID-19 containment measures are lifted and steam coal import demand rebounds in Asia, but not elsewhere.

On the coking coal market, Australian exporters dominate supplies to the four large Asian importers (China, India, Japan and South Korea) followed by the EU. China alone uses 59% of global coking coal production, importing 72.6 Mt in 2020 (-2.8% compared with 2019). Coking coal import-export forecasts for the next five years show strong growth in Indian imports from 54.0 Mt in 2020 (-6.5%), while China and the EU decline for very different reasons. India plans to increase the country's crude steel output from 142 Mt in 2020 to 300 Mt by 2030. Once the world's largest coking coal importer, Japan imported 39.7 Mt in 2020 (-7.8%) and is forecast to remain close to this level in the coming years.

Australian coking coal exports are expected to recover to full capacity in 2023. Nevertheless, China's informal restrictions on Australian coal persist in 2021, so patterns of coking coal trade will shift. The US is likely to fall back from second to fifth-largest exporter of coking coal in the next few years, overtaken by Canada, Mongolia and Russia which increased exports to 29.1 Mt from 26.5 Mt (+9.7%) in 2020. US coking coal exports in 2020, including to Canada, were 38.2 Mt (-20.4%), mainly supplying Brazil and Europe where steel production cuts hit coal demand.

"Green" initiatives and a transition to cleaner energy sources in developed countries increasingly damaged the prospects for coal. The newly elected US President, Joe Biden, returned his country to the UNFCCC Paris Agreement of 2015. EU member states agreed to cut GHG emission by 55% compared with 1990 levels by 2030. However, the cold winter of 2020-2021, notably in Texas, again raises the issue of how to secure reliable energy supplies during the politically desired transition.

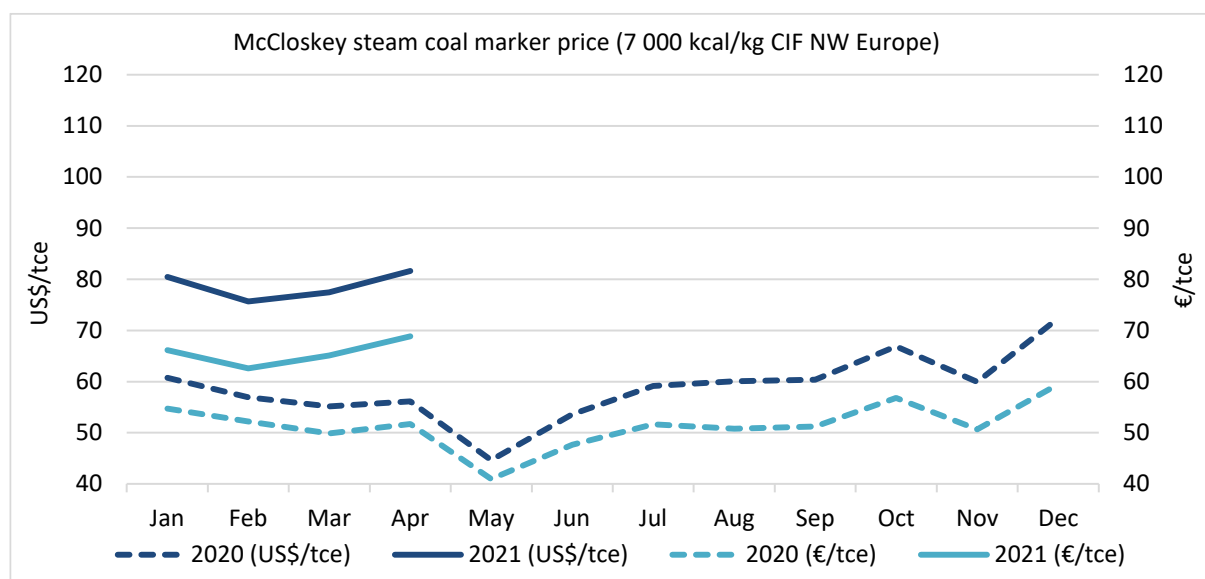
Moving into 2021, there has been a significant rebound in coal demand, including in the EU where German lignite production increased by 24.6% in Q1 compared with the low of Q1 2020. The US Energy Information Administration (EIA) forecasts US coal production rising over the next two years by 9% in 2021 and by 1% in 2022, reflecting higher-than-expected coal demand due to high fossil gas prices.

## Coal Prices

Steam coal prices remained low for almost all of 2020 due to an economic contraction caused by the COVID-19 pandemic. In Q2, regional benchmarks fell to lows not seen in many years: below 40 US\$/tonne in Europe and below 50 US\$/tonne in Asia. Yet by year end, prices had recovered to close to 70 US\$/t in Europe and 90 US\$/t in Asia as fossil gas prices almost quadrupled and coal supplies from Colombia were disrupted due to a long strike at the Cerrejón coal mine. Price dampening was expected as China exhausted its coal import quotas and a second wave of COVID-19 meant more lockdowns in Europe, but low temperatures and greater imports of non-Australian steam coal into China had the opposite effect. The ongoing tensions between China and Australia, including the unofficial restrictions on coal imports, and early signs of inflation make for an uncertain coal market outlook.

The last quarter of 2020 saw a volatile year end for coking coal, with prices rising sharply to reach 140 US\$/tonne before falling to 98 US\$/tonne in November. Whereas the early 2020 fall in prices was driven by a slowdown in the steel industry due to the COVID-19 pandemic, the November price decline came when the economy was recovering, reflecting the uncertainties in Australia-to-China coal trade. Nevertheless, Pembroke Resources moved ahead with the 15 Mtpa Olive Downs coking coal project in Queensland with a production life of eighty years. Domestic coking coal prices in China moved higher and Chinese companies switched to supplies of coking coal from Canada, Mongolia, Russia and the US.

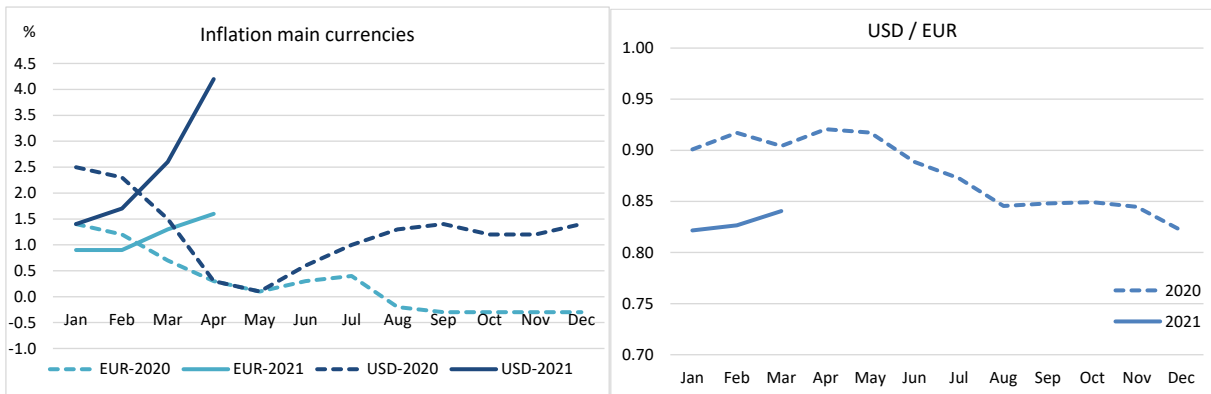
Looking ahead, the expectation is for a demand recovery, coupled with supply shortages which should drive coal prices higher. Fitch Ratings revised its forecasts upwards to 72 US\$/tonne for 2021 (FOB Newcastle 6 000 kcal/kg), falling to 63 US\$/tonne in the long term. For Australian hard coking coal, Fitch Ratings forecasts 140 US\$/tonne in 2023 and beyond. IHS McCloskey reports forward curves at the end of April for API#2 (NAR CIF ARA 6 000 kcal/kg – the relevant price for buyers in the EU) above 80 US\$/tonne for 2021, falling back in later years to 75 US\$/tonne.



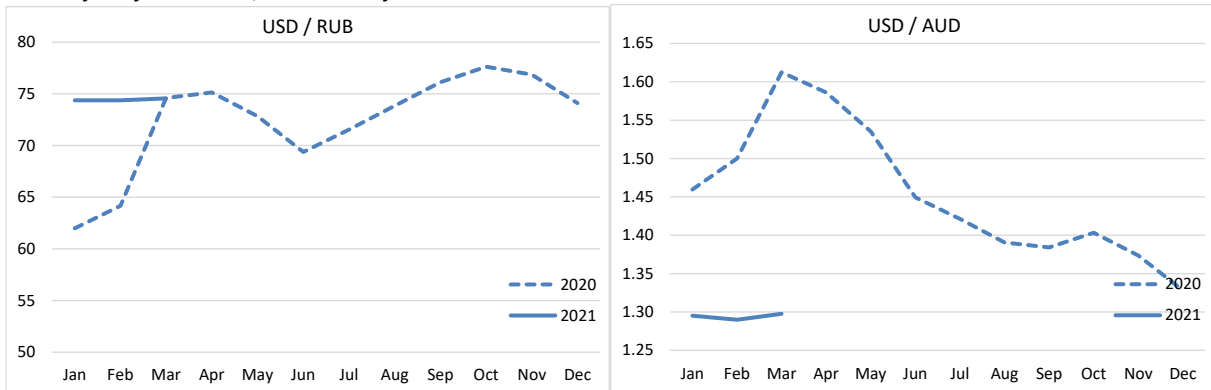
Source: IHS Markit (McCloskey first week quotation of the month, basis 6 000 kcal/kg converted to 7 000 kcal/kg)

After a 6.0% collapse in H1 2020 compared with H1 2019, global crude steel output recovered in H2 such that 2020 output fell by only 0.9% to 1 864.0 Mt, according to the World Steel Association. Steel output fell in the EU by 11.9% to 138.8 Mt, including UK production, this being just 7.4% of the global total (Table 4).

The OPEC Reference Basket (ORB) oil price was around 70 US\$/bbl at the start of 2020 and collapsed more dramatically than other commodities as the COVID-19 crisis hit transport fuel demand. This reference oil price hit an all-time low of 12 US\$/bbl towards the end of April (Table 1). ORB subsequently recovered to above 40 US\$/bbl in Q3 2020, and ended the year at 50 US\$/bbl.



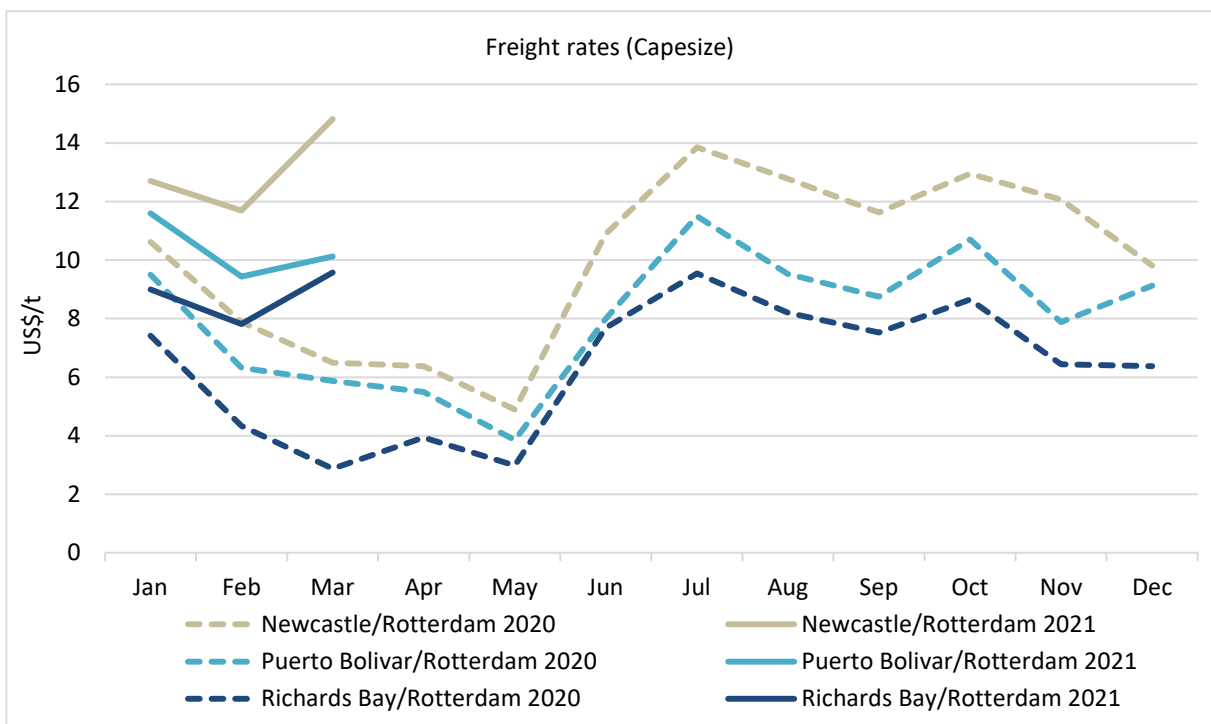
Sources for inflation: ECB; US Bureau of Labor Statistics



Sources for exchange rates: ECB, BoE and OECD

## Freight Rates

Freight rates, reflecting the general macro-economic situation, collapsed in Q1 2020 to below US\$ 3 for the formerly important Richards Bay to Rotterdam route as the pandemic struck. Rates rebounded sharply in expectation of greater economic activity – as predicted in the previous EURACOAL market report – and are anticipated to rise further. At the end of April, the Baltic Dry Index, which tracks the cost of moving bulk commodities by sea, reached a ten-year high.



Source: Clarksons

## EU COAL MARKET<sup>1</sup>

	2020 (1-12) Mt	2019 (1-12) Mt
Hard coal imports	93.3	133.1
Hard coal production	56.5	65.1
Lignite production	244.3	307.5

Hard coal production in the European Union fell to 56.5 Mt in 2020 (-8.5 Mt or -13.1% compared with 2019), this being a much larger relative production fall than seen at the global level – see Table 5. Coal imports, including into the UK, were heavily depressed at 93.3 Mt, a massive 29.9% lower than in 2019 – see Table 6. Steam coal demand suffered as less coal was used for power generation due to the COVID-19 crisis, low fossil gas prices and high EU ETS allowance prices. For the same reasons, lignite production fell by 20.6% to 244.3 Mt in 2020 compared with 2019.

### Carbon Prices

Allowance prices under the EU emissions trading system (ETS) began 2020 at 25 €/tCO<sub>2</sub> and fell, in line with reduced economic activity, to end Q1 below 20 €/tCO<sub>2</sub>. Prices then began an upward trend, breaking through the 30 €/tCO<sub>2</sub> ceiling to reach historic highs, ending 2020 at 33 €/tCO<sub>2</sub>. This trend has continued in Q1 2021 as allowance prices rose above 40 €/tCO<sub>2</sub>. Remarkably, prices hit 50 €/tCO<sub>2</sub> at the beginning of May 2021: equivalent to a 200% royalty tax on coal production in the EU. The average tax rate on cigarettes in the EU is 80%.<sup>2</sup>

A driver for these price developments can be found in the EU reference scenario published by the European Commission in *Energy, transport and GHG emissions trends to 2050* (July 2016). The ETS carbon price projection under this scenario shows a steady rise to 90 €/tCO<sub>2</sub> in 2050 (2016 prices – see *EURACOAL Market Report 2020 no.2*). This was used by many member states when preparing their National Energy and Climate Plans, as recommended by the Commission in its regulation on the governance of the “Energy Union”. Since then, in September 2020, the European Commission proposed a 55% GHG reduction target for 2030 which was agreed with member states and the European Parliament in April 2021, thus reinforcing the political driver for higher allowance prices.

Early in 2020, some called for a market intervention as EU emission allowance prices fell. Now, with prices that make using coal uneconomic, there are calls to ban speculators from the market. However, the introduction of the market stability reserve (MSR) in January 2019 complicates the picture. While some major players live “hand-to-mouth”, buying allowances from the market only when they need to surrender them to cover their previous year’s emissions (as required under the EU ETS Directive), some others have stated they are fully hedged out to 2030. Hedging operations add to the “total number of allowances in circulation” (TNAC), even though they are held to cover *future* emissions, not the *past* emissions used in MSR calculations. As such, the aggregate effect of long-term hedging forces the MSR to repeatedly withdraw allowances from a market that always appears to be in surplus. This means too few allowances enter the market via auctions to meet current demand from those who wish to cover their previous year’s emissions. Prices rise and eventually destroy demand, unless those with hedging positions sell and return to the market the allowance supply assumed in MSR calculations. The EU ETS plus MSR is an unstable system because its legal basis did not foresee the impact of long-term hedging positions beyond one year which, in aggregate, mean the market always appears to have “surplus” allowances. It is legitimate hedging, not speculation, that is now determining the fate of coal power plant operators in poorer member states who, despite their lower purchasing power, must pay the same high carbon price.

<sup>1</sup> All European coal production and trade data come from EURACOAL members or government sources.

<sup>2</sup> “[Taxes in Europe](#)” online database, *Excise Duty Tables Part III – Manufactured Tobacco*, European Commission Directorate-General Taxation and Customs Union, Brussels, 1 March 2021.

## Hard Coal

Producer	2020 (1-12) Mt	2019 (1-12) Mt
Czechia	2.1	3.4
Germany	0.0	0.0
Poland	54.4	61.6
Spain	0.0	0.0
<b>Total</b>	<b>56.5</b>	<b>65.1</b>

### Czech Republic

Hard coal production fell by 38% to 2.1 Mt in 2020 of which 1.0 Mt were coking coal. Steam coal production has fallen steeply since 2012 and in 2020 very little was used for power generation (0.9 Mt). Coking coal production has also fallen to a very low level, despite demand from the steel industry. OKD, the only hard coal producer in the Czech Republic, closed two of its three mines at the end of February 2021 (Darkov and ČSA). The remaining OKD mine (ČSM) is expected to be closed in 2022.

Hard coal imports fell 5.2% compared with 2019 to 3.3 Mt of which 1.8 Mt were coking coal, coming from Poland, the US and Canada. Hard coal exports fell 46% to less than one million tonnes.

Electricity generation decreased by an estimated 18% in the case of hard coal, and by 17% in the case of brown coal. On the other hand, the shares of gas and hydro in the Czech electricity mix increased, each by 10%.

In August 2020, Sokolovská uhelná (SUAS) decommissioned its IGCC syngas plant, mainly due to high ETS allowance prices. Meanwhile, in December 2020, Sev.en Energy acquired the Počerady brown coal-fired power station from ČEZ.

### Germany

All hard coal mining in Germany ceased in December 2018 and activities now focus on eternal post-mining tasks. Reflecting the changing roles of its members, the trade association GVSt (Gesamtverband Steinkohle e.V. – German Hard Coal Association) evolved to become BSN (Branchenverband Steinkohle und Nachbergbau e.V. – Association for Hard Coal and Post-Mining). At RAG, the company plans to complete the “shut-down phase” by the end of 2021. It will then manage post-mining tasks and inherited liabilities such as pensions, securing shafts, repairing subsidence damage and water management, as well as pursuing land redevelopment projects via RAG Montan Immobilien GmbH.

### The Netherlands

Electric power generation in the Netherlands grew by 1.3 TWh to 119 TWh (+1.1%) in 2020 compared with 2019 – its highest ever level and mostly from fossil gas with 70.8 TWh or a 59% share. The share of RES grew by more than 40% to 31 TWh, a share of 26% with half of this from wind turbines and more expected. Consumption dropped 2% due to the pandemic, but the Netherlands became a net power exporter for the first time, with 2.7 TWh, mainly due to changes in the flows of power to Germany as gas-fired generation became more competitive, but also due to nuclear outages in Belgium.

On coal, imports declined from 10.3 Mt to 6.0 Mt, linked to a stock drawdown. Steam coal imports fell dramatically, by 62%, while coking coal imports fell from 4.3 Mt to 3.7 Mt. Power generation from coal declined by one half or 9.7 TWh due to higher coal and carbon prices as well as technical problems at the 800 MW Maasvlakte power plant near Rotterdam owned by Riverstone Holdings. At

the 1 560 MW Eemshaven plant, RWE might use more biomass to displace coal, a trend seen elsewhere in the Netherlands.

## Poland

In Poland, Europe's largest hard coal producer, steam coal output fell 7.4 Mt in 2020 to 42.1 Mt (-14.9% compared with 2019) while coking coal output was relatively stable, rising slightly to 12.3 Mt (+1.7%). Overall, hard coal production totalled 54.4 Mt (-11.7%).

Hard coal exports from Poland rose to 4.4 Mt (+19%) of which 3.4 Mt were coking coal, with the remainder steam coal. The closure of coal mines in the Czech Republic created a higher demand for Polish coking coal.

Imports of hard coal into Poland decreased from 16.7 Mt in 2019 to 12.8 Mt in 2020 (-23%), with low-sulphur steam coal accounting for 11.0 Mt (-17%) and coking coal 1.8 Mt (-47%). Russia dominated with 9.4 Mt or a 73% share of imports, followed by Australia, Colombia and Kazakhstan, each with around one million tonnes, and small volumes from the US, Mozambique and the Czech Republic.

Electricity generation from hard coal fell by 8.5% in 2020 to 70.4 TWh, while overall electricity demand fell by 2.0% in 2020 compared with 2019. Imports of electricity grew significantly, by 24.9% to 13.3 TWh, to meet a total demand of 171.0 TWh – Poland became a net importer in 2014 and imports have grown steadily since, while exports have declined. Germany (11.1 TWh), Sweden (3.8 TWh) and Ukraine (1.4 TWh) only exported electricity to Poland in 2020, *i.e.* these countries did not import any electricity from Poland, whereas Poland exported to the Czech Republic (2.0 TWh net) and Slovakia (3.1 TWh). In addition, there was a net electricity import from Lithuania of 1.7 TWh.

Output from lignite-fired power plants also fell, by 8.3% to 38.3 TWh, meaning that coal and lignite together accounted for a 69% share of total generation in 2020, down from 72% in 2019. Renewables and gas-fired generation enjoyed growth.

Current plans foresee the closure of the last hard coal mine by 2049. Negotiations are ongoing with trade unions who initially refused a government proposal for restructuring the coal sector, but have subsequently agreed certain conditions concerning early retirements and redundancies, as well as regional investment.

## United Kingdom

In the UK, host to UNFCCC COP26 in November 2021, coal hit the headlines with West Cumbria Mining's proposal to open a new coking coal mine financed by an Australian company. The scheme has been permitted at the local level, but now depends on the outcome of an official public inquiry demanded by central government – a long and costly process.

Power generation accounted for an historically small, 2.3 Mt or 33% share of the 7.1 Mt market for coal in the UK in 2020. Almost all generation from coal was in the winter months. To draw down coal stocks in preparation for closure, some plants were run at a loss. In 2013, 50 Mt of coal was used for electricity generation in the UK, this use fell in 2020 to just 3 Mt reflecting the impact of carbon pricing.

As the UK has almost completely phased out coal for power generation, the attention of UK policymakers has moved on to other topics, including a new white paper on energy which argues for offshore wind, but also CCS, albeit only for gas projects. This policy paper brought forward the final phase-out date for coal, from 2025 to 2024, driven entirely by taxation, *i.e.* carbon pricing, not regulation.

Given the small scale of mining and coal use in the UK, the trade association CoallmP (Association of UK Coal Importers and Producers ) closed at the end of March 2021.

## Lignite

Producer	2020 (1-12) Mt	2019 (1-12) Mt
Bulgaria	22.3	28.0
Czechia	29.5	37.5
Germany	107.4	131.3
Greece	13.9	27.3
Hungary	6.1	6.8
Poland	46.0	50.3
Romania	15.0	21.7
Slovakia	1.0	1.5
Slovenia	3.2	3.1
<b>Total</b>	<b>244.3</b>	<b>307.5</b>

### Bulgaria

Lignite production in Bulgaria fell 20.4% in 2020, compared with 2019, to 22.3 Mt. Mini Maritsa Iztok EAD (MMI), a subsidiary of the state-owned Bulgarian Energy Holdings EAD, is by far the country's largest lignite producer. The company's coal mines in south-eastern Bulgaria sell their output mainly to three nearby thermal power plants: one owned by ContourGlobal, one by AES and the state-owned TPP Maritsa East 2. These and other coal power plants generate around 45% of Bulgaria's electricity. According to accounts filed by TPP Maritsa East 2 EAD, more than half the power plant's operating costs cover the purchase of EU ETS allowance certificates, the cost of these being more than the combined costs of fuel and labour. As such, the company is heavily loss making.

### Czech Republic

Brown coal production fell 21.3% to 29.5 Mt in 2020, of which 23.0 Mt were used for power generation. Overall power generation from all sources fell by 6% to 81.4 TWh on account of the COVID-19 pandemic, with coal and lignite together taking a 38% share. Fossil gas-fired generation grew 19% in 2020 compared with 2019 while RES were little changed.

In December 2020, the Czech "Coal Commission" recommended a phase-out of coal by 2038. The phase-out plan entails requirements on energy security, competitiveness and mitigation of social impacts, with reviews every five years. The Commission's recommendations are being evaluated by the state administration, regions, trade unions, industry associations and NGOs who have been critical of the proposed end date, demanding 2030. A compromise is likely.

### Germany

Total energy consumption in Germany was 402.1 Mtce in 2020 (-8% compared with 2019), over 80% from conventional sources and almost 30% from indigenous sources, predominantly RES. Compared with 2006 when energy consumption peaked, Germany's consumption has fallen by 20%, according to AGEBA statistics, with an accompanying 9.6% drop in CO<sub>2</sub> emissions. The pandemic reduced power demand, especially during the period from April to July 2020 when it fell by 8.5% compared with the 2016-2019 five-year average for the same four-month period, but lignite power demand was also affected by:

- a weather-related increase in electricity production from wind and solar PV plants;
- the transfer of further lignite power plant units to the safety standby reserve;
- unplanned power plant outages; and



- shifts in the competitive situation on the national and European electricity markets caused by low natural gas prices and high EU ETS allowance prices.

Lignite production in Germany fell in 2020 to 107.4 Mt (-18.2%) – continuing a trend of decline that began in 2018 after a relatively stable period since 2000. In the Rhineland area (-21%), Lusatia (-17%) and Central Germany (-12%) extracted coal volumes fell significant below the levels of 2019. Consumption of both lignite and hard coal fell by 16.6% and 17.8% respectively in 2020, with a dramatic fall of 49% in demand for lignite for fluidised-beds.

Lignite accounted for 16.1% of total power generation and, together with hard coal, 23.6% of total generation was from coal in 2020. Due to the scheduled closure of Philippsburg nuclear power plant at the end of 2019, nuclear power declined 14.2% in 2020. Electricity imports grew and exports fell, yielding a net 21 TWh export, which magnified the drop in domestic power demand. In Germany, electricity production from lignite was critical in the autumn and winter of 2020. Since September 2020, lignite demand has returned to pre-pandemic levels or above, with a strong recovery in the first three months of 2021, although production has not returned to 2019 levels. So long as no competitive storage solution exists, lignite will remain critical during these seasons.

A closure plan for lignite blocks extends to 2038, with seven more blocks scheduled to close by the end of 2022 in the Rhenish area, bringing the total closures to almost 3 GW over the 2020-21 period. This plan reflects a compromise by society at large with a public law contract in place to compensate coal companies. The industry hopes national policy makers will respect the plan, especially after the upcoming Federal election in autumn 2021. The plan must be approved by the European Commission.

At the end of 2020, the number of employees working in the German lignite industry totalled 19 483.

## Greece

In Greece, GDP fell sharply in Q2 2020, as in other countries, with some recovery in Q3 and Q4, but not back to 2019 levels. Unemployment, although high at 16%, has been on a downward trend since 2013.

PPC lignite production almost halved in 2020, falling by 49% to 13.1 Mt, and is forecast to fall to 12.2 Mt in 2021. Small producers added 0.8 Mt to this figure and are at risk as they face serious viability problems. Power generation from lignite was 5.7 TWh, accounting for just 11.4% of total generation on the interconnected system (excluding many islands), compared with 27.4 TWh or 51.1% back in 2010, having been gradually replaced by fossil gas-fired generation with a 36% share in 2020 and RES with 28%. The higher prices of EU ETS allowances and environmental restrictions on older lignite units, as well as other factors including electricity imports, have driven the decline in lignite use. As a result, employment at PPC lignite mines and power plants fell 19% in 2020 to 4 357 people and the company has introduced a voluntary retirement scheme. In 2020 Greece became dependent on imported energy for the greater part of its electricity supply as power production from indigenous energy sources fell below 50% for the first time.

PPC operates ten lignite-fired units with an installed capacity of 3 137 MW. Most operate at a low capacity or are idled. The two lignite-fired units Amyntaio 1 and 2, with an installed capacity of 600 MW, and nearby mine were closed in June 2020. Two further units, Kardias 3 & 4, with an installed capacity of 612 MW are scheduled to close at the end of April 2021. PPC plans to decommission all operating units by 2023 and run the new 660 MW lignite-fired Ptolemais V until mid-decade, so two years earlier than the previously announced 2028, after which it may be switched to fossil gas. Mine reclamation is now a major task. PPC, via the Greek government, has made a compensation request that is being considered by the European Commission for this three-year (2021-2023) phase-out of existing lignite plants. An intensive restructuring plan is in progress, with a decisive shift towards renewables and optimal land use, including the installation of solar PV at former mine sites.

## Hungary

Estimates for 2020 show that indigenous power production in Hungary met three quarters of total supply including imports, with lignite accounting for 8.7%. RES (9.8% share) increased compared with 2019, while nuclear declined, but remained dominant with a 35.6% share of supply.

Lignite production in 2020 was 10.5% less than in 2019, at 6.1 Mt, and is mainly used at the Mátra power plant in northeast Hungary which remains important for security of electricity supply in the region, at least until 2025 when grid improvements are expected to be completed. Industry restructuring will then mean replacing the lignite units at Mátra with advanced power generation technologies: a solar farm on the former mine site and gas-fired plus waste-fired units at the Mátra power plant site itself will ensure supply security from 2026. The power plant is now owned by MVM Zrt – a 100% state-owned enterprise.

## Poland

Three Polish lignite mining areas are in operation: Konin (c.5.8 Mtpa), Bełchatów (c.38 Mtpa) and Turów (c.5 Mtpa), plus the small Sieniawa mine.

Lignite production in Poland has declined steadily since 2017. In 2020, total production was 46.0 Mt, a drop of 8.6% compared with 2019. The smallest lignite mine, Adamów, was closed in 2020. Lignite accounts for around one quarter of Polish electricity production, having declined 8.3% compared with 2019.

The Ministry of Climate has submitted to the government a draft Polish energy policy to 2040, comprising three main elements: a just transition, the rollout of a parallel zero-emission energy system by 2040, and good air quality. Overall, in 2030, the share of coal in the Polish power mix should be 37-56%, depending on ETS allowances prices. This would constitute a significant reduction from the current 70%. In 2040, the share is expected to be as low as 11-28%. This would be compensated for by a massive rollout of offshore wind and the construction of Poland's first nuclear power units which are expected to be operational from 2033. Overall, this policy aims at a 30% reduction of GHG emissions by 2030, compared with 1990.

The government aims at the “optimal use of own energy sources”, so R&D activities are to be focused on “searching for innovations aimed at reducing the environmental burden resulting from coal mining and new solutions contributing to low-emission, effective and flexible use of the raw material (e.g. gasification, liquid fuels)”. The future exploitation of untapped lignite reserves at Żłoczew and Ościsłowo will depend on investors' decisions which respectively depend on ETS allowance prices, environmental regulations and the commercial development of new technologies. Under a baseline scenario, only the already opened deposits at Ościsłowo would be exploited through to 2030, with no new mines. New, coal-sector restructuring plans will see coal-fired power plants separated from Poland's major utility companies.

## Romania

The general economic situation in Romania included a GDP drop of 4.6% in 2020 and a 1.2% point increase in the unemployment rate. The COVID-19 crisis hit the energy sector with overall power production down by 4 TWh and lignite production by 6.7 Mt or 30.7% to 15.0 Mt. Romgaz postponed the commissioning of a new 450 MW gas-fired power plant until June 2021 while aid to Compexu Energetic Oltenia S.A. was notified to the European Commission who proceeded to open an in-depth inquiry. SN Nuclearelectrica halted negotiations with China General Nuclear Power Corporation for the construction of two new nuclear power plants and the Romanian government instead signed an agreement with the US government on co-operation to build new units at Cernavoda. In 2020, Romania switched from being a net exporter of electricity to a net importer, so replacement power plants are needed, especially as coal is phased out.

## Slovakia

Slovak coal production fell by one third to just 980 thousand tonnes in 2020 compared with 2019. Employment fell from 3 000 to 2 550 employees and the share of coal in national electricity production reduced to less than 5%. The government has agreed a coal phase-out by 2023, covering both mining and power generation. Hornonitrianske bane Prievidza (HBP) is thus preparing projects for the revitalisation of its former mining sites. It has applied to build a new district heating system in Prievidza using a mixture of RES and fossil gas. Moreover, HBP is also preparing projects to use underground roadways for heat storage, as well as offering its engineering services to the rail sector. Security of power supply and prices are an important issue for the future: in December 2020, EP Power Europe had to temporarily restart the 110 MW coal-fired Vojany plant on hard coal imported from Russia and Ukraine.

## Slovenia

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 2020, lignite production grew by 1.0% to 3.2 Mt compared with 2019.

On 27 February 2020, the Slovenian government adopted a National Energy and Climate Plan (NECP). For coal, the plan shows 30% lower production by 2030, with the closure of TEŠ unit 5 and the end of coal use by TE-TEOL for district heating in Ljubljana. Coal mine closure is left open with a range of dates under discussion from 2033 to 2042, recognising that any closure date should be set within the scope of a national strategy for a just transition. Legislation related to the NECP will be adopted in 2021. The main arguments in favour of keeping coal in the energy mix are security of supply and the fact that Slovenia has one of Europe's newest coal power plants. The construction of a nuclear power plant at Krško would be an alternative.

## NON-EU COAL MARKET

### Turkey

Turkey became Europe's largest hard coal importer in 2020 as imports rose 7.4% compared with 2019 to 38.7 Mt, with Russia being the most important supplier.

Compared with 2019, Turkish lignite production fell by 19.9% in 2020 to an estimated 69.9 Mt of which 51.3 Mt was delivered to power plants. Apart from power generation, Turkish lignite is also used for heating and industrial applications. Turkish Coal Enterprises (TKİ) is the largest producer. The small quantity of hard coal production from the Zonguldak basin on the Black Sea coast also fell in 2020 to 1.1 Mt (-11.3% compared with 2019) as the pandemic struck economic activity.

As of October 2020, Turkey had a total installed capacity of 94 GW for electricity generation, of which 20.3 GW was coal-based. 37.2% of electricity generation was from coal in 2019, while renewables accounted for 44%, including hydro. The share of natural gas decreased to 19% from a high of 47% in 2014 as Turkey transitions from imported fossil gas to domestic coal and renewables.

However, the government's policy of favouring indigenous energy sources, such as lignite, hydro and wind, has come to a temporary halt, despite the steady devaluation of the Turkish Lira since the 2008 financial crisis and a growing trade deficit. In 2020, steam coal imports rose remarkably, by a countercyclical 9.2%, to reach 33.3 Mt, with coking coal imports adding a further 5.5 Mt.

New coal-fired power plants will see steam coal imports continue to grow, despite the opening of the TurkStream gas pipeline in January 2020. 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 around 3.5-4.0 Mt annually.

## Ukraine

Ukrainian coal production continued to drop, by 12.9% in 2020 to 22.3 Mt, according to government statistics. DTEK is Ukraine's biggest coal producer. Electricity consumption also declined, with the shares of power generation from both nuclear and renewable energy sources increasing. In 2021, slower renewables growth is anticipated, due to government policy changes.

By the end of January 2021, DTEK completed the transfer of "Dobropilska" coal mine back to the state. The biggest problems face state coal mining companies where lower output pushed up costs and increased the need for subsidies to pay miners. Consequently, the Ukrainian government aims to close unprofitable mines, but has not announced any dates. Low coal market prices and a shortage of skilled workers further hampers the industry.

An EU-Ukraine Memorandum on Strategic Partnership in Energy has presented a working plan for restructuring the coal sector, which might lead to defining a final date for the end of coal mining in Ukraine. Climate diplomacy guidelines for EU foreign ministers put further pressure on Ukraine to align with the European Green Deal, including entry into the EU ETS in the mid-term, say by 2030.

**Evolution of world market prices for coal, freight and crude oil**
**McCloskey steam coal marker price (7 000 kcal/kg)**

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>steam coal</b>	<b>2020</b>	60.76	56.91	55.14	56.14	44.64	53.63	59.16	60.06	60.40	66.90	59.97	72.35
<b>(US\$/tce CIF NW Europe)</b>	<b>2021</b>	80.47	75.69	77.42	81.61								
<b>steam coal</b>	<b>2020</b>	54.74	52.19	49.85	51.69	40.95	47.65	51.62	50.78	51.22	56.81	50.66	59.45
<b>(€/tce CIF NW Europe)</b>	<b>2021</b>	66.12	62.57	65.07	68.86								

Source: IHS Markit (McCloskey first week quotation of the month, basis 6 000 kcal/kg converted to 7 000 kcal/kg)

**Freight rates (US\$/t)**

<b>Richards Bay/Rotterdam</b>	<b>2020</b>	7.42	4.34	2.88	3.94	2.98	7.69	9.54	8.20	7.53	8.65	6.44	6.38
<b>(Capesize)</b>	<b>2021</b>	9.00	7.81	9.58									
<b>Queensland/Rotterdam</b>	<b>2020</b>	10.62	7.88	6.50	6.38	4.90	10.90	13.85	12.78	11.63	12.95	12.06	9.81
<b>(Capesize)</b>	<b>2021</b>	12.70	11.69	14.81									
<b>Puerto Bolivar/Rotterdam</b>	<b>2020</b>	9.50	6.33	5.88	5.50	3.85	8.00	11.50	9.53	8.75	10.70	7.88	9.13
<b>(Capesize)</b>	<b>2021</b>	11.60	9.44	10.13									

Source: Clarksons (monthly averages from weekly data)

**Currency rates**

<b>USD / EUR</b>	<b>2020</b>	0.901	0.917	0.904	0.921	0.917	0.889	0.873	0.846	0.848	0.849	0.845	0.822
	<b>2021</b>	0.822	0.827	0.841									
<b>USD / RUB</b>	<b>2020</b>	62.0	64.2	74.6	75.1	72.8	69.4	71.5	73.8	76.1	77.6	76.9	74.1
	<b>2021</b>	74.4	74.4	74.5									
<b>USD / AUD</b>	<b>2020</b>	1.46	1.50	1.61	1.59	1.54	1.45	1.42	1.39	1.38	1.40	1.37	1.33
	<b>2021</b>	1.30	1.29	1.30									

Sources: ECB Euro foreign exchange reference rates; Bank of England database; OECD.Stat Monthly Monetary and Financial Statistics (MEI) dataset

**Crude oil (US\$/barrel)**

<b>crude oil</b>	<b>2020</b>	65.10	55.53	33.92	17.66	25.17	37.05	43.42	45.19	41.54	40.08	42.61	49.17
	<b>2021</b>	54.38	61.05	64.56	61.33								

Source: OPEC Reference Basket (ORB) price

**International coal trade**
**TABLE 2**

Steam coal				
exporting country	2020 (1-12)	YoY change c.f. 2019		2019 (1-12)
	Mt	Mt	%	Mt
PACIFIC				
Australia	198.7	-13.0	-6.2%	211.8
Canada	4.5	2.7	158.7%	1.7
China	2.3	-2.3	-50.3%	4.6
Colombia	9.9	1.5	17.9%	8.4
Indonesia (exc. lignite)	340.4	-32.7	-8.8%	<b>373.1</b>
Russia	90.7	6.9	8.2%	<b>83.8</b>
South Africa	69.9	-2.5	-3.4%	<b>72.4</b>
USA (exc. to Canada)	14.1	-2.1	-12.9%	<b>16.2</b>
sub-total	730.5	-41.5	-5.4%	772.0
ATLANTIC				
Canada	0.1	0.1	212.0%	0.0
Colombia	42.2	-25.8	-38.0%	68.0
Indonesia	1.1	-0.7	-38.3%	<b>1.8</b>
Russia	78.4	-16.8	-17.7%	95.3
South Africa	4.9	-1.1	-18.5%	<b>6.0</b>
USA (exc. to Canada)	9.5	-10.4	-52.2%	<b>20.0</b>
sub-total	136.3	-54.9	-28.7%	191.2
others	9.4			<b>12.9</b>
<b>total</b>	<b>876.1</b>	<b>-99.9</b>	<b>-10.2%</b>	<b>976.0</b>

 revised 2019 figures shown in **bold**

steam coal data includes anthracite

**TABLE 3**

Coking coal				
exporting country	2020 (1-12)	YoY change c.f. 2019		2019 (1-12)
	Mt	Mt	%	Mt
Australia	171.7	-11.7	-6.4%	183.3
Canada	31.3	-2.9	-8.4%	<b>34.2</b>
China	0.9	-0.5	-37.4%	1.4
Russia	29.1	4.5	18.4%	<b>24.6</b>
USA (exc. to Canada)	34.8	-9.4	-21.2%	<b>44.2</b>
others	2.6	0.1	2.2%	2.6
<b>total</b>	<b>270.4</b>	<b>-19.8</b>	<b>-6.8%</b>	<b>290.3</b>

 revised 2019 figures shown in **bold**

**European crude steel production**

<b>COUNTRY</b>	<b>2020 (1-12) Mt</b>	<b>YoY change c.f. 2019</b>	<b>2019 (1-12) Mt</b>
Austria	6.7	-10.2%	7.4
Belgium	6.1	-21.1%	7.8
Bulgaria	0.5	-14.3%	0.6
Croatia	<0.1	-32.0%	0.1
Czechia	4.5	0.6%	<b>4.4</b>
Finland	3.5	0.8%	3.5
France	11.6	-19.8%	14.5
Germany	35.7	-10.1%	39.7
Greece	1.4	5.9%	1.4
Hungary	1.5	-14.5%	1.8
Italy	20.2	-12.9%	23.2
Luxembourg	1.9	-11.0%	2.1
Netherlands	6.1	-9.1%	6.7
Poland	7.9	-11.9%	9.0
Portugal (est.)	1.8	-8.0%	<b>2.0</b>
Romania (est.)	2.8	-18.8%	<b>3.4</b>
Slovakia (est.)	3.2	-18.6%	<b>3.9</b>
Slovenia	0.6	-8.5%	0.6
Spain	10.9	-19.5%	13.6
Sweden	4.4	-6.6%	4.7
UK	7.2	-0.5%	7.2
unspecified	0.4	:	
<b>EU-27 + UK</b>	<b>138.8</b>	<b>-11.9%</b>	<b>157.6</b>
Belarus	2.5	-5.0%	2.6
Bosnia & Herzegovina	0.8	-5.2%	0.8
Moldova	0.5	18.7%	0.4
North Macedonia	0.2	-24.8%	0.2
Norway	0.6	0.5%	0.6
Serbia	1.5	-24.5%	1.9
Switzerland	n.a.	:	1.5
Turkey	35.8	6.0%	33.7
Ukraine	20.6	-1.1%	20.8

Source: World Steel Association and own estimates

 revised 2019 figures shown in **bold**

**Hard coal and lignite production and consumption**

	Hard coal production			Hard coal deliveries for power generation	
COUNTRY	2020 (1-12) Mt	YoY change c.f. 2019	2019 (1-12) Mt	2020 (1-12) Mt	2019 (1-12) Mt
Czechia	2.1	-37.6%	3.4	1.3	1.7
Germany	0.0	:	0.0	12.9	17.5
Poland	54.4	-11.7%	61.6	32.8	36.0
Spain	0.0	:	0.0	1.7	5.0
<b>EU-27</b>	<b>56.5</b>	<b>-13.1%</b>	<b>65.1</b>	<b>48.7</b>	<b>60.2</b>
Turkey	1.1	-11.3%	1.2	21.9	21.9
Ukraine	22.3	-12.9%	25.5		21.4
UK	1.7	-22.8%	2.2	2.3	2.9

	Lignite production			Lignite deliveries for power generation	
COUNTRY	2020 (1-12) Mt	YoY change c.f. 2019	2019 (1-12) Mt	2020 (1-12) Mt	2019 (1-12) Mt
Bulgaria	22.3	-20.4%	28.0	22.1	27.9
Czechia	29.5	-21.3%	37.5	24.2	28.2
Germany	107.4	-18.2%	131.3	93.1	115.0
Greece	13.9	-49.3%	27.3		26.6
Hungary	6.1	-10.5%	6.8	6.0	6.7
Poland	46.0	-8.6%	50.3	44.9	<b>49.0</b>
Romania	15.0	-30.7%	21.7	15.4	21.9
Slovakia	1.0	-33.0%	1.5	1.4	1.8
Slovenia	3.2	1.0%	3.1	3.1	3.1
<b>EU-28</b>	<b>244.3</b>	<b>-20.6%</b>	<b>307.5</b>	<b>210.2</b>	<b>280.2</b>
Bosnia & Herzegovina	13.6	3.1%	13.2	12.1	11.9
Serbia	39.7	2.0%	38.9	38.5	37.7
Turkey*	69.9	-19.9%	<b>87.3</b>	51.3	69.5

\* Asphaltite is included within lignite.

revised 2019 figures shown in **bold**

Sources: EURACOAL members and Eurostat



**Hard coal imports**

COUNTRY	Coking coal imports		Steam coal imports		Total hard coal imports		
	2020 (1-12) Mt	2019 (1-12) Mt	2020 (1-12) Mt	2019 (1-12) Mt	2020 (1-12) Mt	YoY change c.f. 2019	2019 (1-12) Mt
Austria	1.0	1.3	1.6	2.3	2.6	-28.4%	3.6
Belgium	1.9	2.3	1.0	1.7	3.0	-24.4%	3.9
Bulgaria	0.0	0.0	0.5	0.6	0.5	-4.4%	0.6
Croatia	-	-	0.6	0.7	0.6	-17.2%	0.7
Czechia	1.8	2.0	1.5	1.4	3.3	-5.2%	3.4
Denmark	-	-	1.1	2.4	1.1	-53.5%	2.4
Finland	1.0	1.1	1.4	2.0	2.4	-23.4%	3.1
France	2.3	3.8	5.6	6.5	7.9	-23.6%	10.4
Germany	10.1	11.2	19.7	29.1	29.7	-26.3%	40.3
Greece	-	-	0.3	0.4	0.3	-12.2%	0.4
Hungary	1.2	1.3	0.1	0.1	1.2	-11.3%	1.4
Ireland	-	-	0.3	0.3	0.3	-2.0%	0.3
Italy	1.9	2.9	5.3	8.0	7.2	-33.6%	10.8
Netherlands	3.7	4.3	2.3	6.1	6.0	-41.5%	10.3
Poland	1.8	3.4	11.0	13.3	12.8	-23.2%	16.7
Portugal	-	-	0.2	2.8	0.2	-91.8%	2.8
Romania	-	-	0.7	1.0	0.7	-31.9%	1.0
Slovakia	2.1	2.0	0.3	1.3	2.4	-29.0%	3.4
Slovenia	-	-	0.3	0.4	0.3	-22.5%	0.4
Spain	0.4	0.8	3.6	7.7	4.0	-53.4%	8.5
Sweden	0.5	1.2	1.6	1.1	2.1	-10.7%	2.3
UK	2.1	2.2	2.5	<b>4.0</b>	4.5	-27.3%	<b>6.2</b>
<b>EU-27 + UK</b>	<b>31.5</b>	<b>39.7</b>	<b>61.7</b>	<b>93.4</b>	<b>93.3</b>	<b>-29.9%</b>	<b>133.1</b>
Bosnia & Herzegovina	1.2	1.5	-	-	1.2	-21.6%	1.5
Serbia	-	-	0.4	0.5	0.4	-4.6%	0.5
Turkey	5.5	5.6	33.3	30.4	38.7	7.4%	36.1
Ukraine	17.0	10.4	5.9	10.7	22.8	8.2%	21.1

 revised 2019 figures shown in **bold**