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Is coal making a comeback?

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The term “bulk commodities” refers to a group of commodities which typically have low value-to-volume ratios. In other words, you need to sell quite a lot of them to make any money. Consider for a moment that gold sells for $1800 per troy ounce. If coal was priced on the same volume basis, it would be worth less than 1 US cent per ounce. For this reason, logistics play as important a role in determining available supply as the producers’ ability to extract greater amounts from the earth. Transnet’s difficulties, for example, are presently severely impacting on the ability of coal and iron ore producers to move their goods to market.

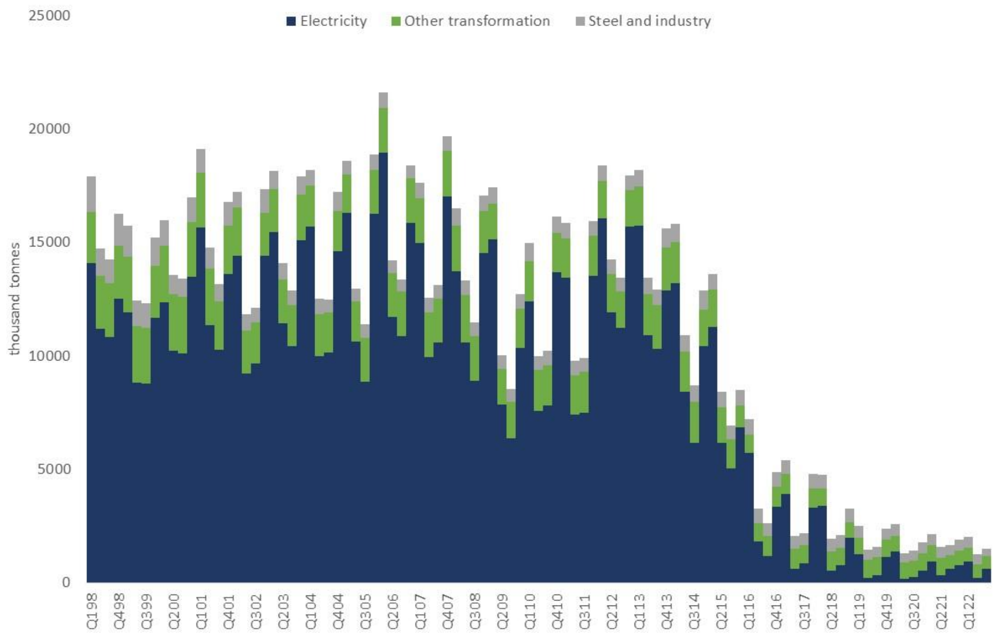
Coal's decline

For years, thermal coal has been the ugly duckling of bulk commodities. Ever since 2015, when countries representing 98% of global greenhouse gas emissions signed the Paris Agreement, the world has been on a path to limit global temperature increases to 1.5 degrees above pre-industrial levels. This has profound implications for coal.

The International Energy Agency (IEA) report titled "Net Zero by 2050", sees unabated coal demand falling by 98% to just under 1% of total energy use in 2050. Also, the latest report from the Intergovernmental Panel on Climate Change (IPCC) suggested that the available pathways to meeting the 1.5 degree target required that the share of primary energy generation from coal drop to 1-7% by 2050, and a large part of this drop needs to happen by 2030, a near 80% decline from current levels.

This plan has been put into action. Many countries have committed to phasing out coal and accelerating renewables, including extreme examples such as the UK where coal consumption has fallen by 93% from its peak, and the US where it has fallen by 64%. Supply has also been falling to accommodate this collapse in demand, with banks almost unilaterally withdrawing funding for new coal projects.

Figure 1: UK coal consumption

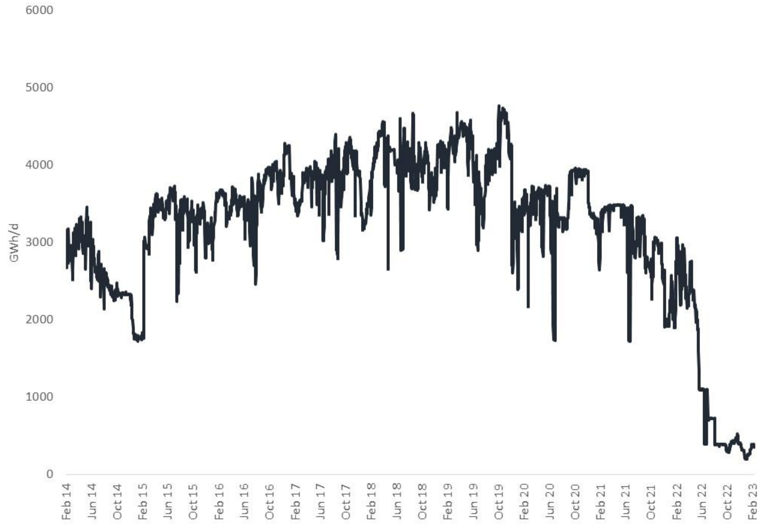


Sources: Matrix Fund Managers, Bloomberg, IRENA, UK Government

The disruptions of war

This trend was well entrenched until Russia invaded Ukraine in February 2022, and overnight the ugly duckling became a black swan. Europe in general, and countries like Germany more specifically, were highly dependent on Russia for gas and coal imports. Russia all but turned off Europe's gas supplies as retaliation for the punitive sanctions imposed by the West over the invasion. This supported coal by driving up the price of gas which competes with coal as a feedstock for electricity generation in Europe.

Figure 2: Russian gas flows to Europe

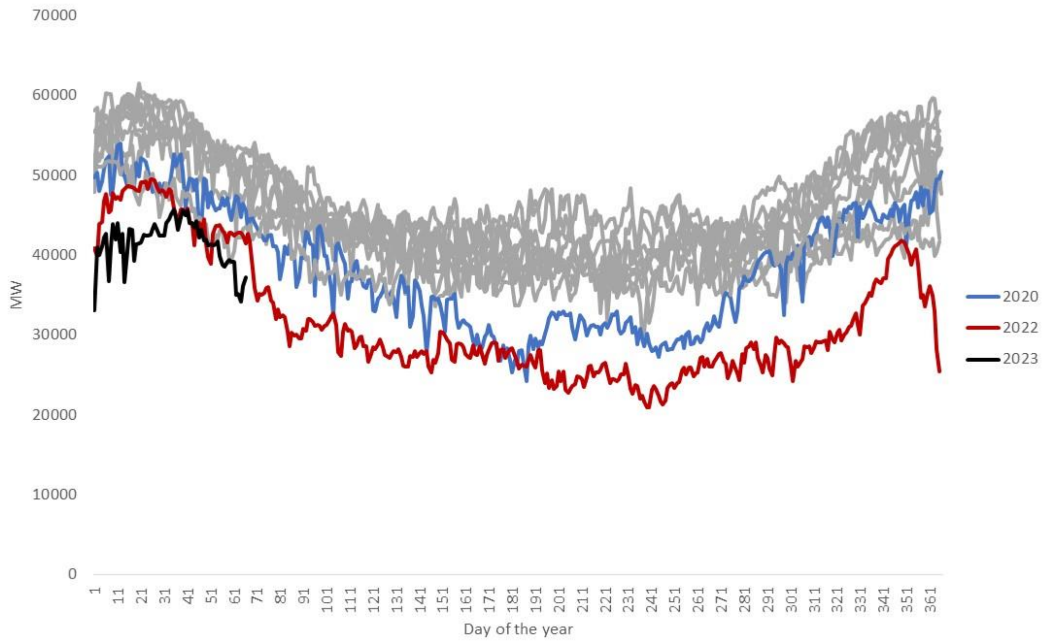


Sources: Matrix Fund Managers, Bloomberg, IRENA, UK Government

Further complicating matters, gas was also Europe's most dependable source of energy. Renewable energy such as wind, which contributes about a quarter of Germany's power, doesn't always blow, and nuclear, which is the dominant energy source in France, is susceptible to drought (water is required to cool the reactors of inland nuclear plants) and has suffered from years of underinvestment due to the perceptions in previous years that nuclear was a declining industry. Popular opinion swung further against nuclear after the events at Fukushima, Japan.

As Murphy's law would have it, these factors conspired to amplify the crisis as France, an electricity exporter, had to import electricity for the first time in around 30 years. COVID disrupted the maintenance schedules in 2020, drought struck in the summer of 2022 and ten-year reviews revealed corrosion in the safety injection systems of multiple French reactors, requiring as many as 15 of its 56 reactors to be taken offline simultaneously for repairs. Meanwhile, Germany was in the midst of decommissioning its own nuclear fleet.

Figure 3: France nuclear power generation



Sources: Matrix Fund Managers, Bloomberg, IRENA, UK Government

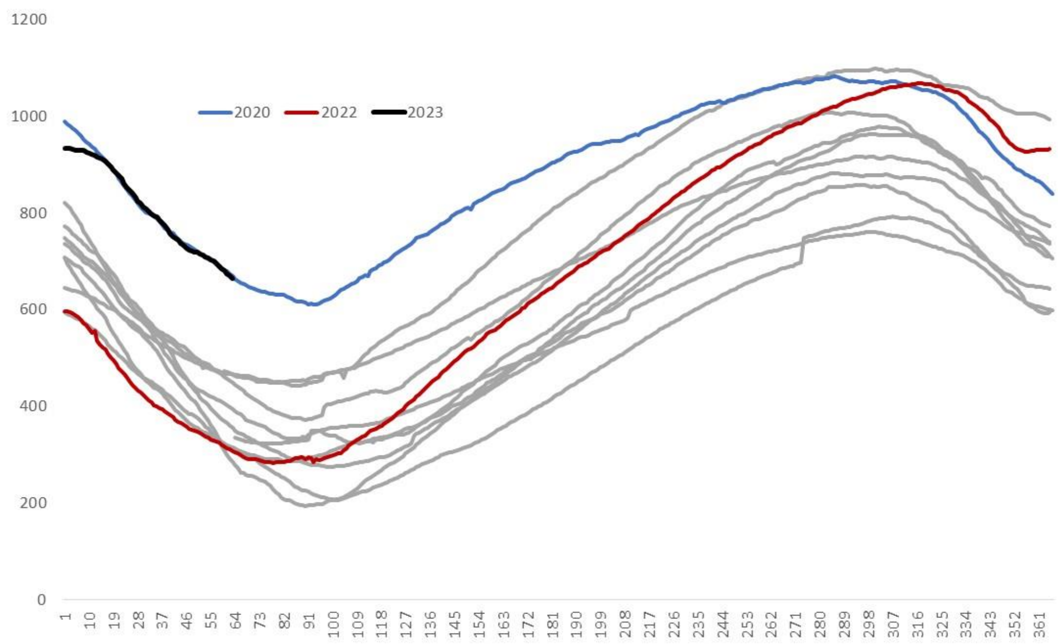
Without access to Russian gas and with other generation issues, Europe compounded the problem by sanctioning Russian coal, initially making it illegal for European companies to ship or insure Russian coal cargoes. This not only made imports to Europe impossible, but also to other parts of the world as European companies dominate the shipping and insurance business. Russian coal was effectively stranded, especially the high calorific value variant, requiring Europe to import from as far afield as Australia where weather-related output disruptions were also constraining supply. The result was not only higher coal prices in general, but an unprecedented move higher in the benchmark Australian Newcastle high calorific coal price to some $200 above the equivalent European price, compared with a pre-war average of around $15.

While coal prices were spiking, and inflating the profits of coal miners, the key point is they rose less than gas prices, making it significantly more profitable to use coal rather than gas for power generation in Europe.

Europe adapts

Most observers assumed that Europe would face power rationing of the sort we see in South Africa today. But as the adage goes, "the best cure for high prices is high prices". At these astronomical prices, gas demand in Europe fell by some 15%, while focus was impressively shifted to LNG imports to fill the gap. As a result, with Spring approaching, European gas storage is in a similar position to the oversupplied situation that presented as COVID first hit in the first half of 2020, well above "normal" levels of previous years. And gas prices are in retreat.

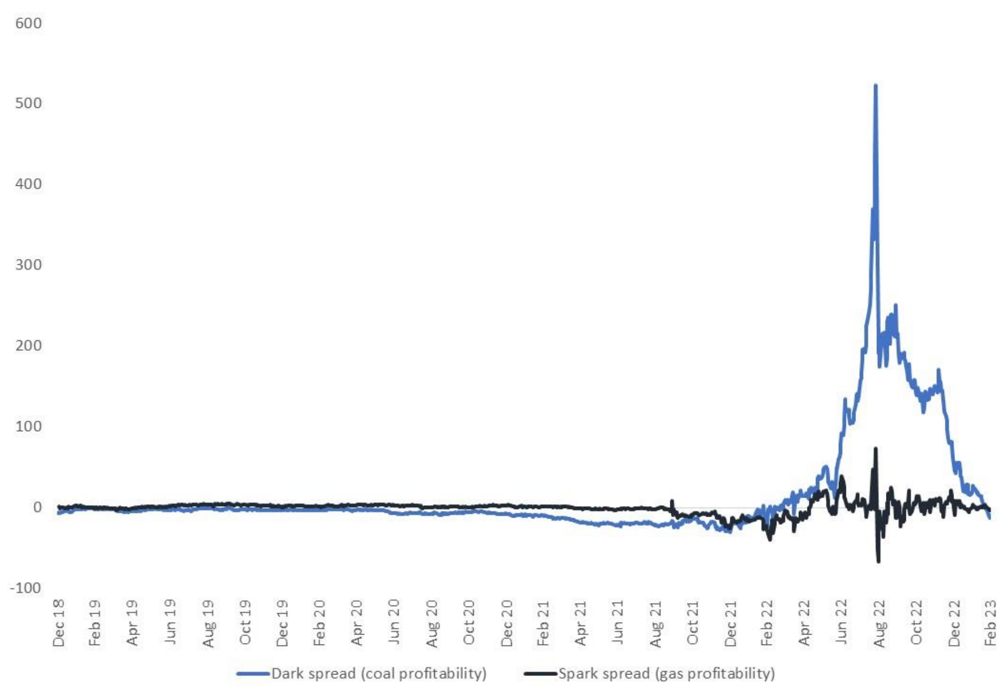
Figure 4: European gas storage levels



Sources: Matrix Fund Managers, Bloomberg, IRENA, UK Government

Europe also walked back some of its coal sanctions, allowing the facilitation of Russian coal exports to countries outside of Europe, which enabled Russia to ramp up exports to friendly nations such as China, India and Turkey. With falling gas prices, the opportunity for power producers to tactically switch to coal appears to have closed, with signs that switching the other way should now be taking place. Evidence of this can be seen in what is termed "Spark and Dark spreads", theoretical calculations of the profitability of gas (Spark) versus coal (Dark) power generation using traded electricity prices and wholesale feedstock input prices, under standardised efficiency assumptions.

Figure 5: Spark and Dark spreads

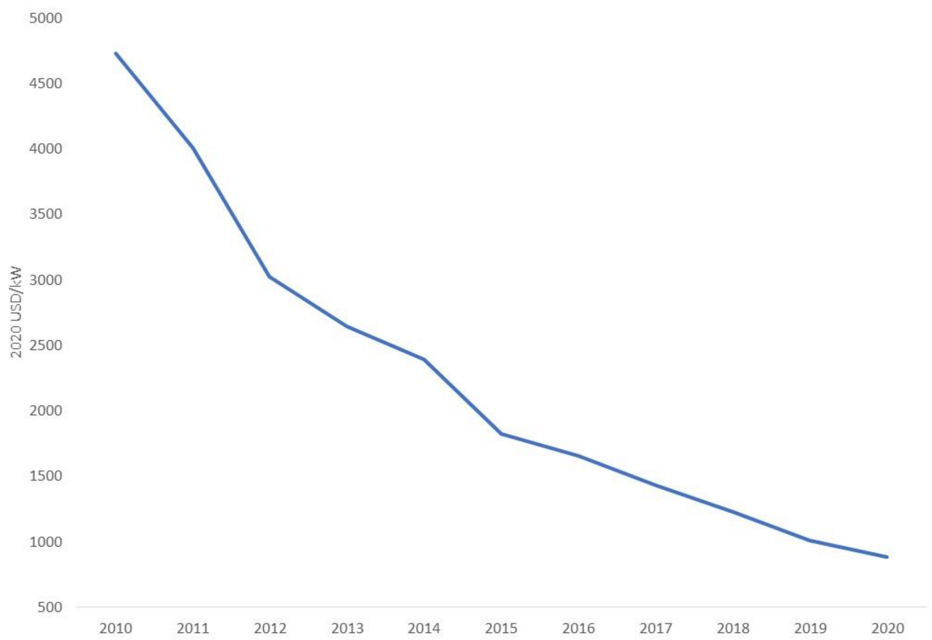


Sources: Matrix Fund Managers, Bloomberg, IRENA, UK Government

What might the future hold?

Many have criticised the speed of the global disinvestment from coal, accentuated certainly by the rise of the ESG lobby, as enabling Putin's weaponisation of gas. However, it's hard to push back against the merits of pivoting to clean energy, which is not only an imperative in the fight against climate change but is also becoming increasingly compelling from a financial perspective as renewable costs fall.

Figure 6: Total installed cost of solar photovoltaic

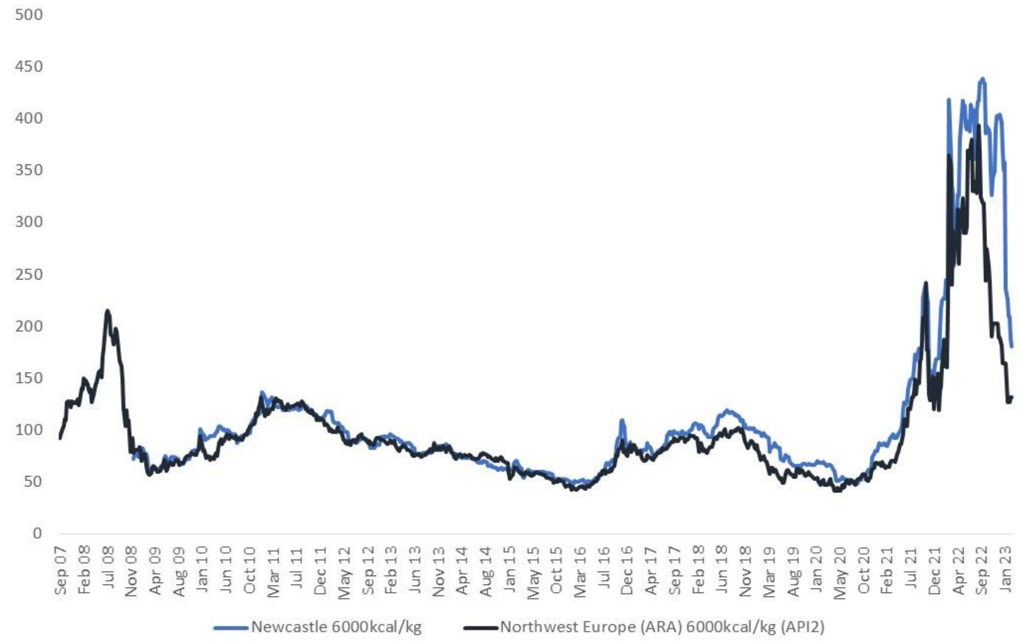


Sources: Matrix Fund Managers, Bloomberg, IRENA, UK Government

The coal market is yet to normalise fully, but prices and price gaps have retraced significantly, and there is evidence that the resolve to wean the world off coal has not been broken. High coal prices have only made coal more expensive as a feedstock, and ageing coal plants around the world are becoming less reliable, as evidenced not only by Eskom but also by Australia's largest polluter AGL Energy which reported total outage factors close to 40% during 2022. In its recent results AGL confirmed the scheduled closure of its last three coal plants, including accelerating the closure of the latest of these by ten years.

The only two nations still building coal fired plants are China and India. Both are also aggressively growing their own domestic coal production to feed these plants and reduce their dependence on the seaborne market. With 80% of global coal fired power generation sitting in Asia, these two nations will be key to watch. China, for its part, announced in the latest National People's Congress work report, as a target for 2023, "continued reductions in energy consumption per unit of GDP and in the discharge of major pollutants with priority on controlling fossil fuel consumption". Only time will tell if these words translate into actions, however it appears clear that despite the temporary stay of execution, coal's long-term future looks as perilous as ever.

Figure 7: Thermal Coal Prices



Sources: Matrix Fund Managers, Bloomberg, IRENA, UK Government

The narrative of coal's rebirth remains alive in the market, and 2022 was a record year for profits leaving historic free cash flow yields optically attractive for coal equities. We think these may prove to be transient, however, and see a downside risk skew for the sector as Europe adapts faster than expected and the long-term trend away from coal reasserts itself.

Glacier Research would like to thank Bruce Mommsen for his contribution to this week's *Funds on Friday*

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Bruce joined Matrix Fund Managers in January 2012 and is CIO, Head of Equities and forms part of the Executive Committee. He is responsible for co-managing hedge and traditional equity portfolios, equity research, chairs the investment committee, oversees the investment process and is the FAIS key individual and authorised representative. Prior to moving to Matrix Managers, he co-managed equity hedge portfolios and conducted equity research at Brait South Africa in the Capital Management team. Bruce has 27 years' industry experience, covering financial research, portfolio management, investment analysis and the management of hedge and equity portfolios. He has an expansive career and was previously employed at Deloitte & Touche, BoE Asset Management and Lauriston Capital which was acquired by Brait South Africa. Bruce studied BBusSci specialising in Finance and Financial Accounting (UCT). He furthered his education with a Post-graduate Diploma in Accounting (PGDA) and is also a CFA® charter holder with the CFA Institute and a Chartered Accountant (SA).