From the Desk Of The **Commodities Team**

European Carbon Market Update, as at April 30, 2023

2023 APR

Market Outlook

2022 proved to be a volatile year for European Union Allowance (EUA) carbon prices as Russia's invasion of Ukraine sent energy prices soaring, introducing heightened uncertainty for the carbon markets. This volatility, particularly in European gas and power prices through 1H22, created significant near-term uncertainty around how much carbon would be emitted. At TD Asset Management (we, us), we believe much of this volatility is now behind us; as industrial activity stabilizes and European Union (EU) policy is clarified, we see EUA prices continuing to appreciate through the medium term. Investors may be able to gain exposure to the EUA market through the TD Global Carbon Credit Index ETF (Ticker: TCBN).

The market was buffeted by opposing factors in 2022: On one hand, emissions were expected to increase, and with them carbon prices as lost natural gas volumes were replaced by dirtier feedstock (the EU responded to lost Russian natural gas volumes by switching to coal and diesel, both of which are dirtier fuels and have higher levels of emissions). This happened as the EU pivoted and used less gas (**Exhibit 1**) and more coal and diesel (**Exhibit 2**):

Exhibit 1: Inland Gas Consumption

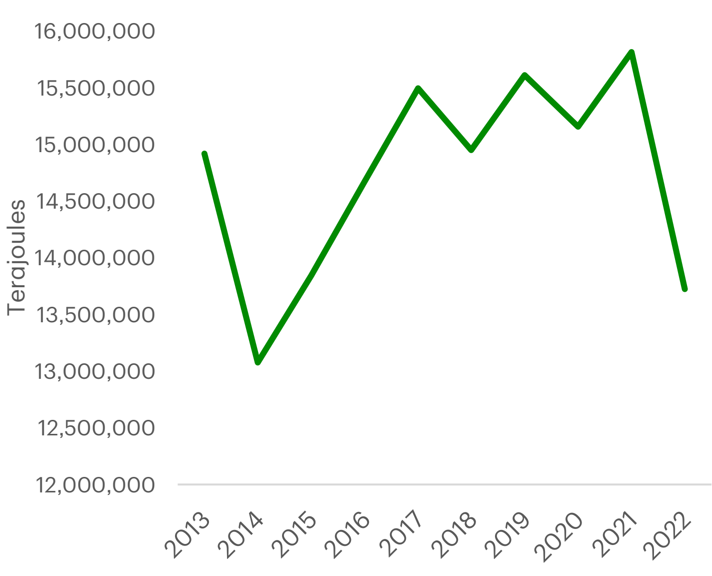
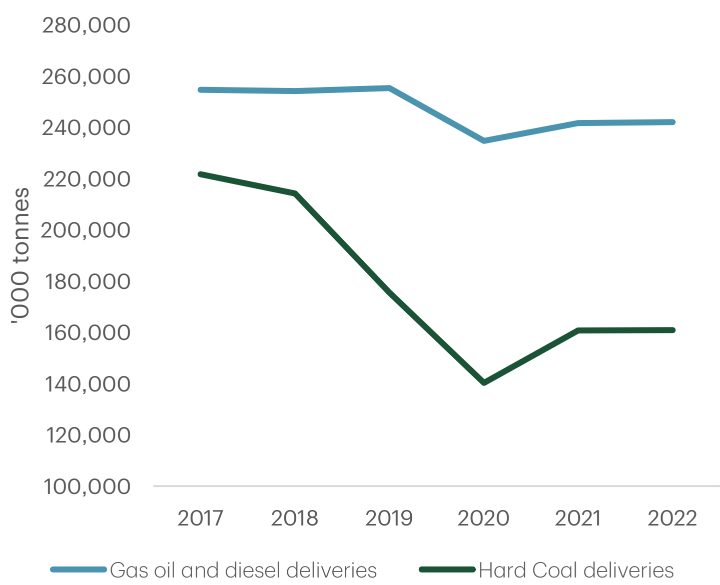


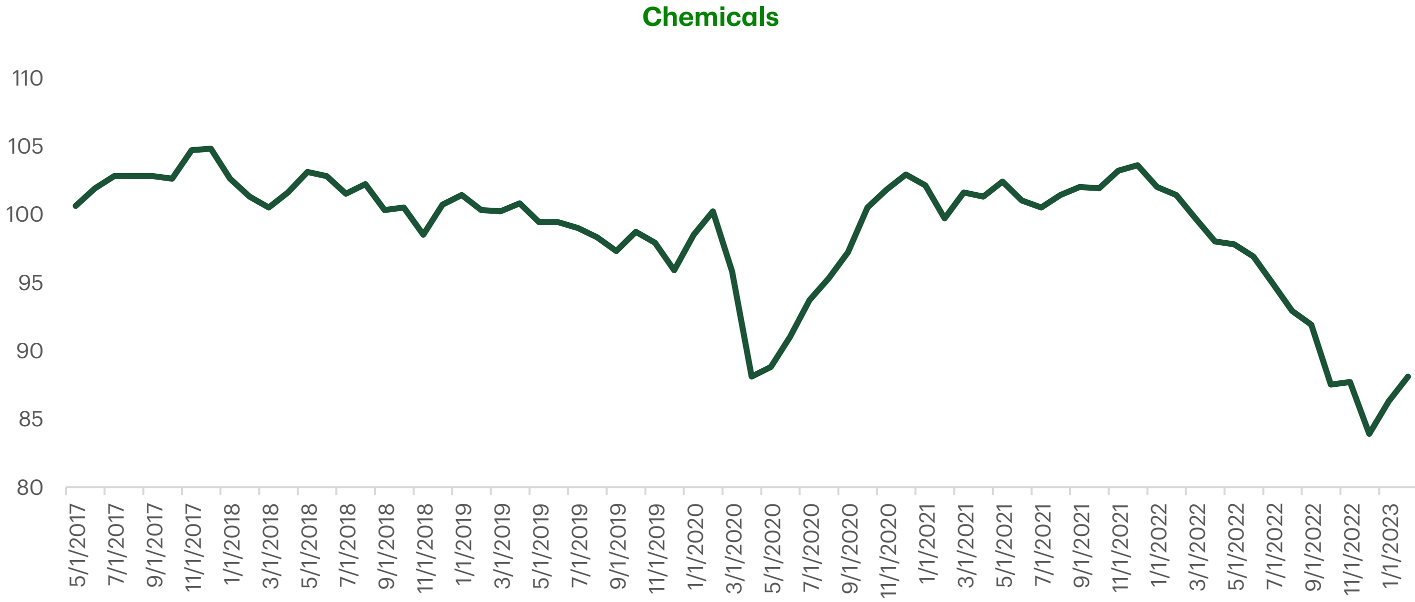
Exhibit 2: Gas, Oil and Diesel Deliveries vs. Hard Coal Deliveries

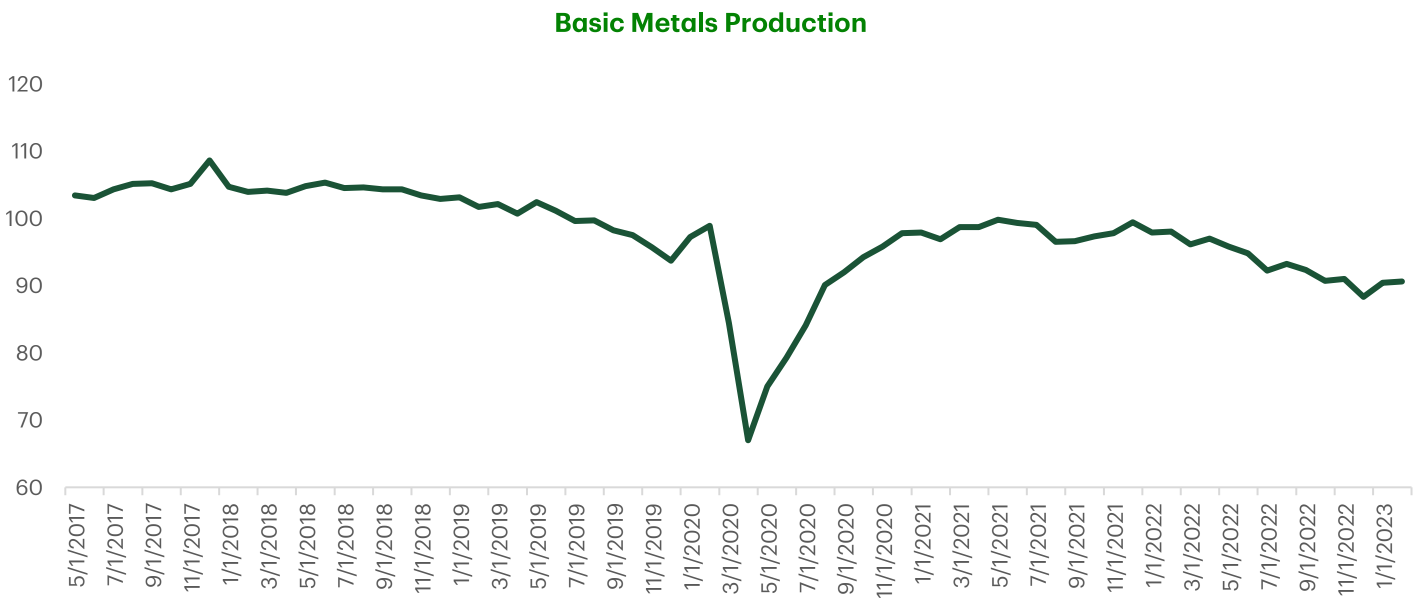


Source: Eurostat, as at April 30, 2023.

On the other hand, growth expectations (and with them emission expectations) were challenged by concerns on how the European economy would cope with markedly higher energy prices. Many factories were unable to absorb higher energy prices and were forced to curtail or shift production outside of EU, especially in energy-intensive industries such as smelters and chemical companies (**Exhibit 3**).

Exhibit 3: Eurozone Industrial Production (indexed 2015 = 100)

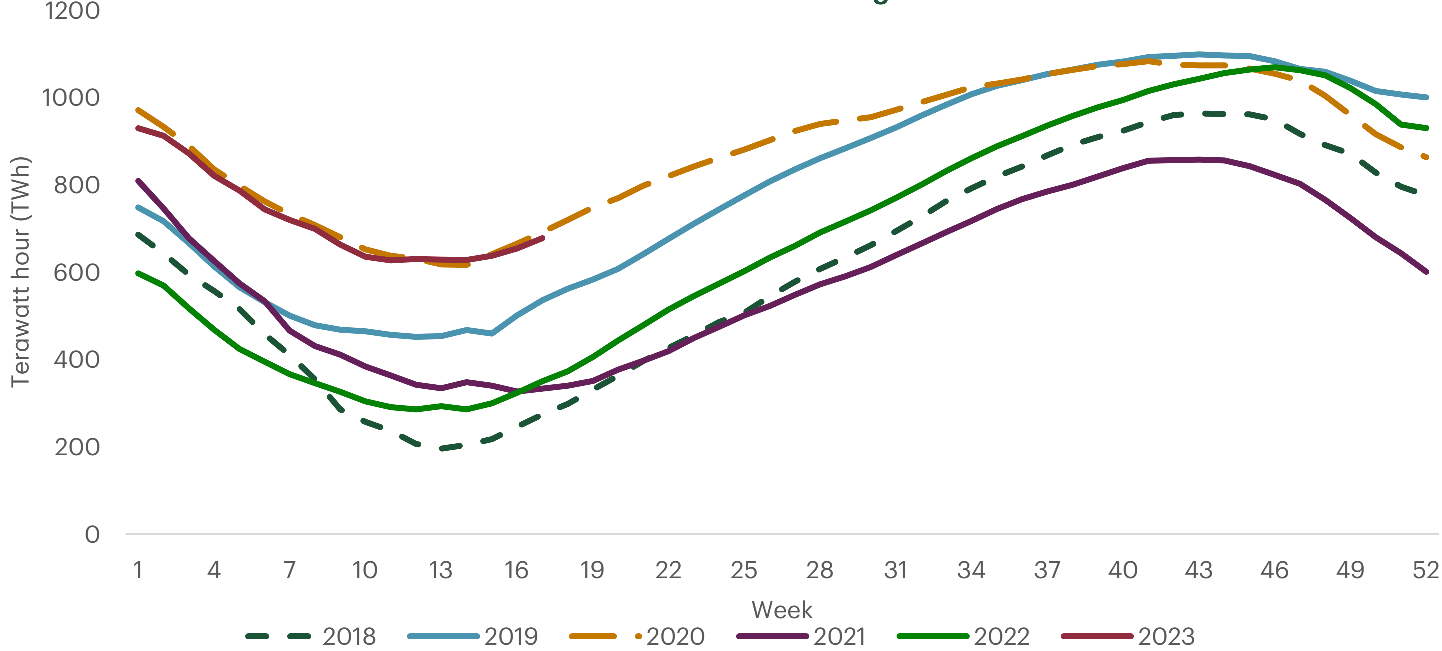




Source: Bloomberg L.P., TDAM, as at February 28, 2023.

Ultimately industrial activity did wane, but less than expected, as evidenced by stronger EUA prices. The worst-case fears of an acute shortage of gas through the winter were not realized as rationing efforts and an incredibly warm winter kept gas supply comfortable (**Exhibit 4**). As a result, energy prices retreated dramatically, preventing much of the anticipated industrial rationing. Those who did have reduced activity were generally able to bring it back online.

Exhibit 4: EU Gas Shortage

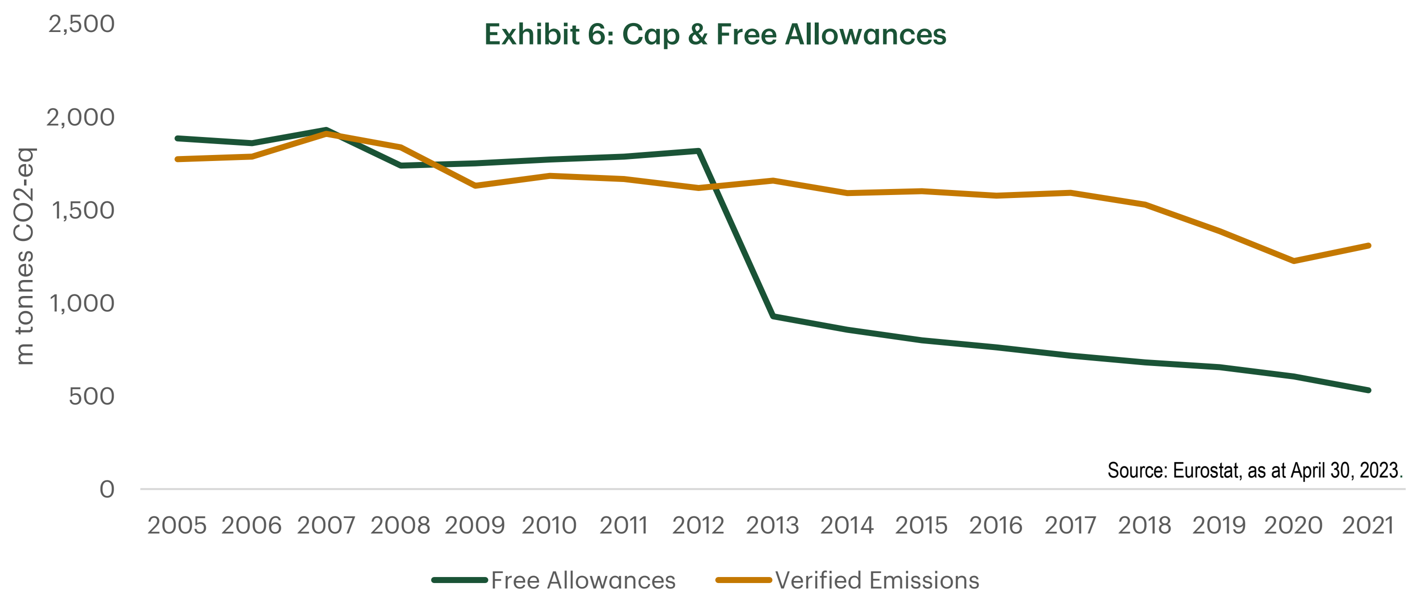


Source: Bloomberg L.P., TDAM, as at April 30, 2023.

Emission prices have found support from reduced policy risk surrounding the "Fit for 55" and "REPowerEU" programs. "Fit for 55" is phase 4 (2020-2030) of the EU's cap-and-trade program and sets the emissions target to 55% of 1990 levels by 2030. There was previously some uncertainty about what the path to the target would look like, but that has been clarified. The "REPowerEU" package is a more recent development, and although not specified, is a likely a response to help industry transition away from Russian oil and gas. €20 billion of the €300 billion Euro plan will be funded by auctioning off allowances in 2023-2026 that were earmarked for the 2027-2030 period. In the aforementioned packages, the EU took a pragmatic approach in weighing near term economic sensitivities but maintaining the robustness of the EUA program and signalling their commitment to bring down emissions, even at a time of reduced energy security.

In the short term, we believe we may see some consolidation in EUA prices as both programs, "Fit for 55" and "REPowerEU" increase the supply of allowances over the next year. In the medium to long-term, however, we are constructive, as this is a market that is designed to push the price of emissions higher as the cap decreases, and as the free allowances decrease at a faster rate than emissions. **We continue to favor exposure to the EU energy market from a portfolio construction viewpoint. Investors may be able to gain exposure through the TD Global Carbon Credit Index ETF (TCBN).** Tactically, we would also look to use any macro-related weakness to add to exposure.

Exhibit 6: Cap & Free Allowances



Source: Eurostat, as at April 30, 2023.

For further information, please contact your TDAM representative.