



POTEN & PARTNERS

May

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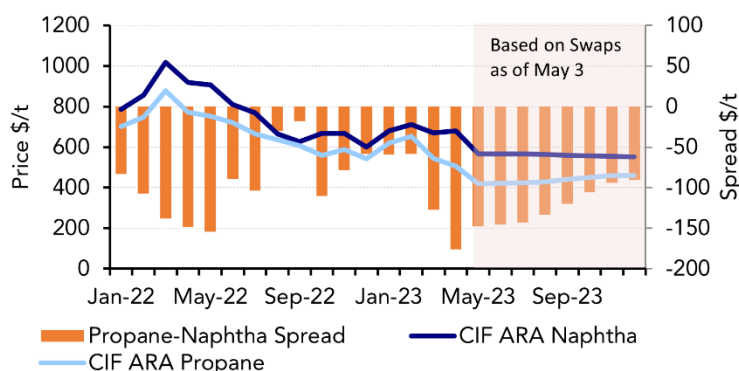
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LPG in Worlds Market

Wide Propane-Naphtha Spread Fails to Boost NW Europe Imports

The Northwest Europe propane-naphtha spread has been widening since early-March 2023, with propane's discount to naphtha increasing from \$80.50/t on March 1, 2023, to a record \$206.50/t as of April 11, 2023. Across the same period, the propane-naphtha ratio has also widened from 89% to 71%.

Northwest Europe Propane-Naphtha Spread



Declines in propane CIF ARA prices outstripped that of naphtha for the majority of March 2023 as robust exports of LPG from the US and the Middle East coincided with waning demand from the Far East and Europe.

The European Union's ban on Russian refined oil products (including naphtha) that came into effect on February 5, 2023, has also lent support to regional naphtha prices.

Firming crude prices from the last decade of March subsequently saw the spread deepen as naphtha prices emulated increases in the broader oil market, while propane prices levelled off.

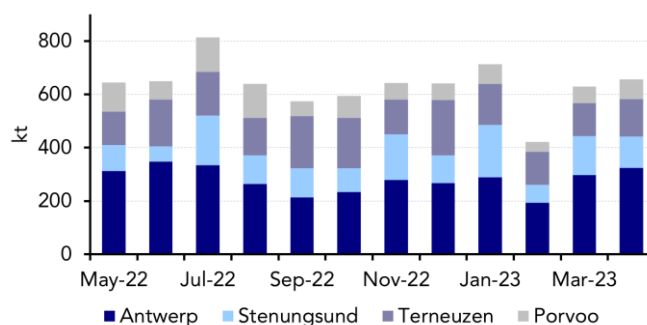
With the widening propane-naphtha spread, flexible feed steam crackers in Europe are more incentivized to increase usage of LPG as feedstock.

As a rule of thumb, propane is preferred over naphtha as a cracking feedstock when the spread dips below negative \$50/t and/or when the propane-to-naphtha price ratio drops below 90%.

Despite the favorable propane-naphtha spread, LPG shipments into the key importing ports of Antwerp, Stenungsund, Terneuzen, and Porvoo, which feed the major mixed-feed crackers in the region have seen lackluster growth in March and April 2023.

According to shiptracking data, waterborne LPG cargoes entering these four ports stood at approximately 630,000 t for March 2023 and 660,000 t for April. As a figure of reference, the average monthly import volume for calendar year 2022 was recorded at around 615,000 t.

Northwest Europe Feedstock Imports at Key Ports



The dearth of growth in LPG imports has been a result of poor downstream demand, coupled with oversupply in the polymers and olefins segment. This has resulted in cracker operating rates across the sector languishing around 70-75%.

Despite natural gas prices declining to pre-invasion levels, operators are not ramping up run rates as high inflation and recessionary fears stymie demand growth for petrochemical-intensive durable goods.

Additionally, Borealis' mixed-feed cracker in Stenungsund has been undergoing maintenance since April 10, and is only expected to restart during the second week of May 2023.

Major petrochemical players have indicated that their European operations are likely to remain subdued in 2023 due to the challenging macroeconomic environment.

In late-April 2023, Dow reiterated in its earnings call for 1Q 2023 that it would deliver \$1 billion in cost savings in 2023, with \$100 million achieved during the latest quarter. The company indicated that operating rates were the lowest in Europe despite overall operating rates for the quarter seeing a 10% lift, buoyed by higher operating rates in the US Gulf, Canada and Argentina of around 90%.

Chief executive officer, James Fitterling, also mentioned that "the biggest pressure is still continuing to be in Europe, because of the higher cost position and also lower demand in Europe".

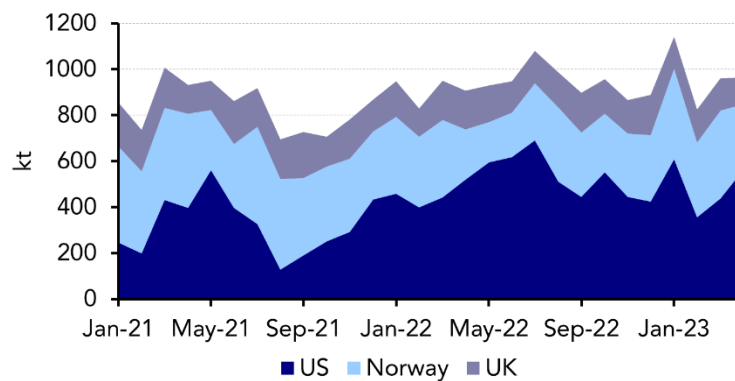
Other prominent publicly-listed petrochemical players such as BASF and LyondellBasell have also indicated in their respective earnings call that Europe remains in a tough operating environment and that they plan to embark on their own cost savings program in 2023 – which is expected to affect their European operations as well. Borealis also announced that its Porvoo cracker in Finland is scheduled for turnaround in 3Q 2023.

As of end-April 2023, the propane-naphtha spread remains conducive for propane cracking at around negative \$160/t and forward prices indicate that the propane-naphtha spread is expected to remain in the triple-digit levels for the remainder of 2023 which augurs well for future LPG demand growth in the petrochemical sector as well as imports into the region.

However, the fragile state of the global economy and a bearish macroeconomic outlook remain a huge concern for petrochemical companies as operators are likely to keep operating at lower run rates until downstream demand picks up.

With regard to import sources, the US continues to be the primary supplier of seaborne LPG cargoes into Europe ever since it overtook Norway at the start of 2022, contributing approximately 1.96 MMt to the region during the first four months of 2023, as compared to the 1.39 MMt recorded for Norwegian imports.

NW Europe Major Import Sources



Norwegian imports into NW Europe have lagged behind that of the US because of skyrocketing natural gas prices, triggered by the Russian-Ukraine crisis. This in turn incentivized North Sea producers to reinject NGLs back into the natural gas stream where they are more valuable, negatively impacting production and consequent exports during 2022.

However, Norwegian exports have exhibited signs of recovery during 1Q 2023. Softening natural gas prices have led to narrowing spreads between natural gas and LPG prices on a heat-equivalent basis, prompting producers to recover more NGLs from the gas stream to be fractionated and then exported.

For 1Q 2023, LPG shipments from Norway to NW Europe averaged around 370,000 t/m, lower than 390,000 t/m registered for 1Q 2021, but 13% higher than 326,000 t recorded for 2Q 2022. Volumes for April 2023 were lower at around 330,000 t, although this was mainly due to turnarounds at Karsto and Kollsness gas processing plants, which occurred during the month.

However, the Norwegian Petroleum Directorate (NPD) forecast the country's NGL production for 2023 to be around 200,000 bbl/d, mirroring 2022 levels. As such, the Norway-NW Europe trade flow is expected to see flat-to-marginal growth in 2023, meaning European buyers will have to continue to rely on US tons and compete with Asian buyers.

Norway NGL Production

