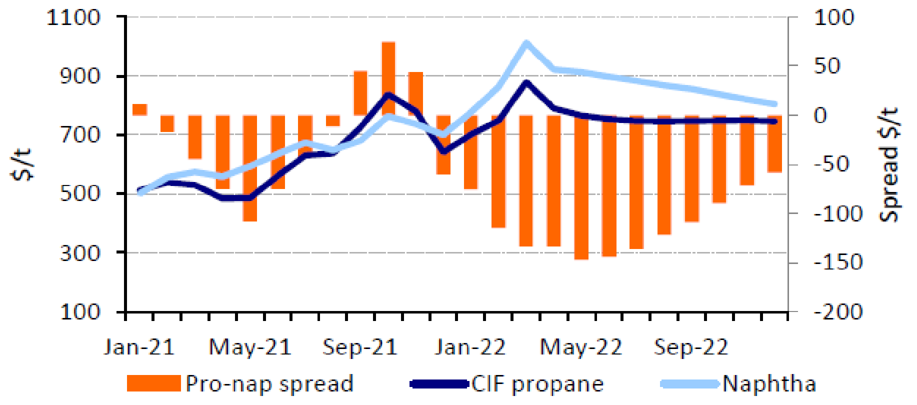
Wide Pro-Nap Spreads Driving Northwest Europe Imports

The average March CIF Northwest Europe propane price increased about 18% in March following the Russian invasion of Ukraine. However, interest for LPG cracking among mixed-feed crackers is growing due to favorable propane-naphtha spreads. Generally, propane is a preferred cracker feedstock when its price is over $50/t less than naphtha. The spread has been favorable since December 2021 when the average Northwest Europe CIF propane prices were $60/t lower than average spot naphtha prices. The spread widened significantly following the Russia-Ukraine crisis as the sharp increase in crude oil prices and disruption of naphtha imports from Russia have boosted naphtha prices more than LPG. Russia is a major exporter of naphtha to the region.

NW Europe propane vs naphtha price



**Forward prices as of Apr 5* *Source: OPIS/Reuters*

Most oil majors and trading companies have restricted Russian imports. Regional naphtha market players are putting bids with stipulation stating counterparties must not be incorporated in Russian Federation or majority owned by entities/individual from it.

Regional LPG players were also heard facing problems dealing with Litasco and Sibur largely due to payment issues and sanctions imposed on financial transactions. There are also stipulations for cargo origin, including restrictions on cargoes loaded in or transported from the Russian Federation in published bids. Russian flagged vessels are also prohibited.

Russia accounts for about 5% of the seaborne LPG imports into Northwest Europe. Lack of these volumes due to the above-mentioned self-sanctioning is expected tighten supply in the region. However, LPG should remain significantly discounted to naphtha as replacing Russian crude and naphtha is more challenging than finding alternate source for the LPG volume.

The average propane-naphtha spread was $115/t in February and rose to about $135/t in March. Forward prices indicate that spreads could widen further in the next three months and will remain extremely favorable for cracking LPG until next winter. LPG may remain favorable as a cracker feedstock even during the winter months if sanctions on Russia remain in effect and European companies continue to avoid doing business with the country which will keep regional naphtha prices elevated.

Most regional petrochemical players capable of cracking LPG have been showing increased interest in buying propane in March for delivery in the coming months. However, Borealis has started a two-month maintenance at its mixed-feed cracker in Stenungsund. Few other plant maintenances will reduce overall cracking capacity in April and offset higher LPG demand from other mixed-feed crackers. However, this is short term and demand should be back up from May.

High energy costs, tight local supplies

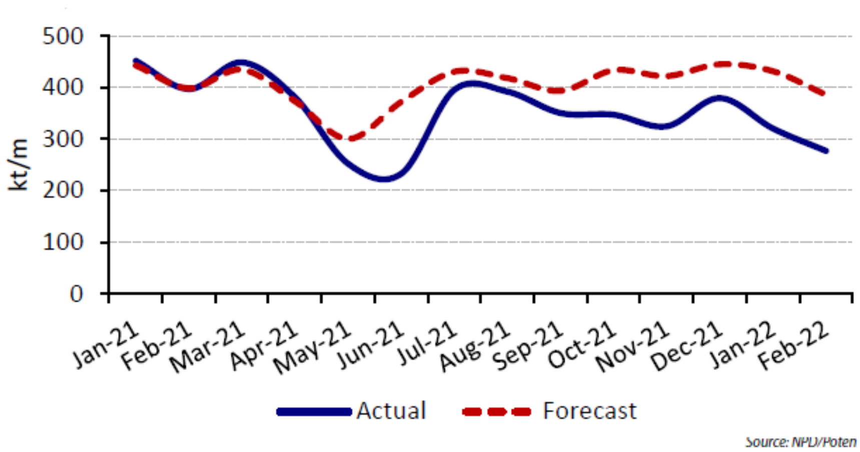
Meanwhile, there is plenty of uncertainty in the European petrochemical market following the Russia-Ukraine crisis raising concerns for overall growth this year. The primary concerns are high cost of energy and petrochemical feedstocks which not only affects the bottom line of crackers and PDH plants but can also result lower demand for finished products due to high inflation. In a worst-case scenario, if the conflict escalates and Russian natural gas supplies to the region are significantly disrupted then residential end-users could be prioritized and supplies to industrial end users would be rationed, said one major producer in a conference recently.

Regional LPG production from refiners and gas processing are down in recent months. Some regional refineries are choosing to use LPG that is produced in the refining process as a combustion fuel instead of selling it in the market due to high natural gas prices.

The day-ahead gas on the Dutch TTF hub average above \$35/MMBtu in March, about \$16.5/MMBtu higher than propane.

The same economics are incentivizing North Sea gas producers not to extract all of the propane during gas processing.

Norway gas-plant LPG production



The most updated data from the Norwegian Petroleum Directorate (NPD) shows North Sea natural gas production decreased 4% in January and 8% in February compared with the same months in 2021. Meanwhile, NGL production declined 30% year-over-year in February and fell 29% in January most likely because producers left LPG (mainly propane) in the gas stream to maximize returns.

Regional natural gas prices have been trending higher since 1Q 2021 as rising demand depleted inventory levels. Prices got a further boost following the Russia-Ukraine conflict on increased supply concerns.

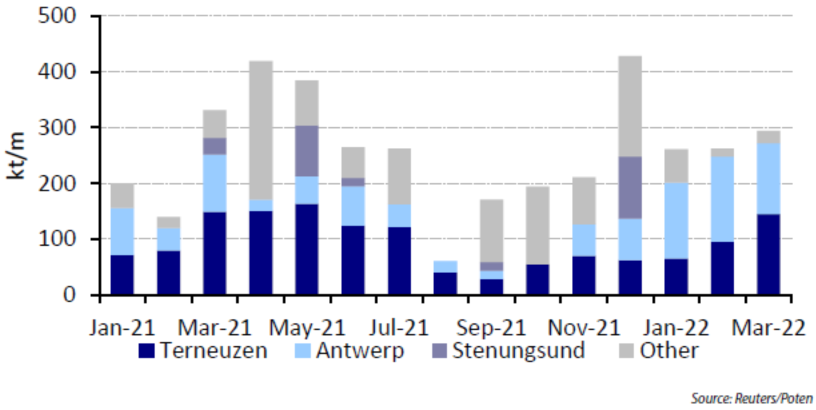
To ease supply concerns, Equinor has announced that it will increase North Sea production in the short term; however, production growth of LPG most likely will remain relatively lower due to the strength in natural gas prices which should continue to incentivize leaving LPG in natural gas stream. (For example, \$1000/t propane equates to \$21/MMBtu and the TTF forward curve is above \$35/MMBtu through December 2022). There is a limit however, on how much propane can be left in the gas.

As a result, reliance on imports, especially from the US should remain high in the coming months.

March LPG imports are estimated around 475,000 t, compared to 420,000 t in March 2021. Out of which 60,000 t was imported from Russian Baltic port of Ust-Luga. So far, seven VLGCs are scheduled to arrive in April from the US with roughly 320,000 t. Six of the cargoes will arrive during the first half of the month. There are no cargoes scheduled from Ust-Luga in April.

There are some concerns among market participants whether low US inventories will lead to higher US prices as US domestic players start building inventories. Given the wide propane-naphtha spreads in Northwest Europe and waning winter demand in the US, arbitrage between the two region is expected to remain open.

VLGC/LGC imports into Northwest Europe



LPG imports into Northwest Europe are forecast to increase 8% in 2022 to 15 MMt/y and increase another 6% in 2023. Regardless of the imports volume LPG should remain favorable in the coming months as the shortage of naphtha in the region is more acute and difficult to replace in the short term.