

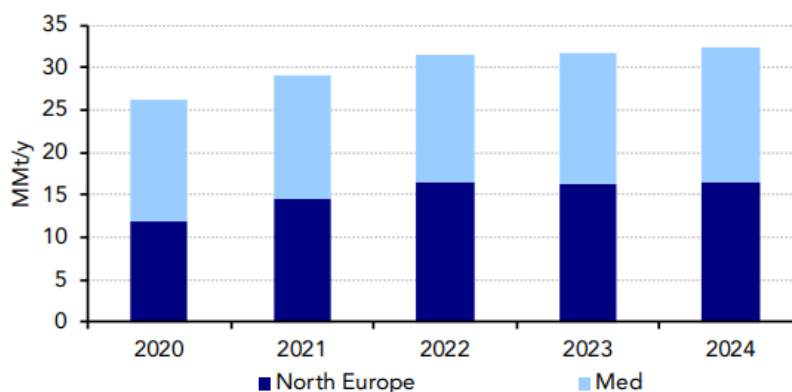


LPG Market Outlook

Import Growth for Europe to Stall in 2023

Imports for Europe increased by 10% y-o-y in 2022 to 31.6 MMt from 2021 figures, with Northwest Europe importing 16.4 MMt and the Mediterranean importing 15.1 MMt. Imports for Northern Europe are forecast to fall slightly to 16.3 MMt in 2023 due to declining demand for LPG in the industrial sector.

North Europe/Mediterranean LPG Import Forecast



High natural gas prices incentivized refiners and other industrial consumers to switch to LPG which drove most of the increase in imports. Now that natural gas prices have come down and the natural gas supply outlook for Europe has improved, the incentive for the industrial sector to increase LPG utilization is not as prevalent in Europe.

Another reason for the increase in imports in 2022 was the decline in LPG output. LPG supply fell from 18.3 MMt in 2021 to 15.5 MMt in 2022 due largely to declines in Norwegian output. High natural gas prices incentivized North Sea producers to keep NGLs in the natural gas stream.

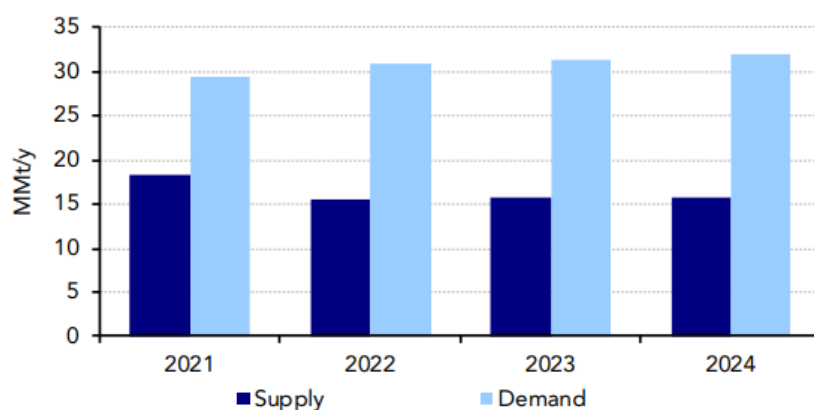
The current natural gas price environment may reduce that incentive and lead Norway to produce more LPG, but these decisions require operations that cannot be turned on and off quickly. For that reason, Norwegian LPG supply is not forecast to increase dramatically and is forecast to be flat to slightly increasing in 2023.

European demand is forecast to increase by 400,000 t/y in 2023 and 2024 to 31.4 MMt and 31.9 MMt, respectively. This is due to higher demand expected from the petrochemical sector in the Mediterranean from Spain and Portugal.

Both countries passed legislation aimed at lowering electricity prices and have been successful in doing so compared to their European neighbors.

Lower energy costs are forecast to increase LPG demand from the petrochemical sector in 2023. Imports for the Mediterranean are forecast to increase by roughly 350,000 t in 2023 to 15.5 MMt.

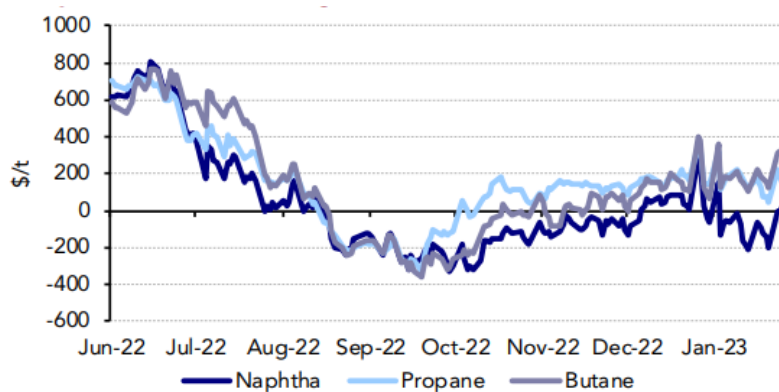
Europe LPG Supply/Demand Forecast



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European Petrochemical Margins



Petrochemical economics in Europe favor LPG at the time of writing but margins have been thin or in negative territory since August 2022.

The propane-naphtha spread is currently North Europe/Mediterranean LPG Import Forecast Europe LPG Supply/Demand Forecast European Petrochemical Margins favoring LPG in the forward months; however, it can shift with European refiners increasing operating rates due to lower natural gas prices.

Meanwhile, rising crude oil prices would pull up naphtha prices and change the dynamics in the propane-naphtha spreads