

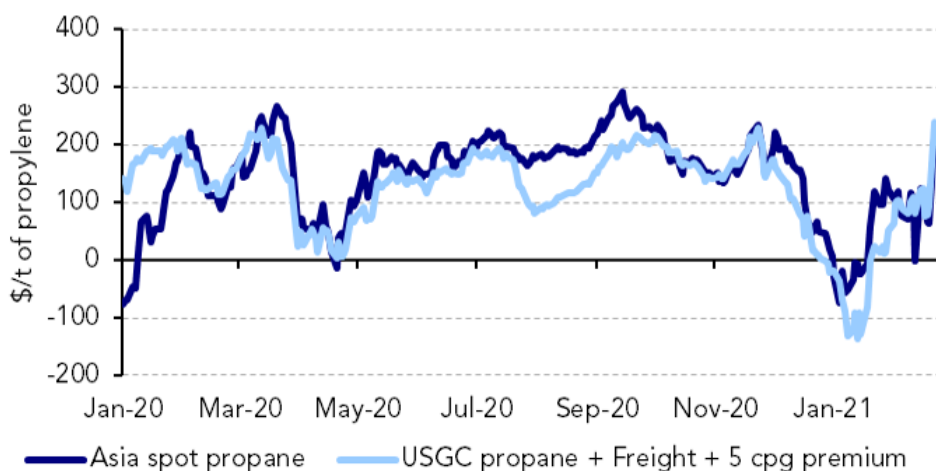


LPG in World Markets

Far East supply to tighten on US delays, Saudi cuts

Asian and US LPG prices have been trending higher since mid-February on expectations of rising demand and potential supply tightness in March. Supply in the Far East is expected to be affected by weather-related delays in US exports last month and possible cancellations of March term cargoes by Saudi Aramco. Liquidity in the Far East spot market has remained thin following the Chinese New Year Holiday through early-March due to wide bid-offer spreads. More deals are expected in March with expectations that buyers would return to secure propane cargoes. But interest for mixed cargoes is likely to remain weak due to depressed demand for butane. Reduced demand for butane is mainly due to lower spot buying interest from India in recent months amid higher LPG prices and lower allocation of petroleum subsidy (LPG and kerosene) in India's 2021-22 budget, which has been cut by more than half from last year.

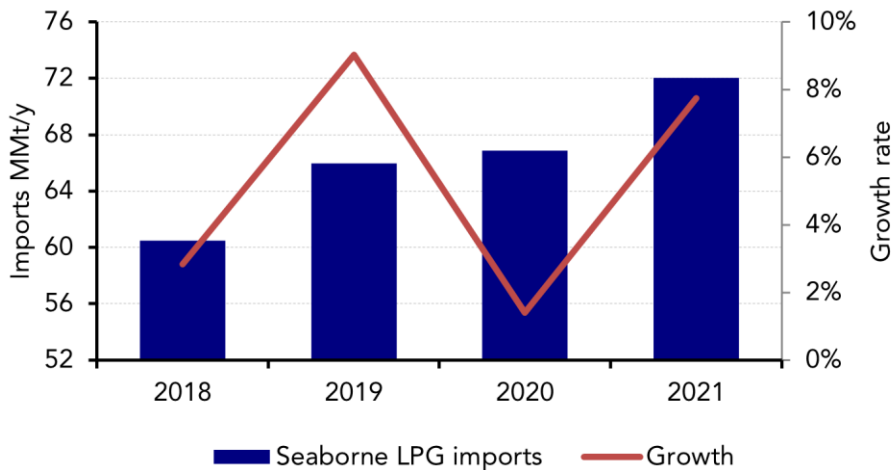
Non-integrated PDH margins in Asia



Global supply-demand of spot propylene and other olefins was tight in 2H February with increased buying interests in Asia following the Chinese Lunar New Year to replenish stocks and due to the cold snap in the US which disrupted many US Gulf Coast plants. As a result, there was sharp increases in propylene and polypropylene prices in both east and west markets driving margins for PDH plants higher. PDH margins should keep plant operating levels high in March and continue to lend support to LPG prices in Asia. China's Oriental Energy has been testing its new PDH plant in Ningbo since January and recently produced on-spec propylene, an indication that the company will gradually ramp up operating rates in the coming months.

There are more Chinese PDH plants in the pipeline scheduled to start later in 2021. In South Korea, LPG demand is expected to rise in the second quarter with the completion of a petrochemical expansion project. Higher ethylene and propylene price also increased margins for Asian crackers since second half of February.

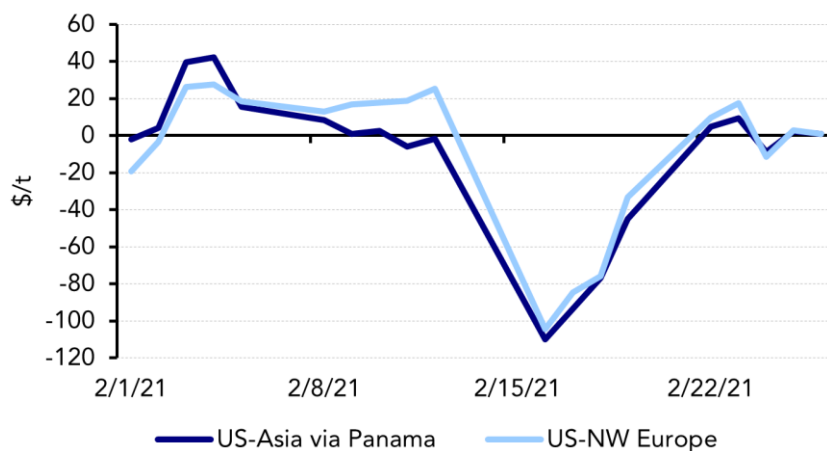
Asia-Pacific seaborne LPG imports



Seaborne LPG imports in the Asia-Pacific region is forecast to increase 8% in 2021 to about 72 MMt/y mainly driven by higher demand from the petrochemical sector.

Freight rates continued its downward trend in February but there are signs that the market could see some respite with improved arbitrage economics between US Gulf Coast (USGC) and Far East markets. In addition, some USGC cargoes destined for the Far East appear to be taking the longer route via the Cape of Good Hope. However, low US inventories may cap significant freight gains in the near term.

US arbitrage economics



Attention in the spot market is also focused on how USGC prices would trend in the near term. There are expectations that with a warmer weather outlook, USGC prices will come down and adjust to reflect international demand rather than domestic demand as US winter demand wanes. As exports will be the main driver going forward. However, US inventories ended February about 36% below last year's level due to robust exports since 4Q 2020 and the recent weather-related production issues, which will most likely limit how wide the spread between USGC and Far East can get.

USGC prices received support since mid-February as a cold snap in the central US disrupted production and boosted domestic demand. But prices have softened from the highs seen in the third week of February with warmer temperatures and lingering delays in USGC exports due to fog.

The cold weather and fog disrupted vessel loading from export terminals across the Gulf Coast for several days. The extreme cold weather lasted for a week with the most severe conditions lasting between 14-17 February when the Houston Ship Channel (HSC) and several other USGC ports were shut. However, fog related disruption started even before with most USGC ports shutting vessel traffics intermittently since 9 February. Towards early March there was about eight-10-day delays among USGC terminals.

The price spread between USGC and Far East widened to over \$100/t during the third week of February following extreme cold weather. The spread has narrowed to less than \$100/t in early March due to rising USGC prices.

Saudi Aramco increased the March propane contract price by \$20/t and butane by \$10/t to \$625/t and \$595/t, respectively. The price hike was in line with market expectations. Saudi Aramco may have cancelled five to six term cargoes in March, although there are talks that the number of cancelled cargoes may be less. Overall, March and April exports out of Saudi Arabia are expected to be lower than the levels in 4Q 2020. Saudi Aramco undertook voluntary oil production cuts in February and March, in addition to OPEC+ production cut agreements that reduced the supply of LPG from the region. Those cuts were extended through April, which should continue to lend support to AG and Far East LPG prices.