Weathering the Storm

As 2022 begins and as the Covid pandemic continues to ebb and flow globally, LPG trade has gained its footing after remaining flat during 2020. Global seaborne LPG trade reached 121.9 million tons in 2021, up from 116.3 million tons in 2020 marking a 4.5% year-on-year increase.
Although the growth in LPG trade from 2020 to 2021 was less than the 7.1% 2016-19 annual average, before the onset of Covid Pandemic and its dramatic effects on the worldwide economy, the increase in LPG trade is nonetheless a positive reflection of increasingly encouraging macroeconomic sentiment.

After gaining its status as the world’s leading LPG exporter in 2020, the US continues to increase its dominance. In 2021, it exported slightly over 50 million tons of LPG, an increase of 11.5% from the previous year, and now accounts for 41% of global exports, up from 39% in 2020. On the other hand, experts from the Middle East Gulf continued their long-term decline which has been evident since 2018. In 2021 the year-on-year fall was less than one third of a percentage point. Exports from the region totalled 34.7 million tons and represented 29% of global exports, a one percentage point reduction since 2020. The cut in Middle Eastern exports was largely a consequence of OPEC’s agreement to reduce crude production. Going forward, LPG exports are expected to increase as the producer group continues to hike their crude output.

East Asia remains the world’s major importing region importing 54.9 million tons of LPG last year, a 4.9% increase from 2020. The majority of incremental volumes were imported by China which took in 23.9 million tons in 2021, a substantial 14.5% increase compared with 2020. China’s LPG imports make up a substantial portion of the total. Middle East Gulf and the Middle East supplemented domestic supply with 40,000 tons of propylene and 210,000 MT of ethylene last year. This trend pressured the LPG market as the US Gulf Coast reduced its exports to Asia.

By the end of summer, Asia’s domestic propylene prices were negatively affected by rising output with weak demand. The volume of new propylene capacity in the Americas as an alternative, attractive destination. The second quarter saw the commissioning of new crackers in China and South Korea. Meanwhile, other facilities restarted operations after long turnarounds. Indeed, this mirrored all sectors of the fossil fuels industry.

As with LPG, last year the petrochemical market was sensitive to major trends in the global economy. Notably, the spillover effects of Covid in both shipping and operations, while the weather had a measurable impact in the industry. Indeed, this mirrored all sectors of the fossil fuels industry.

CHARTERING

VLGC/LGC

VLGC freight rates were again volatile in 2021, particularly during the first quarter. The published Baltic freight rate from Houston to China (BLPCC) for a 44kt cargo peaked at approximately $182/mt in the first half of January and dropped by almost 70% to $57/mt two months later. The arbitrage driven freight rate for this trade remained mostly flat. However, the rates soared in the $180/mt until November whereas rates exceeded the $100/mt level again. A similar trend occurred on the Ras Tanura to China route which peaked at close to $195/mt in January; before dropping by more than 95% to approximately $37/mt in March. Finally, the published average time charter equivalent (TCE) for VLGCs was just under $21,000/Day which represented a reduction of $12,000/Day compared to 2020.

The LGC segment experienced less volatility than their larger cousins, due mostly to the fact that a higher percentage are on long-term contracts. The average time charter equivalent was about $29,000/Day which is only slightly lower than in 2020.

MGC/Handsize

The midsize gas carrier market was stable in 2021 with TCE’s in the $750,000-820,000 range per calendar month for the 35,000 cbm and 38,000 cbm vessels respectively.

The Handysize carrier fleet saw earnings improve, averaging $22-24,000/Day during the year. As in 2020, higher earnings came on the back of Petrochemical trade, especially related to US ethylene exports and backhaul cargoes from Asia to the Americas.

The LPG market was sensitive to major trends in the global economy. The Handysize carrier fleet saw earnings improve, averaging $22-24,000/Day during the year. As in 2020, higher earnings came on the back of petrochemical trade, especially related to US ethylene exports and backhaul cargoes from Asia to the Americas.

The Handysize carrier fleet saw earnings improve, averaging $22-24,000/Day during the year. As in 2020, higher earnings came on the back of petrochemical trade, especially related to US ethylene exports and backhaul cargoes from Asia to the Americas.

CHARTERING

Petrochemicals

As with LPG, last year the petrochemical market was sensitive to major trends in the global economy. Notably, the spillover effects of Covid in both shipping and operations, as well as the weather had a measurable impact in the industry. Indeed, this mirrored all sectors of the fossil fuels industry.

Asia Pacific, the largest region in the global petrochemicals market, started the year with production cutbacks as an earthquake hit northeast Japan in February. Although the natural disaster caused no major structural damage to plants around the region, power outages and unscheduled turnarounds lowered the output of ethylene and propylene in the first quarter in China. PDH operating rates dropped to a multi-year low on planned turnaround and outages, eight PDH plants out of 19 were shut by the end of the first quarter resulting in a 37% decline of total PDH production capacity. Driving propylene prices 6-9% lower.

The second quarter saw the commissioning of new crackers in China and South Korea. Meanwhile, other facilities restarted operations after long turnarounds. South Korea added 750kt/yr of propylene capacity with the start-up of crackers at GS Caltex and LG Chem, which drove propylene prices down. Consequently, intra-regional arbitrage opened as European prices remained supported, prompting more discussions to move Asian-origin cargoes Westbound.

With the surge in east to west propylene trade up by over 50%, shipping proved to be a big challenge in the fourth quarter. Moreover, Covid cases in Asia were on the rise by the end of the third quarter, which led to the prolongation of movement restrictions and lockdowns. China faced a lack of pilots in the Yangtze River which hindered the movement of pressurized tonnage and left charaters facing high demurrage bills while owners handled scheduling delays and voyage cancellations. Consequently, freight rates strengthened while some owners were reluctant to call at Chinese river ports to avoid delays which had reached 10-14 days. As tensions tightened, we saw cargoes being fixed more than a month in advance to ensure space could be secured while traders were reluctant to firm up cargoes without a ship in hand.

By the end of summer, Asia’s domestic propylene prices were negatively affected by rising output with weak regional demand. The motivated traders to look to the Americas as an alternative, attractive destination.
As lockdowns continued in East of Suez countries, demand weakened which triggered reduced global petrochemicals towards the end of the year. In addition, weak Japanese demand contributed to a decline in production of basic petrochemicals, as the auto industry stagnated. Meanwhile, naphtha and crude prices strengthened on tighter global fundamentals which forced some producers to make economic run cuts to counter weaker margins. Furthermore, butadiene prices started to decline in the wake of China’s policy to reduce rubber production.

Notwithstanding continuous declining butadiene prices into fourth quarter, Philippines’ AG Summit confirmed that they had achieved on-specification of butadiene at their new 70,000mt per year extraction unit in Batangas. As there is no downstream butadiene consumption in the Philippines, all production is set to be exported. However, their first export had to be deferred.

The peak of the European ethylene maintenance season saw around 14% of capacity offline in May 2021. This included both planned and unplanned shutdowns which tightened the market. Shutdowns included one cracker in France, two units in the UK, issues in Italy, Germany and the ARA region, and an outage at a large merchant cracker on the ABS pipeline. In the aftermath of the floods and damages, Europe’s balance tightened, and prices accordingly strengthened. This had the effect of decreasing European exports by 40% in 2021 compared with the previous year. As there is no downstream butadiene consumption in the Philippines, all production is set to be exported. However, in light of weak Asian buying interest amid low operating rates, their first export had to be deferred.

US butadiene prices rose on the back of supply shortages, which were related to shutdowns during the winter storms and hurricanes. In a rare move, US prices moved above Asian prices which were influenced by LPG imports from Europe and Asia. By the end of the second quarter, US export prices stood at about $1,700/mt, with freight from Europe, close to 30% higher than the June contract price. This compared with $1,300/mt on a CFR basis in Asia.

Following stronger US and Chinese prices, and with new butadiene extraction units in place, East Asian export volumes increased by over 80,000 metric tons while US Gulf exports fell by close to 72,000 metric tons in 2021 compared with the previous year. All told, these contrasting trends saw the global volume of butadiene trade remain relatively flat year-on-year, although with higher ton-mile figures.

Overview of New Crackers in 2021:

- South Korean refiner and petrochemical producer GS Caltex started ethylene production at its new naphtha-based cracker in Yosu. The cracker can produce up to 700,000 mt/yr of ethylene and 350,000 mt/yr of propylene at capacity rate.
- China's state-controlled PetroChina Lanzhou Petrochemical commenced ethylene production at its first ethane-fed cracker. The cracker at Changning in Yulin county in Northwestern China's Shaanxi province is fed with ethane from its Changning gas fractionation plant and can produce up to 600,000 mt/yr of ethylene. The company has also built 800,000 mt/yr of polyethylene (PE) capacity integrated with the new cracker. The two PE units started up in advance, being fed by merchant ethylene supplies. China’s Guixi Petrochemical (Guixi PD) began ethylene production at its new steam cracker. The cracker at Zhangzhou in Southeast China’s Fujian province has output capacity of 1 m mt/yr of ethylene and 500,000 mt/yr of propylene. However, it can produce up to 1.2 m mt/yr of ethylene and 600,000 mt/yr of propylene.
- Chinese private-sector petrochemical producer Ningbo Runfeng New Material Technology achieved on-specification propylene production at its new 350,000 mt/yr PDH unit in northeast China’s Shandong province.
- South Korean petrochemical producer Hyundai Chemical started ethylene production at its new heavy feed cracker in Daesan. The company’s joint venture between Hyundai Oilbank and S|inte Chemical, obtained on-specification propylene and ethylene production having fed in heavy residuals on 29 November. The new cracker has 950,000 mt/yr of ethylene and 450,000 mt/yr of propylene production capacity. It is integrated with a 300,000 mt/yr low-density polyethylene (LDPE)/ethylene vinyl acetate (EVA) swing plant.
- Chinese state-controlled firm Haqiao Longyang Petrochemical achieved production at its deep catalytic cracker (DCC). The DCC, located in northeast China’s Heilongjiang province, can produce up to 480,000 mt/yr of ethylene and 550,000 mt/yr of propylene.
- Chinese private-sector firm Fujian Meide Petrochemical, a subsidiary of Fujian Soft Packaging, has started propylene production at its new 600,000 mt/yr PDH unit in southeast China’s Fujian province.
- Japanese refiner and petrochemical producer Eniess commenced ethylene production at its large Kawasaki-based cracker. The cracker has 540,000 mt/yr of ethylene and 300,000 mt/yr of propylene capacity.
- Chinese private-sector refiner and petrochemical producer Zhejiang Petrochemical (ZPC) started ethylene production at its new 1.2 m mt/yr naphtha cracker in Zhejiang province. The cracker also has 700,000 mt/yr of propylene production.
- South Korean petrochemical producer LG Chem began ethylene production at its new naphtha-fed cracker in Yeosu. The cracker has a nameplate capacity of 880,000 mt/yr of ethylene, 400,000 mt/yr of propylene and 140,000 mt/yr of butadiene.

US LPG exports to China and the rest of the world

<table>
<thead>
<tr>
<th>Year</th>
<th>China</th>
<th>ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2011</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2012</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2013</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2014</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2015</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2016</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2017</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2018</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2019</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>2020</td>
<td>500</td>
<td>700</td>
</tr>
</tbody>
</table>

- South Korean refiner and petrochemical producer GS Caltex started ethylene production at its new naphtha-fed cracker in Yeosu. The cracker can produce up to 700,000 mt/yr of ethylene and 350,000 mt/yr of propylene at capacity rate.

- China’s state-controlled PetroChina Lanzhou Petrochemical commenced ethylene production at its first ethane-fed cracker. The cracker at Changning in Yulin county in Northwestern China’s Shaanxi province is fed with ethane from its Changning gas fractionation plant and can produce up to 600,000 mt/yr of ethylene. The company has also built 800,000 mt/yr of polyethylene (PE) capacity integrated with the new cracker. The two PE units started up in advance, being fed by merchant ethylene supplies. China’s Guixi Petrochemical (Guixi PD) began ethylene production at its new steam cracker. The cracker at Zhangzhou in Southeast China’s Fujian province has output capacity of 1 m mt/yr of ethylene and 500,000 mt/yr of propylene. However, it can produce up to 1.2 m mt/yr of ethylene and 600,000 mt/yr of propylene.
- Chinese private-sector petrochemical producer Ningbo Runfeng New Material Technology achieved on-specification propylene production at its new 350,000 mt/yr PDH unit in northeast China’s Shandong province.
- South Korean petrochemical producer Hyundai Chemical started ethylene production at its new heavy feed cracker in Daesan. The company’s joint venture between Hyundai Oilbank and S|inte Chemical, obtained on-specification propylene and ethylene production having fed in heavy residuals on 29 November. The new cracker has 950,000 mt/yr of ethylene and 450,000 mt/yr of propylene production capacity. It is integrated with a 300,000 mt/yr low-density polyethylene (LDPE)/ethylene vinyl acetate (EVA) swing plant, a 250,000 mt/yr high-density polyethylene (HDPE) production line, a 300,000 mt/yr HDPE line and two 250,000 mt/yr polypropylene (PP) units.

- Chinese state-controlled firm Haqiao Longyang Petrochemical achieved production at its deep catalytic cracker (DCC). The DCC, located in northeast China’s Heilongjiang province, can produce up to 480,000 mt/yr of ethylene and 550,000 mt/yr of propylene.
- Chinese private-sector firm Fujian Meide Petrochemical, a subsidiary of Fujian Soft Packaging, has started propylene production at its new 600,000 mt/yr PDH unit in southeast China’s Fujian province.
- Japanese refiner and petrochemical producer Eniess commenced ethylene production at its large Kawasaki-based cracker. The cracker has 540,000 mt/yr of ethylene and 300,000 mt/yr of propylene capacity.
- Chinese private-sector refiner and petrochemical producer Zhejiang Petrochemical (ZPC) started ethylene production at its new 1.4 m mt/yr naphtha cracker in Zhejiang province. The cracker also has 700,000 mt/yr of propylene production.
- South Korean petrochemical producer LG Chem began ethylene production at its new naphtha-fed cracker in Yeosu. The cracker has a nameplate capacity of 880,000 mt/yr of ethylene, 400,000 mt/yr of propylene and 140,000 mt/yr of butadiene.
Geopolitical and climate issues have guided the momentum of LPG trade during 2021

Eighteen VLGCs were delivered in 2021, compared with 21 in 2020 and 17 in 2019. The order book, however, currently stands at 86 vessels which represents 20% of the current fleet. There are some 55 vessels over the age of 20 which may become scrapping candidates over time.

As with recent years, there were no LGC deliveries during 2021, and none were ordered. The last new buildings joining the fleet hit the water in 2015 (3 vessels) and 2016 (2 vessels). Therefore, the fleet composition remains unchanged at 21 vessels. The recent trend has been to abandon this segment and to favour the improved economies of scale afforded by VLGCs.

By the end of 2021 there were 106 MGCs after one demolition and four deliveries in the year. The order book stands at 34 vessels scheduled to be delivered in the next three years.

Seven Handy sized vessels are on order for delivery by the end of 2023 adding to the 126 currently in the fleet. No Handy sized vessels were delivered in 2021, whereas two were in 2020.

2021 sparked a renaissance in the S&P market, particularly for the VLGCs. Circa 20 transactions took place, with the average age of vessel exchanging hands being 13 years of age. Most of these deals have been reported against the needs of Indian imports, and those of the Indonesian requirement for longer term employment. With few owners having such age ships to sell, this competition has maintained, if not increased the buoyancy of the asset values. In the Midsized market, four vessels exchanged hands for further trading. The average age being about 20 years old. Whilst the Midsized market is generally less liquid than the larger class in terms of second-hand S&P, the most interesting sale is arguably that of the Ex GasChem Hamburg which was sold to affiliates of Japanese Owners MOL. It is understood that this was against an employment for the need of Indian imports, and those of the Indonesian requirement for long term employment. With few owners having such age ships to sell, this competition has maintained, if not increased the buoyancy of the asset values. In the Midsized market, four vessels exchanged hands for further trading. The average age being about 20 years old. Whilst the Midsized market is generally less liquid than the larger class in terms of second-hand S&P, the most interesting sale is arguably that of the Ex GasChem Hamburg which was sold to affiliates of Japanese Owners MOL. It is understood that this was against an employment for the need of a vessel that can eventually carry ammonia for the bunkering industry.

By the end of 2021 there were 106 MGCs after one demolition and four deliveries in the year. The order book stands at 34 vessels scheduled to be delivered in the next three years.

Seven Handy sized vessels are on order for delivery by the end of 2023 adding to the 126 currently in the fleet. No Handy sized vessels were delivered in 2021, whereas two were in 2020.

2021 sparked a renaissance in the S&P market, particularly for the VLGCs. Circa 20 transactions took place, with the average age of vessel exchanging hands being 13 years of age. Most of these deals have been reported against the needs of Indian imports, and those of the Indonesian requirement for long term employment. With few owners having such age ships to sell, this competition has maintained, if not increased the buoyancy of the asset values. In the Midsized market, four vessels exchanged hands for further trading. The average age being about 20 years old. Whilst the Midsized market is generally less liquid than the larger class in terms of second-hand S&P, the most interesting sale is arguably that of the Ex GasChem Hamburg which was sold to affiliates of Japanese Owners MOL. It is understood that this was against an employment for the need of a vessel that can eventually carry ammonia for the bunkering industry.

Developments among gas carrier owners

In August, we saw another consolidation of gas fleets, as Navigator Gas and Ultragaz finalised their merger. The combined fleet now totals 58 ships including 7 x 22,000 cbm, 5 x 12,000 cbm and 6 x 3,700-9,000 cbm. This makes them the leading owners in cubic capacity in the petrochemical gas shipping market.

Additionally, BW Epic Kisan also bought the Bow Gallant and Bow Guardian, both 9,000 cbm semi-refrigerated ships from Odfjell taking their fleet to 78 vessels.

Jaccar Holding announced that they will be selling all their assets over the next four years which include the Evergas fleet of 8 x 27,500 cbm and 2 x 85,000 cbm ethylene/ethane carriers and 6 x pressurized carriers on which their charter is expected to expire in 2024.

The combined fleet now totals 56 ships including 7 x 22,000 cbm, 5 x 12,000 cbm and 6 x 3,700-9,000 cbm. This makes them the leading owners in cubic capacity in the petrochemical gas shipping market.

Additionally, BW Epic Kisan also bought the Bow Gallant and Bow Guardian, both 9,000 cbm semi-refrigerated ships from Odfjell taking their fleet to 78 vessels.

Jaccar Holding announced that they will be selling all their assets over the next four years which include the Evergas fleet of 8 x 27,500 cbm and 2 x 85,000 cbm ethylene/ethane carriers and 6 x pressurized carriers on which their charter is expected to expire in 2024.

September 2022