

Argus LPG World

News, prices and analysis



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The lower cost of propane versus natural gas should result in continued strong demand from the manufacturing sector, writes Rituparna Ghosh

India's propane demand on the rise

Indian imports of propane have increased significantly this year as its use in the industrial sector grows. And imports are on course to expand further next year as the state-run natural gas distributor prepares to open the country's first propane dehydrogenation (PDH) plant in Usar, Maharashtra state.

Propane imports increased by 13pc on the year to 5.2mn t during the first half of this year, data from Kpler show. A large proportion of the additional intake is probably heading to the ceramics industry in Morbi and Surendranagar in India's western state of Gujarat. Tile manufacturers in the Morbi region have been switching between piped natural gas (PNG) and propane depending on LNG import prices since they spiked following the start of the Ukraine war in 2022.

State-controlled gas supplier Gujarat Gas increased PNG prices in Morbi to 49.36 rupees/m³ (59¢/m³) this month, having stood at Rs42.5/m³ since February, in line with rising LNG import prices. Tile manufacturers ideally need gas prices of Rs30-35/m³, according to local traders. Propane prices for the sector rose marginally to Rs56.03/kg from Rs55.94/kg in June, and based on calorific content, have fallen to more than 10pc below PNG values since May, according to bank BNP Paribas. The low up-front cost of propane installations and the likelihood of propane remaining at a discount to PNG should continue to boost demand in the near term.

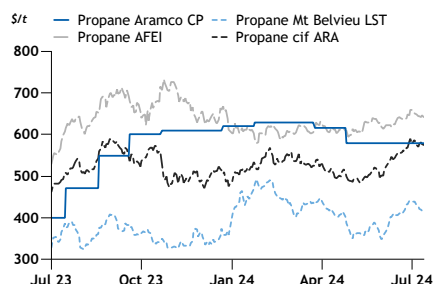
India's propane imports will grow further next year as Gail begins to source feedstock for its new 500,000 t/yr PDH plant in Usar, which is due to open in 2025 and will require about 600,000 t/yr of imports. Gail has signed a 15-year supply contract with Indian state-controlled refiner Bharat Petroleum (BPCL) to secure this volume for the Usar plant from the latter's nearby Uran terminal from next year. BPCL recently issued a term tender to purchase 61 45,000t evenly split propane-butane cargoes for delivery over the course of 2025, equating to 1.37mn t of propane. The Uran terminal imports 1mn t/yr of LPG but could undergo an expansion in the near future.

Gail's PDH project aims to capitalise on India's rising polypropylene demand, which the firm forecasts to reach 6.3mn t/yr by 2025. State-controlled LNG importer Petronet is also diversifying into petrochemicals and plans to develop a 750,000 t/yr PDH plant near its 17.5mn t/yr Dahej LNG terminal. The firm has yet to establish a start-up date for the project and is in talks with suppliers and off-takers. Petronet will also expand the Dahej terminal to 22.5mn t/yr by March 2025, including a third jetty that will handle propane and ethane – no capacities have been given.

India's recent growing demand for Mideast Gulf propane imports occurred at the same time as supplies in Saudi Arabia tightened. Stronger power generation demand in the country boosted natural gas demand, which in turn increased ethane rejection into the gas stream. This led domestic petrochemical producers to switch from ethane to propane feedstock, reducing propane export availability.

International LPG pricing

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EDITORIAL

Subtle shifts in power following months of elections around the world could provide opportunities for the LPG industry

Fragile stability

The energy policy ramifications of several significant governmental elections that have taken place over the past few months are starting to come into focus. For the LPG market, all presently point to more of the same, while the climate and energy transition objectives that will shape the sector's future have so far escaped derailment from far-right forces in all but the US' yet-to-be-held presidential race.

The recent campaigns in [India](#) and Mexico, two major LPG markets, ended in the unsurprising re-election of their two governing parties. Indian prime minister Narendra Modi secured a third term in June after a campaign that promised [competitive LPG pricing](#) and a recommitment to the expansion of the market to less affluent areas that still lack access to clean cooking. In the same month, Mexico's Claudia Sheinbaum won her race to succeed President Andres Manuel Lopez Obrador as the left-wing Morena party's incumbent. His government has pursued nationalist energy policies that have caused friction with private-sector LPG operators. This is unlikely to deviate, with some concerned that [energy reforms could even be repealed](#). Maintaining LPG price controls and tackling theft and black-market practices should remain priorities regardless when she takes over in October.

European Parliament elections, also held in June, saw significant gains for far-right and right-wing groups, seen as a [backlash to green policies and rising costs](#). But the ruling centre-right EPP group ultimately won that race, leaving Ursula von der Leyen on track for a second term as European Commission president. This should keep the EU's bold climate and energy objectives under the Green Deal on track, although a [softening, more pragmatic approach](#) could emerge following a broader parliamentary shift of power from the centre left to the centre right, delegates at last month's Liquid Gas Europe Congress in Lyon heard – something that could benefit the LPG industry.

France's snap election at the turn of this month, following a surprise surge in French votes for the far right in the European poll, looked at one stage to be ending in victory for the far-right National Rally party. But a coalition of left-wing parties unexpectedly secured enough votes to beat the National Rally into third position, while falling short of securing a majority, ending in a hung parliament. Outgoing president Emmanuel Macron has urged the New Popular Front coalition to ditch the far-left Unbowed party and join his centrist group, which came second, to ensure a majority. What government emerges is uncertain, but for now the country's energy transition and climate policies are secure and legislative stability is likely.

The UK had no problem securing a majority, as the incoming centre-left Labour party ousted the centre-right Conservatives in a landslide defeat this month. A huge parliamentary majority will give prime minister Keir Starmer's government free rein to pursue its energy and climate goals, yet these bear a striking resemblance to Boris Johnson's during his premiership in 2019-22. The forming of a new state-owned energy company could be boon or bane for LPG. But the UK LPG sector has wasted no time wooing Labour as it advocates for the protection of gas boilers in rural areas and more support to produce renewable alternatives (*see p8*).

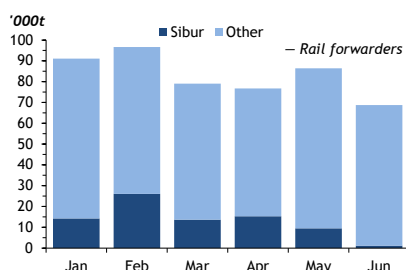
American non-fiction

The US is conversely heading for another U-turn on its energy and climate policy trajectory as Donald Trump inches nearer to a return to office in a stranger-than-fiction campaign. Should he defeat Joe Biden, he is expected to once again pull out of the Paris climate deal and reinstitute a favourable regime for licensing oil and gas wells and LNG projects – a possible boon for LPG supplies. Trump's seeming obsession with economic decoupling from China is also likely to disrupt global trade. Yet Chinese petrochemical firms seem unfazed, as they invest in ethane-fed capacity and ships to import more US supply (*see p6-7*).

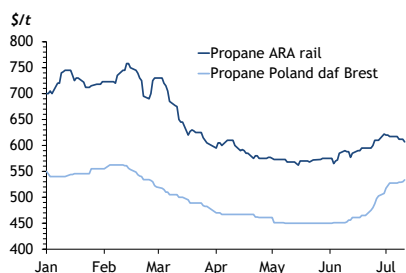
EASTERN EUROPE

Northwest European LPG could replace Poland's lost Russian supply but might result in higher domestic prices, writes Waldemar Jaszczuk

Russia rail LPG exports to Poland



ARA, Polish railcar prices



Poland faces supply crunch as Russian arrivals fall

Polish LPG prices have soared this month as imports from Russia, the country's leading supplier, slumped owing to payment problems, rising demand in both countries and prolonged maintenance at Russian gas processing plants.

Russian petrochemical producer Sibur, Poland's largest LPG supplier, stopped deliveries from 20 June after Austrian authorities froze the bank accounts of its Vienna-based export subsidiary, Sibur International, according to market participants. LPG for which prepayment has been received will still be delivered, they say.

Sibur says it has not been subject to any western sanctions and it stopped supplying LPG to its EU customers because of the bloc's embargo on Russian LPG imports. The company was not included in Poland's decision to sanction 50 Russian companies and individuals in May 2022, whereas LPG and gas suppliers [Novatek and Gazprom were](#). The EU's ban on Russian LPG is not due to come into force [until December](#). Polish customs [temporarily blocked LPG from Sibur in the summer of 2022](#) over EU sanctions targeting its former chairman.

The issue's impact might be mitigated by Sibur redirecting its supply focus to the Russian market in previous months. The company's share of rail deliveries to Poland plummeted to a mere 1.7pc in June from more than a quarter in February, according to *Argus* data. Russian LPG prices have increased significantly in recent weeks in line with growing seasonal autogas demand and ongoing maintenance at production plants, encouraging producers to prioritise the domestic market. Polish railcar import prices for propane-butane mix jumped by more than 17pc on the month to \$477.50/t daf Brest by 15 July, a seven-month high.

Russian LPG exports to Poland by rail fell by almost a fifth from May to less than 69,000t in June, data from rail forwarders show. This is likely to drop further given strong Russian demand and repairs at several refineries and processing plants taking longer than expected. Russia accounted for 46pc of Poland's 1.2mn t of imports in 2023, data from Polish LPG association POGP show.

Increasing rail congestion and delays at the Polish-Belarusian border have added to supply tightness, after Polish customs stiffened checks in retaliation for Minsk's apparent support for migrants using the country to illegally cross into Poland, as well as to prevent any EU-sanctioned Russian products from arriving. Nato's eastern flank countries have faced a surge in Middle Eastern and African migrants arriving from Belarus. Warsaw is considering measures to pressure Belarus into limiting the flow of migrants, Poland's foreign affairs ministry says.

Clearing issues

Although Russian LPG imports into Poland are permitted for now, their clearing at the border has severely slowed, POGP says. Nearly three-quarters of Poland's imports of Russian LPG have historically arrived at its five rail terminals on the Belarus border, most notably Brest in Belarus, establishing itself as the eastern European LPG pricing and trading hub.

Northwest European LPG could replace Russian supply but the switch would raise domestic prices and weigh on demand, according to market participants. Large cargo propane import prices to the Amsterdam-Rotterdam-Antwerp (ARA) hub have firmed in recent months, [defying typical seasonal patterns](#) as the continent competes for US cargoes with Asian markets. Tightening northwest European availability on a shut Atlantic arbitrage pushed the cif ARA large cargo premium to daf Brest railcars to to \$92.50/t this month, compared with a \$3.50/t discount a year earlier.

Poland's seaborne imports of LPG fell to 68,750 t/month in the second quarter from 81,500 t/month a year earlier on weak domestic demand and abundant, cheap Russian availability. But the Baltic Sea terminals are attracting more interest as Russian supply drops and summer autogas demand grows, a terminal operator says.

Q&A

Petreddec pushes LPG to fight African food poverty

LPG trading company and shipowner Petreddec was recently unveiled as one of the founding members of the [World Liquid Gas Association's \(WLGA\) Cooking For Life Africa Task Force \(CFLA\)](#), following the [IEA's Clean Cooking in Africa summit](#) in May. The company was one of the early international entrants to the sub-Saharan African LPG market and continues to pursue opportunities in the region. Argus' Oliver Binks spoke with Petreddec's head of downstream, James Bullen, about the company's plans to help expand LPG's use across Africa:

'LPG's inherent benefits of being accessible, easy to deploy, well-understood and affordable make it the unparalleled choice for meeting the IEA's objectives'

Why did Petreddec join the CFLA?

The task force is a direct response to the IEA's call to action following its summit in Paris in May. The IEA's ambition is to end cooking fuel poverty by making cleaner fuels accessible to all, thereby saving lives. The WLGA created the task force to focus on LPG's role in addressing this challenge. Although the problem itself is acknowledged to be surmountable, and not even particularly costly – in relative terms – the WLGA believes that LPG can largely solve the issue of clean cooking in Africa now. This is a belief that we not only share, but also through our work on the ground in Africa, fully understand first-hand.

LPG is well-suited to developing markets, such as those being highlighted as particularly problematic within Africa by the IEA. We believe that LPG's inherent benefits of being accessible, easy to deploy, well-understood and affordable make it the unparalleled choice for meeting the IEA's objectives.

What projects are the company involved in within the region?

Our strategy onshore has been to invest in markets where LPG is established and understood but market growth is in some way hindered. This is typically owing to a lack of investment in infrastructure, especially import infrastructure. We base our investment decisions on long-term opportunities for LPG and how we can alleviate these bottlenecks to facilitate growth.

Affordability is a significant barrier to fuel switching, so being able to import the cheapest possible product is a fundamental pillar of any investment plan we develop. And central to this is the necessity to select locations where the largest LPG carriers, VLGCs, can be accommodated to discharge cargoes. Big ships mean better freight economics, which means cheaper import prices and more affordable LPG for the consumer.

We have not announced the specific details of our new investments and are not in a position to do so yet, but the type of projects will come as no surprise to anyone familiar with our record. We have invested more than \$200m in the past decade on medium to large-scale LPG infrastructure and it's fair to assume we will do more of the same.

'Delays are common and projects such as designing and constructing import terminals, distribution systems and break-bulk hubs are complicated and time-consuming'

What are the challenges to developing infrastructure in sub-Saharan Africa?

While working in each developing market has its own specific challenges, there are often common issues to navigate when large-scale infrastructure projects are under development. These include planning and permitting, environmental adherence and acceptance and navigating local bureaucracy, which can be multi-layered and onerous.

Delays are common and projects such as designing and constructing import terminals, distribution systems and break-bulk hubs are complicated and time-consuming. The key to overcoming these is consistency, perseverance, patience and commitment. Projects run late, budgets require amendments and remits change, but good opportunities are often difficult by nature. Keeping the end goal in sight and taking a long-term view are key.



Q&A

‘We do not believe that LPG’s ready availability, low-cost set-up and easy scale-up can be bettered by any alternative’

‘We are keen to improve supply chain operations and are examining opportunities to utilise alternative forms of transport and enhance existing logistics’

What specific infrastructure in the supply chain needs the most investment?

Different regions and markets have different needs. Some countries have focused on one specific type of infrastructure investment while ignoring other key elements. Other countries are in need of modernisation across their entire supply chains. A problem we frequently come across is outdated and insufficient infrastructure stifling market growth.

While market participants’ intentions to support the growth of LPG might be there, their efforts can be in vain if they are working with 50-year-old-plus import terminals with inadequate capacity to meet market demands, or an antiquated cylinder filling and distribution system.

How much LPG does Petredec supply to sub-Saharan Africa, and where does it source it from?

Petredec has supplied LPG to Africa since the 1980s, first in north Africa and then elsewhere around the coast of the continent. Annual quantities vary with supply contracts, but for many years now we have supplied significant volumes to South Africa, which we then distribute via road tankers across the southern part of the continent. From our import hub in Richards Bay, South Africa, our local subsidiary, Petregaz, transports LPG to nine countries across the region, often more than 2,000km in each direction.

We have always used our global trading, supply and shipping system to ensure that the most appropriate product is supplied to each market. This means as arbitrage opportunities open and close, product can originate from a number of locations, but for South Africa, we typically utilise our large offtake positions in the US Gulf to supply the market.

What other clean cooking options do Africans have apart from LPG, and why not pursue these over LPG?

We aren’t aware of any alternatives as compelling as LPG when considered holistically as a “through the transition” energy option for developing markets. The IEA itself, in the report *A Vision for Clean Cooking Access for All*, identifies LPG as the primary solution to deliver clean cooking access, representing nearly half of the households gaining access by 2030. That is not to say that LPG is the answer to every problem in every market.

During the summit, we encountered new cooking stoves powered by solar energy and recycled pellets, both intriguing but reliant on electric power as a back-up fuel or for flame acceleration. Where we are talking about markets with limited access to electricity, neither of these are practical. The summit also highlighted a number of biofuels, some of which appear interesting, but developments are very early and at this point unproven. We do not believe that LPG’s ready availability, low-cost set-up and easy scale-up can be bettered by any current alternative.

Which countries are the company focusing on for LPG market expansion across the region?

We are focused on expanding operations in our existing markets and new territories. We already deliver LPG to nine sub-Saharan African countries by road so fully understand the importance of multi-modal logistics. But we are keen to improve supply chain operations and are examining opportunities to utilise alternative forms of transport and enhance existing logistics in order to improve productivity and, most importantly, lower costs. Reduced logistic costs means cheaper deliveries resulting in improved affordability, which is crucial as we and our partners strive for market growth.



Q&A

'Shortages of alternative energy options and an ongoing electricity crisis in South Africa have thrust LPG into the limelight as a viable substitute for power generation'

What are the company's objectives in terms of inland African LPG distribution this year?

The current project focus, particularly in South Africa, is on further optimisation of the supply chain to better serve our customers. Having acquired one of South Africa's largest dedicated LPG road logistics operators in 2023, we have now fully integrated that business into our operations and have set about further expanding the freight aspect of our offering. We expect to announce further developments in due course that will improve that level in terms of speed, cost and reliability.

Targeting new usage opportunities for LPG is also a key current focus, as we look to leverage the strong foundations we have laid since commissioning the Richards Bay terminal in 2020. Acute shortages of alternative energy options and an ongoing electricity crisis in South Africa have thrust LPG into the limelight as a viable substitute for power generation. We are engaged with several industrial and commercial businesses looking for energy security that are, for the first time, considering using LPG.

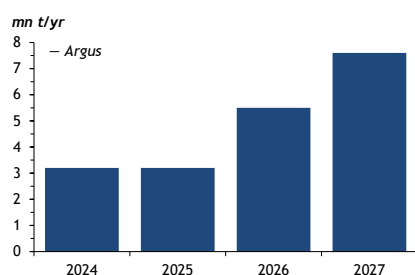
The company divested its Reunion business in 2023. Why and what lessons were learnt?

The business ran profitably throughout our 14 years of ownership, and together with our local partner, we had gradually managed to grow our market share and overall volumes. However, with our investment focus in the region shifting from the southern Indian Ocean to continental Africa, Petregaz Reunion had become somewhat isolated in our longer-term strategic growth plan. With their own growth strategy focusing on market consolidation and integrating operations, the business was a natural fit for Vivo Energy and a transaction suited all parties.

ETHANE

Pressured PDH margins and growing US ethane availability are inducing Chinese petrochemical producers to turn to ethane as feedstock

China ethylene cracker capacity additions



China ethane use to double despite US dependency

China's ethylene producers are increasingly turning to ethane as the most competitive cracking feedstock compared with LPG and naphtha, with domestic demand likely to double to about 8mn t in the next 3-4 years from 4mn t last year. This is despite the challenge of importing the natural gas liquid (NGL) from the US.

Chinese petrochemical producers operate three ethylene crackers in the country that use imported ethane – Satellite Petrochemical's 2.5mn t/yr Lianyun-gang cracker, SP Chemical's 600,000 t/yr Taixing unit and Sanjiang Petrochemical's 1mn t/yr Jiaying cracker.

Satellite's facility is the only one that uses 100pc ethane, with the other two using it as part of the flexible feedstock. The three crackers' combined ethane imports amount to about 4mn t/yr, according to Vortexa data.

Further growth in China's ethane use has been capped by a difficulty in securing government approval to build 100pc ethane-fed crackers owing to the US being the only significant exporter of the NGL.

Beijing is acutely aware of the impacts the trade war between the two countries in 2018-19 had, when the US imposed a 25pc tariff on \$200bn of imports from China, leading to the latter retaliating by doing the same for imports from the US – mainly energy products including LPG and ethane. The trade war was initiated by then-US president Donald Trump, who is currently ahead in the polls to replace incumbent Joe Biden from January 2025.

Another challenge is the substantial amount of investment needed in the ethane supply chain, from US export terminal expansions to building new very large ethane carriers (VLEC) to carry the additional supply to China, given the current fleet is limited and employed under long-term contracts.

ETHANE

SP Chemical ordered three new VLECs at the Yangzijiang Shipyard in May to support its increasing feedstock needs, with the price for each vessel amounting to about \$160mn.

China's ethylene production capacity is set to peak at about 70.2mn t/yr in 2027, up from 50.1mn t/yr in 2023, Argus data show. This will be supported by Beijing's efforts to reduce oil products production and increase petrochemical output in order to lower carbon emissions. Its plans to achieve peak CO₂ emissions from petrochemicals before 2030 also means that the sector is shifting to lighter hydrocarbon feedstocks such as NGLs.

Propane feedstock use has ballooned in the country since 2020 on the significant rise in the number of propane dehydrogenation (PDH) plants producing propylene. But this has placed PDH margins under increasing pressure as propylene supplies have grown, prompting renewed interest from petrochemical producers in ethane-fed projects.

Switching things up

A workaround for companies looking to secure approval for ethane-fed cracking projects has been to convert existing units to the feedstock or to develop flexible crackers that can use ethane as well as LPG and/or naphtha. That is exactly what Wanhua is doing to its propane-fed Yantai 1 cracker in Shandong province, which will reduce propane demand by 1.4mn-2mn t/yr once the conversion is completed at an as-yet-undefined time, [the company announced in June](#).

Another project is Huatai New Materials' upgrade to its 600,000 t/yr cracker in Ningbo, Zhejiang province. The firm is to swap one furnace to ethane from propane, which is expected to be completed by the end of this year, although the amount of propane this will replace is unclear. China has three other projects to develop flexible crackers that can use ethane, including Wanhua's 1.2mn t/yr Yantai 2 unit, which will use ethane and naphtha and is going to start up by the end of 2024.

These will require significant imports of US ethane. The global VLEC fleet stands at 30, while the newbuild orderbook stands at 40, most of which are due for delivery in 2026-27. Wanhua has ordered six VLECs and might need up to 10, SP Chemical ordered three in May, and shipping firm Pacific Gas and petrochemical firm Ineos have also ordered new VLECs.

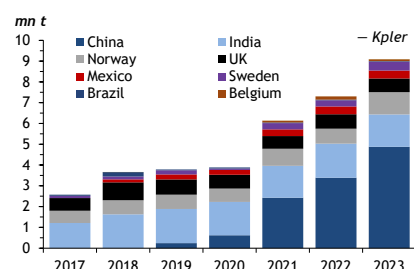
Chinese investment in ethane-fed petrochemical capacity is founded on expectations that US ethane production and export capacity will continue to grow. US exports to China rose to 77.3mn bl (4.37mn t) in 2023 from 57.1mn bl in 2022, with 45pc of the US total heading to China, up from 35.3pc the year before, EIA data show.

US midstream companies are investing in expansions to their ethane export capacity in order to [keep up with growing overseas demand](#). Enterprise Products is developing a Gulf coast terminal at Beaumont, Texas, the first 120,000 b/d (2.5mn t/yr) phase of which is due to open in the second half of 2025, followed by a second phase that will add 180,000 b/d of ethane or 360,000 b/d of propane capacity, or a combination of the two. Enterprise's Morgan's Point ethane terminal exported about 198,000 b/d last year. Once the works are complete, the company expects the terminals to be used at capacity and to reach 550,000 b/d of contracted ethane exports.

Energy Transfer's ethane exports increased to 233,000 b/d in the first quarter. The company owns the 700,000 b/d Nederland, Texas, and 260,000 b/d Marcus Hook, Pennsylvania, terminals, both of which can export LPG and ethane. The former is set to be expanded by 250,000 b/d by mid-2025. Nederland's ethane capacity is underpinned by a long-term contract with Satellite.

Province	Company	Ethylene capacity	Feedstock	Start-up
Jiangsu	SP Chemical	600	Ethane, propane	2019
Jiangsu	Statellite	2,500	Ethane	2021-22
Zhejiang	Ningbo Huatai	600	Propane, ethane	2021
Shandong	Wanhua	1,000	Ethane, propane	2022
Zhejiang	Sanjiang	1,000	LPG, ethane, naphtha	2023
Shandong	Wanhua	1,200	Ethane, naphtha	2025
Tianjin	Ineos-Sinopec	1,200	Ethane, naphtha, LPG	2025
Liaoning	Dingjide	300	Ethane	2026
Jiangsu	PetroChina	1,000	Ethane, LPG	2027
Total		8,800		

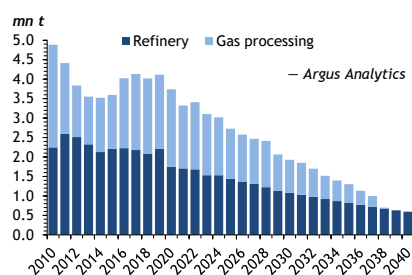
US ethane exports by country



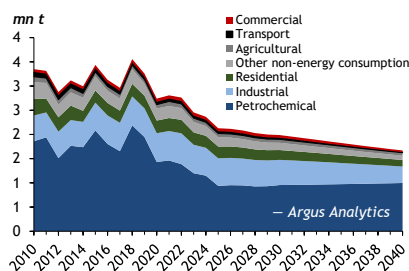
POLITICS

Consistent policy and a level playing field for competing technologies will drive demand for renewable liquid gases, writes Waldemar Jaszczyk

UK LPG output by process



UK LPG demand by sector



UK LPG sector pushes government for RLG support

The UK LPG industry has lost no time engaging the new Labour government, hoping to not only hold on to recent favourable policy changes but to also secure more state support for its decarbonisation.

The sector is entering the new parliamentary term with several policy wins under its belt. The net zero ministry's 2023 biomass strategy for the first time carved out a role for renewable liquid gases (RLG) in decarbonising off-grid heating. Not long after, the Conservative government delayed the phase-out of new fossil fuel boilers to 2035 from 2026 for off-grid homes, while exempting around 20pc of homes deemed unsuitable for heat pumps, in a failed effort to reverse its political fortunes. Previously the UK government was focused on electrification of heating, but it has had a more pragmatic approach since 2019, UK LPG association Liquid Gas UK's (LGUK) chief executive George Webb says.

With the stakes so high, the industry moved early to take advantage of Labour's effort to woo business by engaging with its then shadow cabinet prior to the election. This engagement appears to have been successful – the party's manifesto promised that “nobody will be forced to rip out their gas boiler”.

But, although Labour distanced itself from a “boiler ban” during the election campaign, it remains to be seen if it will hold this position in government, and whether it will look to redefine what boilers will be restricted and by when, consultancy Genserv's head of analysis Robert Honeyman says. Consistent policy will be critical in developing RLG value chains, according to LPG distributor Flogas, by building confidence among consumers and giving investors certainty.

The industry is also pushing the government for several regulatory and financial measures to support RLG development. The government must ensure an equal playing field for competing technologies to help drive demand for RLG, UK distributor Calor Gas says. BioLPG must be put at parity with sustainable aviation fuel (SAF) on sustainability criteria to become viable, according to Webb. Calor wants more support for hybrid heat pumps in the Boiler Upgrade Scheme – which provides a grant to help pay to replace a boiler – and by offering value-added tax relief, both of which are only available for 100pc electric heat pumps.

Green incentives

The LPG sector also hopes the government will unlock private investment by including RLG in the upcoming UK Green Taxonomy. The industry has earmarked £600mn (\$778mn) to develop RLG production to 2025, but much more will be needed to reach its 100pc renewable target by 2040. Labour's interventionist approach could even mean support for RLG through Great British Energy, a new state-owned company backed by £8.3bn over the next parliament, Honeyman says.

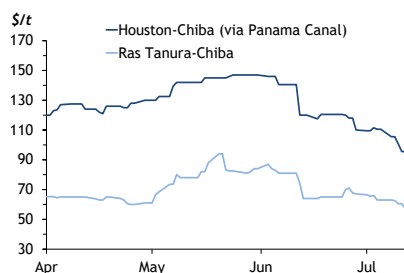
The government also needs to help with supply chain resilience. UK refineries have provided the majority of domestic LPG supply, but this has been declining since the 2010s owing to underinvestment, underperformance and closures. Production dipped to 1.5mn t in 2023 from a peak of 2.9mn t in 2011, government data show. A backlog of refinery turnarounds and storms in the North Sea affecting offshore activity hit domestic supplies in winter. Logistics are also hampered by most LPG storage infrastructure being located in northeast and southeast England.

The industry has taken steps to address these vulnerabilities. Flogas recently opened an LPG terminal at Teesside to provide up to 100,000 t/yr of North Sea-sourced LPG. But the state could take a bigger role, collaborating with upstream suppliers, in improving LPG output reliability and avoiding logistical bottlenecks to ensure adequate supply during heightened demand, Flogas director Ivan Trevor says. Labour's attempt to relax the UK's planning rules could help speed up and lower the cost and risk of developing infrastructure projects, according to Flogas.

SHIPPING

A global surplus of vessels has seen a modest increase in US LPG exports, writes Yohanna Pinheiro

US-Asia, Mideast Gulf-Asia VLGC rates



US-Asia VLGC rates fall in 2Q on strong availability

Spot freight rates for VLGCs sailing from the US Gulf coast to northeast Asia fell by 8pc during the second quarter compared with a year earlier as a global surplus of available vessels was more than adequate to cover a 20pc rise in US LPG exports.

The Houston-Chiba rate via the Panama Canal fell to \$132/t in April-June from \$143/t a year earlier. LPG exports from the Gulf coast to northeast Asia rose to 8.1mn t from 6.7mn t, Kpler data show, driven by increasing production and **strong import demand** from Chinese propane dehydrogenation (PDH) plants.

Rising vessel availability has largely stemmed from chartering demand in the Mideast Gulf falling as a result of **Opec+ production cuts**, leading to VLGCs pooling in the US Gulf. Mideast Gulf LPG exports fell by 17pc on the year to 5.5mn t in the second quarter, according to Kpler. Shipments to India rose by 13pc to 3.4mn t, but the shorter voyage results in vessels returning to the market more quickly.

VLGC availability has also been boosted by a large influx of newbuild vessels since late 2023. The global fleet grew by 53, or 13pc, in 2023 and the first quarter of 2024, according to shipowner BW LPG, with 24 delivered between October and March. Many have also been contracted to new sources of supply, meaning less LPG is reaching the spot freight market, further pressuring rates.

VLGC tonne miles (tmi) – a measure of vessel employment – rose by 9.8pc on the year to 74mn tmi in the second quarter, Kpler data show, lifted by rerouting flows around the **Cape of Good Hope** when Panama Canal auctions hit **yearly highs in May**. But tonne miles fell steeply in June after transits and drafts were raised at the Panama Canal, down by 16pc to 22.8mn tmi.

VLGC rates are likely to remain under pressure this year compared with 2023 given the pressure they experienced from Panama Canal restrictions in the second half of last year. **These have eased this year**, and although the outlook at the canal is uncertain, US LPG export growth will be capped by terminal capacity and the Opec+ cuts should continue to depress Mideast Gulf exports, maintaining pressure on VLGC rates.

SOUTHEAST ASIA

Thailand's imports fell as output from gas processing rose, both by nearly a fifth, writes Eunice Ng

Thai LPG fundamentals		'000t
	Jan-Apr	±% Jan-Apr 23
Supply	2,190	0.7
Domestic output	1,776	9.4
Imports	690	-24.9
Consumption	2,181	4.4
Residential	682	0.1
Industrial	217	-6.1
Autogas	313	6.1
Petrochemical	931	8.1
Other energy	38	83.5
Exports	48	-30.0
– Energy ministry		

Thai LPG imports fall in 1H on domestic output rise

LPG imports to Thailand fell during the first half of this year as a result of increasing domestic production, while petrochemical sector demand remained strong.

The country's LPG imports fell by nearly a fifth to just over 740,000t in January-June compared with the same period a year earlier, Kpler data show, largely driven by a rise in its domestic production. Thailand's LPG output from gas processing, which accounts for roughly 60pc of domestic production, also rose by nearly 20pc to 1.1mn t in January-April, energy ministry data show. Total LPG output rose by 9.4pc to 1.78mn t, with the balance coming from the refining sector.

Thai LPG demand rose by 4.4pc to 2.18mn t in January-April, energy ministry data show, driven by rising petrochemical feedstock consumption, with use growing by 8.1pc to 931,900t. Thailand has six ethylene steam crackers that can be fed with LPG and two propane dehydrogenation plants, all located near the port of Rayong. Cooking fuel consumption was stable at 682,500t, while use as autogas firmed by 6.1pc to 312,600t and industrial sector demand fell by 6.1pc to 216,500t.

Ample LPG supply from the Mideast Gulf continued to meet the majority of Thailand's import needs, while the US has emerged as another major supplier to the country this year after its imports dropped significantly in the past two years. US arrivals totalled 53,200t in January-June, reaching a 6.7pc share of the total, while the imports share from the Mideast Gulf grew to 90.1pc over the same period, Kpler data show.

EU

Calls have been made for core elements of the existing green targets to remain, with a focus on affordable energy, writes Dafydd ab Iago

Parliament groups make climate, energy requests

The European Parliament's centre-left S&D and liberal Renew groups are finalising their key policy requests ahead of an expected plenary vote on 18 July on the re-appointment of Ursula von der Leyen as European Commission president. Both groups, like the centre-right EPP, are broadly calling for a continuation of the bloc's Green Deal.

Von der Leyen, a member of the centre-right EPP's governing body, has already received [nominations](#) from EU leaders. But she will also need support from the centre-left, liberals and Greens to gain a majority in the plenary on 18 July. The EPP had intended to finalise its [policy calls for 2024-29](#) in Portugal by 5 July. But parliament's largest centre-right party is still working on a "live" document with hundreds of amendments. Core elements remain, including a revision of CO₂ standards for new cars to allow for alternative zero-emission fuels beyond 2035, and a new e-fuel, biofuel and low-carbon fuel strategy.

The centre-left S&D group has already handed von der Leyen its policy wish list for 2024-30. The group has called for several existing targets to remain in place, including the EU's legal commitment to climate neutrality by 2050 and the 2030 greenhouse gas (GHG) reduction target – cuts of "at least" 55pc by 2030, from 1990 levels. It wants CO₂ standards for cars and the [deforestation regulation](#) to remain in place. And the S&D wants to extend legal obligations under the EU's Climate Law to establish an "ambitious" intermediate climate target for 2040 of "at least 90pc and up to 95pc of net GHG emissions", compared with 1990 levels.

The Renew group does not want the next commission "backtracking" on the Green Deal, and is pushing for affordable energy for households. The group wants a "complete phase-out" of imported Russian fossil fuels, with a strong emphasis on supply diversification and energy efficiency. Renew further calls for a "zero carbon" Energy Union package of legislation with joint purchasing and enabling more investment in power storage, grids and generation. Other calls from the group include expanding the emissions trading system and the carbon border

RDME

The two firms will separately continue to explore opportunities for the LPG alternative, write Peter Wilton and Oliver Binks

SHV and UGI to dissolve rDME joint venture Dimeta

LPG distributors SHV Energy and UGI International are to dissolve their renewable dimethyl ether (rDME) joint venture Dimeta – [which they established in 2021 in order to develop production of the LPG alternative](#) – because the two firms' "objectives have diverged".

"Our goal is to ensure an orderly and efficient dissolution of Dimeta," the firm's chief executive Frankie Ugboma says. "Dimeta's development activities have ceased but a final dissolution date cannot be pinpointed at this time."

SHV and its sustainable energy arm Futuria Fuels will continue to explore all viable options for rDME production and supply in its key geographies, according to Ugboma, while UGI remains interested in evaluating rDME but is waiting for further policy development before investing.

Netherlands-based Dimeta had been aiming to [produce 300,000 t/yr of rDME by 2027](#) from six new plants in Europe and the US using feedstocks including agricultural residues, municipal solid waste and sewage sludge. The [first 50,000 t/yr plant](#) utilising municipal waste was scheduled to come on line at Teesworks freeport in northeast England next year. Regarding the Teesside project, Ugboma says the new technology used for this process is "more complex and challenging" than initially anticipated, and SHV Energy and UGI International will now review their options. On Dimeta's [other global projects](#), Ugboma says the pair will pursue individual projects "reviewed on a case-by-case basis".

NORTH AMERICA

The hurricane caused power shutdowns and flooding across the Gulf coast, with an impact on vessel availability and loading schedules, writes Amy Strahan

Hurricane Beryl track



Hurricane Beryl delays US Gulf coast LPG exports

US Gulf coast terminals' loading schedules have been delayed after Hurricane Beryl made landfall in Texas on 8 July, causing power shutdowns and flooding.

Vessel tracking showed six VLGCs moored offshore Houston by 11 July, the same day restrictions on outbound vessel traffic on the Houston Ship Channel were lifted and the day after inbound transits were allowed for ballasting VLGCs. A maximum draft of 35ft (11m) for daylight passage was also removed, but transits were slow to resume as the channel's authorities assessed the safety of laden VLGCs.

Power shutdowns affecting navigational lights and a laden VLGCs approximate draft of 45ft meant exports from midstream operators Enterprise's 763,000 b/d and Targa's 450,000 b/d Houston LPG terminals were paused. Refiner P66's 260,000 b/d Freeport terminal in Texas, which was in the direct path of Beryl, received no vessels over 8-11 July. Power cuts had been resolved, market participants said on 11 July, and draft restrictions were lifted, with the *Avance Levant* departing the terminal on 15 July. Vessels loading at midstream firm Energy Transfer's 480,000 b/d Nederland terminal in Texas were relatively unaffected.

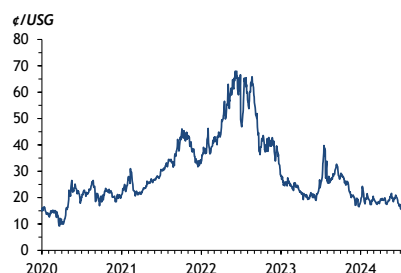
The hurricane has caused further slippages to loading schedules at the two Houston terminals. The terminals had already been playing catch-up after a severe storm hit the area in late May, also resulting in power shutdowns. The two facilities have fewer available cargoes on a spot fob basis, prompting term contract buyers to offer cargoes for resale in August at significant premiums.

Argus' spot fob loading prices at the terminals rose to 16.5¢/USG (\$86/t) premiums to Mont Belvieu propane prices on 10 July from 9.75¢/USG premiums on 17 May, while offers for August cargoes rose to 18¢/USG premiums or higher.

NORTH AMERICA

Prices have fallen to their lowest in four years, as several cracker shutdowns have reduced demand, writes Abby Downing-Beaver

Ethane Mont Belvieu



US ethane prices slump on gas falls, cracker shutdowns

US ethane prices at the Mont Belvieu hub in Texas have slumped this month to their lowest in four years on waning natural gas values and planned and unplanned ethylene cracker shutdowns, reducing demand for the feedstock.

The Mont Belvieu EPC price fell to 15.5¢/USG (\$115.50/t) on 8 July, the lowest since 27 April 2020. This came after gas prices at the Waha hub in Texas turned negative on 24 June, ahead of maintenance on midstream firm Kinder Morgan's 2.6bn ft³/d (26.7bn m³/yr) Permian Highway Pipeline on 25-27 June. Gas prices into July fell to minus \$3.965/mn Btu on 3 July, an eight-week low, despite the pipeline's restart. This pushed ethane's premium to gas up to 41.9¢/USG – the highest since early May, when Waha prices fell to minus \$4.835/mn Btu.

Gas prices at Texas' Henry Hub also fell to an eight-week low of \$2.319/mn Btu on 5 July, as demand weakened in line with forecasts for milder weather. They then firmed slightly to \$2.329/mn Btu by 10 July.

Shutdowns to ethane-fed crackers in Texas and Louisiana have also reduced demand. Planned works at Sasol's 460,000 t/yr and Indorama's 420,000 t/yr crackers, both in Lake Charles, Louisiana, are ongoing for a few months. Shell's 850,000 t/yr mixed-feed cracker in Norco, Louisiana, recently restarted following a shutdown in mid-May and is now operating at reduced rates. Dow's 726,000 t/yr ethane cracker in Orange, Texas, has been in a planned turnaround since April, but is expected to be back on line shortly. Phillips Chemical's 635,000 t/yr cracker in Sweeny, Texas, shut down on 24 June owing to an operational malfunction.

Hurricane Beryl in Texas on 8 July saw Formosa and BASF-Total briefly shutter their Point Comfort and Port Arthur plants, respectively, which together pushed US ethylene prices to a 15-month high of 25.875¢/lb on 9 July, and ethane cracking margins to a two-year high of \$416.58/t on 8 July, Argus data show.

IN BRIEF

Asia-Pacific

China's Jinneng starts up third PP unit

Chinese private-sector petrochemical producer Jinneng Chemical started up its third 450,000 t/yr polypropylene (PP) unit in Qingdao, Shandong, northeast China, earlier this month and aims to hit capacity by mid-July. It forms the second phase of its Qingdao projects, incorporating three PP units of a combined 1.35mn t/yr, integrated with [two 900,000 t/yr propane dehydrogenation \(PDH\) plants](#). A shortage of PP in north and east China has led to surging prices since March. Weekly operating rates at PP plants in China eased to 72pc in early July from 76pc in early March, but PP raffia prices increased to 7,640-7,880 yuan/t (\$856-884/t) from Yn7,300-7,600/t. The gains in PP prices also lifted production margins for China's PDH producers, prompting them to [raise operating rates](#). PDH utilisation averaged 74pc between 26 June and 10 July, up from 72pc a month earlier.

India's Pipavav jetty off line

India's Pipavav port on the east coast has closed its liquid cargo jetty for planned maintenance over 15-18 July. Rehabilitation work and fire safety improvements will be carried out, according to the port authority. The port received 636,000t of LPG in 2023, about 7pc of the 8.6mn t that arrived on India's east coast, Kpler data show. The last LPG discharge at the port was a 17,000t propane-butane cargo from Qatar Energy's Ras Laffan complex on board the *Manasarovar* on 13 July. The next will be a 22,400t propane-butane cargo from Kuwait on board the *Green Sarita* on 19 July. India's Haldia port is also due to shut down its Oil Jetty 1 (HOJ-1), a key berth for regional LPG imports, for urgent work for four days from 22 July. Shipments are expected to arrive at HOJ-2, which was [taken off line for 30 days on 25 April](#).

DCC divests Hong Kong LPG business

Dublin-based LPG distributor DCC Energy has sold a majority stake in its Hong Kong and Macau LPG business to Philip-pines-based conglomerate Citadel Pacific. DCC received \$105mn in cash on completion, retaining a minority stake in the combined operations, the firm says. The business was valued at \$150mn and represented around 2pc of DCC's operating profit in the second quarter.

Europe

Greek autogas car registrations fall

New autogas car registrations in Greece fell to 1,070 in the first half of 2024 from 1,600 a year earlier, the latest data from Greek automobile importers association Amvir show. Fewer than 100 were registered in June, down by 34pc from May and 63pc from June 2023.

UK, Petroineos hold Grangemouth talks

The UK government has held talks with refiner and trading company Petroineos on how to secure a future for the firm's Grangemouth plant – Scotland's sole refinery – after its planned closure in 2025.

Petroineos – a joint venture between state-controlled PetroChina and UK-based petrochemical firm Ineos – has said it will close the 150,000 b/d Grangemouth plant and convert it into a fuel import terminal. The refinery is a major supplier of road fuels across the densely populated central belt of Scotland and is also the primary supplier of jet fuel to Scotland's main airports.

UK energy secretary Ed Miliband on 12 July said the government and the devolved Scottish administration will fund work to explore options at Grangemouth. Petroineos has said it is evaluating the feasibility of [building a bio-refinery](#) on the site.

The UK's new Labour government, which has been in power since 5 July, is facing calls from unions and climate groups for clarity over its plans for the energy sector, having committed to issuing no further oil or gas exploration licences. UK union Unite and more than 60 climate groups have called for "a clear and funded transition plan for workers and communities reliant on the oil and gas industry". More than 400 people are employed at the Grangemouth refinery.

Oversupply caps Ukraine LPG price gains

LPG prices have risen in Ukraine this month owing to rising import costs. But the increase was tempered by sluggish demand and a large supply overhang, according to market participants. LPG prices at Ukrainian terminals and ports increased to 38,500-43,000 hryvnia/t (\$944-1,054/t) during the week to 12 July from HRN38,400-42,400/t a week earlier. At Izmail and Reni on the Danube River, prices decreased to HRN38,500-39,500/t from HRN39,000-39,500/t.

Latin America

Petrobras lifts LPG prices by 10pc

Brazil's state-controlled Petrobras has raised its wholesale residential sector LPG prices by 9.8pc to 34.7 reals (\$6.4) per 13kg cylinder from 9 July. This is the first adjustment to Petrobras' wholesale prices for distributors this year. The company has also increased gasoline prices. The Brazilian government does not regulate retail LPG prices but they are determined largely by Petrobras' wholesale rates. The cost of a 13kg cylinder in the country stands at about R104.5, 18pc of which comes from state taxes and 50pc from distribution and resale margins, according to Petrobras.

IN BRIEF

Latin America

Mexico's LPG prices resist US climb

Mexico's average LPG retail price cap remained little changed after two straight weeks of increases, despite higher delivered US fob propane prices. The average of 2,475 city-specific retail price caps for 7-13 July edged down to 10.63 pesos/litre (\$2.22/USG) from a four-month high of Ps10.64/l the previous week. This is above the average of Ps10.26/l this year and Ps9.66/l in full-year 2023. Domestic LPG prices have increased this year and [the upward trend](#) might continue as state-owned Pemex imports more as its production declines. Mexico's energy regulatory commission CRE refers back to two weeks of international prices when setting weekly LPG rates. The price of US Gulf coast propane delivered to Mexico rose to 98.39¢/USG by 12 July, from 97.7¢/USG on 27 June.

North America

US DOE seeks bioLPG advice

The US Department of Energy (DOE) has issued a formal request for information on the production costs and potential benefits of bioLPG and renewable LPG. The ministry has asked for input from "industry and other stakeholders" that produce or are considering producing "renewable propane" as a by-product at biofuels plants, commonly referred to as bioLPG, or directly from municipal and agricultural waste, also referred to as renewable or recycled-carbon LPG. It aims to discern the potential of increasing bioLPG and renewable LPG's viability through the development of new production of sustainable aviation fuel and "other high-impact products". Responses are due by 5 August. US production of bioLPG is relatively limited and currently restricted to about four renewable diesel plants, where it is extracted as a fractional by-product. But the country has another 15 renewable diesel plants that could add bioLPG separation units. UGI, the parent company of US LPG retailer AmeriGas, announced in 2022 an agreement with Global Clean Energy Holdings (GCEH) to purchase and distribute up to 848 b/d of renewable propane from GCEH's Bakersfield renewable fuels plant in California.

Wolf to expand Alberta NGL complex

Canadian firm Wolf Midstream has reached a final investment decision on the expansion of its natural gas liquids (NGL) recovery and transportation system in Alberta, Canada. Phase two of the company's NGL North complex will include a 1.5bn ft³/d (15.5bn m³/yr) natural gas plant and a 90,000 b/d NGL fractionation facility, which includes 60,000 b/d of ethane capacity. The C\$1bn (\$730mn) expansion will bring total fractionation capacity on the NGL North

Trigon first Canada LPG exports in 2028

Canadian company Trigon Pacific Terminals plans to begin LPG exports from a repurposed section of its Pacific coast export terminal at Prince Rupert, British Columbia, in 2028.

The [Trigon Pacific LPG export project](#), announced in November, is still in the early engineering and design stages. It will include 120,000m³ (70,900t) of LPG storage capacity having converted a thermal coal storage space to LPG, and involves preparing the terminal's industrial area for bulk liquids storage and handling, the firm says. Trigon's coal terminal can export 18mn t/yr.

The project could become British Columbia's fourth LPG export terminal. Midstream firms AltaGas and Pembina operate the 65,000 b/d Ridley Island propane export terminal (Ripet) and 25,000 b/d Watson Island facility, respectively. And AltaGas and Dutch storage operator Vopak recently announced a final investment decision on the new [55,000 b/d Ridley Island energy export facility](#), which will be adjacent to Ripet.

Questions remain on whether Trigon is authorised to add LPG to its terminal operations. The Prince Rupert Port Authority (PRPA) said last year that AltaGas and Vopak have time-limited exclusive rights for the export of LPG from Prince Rupert and that it had not given Trigon consent to expand its permitted uses on the leased property beyond its current portfolio.

"The provision of exclusive rights for specific cargoes enables the certainty required to advance large capital projects through long development periods, secure investment in vital trade infrastructure, and fulfill PRPA's mandate," the authority said in December.

Trigon submitted the project description to PRPA early this year. PRPA did not immediately respond to a request for updated comment.

system to 170,000 b/d when it comes on line in 2027, Wolf says. The firm also plans to build supporting infrastructure including a pipeline, a new unit train and a storage cavern.

Canada rail strike might start on 12 Aug

Canadian railroad workers might strike from 12 August after the Canada Industrial Relations Board (CIRB) said it would decide by 9 August what essential rail services would be needed in the event of industrial action. Canadian labour minister Seamus O'Regan in May asked the agency to step in, concerned about remote communities running out of propane. A strike by the union would require three days' notice to all parties, although the carriers asked CIRB to extend that cooling-off period. More than 90pc of union members recently voted a second time to authorise a strike.

TRADE FLOWS: NORTH AMERICA EXPORTS

US propane exports					'000 bl
	Apr	±% Apr 23	Feb-Apr	±% Feb-Apr 23	2024
Region					
Asia-Pacific	29,255	32.4	92,712	15.7	124,273
Latin America	11,165	-0.4	34,865	7.7	45,887
Europe and Turkey	7,781	-12.5	22,217	-2.6	30,780
Africa	1,985	33.6	5,743	44.4	7,162
North America	158	-41.3	430	-29.2	529
Middle East	0	-	0	-100.0	0
Total	50,344	14.5	155,967	11.4	208,631
Country					
Japan	11,992	11.3	42,317	0.2	55,906
China	9,603	173.9	24,628	79.0	34,547
South Korea	3,667	-10.4	12,564	-9.8	16,346
Indonesia	2,068	81.1	5,590	33.1	6,968
Mexico	4,820	8.7	15,297	8.3	20,824
Netherlands and Belgium (ARA)	4,785	-18.2	10,461	-21.7	14,479

- EIA

US normal butane exports					'000 bl
	Apr	±% Apr 23	Feb-Apr	±% Feb-Apr 23	2024
Region					
Asia-Pacific	6,227	41.7	17,661	20.2	20,774
Latin America	891	-57.2	2,875	-51.6	3,895
Europe and Turkey	3,011	-1.0	6,721	-1.9	8,465
Africa	6,211	6.8	18,394	25.1	23,322
Middle East	0	-	0	-100.0	0
North America	79	-28.2	481	47.5	666
Total	16,419	6.3	46,132	7.7	57,122
Country					
Indonesia	1,226	23.6	4,230	26.2	5,156
South Korea	1,997	124.6	5,444	61.8	5,958
Morocco	2,159	-5.8	6,622	20.2	8,504
Egypt	1,032	-5.1	4,031	30.8	4,826
Turkey	887	67.4	1,929	78.0	2,181
China	1,263	70.4	3,123	91.7	3,123

- EIA

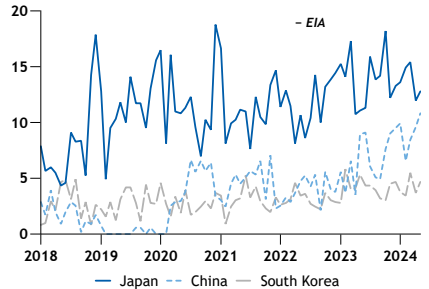
US ethane exports					'000 bl
	Apr	±% Apr 23	Feb-Apr	±% Feb-Apr 23	2024
China	5,848	-11.1	18,268	-13.6	24,895
India	2,396	-24.2	5,556	-21.8	8,715
UK	936	-23.5	2,713	-14.1	3,892
Norway	1,444	52.5	4,640	18.5	5,441
Other	3,329	18.8	10,634	14.4	14,532
Total	13,953	-5.1	41,811	-6.3	57,475

- EIA

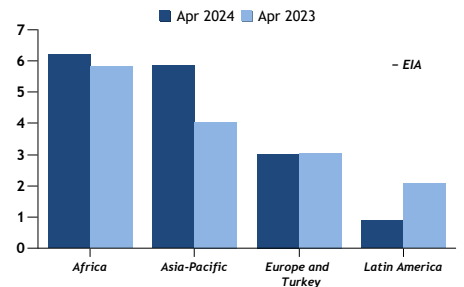
Canada LPG exports					'000t
	May	±% May 23	Mar-May	±% Mar-May 23	2024
US	354	12.9	1,237	9.5	2,475
Japan	150	-23.1	798	70.0	1,097
South Korea	94	5.8	168	-21.0	279
Mexico	26	238.3	70	204.2	99
Others	0	-76.0	0	-54.5	0
Total	623	3.1	2,272	23.9	3,950

- Statistics Canada

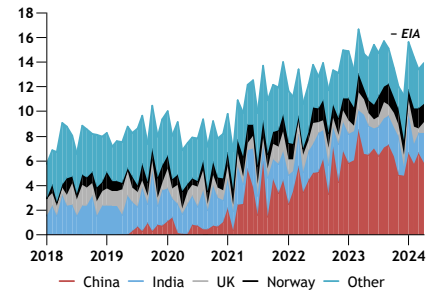
US propane exports by Asian country mn bl



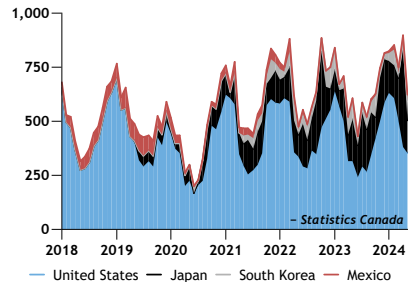
US butane exports by region, YoY mn bl



US ethane exports by country mn bl



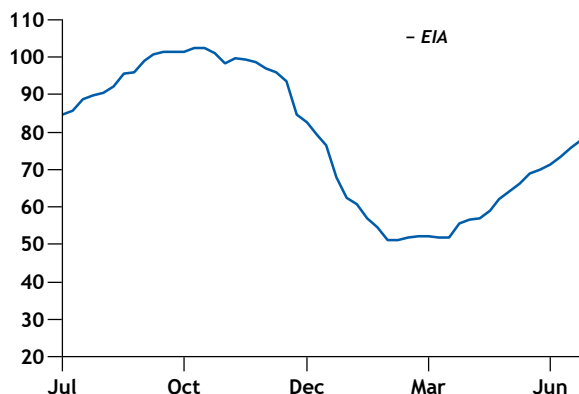
Canada LPG exports by country '000t



INVENTORIES: US

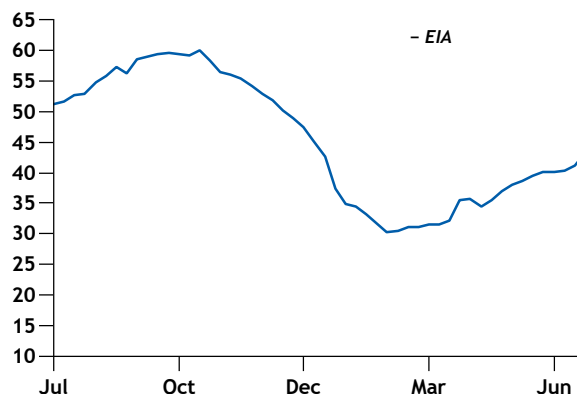
Total US weekly propane stocks

mn bl



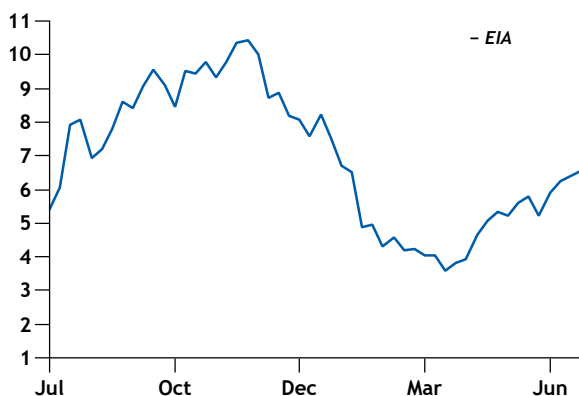
US Gulf coast stocks

mn bl



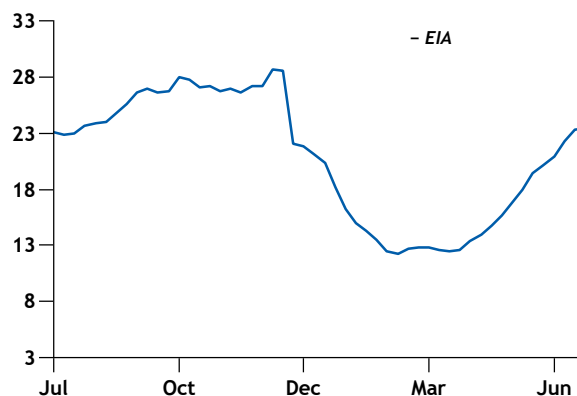
US east coast stocks

mn bl



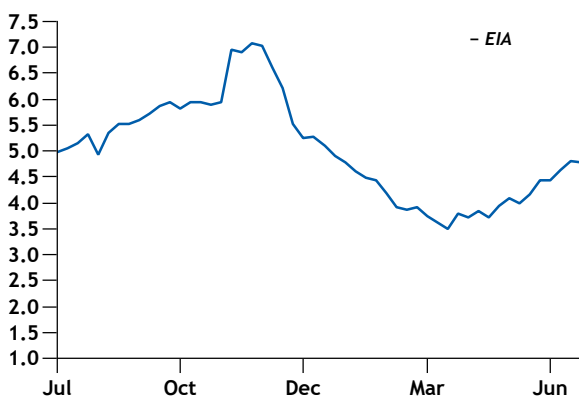
US midcontinent stocks

mn bl



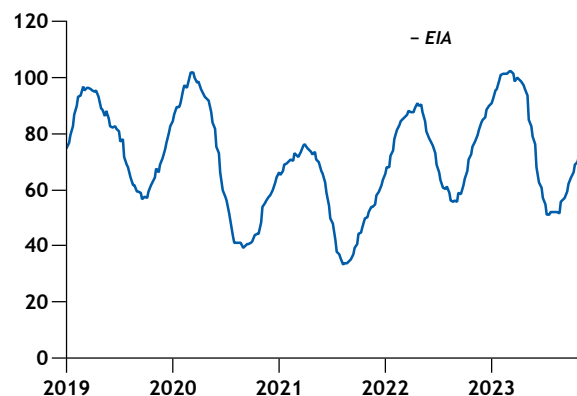
US west coast stocks

mn bl



US stocks 5-year view

mn bl



MARKET ANALYSIS

■ US propane stocks increased by 2.15mn bl to just under 78mn bl (6.3mn t) during the week to 5 July, as exports dipped, the latest EIA data show. The stockbuild was in line with market participants' expectations.

■ Fractionated propane inventories increased by about 2mn bl to 49.8mn bl, accounting for 63.7pc of the total.

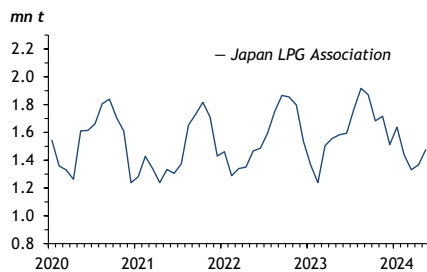
■ US Gulf coast propane stocks went up by 1.4mn bl to 25mn bl and midcontinent stocks rose by 433,000 bl to 17mn bl. East coast stocks rose by 136,000 bl to 6.5mn bl.

■ US propane exports fell to 1.66mn b/d from 1.83mn b/d. Domestic demand rose to 867,000 b/d from 660,000 b/d, while output was steady at 2.7mn b/d.

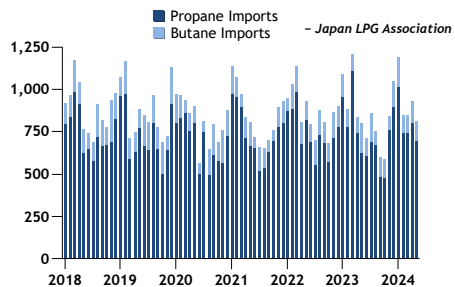
TRADE FLOWS: JAPAN, SOUTH KOREA

Japanese LPG imports							'000t
Imports by country	May	Mar-May	Mar-May 23	24/23 ±%	Mar-May 22	24/22 ±%	2024
Saudi Arabia	0.0	22.0	0.0	-	0.0	-	22.0
Qatar	10.0	36.4	0.0	-	34.1	6.8	83.0
Kuwait	0.0	166.0	142.2	16.7	297.2	-44.1	226.6
UAE	0.0	0.0	47.4	-100.0	90.0	-100.0	3.0
Australia	59.6	252.4	315.1	-19.9	268.3	-5.9	543.3
US	532.7	1,530.2	1,874.8	-18.4	1,742.9	-12.2	2,892.1
Others	209.4	585.1	473.6	23.6	440.8	32.7	861.2
Total imports	811.7	2,592.2	2,853.1	-9.1	2,873.2	-9.8	4,631.3
Imports by product							
Propane	700.3	2,247.7	2,480.6	-9.4	2,483.3	-9.5	4,012.7
Butane	111.4	344.5	372.5	-7.5	390.0	-11.7	618.7

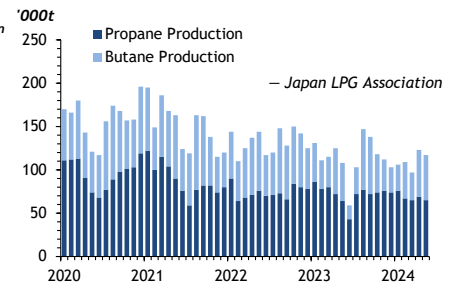
Japan: LPG stocks



Japan: LPG imports

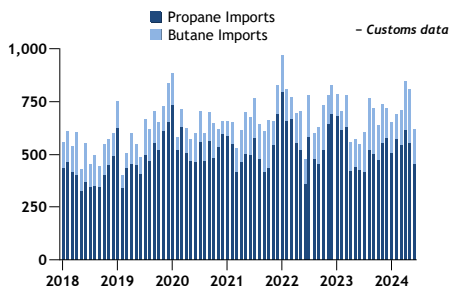


Japan: LPG production

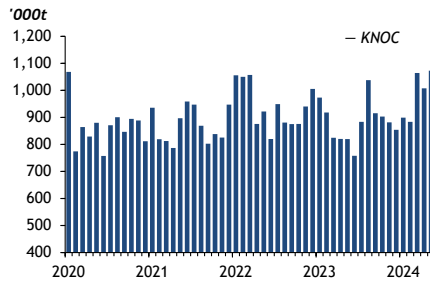


South Korean LPG imports							'000t
Imports by country	Jun	Apr-Jun	Apr-Jun 23	24/23 ±%	Apr-Jun 22	24/22 ±%	2024
US	442.3	1,730.3	1,422.9	21.6	1,621.7	6.7	3,508.1
UAE	0.0	50.2	0.0	-	46.6	7.7	50.2
Qatar	0.0	0.0	0.0	-	0.0	-	0.0
Australia	8.4	8.4	53.0	-84.1	41.7	-79.8	54.1
Nigeria	0.0	0.0	0.0	-	0.0	-	0.0
Kuwait	0.0	47.9	0.0	-	0.0	-	47.9
Saudi Arabia	23.2	195.5	24.1	711.5	0.0	-	218.3
Others	146.8	238.3	173.7	37.2	162.9	46.3	437.0
Total imports	620.7	2,270.4	1,673.7	35.7	1,872.9	21.2	4,315.5
Imports by product							
Propane	455.8	1,626.4	1,290.4	26.0	1,432.4	13.5	3,250.5
Butane	164.9	644.1	383.3	68.0	440.5	46.2	1,065.0

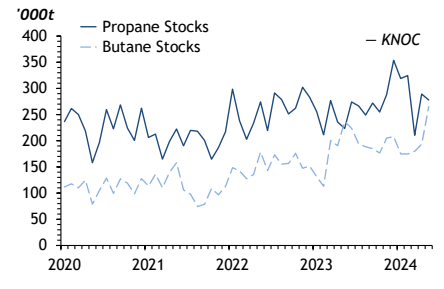
South Korea: LPG imports



South Korea: LPG consumption



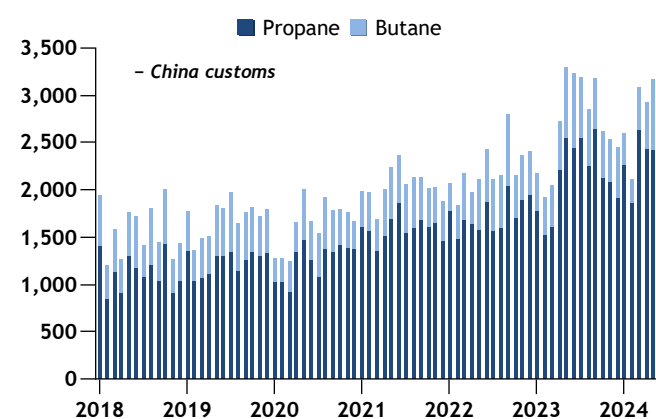
South Korea: LPG stocks



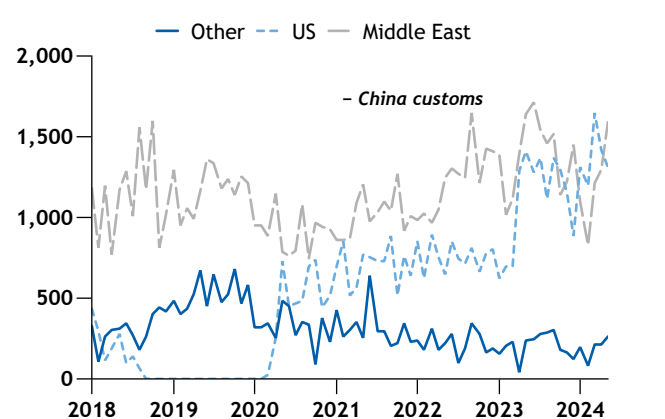
TRADE FLOWS: CHINA

China LPG imports							'000t
Imports by country	May	Mar-May	Mar-May 23	24/23 ±%	Mar-May 22	24/22 ±%	2024
US	1,315.5	4,383.0	3,400.6	28.9	2,294.4	91.0	6,890.3
UAE	753.5	2,020.6	1,784.5	13.2	1,386.0	45.8	2,979.6
Qatar	238.9	580.4	759.0	-23.5	728.6	-20.3	899.8
Saudi Arabia	232.4	465.7	437.0	6.6	193.6	140.6	513.2
Kuwait	84.6	279.2	231.7	20.5	93.2	199.7	396.7
Australia	46.3	153.4	148.3	3.4	258.0	-40.6	153.4
Others	494.5	1,286.4	1,292.6	-0.5	1,313.7	-2.1	2,055.9
Total imports	3,165.8	9,168.8	8,053.7	13.8	6,267.5	46.3	13,888.9
Imports by product							
Propane	2,418.7	7,483.7	6,375.0	17.4	4,892.4	53.0	11,606.2
Butane	747.1	1,685.1	1,678.7	0.4	1,375.1	22.5	2,282.7

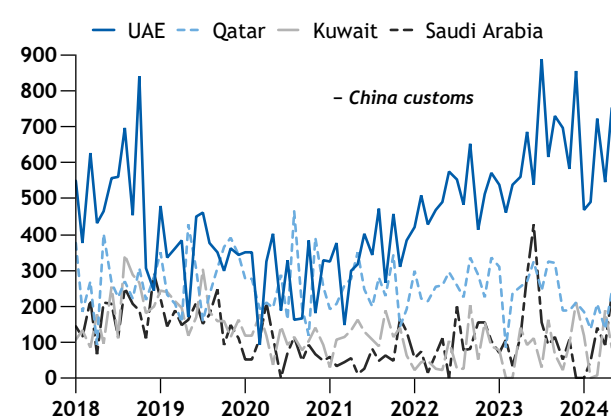
China LPG imports by product



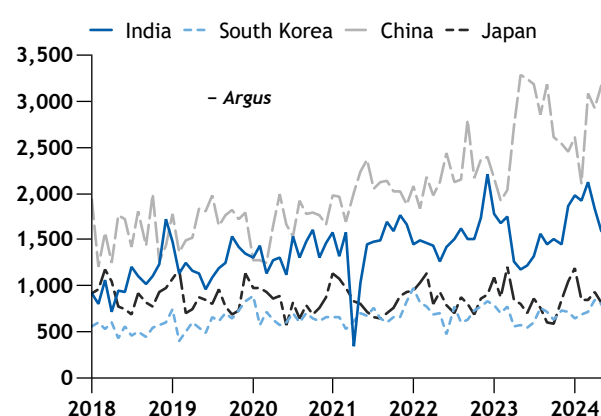
China LPG imports by origin



China LPG imports from Middle East

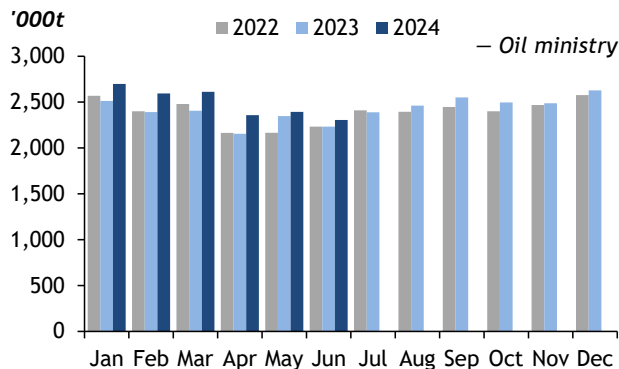


Key Asia-Pacific LPG importers

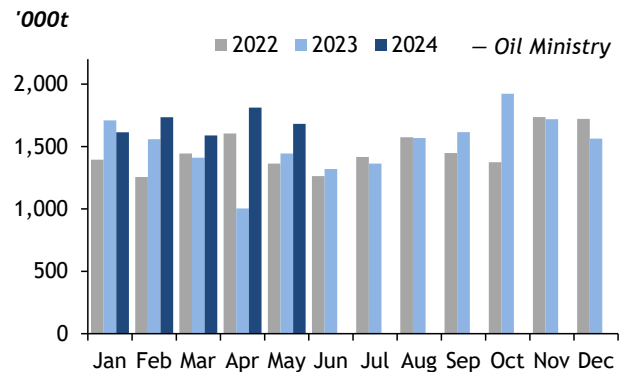


STATISTICS: ASIA

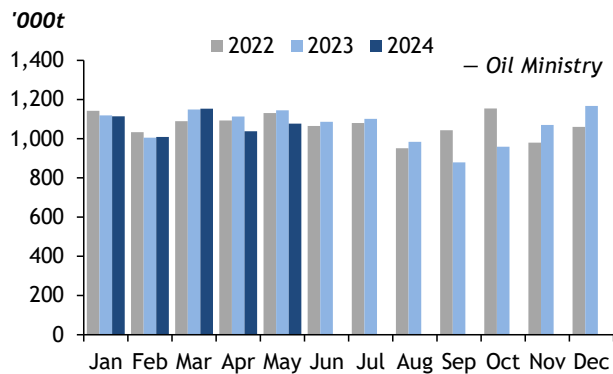
India: LPG demand



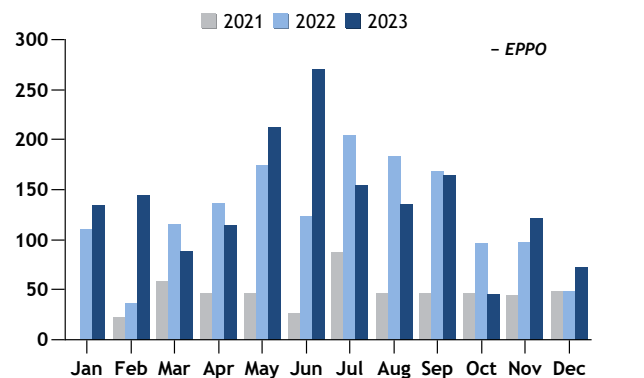
India: LPG imports



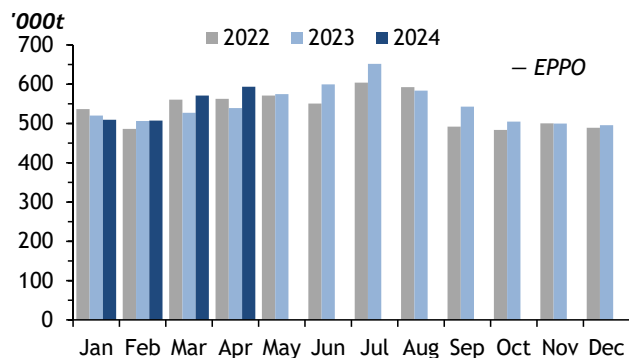
India: LPG production



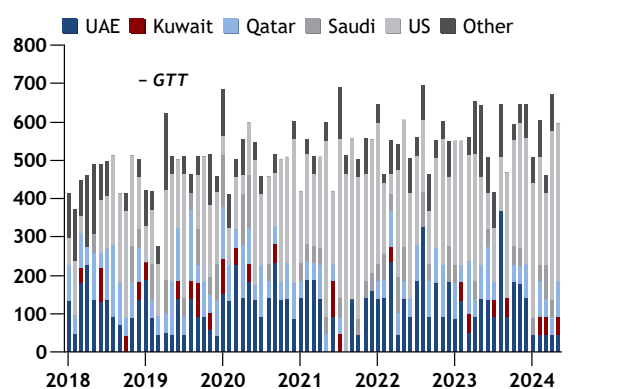
Thailand: LPG imports



Thailand: LPG consumption



Indonesia: LPG imports origin



MARKET ANALYSIS

■ Australia's LPG exports rose by 8.6pc on the year but fell by 21pc on the month to 197,700t in May, data from the Australian Bureau of Statistics (ABS) show. Shipments also grew by 8pc on the year to 1.15mn t in January-May.

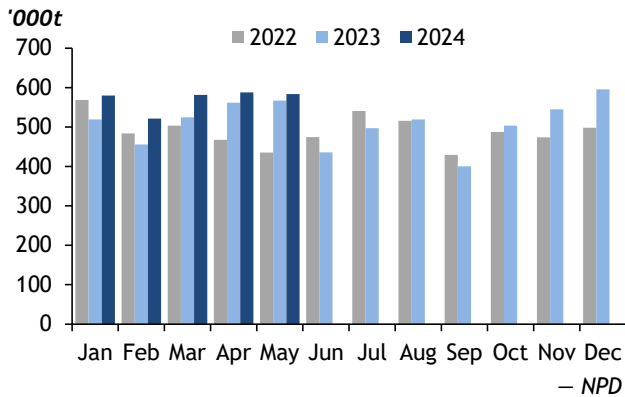
■ Propane exports fell by 16pc on the month and butane exports by 26pc to 109,000t and 88,800t, respectively.

■ Export values fell by 26pc on the month but rose by 21pc on the year to A\$169mn (\$114mn) in May, ABS data show. Revenues in the first five months of the year stood at A\$956mn, up from A\$935mn in January-May 2023.

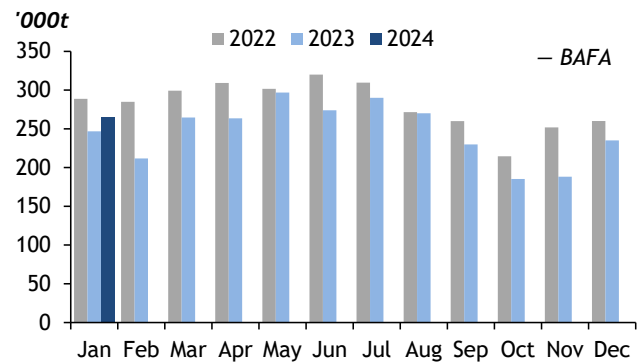
■ Japan's imports of Australian LPG fell by 36pc in May, as the US and Canada continued to dominate that market.

STATISTICS: EUROPE

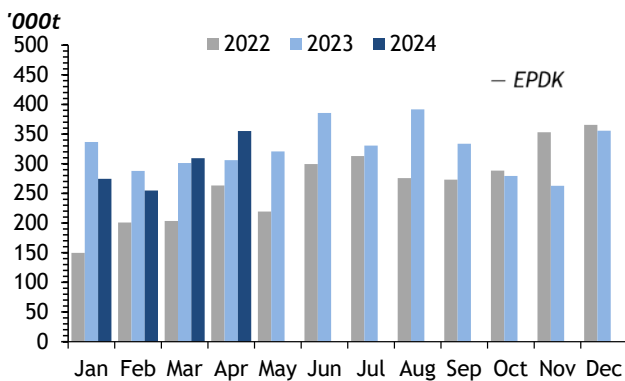
Norway: NGL production



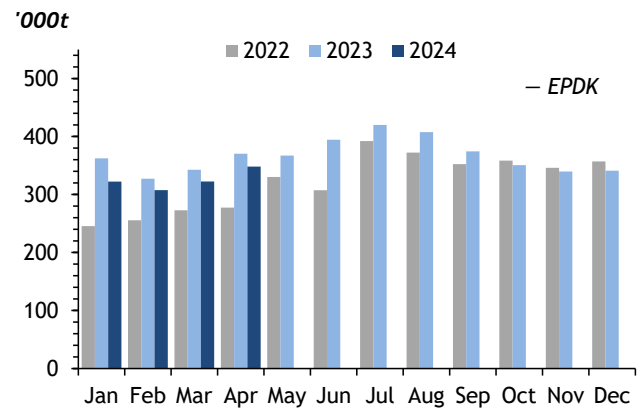
Germany: inland LPG deliveries



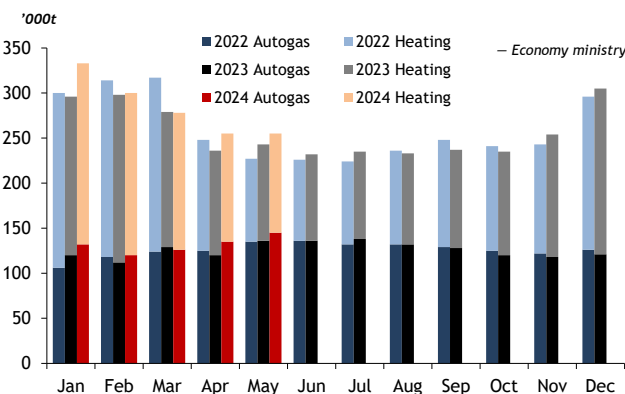
Turkey: LPG imports



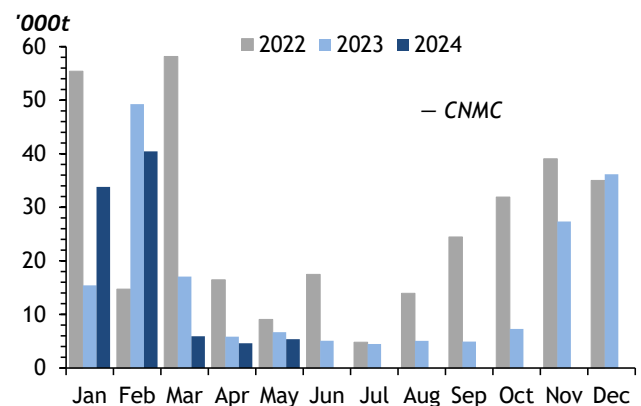
Turkey: LPG consumption



Italy: LPG transport and heating consumption



Spain: LPG imports



EUROPEAN PROPANE

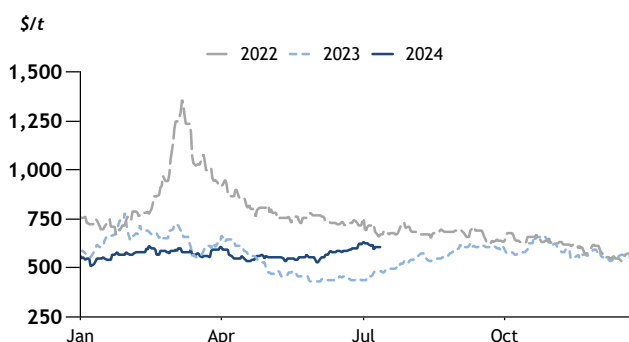
■ Large cargo propane prices crept higher over the first half of July, rising to \$581.50/t from \$569/t between 27 June and 11 July. Northwest European supply tightness persisted as relative strength in Asia lured US exports east, with Hurricane Beryl-related loading delays on the US Gulf coast not helping.

■ This helped European physical values to continue to hold a premium to front-month paper, although this eased to \$5/t from \$7.50/t. But demand in the region was sluggish, with few keen to pay up for additional supplies given crude-driven backwardation undermining the economics of pre-winter stockbuilding.

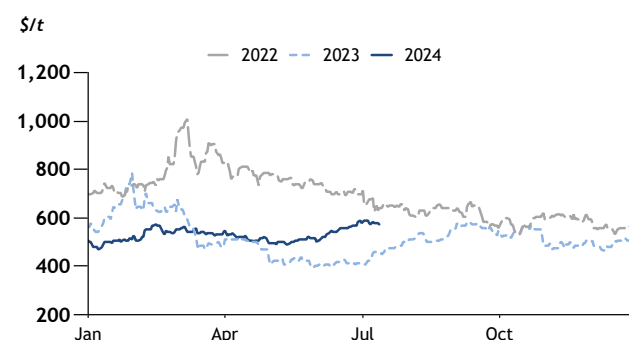
■ European propane coaster prices fell by \$6/t to \$595/t fob northwest Europe, while the premium to large cargo prices was trimmed to \$13.50/t from \$32/t. Delivered coaster prices also declined, by \$4/t to \$643/t. Sporadic demand was unable to support prices, with ample supplies able to cover any prompt shorts.

■ Demand for propane railcars was subdued, with the price edging up by \$2/t to \$612/t fca Amsterdam-Rotterdam-Antwerp. Fob propane barge prices followed a similar path, with the value rising to \$607/t from \$605/t.

Propane cif NWE cargoes small



Propane cif Mediterranean cargoes large



EUROPEAN BUTANE

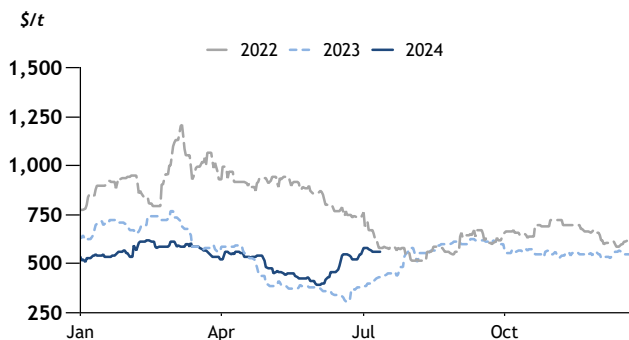
■ Butane large cargo prices relative to naphtha rose as a closed arbitrage from the US since March restricted US arrivals. The price climbed to 73.5pc from 77.5pc between 27 June and 11 July. On an outright basis, prices rose by \$25.25/t to \$532.25/t cif Amsterdam-Rotterdam-Antwerp (ARA) over the same period.

■ Delivered butane coaster prices increased to 76.5pc of naphtha from 74pc, pushing the outright price up by \$19.50/t to \$529.50/t cif ARA. Regional demand picked up slightly, while supply thinned. The fob coaster price also increased, by \$43/t to \$563.50/t.

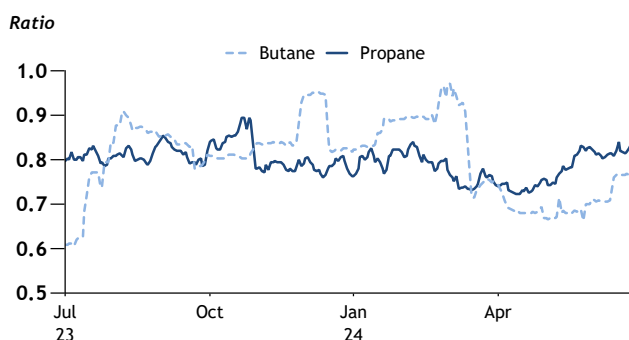
■ Butane barge prices rose to 75pc of naphtha from 74pc on a delivered basis. Demand was limited but diminishing supplies supported prices and averted any losses. Fob outright barge prices increased by \$2.25/t to \$499/t.

■ Butane values in the western Mediterranean region have been volatile with pockets of demand lifting prices as high as \$623.50/t on 2 July, while unsold volumes saw values drop back to \$556/t fob Laveria by 11 July.

Butane fob NWE cargoes small



Propane and butane ratios to naphtha NWE



EURASIA LPG

■ Russian LPG producers raised their wholesale prices by 2,000-6,000 roubles/t (\$23-68/t) over the first half of July as a result of stronger seasonal demand for autogas, limited stocks in certain regions and maintenance at several large processing plants. Traders in southern Russia also reported delays to rail deliveries.

■ Propane-butane mix railcar prices on the Poland-Belarus border increased by \$30/t to \$468.50/t daf Brest between 27 June and 11 July. The climb reflected continuing strong demand from Polish importers as a result of higher domestic autogas sales and lower availability from Russia for July deliveries compared with June and May.

■ Railway LPG exports from Russia to Poland declined to 18,630t over 1-11 July from 28,880t during the same period in June, data from rail forwarders show.

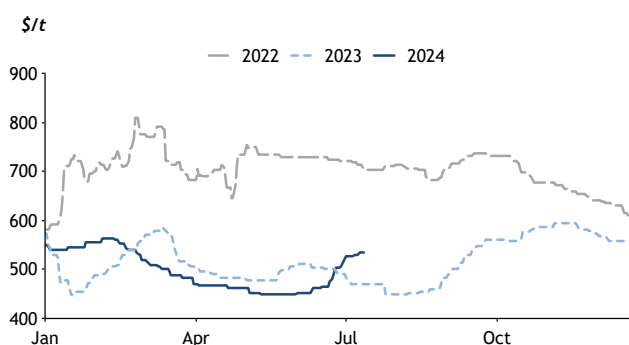
■ Kazakhstan's rail shipments to Poland increased to 986t over 1-11 July from none a month earlier, data from rail forwarders show.

■ Propane railcar prices on the Poland-Belarus border moved up by \$32.50/t to \$530/t daf Brest as a result of stable demand from Polish importers and higher prices in northwest Europe.

■ Propane railcar and truck prices at Polish ports rose to \$740-780/t fca/fot from \$680-710/t two weeks earlier, tracking rising northwest European assessments.

■ The price of propane-butane mix at the Uzbekistan-Tajikistan border climbed by \$10/t to \$290/t daf Bekabad over the first half of July. Sellers increased their offers as a result of higher prices in Russia.

Propane Argus daf Brest



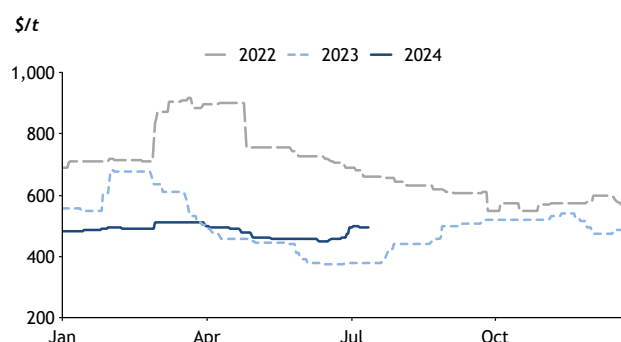
BLACK SEA LPG

■ Black Sea propane-butane mix, propane and butane coaster prices increased over the first two weeks of July in line with rising international prices. LPG demand was seasonally strong and growing in Bulgaria, Romania and Turkey.

■ But buying interest in Turkey could come under pressure over the rest of this month after the government raised consumption tax on LPG.

■ Propane-butane mix values increased by \$45/t to \$470/t fob Black Sea between 27 June and 11 July, propane values moved higher by \$37.50/t to \$495/t, while butane prices grew by \$55/t to \$44.50/t.

Propane Argus fob Black Sea



ASIA PROPANE

■ Delivered northeast Asian Argus Far East Index (AFEI) propane prices edged 0.4pc lower to \$645.75/t from 28 June to 12 July, following a 1pc drop in front-month Brent crude prices.

■ Chinese demand for August shipments was lacklustre following strong imports in July, with about 3.4mn t expected to arrive. Deals for 46,000t propane cargoes for delivery to Ningbo in the second half of August were struck at \$5-7/t premiums to August AFEI swaps. Chinese PDH operating rates averaged 72pc in the week to 11 July as northeast Asian propylene prices firmed to support utilisation.

■ Asian buyers were unfazed by loading delays at US terminals owing to Hurricane Beryl, with bids for 23,000t propane cargoes arriving in the first half of August to Chiba, Japan, stable at \$5/t premiums to the August AFEI, unchanged from a fortnight ago.

ASIA BUTANE

■ Argus Far East Index (AFEI) butane prices fell by 0.4pc to \$638.75/t between 28 June and 12 July, keeping them at a \$7/t discount to propane, on ample availability of evenly split propane-butane cargoes in the region.

■ Japan's Inpex sold an evenly split cargo for 4-15 August delivery to Chiba at a \$5/t premium to the August AFEI. India's IOC issued a tender to buy three evenly split cargoes to be delivered in the first quarter of 2025, while fellow importer BPCL sought 61 cargoes for delivery next year.

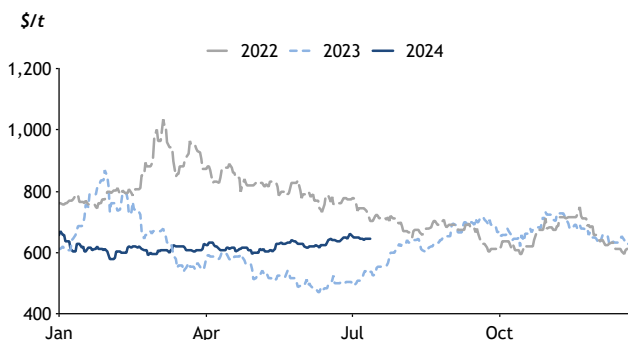
■ The front-month butane AFEI swap's discount to naphtha was \$73/t on average in July, allowing ethylene producers in northeast Asia to maximise butane feedstock use.

ASIA PRESSURISED

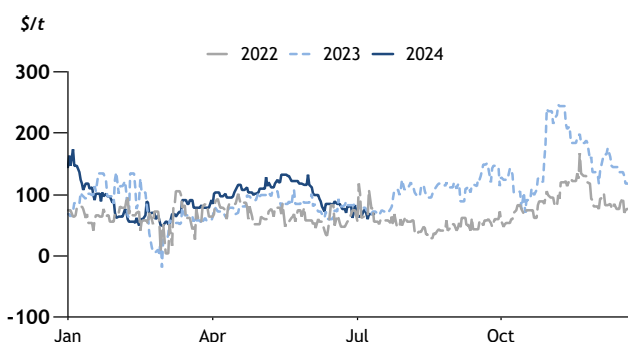
■ Pressurised cargo prices at south Chinese terminals rose to \$60/t premiums to state-run Saudi Aramco's July contract price (CP) on a fob basis from \$57/t premiums in line with recent trades. Delivered cargoes to north Vietnam remained at \$125/t premiums to the July CP on a cfr Haiphong basis on tepid spot buying interest.

■ China's wholesale prices rose on tightening supply at import terminals and regional refineries. The Pearl river delta index firmed by 2pc to 5,044 yuan/t (\$695/t) from 28 June to 12 July, supported by limited stocks at terminals. Sellers in east China were reluctant to lower prices owing to high import costs despite weaker summer demand.

Propane Argus Far East index



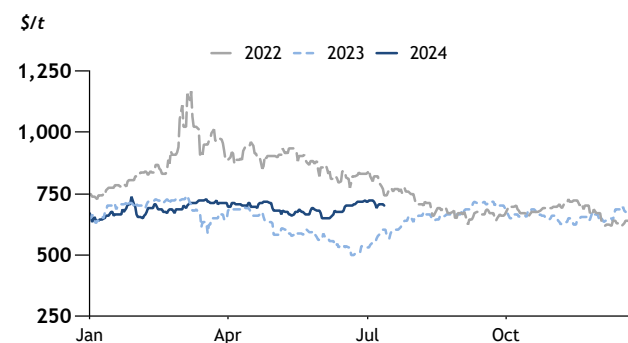
Propane Argus Far East Index differential to NWE



Butane Argus Far East Index



Naphtha c+f Japan



AMERICAS PROPANE

■ US Gulf coast fob propane cargoes loading in August were offered at 18¢/USG (\$94/t) premiums and above to Mont Belvieu prices in the first half of July, as availability tightened as a result of Hurricane Beryl.

■ Mont Belvieu LST propane prices fell to a two-week low of 80.125¢/USG from 82.875¢/USG between 27 June and 11 July as inventories continued to rise. Mont Belvieu EPC prices fell to 81.125¢/USG from 82.625¢/USG. Mont Belvieu LST's value relative to Nymex WTI crude fell to 40.7pc from 42.6pc, also a two-week low.

■ US propane stocks grew by 2.15mn bl to 77.98mn bl (6.3mn t) over the week to 5 July, leaving stocks 12pc above the five-year average, EIA data show.

■ US midcontinent Conway prices decreased by 1.25¢/USG to 78¢/USG owing to a seasonal lack of demand as participants focused on building inventories.

■ Edmonton prices in Alberta, Canada, fell to a 26¢/USG discount to Conway from a 24.5¢/USG discount owing to weakening demand during the summer off-season.

AMERICAS ETHANE

■ Mont Belvieu EPC ethane prices on the US Gulf coast fell to 16.625¢/USG (\$124/t) by 11 July from 16.875¢/USG on 27 June, tracking natural gas losses. The price rebounded from a four-year low of 15.5¢/USG on 8 July. Ethane's discount to propane narrowed to 64.625¢/USG from 65.875¢/USG.

AMERICAS BUTANE

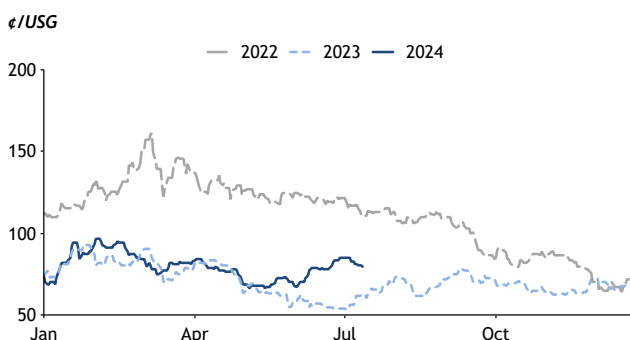
■ US Gulf coast Mont Belvieu EPC butane prices decreased to 97.125¢/USG (\$440/t) from 98.5¢/USG between 27 June and 11 July alongside weakness in propane. Mont Belvieu butane's value relative to Nymex WTI crude also dropped, to 49.4pc from 50.6pc.

■ Mont Belvieu EPC isobutane prices conversely increased, to 112¢/USG from 110.875¢/USG.

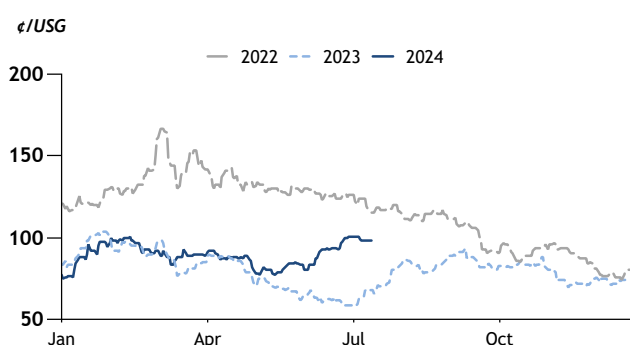
■ US midcontinent Conway butane prices dropped by 1.375¢/USG to 91.5¢/USG as butane demand in the region remained limited during the summer.

■ Edmonton butane prices in Alberta, Canada, weakened to 39.5pc from 40pc of the calendar month average of Nymex WTI crude alongside declines in the US.

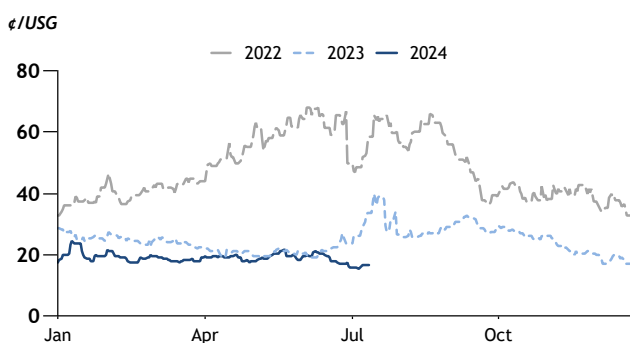
Propane Mont Belvieu non-LST



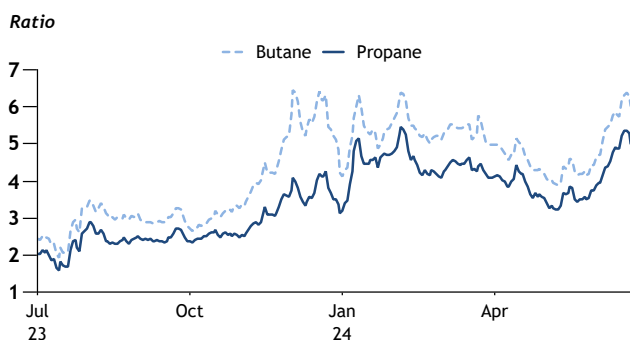
Propane US Gulf coast import



Ethane Mont Belvieu



Propane and butane ratios to ethane



NGL ECONOMICS/SHIPPING

Ethylene plant total variable cash cost*					
	5 Jun	12 Jun	26 Jun	3 Jul	10 Jul
Purity ethane	8.88	9.38	7.55	6.99	7.33
Propane	14.34	19.08	18.63	19.96	17.24
N-Butane	11.86	15.75	16.65	16.84	14.95
Light naphtha	29.15	32.98	32.18	33.21	31.65
Gasoil	32.09	70.55	74.96	78.84	71.30

*at Mont Belvieu, Texas

— Argus

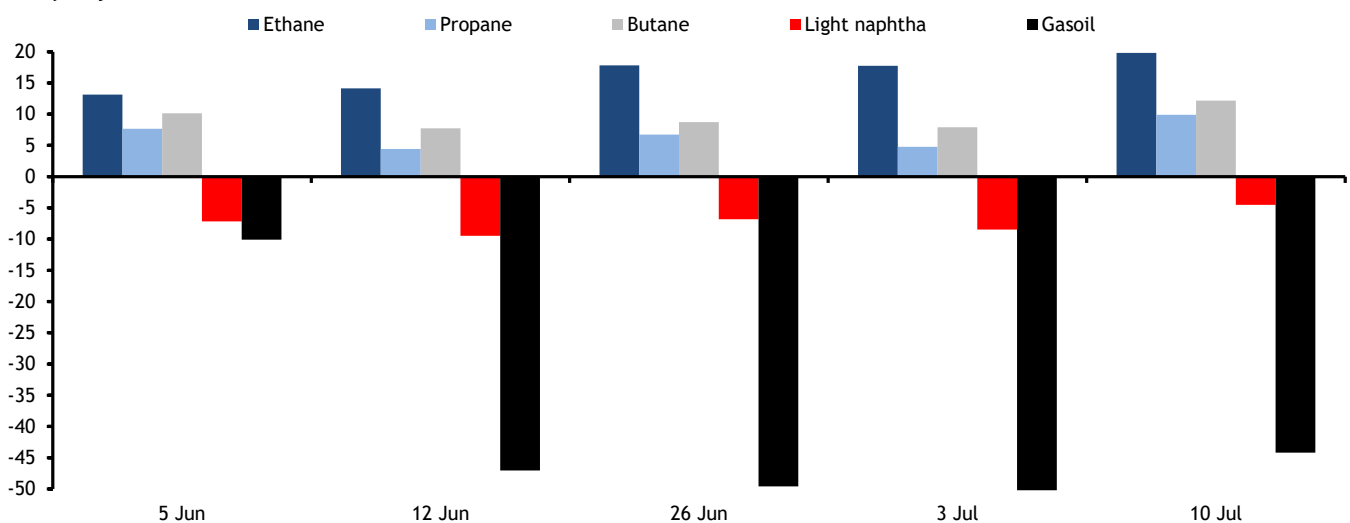
Ethylene plant gross margins* (see graph below)					
	5 Jun	12 Jun	26 Jun	3 Jul	10 Jul
Ethane	13.12	14.12	17.83	17.76	19.80
Propane	7.66	4.42	6.74	4.79	9.89
Butane	10.14	7.75	8.73	7.91	12.18
Light naphtha	-7.15	-9.48	-6.81	-8.46	-4.52
Gasoil	-10.09	-47.05	-49.59	-54.09	-44.18

*at Mont Belvieu, Texas

— Argus

US Ethylene plant gross margins (Mont Belvieu, Texas)

¢/lb of ethylene



Shipping

■ The Panama Canal only received bids on half of the 10 auctioned Neopanamax transit slots over 7-10 July, as VLGC demand fell. Daily Neopanamax transits have been raised from eight to nine in line with higher Gatun Lake water levels, and will rise to 10 in August. Vessel operators paid an average of \$111,000 for each of the five slots sold, three of which were for VLGCs. This is down from as high as \$1.68mn in mid-May and a record of \$4mn in November after the canal imposed severe restrictions owing to low water levels.

Shipping rates

■ Houston-Chiba VLGC rates shed \$14.50/t to \$95.50/t over the fortnight to 12 July on limited US Gulf cargo availability as terminals' schedules were disrupted by Hurricane Beryl and Panama Canal transits freed up.

■ Northwest European Tees-ARA coaster rates edged \$1/t higher to \$48/t, supported by thinner vessel supply. The Tees-Mohammedia rate for larger vessels heading to Morocco rose by \$2/t to \$92/t on limited availability.

Shipping rates				\$/t
Spot				
44,000t	Ras Tanura-Chiba	▼		57.00
44,000t	Houston-Chiba	▼		95.50
44,000t	Houston-Flushing	▼		54.00
1,800t	Tees-ARA	▲		48.00
1,800t	Tees-Lisbon	▲		119.00
4,000t	Tees-Mohammedia	▲		92.00

— Argus Gas Freight

Shipping rates				\$/calendar month
12-month time charter				
84,000m ³		▼		1,650,000
38,000m ³		◀ ▶		1,000,000
35,000m ³		▲		875,000
3,500m ³ pressurised (west)		▲		290,000
3,500m ³ pressurised (east)		◀ ▶		240,000

— Gibsons

DATA

PROPANE													
	Jul 23	Aug	Sep	Oct	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul
Middle East \$/t													
Saudi Arabia	400.00	470.00	550.00	600.00	610.00	610.00	620.00	630.00	630.00	615.00	580.00	580.00	580.00
Kuwait	400.00	470.00	550.00	600.00	610.00	610.00	620.00	630.00	630.00	615.00	580.00	580.00	580.00
Mediterranean \$/t													
Algeria (Sonatrach)	400.00	470.00	530.00	560.00	560.00	520.00	510.00	520.00	540.00	535.00	500.00	495.00	550.00
Spot prices \$/t													
Large cargo cif ARA*	481.00	516.00	556.00	573.00	495.00	512.50	519.75	535.50	528.75	499.50	509.00	561.00	na
Large cargo cif Lavera	454.98	513.23	565.31	543.06	487.60	492.51	498.61	541.92	543.80	519.73	503.36	541.36	na
Large cargo Japan cfr	539.79	629.32	694.85	663.81	697.50	641.00	619.17	603.85	610.00	614.98	618.05	629.42	na
Large cargo India cfr	537.42	626.33	723.35	693.97	724.36	694.71	642.51	653.07	639.48	607.39	603.23	614.35	na
Large cargo Argus South China Index	538.14	634.09	707.80	673.33	683.17	637.35	613.69	598.50	604.05	612.17	612.48	624.14	na
Large cargo Argus Ningbo Index	539.89	633.66	697.05	664.31	688.36	643.50	617.74	603.85	610.75	617.21	620.14	631.46	na
Large cargo Argus Far East Index*	557.25	633.00	707.25	672.00	674.50	636.25	621.25	590.00	606.75	611.25	637.75	637.75	na
Asia spot premiums to CP \$/t													
Mideast Gulf	-0.52	18.68	29.85	18.05	7.81	-10.15	-11.23	0.10	-20.15	-24.62	-11.95	-10.89	na
India cfr	88.79	92.37	151.78	105.75	119.30	86.81	48.08	40.96	31.28	19.99	46.54	41.91	na
South China (pressurised)	73.00	81.77	99.75	100.00	99.62	97.00	97.32	95.30	91.50	84.71	82.00	84.37	na
Japan	99.88	109.32	126.25	73.03	91.36	29.70	17.08	-19.45	-8.55	20.02	50.57	50.05	na
Mont Belvieu €/USG													
LST	64.26	68.23	74.11	68.58	64.01	67.36	80.47	89.74	81.82	80.66	70.51	75.55	na
Non-LST	62.45	67.22	73.66	68.13	64.05	68.92	81.91	90.65	79.82	79.37	69.43	75.73	na
Europe \$/t													
Coasters fob NWE	480.65	550.53	608.55	607.45	585.11	559.09	551.01	582.93	577.69	561.68	550.88	574.36	na
Barges fob NWE	482.79	537.16	607.43	584.23	626.34	680.63	711.82	724.30	649.85	587.33	569.76	586.15	na
Coasters fob Med	489.06	553.09	585.38	556.86	531.52	512.05	520.43	553.38	546.70	519.81	504.83	529.91	na
*as of Apr 2019 spot price on 25th or nearest working day to 25th of the month													
— all prices from Argus International LPG													
Ethane													€/USG
	Jun 23	Jul	Aug	Sep	Oct	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun
Mont Belvieu	21.77	32.32	26.92	29.94	27.21	22.59	18.43	20.22	19.18	18.36	19.14	19.44	19.14
Naphtha													\$/t
	Jun 23	Jul	Aug	Sep	Oct	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun
Cargoes cif NWE	550.13	573.00	642.07	699.43	645.40	628.14	636.42	639.50	663.87	709.88	690.15	661.49	663.19
Cargoes c+f Japan	539.30	584.49	657.01	701.77	665.69	646.10	665.85	669.11	678.63	710.74	705.32	676.30	680.99
BUTANE													
	Jul 23	Aug	Sep	Oct	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul
Middle East \$/t													
Saudi Arabia	375.00	460.00	560.00	615.00	620.00	620.00	630.00	640.00	640.00	620.00	585.00	565.00	565.00
Kuwait	375.00	460.00	560.00	615.00	620.00	620.00	630.00	640.00	640.00	620.00	585.00	565.00	565.00
Mediterranean \$/t													
Algeria (Sonatrach)	335.00	465.00	550.00	570.00	535.00	540.00	540.00	540.00	580.00	570.00	490.00	425.00	500.00
Spot prices \$/t													
Large cargo cif ARA*	448.25	557.25	546.75	515.50	532.75	531.00	564.00	596.50	518.00	473.75	445.50	487.50	na
Large cargo cif Lavera	390.87	547.32	565.71	510.01	521.63	544.66	509.53	564.42	598.20	467.35	420.99	438.21	na
Large cargo Japan cfr	525.84	630.89	705.20	674.20	708.02	653.80	627.94	615.58	618.80	624.45	604.95	615.27	na
Large cargo India cfr	527.05	628.66	731.09	703.38	734.67	707.55	653.37	664.54	642.63	611.04	597.91	596.80	na
Large cargo Argus South China Index	524.19	635.66	718.15	683.72	693.69	650.15	622.47	610.23	612.85	621.64	599.38	610.00	na
Large cargo Argus Ningbo Index	525.94	635.23	707.40	674.69	698.88	656.30	626.51	615.58	619.55	626.69	607.05	617.32	na
Large cargo Argus Far East Index*	544.25	633.00	723.25	680.00	686.50	648.25	633.25	600.00	615.75	619.75	627.75	625.25	na
Asia spot premiums to CP \$/t													
Mideast Gulf	-0.52	18.68	29.85	18.05	7.81	-10.15	-11.23	0.10	-20.15	-24.62	-11.95	-10.89	na
India cfr	88.79	92.37	152.04	105.75	119.30	86.81	48.08	40.96	31.28	19.99	45.49	41.91	na
South China (pressurised)	73.00	81.77	99.75	99.55	92.76	97.00	97.32	95.30	91.50	84.71	82.00	84.26	na
Japan	99.98	110.02	127.35	71.88	90.26	30.25	15.31	-17.73	-4.40	25.26	40.09	53.91	na
Mont Belvieu €/USG													
LST	50.68	64.30	79.89	77.26	86.29	100.44	103.40	94.09	83.38	81.45	65.85	70.93	na
Non-LST	75.89	84.59	89.40	80.20	86.50	105.18	104.03	106.12	97.62	95.92	82.89	90.93	na
Europe \$/t													
Coasters fob NWE	431.38	568.61	611.69	563.61	548.88	546.64	541.45	591.51	581.98	541.68	447.51	467.38	na
Barges fob NWE	320.06	491.35	630.82	611.30	627.65	640.07	599.39	616.00	610.35	465.35	445.77	464.81	na
Coasters fob Med	482.63	605.07	662.31	627.98	587.89	608.01	604.86	617.10	560.95	530.88	426.92	474.60	na
*as of Apr 2019 spot price on 25th or nearest working day to 25th of the month													
— all prices from Argus International LPG													

DATA

Chinese domestic prices													Yuan/t
	Jun 23	Jul	Aug	Sep	Oct	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun
East China terminal													
Ningbo ex terminal	3,958	3,971	4,982	5,313	5,300	5,329	5,215	5,095	5,144	5,090	5,126	5,173	5,008
Wenzhou ex terminal	3,958	3,971	5,007	5,382	5,341	5,383	5,363	5,200	5,184	5,140	5,179	5,250	5,094
Taicang ex terminal	3,972	3,993	5,064	5,458	5,391	5,469	5,368	5,180	5,191	5,100	5,137	5,171	5,158
Shanghai ex terminal	3,958	3,979	4,986	5,313	5,300	5,321	5,215	5,095	5,144	5,090	5,126	5,194	5,108
Zhangjiagang ex terminal	3,972	3,993	5,064	5,458	5,391	5,469	5,368	5,180	5,191	5,100	5,137	5,171	5,158
Fujian ex terminal	3,904	3,911	4,888	5,364	5,199	5,321	5,318	5,214	5,192	5,111	5,162	5,074	5,093
East China refinery													
Shanghai ex refinery	3,844	3,892	4,770	5,030	4,881	5,030	4,993	4,703	4,649	4,765	4,904	5,017	4,761
Zhenhai ex refinery	3,797	3,899	4,793	5,051	5,022	5,117	5,098	4,784	4,826	4,853	4,991	5,073	4,925
Yangzi ex refinery	3,933	3,992	4,902	5,334	5,193	5,261	5,233	4,946	5,036	4,926	5,017	5,151	5,033
Fujian ex refinery	3,885	3,953	4,791	5,330	5,091	5,150	4,940	4,941	4,928	4,945	4,980	4,940	4,957
Gaoqiao ex refinery	3,803	3,858	4,727	5,025	4,884	5,006	4,975	4,655	4,594	4,743	4,880	4,933	4,775
South China terminal													
Zhuhai ex terminal	3,800	3,828	4,869	5,458	5,130	5,204	5,288	5,160	5,084	5,114	5,138	5,098	4,982
Shenzhen ex terminal	3,850	3,892	4,900	5,494	5,177	5,234	5,306	5,176	5,107	5,109	5,155	5,114	5,016
Raoping ex terminal	3,912	3,860	4,778	5,378	5,195	5,218	5,298	5,215	5,178	5,115	5,166	5,024	4,971
Nansha ex terminal	3,850	3,891	4,900	5,494	5,177	5,234	5,306	5,176	5,107	5,109	5,155	5,114	5,016
Shantou ex terminal	3,912	3,860	4,778	5,378	5,195	5,218	5,298	5,215	5,178	5,115	5,166	5,024	4,971
Yangjiang ex terminal	3,834	3,881	5,016	5,463	5,147	5,171	5,269	5,139	5,063	5,065	5,122	5,112	4,986
South China refinery													
Maoming ex refinery	3,784	3,824	4,844	5,421	5,096	5,114	5,157	5,046	4,871	5,025	5,113	5,088	4,944
Guangzhou ex refinery	3,768	3,729	4,733	5,343	5,083	5,140	5,187	5,061	4,899	5,035	5,092	5,042	4,912
Northeast China refinery													
Daqing ex refinery	3,957	3,792	4,702	5,350	5,146	4,730	4,722	4,460	4,511	4,598	4,703	4,924	4,848
Dalian ex refinery	3,706	3,572	4,498	5,105	4,966	4,581	4,813	4,462	4,485	4,402	4,659	4,834	4,962
Northwest China refinery													
Urumqi ex refinery	2,868	2,788	3,719	4,302	4,266	4,168	4,180	3,971	3,391	3,408	3,576	3,765	3,602
Inland China refinery													
Yan-An ex refinery	3,626	3,710	4,860	5,318	5,090	4,884	5,248	5,194	4,464	4,630	4,856	5,002	4,880
— all prices from Argus International LP													

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Registered office

Lacon House, 84 Theobald's Road,
London, WC1X 8NL
Tel: +44 20 7780 4200

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Global head of editorial
Neil Fleming

Editor in chief
Jim Washer

Managing editor
Andrew Bonnington

Editor
Matt Scotland
Tel: +44 20 7780 4255
lpgworld@argusmedia.com

Customer support and sales:

support@argusmedia.com
sales@argusmedia.com

London, Tel: +44 20 7780 4200

Houston, Tel: +1 713 968 0000

Singapore, Tel: +65 6496 9966



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