

Argus LPG World

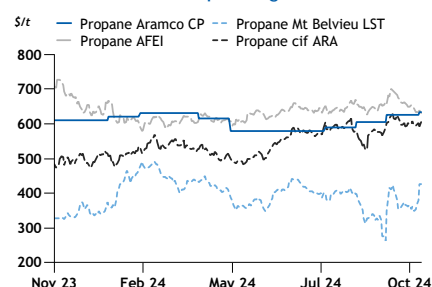
News, prices and analysis



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Abuja's ban on LPG exports seeks to stabilise domestic prices as retail cylinder costs continue to rise, writes Adebisi Olusolape

International LPG pricing \$/t



CONTENTS

Editorial: Great haul of China	2
WLGA reflects on strong growth	3-4
Poland awaits Russian import ban	5-6
Brazil launches clean cooking scheme	6
Mexico LPG contends with reforms	7
Asia readies for possible US trade war	8
Lower canal fees boost US exports	8
Japan terminals switch to ammonia	9
Chinese PDH rates defy propane rise	9
US propane exports slump	10
Bunker demand lags despite pricing	10
Algeria pursues upstream deals	11
Angola plans gas grid roll-out	11
Pennsylvania drilling at 17-year low	13

Nigeria bans LPG exports to lift supply and cut prices

Nigeria has imposed a ban on exports of its LPG unless sellers cover these with “cost-reflective” imports from 1 November, under new policies aimed at stabilising prices and increasing availability of cooking gas.

State-owned oil firm NNPC and domestic LPG producers “must halt exports of LPG produced in-country or import equivalent volumes at cost-reflective prices” from 1 November, natural gas minister Ekperikpe Ekpo said on 22 October. Nigeria’s petroleum regulator NMDPRA will “within 90 days” lead the creation of an LPG pricing framework that is based “on the cost of local production rather than external market indices like those from the Americas or Asia”, Ekpo said.

The local pricing framework will have a more general application once it is created, but it is particularly aimed at ensuring imported LPG is cheaper than it would be from either the “Argus West Africa (WAF) netback index, the Mont Belvieu index or the Platts index” should producers choose to continue exporting, a government source says.

Nigeria’s LPG market continues to expand but growth has “plateaued a bit within the past two years, specifically this year”, largely owing to rising prices, NNPC retail commercial director Lilian Ikokwu says. LPG costs rose by 80pc over January-September, she says. Retail prices for 12.5kg cylinders of LPG for cooking increased by 39pc over January-September, while prices in September were 76pc higher than a year earlier, data from Nigeria’s National Bureau of Statistics show. Nigeria’s government exempted LPG from value-added tax earlier in the year but Ekpo says “previous efforts” have failed to address “price increases and the hardship they bring to Nigerians”.

The country will also develop facilities to “blend, store, and deliver LPG domestically within 12 months”, according to Ekpo. These blending facilities are targeted at NNPC and Chevron’s joint venture, which produces an LPG mix that is unsuitable for the domestic market and is exported from the Escravos floating, storage and offloading facility in the western Niger delta, a government source says. Blending the Escravos LPG mix to make it suitable for cooking use has been successfully trialled but the political will to enforce it has until now been lacking, according to an industry source.

NNPC has exported six cargoes of the Escravos LPG mix this year, with cargo sizes averaging 24,000t, a company source says — exports from Escravos stand at 181,000t in January-October, according to Kpler. Nigeria also exports propane from NNPC and ExxonMobil’s Bonny River terminal, but all four butane cargoes from the terminal, averaging 8,000t apiece, have been delivered domestically, the source says. And propane is exported from NLNG’s Bonny Island terminal, standing at about 134,000t in January-October, Kpler data show, with all butane sold domestically. “All LPG exports will cease until the [domestic] market achieves stability and sufficiency,” Ekpo says.

EDITORIAL

A sharp rise in global LPG consumption was driven by China, although future demand growth may depend on trade relations

Top 10 LPG producers '000t			
Country	2022	2023	±%
1 US	97,224	104,732	7.7
2 China	48,192	51,658	7.2
3 Saudi Arabia	27,396	25,538	-6.8
4 Russia	16,454	17,344	5.4
5 Canada	16,399	16,556	1.0
6 India	12,821	12,777	-0.3
7 UAE	11,789	12,019	2.0
8 Iran	10,891	12,012	10.3
9 Qatar	10,386	10,618	2.2
10 Algeria	9,060	9,126	0.7
Global total	345,896	359,412	3.91

— Statistical Review of Global LPG

Top 10 LPG consumers '000t			
Country	2022	2023	±%
1 China	73,920	81,647	10.5
2 US	46,550	47,993	3.1
3 India	30,139	31,317	3.9
4 Saudi Arabia	18,686	17,560	-6.0
5 Russia	13,071	13,627	4.3
6 Japan	13,510	13,198	-2.3
7 South Korea	10,390	11,161	7.4
8 Canada	9,866	10,811	9.6
9 Mexico	9,340	10,009	7.2
10 Indonesia	8,627	8,777	1.7
Global total	342,441	357,598	4.43

— Statistical Review of Global LPG

Great haul of China

Global LPG consumption grew again in 2023 and did so strongly, the latest *Statistical Review of Global LPG* — compiled by Argus on behalf of the World Liquid Gas Association (WLGA) — has found. The engine behind this growth continued to be China, from its still-expanding petrochemical sector in spite of economic headwinds, as well as for use in refineries.

Global demand increased by over 15mn t last year — the largest jump since 2016. And it was China that was the “standout performer”, as its consumption rose by over 10pc to exceed 81mn t, according to WLGA director David Tylor (see pp4-5). This may come as scant surprise given the amount of coverage *LPG World* devotes to China’s recent investment and expansion of its propane dehydrogenation (PDH) and LPG-fed ethylene steam cracking capacity, and the degree to which this has boosted imports in 2023 and the preceding years — and is likely to again in 2024. What may be more unanticipated is the amount China consumed at its refineries last year.

The country’s refinery use of LPG climbed by almost a quarter on the year to nearly 22mn t. This leap helped global consumption from the refining sector rise by 13.5pc to 47mn t, which is up from less than 20mn t only 10 years ago, Tyler says. This may be down to the increasing need for refiners to meet local emissions standards, displacing more polluting fuel oil and middle distillates with LPG, he says. Whatever the reason, the US’ refining use jumped too, as did Turkey’s and Canada’s, meaning that while refineries still provided more than a third of global supplies, they were also responsible for about 13pc of its consumption.

The residential sector, which is the industry’s core focus in its drive to replace harmful solid biomass fuels with LPG for cooking in developing countries, was meanwhile somewhat flat last year — signifying some of the substantial funding challenges ahead if use is to blossom in sub-Saharan Africa. Consumption in the whole of Africa rose to 17mn t from 16.3mn t a year earlier, but a significant proportion of that came from Algeria’s autogas sector. Important growth markets such as Nigeria and Kenya, where governments are spearheading LPG clean cooking schemes, only managed moderate gains.

Nigeria will be hoping its new plan to block LPG exports without importing replacement supply at price parity to domestic production will help drive down domestic prices and get market growth back on track next year (see p1). In Latin America, Brazil is also about to unfurl an expanded subsidy scheme to shift 20mn households from harmful cooking fuels to LPG next year, the development, cost and success of which will be closely scrutinised by the international community.

Return of the Don?

China’s consumption growth in the past four years has relied on an increasing volume of US LPG flowing unencumbered to its shores. Americans are in the process of casting their presidential votes as *LPG World* goes to press, with the contest presently too tight to call for most pollsters, putting the likelihood of them re-electing the man responsible for ending LPG trade between the two countries in 2019 at about 50pc. This understandably is causing some consternation in China and among other regional importers, which could stand to be affected by another US-China trade war, although they claim a similar scenario playing out is unlikely and, if it were to happen again, would probably hit US prices more than import costs (see p8).

In the event Trump wins the vote, he will not be sworn in until 20 January 2025, and any direct ramifications on LPG trade are likely to take time to filter down. Whatever the outcome from an election like no other, there will undoubtedly be knock-on effects, which we will be sure to examine in these pages.

Q&A

WLGA reflects on strong LPG growth in 2023

Global LPG demand grew last year at the fastest rate since 2016, the latest Statistical Review of Global LPG from the World Liquid Gas Association (WLGA) finds. This was particularly impressive considering the economic, geopolitical and decarbonisation challenges the sector faced. But while much of the industry's recent focus has been on the expansion of clean cooking use in areas still stricken by energy poverty, it was growing petrochemical and refining use that drove much of the significant increase in consumption last year. Argus spoke with WLGA director David Tyler about the latest statistics:

What was your assessment of global supply and demand growth in 2023?

With global LPG supplies and demand both increasing by around 4pc in 2023, it was encouraging. LPG supplies were 359.4mn t in 2023 and global demand was 357.6mn t. Middle East production was limited by Opec crude quotas, except for Iran, but a 7.5pc increase in US output compensated for that. Chinese demand grew by almost 8mn t, half the global increase, owing mainly to increased demand for chemical feedstock following the opening of more propane dehydrogenation (PDH) plants.

What were the largest challenges the industry faced last year?

We hear from governments and other key stakeholders that the volatility of international LPG prices was one of the key challenges, especially for developing markets. Prices halved in six months before increasing back to levels seen at the beginning of the year. If you add to that the volatility in VLGC freight rates, driven primarily by supply-demand imbalances and disruptions at the Panama Canal, managing costs has to be high on the list of challenges. Freight rates soared to all-time highs in November 2023, with US-Japan rates reaching \$250/t — a 23pc increase compared with a year earlier. The geopolitical issues in Ukraine and the Middle East added to those challenges.

A year on from the start of the Israel-Gaza conflict, did instability in the Middle East and the war in Ukraine affect supply and demand?

Yes, there was an impact but managing geopolitical events has been a challenge for the LPG industry for decades. The supply side of the industry is very adaptable to these events and supplies can be rerouted, albeit at a cost in time and money. There is always a concern that these events could escalate to a much more serious level as we saw in the 1970s. LPG is a very versatile form of energy, and often called upon in times of crisis, *so the demand is resilient in these times*. The WLGA works closely with the World Central Kitchen to support populations affected by these events, making sure vital supplies of LPG reach those in need.

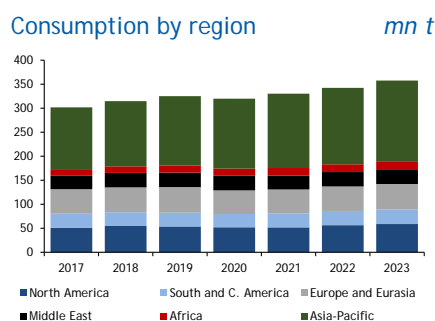
Which countries drove the supply increase, and from which sources, last year?

The increase was across several continents. Supplies from the US stood at almost 105mn t in 2023, an increase of 7.7pc. In 2010, the US was a net importer of LPG and exports have risen annually since then. Supplies from Iran rose by 10pc in 2023 and exports increased by almost 15pc to nearly 9mn t. Supplies from China's refining sector increased by 7pc to over 51mn t.

Middle Eastern production was flat. Was this a surprise?

Not really. The crude production quotas that Opec implemented at the end of 2022 limited LPG production in the Middle East, with almost all the supply increase from the exempt Iran. Supplies from the region grew by 0.4pc in 2023. Iran, which exported 8.9mn t last year, has now replaced Saudi Arabia, at 8mn t, as the region's third-largest exporter, with Qatar's 10.4mn t and the UAE's 9.6mn t ahead of them.

'Volatility in international LPG prices was one of the main challenges, especially for developing markets'



Q&A

Why did demand increase at a faster rate than supply in 2023 and by the largest degree since 2016?

Global demand rose by 4.4pc in 2023 with supplies growing by 3.9pc. The LPG industry has a complex distribution chain requiring storage facilities both onshore and in LPG vessels. The global LPG shipping fleet capacity was 47mn m³ from a total of 1,669 vessels in 2023, according to shipbroker Clarksons. If you add in the total storage capacity of onshore vessels, there is a sizable amount of LPG storage capacity between the producers and consumers. This, coupled with the seasonality of demand and the price volatility, explains the difference in the rates of supply and demand. Petrochemical and refinery use were the fastest-growing LPG demand sectors, but consumption rose in all sectors compared with 2022 except for agriculture, demand from which declined by just 15,000t globally.

'Petrochemical and refinery use were the fastest growing in terms of demand, but consumption rose in all sectors except for agriculture, which fell by just 15,000t'

Which countries stood out in terms of demand growth?

China has to be the standout performer with demand growing by over 10pc to exceed 81mn t. But this growth was not in the traditional market sector, where domestic demand fell by 1mn t. It was in the refining sector, where demand increased by 24pc to almost 22mn t, and the chemical sector, where demand increased by 20pc to over 25mn t.

Globally, the use of LPG in refineries grew by 13.5pc to over 47mn t. This compares with 17.8mn t 10 years ago. The challenge to meet local emission standards has perhaps led to refiners displacing higher-carbon alternatives such as fuel oil and middle distillates with LPG. Other standouts were Turkey, where demand grew by 0.5mn t, or 15pc, to 4.5mn t, and Canada, where demand increased by 10pc to 10.8mn t.

Which sectors drove the increase in consumption?

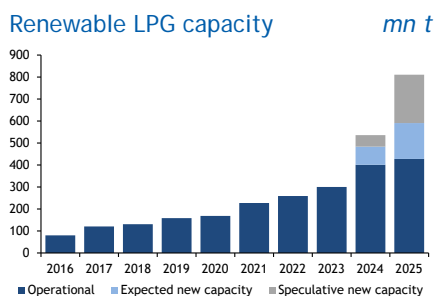
The LPG market grew by 15.5mn t in 2023 compared with 2022. The two sectors that drove this growth were the chemical sector, rising by 6.6mn t, and the refinery sector, up by 5.6mn t. The traditional residential, industrial and agricultural sectors were all disappointingly flat. Transport was the exception, where demand grew by 6.4pc to almost 27mn t, much of this driven by increases in autogas demand in Turkey, Russia, Algeria and Kazakhstan.

How did emerging markets in developing countries fare in 2023?

Demand in Africa exceeded 17mn t for the first time, but there is still a long way to go for those countries mostly in the sub-Saharan region. The exception in 2023 was South Africa, which saw demand increase by 28pc to 425,000t, driven mostly by LPG-powered generators as the country wrestles with power shortages. Demand in the Asia-Pacific region grew by 6pc to 169mn t, now representing almost half the world's LPG demand. Apart from China, the top performers in Asia were Bangladesh, where demand grew by 5pc to 1.5mn t, in India, rising by 3.9pc to 31.3mn t, and South Korea, up by 7.4pc to 11.1mn t. Elsewhere, demand in Mexico grew by 7.2pc to exceed 10mn t in 2023.

What progress if any was made in the development of renewable LPG and DME markets during 2023?

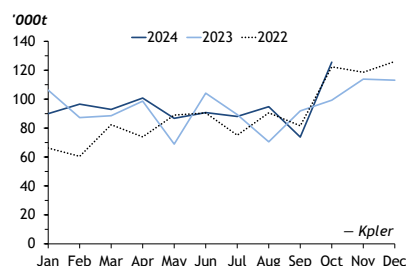
Renewable LPG supply continues to grow at a rapid pace. Global production capacity increased by almost 20pc in 2023, including a near 60pc rise in Asia-Pacific. But growth in Europe and North America slowed as projects were delayed into 2024. As renewable LPG continues to become more available, there is an expectation that the market will continue to develop and for new uses to emerge. It will be an exciting market to watch over the coming years.



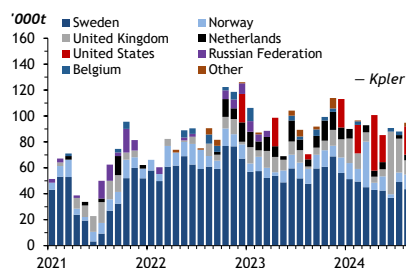
EASTERN EUROPE

The industry hopes to avoid shortages caused by logistical bottlenecks, but fears the long-term impact of the embargo, writes Waldemar Jaszczuk

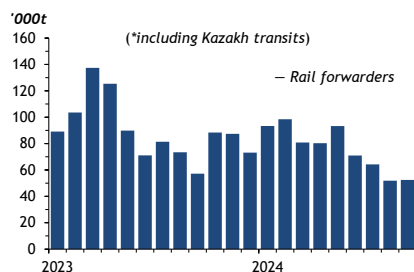
Poland seaborne LPG imports



Poland LPG seaborne imports by origin



Russian LPG rail exports to Poland*



Polish LPG market braces for Russian import ban

A sober mood has taken hold of the Polish LPG industry as it grapples with the ramifications of losing its largest supplier, with the EU's ban on imports of Russian LPG fast approaching.

The first point of call for buyers are the country's three Baltic Sea terminals, which have been responsible for the bulk of the recent drive to diversify supply. Seaborne LPG imports to Poland reached a **record high of 1mn t in 2023**, up by more than half from pre-Ukraine war levels. Next year, the terminals could increase intake to more than 1.2mn t/yr, Polish distributor Gaspol's public affairs manager Mateusz Kedzierski says. The company owns the country's largest seaborne terminal, the 900,000 t/yr Gdansk facility, and ended purchases from Russia in 2022.

Imports will be boosted by the expansion of Polish refiner Orlen's Szczecin terminal to 400,000 t/yr from 250,000 t/yr. But the facility, still under renovation, has only recently begun operating on a part-time basis and will not reach capacity until the second quarter of 2025, an industry executive says. Other distributors are rushing to secure access to the only remaining depot – the 420,000 t/yr Gdynia terminal – with its operator, Alpetrol, recently signing long-term transloading contracts with domestic LPG companies Barter and Polski Gaz. Importers hope to avoid the logistical issues that haunted the market in 2022 when LPG **struggled for rail access to the ports that prioritised coal**. Kedzierski says product shortages are not expected following the embargo.

Securing rail supplies from the Amsterdam-Rotterdam-Antwerp (ARA) hub may be trickier. The German railway network is less congested now owing to a stagnating economy and declines in manufacturing, but any substantial increase in usage will affect the Polish market's logistics, Polish LPG association PIGP president Pawel Bielski says. A €40bn (\$43bn) maintenance and modernisation programme being undertaken by state-owned rail operator Deutsche Bahn (DB) will also weigh heavily on rail network availability for Polish importers. Only recently, two out of six rail border crossings with Germany were blocked for a week after a train derailment at one coincided with the launch of modernisation works at the other.

Go west

The availability of LPG railcars in Poland has improved markedly, with market participants expanding their fleets in preparation for the shift west. But this was achieved through renovation of old railcars to make them suitable for western routes, with logistics companies cutting investment in new vehicles given the uncertain future of fossil fuels in Europe, tanks producer Chemet's vice-president Piotr Frycz says. This availability might not last long as rail imports from north-west Europe could more than double to almost 1mn t/yr after the embargo, requiring anywhere between 384 and 588 additional LPG railcars, Rail Cargo Logistics sales manager Piotr Ulko says. Higher demand will increase logistical costs for ARA rail transit by at least 10pc, according to an importer.

Another problem is that propane-butane mix, a key import from Russia needed for autogas, is not commonly sold in northwest Europe. But the main challenge remains the lack of alternative inland import infrastructure to the rail terminals on Poland's eastern border. The only project under way is Barter's 400,000 t/yr rail terminal in Slawkow, due to start up in the first quarter of 2025. Interest has emerged in developing "pocket terminals" with 2,000-10,000t capacities that only take 9-12 months to construct, Frycz says. Chemet recently completed one such project in Norway and is in talks with a few parties in Poland, but no final decisions have been made. Delays in processing environmental permits from local authorities continue to stall progress despite the government's promise to simplify procedures.

The shift to imports from northwest Europe will inevitably result in higher



EASTERN EUROPE

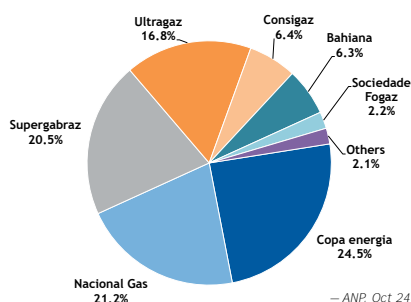
domestic prices, with [Poland's 2mn t/yr autogas market likely to bear the brunt](#). Propane-butane mix railcar prices on the border with Belarus averaged \$488/t daf Brest in January-October — more than \$135/t cheaper than ARA railcars. The market has already had a taste of the future after Russian LPG rail imports shrunk by almost 25pc on the year to 150,000t in the third quarter. Poor domestic demand partially offset the drop, but autogas prices still firmed to a six-month high.

The impact on demand is uncertain. Autogas prices are historically low against other fuels, and even a rise to a 60pc price ratio to gasoline from 46pc in 2023 will not affect demand, Kedzierski says. Others have longer-term fears, with the industry risking an outflow of new clients converting vehicles to LPG, given lower competitiveness. The full impact of the embargo may not be felt until 2027, Bielski says.

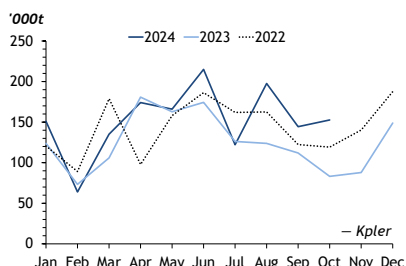
LATIN AMERICA

The scheme could replace up to 40pc of household firewood consumption, which would boost LPG demand, write [Betina Moura](#) and [Matt Scotland](#)

Brazilian LPG market share



Brazil LPG imports



Brazil to launch LPG clean cooking scheme in 2025

Brazil's LPG market is on course to expand significantly from the start of next year when the government introduces its "Gas for All" scheme, which will aim to cover the cost of one 13kg cylinder every two months for 20mn lower-income, predominantly families that use firewood or charcoal for cooking.

The scheme was announced in August and is due to begin on 1 January 2025, although its schedule may slip owing to the voting agenda of congress. It will supersede the social assistance ministry's Brazilian Gas Assistance Programme (PAGB), which distributed nearly 575mn reais (\$102mn) to more than 5.5mn low-income families in October to help them cover the cost of LPG. The PAGB was launched in late August and, similarly to the Gas for All scheme, is intended to cut the harmful use of firewood and charcoal for cooking and to tackle pollution and deforestation. Around 17pc of Brazilian households, or 12.7mn homes, use traditional biomass fuels such as wood for cooking, government data show.

The new scheme is unlikely to stop the use of wood for cooking entirely but could replace up to 40pc of current firewood consumption, which would equate to around 216,000-312,000 t/yr of additional LPG demand, a local consultant says. Brazil's demand stood at about 7.6mn t in 2023, of which 5.2mn t was residential consumption for cooking, *Argus* data show.

The scheme to expand Brazil's household use of LPG comes as hydrocarbons regulator ANP looks to adopt a new regulatory framework for LPG distribution that will [ease restrictions on its use](#). A regulatory impact analysis was approved by ANP on 31 October and is available for feedback for 45 days, at which point further public consultations and hearings will be held. LPG cannot presently be used as autogas in vehicles — except for forklift trucks and industrial cleaning equipment — saunas, pool heating and commercial boilers. Brazilian LPG association Sindigas expects that lifting restrictions could boost LPG demand by [5pc over the next five years](#).

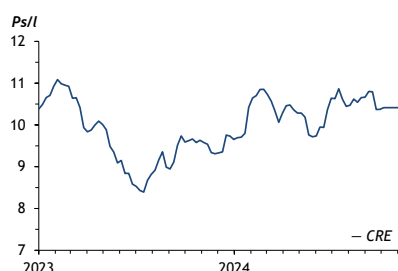
Brazil's LPG distributors are at the same time increasingly looking to diversify into alternative products such as compressed natural gas (CNG) and biomethane following recent mergers. Copa Energia, Brazil's largest LPG distributor with a 25pc market share, acquired small-scale [CNG distributor Companhia de Transporte de Gas](#) in March as part of its strategy to expand distribution of natural gas and biomethane. Copa is looking to acquire at least three other companies to increase margins as biomolecule prices are still high, it says.

Ultragaz, which has a 17pc market share, acquired its own CNG producer in 2022, Neogas. The company also plans to move into biomethane sales after it signed a deal with Essencis Biometano, a southeastern Sao Paulo state partnership between renewable energy companies MDC and Solvi Essencis Ambiental, to distribute 68,000 m³/d of its biomethane.

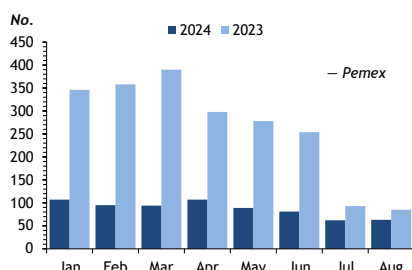
LATIN AMERICA

The president has committed to continuing her predecessor's statist energy policies, adding to legislative uncertainty in the country, writes Antonio Gozain

Mexico average LPG retail price cap



Illegal LPG pipeline taps



Mexican LPG market awaits direction amid reforms

Mexico's LPG market finds itself in a holding pattern, with little change in retail pricing or policy signals from new president Claudia Sheinbaum, despite energy and judicial reforms that have stirred the country's political and investment climate.

Sheinbaum has not specifically addressed the LPG market beyond promising stable retail prices since being sworn into office in October following her victory in elections in June. But she has committed to continuing former president Andres Manuel Lopez Obrador's energy policies, which included increasing the domestic LPG market share of state-owned oil company Pemex to about 65pc this year from 50pc in 2020. Private-sector companies have long handled LPG retail distribution in Mexico, but they started importing LPG after the 2014 energy reform.

Pemex sold 157,000 b/d (406,000t) of LPG in September, down by 1.5pc from a year earlier, the latest data from the company show. The firm imported 83,000 b/d and produced 96,800 b/d of LPG in the same month, while private-sector companies imported 106,500 b/d, according to the energy ministry.

The government's commitment to state energy control is underscored by the recent passage of constitutional reforms aimed at removing Pemex and state-owned utility CFE's definition as "productive state companies", freeing them from the obligation of seeking profit. The energy reform, already approved by congress, could allow the government to provide more direct support to Pemex or guarantee larger debts, of which Pemex currently holds around \$95.5bn. The continuation of Lopez Obrador's statist policies, intended to make Mexico self-sufficient in terms of gasoline and diesel production, is expected to harm market competition.

Adding to the uncertainty for the LPG sector, legislators are likely to approve a bill to dissolve Mexico's independent regulators, including the competition watchdog Cofece and energy regulator the CRE, which oversees fuel and LPG market permits. This would centralise regulatory authority under the energy ministry.

The CRE has been in charge of LPG retail price controls since their reintroduction in 2021 to protect residential consumers from price spikes. It is unclear if the energy ministry will set price caps if the CRE is dissolved, given concerns that it could weaken Mexico's standing in the 2026 review of the US-Mexico-Canada Agreement, as the US and Canada may see it as a threat to their interests.

Another reform that has impacted Mexico's investment climate during Sheinbaum's first month is the judicial bill. Mexico will now elect more than 1,600 judges, magistrates and supreme court justices between 2025 and 2027, a process critics claim would favour candidates aligned with the executive and congress.

Meanwhile, the market's long-standing issue with theft has sharply declined. Illegal taps on Pemex's LPG pipelines fell by 67pc to 698 over January-August from 2,102 a year earlier, according to a Pemex transparency response to an Argus request. The volumes of stolen LPG were not disclosed. The fall in illegal tapping was mainly driven by the government's push to secure Pemex's 1,600km Cactus-Guadalajara LPG pipeline, market participants say.

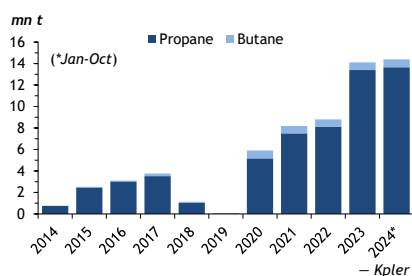
Gas Welfare state

The suspension of operations at state-owned LPG retailer Gas Bienestar — which translates to Gas Welfare — in November 2022 reflects some of the challenges for the government in expanding LPG access through state-run schemes. Touted as a solution to provide LPG to low-income households, sales did not expand as anticipated and the firm was "paused" until resuming operations last year. The company refused to disclose its financial statements in July following a transparency request but confirmed it operates in nine of Mexico City's 16 municipalities. This has not stopped government support, as Pemex received 300mn pesos (\$15mn) for Gas Bienestar's LPG distribution units in the third quarter, according to company data.

GEOPOLITICS

Region views a second Trump presidency as unlikely to force China's hand on LPG tariffs, write Frances Goh and Matt Scotland

US LPG exports to China



Asian LPG importers gird for possible US trade war

Asian LPG importers have for months been readying themselves for a possible re-election of Donald Trump as US president and corollary tit-for-tat trade tariffs that end up ensnaring US LPG exports, as they did in 2018-19 under his stewardship. But most market participants think it is unlikely that China would impose a significant levy on US LPG even if Trump were to win given its dependency and the economic ramifications of doing so.

Trump's tenure in 2017-21 was marked by his trade spat with China that resulted in Beijing imposing **retaliatory 25pc tariffs** on a range of imports from the US including LPG. This cut US LPG shipments to China to zero from mid-2018 until early 2020, with exports then rebounding when **Washington and Beijing agreed** to drop the tariffs on some commodities.

The US election takes place at the time of publication, with Trump's race against Kamala Harris too tight to call for most pollsters. Trump, the self-proclaimed "Tariff Man", has proposed a 60pc levy on imported goods from China, which he later threatened he would increase to "150pc to 200pc" should China "go into Taiwan".

During the 2018-19 trade war, a two-tiered market for Chinese buyers of US and non-US cargoes emerged as traders struggled to renegotiate term contracts and were forced to buy LPG from other regions — buyers paid \$15-20/t premiums for non-US supply. Chinese demand for its rapidly growing petrochemical sector was also slighter, with LPG imports at 26.6mn t in January-September this year, compared with 18.6mn t in 2018, customs data show. The country's propane dehydrogenation (PDH) capacity stands at 23mn t/yr and 11mn t/yr of ethylene capacity from LPG cracking compared with 4.6mn t/yr and 2.3mn t/yr in 2018.

US LPG exports have also risen to take around a 26pc share of China's intake this year, up from 23pc last year and just 13pc in 2017. The importance of US supply to the country is such that if a similar trade war were to occur, it would drive US prices down to such low levels to enable US imports to continue, market participants say. Traders are also sceptical Beijing would reinstate a 25pc tariff on US LPG imports given the current state of the economy and its recent fiscal support.

SHIPPING

US exports have increased as canal transit costs have declined, writes Giovann Rosales

Lower Panama Canal fees bolster US LPG exports

US LPG exports have risen this year thanks to falling Panama Canal auction prices outweighing tight loading capacity, according to US midstream firm Energy Transfer.

Panama Canal auction prices have fallen this year as higher water levels at Gatun Lake **allow for more transits**. The average cost to win an auction for a Panama Canal transit slot at the Neopanamax locks fell as low as \$112,900 in mid-August, down from about \$1.69mn in mid-May, *Argus* data show. This helped US LPG exports to climb to a record high of 2.4mn b/d (6.2mn t) from around 1.9mn b/d a year earlier, Energy Transfer head of international marketing Kent Holmstrom said at the Petrochemical Feedstock Association of the Americas (PFAA) conference in Lake Charles, Louisiana, on 23 October.

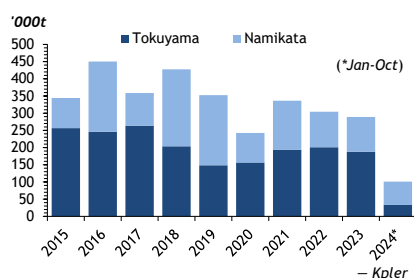
But tight export capacity at the country's Gulf coast terminals has pushed up the price of loading fob cargoes to **record highs in September**. "Everyone is trying to figure out if capacity changed" at Gulf coast terminals, he said. "Capacity hasn't changed. US Gulf terminals are pushing their operational capacity."

US LPG exports are expected to grow further once Energy Transfer's planned 250,000 b/d expansion of its 700,000 b/d Nederland LPG and ethane export terminal is complete by mid-2025. The firm also plans to boost butane storage capacity by a third and to double propane storage capacity at the site, Holmstrom said. Energy Transfer had a 35pc share of US LPG and ethane exports in 2023, it says.

JAPAN

The facilities, among the country's largest, will be converted by 2030, writes Reina Maeda

Tokuyama, Namikata LPG imports



Tokuyama, Namikata terminals switch to ammonia

Japanese refiner Idemitsu and trading company Mitsubishi, the owners of LPG importer Astomos, are to convert two of the country's largest LPG import terminals to ammonia by 2030.

The two firms will convert the Tokuyama and Namikata LPG terminals in Yamaguchi and Ehime prefectures in southern Japan. The announcement comes after Astomos chose not to renew its contract at each facility in January and October, respectively, citing falling domestic demand and plans to streamline operations. The Tokuyama terminal can store 120,000t and imported around 269,000t in 2017, with arrivals falling to 188,000t last year, Kpler data show. The Namikata facility can store 182,000t and received as much as 224,000t in 2018 before falling to 101,000t by last year.

Idemitsu on 22 October said it will join ExxonMobil's planned low-carbon hydrogen and ammonia production project in Baytown near Houston, US, and explore enhancing the operational efficiency of ammonia carriers and import terminals with Mitsubishi, which is another offtaker from the project. Idemitsu plans to import more than 1mn t/yr of ammonia by 2030 to the Tokuyama terminal, which it owns. The propane and butane tanks at the facility will be converted to ammonia storage, although no decision has been made on whether to convert all or some of them, Idemitsu says. The Tokuyama terminal has been unused since March when Astomos' contract expired.

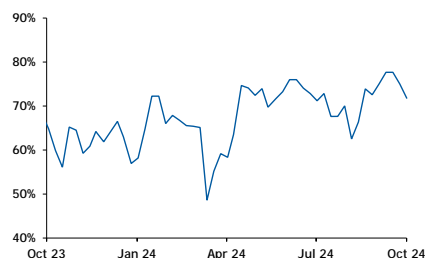
Mitsubishi, which owns the Namikata facility, also aims to import about 1mn t/yr of ammonia by 2030. It will convert "part" of Namikata to ammonia under plans to turn the terminal into a "hub for clean energies".

ExxonMobil aims to reach a final investment decision on the project in 2025 and to start commercial operations by 2029, producing around 900,000 t/yr of hydrogen and 1mn t/yr of ammonia. Japan expects ammonia demand as a fuel to increase to 3mn t/yr by 2030 and to 30mn t/yr by 2050.

CHINA

A surge in import prices did not affect PDH operating rates, writes Yaxiu Wang

China PDH operating rates



Chinese PDH run rates resist higher propane prices

China's propane dehydrogenation (PDH) plant operating rates remained relatively firm last month despite a surge in northeast Asian LPG import prices during the Golden Week holiday at the start of October.

Delivered northeast Asian propane prices under the Argus Far East Index (AFEI) rose to a yearly high of \$701/t on 4 October after underlying paper values drew support from a sharp gain on crude benchmarks, in turn bolstered by escalating conflict in the Middle East. The front-month October AFEI swap rose by nearly 7pc after front-month Brent crude values rose by 11pc. Propane prices were also supported by maintenance at the US Gulf coast's Nederland LPG terminal.

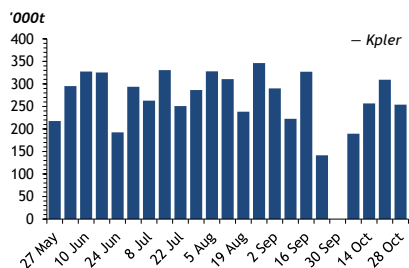
But high AFEI propane values failed to weigh on China's PDH utilisation as production margins, while negative, remained at breakeven levels, according to market participants. PDH operating rates averaged 78pc in the first week of October, while margins – for propane to propylene – dropped to slightly over -\$100/t, Argus data show.

Stronger propane to polypropylene (PP) margins of -\$40-50/t on firming PP prices also bolstered run rates, with PDH plants with integrated downstream PP units running at closer to 80pc. Chinese PP prices have been supported by Beijing's recent economic stimulus measures, especially subsidies on home appliances. The front-month PP futures listed on the Dalian Commodities Exchange rose by 3pc to 7,679 yuan/t (\$1,081/t) after the Golden Week holiday, while Argus' spot PP prices increased by nearly 4pc to Yn7,775/t on 11 October from 27 September.

US

Protracted maintenance at major facilities crimped US shipments, writes Joseph Barbour

Nederland weekly LPG exports



Gulf coast propane exports fall on Nederland works

US propane exports from the Gulf coast dropped in October owing to maintenance at US midstream company Energy Transfer's 700,000 b/d Nederland LPG and ethane terminal, despite it coinciding with the start of the peak demand season.

Gulf coast propane shipments fell by 4.4pc on the month and 3.9pc on the year to 48.2mn bl (3.9mn t) in October, according to Vortexa. Exports from the region typically increase in October and November as the market moves from the summer off-season to the peak winter period. The drop came as a result of technical issues at Nederland after planned tie-in works that began in late September as part of Energy Transfer's 250,000 b/d expansion of the facility, which is due to open in late 2025. Loading resumed by 7 October but one of two propane compressors failed to restart, leading the firm to declare force majeure on 8 October. Propane exports were halved for a week following this, according to market participants and ship tracking data.

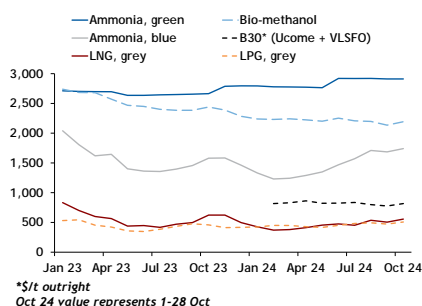
The compressor had restarted some time before Energy Transfer confirmed it was operational on 17 October. Nederland can load around 300,000 b/d (8.8mn t/yr) of propane. US propane exports rose by 389,000 b/d to 1.9mn b/d over the week to 18 October, following confirmation of the compressor's recovery, but fell by 344,000 b/d to 1.6mn bl in the week after that, resulting in a total 3.1mn bl down from the four weeks ending in October 2023, EIA data show.

Total exports of all petroleum products from the US Gulf coast rose by less than 1pc on the year in October, compared with an average yearly increase of 9.6pc across the past 37 months, owing to the Nederland works and earlier loading

MARINE FUEL

A lack of suitable engines and variable safety regulations continue to limit bunker demand, writes Stefka Wechsler

NWE alternative marine fuel prices



*\$/t outright
Oct 24 value represents 1-28 Oct

LPG bunker demand lags despite attractive pricing

LPG has emerged as one of the least expensive marine fuels for meeting new low-carbon emission rules, but patchy safety regulations and a lack of four-stroke engines continues to hold back demand.

LPG has been price-competitive with LNG and at a significant discount to B30 biodiesel, biomethanol and blue ammonia and green ammonia this year, according to Argus data. Taking into account the cost of CO₂ traded on the EU emissions trading system (ETS), northwest European LPG was pegged at \$577/t over 1-28 October compared with LNG at \$614/t. The EU's ETS for marine shipping started this year and requires ship operators to pay for 40pc of their greenhouse gas (GHG) emissions generated on voyages in the EU. Next year, ship operators will have to pay for 70pc of their CO₂ emissions.

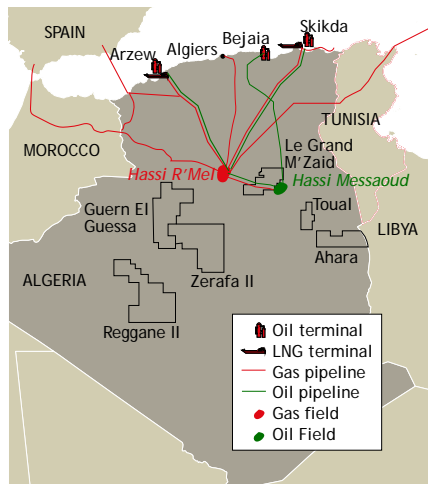
LPG is one of the fuels that can help ship operators comply with the FuelEU regulations, which start in January, for the next 10 years. The rules require a 2pc cut in the life-cycle GHG intensity for bunker fuels burned in EU territorial waters compared with 2020 base year levels. The reduction jumps to 6pc from 2030 and gradually reaches 80pc by 2050. LPG's life-cycle GHG emissions are pegged at about 81.2g of CO₂-equivalent/megajoule (gCO₂e/MJ), according to the California Air Resources Board, making it compliant with the FuelEU's GHG limit of 85.69g CO₂e/MJ through to 2034, similarly to LNG.

The global fleet of ships with LPG-powered engines stands at 151, with another 109 on order by 2028, according to classification body DNV. LPG bunkering demand more than doubled on the year to 242,300t in 2023, according to the latest International Maritime Organisation data. But the bulk of this use comes from LPG carriers fitted with dual-fuel engines, and standalone use on other vessel types is lagging because only [two-stroke LPG engines are available](#) and safety regulations are lacking, according to classification society Lloyd's Register.

NORTH AFRICA

State-owned Sonatrach is pursuing foreign investment to boost LPG production, writes Efcharis Sgourou

Algeria oil and gas infrastructure



Algeria eyes upstream deals that will lift LPG output

Algeria's state-owned Sonatrach is closing in on securing foreign investment to expand upstream exploration and production that should significantly boost the country's LPG output over the coming decade, delegates heard at the Argus LPG Conference in Istanbul, Turkey, over 17-18 October.

Sonatrach is seeking funding to enable it to double its natural gas production and substantially increase its LPG output, the company's head of east Mediterranean LPG exports Idir Ait Ferroukh said at the event. ExxonMobil and Chevron are two potential investors that have been in discussions with Sonatrach this year about oil and gas exploration and production projects, but have yet to finalise any deals. Predicting how much LPG will emerge from these plans is presently not possible, but Sonatrach has revealed it plans to expand its VLGC fleet from two to 5-6 over the next year as exports to Asia increase.

Algeria exported 6.5mn t of LPG last year, up from 6mn t in 2022, Sonatrach says. But exports over the first 10 months of this year stand at 5.1mn t, down by 7.6pc from a year earlier, Kpler data show. Domestic LPG production combines gas processing plants tied to five key gas fields, which have a combined capacity of 10.4mn t/yr. Algeria's LPG output stood at about 8.6mn t in 2023 and is forecast to grow to 8.8mn t this year and 9.3mn t in 2025, according to Argus Analytics.

Political instability in Algeria has resulted in a rapid succession of Sonatrach chief executives and energy ministers that has deterred foreign investors for decades — Sonatrach has had six chief executives since 2010. The re-election of the Algerian president Abdelmadjid Tebboune in early September has been seen as a signal of stability while not a guarantee.

WEST AFRICA

Luanda's gas plan seeks to establish a domestic pipeline network and other infrastructure linking Angola to neighbouring countries, writes Adebisi Olusolape

Angola plans gas grid roll-out, paring LPG growth

Angola's energy and mineral resources ministry is preparing to launch a natural gas master plan that will seek to develop a piped gas grid network, eating into some of the residential LPG market in urban areas.

The government published a draft plan on 13 September and took feedback on the proposals until 21 October. The aim of the plan is for domestically produced natural gas to become part of the country's energy mix, taking around a quarter of the residential market for butane.

LPG consumption is still expected to grow under the plan but at a slower pace than state-owned Sonagas had previously targeted. The firm had aimed to reach 620,000 t/yr of LPG demand by 2027 but the ministry now expects this to be up to 607,000 t/yr, compared with 472,000t in 2023. The draft plan forecasts domestic LPG demand to grow by about 2.9pc/yr over 2027-30 and by 4pc/yr over 2031-50.

The plan echoes Sonagas in noting that Angola's LPG expansion is being held back by a lack of road infrastructure, cylinder manufacturing and refilling plants. This it sees as an opportunity to provide natural gas as an alternative to LPG through "low-pressure gas pipeline connections" into new areas. Butane consumption in Angola is nevertheless on track to grow by about 6.1pc on the year to 501,000t in 2024, according to Sonagas chief executive Manuel Barros.

The government also intends to start exporting natural gas to nearby markets under the plan, especially in the "Copperbelt" region that runs through neighbouring Democratic Republic of Congo and Zambia, where there is "a lot of potential to replace diesel, [fuel oil] and LPG". The final document will guide the establishment of a legal and fiscal regulatory framework, investments, exploration, development, production, sales, infrastructure development, domestic, regional and other export markets expansion over "a time horizon of 25-30 years", the ministry says.

IN BRIEF

Asia-Pacific

Vietnam LPG imports to keep rising

Vietnam's LPG imports are on course to grow by 10pc this year and continue growing in 2025 following the opening of a new import terminal in the north of the country. Vietnam is on course to receive about 2.6mn-2.7mn t this year, up by about 10pc from 2023, Kpler data show. South Korean LPG company E1 plans to [open the new terminal](#) at the Bac Tien Phong industrial complex near Haiphong city in Quang Ninh province in the fourth quarter of 2025. Haiphong already imports about 400,000 t/yr on pressurised coasters, usually from south China. The new terminal can store 80,000t of LPG and could receive more than 1mn t/yr. Vietnam's demand growth is being driven by the residential and petrochemical sectors, representing 51pc and 35pc, respectively, of consumption of 4.3mn t in 2023, Argus data show.

China's LPG imports rise in September

China's LPG imports rose by 9pc on the month to 3.26mn t in September, customs data show, on strong demand from propane dehydrogenation (PDH) plants. Propane and butane imports both grew by 9pc to 2.67mn t and 589,800t, respectively. PDH operating rates in China rose by four percentage points to 72pc in September, Argus data show, despite negative production margins owing to low propylene prices. East Chinese ex-tank propylene prices fell to a yearly low of 6,675 yuan/t (\$938/t) in September from Yn7,175/t at the end of August, while propane Argus Far East Index (AFEI) prices averaged \$646/t in August, up by \$2.90/t from July. LPG imports from the US rose by nearly a third to 1.76mn t.

China PDH project shelved

Chinese private-sector company SP Chemicals has suspended development of a new 800,000 t/yr propane dehydrogenation (PDH) plant in Taixing, Jiangsu province, because of poor operating margins. The decision to shelve the project comes despite it being 70pc complete, according to a source close to the company. SP Chemicals started to develop the PDH facility in May 2023 and it was due to start up in 2025. The company operates a 650,000 t/yr ethylene steam cracker, as well as integrated downstream styrene and styrene polymer plants, at its Taixing complex.

Europe

EU ratifies Sweden bioLPG tax waiver

The European Commission has concluded after an investigation that Sweden's incentive schemes for biogas and biopropane are in line with EU state aid rules. Under the schemes, biogas and biopropane used in motor fuel and heat generation will be exempt from energy and CO₂ taxation.

This applies to domestic and imported supply. The scheme for biogas was approved in 2003 and the biopropane one in 2007. But the EU's General Court annulled the extension until 2030 of both in December 2022 on procedural grounds, finding that the commission should have assessed whether they could be combined with similar tax exemptions in other member states such as Denmark, overcompensating biogas and biopropane producers. The commission, which began its investigation into the schemes in January, found that they were necessary, appropriate and proportionate.

Norway NGL output falls to 24-year low

Norway's natural gas liquids (NGL) production fell to a 24-year low in September owing to seasonal maintenance. Output fell by 42pc on the month to 114,000 b/d, the lowest since September 2000, according to preliminary data from the Norwegian Offshore Directorate (NOD). This pulled production down to 209,000 b/d in January-August, which is slightly higher than 203,000 b/d a year earlier following higher output in the first eight months of 2024. The 97.6mn m³/d Karsto gas processing plant was shut down for maintenance from 30 August until 19 September. The plant accounted for about two-thirds of Norway's 3.6mn t of LPG exports last year, according to Kpler data.

NWE propane-naphtha spread narrows

Northwest European propane swaps' discount to naphtha rose to their narrowest in 17 months in late September, with the spread tightening in October as low propane availability coincided with weak naphtha demand.

The propane paper discount rose to a high last month of -\$42/t on 18 October, the narrowest it has stood since it was -\$39/t in late September, which was the highest since February 2023. Large cargo propane supply has been consistently tight in recent months while naphtha supply has been long and demand weak.

The spread has contracted since the third quarter, averaging about -\$105/t in July, -\$70/t in August, -\$55/t in September and -\$53/t in October. It stood at -\$103/t in October 2023. Large cargo propane supply issues stem largely from North Sea field and gas processing plant (GPP) maintenance over summer, in particular at Norway's 97.6mn m³/d Karsto GPP, which was shut down between 30 August and 19 September, reducing Norway's natural gas liquids production to a 24-year low in September. The narrower propane discount is meanwhile paring petrochemical sector demand for propane.

Regional naphtha demand for gasoline has slumped, with stocks at storage facilities in Amsterdam-Rotterdam-Antwerp hitting 596,000t in mid-October, the highest since 2011, according to consultancy Insights Global.

IN BRIEF

Eurasia

Kazakhstan plans petchem expansion

The Kazakh government has adopted an energy ministry roadmap targeting a fivefold increase in petrochemicals production by 2030. The ambitious plans target domestic petrochemical and gas-to-chemical output of 1.8mn t, up from 357,800t last year, requiring investment of around \$14.7bn by 2030. Feedstock requirements to achieve this goal are 1.6mn t/yr of ethane, 272,000 t/yr of propane, 400,000 t/yr of paraxylene and 100,000 t/yr of benzene, as well as unspecified quantities of light hydrocarbons. A new 9.1bn m³/yr gas processing facility at the country's 9bn bl Tengiz oil field will be completed by 2029 to provide some feedstocks, according to the roadmap. Ethane will also be supplied from the 13bn bl Kashagan oil field's onshore Bolashak processing plant, following talks with project operating consortium NCOC, it says. And discussion on future feedstock supplies will be held with shareholders in Kazakhstan's 9bn bl Karachaganak project.

North America

Medford NGL unit to start up in 2026

US midstream firm Oneok plans to bring the first 100,000 b/d phase of its Medford natural gas liquids (NGL) fractionator project in Oklahoma on line in the fourth quarter of 2026, restoring operations after a fire at the facility two years ago. [Oneok announced plans to rebuild](#) the facility after it was shut down in July 2022 following the fire. The second phase adding 110,000 b/d is due on line in the first quarter of 2027, returning the facility to its original 210,000 b/d capacity. Oneok is on track to bring its sixth 125,000 b/d fractionator in Mont Belvieu and the West Texas NGL pipeline expansion on line in this quarter, it says. The firm's NGL throughput fell to 1.3mn b/d in the third quarter from 1.4mn b/d a year earlier mainly owing to lower ethane recovery on weak gas and ethane prices.

Enterprise's Bahia NGL line project slips

US midstream operator Enterprise Products has pushed back the scheduled completion of its 600,000 b/d Bahia natural gas liquids (NGL) pipeline to the third quarter of 2025 from the first half of the year. The news came as the firm reported its NGL shipments rose by 6.3pc on the year to 4.2mn b/d in the third quarter. The project's schedule slipped slightly owing to delays in obtaining permits for construction, Enterprise says. When completed, Bahia will provide additional NGL takeaway capacity from the Permian basin to Enterprise's NGL fractionation complex in Mont Belvieu, Texas. The majority of the unprocessed NGL transported by the pipeline is expected to come from Enterprise's gas processing plants.

Pennsylvania drilling at 17-year low

Natural gas drilling in Pennsylvania has fallen to the lowest level in 17 years, signalling dimming producer sentiment in the second-largest gas producing US state.

The number of rigs drilling for oil and gas in Pennsylvania was 12 on 25 October, the lowest since July 2007, according to oil field service company Baker Hughes. The drop in drilling in the state, which is home to the prolific Marcellus shale, can partly be explained by higher productivity on a per-rig basis.

Expectations of lower gas prices after the 2024-25 winter heating season are likely to have persuaded Pennsylvanian producers to idle rigs. Drilling rig counts reflect expected prices roughly six months in the future, accounting for the lag between when the drilling of a well begins and when its production is sold, Enverus Intelligence Research principle analyst Jimmy McNamara says.

Nymex gas prices for 2025-26 delivery at the US benchmark Henry Hub settled at \$3.295/mn Btu in mid-October, while the 2025-26 strip at the Leidy Line, a bellwether for Marcellus shale output, was \$2.51/mn Btu, according to *Argus* forward curves. The April 2025 Nymex settlement of \$2.702/mn Btu on 22 October was down by 25pc from a year earlier.

Rig counts in the nearby states of West Virginia and Ohio were little changed from a year earlier, probably because these produce a much higher share of crude and natural gas liquids (NGL) than Pennsylvania. The different market dynamics for crude and NGLs act as a natural hedge for gas producers.

Canada's AltaGas lifts 3Q LPG exports

Canadian midstream company AltaGas' seaborne LPG exports to Asia increased in the third quarter on growing demand from northeast Asia and rising gas and natural gas liquids (NGL) production in western Canada. AltaGas exported 128,300 b/d (1mn t/quarter) of LPG to Asia in July-September, up by 8.5pc from a year earlier, despite delays owing to [wildfires](#) and an [aborted rail strike](#) in Canada. The company's propane exports from its Ridley Island terminal in British Columbia stood at around 70,000 b/d, while it shipped 50,000 b/d from its Ferndale terminal in the US state of Washington — up by 22pc on the year. The company loaded 21 VLGCs. The first phase of AltaGas' [Ridley Island energy export facility \(Reef\) project](#) is under way and is due to start operations in late 2026. The firm could conduct a relatively modest expansion at Reef that requires minimal environmental permitting before moving on to phase two, company executives say. AltaGas posted profit of C\$9mn (\$6.5mn) during the third quarter, swinging from a C\$50mn loss a year earlier.

TRADE FLOWS: NORTH AMERICA EXPORTS

US propane exports					'000 bl
	Aug	±% Aug 23	Jun-Aug	±% Jun-Aug 23	2024
Region					
Asia-Pacific	37,456	39.8	100,413	21.7	258,504
Latin America	12,181	21.5	36,144	17.4	93,480
Europe and Turkey	6,553	-18.3	20,447	-9.3	56,181
Africa	968	14.2	3,381	-2.7	12,370
North America	96	-41.1	301	-39.7	941
Middle East	0	-100.0	0	-100.0	0
Total	57,254	24.5	160,686	14.8	421,476
Country					
Japan	17,141	35.7	49,484	30.6	118,161
China	12,037	101.6	26,768	35.6	72,114
South Korea	5,147	30.4	14,841	3.3	35,857
Indonesia	1,737	-15.0	5,512	45.2	14,397
Mexico	4,979	14.0	14,748	18.2	40,323
Netherlands and Belgium (ARA)	2,716	-13.7	9,089	-6.8	26,407

— EIA

US normal butane exports					'000 bl
	Aug	±% Aug 23	Jun-Aug	±% Jun-Aug 23	2024
Region					
Asia-Pacific	8,120	61.9	20,549	29.5	47,055
Latin America	1,226	13.9	4,328	28.5	9,335
Europe and Turkey	2,657	7.2	7,345	10.2	17,898
Africa	5,700	12.2	16,013	40.3	44,499
Middle East	0	-100.0	0	-100.0	0
North America	130	-75.1	663	-20.3	1,714
Total	17,833	24.7	48,898	27.7	120,501
Country					
Indonesia	1,383	2.0	4,083	55.9	10,516
South Korea	1,525	1.0	4,786	6.3	12,623
Morocco	2,442	-12.9	6,356	40.9	16,893
Egypt	1,050	217.2	3,892	110.7	9,541
Turkey	428	-57.8	1,515	-42.2	4,229
China	1,028	165.6	3,419	96.8	7,616

— EIA

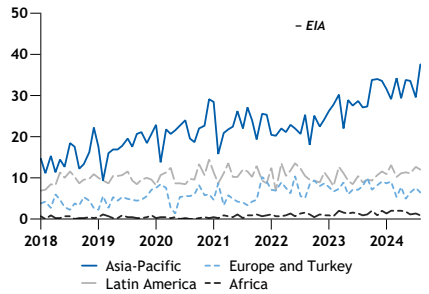
US ethane exports					'000 bl
	Aug	±% Aug 23	Jun-Aug	±% Jun-Aug 23	2024
China	6,695	-6.2	20,145	-4.7	52,480
India	1,480	-37.5	5,429	-14.1	14,934
UK	189	-85.4	1,467	-48.3	5,862
Norway	1,900	48.1	4,630	13.0	11,599
Other	2,776	-25.0	10,981	-9.2	28,504
Total	13,040	-17.4	42,652	-8.3	113,379

— EIA

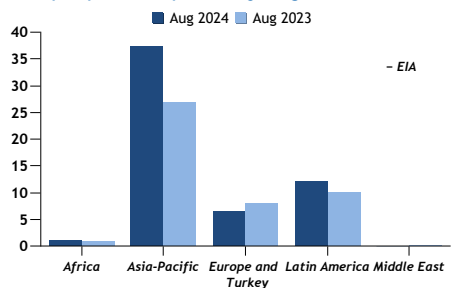
Canada LPG exports					'000t
	Aug	±% Aug 23	Jun-Aug	±% Jun-Aug 23	2024
US	341	28.5	1,040	30.8	3,517
Japan	149	-24.9	423	-28.8	1,520
South Korea	49	0.0	209	55.4	488
Mexico	20	172.1	78	420.0	177
Others	0	-97.2	0	-95.6	0
Total	559	7.4	1,751	13.7	5,702

— Statistics Canada

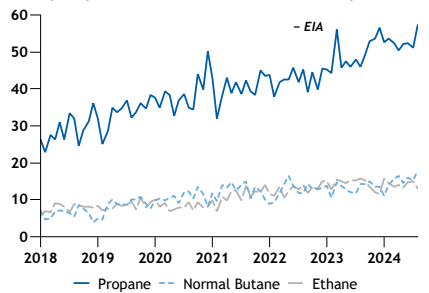
US propane exports by region mn bl



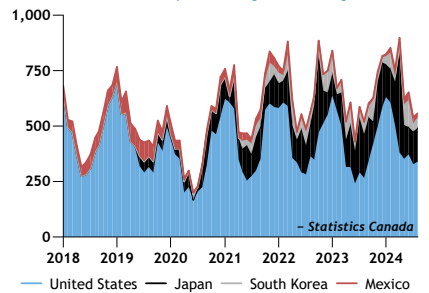
US propane exports by region, YoY mn bl



US propane, butane, ethane exports mn bl



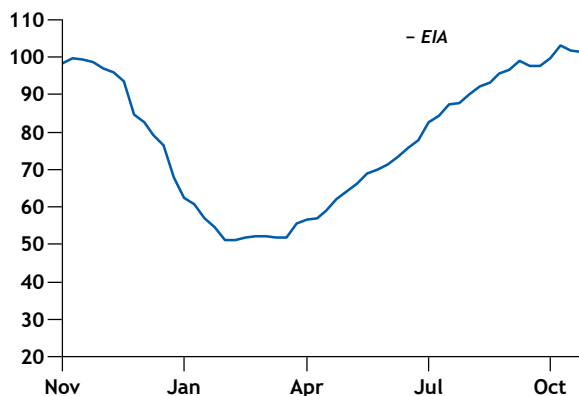
Canada LPG exports by country '000t



INVENTORIES: US

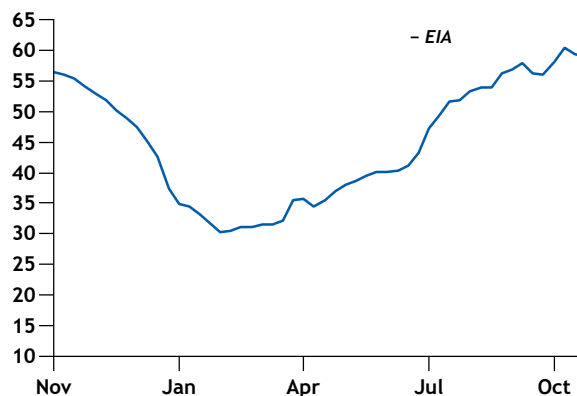
Total US weekly propane stocks

mn bl



US Gulf coast stocks

mn bl



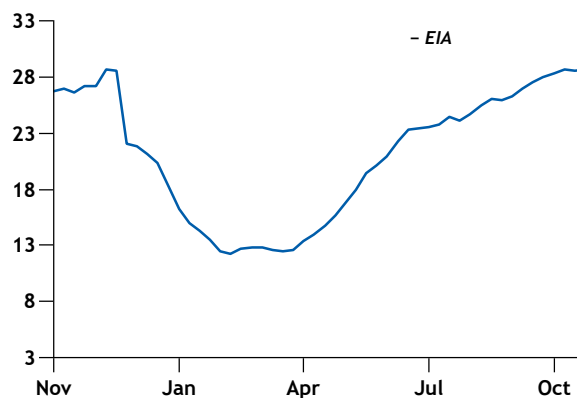
US east coast stocks

mn bl



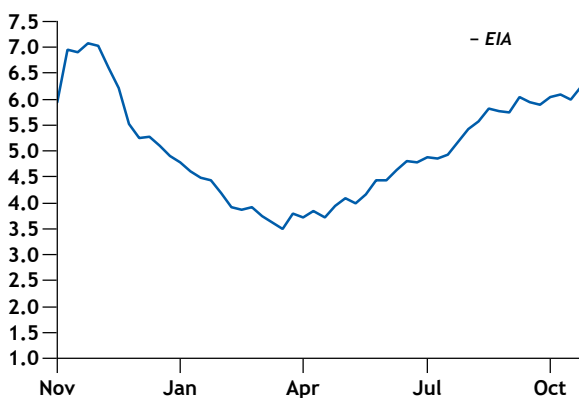
US midcontinent stocks

mn bl



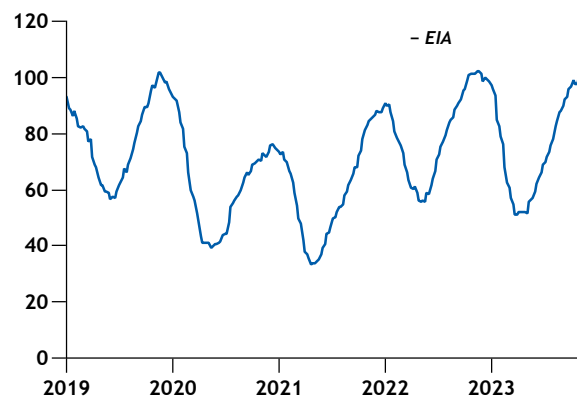
US west coast stocks

mn bl



US stocks 5-year view

mn bl



MARKET ANALYSIS

■ US propane stocks fell by 300,000 bl to 101.5mn bl (8.2mn t) during the week to 25 October on higher domestic demand, according to the EIA.

■ The stockdraw left inventories 0.3pc below levels a year earlier. Fractionated propane inventories fell by 480,000 bl to 68.4mn bl, accounting for 67.4pc of the total.

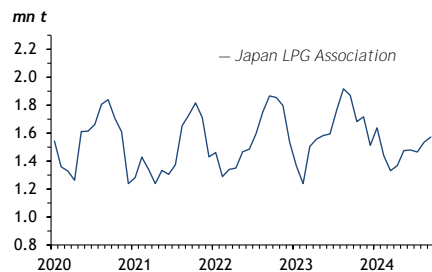
■ US Gulf coast propane stocks fell by 489,000 bl to 58.9mn bl and on the east coast they dropped by 166,000 bl to 7.7mn bl. But midcontinent inventories rose by 166,000 bl to 28.7mn bl.

■ Domestic sales increased to 1.3mn b/d from 1.1mn b/d but exports fell to 1.6mn b/d from 1.9mn b/d.

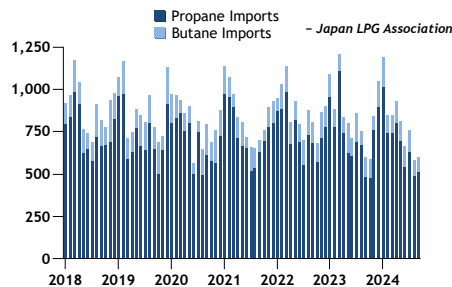
TRADE FLOWS: JAPAN, SOUTH KOREA

Japanese LPG imports							'000t
Imports by country	Sep	Jul-Sep	Jul-Sep 23	24/23 ±%	Jul-Sep 22	24/22 ±%	2024
Saudi Arabia	0.0	0.0	0.0	-	93.6	-100.0	22.0
Qatar	0.0	0.0	48.1	-100.0	0.0	-	91.4
Kuwait	5.4	18.0	23.9	-24.7	26.0	-30.8	321.7
UAE	0.0	0.0	0.5	-100.0	47.2	-100.0	3.0
Australia	89.9	212.7	372.8	-42.9	287.8	-26.1	852.7
US	352.4	1,276.1	1,298.6	-1.7	1,514.9	-15.8	4,499.2
Others	153.9	436.0	473.8	-8.0	412.8	5.6	1,449.7
Total imports	601.6	1,942.8	2,217.7	-12.4	2,382.2	-18.4	7,239.7
Imports by product							
Propane	512.2	1,635.7	1,850.2	-11.6	1,973.9	-17.1	6,197.6
Butane	89.4	307.1	367.5	-16.4	408.3	-24.8	1,042.2

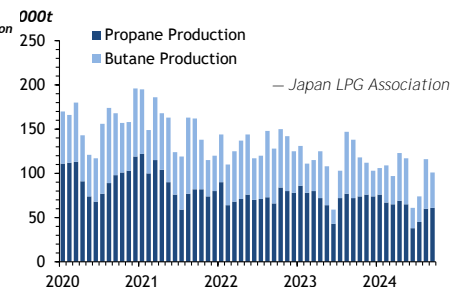
Japan: LPG stocks



Japan: LPG imports

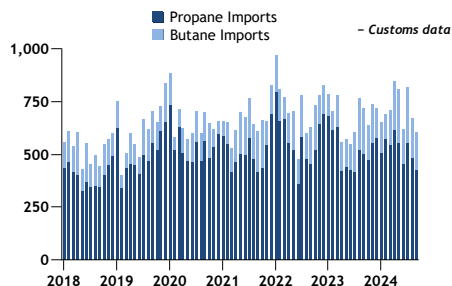


Japan: LPG production

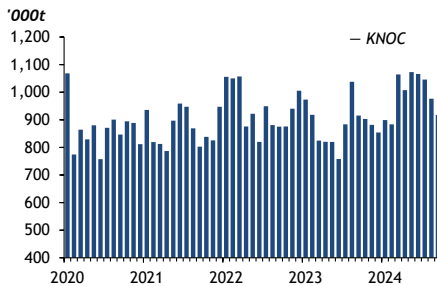


South Korean LPG imports							'000t
Imports by country	Sep	Jul-Sep	Jul-Sep 23	24/23 ±%	Jul-Sep 22	24/22 ±%	2024
US	564.2	1,855.5	1,828.3	1.5	1,663.6	11.5	5,363.5
UAE	0.0	0.0	0.0	-	0.0	-	50.2
Qatar	0.0	0.0	23.6	-100.0	0.0	-	0.0
Australia	0.0	43.8	23.1	89.5	33.7	29.7	97.9
Nigeria	0.0	0.0	0.0	-	0.0	-	0.0
Kuwait	0.0	0.0	0.0	-	0.0	-	47.9
Saudi Arabia	4.0	7.2	47.5	-84.8	141.3	-94.9	225.5
Others	37.5	188.3	163.6	15.1	170.4	10.5	625.3
Total imports	605.7	2,094.8	2,086.1	0.4	2,009.1	4.3	6,410.3
Imports by product							
Propane	428.5	1,468.4	1,441.9	1.8	1,518.2	-3.3	4,718.9
Butane	177.2	626.4	644.2	-2.8	490.9	27.6	1,691.4

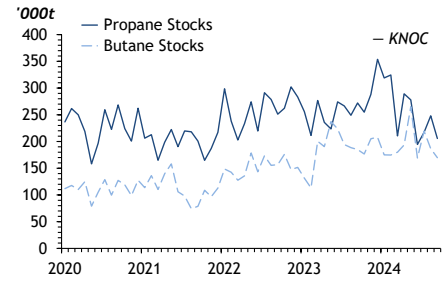
South Korea: LPG imports



South Korea: LPG consumption



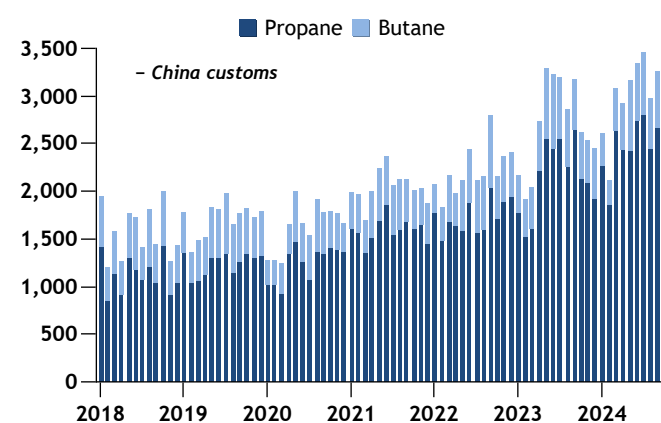
South Korea: LPG stocks



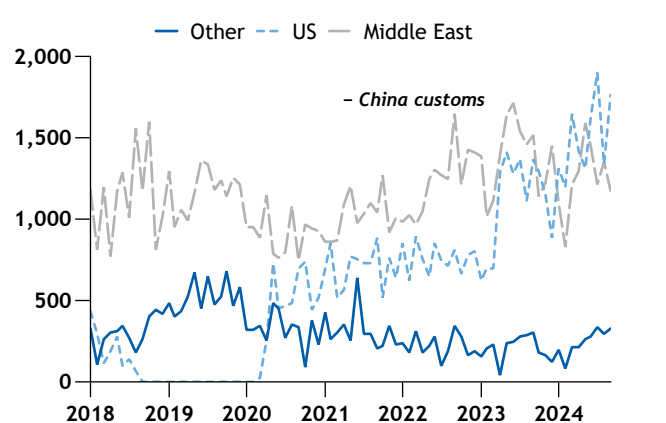
TRADE FLOWS: CHINA

China LPG imports							'000t
Imports by country	Sep	Jul-Sep	Jul-Sep 23	24/23 ±%	Jul-Sep 22	24/22 ±%	2024
US	1,758.7	4,999.0	3,852.0	29.8	2,275.3	119.7	13,509.7
UAE	578.9	1,724.6	2,231.2	-22.7	1,688.5	2.1	5,410.4
Qatar	92.9	677.8	888.3	-23.7	818.8	-17.2	1,817.7
Saudi Arabia	179.5	434.7	364.1	19.4	359.4	20.9	1,055.6
Kuwait	140.9	280.2	259.1	8.1	252.5	11.0	817.5
Australia	107.0	237.6	165.8	43.3	105.1	126.0	557.6
Others	401.0	1,343.5	1,465.4	-8.3	1,564.7	-14.1	3,769.3
Total imports	3,258.9	9,697.5	9,226.0	5.1	7,064.3	37.3	26,937.8
Imports by product							
Propane	2,669.1	7,910.2	7,445.0	6.2	5,206.2	51.9	22,260.8
Butane	589.8	1,787.4	1,781.0	0.4	1,858.2	-3.8	4,677.0

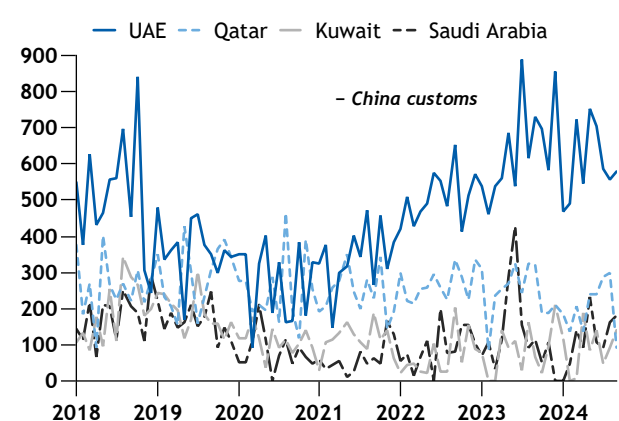
China LPG imports by product



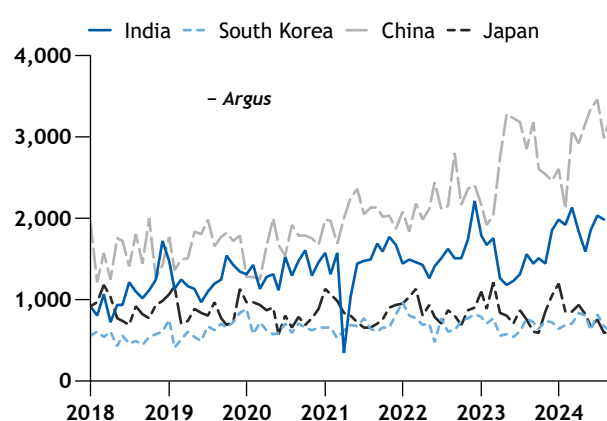
China LPG imports by origin



China LPG imports from Middle East

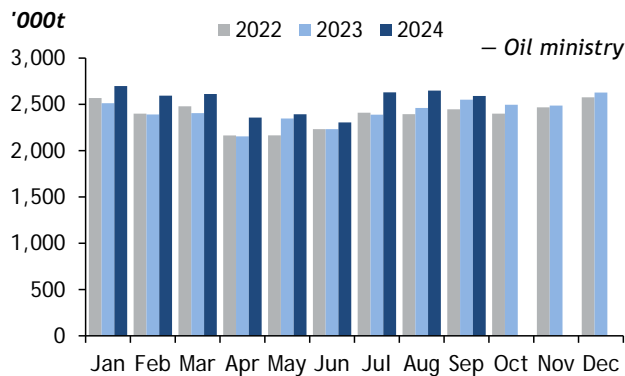


Key Asia-Pacific LPG importers



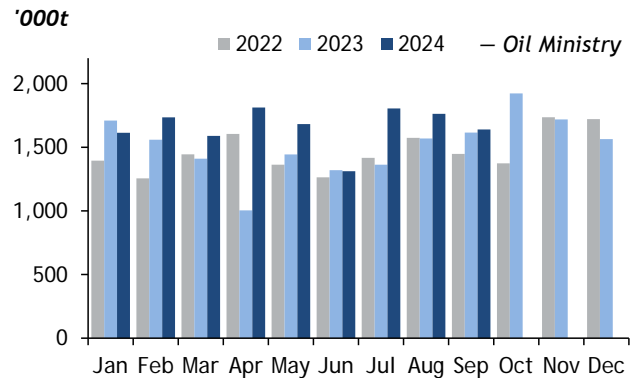
STATISTICS: ASIA

India: LPG demand

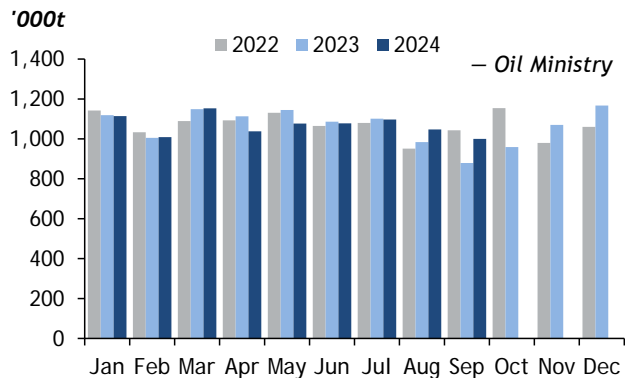


India: LPG imports

'000t

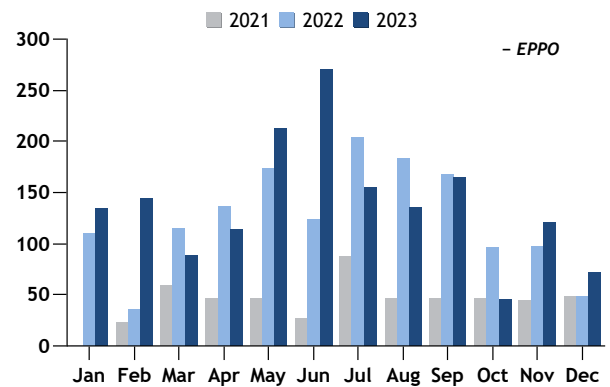


India: LPG production

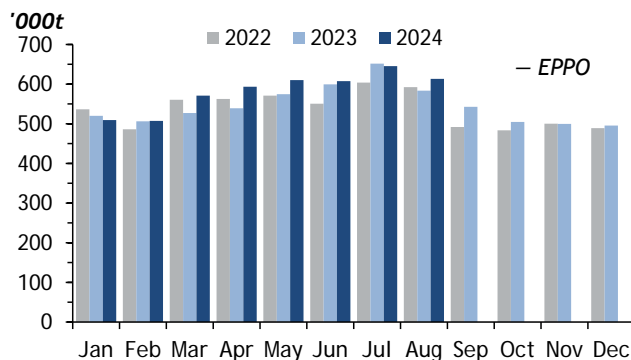


Thailand: LPG imports

'000t

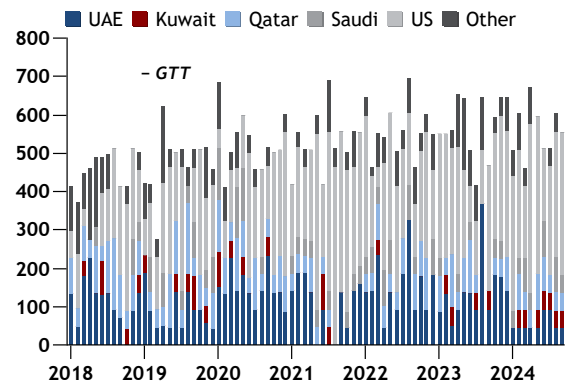


Thailand: LPG consumption



Indonesia: LPG imports origin

'000t



MARKET ANALYSIS

Japan's LPG stocks fell by 16pc on the year but rose by 2.4pc on the month to 1.1mn t in September as domestic demand eased, data from the Japan LPG Association show.

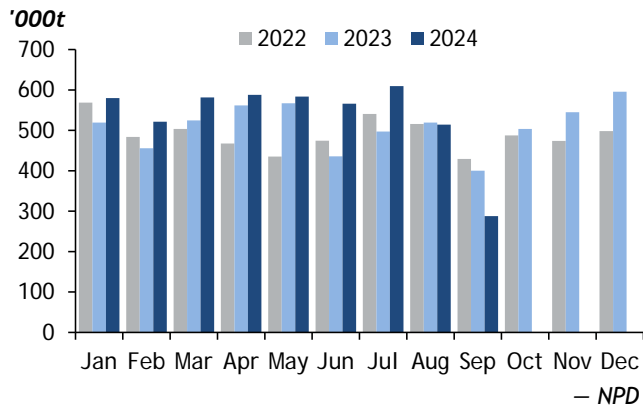
Propane stocks rose by 4.6pc on the month to 1.1mn t, while butane inventories fell by 1.9pc to 511,000t. They fell by 15pc and 17pc, respectively, from a year earlier.

Domestic consumption dropped by 0.4pc on the month and 13pc from a year earlier to 723,000t in September. This offset imports declining by 3.1pc on the month to 659,000t, although they were 1.7pc up on the year.

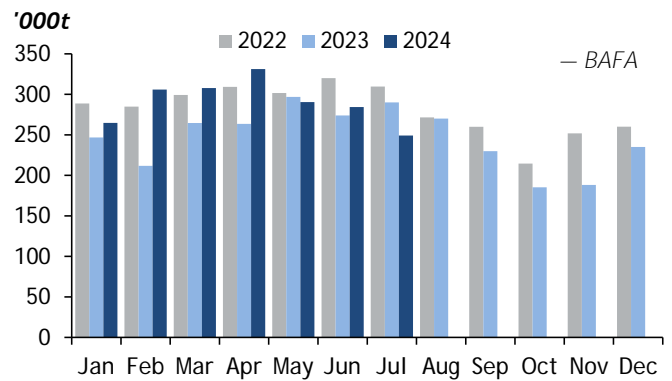
Japanese LPG output from refineries fell sharply, by 13pc on the month and 27pc on the year to 101,000t.

STATISTICS: EUROPE

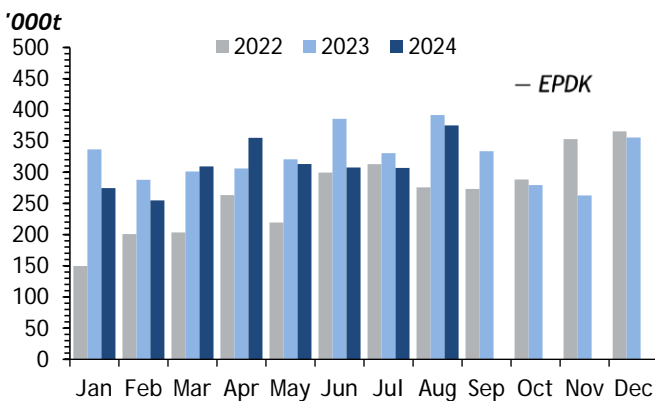
Norway: NGL production



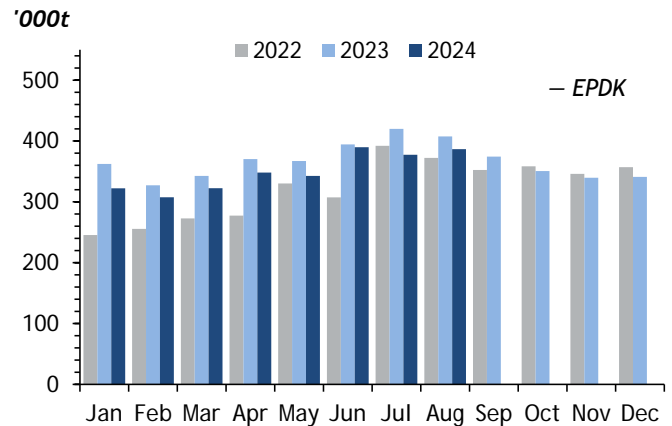
Germany: inland LPG deliveries



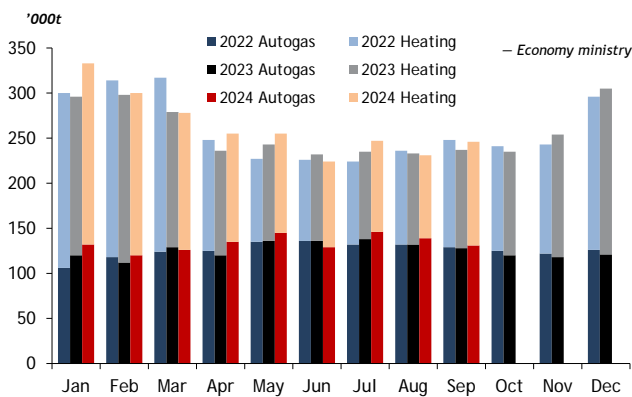
Turkey: LPG imports



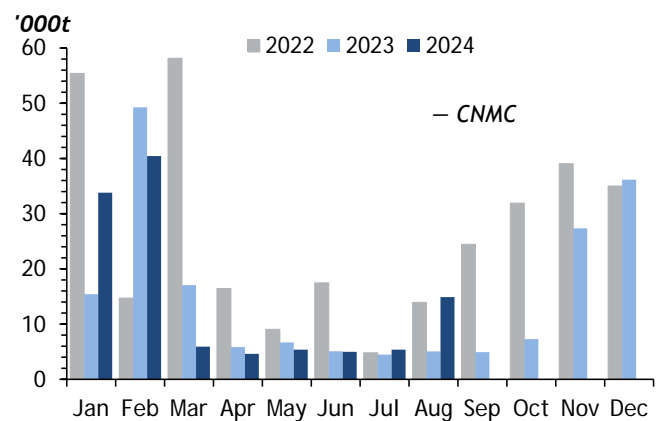
Turkey: LPG consumption



Italy: LPG transport and heating consumption



Spain: LPG imports



EUROPEAN PROPANE

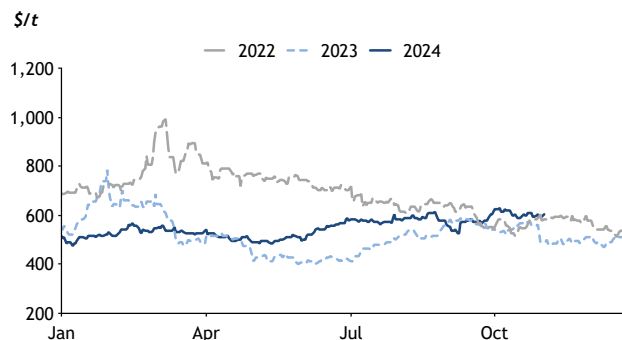
■ Large cargo propane prices fell by \$24.25/t to \$603/t cif Amsterdam-Rotterdam-Antwerp (ARA) across 10-31 October as crude and oil products values tumbled. But this masked tight supply regionally and from the US in a bullish market. US arrivals in northwest Europe dropped to 496,000t in October from 626,000t a month earlier, Kpler data show, while Norway's Karsto export hub was slow to restart after works. Physical cargo premiums to front-month swaps subsequently firmed by \$10.75/t to \$23/t, a two-month high.

■ Propane coaster premiums to large cargoes firmed as winter demand kicked in. Outright fob and cif cargo prices rose by about \$10/t to \$694.50/t and \$738/t, respectively, bucking the losses on the large cargo market.

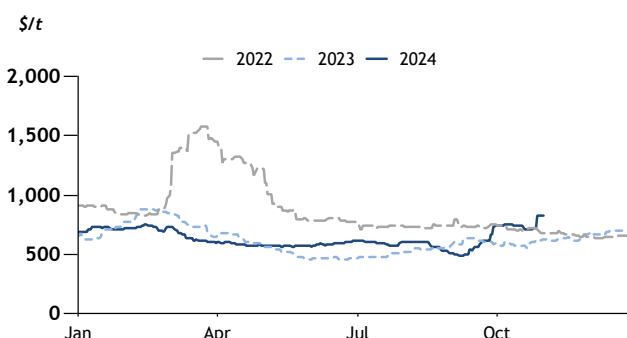
■ A combination of pre-winter storage buying, emerging demand from central-eastern Europe and tight refinery supply pushed ARA railcar prices up by \$45/t to \$845/t despite mild weather. Their premium to large cargoes widened by \$69.25/t to \$242/t, the highest since early January. Fob ARA barges rose even more strongly – by \$73/t to \$825/t.

■ Algeria's Sonatrach set its price for November-loading propane cargoes at \$595/t, up by \$5/t from October.

Propane cif NWE cargoes large



Propane fob ARA barge



EUROPEAN BUTANE

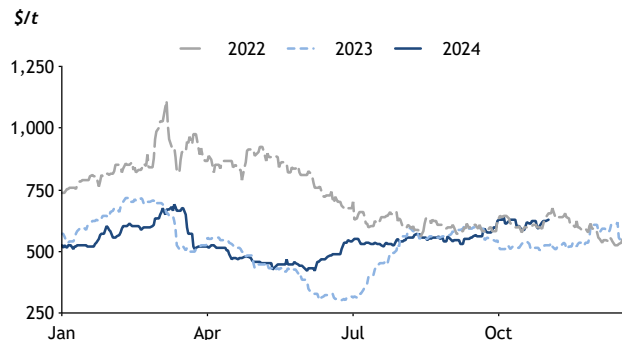
■ The large cargo butane cif Amsterdam-Rotterdam-Antwerp (ARA) price slid by \$9.50/t to \$615.50/t across 10-31 October following crude-led naphtha losses. But the value relative to front-month naphtha firmed by three percentage points to 96.5pc, the highest since early March, finding support from a firmly closed transatlantic arbitrage and relatively thin local supplies of field-grade butane.

■ Fob coaster prices eased by half a percentage point to 93pc, equating to a \$31.50/t outright fall to \$593.50/t. The price briefly rose above parity to naphtha on 21 October as tight Mediterranean supply supported stronger demand for fob shipments south. The delivered ARA price shed two percentage points to 102pc, a \$35.50/t outright loss to \$651/t, on thin gasoline blending demand.

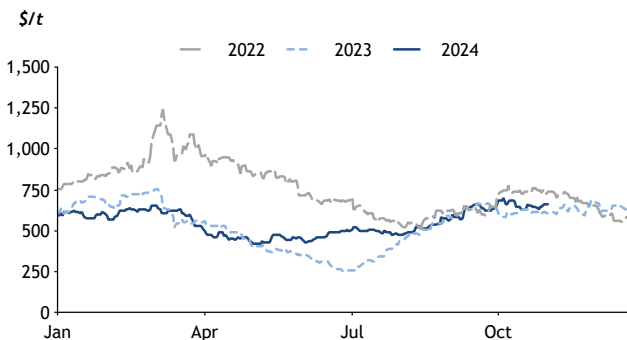
■ Barge prices fell by one percentage point to 104pc of naphtha on a delivered basis as gasoline blending demand eased, but prices continued to find support from tight prompt supply. The fob ARA price fell by \$36/t to \$643.75/t.

■ Algeria's Sonatrach lifted its November butane price by \$20/t to \$600/t. Mediterranean coaster prices surged as high as 115pc of naphtha on 21 October but ended the month where they began, at 104pc.

Butane cif NWE cargoes large



Butane fob ARA barge



EURASIA LPG

■ Russia's domestic LPG prices fell by 1,000-5,000 roubles/t (\$10-52/t) over 10-31 October owing to slower railway deliveries and weaker seasonal demand for autogas. Traders reported stockpiling in southern regions and growing heating demand in northwestern regions, but this was not enough to offset the overall decline in consumption.

■ Propane-butane mix railcar prices on the Poland-Belarus border increased by \$11/t to \$616/t daf Brest, reflecting low product availability on the Polish border and high buying interest ahead of the December embargo on Russian LPG. Railway LPG exports from Russia to Poland rose to 24,800t over 1-14 October from 16,100t a month earlier, rail forwarders' data show, with Russian suppliers planning to stop shipments by mid-November, ahead of the ban.

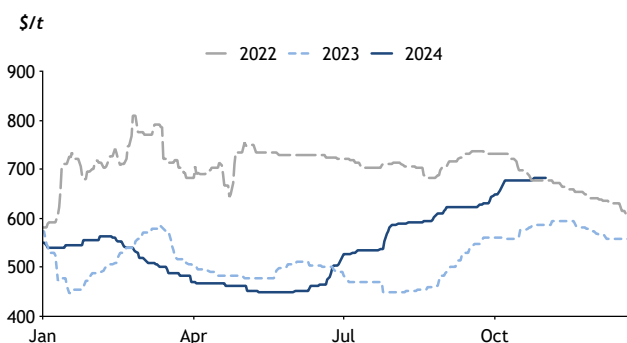
■ Propane railcar prices on the Poland-Belarus border moved up by \$5/t to \$682.50/t daf Brest in line with rising prices in northwest Europe.

■ Propane railcar and truck prices at Polish ports increased to \$815-840/t fca/fot from \$780-820/t three weeks earlier, also tracking higher northwest European assessments.

■ The price of propane-butane mix at the Uzbekistan-Tajikistan border rose by \$10/t to \$480/t daf Bekabad, owing to a drop in supplies from Kazakhstan in October.

■ Tengizchevroil (TCO), Kazakhstan's leading LPG producer and the biggest exporter to Tajikistan, had in early October offered an additional 20pc to long-term contract supplies this month but later reversed the decision, sending supplies instead to Kazakhstan Petrochemical Industries' propane dehydrogenation plant, which requested up to 45,000t of propane from TCO in October.

Propane Argus daf Brest

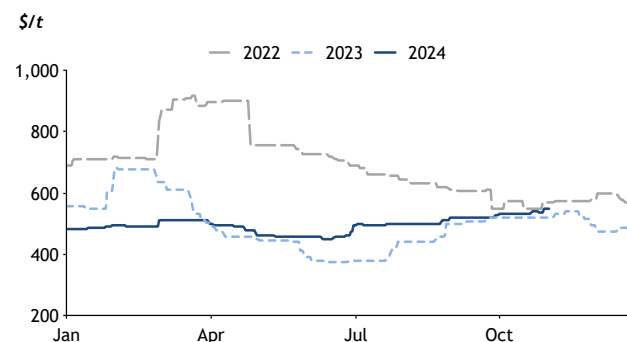


BLACK SEA LPG

■ The price of propane-butane mix, propane and butane coaster cargoes from Black Sea and Sea of Azov terminals increased during 10-31 October as a result of livelier seasonal demand and expectations of higher monthly Algerian prices. This came to pass, as Algeria's Sonatrach raised its November propane and butane prices by \$5/t to \$595/t and \$20/t to \$600/t, respectively.

■ Propane-butane mix prices increased by \$27.50/t to \$540/t fob Black Sea, propane prices moved up by \$5/t to \$535/t and butane rose by \$10/t to \$535/t.

Propane Argus fob Black Sea



ASIA PROPANE

■ Delivered northeast Asian propane prices under the Argus Far East Index (AFEI) fell by 5.2pc to \$640.25/t between 11 October and 1 November, after front-month Brent crude values lost 8.7pc.

■ The US was on course to export a record-high of 3.7mn t of LPG to Asia-Pacific in November while incremental demand from China was lacking. Chinese propane dehydrogenation (PDH) run rates averaged 75pc in October as downstream propylene prices inched up. But spot demand from petrochemical producers for November shipments was tepid on expected declines in utilisation.

■ A prompt supply overhang pushed the physical market for 23,000t cargoes into a contango structure — prompt prices at a discount to later ones.

■ State-controlled Saudi Aramco raised its November propane contract price by \$10/t on the month to \$635/t, reflecting firm demand from India and southeast Asia.

ASIA BUTANE

■ The Argus Far East Index (AFEI) for butane fell by 3.7pc to \$650.25/t by 1 November from 11 October, pushing it to a \$10/t premium over propane on firmer demand from northeast Asian importers.

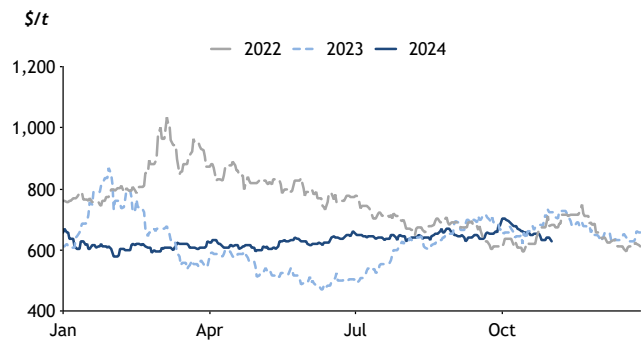
■ State-controlled Saudi Aramco raised its November butane contract price (CP) by \$10/t to \$630/t. Firm demand from India and Indonesia kept prices for November-loading Mideast Gulf cargoes at \$18-21/t premiums to Aramco's November CP. Indonesia's Pertamina sought an evenly split propane-butane cargo for 18-22 December delivery to Kalbut after procuring two similar cargoes for November arrival at \$65/t premiums to the November CP.

ASIA PRESSURISED

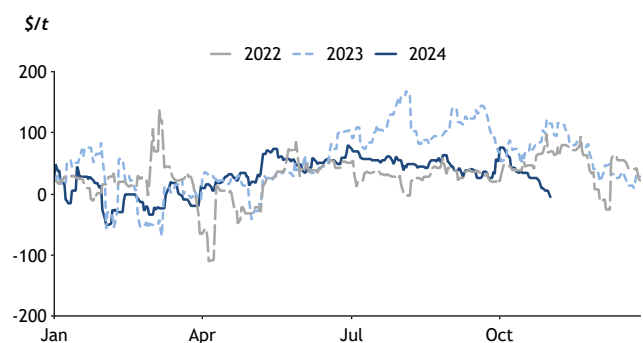
■ South China coaster prices for cargoes loading in November fell to \$55/t premiums to Saudi Aramco's November contract price (CP) over the second half of October. Delivered coasters to north Vietnam were unchanged at the November CP plus \$125/t on a cfr Haiphong basis amid limited demand.

■ China's wholesale prices fell in the wake of high domestic output and weak demand. The Pearl River Delta index eased by 2.2pc to 5,033 yuan/t (\$709/t) over 11 October-1 November after import terminals raised prices to cover higher import costs after the hike in the November CP. Higher output from the new Yulong refinery weighed on values.

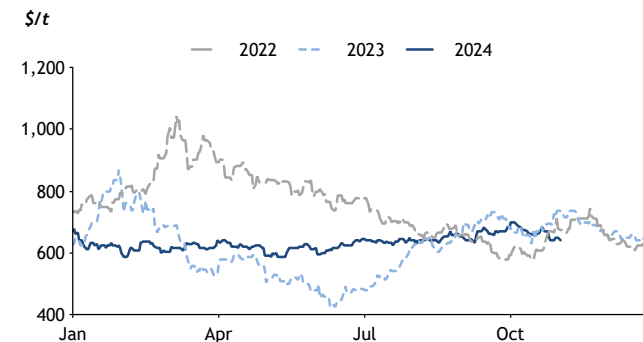
Propane Argus Far East index



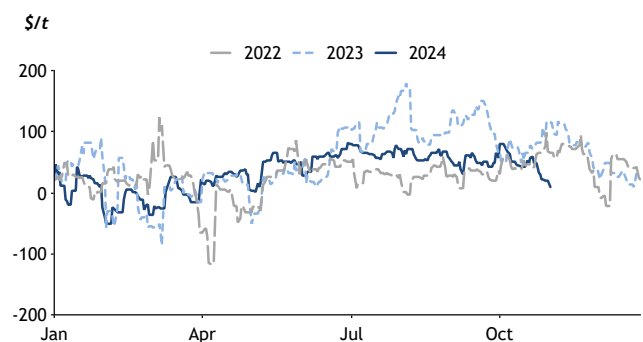
Propane cfr Japan premium to CP



Butane Argus Far East Index



Butane cfr Japan premium to CP



AMERICAS PROPANE

■ Premiums to forward prices for US Gulf coast fob propane cargoes tumbled in late October on a narrowing arbitrage to Asia. Cargoes were sold at 25¢/USG (\$130.25/t) premiums to Mont Belvieu and fell to 17¢/USG by the end of October.

■ Mont Belvieu LST prices rose to 72.5¢/USG (\$378.75/t) from 72.375¢/USG over 10-31 October. They dropped to 67.875¢/USG on 11 October following restart issues at the Nederland terminal that took it off line, reaching a low of 66.5¢/USG on 28 October despite operations resuming by 17 October, before rebounding towards the end of the month.

■ Propane prices at the US midcontinent hub of Conway rose by 2.25¢/USG to 74.5¢/USG, supported by gains at Mont Belvieu. But thin seasonal demand in the region widened Conway's discount to Mont Belvieu to 7.4375¢/USG from 6.375¢/USG by the end of the month.

■ Propane prices at the Edmonton hub in Alberta, western Canada, dropped to a 12.5¢/USG discount to Conway equivalents from a 10¢/USG discount in mid-October, in line with lacklustre seasonal demand as heating and crop-drying use remained limited.

AMERICAS ETHANE

■ Mont Belvieu EPC prices on the US Gulf coast fell to 19.875¢/USG (\$148/t) by 31 October from 22.125¢/USG on 10 October owing to rising inventories, having reached a nearly six-week low of 18.625¢/USG on 28 October. Ethane's discount to propane at Mont Belvieu widened to 62.125¢/USG from 56.625¢/USG.

AMERICAS BUTANE

■ US Gulf coast Mont Belvieu EPC butane prices fell to 114.875¢/USG (\$520.50/t) from 119.375¢/USG over 10-31 October, lagging weakness in crude and gasoline. Butane's value as a percentage of Nymex Rbob gasoline futures rose to 57.3pc from 55.5pc, compared with 35.1pc a year earlier.

■ Normal butane's premium to isobutane at Mont Belvieu narrowed to 1.875¢/USG from 3.25¢/USG.

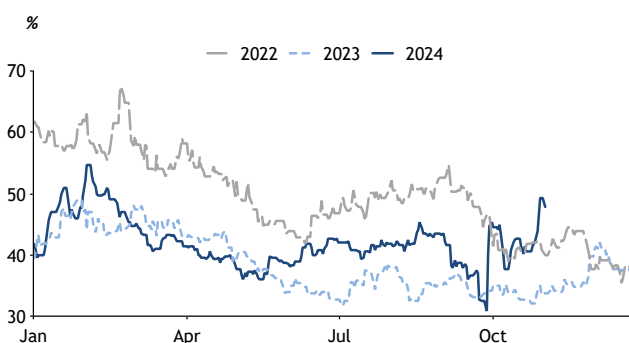
■ US midcontinent butane prices at Conway edged 0.25¢/USG higher to 113.75¢/USG.

■ Prices in Edmonton, Alberta, fell to 56.75pc of the calendar month average of Nymex WTI crude from 60.5pc after a regional natural gas liquids fractionator came back on line by the end of the month and supply tightness eased.

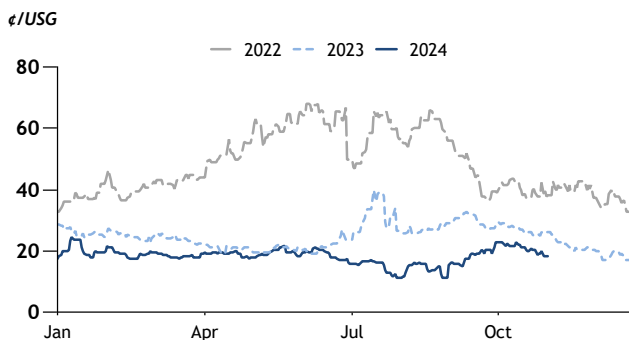
Propane Mont Belvieu non-LST



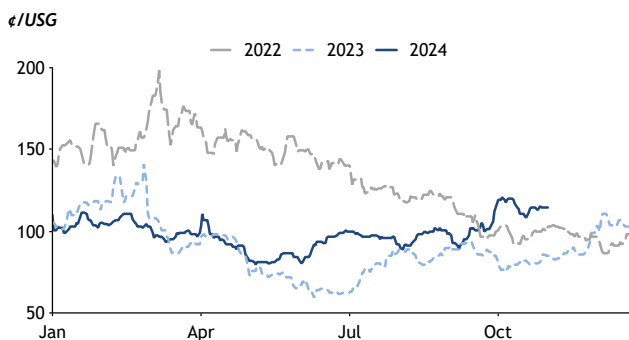
Propane Mont Belvieu LST % to Nymex WTI



Ethane Mont Belvieu



Butane Mont Belvieu non LST



NGL ECONOMICS/SHIPPING

Ethylene plant total variable cash cost*					
	2 Oct	9 Oct	16 Oct	23 Oct	30 Oct
Purity ethane	10.59	10.35	10.18	9.39	8.75
Propane	20.96	23.10	19.30	21.81	24.80
N-Butane	28.88	32.21	30.28	30.33	32.87
Light naphtha	37.20	38.77	36.11	40.53	41.14
Gasoil	59.34	65.91	61.42	67.15	71.29

*at Mont Belvieu, Texas

— Argus

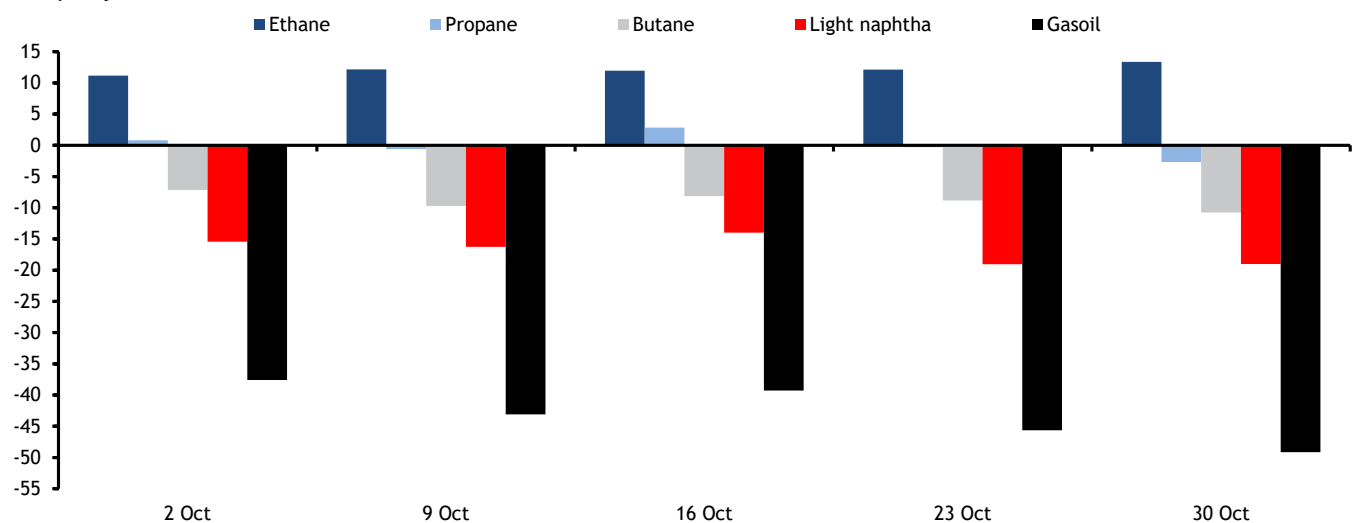
Ethylene plant gross margins* (see graph below)					
	2 Oct	9 Oct	16 Oct	23 Oct	30 Oct
Ethane	11.16	12.15	11.95	12.11	13.38
Propane	0.79	-0.60	2.83	-0.31	-2.68
Butane	-7.13	-9.71	-8.15	-8.83	-10.74
Light naphtha	-15.45	-16.27	-13.98	-19.03	-19.02
Gasoil	-37.59	-43.11	-39.29	-45.65	-49.16

*at Mont Belvieu, Texas

— Argus

US Ethylene plant gross margins (Mont Belvieu, Texas)

¢/lb of ethylene



Shipping

■ New York-listed shipowner Dorian LPG's profits fell by 87pc on the year to \$9.4mn in the third quarter owing to lower VLGC rates. The company's time charter equivalent rate fell by 41pc to \$37,010/d as Ras Tanura-Chiba VLGC freight rates dropped by 57pc to \$52/t and Houston-Chiba rates by 47pc to \$100/t. Rates were depressed by weather-related delays at US Gulf coast terminals and limited export capacity squeezing LPG arbitrages, Dorian says. Seamless Panama Canal transits also pressured rates.

Shipping rates			\$/t
Spot			
44,000t	Ras Tanura-Chiba	▼	53.00
44,000t	Houston-Chiba	▼	99.00
44,000t	Houston-Flushing	▼	56.00
1,800t	Tees-ARA	▲	44.50
1,800t	Tees-Lisbon	▲	113.50
4,000t	Tees-Mohammedia	◀ ▶	84.50

— Argus Gas Freight

Shipping rates

■ Limited US exports owing to terminal maintenance and smooth Panama Canal transits pushed the Houston-Chiba VLGC rates down to \$99/t by 1 November from \$120/t on 11 October. Ras Tanura-Chiba rates also slipped by 21pc to \$53/t in the period.

■ Stronger northwest European LPG demand absorbed more vessels, pushing the Tees-ARA coaster rate up by \$2.50/t to \$44.50/t. The Tees-Mohammedia rate was stable at \$84.50/t.

Shipping rates		\$/calendar month
12-month time charter		
84,000m ³	▼	1,350,000
38,000m ³	◀ ▶	950,000
35,000m ³	◀ ▶	845,000
3,500m ³ pressurised (west)	◀ ▶	290,000
3,500m ³ pressurised (east)	◀ ▶	235,000

— Gibsons

DATA

PROPANE													
	Nov 23	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Middle East \$/t													
Saudi Arabia	610.00	610.00	620.00	630.00	630.00	615.00	580.00	580.00	580.00	590.00	605.00	625.00	635.00
Kuwait	610.00	610.00	620.00	630.00	630.00	615.00	580.00	580.00	580.00	590.00	605.00	625.00	635.00
Mediterranean \$/t													
Algeria (Sonatrach)	560.00	520.00	510.00	520.00	540.00	535.00	500.00	495.00	550.00	555.00	590.00	590.00	595.00
Spot prices \$/t													
Large cargo cif ARA*	495.00	512.50	519.75	535.50	528.75	499.50	509.00	561.00	574.00	608.00	572.75	609.00	na
Large cargo cif Lavera	487.60	492.51	498.61	541.92	543.80	519.73	503.36	541.36	577.92	592.17	567.00	608.05	na
Large cargo Japan cfr	697.50	641.00	619.17	603.85	610.00	614.98	618.05	629.42	643.54	646.42	646.86	665.56	na
Large cargo India cfr	724.36	694.71	642.51	653.07	639.48	607.39	603.23	614.35	632.09	647.46	661.14	693.09	na
Large cargo Argus South China Index	683.17	637.35	613.69	598.50	604.05	612.17	612.48	624.14	639.70	642.93	647.18	666.67	na
Large cargo Argus Ningbo Index	688.36	643.50	617.74	603.85	610.75	617.21	620.14	631.46	645.37	648.69	648.42	666.67	na
Large cargo Argus Far East Index*	674.50	636.25	621.25	590.00	606.75	611.25	637.75	637.75	638.25	668.75	657.00	653.00	na
Asia spot premiums to CP \$/t													
Mideast Gulf	7.81	-10.15	-11.23	0.10	-20.15	-24.62	-11.95	-10.89	4.17	11.05	16.76	19.45	na
India cfr	119.30	86.81	48.08	40.96	31.28	19.99	46.54	41.91	46.04	50.51	51.19	64.32	na
South China (pressurised)	99.62	97.00	97.32	95.30	91.50	84.71	82.00	84.37	89.48	90.00	89.33	87.45	na
Japan	91.36	29.70	17.08	-19.45	-8.55	20.02	50.57	50.05	60.07	49.56	37.48	40.33	na
Mont Belvieu €/USG													
LST	64.01	67.36	80.47	89.74	81.82	80.66	70.51	75.55	78.92	76.58	62.53	71.57	na
Non-LST	64.05	68.92	81.91	90.65	79.82	79.37	69.43	75.73	79.75	74.95	65.35	77.95	na
Europe \$/t													
Coasters fob NWE	585.11	559.09	551.01	582.93	577.69	561.68	550.88	574.61	612.79	630.24	614.29	679.89	na
Barges fob NWE	626.34	680.63	711.82	724.30	649.85	587.33	569.76	586.15	594.99	585.05	543.29	734.13	na
Coasters fob Med	531.52	512.05	520.43	553.38	546.70	519.81	504.83	529.91	583.29	584.79	565.80	643.16	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
	Oct 23	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Mont Belvieu	27.21	22.59	18.43	20.22	19.18	18.36	19.14	19.44	19.14	15.43	13.96	17.81	21.16
Naphtha													\$/t
	Oct 23	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Cargoes cif NWE	645.40	628.14	636.42	639.50	663.87	709.88	690.15	661.49	663.19	687.30	658.17	624.87	647.05
Cargoes c+f Japan	665.69	646.10	665.85	669.11	678.63	710.74	705.32	676.30	680.99	695.96	671.71	647.60	673.73
BUTANE													
	Nov 23	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Middle East \$/t													
Saudi Arabia	620.00	620.00	630.00	640.00	640.00	620.00	585.00	565.00	565.00	570.00	595.00	620.00	630.00
Kuwait	620.00	620.00	630.00	640.00	640.00	620.00	585.00	565.00	565.00	570.00	595.00	620.00	630.00
Mediterranean \$/t													
Algeria (Sonatrach)	535.00	540.00	540.00	540.00	580.00	570.00	490.00	425.00	500.00	500.00	565.00	580.00	600.00
Spot prices \$/t													
Large cargo cif ARA*	532.75	531.00	564.00	596.50	518.00	473.75	445.50	487.50	533.50	556.00	593.00	620.75	na
Large cargo cif Lavera	521.63	544.66	509.53	564.42	598.20	467.35	420.99	438.21	512.09	533.26	536.77	588.78	na
Large cargo Japan cfr	708.02	653.80	627.94	615.58	618.80	624.45	604.95	615.27	637.50	645.66	658.93	671.16	na
Large cargo India cfr	734.67	707.55	653.37	664.54	642.63	611.04	597.91	596.80	618.77	637.01	661.34	685.77	na
Large cargo Argus South China Index	693.69	650.15	622.47	610.23	612.85	621.64	599.38	610.00	633.65	642.17	659.25	672.27	na
Large cargo Argus Ningbo Index	698.88	656.30	626.51	615.58	619.55	626.69	607.05	617.32	639.33	647.93	660.49	672.27	na
Large cargo Argus Far East Index*	686.50	648.25	633.25	600.00	615.75	619.75	627.75	625.25	637.25	667.75	671.00	670.00	na
Asia spot premiums to CP \$/t													
Mideast Gulf	7.81	-10.15	-11.23	0.10	-20.15	-24.62	-11.95	-10.89	4.17	11.05	16.76	19.45	na
India cfr	119.30	86.81	48.08	40.96	31.28	19.99	45.49	41.91	46.04	50.51	51.19	64.32	na
South China (pressurised)	92.76	97.00	97.32	95.30	91.50	84.71	82.00	84.26	89.48	90.00	89.33	87.41	na
Japan	90.26	30.25	15.31	-17.73	-4.40	25.26	40.09	53.91	67.28	62.33	50.50	52.07	na
Mont Belvieu €/USG													
LST	86.29	100.44	103.40	94.09	83.38	81.45	65.85	70.93	77.25	76.38	83.23	108.69	na
Non-LST	86.50	105.18	104.03	106.12	97.62	95.92	82.89	90.93	97.23	96.38	98.24	114.63	na
Europe \$/t													
Coasters fob NWE	548.88	546.64	541.45	591.51	581.98	541.68	447.51	467.38	546.88	531.99	539.77	622.47	na
Barges fob NWE	627.65	640.07	599.39	616.00	610.35	465.35	445.77	464.81	496.72	514.95	614.38	655.21	na
Coasters fob Med	587.89	608.01	604.86	617.10	560.95	530.88	426.92	474.60	564.25	530.93	568.61	694.42	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
	Oct 23	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
East China terminal													
Ningbo ex terminal	5,300	5,329	5,215	5,095	5,144	5,090	5,126	5,173	5,008	5,014	5,051	5,078	5,151
Wenzhou ex terminal	5,341	5,383	5,363	5,200	5,184	5,140	5,179	5,250	5,094	5,074	5,136	5,149	5,287
Zhangjiagang ex terminal	5,391	5,469	5,368	5,180	5,191	5,100	5,137	5,171	5,158	5,165	5,202	5,226	5,244
Shandong ex terminal	na	na	na	na	na	na	na	na	na	5,350	5,405	5,355	5,386
Fujian ex terminal	5,199	5,321	5,318	5,214	5,192	5,111	5,162	5,074	5,093	5,115	5,160	5,188	5,181
East China refinery													
Shanghai ex refinery	4,881	5,030	4,993	4,703	4,649	4,765	4,904	5,017	4,761	4,784	4,832	4,762	4,871
Zhenhai ex refinery	5,022	5,117	5,098	4,784	4,826	4,853	4,991	5,073	4,925	4,904	4,949	4,801	4,949
Yangzi ex refinery	5,193	5,261	5,233	4,946	5,036	4,926	5,017	5,151	5,033	5,102	5,113	4,991	5,057
Fujian ex refinery	5,091	5,150	4,940	4,941	4,928	4,945	4,980	4,940	4,957	4,913	5,010	4,950	5,034
Gaoqiao ex refinery	4,884	5,006	4,975	4,655	4,594	4,743	4,880	4,933	4,775	4,786	4,813	4,728	4,827
South China terminal													
Zhuhai ex terminal	5,130	5,204	5,288	5,160	5,084	5,114	5,138	5,098	4,982	5,028	5,086	5,090	5,098
Shenzhen ex terminal	5,177	5,234	5,306	5,176	5,107	5,109	5,155	5,114	5,016	5,062	5,162	5,142	5,126
Raoping ex terminal	5,195	5,218	5,298	5,215	5,178	5,115	5,166	5,024	4,971	5,014	5,082	5,112	5,219
Nansha ex terminal	5,177	5,234	5,306	5,176	5,107	5,109	5,155	5,114	5,016	5,062	5,162	5,142	5,126
Shantou ex terminal	5,195	5,218	5,298	5,215	5,178	5,115	5,166	5,024	4,971	5,014	5,082	5,112	5,219
Yangjiang ex terminal	5,147	5,171	5,269	5,139	5,063	5,065	5,122	5,112	4,986	5,036	5,077	5,086	5,091
South China refinery													
Maoming ex refinery	5,096	5,114	5,157	5,046	4,871	5,025	5,113	5,088	4,944	4,988	5,038	4,977	4,957
Guangzhou ex refinery	5,083	5,140	5,187	5,061	4,899	5,035	5,092	5,042	4,912	4,971	5,096	5,007	5,033
Northeast China refinery													
Daqing ex refinery	5,146	4,730	4,722	4,460	4,511	4,598	4,703	4,924	4,848	4,757	4,815	4,864	4,618
Dalian ex refinery	4,966	4,581	4,813	4,462	4,485	4,402	4,659	4,834	4,962	4,790	4,805	4,847	4,441
Northwest China refinery													
Urumqi ex refinery	4,266	4,168	4,180	3,971	3,391	3,408	3,576	3,765	3,602	3,908	4,331	4,199	3,729
Inland China refinery													
Yan-An ex refinery	5,090	4,884	5,248	5,194	4,464	4,630	4,856	5,002	4,880	4,950	5,024	4,860	4,672

— all prices from Argus International LPG

Argus stopped assessing Taicang and Shanghai ex-terminal prices from 26 July. These have been replaced by the new Shandong ex-terminal price, which launched on 29 July.



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