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Argus LPG Outlook

The quarter ahead

Weak prices relative to crude and naphtha are the result of a large supply overhang following weak heating demand over an exceptionally mild winter. Excess supplies will continue to weigh on values in the coming months.

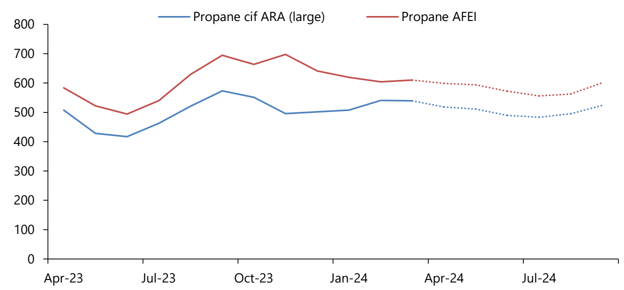
But outright prices are supported by firmer crude values, which have been buoyed by tight fundamentals resulting from Opec+ production cuts. Crude prices will begin to fall towards the end of the quarter as crude supply rises.

LPG's price advantage to naphtha means flexible crackers have continued to use LPG in their feedslates. Rising runs at flexible South Korean and European steam crackers are balanced against rock bottom utilisation rates at Chinese propane dehydrogenation (PDH) plants to keep petrochemical demand in line with recent months.

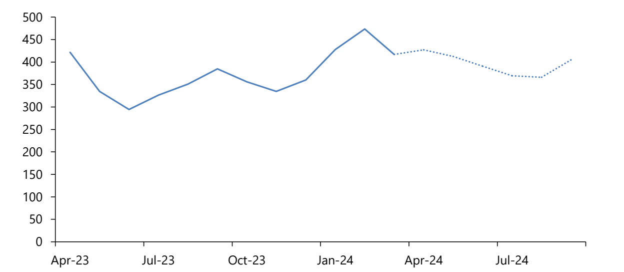
Houston-Chiba freight rates have stabilised at $110-130/t. Transiting the Panama Canal has become manageable for most shippers, but reduced transit numbers will probably continue throughout this quarter, preventing rates from falling much lower.

The US has now fully recovered from January's winter storm and production is close to a record high. With fog season at Houston coming to an end, exports are likely to be firm, pressuring prices globally.

Propane cif ARA, cfr Japan $/t



Propane Mont Belvieu (EPC) $/t



LPG

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Forecast prices									**$/t**
	Apr 24	**May 24**	**Jun 24**	**2Q24**	**3Q24**	**4Q24**	**2024**	**2025**	**2026**
Propane cif ARA (large)	518	511	489	506	501	560	524	545	522
Butane cif ARA (large)	518	513	487	506	505	559	539	542	518
Propane Mt Belvieu EPC	427	412	391	410	380	449	420	445	428
Butane Mt Belvieu EPC	434	417	383	411	378	462	429	447	433
USGC propane export	464	444	422	443	417	486	455	481	459
Propane Conway	404	388	363	385	356	446	400	429	409
Propane Edmonton	267	248	237	251	235	350	278	322	320
Mixed butane Edmonton	337	335	316	329	312	441	361	355	329
Propane AFEI	599	594	572	588	573	638	603	641	619
Butane AFEI	601	596	574	590	572	638	605	628	607
Propane ANI	601	596	574	590	575	640	604	643	622
Butane ANI	603	598	576	592	574	641	607	630	609
Daf Brest Propane	454	436	423	438	465	604	509	644	617
Propane Saudi CP	615	600	565	593	553	613	597	615	594
Butane Saudi CP	620	610	570	600	560	630	607	618	596
Propane Sonatrach SP	535	495	485	505	515	613	539	544	500
Butane Sonatrach SP	520	485	460	488	470	578	522	530	507
North Sea Dated (*$/bl*)	90	92	91	91	88	84	87	85	84
LLS (*$/bl*)	86	88	87	87	85	81	83	82	81
Naphtha cif NWE	685	695	682	688	654	635	661	677	677
Naphtha Japan C and F	693	705	693	697	663	657	674	698	698

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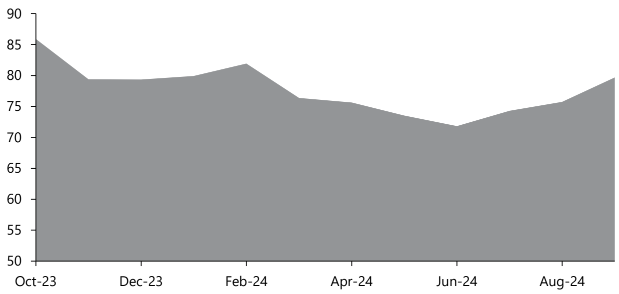
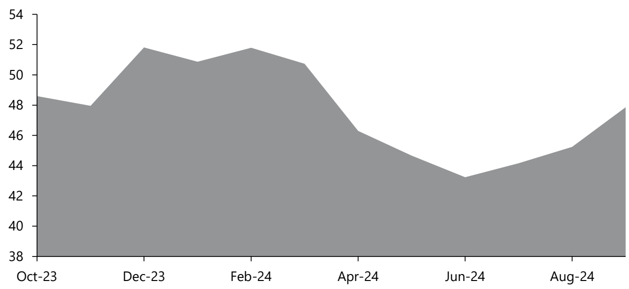
Petrochemical feedstock prices - March		**$/t**
	Price	**±**
Ethane fob Mt Belvieu (¢/USG)	18.34	-0.81
Naphtha cif NWE	685	-20
Naphtha c+f Japan	693	-10
Ice gasoil	830.02	-19

Crude prices - March		**$/bl**
	Price	**±**
North Sea Dated	85.44	-4.6
Ice Brent	84.67	+3.0
Louisiana Light Sweet	83.51	+4.2
Nymex WTI	80.41	+3.8
Dubai	84.61	+3.5

Propane cif ARA large as percentage of naphtha cif



Propane cif ARA large as percentage of North Sea Dated



Outlook summary

- LPG prices are weak, even relative to modest seasonal expectations. High inventory levels will probably weigh on prices for most of the year
- US stockdraws have ended unusually early as production approaches record highs. Exports will remain firm, but are unlikely to be much higher than in 2023
- Petrochemical demand in Asia has balanced out, with demand from steam crackers firming, but demand from PDHs weak. New capacity continues to come on line, and this will push up demand later in the year

Outright LPG prices were steady in March. But once bullish crude and naphtha are stripped away, the underlying weakness of LPG is plain to see. The propane to naphtha ratio in Europe had its weakest March since *Argus* began reporting these prices in 1992. The Argus Far East Index (AFEI) for both propane and butane was the weakest in March relative to Dubai crude since 2003, again when *Argus* began reporting these prices. US propane had the weakest March on record relative to WTI Houston.

Prices are normally supported in March by restocking requirements and lingering heating demand. But preliminary data suggest winter 2023-24 was the warmest on record, leaving stocks unusually high in Europe and Asia. And the mild weather has continued into spring, further eroding demand. The warmer weather has also sapped natural gas demand, with gas storage sites in Europe almost 60pc full at the end of winter — a record high, despite the lack of supply from Russia. Low natural gas prices mean there has been no incentive for refiners to use LPG internally as a replacement, or for gas producers to leave LPG in their gas streams.

This length has extended with the US market returning to normal following January's winter storm. The cold weather disrupted production and pushed up domestic demand, causing stocks to fall from over 80mn bl at the start of January to 51mn bl by the end of February. But production recovered in March and heating demand is subsiding. This has resulted in inventories stabilising unseasonably early, pressuring prices and increasing export availability — something that has contributed to global length.

But outright pricing has been supported by gains in crude and naphtha. North Sea Dated prices are now topping $90/bl as the continuing Opec+ crude production cuts tighten global supply. And fears are growing about an escalation of tensions in the Middle East. There are clear upside risks to crude prices in this environment, but producers will be wary of the inflationary impact that high and rising prices will have, and with plenty of spare capacity at its disposal, the Opec+ alliance is likely to intervene to keep prices under control. Naphtha has also strengthened relative to crude because of high freight costs and firm petrochemical demand. The Houthi attacks in the Red Sea have resulted in vessels being rerouted around the Cape of Good Hope, stretching the clean tanker fleet and driving up freight costs.

Increased freight costs and longer voyage times initially disrupted petrochemical flows between Asia-Pacific and Europe, prompting European steam cracker operators to increase their runs to cover for the lack of imports. But Asian product has started to find its way onto downstream European markets, despite the closed arbitrage on paper. This has seen many cracker operators in Europe cutting their runs, reducing demand for naphtha and LPG, and causing prices for the former to drop sharply. But we expect prices to stabilise moving forward. Containership freight rates have been declining, but are still almost double the 2023 average, and the longer route adds further expenses, keeping the arbitrage closed. Some exports will continue, but these are unlikely to be heavy enough to depress the market further.

The interplay between these factors has kept outright prices balanced, but this is unlikely to be sustained. Crude prices might hold on to their strength over the next couple of months, but naphtha values are already starting to slide. We also expect downbeat LPG market fundamentals to persist. Growth in US production is likely to continue at its recent pace and high stock levels will only become more of a drag as we move further away from the winter heating season. The petrochemicals sector might be the best hope for an upswing in demand, but a heavy turnaround schedule in Asia-Pacific will probably keep such demand subdued for the coming month or two. There will probably be a small uptick in prices in April in response to rising crude values, but thereafter we see little strength on the horizon until much later in the year.

Global fundamentals								'000t
	2023	1Q24	2Q24	3Q24	4Q24	2024	2025	2026
LPG supply								
Gas processing	230,874	63,002	53,960	55,766	64,013	238,024	244,775	255,379
Refining	126,342	30,883	33,027	32,649	29,783	128,828	129,014	129,266
Total LPG supply	357,216	93,885	86,988	88,414	93,795	366,852	373,789	384,645
Capacity ('000 b/d)	99,093	99,619	100,131	100,131	100,967	100,967	101,512	102,319
Utilisation (%)	0.82	0.83	0.82	0.82	0.82	0.82	0.81	0.81
Trade position								
LPG import requirement	146,313	38,779	37,779	38,410	39,368	154,336	160,947	165,571
LPG export availability	150,353	40,375	37,564	36,872	43,295	158,106	165,087	175,221
LPG demand	352,871	93,885	86,988	88,414	93,795	363,082	369,648	374,995

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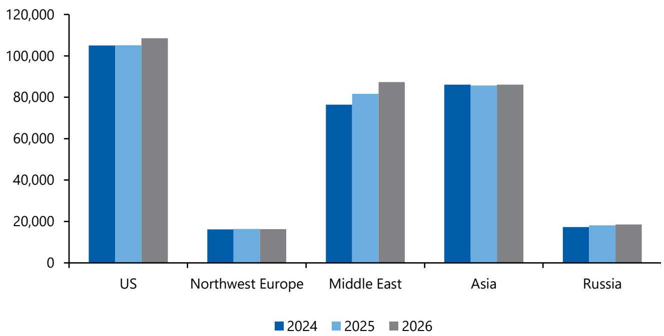
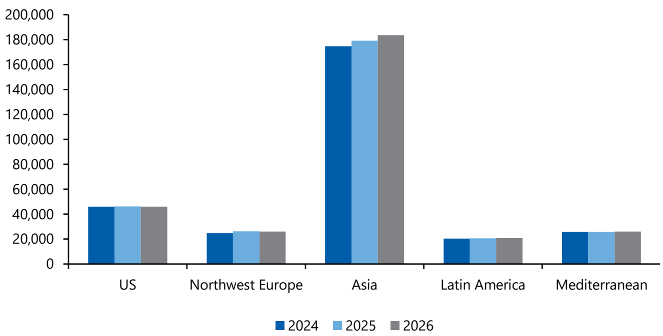
LPG major producing regions 2024-26 *'000t*



LPG major consuming regions 2024-26 *'000t*



LPG Fundamentals Overview

- The regional and global balances will be updated in the May issue of this report
- The last update was in February

Regional fundamentals - LPG								'000t
	2023	1Q24	2Q24	3Q24	4Q24	2024	2025	2026
US								
Production	103,711	23,072	28,962	29,343	23,630	105,008	105,073	108,499
Import requirement	3,377	1,018	666	733	960	3,377	3,377	3,377
Export availability	60,831	14,072	15,397	15,909	16,956	62,335	62,280	65,902
Consumption	46,115	13,563	9,518	9,736	13,233	46,050	46,171	45,974
Canada								
Production	16,829	4,781	3,926	4,257	3,844	16,808	17,041	17,355
Import requirement	292	76	79	65	72	292	292	292
Export availability	7,539	1,263	2,181	2,870	1,157	7,471	7,642	7,924
Consumption	9,711	2,706	2,163	2,521	2,239	9,629	9,691	9,723
Mexico								
Production	3,152	842	829	805	752	3,229	3,239	3,219
Import requirement	6,363	1,613	1,346	1,285	1,955	6,199	6,185	6,190
Export availability	0	0	0	0	0	0	0	0
Consumption	9,508	2,526	2,069	2,199	2,633	9,427	9,423	9,409
Latin America								
Production	13,747	3,702	3,313	3,456	3,308	13,779	13,842	13,899
Import requirement	9,126	2,096	2,322	2,360	2,212	8,990	9,072	9,197
Export availability	2,359	884	477	349	680	2,389	2,381	2,435
Consumption	20,494	4,729	5,321	5,390	4,939	20,379	20,532	20,662
Northwest Europe								
Production	15,986	4,123	4,242	4,129	3,686	16,180	16,389	16,313
Import requirement	19,168	5,453	4,662	5,001	5,147	20,263	21,669	21,744
Export availability	11,245	3,145	2,880	2,747	2,980	11,753	11,829	11,940
Consumption	22,805	6,464	5,969	6,323	5,935	24,691	26,229	26,117
Mediterranean								
Production	18,739	5,038	4,635	4,896	4,666	19,234	19,666	19,939
Import requirement	15,755	4,347	3,515	3,537	3,965	15,364	15,444	15,556
Export availability	8,685	2,116	2,398	2,384	1,958	8,856	9,327	9,468
Consumption	25,694	7,101	6,006	6,092	6,544	25,743	25,782	26,026
Middle East								
Production	71,812	18,304	21,846	19,483	16,836	76,469	81,715	87,377
Import requirement	121	56	32	16	27	130	140	148
Export availability	44,694	14,048	10,399	9,051	15,127	48,626	53,486	58,518
Consumption	27,239	7,467	6,957	6,436	7,112	27,973	28,368	29,008
Africa								
Production	6,128	2,199	1,992	1,250	1,336	6,777	6,932	7,268
Import requirement	3,175	743	1,113	832	648	3,337	3,513	3,699
Export availability	3,540	1,768	624	428	1,211	4,031	4,081	4,307
Consumption	5,766	1,555	1,662	1,424	1,442	6,083	6,363	6,660
Russia								
Production	16,155	4,710	4,243	4,072	4,251	17,276	18,172	18,528
Import requirement	75	16	19	21	18	75	75	75
Export availability	2,913	1,088	980	941	982	3,991	5,614	6,333
Consumption	13,317	3,561	3,052	3,298	3,448	13,359	12,632	12,270
Other Eastern Europe								
Production	5,911	1,556	1,474	1,394	1,573	5,997	6,075	6,193
Import requirement	1,321	349	341	437	379	1,505	1,578	1,593
Export availability	2,597	614	691	614	549	2,467	2,354	2,265
Consumption	4,636	1,330	1,246	1,235	1,224	5,035	5,299	5,522
Asia-Pacific								
Production	85,045	20,973	21,283	21,695	22,143	86,094	85,647	86,054
Import requirement	87,539	23,012	23,684	24,122	23,986	94,804	99,603	103,699
Export availability	5,950	1,377	1,536	1,578	1,695	6,187	6,093	6,129
Consumption	167,588	42,881	43,024	43,761	45,045	174,711	179,157	183,624

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Regional analysis

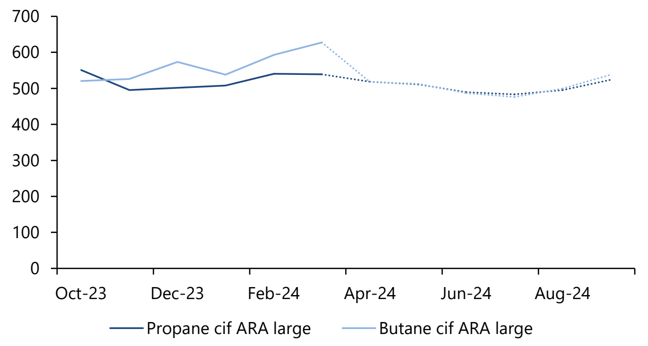
Northwest Europe

A mild winter in Europe has left LPG inventories seasonally high across the continent. Temperatures in the first quarter were on average over 2°C above the 1990-2020 average, with last month only 0.02°C short of the March record. This left heating demand far below where we would normally expect it to be, and pushed the region deeper into oversupply. Supplies have also been freed up by lower natural gas prices, which has increased production from natural gas processing as rejection rates for LPG fall, and from refineries that are using less LPG internally as fuel.

Petrochemical demand has been the only bright spot for LPG fundamentals. The disruption in the Red Sea has supported demand for locally sourced petrochemicals in Europe, supporting cracker runs. Along with Europe's highly flexible steam cracker fleet and a steep discount for LPG against naphtha, this has ensured firm demand. But growing receipts of downstream Asian products have pressured this, causing utilisation rates and demand to fall.

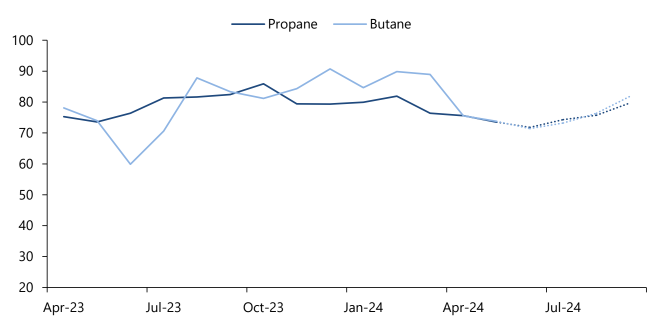
But there has been little pressure for suppliers to sell, as many are happy to hold stocks and slowly rebuild for next winter. Northwest Europe LPG swaps are usually backwardated in April, encouraging distributors to empty their stocks. But, even early in the month, the forward curve is almost flat, declining by just $2/t between month 1 and month 2. This reflects a general expectation that prices have bottomed out, and market participants are comfortable holding out for better conditions in the coming months. But our view is that the market is unlikely to rise significantly until winter, oversupply is here to stay and prices will continue to reflect that.

Propane and butane cif ARA large **$/t**

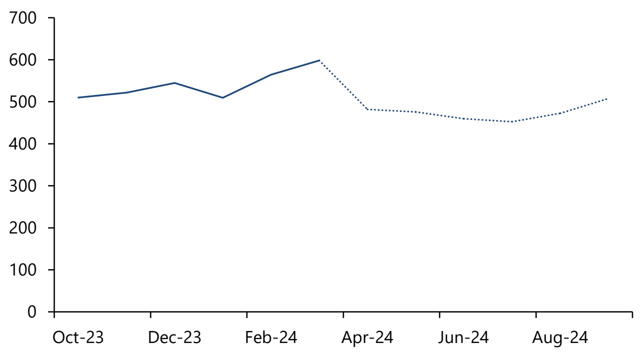


Butane prices in Europe tumbled in March with the transition to summer-specification gasoline and logistical problems at import terminals. Butane is an important component for winter-specification gasoline as it has a high octane value and a low price, making it highly desirable. But blending demand is limited in the summer by tighter restrictions on Reid vapour pressure values. Late-season demand for winter-specification gasoline supported butane at significant premiums to propane, but as the industry transitioned to summer-specification, demand dried up and prices returned to normal levels relative to propane. There was also a vessel collision at Le Havre in France — a key butane import hub — which prevented shipments and limited demand for butane.

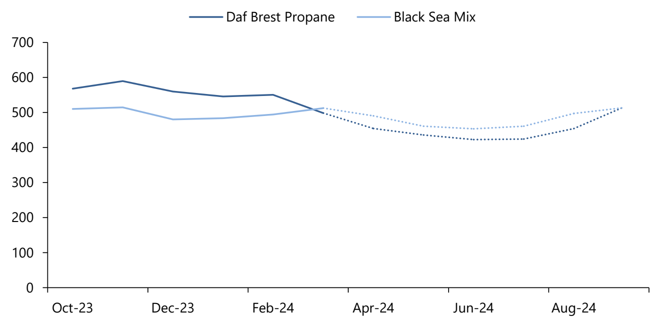
LPG ratio to naphtha northwest Europe **%**



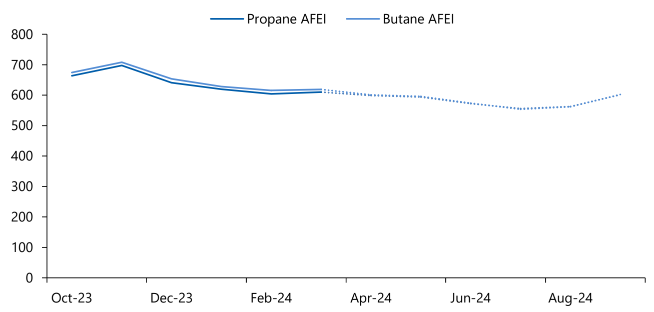
Butane cif Lavera large **$/t**



Daf Brest propane and Black Sea LPG mix *$/t*



Propane and butane cfr Japan *$/t*



Eastern Europe

Propane-butane mix daf Brest prices weakened slightly on the month in March, pressured by lower prices in northwest Europe. Oversupply persists and stronger buying demand ahead of the Easter break failed to support prices. But stocks could fall with lower supply from Russia. Rail LPG deliveries dropped to 79,100t in March from 96,400t in February. And consistently lower propane-butane mix daf Brest prices spurred interest from importers in the Balkans. This could lend support to Propane-butane mix daf Brest prices, but these will probably take their cue from northwest Europe price dynamics.

Propane daf Brest prices fell by $52/t on the month to $499/t in March and have continued to fall, pressured by seasonally lower demand. Prices are expect to maintain $20-30/t a premium to propane-butane mix daf Brest during summer.

Middle East

Saudi state-controlled Aramco cut its April propane and butane contract prices (CPs) by $15/t and $20/t, respectively. While prices are at a four-month low, Aramco has been able to keep prices north of where they were a year ago because of strong crude prices and as supplies are still ramping up.

The April propane CP was set at $615/t, down from $630/t the previous month. The CP is largely within *Argus*' and market expectations. More supplies have emerged within the region, while demand is waning. Saudi Arabia is expected to maintain LPG term supply in April, but spot availability is likely to fall to two cargoes from five-six in March, possibly as additional crude cuts have been extended to June. Seaborne exports rose in March by 69pc on the month to 872,000t, preliminary data from Vortexa show. But April exports are likely to fall as a result of less spot availability, which indicates that demand is weakening as the market has moved into the summer off-season.

Supplies are rising, particularly from Iran, where output from the South Pars field began climbing last year. China is the main outlet for Iranian supplies, and Saudi Arabia's market share in China has been in decline since 2019. The kingdom's share fell to 4.3pc last year from 7.9pc in 2019, while Iran's increased to 20.2pc from 13.7pc, according to Vortexa.

Higher US exports are also weighing on fundamentals as average refinery runs rose to 87.9pc in March from 81.8pc in February, according to the EIA weekly data. And production is gradually returning from gas processing plants. The US has also been capturing more market share in China, which was at 11.4pc in 2019 and rose to 43.3pc last year, according to Vortexa. The April butane CP was set at $620/t, also within *Argus*' and market expectations. The weaker price narrowed the butane-propane spread, which fell to $5/t from $10/t the previous month, reflecting firmer demand from crackers.

Meanwhile, India's consumption remains firm and rose again on the year in February — by 8pc to 2.594mn t, according to the latest oil ministry data. The latest government price cut will spur demand, particularly in the residential sector. The prime minister last month announced a 100 rupee ($1.201) cut for 14.2kg cylinders and an extension of the Rs300 subsidy on cylinders for low-income beneficiaries of the PMUY scheme until March 2025. But looking ahead, global and regional demand is expected to continue its off-season slid through summer. And this, with heavy cracker turnarounds in Asia this month, should keep the market well supplied and capping prices, despite stronger crude values.

Asia-Pacific

PDH demand for LPG has slumped in Asia as runs fell to under 50pc at the start of April — the lowest since 2015. Runs were already weak in the face of chronic overcapacity, but were undermined further by outages. Despite this, margins have continued to decline, dropping to losses of $130/t — showing how challenging the environment for these plants is. But the ramp-up of production from South Korea's flexible crackers has kept petrochemical demand from falling sharply, and with PDH facilities due to restart, we expect demand to continue to rise. But general weakness in the sector will persist through the year and probably longer, limiting gains.

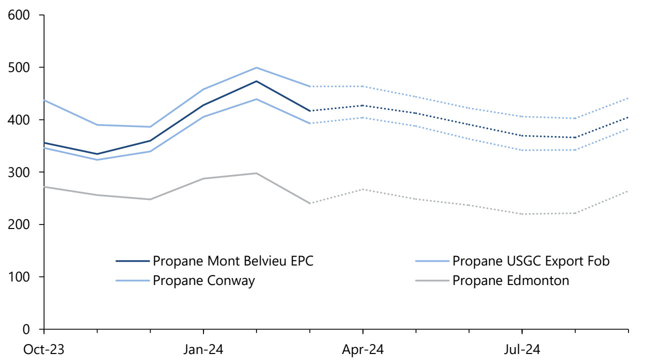
Warm weather in Asia has hit heating demand and caused an overhang of stocks, although not to the same extent as in Europe. But higher demand from India resulting from increased LPG subsidies will help slow stockbuilds and clear the supply overhang, as will reduced Saudi receipts in April. But US exports on the way to Asia are projected to reach 3.3mn t in April, the highest on record and more than enough to offset reduced Middle East supply. For these reasons we see the market remaining weak, with the AFEI sliding into summer.

US

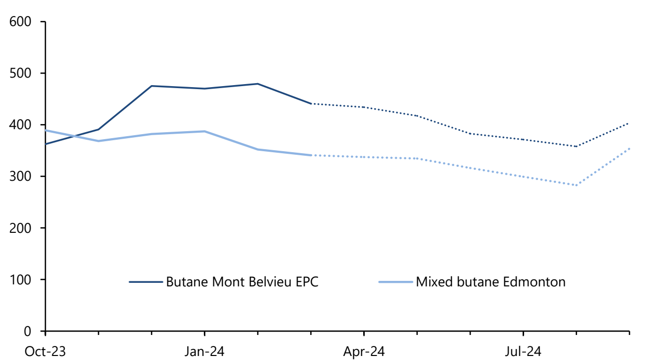
After January's winter storm disrupted production and boosted consumption, the LPG sector recovered in March. Production in the week to 29 March was running at its second highest rate on record, having fallen by 14pc in January. And consumption averaged 1mn b/d in March, half the demand reported at the peak of the storm. This shift slowed the pace of stockdraws, with the draw stabilising at 52mn b/d. This is down on year-ago levels, but still significantly above the average for the time of year, and the early stabilisation of inventories suggests strong stock growth will follow through summer — a trend all the likelier, given the strong production we have seen.

But exports are unlikely to increase at a similar rate to previous years. Although expansions and improvements at Gulf coast terminals are under way, the next major increase will be in mid-2025 at Nederland. And most existing export terminals are already operating close to effective capacity, leaving little rJoom for growth. Even if export capacity is found, production growth is expected to slow in 2024, increasing by just 1.3pc, against 6.7pc in 2023 and 6.6pc in 2022. This will mean export growth will be modest, possibly even slightly below 2023 levels, with less pressure on stocks to absorb excess supply, and less pressure on prices, to ensure product can clear into Asia and Europe.

Propane fob Mt Belvieu and USGC export fob *$/t*



Butane Mt Belvieu EPC *$/t*



Freight and arbitrage

Short-term forecast freight rates		$/t
	Apr	**May**
VLGC Mideast Gulf-Japan	70.0	75.0
VLGC Houston-Chiba	120.0	125.0
VLGC Houston-Flushing	70.0	70.0

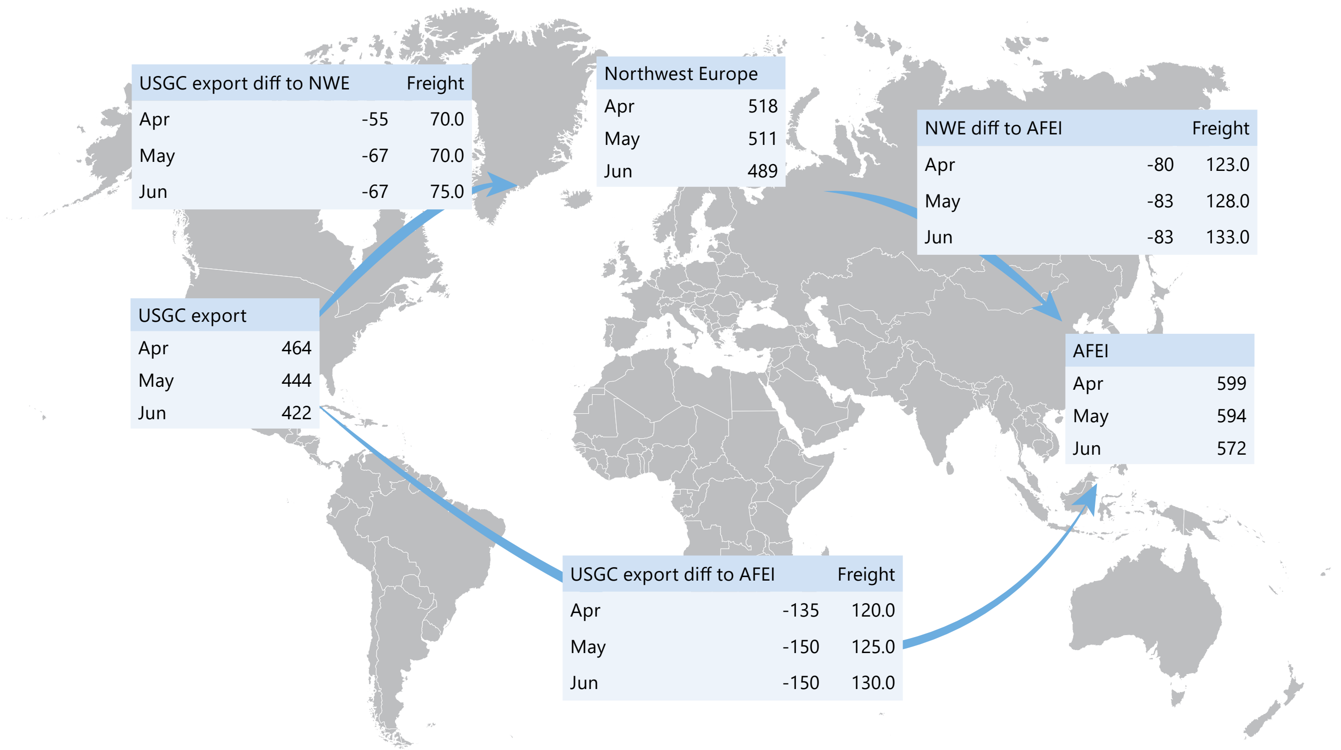
Global freight rates for very large gas carriers (VLGCs) initially rose early in March, before declining later in the month. Rates from Houston to Chiba peaked at $137/t, the highest since 11 January, before ending the month at $120/t. And Ras Tanura to Chiba rates climbed to $78.50/t before falling to $69/t, although unlike Houston-Chiba they showed some volatility because of increased chartering demand.

From 4 March, VLGC rates surged on the widening US arbitrage to east Asia, driven by lower propane prices on the US Gulf coast at a time of weaker seasonal demand. This created opportunities for charterers to secure higher rates for their vessels, particularly in the Atlantic basin. Tight ship availability in the US Gulf for the first half of April further bolstered rates, as shipowners raised offers. Foggy conditions in Texas added to a slowdown in exports from the US, but this did not dampen the overall bullish mood.

But by mid-March, cuts to the Saudi loading schedule and increased competition in east Asia from US cargoes had eroded shipping demand east of Suez. This weighed on rates, which fell over $10,000/d behind Atlantic levels on a time charter-equivalent basis. In response, vessels ballasted west. This influx of new cargo heightened competition among shipowners, rebalancing the market at a lower rate.

The continuing expansion of China's PDH sector in the first quarter spurred imports. Although the sector is battling with poor utilisation, more capacity is due on line, and this will probably stimulate imports over the coming months. Likewise, Indian demand is poised to rise after subsidies on LPG cylinders were extended until March 2025. The enduring strength in naphtha values, maintaining propane at a discount, should drive robust LPG cracking demand. Despite a forecast rise in Gatun Lake levels from May, potentially easing Panama Canal restrictions, we see rates rising in the near term as conditions stabilise.

PROPANE ARBITRAGE MAP $/t



Crude overview

Since our last Outlook in early March, crude prices have come under sustained upward pressure. North Sea Dated is around $3/bl higher than at the beginning of March and $7/bl higher than at its lowest point in mid-March. Part of the reason for this is the increasing tension surrounding the Israel-Hamas conflict. The conflict itself does not threaten oil supplies — exports are being rerouted from the Red Sea and Suez Canal for the longer voyage around the Cape of Good Hope. But any tension in the key Middle East crude producing region inevitably results in some risk premium to prices.

But the rise in prices also has firm support from tightening fundamentals. In the March Outlook, we said that although some of the additional output cuts previously pledged by eight Opec+ countries would be needed beyond their originally scheduled expiry at the end of March, the curtailments would not need to be as extensive as they were in the first quarter. But in the end, the decision was made to extend the full reduction — almost 2mn b/d, including the unilateral Saudi cut of 1mn b/d imposed in July 2023 — to the middle of the year. This will prove to be excessive, with our modelling showing an average global stockdraw of 1mn b/d in the first half of this year, which will further squeeze an already tight market. Since mid-2020, global demand growth has outstripped global supply growth by an average of 1mn b/d. On a cumulative basis, this implies a 'deficit' of about 450mn bl currently, rising to a 'deficit' of close to 600mn bl by mid-year, if the cuts are delivered in full (*see graph*).

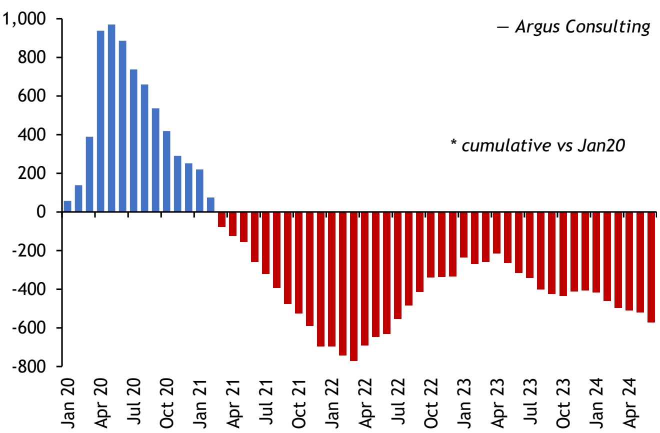
Reflecting this combination of tightening fundamentals and geopolitical tension, we have raised our price forecast. North Sea Dated is now forecast to average $91/bl in the current quarter, up from $85/bl previously. For the remainder of 2024, our forecast is broadly unchanged, with North Sea Dated averaging $88/bl in the third quarter and $84/bl in the fourth quarter. This pull-back in prices reflects the assumption that the additional cuts recently extended to mid-year will start to be unwound in the third quarter and will have been fully returned to the market in the fourth quarter.

There is a good deal of upside risk to the near-term outlook, given how tight the market is and the tense situation in the Middle East. Crude prices could easily be stronger than we are forecasting — indeed, North Sea Dated has already breached $91/bl briefly.

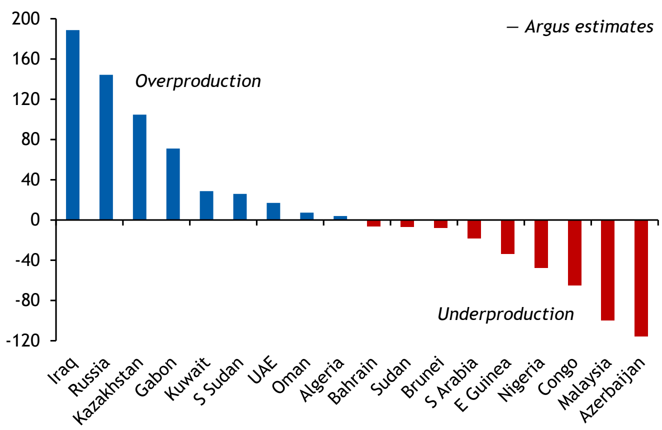
But there are reasons to expect this upside to be limited. Opec+ itself could easily decide to start returning the additional cuts earlier than planned if prices continue to rise. At the latest meeting of the Joint Ministerial Monitoring Committee (JMMC) last week, the decision was made to keep the current output targets. But while $90/bl is no doubt acceptable from the point of view of revenues, if prices continue to increase, so too will concerns about what this might mean for the global economy — $100/bl is a 20pc increase on the average price of crude in 2023, and an increase of this size would feed global inflation and no doubt keep interest rates higher for longer.

A sustained rise in prices could also weaken quota adherence, which is already looking a little shaky (*see graph*). If prices are seen to be rising, despite some countries over-

Implied cumulative* global stock change *mn bl*



Opec+ compliance: Dec23-Feb24 average *'000 b/d*



Summary of global oil balance												mn b/d
	1Q23	2Q23	3Q23	4Q23	2023	1Q24	2Q24	3Q24	4Q24	2024	2025	2026
Demand	99.53	101.01	101.72	101.39	**100.91**	101.17	101.95	103.15	103.20	**102.37**	**103.48**	**104.52**
Supply	100.34	100.26	100.59	101.58	**100.69**	100.28	101.17	102.64	103.57	**101.92**	**105.26**	**106.34**
Opec crude	27.85	27.31	26.69	26.92	**27.19**	26.66	26.53	27.28	28.10	**27.14**	**29.07**	**29.07**
Opec NGL and condensate	5.27	5.27	5.27	5.27	**5.27**	5.40	5.40	5.40	5.40	**5.40**	**5.47**	**5.73**
Non-Opec crude and NGL	61.73	61.55	62.14	63.35	**62.19**	62.66	62.89	63.26	63.82	**63.16**	**64.44**	**65.16**
Other supply	5.49	6.13	6.49	6.05	**6.04**	5.56	6.35	6.69	6.25	**6.21**	**6.28**	**6.37**
Global balance*	0.77	-0.62	-1.13	0.23	**-0.19**	-1.00	-0.88	-0.57	0.38	**-0.52**	**1.79**	**1.82**

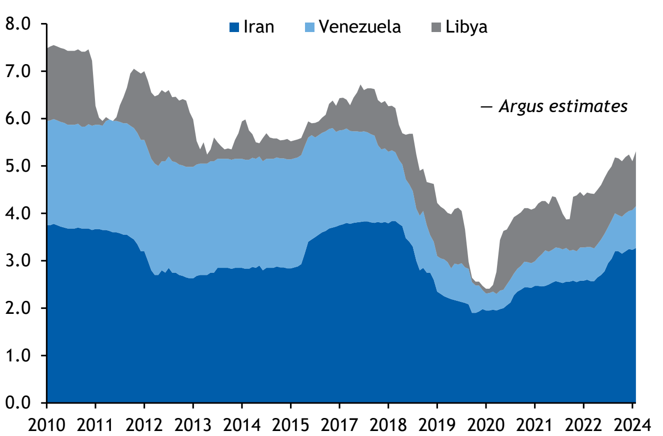
**equivalent to global stock change*

producing, there is less impetus to bring existing overproducers back into line and the temptation for others to also shirk their responsibilities grows. Interestingly, at the latest JMMC meeting, the issue of overproduction by Iraq and Kazakhstan appears to have been raised again, with both now pledging to adhere to quotas and to propose a compensation plan for their overproduction by the end of April. But in the existing environment, it is hard to see what actions might be taken if both countries continue to overproduce.

So Opec+ output could easily start to grow — even without a formal decision to start unwinding the cuts. And in the end, the market might just anticipate these sorts of developments on its own and start to price in weakening demand growth or growing overproduction.

The next full ministerial meeting is scheduled for June and is unlikely to do anything more than confirm the start of the tapering process under which the current additional cuts will be returned to market. Prices will probably start to fall ahead of the start of this tapering process as the market prices this

Opec exempt-3: Crude output *mn b/d*



in. But the next full ministerial meeting, set for December, will take place in a very different environment because assuming the full return of the additional cuts, the market will be starting to grapple with an oversupply situation — as the balance above shows, the fourth quarter could show a global stockbuild of almost 0.4mn b/d.

This, of course, is based on the full return of the additional cuts currently in place. But there is more to come potentially. At the moment, the entire quota structure that has been in place since late 2022 is due to expire at the end of 2024 and unless a new agreement is reached the market will be oversupplied to the tune of around 1.8mn b/d in 2025 and 2026.

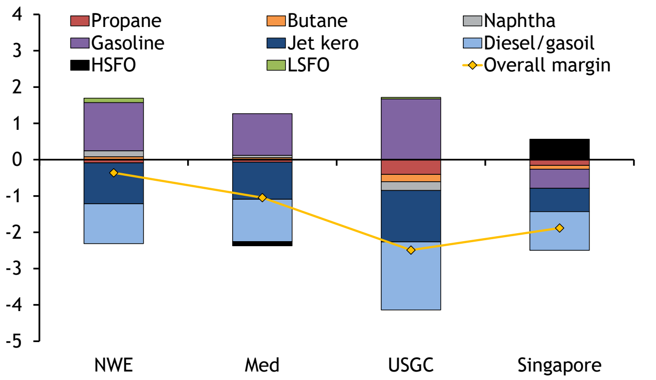
This will be top of the agenda at the December meeting. It is inconceivable that a new agreement will not be reached. But the ministerial discussions could be long and fraught. The issue of recent overproduction and compensation is likely to be prominent. Some countries might well argue for a revision to baselines to reflect increased wellhead capacity. Discussion will no doubt also focus on the issue of the exempt Opec countries — Iran, Venezuela and Libya — where production has been inching up (*see graph*). In February, production in the three hit 5.3mn b/d, up by 210,000 b/d on the month and the highest since November 2018. Combined production was 900,000 b/d up on the year and further increases are possible by the year's end. This production eats directly into what Opec+ can produce and the wider alliance might be tempted to ask whether the three should now re-rejoin the formal Opec+ quota regime.

The end of the year is going to be challenging enough for the alliance and the last thing it needs now is a run-up in prices to levels that could bring a weakening global demand environment later in the year. A prudent strategy in the near term would be to keep prices under control.

Refining economics

Refining margins were down on the month in March across all regions, as weakening middle distillate cracks outweighed rising gasoline cracks *(see graph)*. A heavy spell of refinery maintenance, particularly in the US, began to ease in March, adding supply to the market.

Yield-weighted crack change Mar vs Feb *$/bl*



The indicator fluid catalytic cracker (FCC) margin on the US Gulf coast against WTI Houston fell most sharply, largely driven by a rebound in refinery utilisation rates and product output. The margin fell by almost $2.50/bl from February to an average of $13.13/bl. Preliminary weekly data from the EIA for the first three weeks of March suggest that refinery utilisation rates recovered to 87.6pc from 81.8pc in February, when they were at their lowest for the month in 13 years — excluding those years affected by the pandemic. The rebound in utilisation rates was aided by the return of BP's 435,000 b/d Whiting refinery in mid-March, following a six-week outage. Further increases in refinery utilisation rates are to be expected as we head into the peak summer driving season, which should depress product cracks and result in a continuing contraction in refining margins over the course of the current quarter.

Refining margins in Asia-Pacific recorded the next biggest drop. The Singapore FCC margin against Dubai fell by $1.90/bl from February to an average of $3.34/bl in March — a four-month low. But margins could draw support in the coming months as China embarks on a heavy bout of refinery maintenance. About 1.3mn b/d of Chinese crude unit capacity across state-owned and independent companies is expected to be offline for maintenance this month. And this could coincide with an uptick in demand — particularly for diesel in the construction and agriculture sectors with the onset of warmer weather.

But these bullish factors in Asia should be weighed against more bearish signals. On the demand side, China's ailing real estate market remains a major drag on the country's economy. Construction sector activity is typically a less significant driver of diesel demand than household spending, but it has a knock-on effect on household wealth and expenditure because many households' savings are tied up in real estate. Investment in Chinese real estate shrank by 13pc year on year in January-February, data from the National Bureau of Statistics show, making households feel poorer and less inclined to spend. On the supply side, meanwhile, the launch of Shandong's new 400,000 b/d Yulong mega-refinery in June poses a further threat to margins. More immediately, refineries in southeast Asia are returning from maintenance, which will offset the impact of Chinese turnarounds in April. On balance, we see refining margins in the region remaining at a relatively modest level — both through the current quarter and over the remainder of the year.

In northwest Europe, FCC margins fell by less than 40¢/bl on the month in March. While refinery maintenance began to unwind in the US in March — having peaked in February — turnarounds in Europe were heavier, which lent some support to margins.

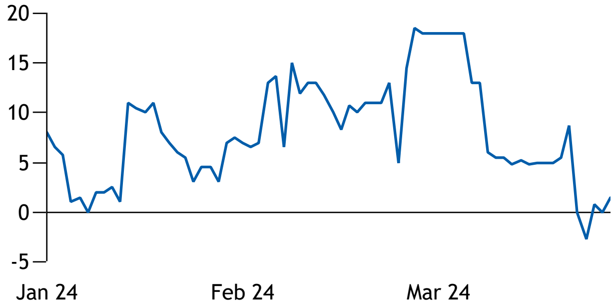
Refining margins *$/bl*

	Feb	Mar	Apr	May	Jun
Northwest Europe					
vs North Sea Dated	8.61	8.25	6.50	6.10	6.00
vs Johan Sverdrup	4.90	6.11	2.90	1.16	1.02
Mediterranean					
vs Kebco cif Augusta	4.95	3.91	1.41	1.32	1.24
vs CPC Blend	10.06	8.78	6.40	6.50	6.00
US Gulf coast					
vs WTI Houston	15.62	13.13	9.90	9.30	8.90
vs Mars	5.55	4.56	1.80	3.20	3.30
Singapore					
vs Dubai	5.23	3.34	1.80	2.20	1.80
vs ESPO Blend	16.39	14.98	13.40	14.10	13.10

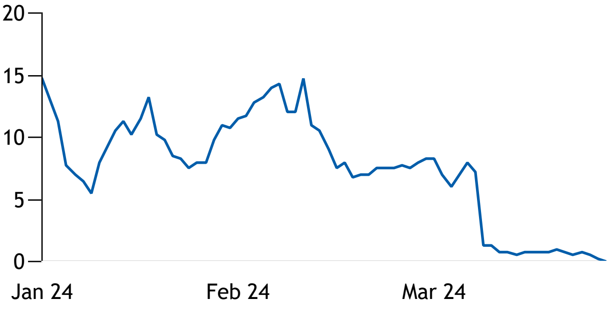
Gross refining margins calculated based on FCC unit yields

LPG swaps

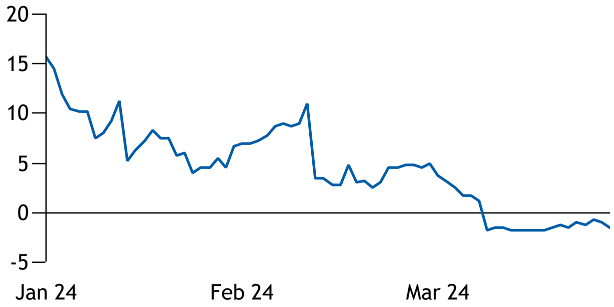
Propane NW Europe month 1 vs month 2 $/t



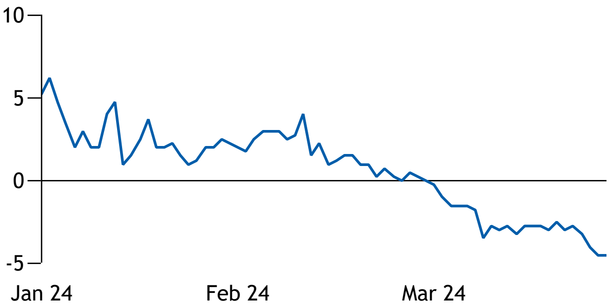
Propane NW Europe month 2 vs month 3 $/t



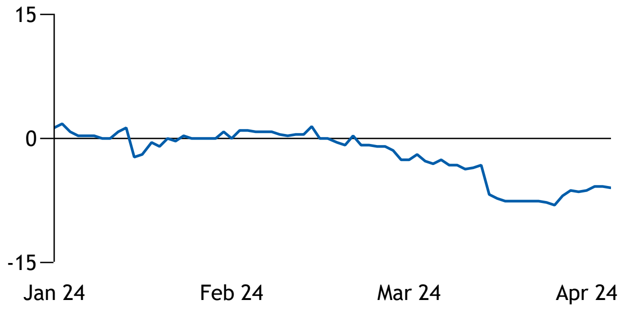
Propane NW Europe month 3 vs month 4 $/t



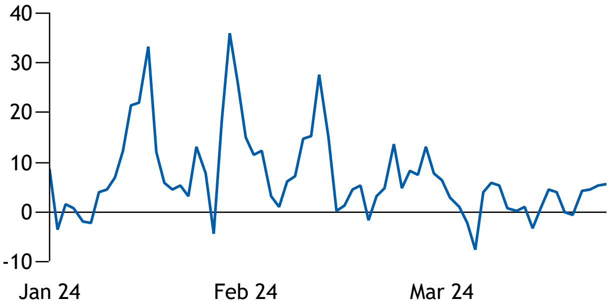
Propane NW Europe month 4 vs month 5 $/t



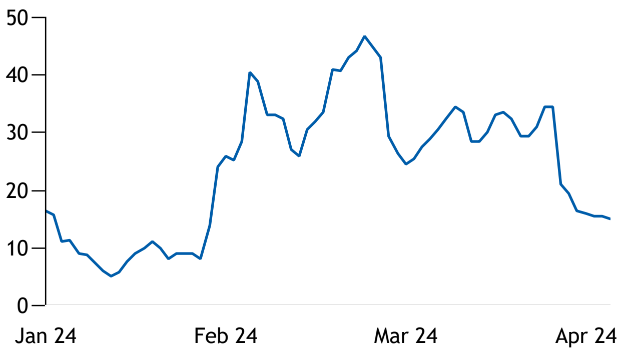
Propane NW Europe month 5 vs month 6 $/t



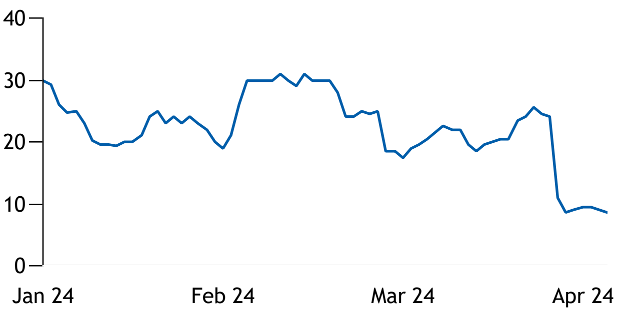
Mont Belvieu month 1 vs month 2 $/t



Saudi CP month 1 vs month 2 $/t



Saudi CP month 2 vs month 3 $/t



LPG developments to watch

Date	Development
China PDH start-ups	
2024	Sinochem Ruiheng
2024	Guoheng Chemicals
2024	Lihuayi Weiyuan Chemical
2024	Ningbo Jinfa No 2
2024	Fujian Soft Packaging Meide
2024	Qingdao Jinneng No 2
2024	Shandong Zhenhua Chemical/Yatong Petchem
2024	Shandong Zhonghai Jingxi
2025	Yuanjin New Material
2025	Juzhengyuan No 3
2025	Sinopec Zhenhai
2025	Oriental Maoming No 2
2025	Wanhua No 2
2026	SP Chemical

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Issue 6	13 June
Issue 7	11 July
Issue 8	8 August
Issue 9	12 September
Issue 10	10 October
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Issue 12	12 December

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