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Argus *Global Polypropylene*

Polypropylene prices and global coverage

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HIGHLIGHTS

US
Market awaits February PGP settlement

Latin America
Availability from US remains limited

Europe
Market quiet, sentiment remains cautious

Russia and CIS
Prices rise on limited supplies

Turkey
Homopol prices stable on reduced supply, weak demand

Middle East
Stable prices on limited trades

China
Converters see high inventory of finished goods

Southeast Asia and Vietnam
Offers diverge on varying producers' inventories

India
Chinese offers dominate

Pakistan
Sellers raise prices on credit risks

Dalian futures market
PP futures fall towards end of trading week

Fundamentals to watch
Asian crackers set to raise run rates as margins rise
'Reopen' China boosts butane but not petchems
Fire hits HMEL's naphtha-fed cracker in India's Punjab
Naphtha rises above crude in northwest Europe
Sri Lanka's virgin plastics buyers avoid SUP ban impact
Ohio train accident may drive safety rule changes

Global polymer freight rates

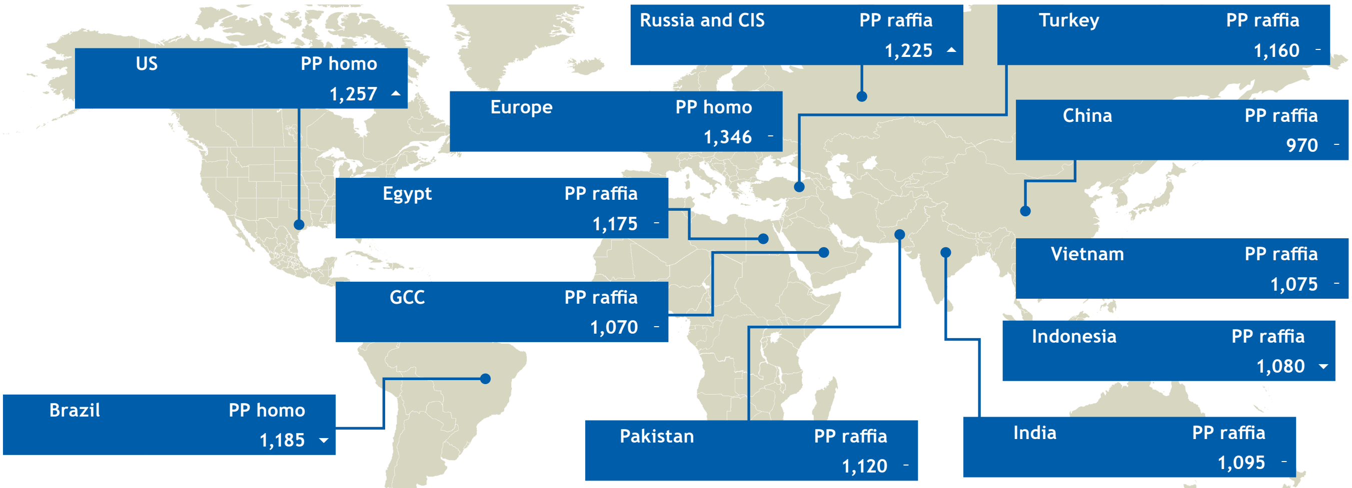
Contract prices *$/t*

	Timing	Contract marker		±
US				
Copolymer	Feb	1,499	-	0.00
Homopolymer	Feb	1,455	-	0.00
Western Europe				
Copolymer	Feb	1,609	▲	+39.0
Homopolymer	Feb	1,535	▲	+40.0

Spot prices *$/t*

	Basis	Price		±
US				
Homopolymer	fas/Houston bagged	1,213-1,301	▲	+33
Homopolymer	dap/Laredo railcar	1,213-1,235	-	0
Brazil				
Homopolymer	cfr	1,170-1,200	▼	-30
Copolymer	cfr	1,270-1,300	▲	+10
West Coast South America				
Homopolymer	cfr	1,150-1,190	▼	-40
Copolymer	cfr	1,240-1,280	▼	-20
Northwest Europe				
Homopolymer	del	1,319-1,372	-	0
Raffia	del	1,292-1,345	▼	-1
Russia and CIS				
Raffia	cpt	1,213-1,236	▲	+2.0
PP homopolymer	cpt	1,213-1,263	▼	-2.0
Block copolymer	cpt	1,314-1,341	▲	+4.5
Turkey				
Raffia Mideast Gulf origin	cfr	1,150-1,170	-	0
Non-woven fibre Mideast Gulf origin	cfr	1,180-1,200	-	0
Fibre Mideast Gulf origin	cfr	1,180-1,200	-	0
Block copolymer Mideast Gulf origin	cfr	1,190-1,220	▼	-10
Block copolymer South Korea origin	cfr	1,260-1,290	▼	-15
Egypt				
Raffia Mideast Gulf origin	cif	1,150-1,200	-	0
Fibre Mideast Gulf origin	cif	1,180-1,220	-	0
GCC				
Raffia	del	1,040-1,100	-	0
BOPP film	del	1,100-1,130	-	0
Jordan/Lebanon				
Raffia	del	1,050-1,070	-	0
Saudi Arabia (CMP)				
Copolymer	fob	977-987	▼	-10
Raffia	fob	947-967	-	0
China				
Copolymer	cfr	990-1,000	▼	-10
Copolymer domestic	import parity	934-958	▼	-3
Raffia	cfr	960-980	-	0
Raffia domestic	import parity	909-946	▲	+1
Raffia	fob	1,040-1,070	▲	+5

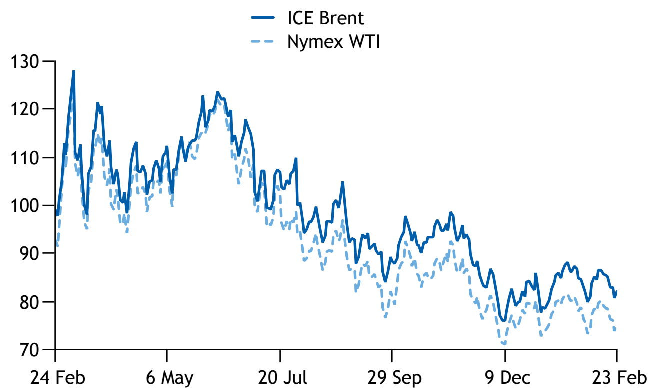
GLOBAL SNAPSHOT



Key prices								$/t
	Timing	US fas Houston	Western Europe spot ddp	Russia and CIS spot cpt	Turkey spot cfr (Mideast origin)	China spot cfr	Southeast Asia dutiable spot cfr	India spot cfr
PP copolymer				1,314-1,341	1,190-1,220	990-1,000	1,090-1,110	
PP homopolymer	Feb	1,213-1,301	1,319-1,372					
PP raffia			1,292-1,345	1,213-1,236	1,150-1,170	960-980	1,070-1,090	1,080-1,110

FEEDSTOCKS

Crude futures $/t



Spot prices			$/t
	Basis	Price	±
Southeast Asia dutiable			
Copolymer	cfr	1,090-1,110	-40
Raffia	cfr	1,070-1,090	-10
Southeast Asia duty free			
Copolymer	cfr	1,150-1,180	-35
Raffia	cfr	1,120-1,150	-25
Vietnam			
Raffia	cfr	1,060-1,090	0
Indonesia			
Copolymer Mid-east Gulf origin	cfr	1,090-1,110	-30
Raffia Mideast Gulf origin	cfr	1,070-1,090	-5
India			
Raffia	cfr	1,080-1,110	0
Pakistan			
Raffia	cfr	1,100-1,140	0
Bangladesh			
Raffia	cfr	1,130-1,150	0
Sri Lanka			
Raffia	cfr	1,150-1,170	0
Nepal			
Raffia	cpt	1,170-1,190	0

Crude			$/bl
	Effective date	Price	±
Ice Brent	24 Feb	83.16	+0.16
Nymex WTI	23 Feb	75.39	-0.95

Crude oil

Crude oil prices fell during the earlier trading sessions of this week as the latest minutes from the Federal Reserve suggested the central bank will increase interest rates further to curb inflation. But prices subsequently recovered most of the lost ground, drawing some support from Russia's planned 25pc cut in crude exports from its Baltic and Black Sea ports in March.

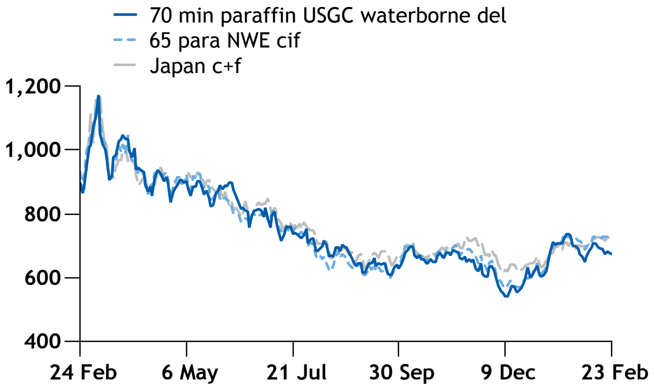
Naphtha

Average European naphtha prices have increased in February despite softer crude. The lack of Russian supply since the EU banned the trade may be restricting availability, with Europe competing with Asia for Mediterranean cargoes. Month-to-date average naphtha prices are €28/t higher than

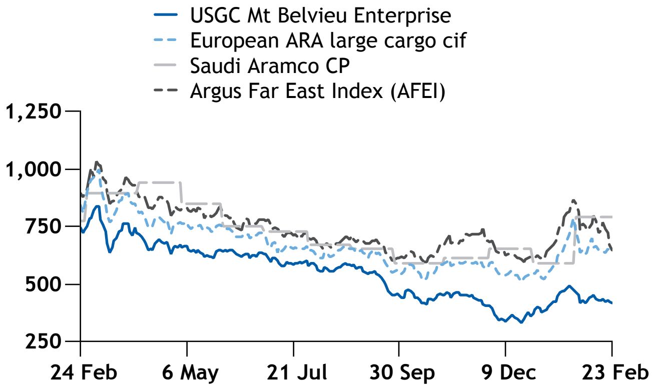
Naphtha				$/t
	Effective date	Price		±
70 min paraffin USGC waterborne del	23 Feb	672.13	▲	+0.25
65 para NWE cif	24 Feb	724.75	▼	-3.75
Japan c+f	24 Feb	721.25	▲	+8.00

Propane				$/t
	Effective date	Price		±
Mt Belvieu Enterprise	23 Feb	418.10	▼	-1.96
ARA large cargo	24 Feb	654.00	▲	+19.75
Saudi Aramco CP	24 Feb	790.00	-	0.00
Argus Far East Index (AFEI)	24 Feb	659.00	▼	-79.00

Naphtha spot prices $/t



Propane key prices $/t



in January, which will set the tone for olefin contract price negotiations next week.

In Asia-Pacific, the naphtha market has strengthened with reduced supply, and demand from the petrochemical sector edging upwards. Supply is tight with fewer commercial tank offers/takers after the price cap on Russian oil products came into effect on 5 February. Demand was stronger because some crackers in South Korea quietly raised runs amid improving cracker margins, although petchem demand is still relatively weak and recovering more slowly than expected. China has been importing more naphtha to run its crackers because its own refineries are on maintenance and new crackers have come online in the past few months.

Propane

Mont Belvieu, Texas, LST propane prices weakened on the back of extended losses in international prices, despite gains in crude and a seasonal draw in propane inventories reported for last week.

European propane prices rose during the earlier trading sessions of this week, supported by firming crude and aggressive bidding in the open market. But prices fell back after sharp drops in Asian prices.

Asian prices dropped sharply to $659/t, from $738/t at the end of last week as a result of weaker demand. Meanwhile, term customers reportedly submitted a first round of March contract price (CP) recommendations to Saudi Aramco in the range of $705-730/t.

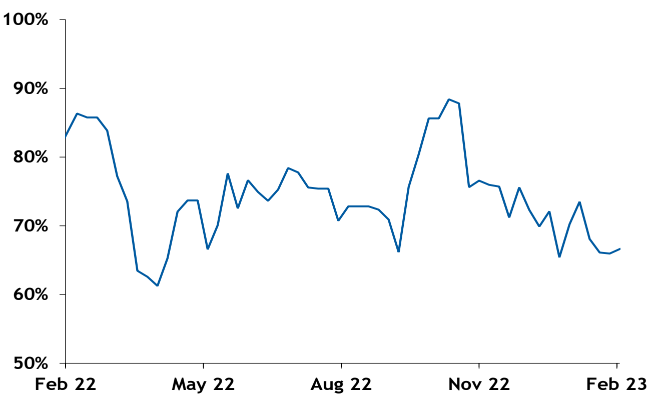
PDH margins

China PDH margins recovered to $36/t this week, after a sharp decline in Asia propane prices. Propane prices fell by $55/t to a weekly average of $693/t in northeast Asia. Propylene prices were stable at $985/t cfr northeast Asia on the back of continuing supply tightness.

China PDHs

The average operating rates among PDH units in China were at 67pc, down by 7pc compared with 74pc at the end of January. Production from PDH plants remained curtailed on cuts in run rates and shutdowns. PDH producers such as Tianjin

China PDH operating rates %



New PDH start-ups							
Status	Plant	Location	Grade	Capacity '000t/yr	Start-up	Remarks	Source
	Wanda Tianhong	China	Propylene	450	Nov 2022	Plant is operating at 60pc	Industry
	Liaoning Kingfa	China	Propylene	600	Dec 2022	Plant is operating at 50pc	Industry
NEW	Guangxi Huayi New Material	China	Propylene	750	Feb 2023	Achieved on-specification production on 21 February	Industry

Bohua, Shaoxing Sanyuan, Shandong Huifeng Haiyi, Zhejiang Huahong, Puyang Far East Technology and Zhejiang Satellite No.2 are still undergoing turnarounds. Upcoming PDH maintenances include Ningbo Kingfa's 600,000 t/yr PDH unit and Liaoning Kingfa's 600,000 t/yr PDH line in March. Other PDH plants such as Wanda Tianhong and Jiangsu Sailboat are operating at reduced rates. Hebei Haiwei's 500,000t/yr PDH plant is operating at run rates of below 50pc and will likely undergo a shutdown soon for 40-45 days, according to market participants.

There were two new PDH plant start-ups this week. Guangxi Huayi New Material in Qinzhou, Guangxi province achieved on-specification propylene production at its 750,000 t/yr PDH unit on 21 February. Production from the PDH unit will feed into the firm's 400,000 t/yr acrylic acid plants, a 300,000 t/yr n-butanol unit, a 175,000/105,000 t/yr phenol/ acetone line and its subsidiary 300,000 t/yr PP plant owned by Guangxi Hongyi New Material. Yangchang Zhongran Taixing on 16-17 February fed in propane to its new 600,000 t/yr PDH unit located in Taixing, Jiangsu province. Timelines for the production of on-specification propylene were undisclosed. The PDH is not integrated with any downstream units.

Propylene

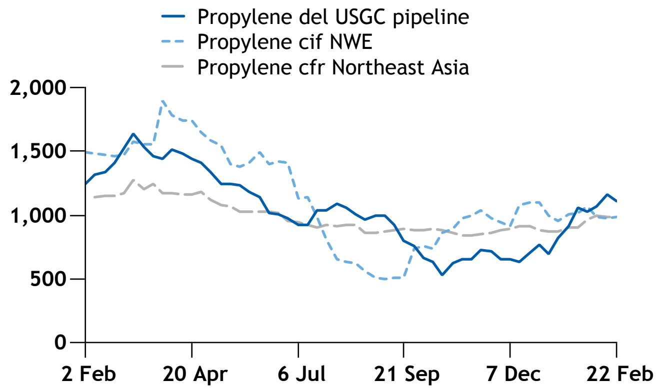
The traded range for prompt-month US spot polymer-grade propylene (PGP) for Mont Belvieu, Texas, delivery declined slightly as multiple trades emerged. Five February PGP deals traded at 50.50¢/lb, totalling 16mn lb. The decline comes after PGP prices previously reached their highest recorded levels since June 2022 following a trade at 53¢/lb. US spot PGP prices remain in backwardation, with March assessed at a 5¢/lb discount to February.

In Europe, propylene demand is low relative to ethylene and with refineries also operating at high rates, supply remains on the long side but manageable. Cracker operating rates are being held back alongside derivatives because of low demand across the cracker product slate. Globally, propylene prices have converged slightly, but Europe remains relatively high on a contract basis. Negotiations for the March contract price will take place early next week, against the backdrop of average naphtha prices being €28/t higher so far in February. Poor demand on the one hand and weak cracker margins on the other will limit the possibilities for buyers or sellers to go far beyond a feedstock-driven movement. The European propylene contract price for February settled on 31 January at €1,155/t, up by €80/t from January.

Asian propylene prices were stable this week with sellers continuing to maintain their offers because of reduced supplies. High propane prices resulted in rate cuts among PDH plants, but recent gains in ethylene and butadiene prices led to possibilities of increases in cracker run rates as mar-

Propylene					
	Basis	Effective date	Price		±
PGP USGC contract ¢/lb	Jan	1 Feb	43.00	▲	+11.00
PGP USGC contract $/t	Jan	1 Feb	947.99	▲	+242.5
PGP NWE contract €/t	Feb	31 Jan	1,155.00	▲	+80.00
PGP NWE contract $/t	Feb	31 Jan	1,254.75	▲	+86.91
cfr NE Asia $/t	spot	22 Feb	985.00	-	0.00

Propylene spot prices $/t



Market highlight

- High propane prices resulted in rate cuts among Chinese PDH plants gins showed significant improvement since early February, despite still being in negative territory. South Korea's Lotte Chemical will raise its Daesan cracker run rate to 90pc at the start of March from the current 82pc. KPIC is also targeting to increase run rates at its Ulsan-based cracker in April, although no firm decisions have been made yet. LG Chem decided not to advance its cracker turnaround and will stick to the original schedule of April to June. Hanwha Total has already ramped up cracker rates to 100pc this month to stock up on olefin inventories ahead of its cracker turnaround in late April. Sinopec is also planning to raise overall cracker run rates in March to cater for higher consumption in downstream sectors because of a recovery in demand. Philippines' JG Summit on 17 February commenced its turnaround for its whole cracker complex in Batangas, with the restart date still unclear.

PRICING ANALYSIS

US

US polypropylene (PP) prices for February will likely move higher, but the amount is undetermined for now, as the market awaits a settlement in the polymer-grade propylene (PGP) market. PGP last traded at 50.5¢/lb, well above the 43¢/lb January contract settlement. Market participants have said a settlement is not likely to be agreed upon soon, but some market participants are anticipating an increase of as much as 4-7¢/lb for the month.

PP producers are officially still seeking margin expansion in February of between 3-6¢/lb on top of any change in monomer costs. However, there appears to be little support for higher margins given the increase in monomer costs, and in fact, there is some discussion of possible margin erosion as some in the market push to achieve rebates seen by others last month.

US PP operations in February continue to improve versus January, though plants are still believed to be running below 80pc of capacity. It was not clear whether Ineos Olefins & Polymers had fully restarted its PP production at La Porte, Texas, or whether Pinnacle Polymers had restarted its plant in Louisiana. Another US producer is still in the midst of a lengthy turnaround that will extend into March.

January operations improved versus December, rising to around 79pc of total capacity, with 1.522bn lb produced, according to data from the American Chemistry Council's Plastic Industry Producers' Statistics Group as compiled by Vault Consulting.

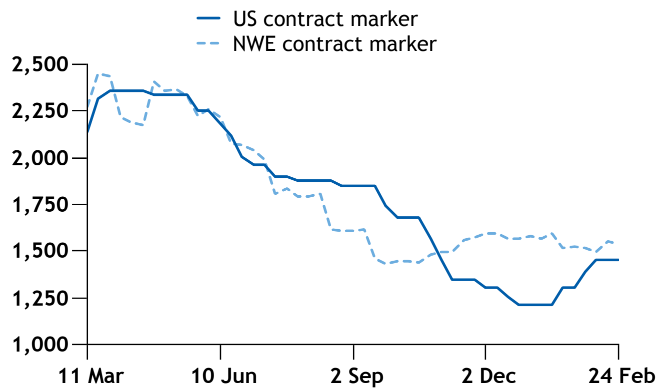
January sales roes to 1.367bn lb, up by 5.5pc from December, but down by 4.2pc from January 2022. Exports were down by 65.7pc while domestic sales were up by 11.2pc over the period. Producers added around 156mn lb to inventories in January.

Demand in February is improving, but still overall sluggish, as buyers are purchasing only as needed in the hopes that prices will come down with PGP in the next few months. The higher prices are hurting demand, with some

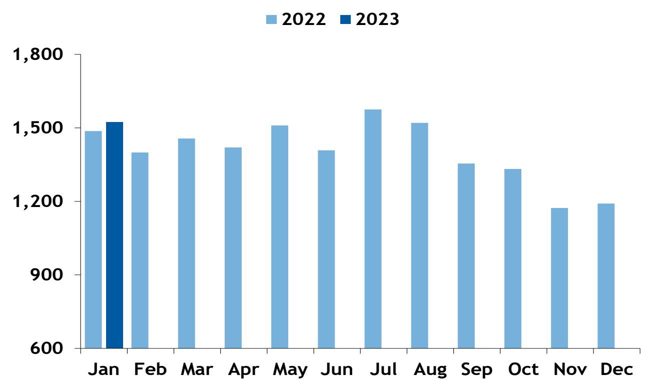
US contracts				¢/lb
	Timing	Argus Δ (month-on-month change)	Contract marker	Low / High ±
Copolymer contract marker	Feb	0.0	68	0.0/+10.0
Homopolymer contract marker	Feb	0.0	66	0.0/+10.0

US exports				¢/lb
	Basis	Price		±
Homopolymer	fas/Houston bagged	55-59	▲	+2
Homopolymer	dap/Laredo railcar	55-56	-	0

US vs west Europe PP homopolymer prices $/t



North America PP production mn lb



— ACC/Vault

buyers saying they are unable to pass the higher costs on to downstream customers.

Export activity is very limited, with no fresh offers heard in the market, and prices too high to generate much interest from global buyers. Export prices moved notionally higher.

Mexico

Demand for PP in Mexico remains healthy, but supplies are tight, with little to no product being offered from the US. Few fresh offers were heard in the Mexican market during the week, and market participants are expecting another increase of as much as 4-7¢/lb in March, based on continued elevated feedstocks in the US.

Market participants said demand is actually improving in Mexico, in part due to new downstream production brought to the country as part of re-shoring from China. The new converter demand will require an increase in exports to the country, with most of the new volume expected to come from the US or Canada.

Latin America

The Latin American polypropylene (PP) markets witnessed several fresh Asia-Pacific offers with good prices and acceptance this week, especially in parts of the west coast South America (WCSA).

In Brazil, Colombia, and Ecuador, the carnival holiday impacted local PP demand during the first part of the week. The movement slowly returned to normal on 22 February, when the markets came back online.

Prices continued on a downward trend this week, with the exception of PP copolymer in Brazil, which saw offers $10/t higher than in the previous period. All other prices fell.

However, this is expected to change with the forecasted price increase for US produced monomers over March contracts, impacting especially the WCSA, according to market participants. The Colombian PP producer depends on US origin feedstock to domestically produce PP.

On the supply side, Asia was the region with leading offers to Latin America. US offers were scarce. Middle Eastern offers were not heard until Thursday, a market participant told *Argus*.

In Argentina, PP domestic prices increased $150/t in February, tracking the international propylene prices and with domestic sales helped by import restrictions. Restrictions on imports favor domestic producers, increasing their sales by reducing competition, even at high prices.

In January, Argentinean PP imports fell 40pc to 7,700t from January 2022. South America led, even losing market share from 73pc in January 2022 to 65pc in 2023. Africa-Middle East fell from 17pc in January 2022 to 12pc. There were no PP exports in January, with production driven to the domestic market.

Propylene and ethylene supply are in line with PP output in February.

Europe

The European polypropylene (PP) market was relatively quiet this week, with fundamentals remaining weak albeit relatively balanced. Sentiment remains cautious on low demand as buyers are restricting purchases to a need-to basis and the focus is on keeping inventories low. But this has been partly offset by reduced production rates at PP plants, as well as market participants reporting reduced imports into Europe. This has kept the pricing picture fragmented within the PP grades and between sellers, with the underlying stock positions playing some role in the extent of increases in PP contract prices secured by sellers in February.

Activity was also dampened this week as market participants eyed the outcome of negotiations of feedstock propylene's March contract price, which will commence next week. Most market participants expect to see some increase in propylene's March contract price against the backdrop of an average €28/t increase in naphtha prices in February. And this could have a knock-on effect on PP contract prices in March, but it remains premature to say to what extent PP producers might succeed in recovering these potentially higher costs from buyers. The evolution of the demand situation will play a key role in determining the outcomes, but the demand outlook can be described as foggy at best. Some sellers are optimistic that they will see improved demand in March, but others hold more conservative views as economic conditions remain difficult.

With inflation rates remaining high and at above historical averages, consumers continue to be faced with a

Western Europe contracts				€/t
	Timing	Argus Δ (month-on-month change)	Contract marker	Low / High ±
Copolymer contract marker	Feb	+55.0	1,525	+50.0/+80.0
Homopolymer contract marker	Feb	+55.0	1,455	+50.0/+80.0

Northwest Europe spot				€/t
	Basis	Price		±
Homopolymer	del	1,250-1,300	▲	+13
Raffia	del	1,225-1,275	▲	+13

cost-of-living crisis. As such, consumers have cut spending on non-essential purchases and durable goods, which has also affected demand for polymer resins in the value chain in most segments, with fast-moving consumer goods being somewhat of an exception. And this has kept confidence low among sellers and buyers that they will see any meaningful improvement in demand fundamentals in the short term. Producers also remain hesitant to increase run rates speculatively, as this would risk increasing their stocks with no certainty of a proportionate increase in offtake from buyers. Likewise, imports have been reduced as sellers remain hesitant to risk committing to volumes with forward arrival dates in April-May in this uncertain environment. But the relatively low stocks on most grades has also meant the overall supply front in Europe remains vulnerable.

PP contract price negotiations in February so far have concluded in many cases at increases of €50-80/t. Producers reported a slight improvement in demand in February, when compared with January, as some buyers had to replenish inventories to baseline levels. But some sellers reported that year on year, demand in February fell by 10pc or more. Producers had hoped to pass the full magnitude of the €80/t increase in feedstock propylene's February contract price on to their freely negotiated PP contracts. But buyers countered with arguments of lower demand and margins in their own downstream product chains and managed to constrain the increases to €50-60/t in most cases. The individual positions of sellers and supply dynamics of specific grades were also influential in determining the outcome of the negotiations and whether producers conceded ground on margins.

For all PP grades, the February *Argus* deltas were preliminarily assessed at a €55/t increase, representing a €25/t narrowing of contract margins. And the final assessments of the February *Argus* deltas will be made next week.

The spot market in Europe was also relatively muted this week, with many buyers taking the back seat after having bought the required volumes needed in earlier weeks and as they awaited clarity on the pricing outlook for March and beyond. As such, the high ends of the prices on all PP grades were sticky but some upside moves were seen on the low ends of prices, slightly narrowing the price ranges as a result. Reduced imports, as well as price increases and reduced supplies in other regions – particularly in the adjacent Turkish market – had an influence on firming the low ends of the spot price ranges. Imports from east Asia could be worked at relatively lower prices, but it remains unclear whether any increase is seen in the appetite for working these long-haul arbitrages, particularly if the high ends of European spot prices make upside moves in the coming weeks and widen the price disconnect between the regions.

The spot prices of PP homopolymer injection and PP raffia, basis ddp northwest Europe, were assessed at €1,250-1,300/t and €1,225-1,275/t, respectively. These were up by €25/t at the low ends and stable at the high ends.

Spot volumes of PP block copolymer grades were heard mostly transacting in the mid to high €1,300s/t ddp.

Russia and CIS

Spot prices for cargoes of PP from Bashneft's Ufaorgsintez unit rose this week on limited supplies. Market participants say Sibur Holding will increase prices for PP in March, but the company has not confirmed this.

Cargoes of PP raffia were offered for 90,833-92,500 roubles/t ($1,213-1,236/t) cpt Moscow, compared with Rbs90,417-92,500/t a week earlier. Demand for the product was steady, according to traders.

Prices for PP block copolymer rose to Rbs98,333-100,417/t ($1,314-1,341/t) cpt Moscow from Rbs98,333-99,583/t a week earlier.

PP homopolymer injection grade was assessed at Rbs90,833-94,583/t ($1,213-1,263/t) cpt Moscow for the second week in a row.

Russia and CIS domestic				*Roubles/t*
	Basis	Price		±
Raffia	cpt inc VAT	109,000-111,000	▲	+250.0
PP homopolymer	cpt inc VAT	109,000-113,500	-	0.0
Block copolymer	cpt inc VAT	118,000-120,500	▲	+500.0

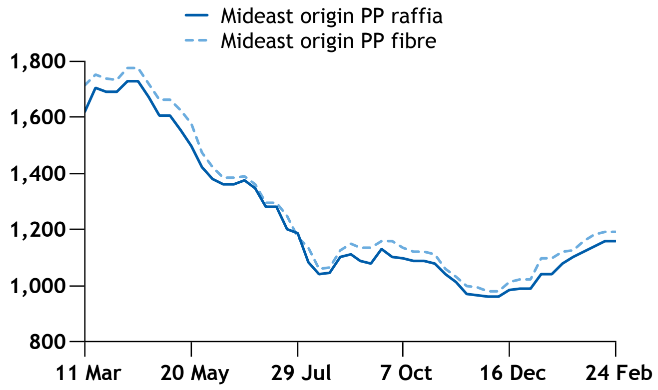
Turkey

Polypropylene (PP) import prices to Turkey for homopolymer grades rolled over this week because of reduced supply in the country, which was balanced to an extent by low demand in the market and a slowing down of the economy owing to two major earthquakes that hit the country on 6 February.

Following the disruption, polymer availability in Turkey has remained low. This is because of the non-operability of the Iskenderun port, where tonnes of polymer products that were previously shipped to the port became fuel for the fire afterwards. The authorities were able to save some of the containers, but buyers view purchasing those materials as taking a risk. Besides, there are now fewer offers of Russian origin owing to logistical problems at Novorossiysk port.

The trading firms and converters in Gaziantep are keen to return to pre-earthquake levels of production, other logistical problems such as document losses, raw material provision, and limited access to banks remain. Converters' ability

Turkey homopolymer prices $/t



to conclude transactions is also still under pressure from the credit crunch in Turkey, which deteriorated further after the central bank cut its benchmark interest rate to 8.5pc from 9pc this week. This was the second cut in the new year, despite high inflation, although the bank hinted at ending the cycle of cuts at the end of 2022. As a result, demand in Turkey remains low, which curbs high price increases in the market. At present, economic activity for polymers originates mainly from trading firms' tendency to take a position.

Middle East-origin PP raffia was assessed at $1,150-1,170/t cfr, an increase of $10/t at the low end and a decrease of $10/t at the high end of the range compared with last week. Middle East-origin PP fibre was assessed stable at $1,180-1,200/t cfr. Middle East-origin PP fibre non-woven was assessed at $1,180-1,200/t cfr, rolled over from last week's assessment.

Middle East-origin PP block copolymer was assessed at $1,190-1,220/t cfr this week, down by $10/t at both ends of the range against last week's assessment. South Korea-origin PP block copolymer was assessed at $1,260-1,290/t cfr, down by $10/t at the low end and $20/t at the high end of the range from last week.

Egypt

Polypropylene (PP) import prices in Egypt rolled over this week on limited trading in the country.

Major suppliers are still holding back from offering material in the Egyptian market, owing to high trading and financial risks. The market remains subdued and procurements are on standby, although banks have partially resumed issuing letters of credit to buyers for concluding transactions, mainly to clear the cargoes that have been stuck at Egyptian ports for several months.

The shortage of dollars in the country continues to undermine trading firms' abilities to import polymers. Most converters in Egypt are operating at reduced run rates of around 25pc because of the lack of supply. To mitigate the currency crisis, the government plans to sell dozens of state assets to foreign investors. Similarly, domestic companies are more focused on exporting to foster their business, and to increase foreign exchange reserves in the country.

Market participants await new offers for March, with expectations of prices increasing next week, notwithstanding the economic stagnation in Egypt. The producers aim to align their offers with the international markets and follow the firmer pricing trend elsewhere.

Middle East-origin PP raffia was assessed at $1,150-1,200/t cif, stable on both ends against last week's assessment. Middle East-origin PP fibre was assessed at $1,180-1,220/t cif, stable on both ends of the range compared with last week.

Middle East

Gulf Co-operation Council (GCC) polypropylene (PP) prices were mostly stable as trades stayed limited. PP raffia was stable at $1,040-1,100/t del GCC. Biaxially-oriented PP (BOPP) film was rolled over at $1,110-1,130/t del GCC. PP raffia in Jordan and Lebanon was stable at $1,050-1,070/t del Jordan/Lebanon.

Buyers expect key producers to announce new shipments for March deliveries next week. Demand for March shipments should be stable-to-firm as converters ramp up operations ahead of the Islamic fasting month of Ramadan in April. Demand will likely remain muted then as converters reduce operating rates because of shortened working hours. Trading firms observed that demand in February was stable. But it did not rise to meet market participants' higher expectations. Sellers were initially expecting higher restocking activity as most converters destocked towards the end of 2022.

Supplies continue to tighten as more producers shut down production. Saudi producer Saudi Polymers, owned by Arabian Chevron Phillips Petrochemical and Saudi Arabia's National Petrochemical (Petrochem), has also shut production. The producer encountered technical issues last week and was unable to continue PP production at its plant in Jubail. It operates 400,000 t/yr PP plant. Market participants expect the producer to resume operations in the next two weeks.

Saudi state-controlled PP producer PetroRabigh will be conducting a turnaround at its 1.6mn t/yr ethane cracker next week, market participants said. The producer will be bringing forward a planned turnaround initially intended for April as it will be the Islamic fasting month of Ramadan then. Production at its 700,000 t/yr PP plant will be shut down.

UAE-based PP producer Borouge, a joint venture between Abu Dhabi's state-owned Adnoc and Austria's Borealis, has shut production at two of its PP lines in Ruwais because of planned maintenance. The shutdown began in January and should last for 50 days. The turnaround will shut 880,000 t/yr of PP production. Saudi PP producer Yansab, an affiliate of state-owned petrochemical producer Sabic, started a 53-day turnaround at its petrochemical complex in Yanbu on 10 January. The complex produces 400,000 t/yr of PP.

China

China's domestic PP prices rose slightly, following an upward trend in PP futures. But import prices were steady on limited offers.

PP futures rebounded strongly earlier this week but fell slightly on weakening sentiment afterwards. "Downstream converters would like to deplete their feedstocks on hand," a market participant said. "And some of them prefer to delay the arrival of feedstocks as they are suffering from high inventory of finished products." Operating rates in the plastic woven industry increased to 40pc, while run rates for biaxially-oriented PP (BOPP) were steady at 63pc.

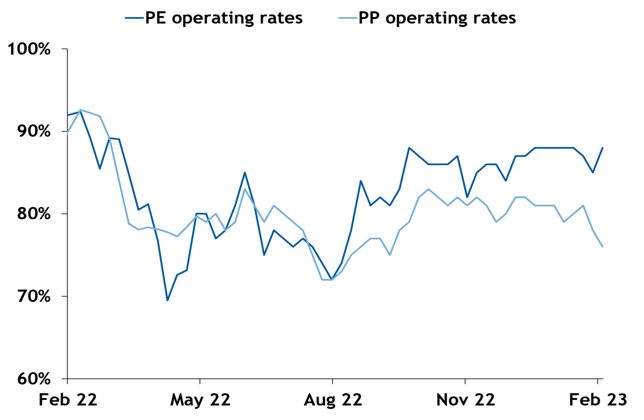
Spot prices increased by less than PP futures as producers and traders cut their offers to boost sales after an earlier rise in prices. Ex-works prices for PP raffia were assessed at 7,700-8,000 yuan/t in east China, or an import parity equivalent of $912-948/t, up by Yn100/t from the previous week's high end. PP co-polymer prices were assessed at Yn7,900-8,100/t ex-works in east China, up by Yn50/t from last week's low end.

Major Chinese producers' inventories of PP and polyethylene fell to 710,000t on 23 February, down by 80,000t compared with 790,000t on 16 February. Average operating rates at Chinese PP plants edged lower to 76pc, down by two percentage points from the previous week. Sinopec Quanzhou shut its 200,000 t/yr unit for maintenance throughout February. Ningbo Fund started maintenance at its 400,000t/yr unit on 8 February, which will last until 27 February. Zhejiang Petrochemical shut its 450,000 t/yr No.4 PP unit for 15 days from 15 February. Guangdong Juzhengyuan shut its two 300,000 t/yr PP units for maintenance on margin issues.

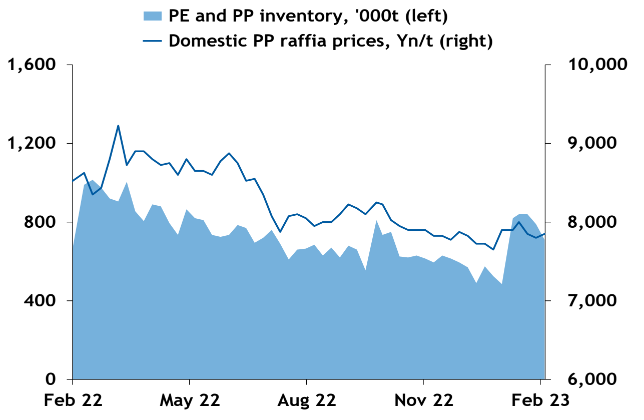
The import market remained quiet in the absence of new offers. Trading firms quoted PP raffia and PP injection at $980-1,000/t cfr China, while PP co-polymer was at $1,000-1,020/t cfr China with no deals finalised. Buying interests were subdued by the depreciation of the Chinese yuan against the US dollar. PP raffia prices were assessed unchanged at $960-980/t cfr China. PP co-polymer prices were assessed at $990-1,000/t cfr China, down by $10/t from the previous week's high end.

China domestic				Yn/t
	Basis	Price		±
Copolymer	ex-works	7,900-8,100	▲	+25
Raffia	ex-works	7,700-8,000	▲	+50

China PE, PP plant operating rates %



Sinopec and PetroChina inventory vs PP prices



Market highlight

- Chinese spot prices increased by less than PP futures as producers and traders reduced offers to boost sales after an earlier rise in prices

Export trading activities weakened this week. China-origin PP raffia and PP fiber were traded at $1,040-1,060/t fob China, PP co-polymer was transacted at $1,095/t fob China. These cargoes were mainly destined for southeast Asia and Latin America. Chinese BOPP film grade was done at $1,060/t fob China, shipping to middle eastern countries.

Freight rates from China to Vietnam were $15-20/t, while rates from China to south Asia and to Latin America were $30-40/t and $60-80/t respectively, according to market participants. Export prices for PP raffia were assessed at $1,040-1,070/t fob China, up by $10/t from the last assessment's low end.

Southeast Asia and Vietnam

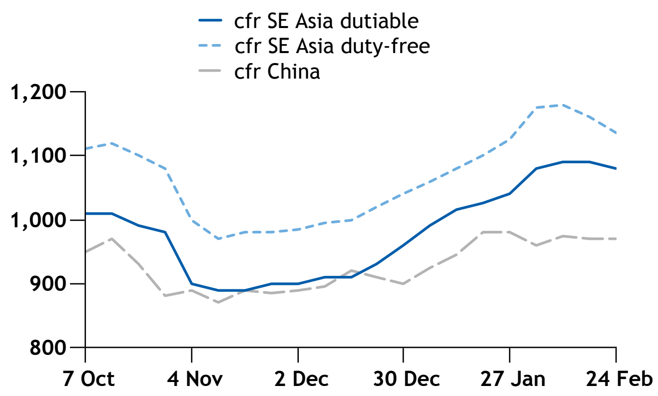
PP prices weakened further in southeast Asia despite supply from some regular suppliers remaining tight. Most Middle Eastern and South Korean producers raised PP offers for March shipment while holding limited stocks, because of continuing maintenance shutdowns or production cuts. But some regional producers have begun lowering their PP offers in response to weak market sentiment.

Regional converters faced a slowdown in downstream sales of finished PP products, with high inflation holding back consumer spending. Retailers were unwillingto increase stocks of finished PP products, hoping for prices to ease gradually as demand slows down. Converters also tracked prices and activity in the key Chinese market, but Chinese consumption has not lived up to market expectations post the lunar new year holidayThe monsoon season is likely to start in the second quarter of 2023, exerting pressure on Thailand's PE consumption, should the volume of tourists begin to slow down Market participants in Indonesia anticipate a moderate PP consumption ahead of the Eid festival.

Expectations of oversupply, especially in China, have continued to cast a gloom over the Asian PP market. Maintenance shutdowns by the Middle Eastern producers and production cuts among regional producers, as well as higher costs of naphtha and propane feedstocks since early this year have supported the southeast Asian PP market. But weak demand outlook associated with high inflation this year has kept converters cautious while restocking. Most major PP converters in southeast Asia built inventories during the price uptrend and are less interested in sourcing PP at currently high prices.

Malaysia's PRefChem restarted its No.1 and No.2 450,000 t/yr PP units earlier this week. Both PP units were shut briefly last week. Thailand's SCG restarted its upstream 800,000 t/yr Rayong-based cracker in early February, after shutting it since September last year. Market participants expect more PP supplies from the producer from late February. Indonesia's Chandra Asri has continued to operate its 590,000 t/yr PP plant at 70pc because of issues at its upstream cracker facilities. Malaysia's Lotte Titan has continued to operate its PP plant at reduced rates because of weaker margins and feedstock propylene shortages. The producer also shut its 166,000 t/yr PP unit in February for a month-long maintenance. Philippines' JG Summit shut its naphtha cracker and 300,000 t/yr PP plant in mid-February because of margin concerns. Thailand's IRPC will also conduct a turnaround at its 775,000 t/yr PP plant from mid-February to early March, according to market sources. Singapore's ExxonMobil is likely to reduce its PP production from early February to mid-March, alongside a shutdown at its upstream 1mn t/yr cracker .

SE Asia vs China PP raffia prices $/t



Dutiable PP raffia offers were revised downwards to $1,070-1,090/t cfr southeast Asia this week. China- and Saudi-origin PP homopolymer offers were at $1,090/t cfr southeast Asia. PP block copolymer prices fell to $1,090-1,110/t cfr southeast Asia. Saudi-origin PP block copolymer offers were at $1,100/t levels cfr southeast Asia.

Duty-free PP raffia prices fell to $1,120-1,150/t cfr southeast Asia this week. Vietnam- and Thailand-origin PP raffia offers were at $1,130-1,160/t cfr southeast Asia. Malaysia-origin PP raffia offers rose to $1,200/t cfr southeast Asia. Malaysia-origin PP injection offers were at $1,110/t cfr southeast Asia. Duty-free PP block copolymer offers fell to $1,150-1,180/t cfr southeast Asia. Vietnam- and Malaysia-origin PP block copolymer offers were at $1,200/t levels cfr southeast Asia to consumers. South Korea-origin PP block copolymer offers were at $1,100-1,120/t cfr Indonesia on a duty-free basis.

PP raffia prices were stable at $1,060-1,090/t cfr Vietnam, but downstream demand weakened. Domestic producers reduced PP prices to $1,060-1,070/t on an import parity basis, weakening buying ideas for imported PP supplies. Saudi-origin PP homopolymer offers were at $1,090/t cfr Vietnam. South Korea-origin PP raffia and injection offers were available at $1,110/t cfr Vietnam, but no deals could be confirmed.

South Asia

Indian PP raffia was stable at $1,080-1,110/t cfr India. China-origin cargoes were offered at $1,080/t cfr, $30/t lower than last week. But offers from other producers were limited this week. Restocking activity remains slow as most buyers are currently well-stocked. Buyers are awaiting the announcement of new offers from key producers in the coming weeks.

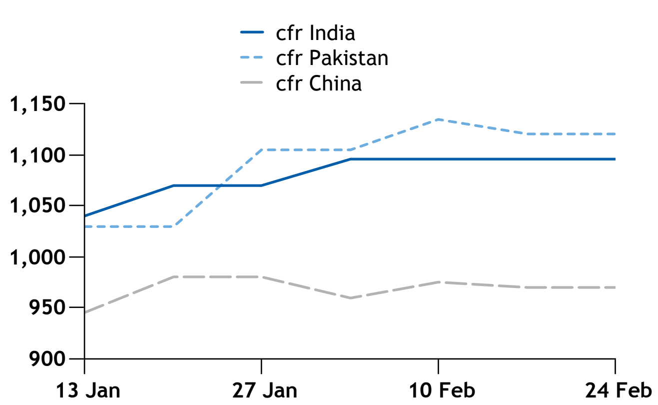
Buyers that needed to restock continued to focus on domestic markets. Most buyers are looking to fulfil contractual requirements before India's fiscal year ends in March. Import interest will likely wane in March because of this. The influx of offers from China continued to dominate import offers this week, as offers from key Middle East producers stayed limited.

State-controlled IOC shut two lines at its PP plant in Panipat two weeks ago because of technical issues. A total of 300,000 t/yr of capacity has gone off line. Participants are unsure of when the producer will restart production.

Pakistani PP raffia was stable at $1,100-1,140/t. Cargoes from China were offered at $1,100/t cfr. Offers from key Middle East producers were limited. Restrictions on obtaining letters of credit (LCs) continue to limit interest in import cargoes. Some trading firms have stayed away from selling to Pakistan on fears that buyers may default on payments. Other trading firms, with bigger risk appetites, continue to offer cargoes to Pakistan buyers. Some buyers are financing import purchases through bank accounts in Dubai to circumvent local LC restrictions. These transactions are typically conducted with trading firms that have a presence in Dubai and are able to accept these payments.

Bangladeshi PP raffia was stable at $1,130-1,150/t cfr Bangladesh. Sri Lanka PP raffia was also stable at $1,150-1,170/t cfr Sri Lanka as offers stayed limited. Nepalese PP raffia was rolled over at $1,170-1,190/t cpt Nepal. A key Saudi producer announced new offers. But buyers felt this was too high. Participants expect the producer to cut offer prices next week. Cargoes of PP injection moulding were offered at $1,270/t cif Kolkata. Shipping costs remained at $70/t from India's port of Kolkata to Nepal's inland port of Birgunj.

South Asia vs China raffia prices $/t



FUNDAMENTALS

Global production news

Asian crackers set to raise run rates as margins rise

Asian crackers are slowly raising or planning to raise operating rates as margins rose following steep price hikes in olefin markets in the past month as a result of supply constraints.

Asian ethylene prices surged to $920-950/t cfr northeast Asia this week, up by $150-170/t or 21pc from a month ago. Propylene prices rose to $970-1,000/t cfr northeast Asia, up by $70-90/t or 9pc on the month. Butadiene rose sharply to $1,280-1,330/t cfr northeast Asia on 17 February, up by $305-335/t or 32pc from late January.

In comparison, the weekly average value of feedstock naphtha only rose by 3pc in the month to $721/t cfr Japan. Feedstock propane prices experienced steep volatilities in the past month with its weekly average values peaking at $835/t cfr Japan at the end of January, before falling to $738/t on 17 February.

Cash margins of naphtha crackers rose sharply to negative $144/t this week, up by $213/t from a month earlier, based on *Argus*' cracker economics model. The propane cracker cash margin settled at negative $188/t, up by $265/t compared with late January.

Naphtha cracker margins rose to -$60/t this week from -$270/t in late January, if based on variable cost. Propane cracker margins rose to -$117/t from -$379/t on 25 January.

Some South Korean cracker operators took the lead to raise cracker run rates. Hanwha Total since early February has ramped up cracker run rates to 100pc from the previous 75pc to stock up on olefin inventories ahead of its cracker turnaround in late April.

More producers are considering raising run rates. Lotte plans to raise its Daesan cracker rate to 90pc in early March from the current 82pc. But it will maintain its Yeosu cracker rate at 84pc.

LG Chem has decided not to advance its turnaround plan and will stick to the original schedule of April-June at its 800,000 t/yr Yeosu No.2 cracker. The company had said in mid-February that it would bring forward the overhaul to March because of negative margins.

Another South Korean producer KPIC also plans to raise cracker operating rate, but that may not happen until April.

Plant maintenance, outages and disruptions

Status	Plant	Location	Grade	Capacity '000t/yr	Duration	Remarks	Source
	Ineos	US	PP	586	Dec 2022	Force majeure announced for PP units in Texas	Industry
	Pinnacle Polymers	US	PP	429	Dec 2022	Force majeure announced in Garyville, Louisiana	Industry
	Phillips 66	US	PP	352	Feb - Mar	Turnaround at Bayway, New Jersey unit	Industry
	Orlen Unipetrol	Europe	PP	300	Apr - May for one month	Planned maintenance	Industry
	Stavrolen	Russia	PP	120	1 Oct for two weeks	Planned maintenance	Producer
	Poliom	Russia	PP	218	9 - 31 Oct	Planned maintenance	Producer
	Yansab	Saudi Arabia	PP	400	10 Jan for 53 days	Planned maintenance	Producer
	Borouge	UAE	PP	880	Jan for 50 days	Planned maintenance	Industry
NEW	S-Chem's Saudi Polymers	Saudi Arabia	PP	400	Mid-Feb for two weeks	Unplanned shutdown	Industry
NEW	Petro Rabigh	Saudi Arabia	PP	700	Mar for three weeks	Planned shutdown	Industry
	OQ	Oman	PP	340	Mar for one month	Planned maintenance	Industry
	HPCL-Mittal Energy Limited	India	PP	400	Mid-Feb 2022 until present	Plant is operating at 40pc from August 2022 onwards	Industry
	HPCL-Mittal Energy Limited	India	PP	500	Jun 2022 to present	Plant is operating at reduced rates	Industry
	Haldia Petrochemicals	India	PP	330	Jan	Plant is operating at reduced rates because of cracker issues	Industry
	Indian Oil Corporation	India	PP	300	10 Feb until present	Unplanned maintenance due to technical issues	Producer
	Wuhan Petrochemical	China	PP	120	10 Nov 2021 until present	Maintenance	Producer
	Haiguo Longyou Daqing Lianyi Petrochemical	China	PP	200	Apr 2022 until present	Maintenance due to margin concerns	Producer
	Haiguo Longyou Daqing Lianyi Petrochemical	China	PP	350	3 Apr 2022 until present	Maintenance due to margin concerns	Producer
	Sinopec Tianjin No.2	China	PP	200	1 Jul 2022 until present	Unplanned outage due to technical problems	Producer
	Fujian Refinery No.1	China	PP	120	10 Nov 2022 until present	Maintenance	Producer
	SK Wuhan Petrochemical	China	PP	200	27 Dec 2022 - 31 Jan 2023	Maintenance	Producer
	Shaoxing Sanyuan No.2	China	PP	300	9 Jan until present	Maintenance	Producer
	Lihe Zhixin	China	PP	300	19 Jan until present	Planned maintenance extended	Producer
	Xuzhou Haitian	China	PP	200	20 Jan - mid-Feb	Planned maintenance	Producer
	Sinochem Quanzhou	China	PP	200	1 - 28 Feb	Planned maintenance	Producer
	Sinopec Yangzi No.2	China	PP	200	8 Feb until present	Planned maintenance	Producer
	Ningbo Fund	China	PP	400	8 - 27 Feb	Planned maintenance	Producer
	Sinopec Yanshan	China	PP	250	8 - 20 Feb	Planned maintenance	Producer
	PetroChina Jinxi	China	PP	150	8 Feb until present	Maintenance	Producer
	Zhenhai Refinery No.1	China	PP	200	14 - 19 Feb	Unplanned outage due to technical issues	Producer
	Hebei Haiwei	China	PP	300	15 Feb until present	Maintenance due to margin concerns	Producer
	Zhejiang Petrochemical No.4	China	PP	450	15 Feb for 15 - 20 days	Maintenance	Producer
NEW	Sinopec Maoming No.2	China	PP	170	17 Feb until present	Unplanned shutdown due to technical issues	Producer
NEW	Dongguan Juzhengyuan No.1	China	PP	300	21 Feb until present	Unplanned shutdown due to margin issues	Producer
NEW	Dongguan Juzhengyuan No.2	China	PP	300	21 Feb until present	Unplanned shutdown due to margin issues	Producer
NEW	Datang Duolun No.1	China	PP	230	22 Feb - 3 Mar	Planned maintenance	Producer
NEW	Datang Duolun No.2	China	PP	230	22 Feb - 3 Mar	Planned maintenance	Producer
	Zhenhai Refinery No.2	China	PP	300	27 Feb - 14 May	Planned maintenance	Producer
NEW	Shenhua Ningmei	China	PP	600	10 Mar - 25 Apr	Planned maintenance	Producer
	Beihai Refinery	China	PP	200	Mar for one month	Planned maintenance	Producer
UPDATE	Chandra Asri	Indonesia	PP	590	Jan until present	Plant is operating at 70pc	Producer
	Lotte Chemical Titan	Malaysia	PP	166	Feb for 30 days	Maintenance	Producer
	ExxonMobil	Singapore	PP	500	Early Feb - mid-Mar	Maintenance	Industry
	IRPC	Thailand	PP	775	Mid-Feb for 20 days	Maintenance	Industry
NEW	JG Summit Petrochemical	Philippines	PP	300	Mid-Feb - Mar	Maintenance	Industry

Taiwan's Formosa is considering restarting its No.2 cracker but has yet to decide when. The 1.035mn t cracker has been shut since 11 July 2022 to align with heavy production cuts in the downstream ethylene glycol sector.

In China, Sinopec is considering raising overall cracker run rates in March to cater to higher consumption in downstream sectors because of a recovery in demand. The current average operating rate of Sinopec subsidiary crackers is estimated at about 86pc.

In southeast Asia, a Singapore-based cracker operator has since early February raised its cracker operating rate to 80-85pc from the previous 75pc.

"Crackers must slowly and prudently raise operations or it will once again depress olefin prices and margins, as China continues to add massive new capacities" a major cracker operator in China said.

New start-ups

Status	Plant	Location	Grade	Capacity '000t/yr	Start-up	Remarks	Source
	Inter Pipeline	Canada	PP	525	Jul 2022	Plant started	Industry
	ExxonMobil	US	PP	450	Dec 2022	Plant started	Industry
	Grupa Azoty	Europe	PP	437	2023		Industry
	Kazakhstan Petrochemical Industries	CIS	PP	500	2H Sep		Industry
	Fujian Zhongjing Petro-chemical	China	PP	600	Early Sep 2022	Delayed from April 2022	Producer
UPDATE	Fujian Zhongjing Petro-chemical	China	PP	600	Dec 2022	Plant started from 8 December 2022	Producer
	Jingbo Petrochemical	China	PP	400	1Q 2023	Delayed from October 2022	Producer
UPDATE	Jingbo Petrochemical	China	PP	200	2Q 2023	Delayed from October 2022	Producer
UPDATE	Sinopec Hainan	China	PP	200	Feb 2023	Plant started from 16 February	Producer
UPDATE	Sinopec Hainan	China	PP	300	Feb 2023	Plant started from 16 February	Producer
NEW	Hongrun Petrochemical	China	PP	300	Feb 2023	Plant started from 21 February	Industry
	Oriental Maoming	China	PP	500	1Q 2023		Producer
	Guangzhou Juzhengyuan Phase 2	China	PP	300	1Q 2023		Producer
	Guangzhou Juzhengyuan Phase 2	China	PP	300	1Q 2023		Producer
	Ningbo Jinfa New Material	China	PP	800	1Q 2023		Producer
	Zhejiang Yuanjin New Materials	China	PP	450	2Q 2023		Producer
	Anhui Tianda	China	PP	300	3Q 2023		Producer
	Baofeng Energy Phase 3	China	PP	500	Jun 2023		Producer
	Sinopec Qilu	China	PP	250	Jun 2023		Producer
	Sinopec Anqing	China	PP	300	Jun 2023		Producer
	Petrochina Guangdong	China	PP	200	Sep 2023		Producer
	Guangxi Hongyi New Material	China	PP	300	2H 2023		Producer
	Jinneng Petrochemical Phase 2	China	PP	450	End 2023		Producer
	Shenhua Baotou Phase 2	China	PP	350	2023		Producer
	Oriental Maoming	China	PP	500	2023		Producer
	Nayara Energy	India	PP	450	4Q 2023	Construction is 85pc completed	Producer
UPDATE	PRefChem	Malaysia	PP	450	Aug 2022	Plant restarted, running at 70pc	Industry
UPDATE	PRefChem	Malaysia	PP	450	Oct 2022	Plant restarted	Industry
	HMC Polymers	Thailand	PP	220	Dec 2022	Trial runs expected in December 2022	Producer
	Long Son Petrochemical	Vietnam	PP	450	Mid-2023	Trial runs expected in December 2022	Producer

China's Guangxi Huayi starts up Qinzhou PDH unit

Chinese petrochemical firm Guangxi Huayi New Material has started up its new 750,000 t/yr PDH unit at Qinzhou in south China's Guangxi province and achieved on-specification propylene earlier this week.

Production of propylene from the PDH unit will feed into the company's 400,000 t/yr acrylic acid plants, a 300,000 t/yr n-butanol unit, a 175,000/105,000 t/yr phenol/acetone production line and its subsidiary 300,000 t/yr polypropylene plant owned by Guangxi Hongyi New Material.

Guangxi Huayi New Material will be in a net short position of 161,000 t/yr, or 13,400 t/month, of propylene when its PDH and downstream plants run at full rates. Feedstock propane will come from imports through the port of Qinzhou. The company will need to import 900,000 t/yr propane to run the PDH plant.

'Reopen' China boosts butane but not petchems

China's reopening economy after it dropped its zero Covid policy and post the lunar new year holiday has lifted butane demand for gasoline blending. But other energy and petrochemical demand for LPG may not recover until the second quarter.

Butane demand from the gasoline blending sector has been firm this month as people resumed travel and MTBE exports increase, an east Chinese MTBE producer says. Wholesale margins for normal butane and isobutane were strong in east China's Shandong province, the hub for gasoline blendstocks.

LPG sales in the commercial and industrial sectors have shown no signs of obvious improvement after the holiday as the weather has been getting warmer, a south Chinese distributor says. Demand for LPG as a fuel in east China has been stable, with people returning from rural areas to cities, reducing use as a cooking fuel in the former but boosting it in the latter, an east Chinese refiner says. But market participants expect industrial sector demand to rise in the second quarter on a recovering property market, which supports use in the ceramics sector.

In the petrochemical sector, propane dehydrogenation (PDH) plants struggled in January and February because of unusually high LPG prices and rising competition from ethylene producers. PDH run rates had dropped to 66pc by 15 Februaryfrom 74pc on 25 January because of high propane prices, while ethylene cracker rates were stable at 91.5pc, including the new 1.1mn t/yr Shenghong cracker launched in December 2022. This will be joined by state-controlled PetroChina's 1.2mn t/yr Jieyang and state-owned Sinopec's 1mn t/yr Hainan crackers this month. These three plants will yield around 1.6mn t/yr of propylene combined.

Some petrochemical firms are concerned that higher run rates at refineries and associated crackers after the economy's reopening will squeeze PDH's share in the domestic propylene market in 2023. But the IMF forecasts China's GDP to grow by 5.2pc this year, up from 3pc in 2022, which should bolster downstream demand.

Fire hits HMEL's naphtha-fed cracker in India's Punjab

A fire hit Indian petrochemical producer Hindustan Petroleum-Mittal Energy's (HMEL) Guru Gobind Singh refinery in India's northwestern state of Punjab early this morning.

The fire started near the quench oil pump at the producer's 1.2mn t/yr naphtha-fed cracker because of an oil leak which generated thick smoke, according to HMEL on 24 February. The fire was localised and brought under control by 10am local time (4:30am GMT), with no casualties reported.

But it remains unclear if the fire has been fully extinguished. There was no impact to other units in the complex, HMEL said.

The producer has been gearing up to start commercial operations at its cracker as well as its downstream 450,000 t/yr high-density polyethylene (HDPE) and 800,000 t/yr linear low-density PE/HDPE plants this quarter. HMEL has been conducting trial runs at this plant since December.

Participants close to the producer are expecting start-up delays of around three months because of the fire.

The producer last year started operations at its new 500,000 t/yr polypropylene (PP) plant in the same complex in Bathinda. But the new plant and its older 400,000 t/yr PP plant have been operating at reduced rates because of feedstock shortages.

Argus has reached out to HMEL for further comments about the impact of the fire on its petrochemical operations. But the producer was unable to give further comments as investigations are still ongoing.

Naphtha rises above crude in northwest Europe

Naphtha is trading at a premium to crude in northwest Europe for the first time since April last year, boosted by the EU's ban on Russian imports and strong demand from gasoline blenders in the region.

Delivered naphtha cargoes in northwest Europe were assessed at a premium of 30¢/bl to North Sea Dated on 22 February, the first time prices have risen above the crude benchmark since 11 April 2022. The region's naphtha forward curve has also moved into heavy backwardation — where prompt prices are higher than later delivery dates — with the front-month swap averaging a $15.28/t premium over the second month in February to date. This marks the steepest backwardation since late March 2022.

This kind of market structure typically indicates tight prompt supply, which is certainly the case in northwest Europe now that Russian naphtha is off limits. Russia sent over 7mn t of naphtha to northwest Europe in 2022, according to Vortexa.

Increased imports from the Mediterranean region could help to at least partially plug the supply gap. Mediterranean naphtha has historically found buyers among petrochemical producers in Asia-Pacific, with an average of 6.8mn t/yr shipped east in 2020-22. But current regional price differentials mean that more Mediterranean supply has been moving to northwest Europe and less to Asia-Pacific.

Besides tight supply, strong demand from gasoline blenders is also lending support to naphtha margins in northwest Europe. Gasoline blending margins have been counter-seasonally high this month, with Eurobob oxy gasoline's premium to naphtha averaging almost $90/t in February to date, up from around $25/t in February last year. It is the highest February average in the past five years, according to *Argus* records.

Demand for naphtha from Europe's petrochemical sector remains lacklustre though, partly due to the economic slowdown, but also because naphtha has traded at an average premium of $65/t to rival petrochemical feedstock propane in February so far.

China's LPG demand grows following tough year

China's LPG apparent demand continued to increase last year on firming petrochemical feedstock use despite poor margins and lower utilisation in the sector.

The country's apparent demand — domestic production plus net imports — rose by just over 4pc on the year to 74mn t in 2022, National Bureau of Statistics (NBS) data show. But this was slower than a year earlier, when it rose by 13pc to 71mn t.

China's LPG imports firmed by 8.6pc to 26.6mn t in 2022, with 20.8mn t of this propane and 5.8mn t propane, customs data show. Broken down into region, east China — home to many of the country's petrochemical facilities — took 19.1mn t of the total, up by 22pc, as many new petrochemical projects, largely propane dehydrogenation (PDH) plants, continued to open in spite of weak downstream demand and negative operating margins.

In south China, imports dropped by 9.8pc to 5mn t on weaker fuel consumption as a result of the country's zero-

Covid policy, which it removed late last year. The US continued to be China's largest LPG supplier in 2022, providing 34.4pc of its imports, up slightly from 34.1pc a year earlier. An open US-northeast Asia arbitrage encouraged more flows, with the spread averaging $20/t last year compared with a $7/t spread from the US to northwest Europe.

A total of eight new PDH plants opened in China last year with a combined capacity of 3.9mn t/yr, with six of these based in east China. These new facilities could have added about 1.8mn-2.2mn t of propane demand in 2022, assuming 100pc operating rates and based on their varying start-up dates. But average PDH operating rates in the country slipped to 75.4pc in 2022 compared with 87.5pc in 2021, as margins were squeezed by higher feedstock costs and propylene oversupply.

South China's LPG is mainly consumed by the residential, commercial and industrial sectors, with the latter two adversely affected by weaker economic activity. Food and average revenues in Guangdong province — a good indicator of commercial LPG use as a cooking fuel — dropped by 7.1pc on the year to 176bn yuan ($25.7bn) in 2022, while across China they fell by 6.3pc to Yn4.4 trillion.

The country's LPG re-exports, largely on coasters from south Chinese terminals to southeast Asian importers, fell by 12pc to 868,000t last year, 341,000t of which was propane and 527,000t butane, leaving net imports at 25.7mn t. Higher profit margins for south China's wholesalers that operate the terminals discouraged them to sell overseas. Import terminals in the region saw their profit margins grow to about Yn250/t in 2022 from minus Yn182/t a year earlier.

China's LPG output, mostly from refineries, was steadier last year, rising by 1.4pc to 48.2mn t, NBS data show. Production rose as new refineries and upgrades were brought on line, with these gains partially offset by crude runs decreasing owing to Covid-19 restrictions and weaker gasoline demand. But *Argus* forecasts refinery crude runs to rebound to 14.1mn b/d this year from 13.5mn b/d in 2022 as a result of relaxed Covid-19 rules and a far lighter refinery maintenance schedule, which will boost domestic LPG supplies.

China's LPG demand is expected to rebound in the first half of this year in line with improving economic activity after zero-Covid, a market participant says. The petrochemical sector is likely to consume yet more LPG as new facilities open — 12 new PDH plants with a combined capacity of 8.1mn t/yr are expected to start up in 2023. But traders are cautious on the upside potential as the sector grapples with surplus propylene, which should continue to pressure margins and run rates. Consumption in the commercial sector should rebound from levels seen in 2022, but is unlikely to recapture the losses since pre-pandemic times as many businesses, especially restaurants, closed in the interim.

Packaging and downstream applications

Sri Lanka's virgin plastics buyers avoid SUP ban impact

Sri Lanka's ban on eight single-use plastic (SUP) products from 1 June 2023 is expected by market participants to have a minimal impact on its virgin polymer imports.

A ban on the import, production, sale and use of polythene bags, plastic hopper holders, plastic dishes, plastic cups and plastic was proposed by the government in August 2021. It was endorsed on 14 February this year because of continued reports of elephants and deer deaths caused by ingesting plastic waste.

But participants expect most of Sri Lanka's plastics converters will continue importing virgin polymers as the industry is heavily focused on garments and textiles, which are not categorized as single-use plastics.

Approximately 40pc of Sri Lanka's total plastic exports are to the US, according to a 2021 report by Sri Lanka's environment ministry. The new legislation is unlikely to affect revenue streams as exported plastic products are typically sacks, bags and textiles. The report has domestic plastic processing capacity, the aggregate total domestic plastic production capacity, at 140,000 t/yr.

The bulk of Sri Lanka's plastic waste is generated in Western province where the capital Colombo is located. It is targeting a recycling rate of 7pc by 2023.

Converters have also been facing issues in securing stable supplies of diesel to run power generators and maintain consistent operating rates at factories. The Sri Lankan government in August 2022 increased electricity tariffs by 75pc, with a further undisclosed increment approved in January.

The weakening Sri Lankan rupee and exacerbating trade deficit has resulted in tighter restrictions in obtaining letters of credit (LCs). Most buyers have had to make cash payments through advanced telegraphic transfers as it has been difficult to obtain LCs.

Trading firms that typically sell virgin resin to Sri Lanka have noted increased interest for recycled resin from domestic buyers in last year's fourth quarter. Interested buyers are typically rigid packaging producers that produce final goods for exports to Europe. Customers have been seeking recycled resin to form virgin-recycled blends to comply with EU legislation.

Implementation of the SUP ban in June later this year could result in increased recycled polymer imports, especially from India. Recycling market participants at the Plastindia 2023 trade fair in New Delhi spoke of a positive environment for investment in the Indian industry, driven by new regulations governing the use of recyclates in packaging.

Indian private-sector conglomerate Reliance Industries has also begun producing recycled polyethylene terephthalate. Capacities are currently at around 5,000-6,000 t/month, with plans to expand recycled plastics production in the next 2-3 years. RIL currently does not export recycled plastics but capacity additions could make it a key regional exporter.

Sri Lanka's SUP ban also has the potential for increased recycled plastics imports with increasing pressure for consumers and producers to be more environmentally conscious.

EU new car registrations rise in January

New passenger car registrations in the EU increased by 11.3pc from a year earlier to 760,000 units in January, according to data from the European Automobile Manufacturers' Association (ACEA).

The increase was mostly the result of irregular low January registrations in 2022, ACEA said. New passenger car registrations for the same month last year reached 683,000 units, representing the lowest January volume on record. Although the volume of new units registered last month was higher than in January 2022 and January 2021, it is still significantly lower than the pre-Covid-19 volume in January 2020 of 956,000.

The largest market Germany posted a 2.6pc year-on-year fall last month with 179,000 new units registered, probably because it had seen positive growth of 8.5pc in January 2022.

The next three largest markets of Italy, France and Spain all saw increases in January this year. Italian registrations were up by 19pc compared with a year earlier to 128,000 new cars. French registrations rose by 8.8pc to 112,000. Spanish registrations increased by 51pc to 64,000.

Registrations in the UK increased by 15pc from the previous year to 132,000 in January.

Volkswagen remained the EU's largest manufacturer of new passenger cars in January, with registrations up by 14pc from year earlier to 86,000. Toyota retained its spot, attained in December, as the second-largest manufacturer having posted growth of 13pc to 60,000 units. BMW and Peugeot each saw falls, resulting in them dropping out of the top five of largest manufacturers. In their place were Dacia, with growth of 43pc, and Skoda that saw registrations increase by 13pc. Rounding out the top five was Renault whose registrations grew by 10pc.

India's Jan car sales rise, output at over 1½-year high

India's passenger car production and sales rose in January because of firmer consumer sentiment and output hit its highest level since November 2020.

India produced 187,500 passenger cars in January, up by 33pc on the previous month and 18pc from a year earlier, according to data from the Society of Indian Automobile Manufacturers (Siam). Sales were 136,900 in the same month, up by 31pc on the previous month and by 8pc from a year earlier.

India's auto industry has gradually strengthened since the start of the Covid-19 pandemic and India overtook Japan to become the third-largest automobile market in 2022.

India's production totaled 1.67mn in April 2022-January 2023, up by 11pc from the year-earlier period and 19pc higher from the same period in the fiscal year over 2020-21. But this was 7.9pc lower than the same period in 2019-20.

India's passenger car sales totaled 1.3mn in April 2022-January 2023, up by 8.9pc a year earlier and by 5.8pc two years earlier but was 7.8pc lower than the same period three years earlier.

"Better consumer sentiment is driving demand for passenger vehicles…Positive announcements at the Union budget should help in continuing with the overall growth momentum," said Siam's president Vinod Aggarwal.

India had a strong economic recovery in 2022 and is likely to continue on this growth trajectory. The IMF hailed India as a "bright spot" in the global forecasts, with a projected economic growth rate of 6.1pc in 2023.

Indian base oil prices were mixed in January as its market remained well stocked with competitively priced domestic supplies. Demand for very-light grades rose on the back of a seasonal pick-up in demand as India approached the end of its 2022-23 fiscal year in March and domestic blenders sought to maximize sales.

US Democrats ask EPA to slow plastics output

A group of Democratic federal lawmakers are calling for the US Environmental Protection Agency to slow plastics production and fight pollution by increasing industry regulation and rejecting chemical recycling.

The 9 February letter signed by 48 legislators claims that chemical recycling technologies, including pyrolysis and gasification, harm the environment by putting resources into plastics production when the nation should be slowing output.

"While recycling is important, recycling alone will not get us out of this crisis, especially with misguided solutions like chemical recycling," according to the letter organized by senators Cory Booker, Jeff Merkley and Jared Huffman.

The legislators request that the EPA continue to regulate pyrolysis and gasification as waste incineration, rather than recycling, under Section 129 of the 1970 Clean Air Act. In addition, the lawmakers seek the removal of "harmful" chemical recycling technologies from the National Recycling Strategy.

The letter also requests national targets for single-use plastic reduction, as well as a sweeping federal review of the petrochemical industry's impact on human health.

Merkley hosted a Senate panel in December addressing the issue of plastic waste.

Booker introduced the Protecting Communities from Plastics Act last year, which would have enforced stricter plastics manufacturing industry regulations. The bill also would have temporarily paused permitting for some facilities and focused on creating incentives for more reuse and refill programs. The bill failed to advance out of committee after plastics industry representatives said it would hurt jobs and slow technological advancements.

Last year 35 US legislators signed a similar letter calling for chemical recycling using gasification and pyrolysis to continue to be regulated as waste incineration.

FMCGs

Food packagers feel sustainability pressure

Food packaging producers are feeling pressure from all sides to demonstrate their green credentials. But they should not use this an excuse for adopting behaviors that may be detrimental to sustainability as a whole, delegates at the ACI European Food and Beverage Plastic Packaging Summit in Antwerp heard.

The head of Coca-Cola's public policy center and chairman of packaging association Europen Hans van Bochove identified several layers of pressure driving brands to increase the sustainability of their plastic packaging. Pressure starts with consumers and non-governmental organizations that care about packaging and packaging waste and develops with "demonization" of plastics by the media, he said. Potential investors may also use sustainability criteria to judge investments, he added, and regulations — such as the EU's Single Use Plastic (SUP) directive and proposed Packaging and Packaging Waste Regulations (PPWR) that set out requirements for recycled content in food packaging — then follow.

Companies need to "be mindful" to navigate through these various pressures and, while there can be a temptation for competing brands to try to outdo each other with increasingly ambitious targets, a more cohesive approach is likely to produce better results, van Bochove said. Solid targets from within the industry can help to lead legislation, he said, and effective legislation reduces the risk of individual countries "going their own way". "It may be great to compete and try to 'one-up' each other, but a collaborative approach would be better," agreed Hannah Drew from Aldi South Group.

A collaborative approach could also help small- and medium-size food and beverage companies that may otherwise struggle with the financial burden of compliance with regulations, delegates heard. Such companies are likely to have fewer resources than large corporations for dealing with sourcing the material necessary to comply with the SUP directive and PPWR without compromising safety. Demand outweighs supply of consumer-packaging-quality recyclates — particularly those that are approved for use in food-contact applications — in Europe, and prices remain significantly higher than for virgin polymers.

Supply chain and shipping

Ohio train accident may drive safety rule changes

The public outcry over the 3 February derailment of a Norfolk Southern (NS) freight train in Ohio may spur new safety regulations governing how some hazardous materials are handled.

A NS train hauling five railcars of vinyl chloride monomer (VCM) derailed in East Palestine, Ohio. Rail service was restored within days and NS has already begun cleaning up the area, removing contaminated soil and water.

The incident has attracted worldwide attention. Local residents fearful about toxic leftovers from a controlled burn of VCM are clamoring for a more vigorous response from state and federal regulators. While trains derail in the US almost daily, most are minor accidents that do not involve hazardous materials. But the uproar has moved beyond just shipment of VCM to encompass broader concerns over train derailments.

US transportation secretary Pete Buttigieg called for reviving a proposed rule mandating installation of electronically controlled pneumatic brakes. The Transportation Department also will consider requiring railroads to provide states more notice before transporting hazardous gas tank cars. And the US Environmental Protection Agency issued a binding order requiring NS to take "all necessary actions" related to the clean-up.

But Buttigieg said railroads "should not wait" to act. And he wants Congress to weigh in.

The Senate Environment and Public Works Committee already is planning a hearing to examine the response to the incident. The Senate Committee on Commerce, Science and Transportation ordered the seven largest US railroads to provide information on their hazardous materials safety practices.

The Association of American Railroads said the facts should "drive the post-accident response."

NS "will not walk away," railroad chief executive Alan Shaw pledged on 19 February.

Global polymer freight rates $/t

Origin	Destination	Argus Low	Argus High	±	Source
Americas					
Houston	Shanghai	32	44	-	Freightos Derived
Houston	Mersin	96	99	▼	Freightos Derived
Houston	Genoa	22	35	▼	Freightos Derived
Houston	Valencia	22	33	▼	Freightos Derived
Houston	Antwerp	23	37	▼	Freightos Derived
Houston	Santos	44	65	-	Freightos Derived
Houston	Buenos Aires	48	71	▼	Freightos Derived
Houston	Buenaventura	93	106	-	Freightos Derived
Houston	Callao	93	110	-	Freightos Derived
Houston	Guayaquil	93	106	-	Freightos Derived
Houston	Valparaiso	126	127	-	Freightos Derived
Santos	Rotterdam	130	140	▲	Freightos Derived
Middle East and North Africa					
Jubail	China	10	15	▲	Argus
Jubail	Indonesia	30	35	▲	Argus
Jubail	Karachi	45	50	▲	Argus
Jubail	Mumbai	25	30	▲	Argus
Jubail	Turkey	55	65	-	Argus
Jebel Ali	Shanghai	12	20	-	Freightos Derived
Jebel Ali	Singapore	8	12	-	Freightos Derived
Jebel Ali	Melbourne	107	121	-	Freightos Derived
Jebel Ali	Tauranga	121	121	-	Freightos Derived
Jebel Ali	Antwerp	39	52	-	Freightos Derived
Jebel Ali	Buenaventura	176	176	-	Freightos Derived
Jebel Ali	Callao	173	173	-	Freightos Derived
Port Said	Mersin	15	20	-	Freightos Derived
Port Said	La Spezia	15	25	-	Freightos Derived
Port Said	Antwerp	25	35	-	Freightos Derived
Southeast Asia					
Singapore	Karachi	40	48	-	Freightos Derived
Singapore	Mumbai Nhava Sheva	32	48	-	Freightos Derived
Singapore	Colombo	54	57	▲	Freightos Derived
Singapore	Melbourne	57	101	▲	Freightos Derived
Singapore	Tauranga	128	139	-	Freightos Derived
Vung Tau	Antwerp	90	96	▼	Freightos Derived
Vung Tau	Genoa	98	109	▼	Freightos Derived
Northeast Asia					
Busan	Mersin	113	117	▲	Freightos Derived
Busan	Koper	118	130	▲	Freightos Derived
Busan	Genoa	94	105	▼	Freightos Derived
Busan	Valencia	98	119	▲	Freightos Derived
Busan	Antwerp	57	82	▼	Freightos Derived
Busan	Durban	113	113	▼	Freightos Derived
Busan	Santos	85	85	-	Freightos Derived
Busan	Buenaventura	65	85	-	Freightos Derived
Busan	Callao	65	85	-	Freightos Derived
Busan	Melbourne	40	40	-	Freightos Derived
Busan	Tauranga	95	95	-	Freightos Derived
Shanghai	Nagoya	21	21	▼	Freightos Derived
Shanghai	Laem Chabang	5	13	-	Freightos Derived
Shanghai	Port Klang	8	24	-	Freightos Derived
Shanghai	Karachi	32	53	▼	Freightos Derived
Shanghai	Mumbai Nhava Sheva	24	51	▼	Freightos Derived
Shanghai	Chennai	24	52	▼	Freightos Derived
Shanghai	Colombo	44	52	▼	Freightos Derived
Shanghai	Chittagong	80	100	-	Freightos Derived
Shanghai	Mersin	113	117	▲	Freightos Derived
Shanghai	Koper	118	130	▲	Freightos Derived
Shanghai	Genoa	93	105	-	Freightos Derived
Shanghai	Valencia	89	109	-	Freightos Derived
Shanghai	Antwerp	55	67	-	Freightos Derived
Shanghai	Rotterdam	55	63	▼	Freightos Derived
Shanghai	Durban	108	125	▼	Freightos Derived
Shanghai	Santos	86	88	▲	Freightos Derived
Shanghai	Manzanillo	50	70	▲	Freightos Derived
Shanghai	Buenaventura	51	66	▼	Freightos Derived
Shanghai	Callao	66	70	-	Freightos Derived
Shanghai	San Antonio, Chile	54	75	▲	Freightos Derived

FREIGHTOS

Argus freight rates are as of the day of publication. Rates derived from Freightos data are of the previous day. Selected polymer spot freight rates are calculated by Argus methodology, based on underlying data from the online freight marketplace, Freightos. Visit www.freightos.com for complete lists of $/FEU rates in the wider spot container market.

North America transborder freight up 3.5pc in Dec: BTS

North American transborder freight increased in December by 3.5pc from a year earlier, boosted by higher oil prices and trade between the US and Mexico, according to the Bureau of Transportation Statistics (BTS).

Freight by all modes of transportation among the US, Canada and Mexico rose to $125.8bn, climbing from $121.7bn in December 2021. Oil prices were up by 6.6pc from a year earlier, contributing to the increased value of trade in the month, BTS said.

Trade between the US and Mexico also boosted the month's total, rising by 7pc from a year earlier to $61bn, according to BTS data, while US-Canada freight rose by 0.2pc to $60.7bn.

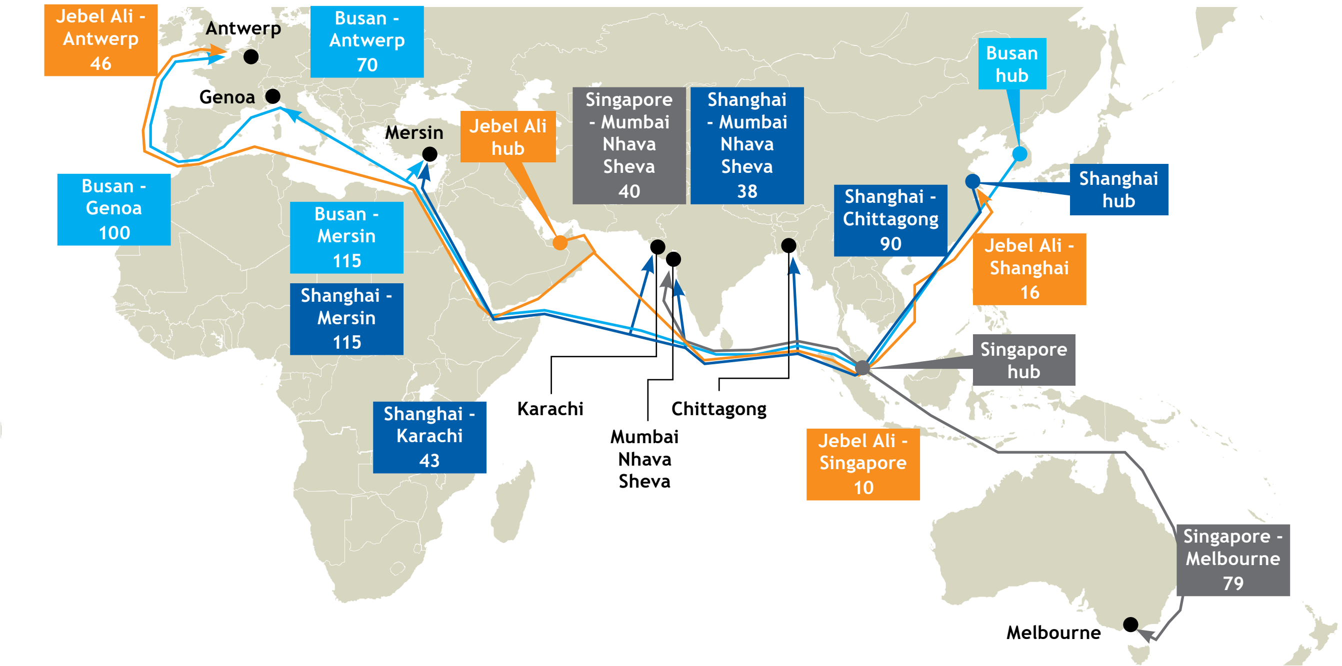
Truck freight climbed by 5.9pc to $73.9bn, comprising the bulk of all transportation methods, and vessel trans-

QUOTE OF THE WEEK

"Some converters see high inventory of finished products"

— *Chinese participant*

POLYPROPYLENE ROUTES BY EXPORTING PORT



portation rose by nearly 10pc to 10.3bn. Rail freight fell by about 2pc to 16bn and pipeline transport dropped by about 4pc to $10.2bn. The December shutdown of the 622,000 b/d Keystone crude pipeline near the Canadian border caused energy suppliers to temporarily switch to vessel transport.

Korea unveils roadmap for net zero in shipping by 2050

South Korea's maritime ministry (Mof) has announced its strategy to decarbonize the shipping sector by 2050, with a focus on hastening the transition to what it terms as "eco-friendly" vessels.

The roadmap is a pre-emptive response to stricter decarbonization regulations by the International Maritime Organization (IMO) and the international community, including Europe, Mof said on 14 February.

Mof expects the IMO in July to raise its international maritime carbon emissions reduction target from 50pc to 100pc by 2050, in addition to more economic regulatory measures such as a carbon levy system. The 80th session of the Marine Environment Protection Committee will be held over 3-7 July and is expected to adopt the revised IMO Strategy for Reduction of GHG Emissions from Ships, according to the IMO.

Mof sees "significant ripple effects" stemming from the tighter regulations on the shipping industry, since charging a certain amount for each tonne of carbon emitted will directly raise transportation costs for shipping firms. This will consequently make it "inevitable" for firms to switch to carbon-neutral fuels to stay competitive.

The Mof has consequently laid out its four-point strategy to achieve carbon neutrality in the shipping sector by 2050, in what it describes as a first in Asia.

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