

HIGHLIGHTS

US

Market awaiting fresh export offers

Latin America

Demand remains weak for now

Europe

Demand expected to improve after weak December

Russia and CIS

Market inactive due to public holidays

Turkey

Prices increased on reduced supply/stock levels

Middle East

Stable prices as buyers mull offers

China

Higher infections could lead to labour shortages

Southeast Asia and Vietnam

Buyers see limited import offers

India

Prices rise on firm interest

Pakistan

Prices mixed as LC restrictions hinder sales

Dalian Futures Market

LLDPE futures fall after earlier gains

Fundamentals to watch

US Gulf coast ethylene units begin post-storm thaw

S Korea's Hyundai Chemical to shut cracker in February

Spanish plastic tax comes into force

More ships added to California shore power law

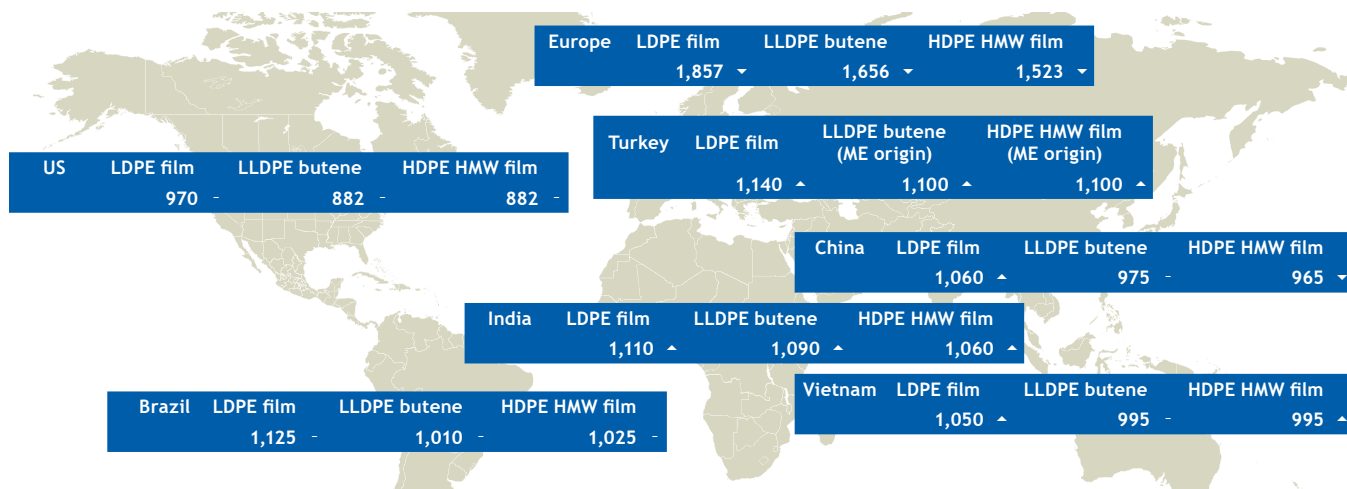
Brazil's cargo handling by rail fell in November

Global polymer freight rates

Contract prices			\$/t	
	Timing	Contract marker	Argus Δ	(month-on-month)
US				
LDPE liner film	Dec	2,116	-	0.0
LLDPE butene	Dec	1,830	-	0.0
LLDPE hexene	Dec	1,874	-	0.0
LLDPE octene	Dec	1,918	-	0.0
HDPE injection	Dec	1,830	-	0.0
HDPE HMW film	Dec	1,830	-	0.0
HDPE BM	Dec	1,852	-	0.0
Western Europe				
LDPE liner film	Dec	1,857	▼	-40.0
LLDPE butene	Dec	1,656	▼	-41.0
HDPE injection	Dec	1,475	▼	-43.0
HDPE HMW film	Dec	1,523	▼	-42.0
HDPE BM	Dec	1,475	▼	-43.0

Spot prices			\$/t	
	Basis	Price		±
US exports				
LDPE liner film	fas/Houston bagged	948-992	-	0.0
LLDPE butene	fas/Houston bagged	860-904	-	0.0
HDPE injection	fas/Houston bagged	838-882	-	0.0
HDPE HMW film	fas/Houston bagged	860-904	-	0.0
HDPE BM	fas/Houston bagged	838-882	-	0.0
LDPE liner film	dap/Laredo railcar	860-926	-	0.0
LLDPE butene	dap/Laredo railcar	772-816	-	0.0
HDPE injection	dap/Laredo railcar	860-904	-	0.0
HDPE HMW film	dap/Laredo railcar	794-838	-	0.0
HDPE BM	dap/Laredo railcar	772-794	-	0.0
Brazil				
LDPE liner film	cfr	1,100-1,150	-	0
LLDPE butene	cfr	980-1,040	-	0
HDPE injection	cfr	980-1,020	-	0
HDPE HMW film	cfr	1,000-1,050	-	0
HDPE BM	cfr	980-1,020	-	0
West coast South America				
LDPE liner film	cfr	1,140-1,150	-	0
LLDPE butene	cfr	980-1,020	-	0
HDPE injection	cfr	990-1,030	-	0
HDPE HMW film	cfr	1,020-1,050	-	0
HDPE BM	cfr	970-1,020	-	0
Northwest Europe				
LDPE liner film	del	1,274-1,433	▼	-9
LLDPE butene	del	1,167-1,274	▼	-8
HDPE injection	del	1,167-1,274	▼	-8
HDPE HMW film	del	1,167-1,274	▼	-8
HDPE BM	del	1,167-1,274	▼	-8
Russia and CIS				
LDPE 15803	cpt	1,424-1,505	▲	+4
LDPE 15303	cpt	1,482-1,540	▼	-3
LDPE 10803	cpt	1,355-1,401	▲	+3
HDPE injection	cpt	1,297-1,297	▲	+3
HDPE HMW film	cpt	1,297-1,297	▲	+3
HDPE pipe/BM	cpt	1,297-1,424	▲	+4
Turkey				
LDPE liner film Mideast Gulf origin	cfr	1,120-1,160	▲	+30
LLDPE butene Mideast Gulf origin	cfr	1,080-1,120	▲	+25
LLDPE butene US origin	cfr	1,030-1,080	▲	+30
HDPE HMW film Mideast Gulf origin	cfr	1,080-1,120	▲	+35
HDPE BM Mideast Gulf	cfr	1,080-1,120	▲	+35
HDPE HMW film US origin	cfr	1,030-1,080	▲	+30

GLOBAL SNAPSHOT



Key prices							\$/t
	US fas Houston	Timing	Western Europe contract marker	Turkey spot cfr (Mideast origin)	China spot cfr (main origin)	Southeast Asia dutiable spot cfr	India spot cfr
LDPE liner film	948-992	Dec	1,857	1,120-1,160	1,040-1,080	1,040-1,060	1,100-1,120
LLDPE butene	860-904	Dec	1,656	1,080-1,120	960-990	990-1,010	1,080-1,100
HDPE HMW film	860-904	Dec	1,523	1,080-1,120	950-980	970-1,000	1,050-1,070

Spot prices				\$/t
	Basis	Price		±
Egypt				
HDPE HMW film Mideast Gulf origin	cif	1,100-1,150	▲	+30
LDPE liner film Mideast Gulf origin	cif	1,250-1,350	▲	+50
LLDPE butene Mideast Gulf origin	cif	1,100-1,160	▲	+35
GCC				
LDPE liner film	del	1,190-1,210	-	0
LLDPE butene	del	1,000-1,050	-	0
LLDPE hexene	del	1,540-1,610	-	0
LLDPE octene	del	1,660-1,760	-	0
HDPE HMW film	del	1,020-1,080	-	0
Jordan/Lebanon				
LDPE liner film	del	1,250-1,270	-	0
LLDPE butene	del	1,100-1,120	▲	+20
HDPE HMW film	del	1,060-1,080	▲	+25
Saudi Arabia (CMP)				
LDPE liner film	fob	1,027-1,067	▲	+24
LLDPE butene	fob	947-977	▲	+14
HDPE HMW film	fob	937-967	▲	+9
China				
LDPE liner film Main origin	cfr	1,040-1,080	▲	+10
LDPE liner film All origin	cfr	1,040-1,080	▲	+10
LDPE liner film domestic	import parity	1,040.09-1,082.42	▲	+8
LLDPE butene Main origin	cfr	960-990	-	0
LLDPE butene All origin	cfr	960-990	-	0
LLDPE butene domestic	import parity	949.38-979.62	▼	-11
LLDPE hexene metal-locene	cfr	1,160-1,200	▲	+25
HDPE HMW film Main origin	cfr	950-980	▼	-5
HDPE HMW film All origin	cfr	950-980	▼	-5
HDPE HMW film domestic	import parity	967.52-985.66	▲	+13
HDPE injection Main origin	cfr	920-950	▼	-5
HDPE injection All origin	cfr	920-950	▼	-5
HDPE BM Main origin	cfr	930-950	▼	-5
HDPE BM All origin	cfr	930-950	▼	-5
Southeast Asia dutiable				
LDPE liner film	cfr	1,040-1,060	-	0
LLDPE butene	cfr	990-1,010	▲	+10
LLDPE hexene metal-locene	cfr	1,090-1,130	▼	-20
HDPE HMW film	cfr	970-1,000	▲	+10
Southeast Asia duty free				
LDPE liner film	cfr	1,160-1,180	-	0
LLDPE butene	cfr	1,060-1,090	▲	+15
LLDPE hexene metal-locene	cfr	1,170-1,190	▼	-20
HDPE HMW film	cfr	1,050-1,070	-	0
Vietnam				
LDPE liner film	cfr	1,040-1,060	▲	+20
LLDPE butene	cfr	980-1,010	-	0
HDPE HMW film	cfr	980-1,010	▲	+5
Indonesia				
LDPE liner film Mideast Gulf origin	cfr	1,040-1,060	-	0
LLDPE butene Mideast Gulf origin	cfr	990-1,010	▲	+10
HDPE HMW film Mideast Gulf origin	cfr	970-990	▲	+10
India				
LDPE liner film	cfr	1,100-1,120	▲	+40
LLDPE butene	cfr	1,080-1,100	▲	+60
LLDPE hexene metal-locene	cfr	1,200-1,220	▲	+20
HDPE HMW film	cfr	1,050-1,070	▲	+50
Pakistan				
LDPE liner film	cfr	1,200-1,240	▲	+40
LLDPE butene	cfr	1,080-1,100	-	0
HDPE HMW film	cfr	1,000-1,030	▼	-5
Bangladesh				
LDPE liner film	cfr	1,120-1,140	-	0
LLDPE butene	cfr	1,070-1,090	-	0
HDPE HMW film	cfr	1,060-1,080	-	0
Sri Lanka				
LDPE liner film	cfr	1,180-1,220	▼	-10
LLDPE butene	cfr	1,080-1,110	▲	+5
HDPE HMW film	cfr	1,080-1,100	-	0
Nepal				
LDPE liner film	cpt	1,250-1,270	▲	+90
LLDPE butene	cpt	1,170-1,190	▲	+70
HDPE HMW film	cpt	1,200-1,220	▲	+90

Notes: Main origin - Price of PE of GCC, Asean, South Korean and Indian origins.
All origin - Price of PE, regardless of origin.

FEEDSTOCKS

Crude oil

Ice Brent crude futures have stabilised just below \$80/bl, which is lower than before the holiday period. Demand concerns have continued to weigh on the market, but there is considerable supply uncertainty as the impact of the EU and G7 embargo on Russian supply into the global market is still uncertain.

Prices for US marker WTI were similarly broadly stable. US crude inventories rose but product inventories eased back.

Ethane

Mont Belvieu EPC ethane prices fell by 6.3pc during the week, falling from 28.75¢/USG on 30 December to 26.9375¢/USG on 5 January. Prices fell along with a decline in natural gas prices.

Naphtha

Naphtha prices have strengthened slightly in early January. Low gasoline prices and export demand outside of Europe encouraged some buying activity, with the naphtha crack to North Sea Dated crude climbing to its strongest since May 2022. The average naphtha price for January so far is €30/t (\$32/t) higher than December's average, but it is too early to draw conclusions for the full month.

Asian naphtha prices were steady. Chinese naphtha imports rose to a four-year high in November, with increased imports from Russia and new crackers starting up. But demand across Asia is weak and driving some cracker operators towards extended shutdowns.

Ethylene

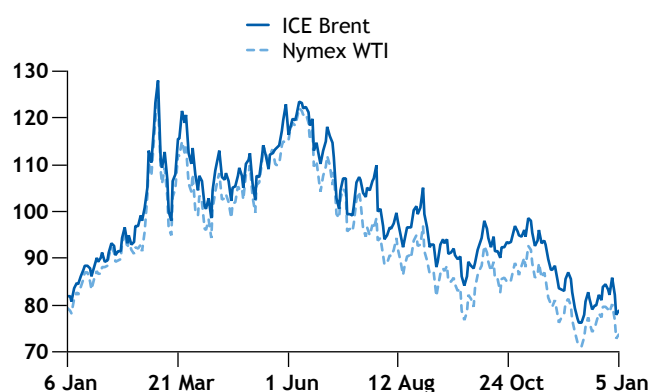
US spot EPC ethylene prices fell at the end of the week, with January EPC ethylene trading six times at 19¢/lb. Spot trading increased tremendously during the week in the wake of multiple production issues and shutdowns stemming from winter weather at the end of December. Argus recorded 268mn lb of physical ethylene trading for December and January in both Texas and Louisiana. Despite the heavy volume, prices were largely stable, with the traded range between 19-19.5¢/lb. The December ethylene contract settled down by 1.5¢/lb to 32.5¢/lb.

The ethylene market in Europe is still quiet after the holiday season. The January monthly contract price (MCP) settled before the end of December with a €95/t decrease that was in line with the average decrease in feedstock naphtha. Spot prices have been adjusted lower, taking direction from the lower MCP but with a wide range reflecting the lack of activity.

Crude				\$/bl	
		Effective date	Price		±
Ice Brent		6 Jan	78.57	▼	-7.34
Nymex WTI		5 Jan	73.67	▼	-6.59
Naphtha				\$/t	
		Effective date	Price		±
70 min paraffin USGC water-borne del		5 Jan	602.48	▼	-18.40
65 para NWE cif		6 Jan	618.00	▼	-5.25
Japan c+f		6 Jan	638.00	▼	-11.38
Ethylene					
	Basis	Effective date	Price		±
del USGC ¢/lb	Dec	4 Jan	32.50	▼	-1.50
del USGC \$/t	Dec	4 Jan	716.50	▼	-33.07
del Europe €/t	Jan	29 Dec	1,175.00	▼	-95.00
del Europe \$/t	Jan	29 Dec	1,255.21	▼	-101.48
cfr NE Asia \$/t	spot	4 Jan	860.00	▼	-10.00

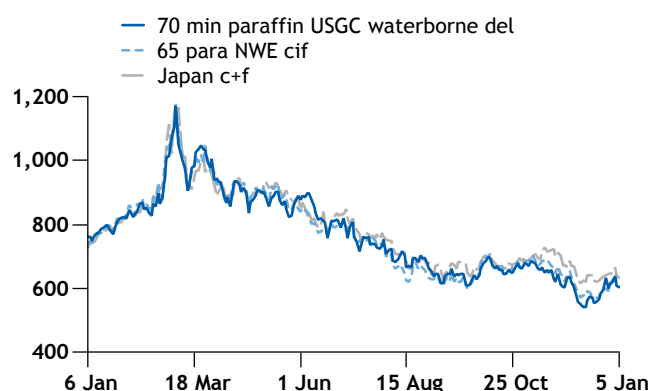
Crude futures

\$/t

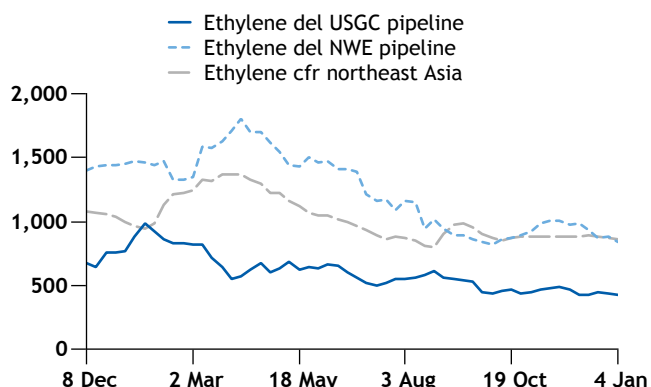


Naphtha spot prices

\$/t



Ethylene spot prices



Market highlight

■ US spot ethylene prices hold fairly steady amid increase in trades.

Asia-Pacific spot ethylene prices fell as demand remains weak while supply lengthened. There was some talk of Japanese ethylene spot availability for February arrival. Selling ideas were indicating at \$870-880/t cfr northeast Asia. Buyers were staying on the sidelines, showing limited buying interest from spot cargoes. Their notional buying ideas were capped at \$850/t cfr China. The overall sentiment has improved in China as market expectations that the Covid-19 peak has nearly passed.

Cracker margins

In the US, the gross margin for cracking ethane in the US Gulf coast region expanded to its highest level in eight months as the cash cost of ethane dropped to its lowest level since September 2021 following a decline in natural gas prices. The cracking margin for ethane widened to 5.7¢/lb during the week, according to an Argus model. US ethane prices have tumbled 29pc since 13 December, falling this week to 28¢/USG, the lowest price since June 2021.

In Europe, the lower January MCP, which settled down by €95/t in line with the average decrease in feedstock naphtha, and the fact that spot and forward power and gas costs have fallen to their lowest levels for eight months should help improve cracker margins. Cracker operators will continue managing operating rates carefully, and while rates may increase, they will be managed carefully to manage the balance of ethylene and co-products.

In Asia-Pacific, feedstock naphtha prices rose to an average of \$651/t cfr Japan this week, up by \$13/t. Propane

\$/t

prices were at an average of \$617/t cfr Japan, up by \$8/t. Naphtha cracker margins stayed in negative territory at minus \$194/t during the week, down by \$38/t. Propane cracker cash margins were also lower at minus \$94/t. The average year-to-date naphtha cracker margin for 2022 settled at minus \$237/t, while propane cracker margins were at minus \$149/t.

PRICING ANALYSIS

US

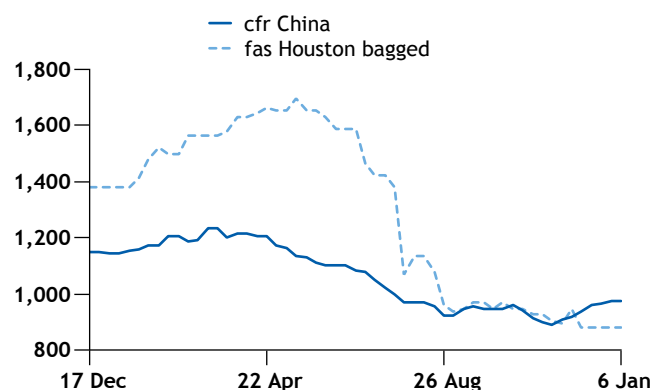
Price direction for US polyethylene (PE) contracts for January is uncertain, with multiple producers nominating increases of between 5-7¢/lb for the month, but buyers anticipating another flat settlement following the largely flat settlement in December. Some non-market adjustments were heard to have taken place for some medium-to-small volume buyers in November and December, but the majority of the market was heard to have settled flat.

Producers argue that prices should increase as global prices are beginning to rise and demand is beginning to return to the market. However, buyers point to healthy availability, and new capacity from Shell and forthcoming capacity from Baystar and Nova later in the year, as a reason why prices should not increase.

PE operations in December remained at reduced levels, with additional shutdowns in the last few weeks related to below-freezing temperatures that hit the US Gulf coast region beginning on 23 December. Ineos Olefins & Polymers declared a force majeure event on high density polyethylene (HDPE) on 28 December due to impacts from the storm. The company declined to comment on the status of the units this week, but market participants said they didn't expect any

US vs China LLDPE film prices

\$/t



US contracts				¢/lb
	Timing	Argus Δ (month-on-month change)	Contract marker	Low / High ±
LDPE liner film	Dec	0.0	96.00	0.0/0.0
LLDPE butene	Dec	0.0	83.00	0.0/0.0
LLDPE hexene	Dec	0.0	85.00	0.0/0.0
LLDPE octene	Dec	0.0	87.00	0.0/0.0
HDPE injection	Dec	0.0	83.00	0.0/0.0
HDPE HMW film	Dec	0.0	83.00	0.0/0.0
HDPE BM	Dec	0.0	84.00	0.0/0.0

US exports				¢/lb
	Basis	Price		±
LDPE liner film	fas/Houston bagged	43-45		nc
LLDPE butene	fas/Houston bagged	39-41		nc
HDPE injection	fas/Houston bagged	38-40		nc
HDPE HMW film	fas/Houston bagged	39-41		nc
HDPE BM	fas/Houston bagged	38-40		nc
LDPE liner film	dap/Laredo railcar	39-42		nc
LLDPE butene	dap/Laredo railcar	35-37		nc
HDPE injection	dap/Laredo railcar	39-41		nc
HDPE HMW film	dap/Laredo railcar	36-38		nc
HDPE BM	dap/Laredo railcar	35-36		nc

major impact, as HDPE grades are fairly available still. It was not immediately clear whether a low density polyethylene (LDPE) unit in Louisiana, which had been heard to have been experiencing operational issues in December, was still down. While other plants were believed to be running at reduced levels at the end of 2022, no other significant operational concerns were heard in the market.

Spot availability was limited during the week, as most producers had cleared out excess inventories in the last few weeks of December. Storm outages could delay additional shipments by at least a few days, so few fresh offers, or fresh prices were hard in the market during the week.

December data from the American Chemistry Council (ACC) is not yet available, but final November data showed year-to-date production is up by 5.4pc, with HDPE up by 4.5pc, LDPE down by -0.1pc and linear low density polyethylene (LLDPE) up by 8pc, according to the ACC's Plastics Industry Producers' Statistics Group as compiled by Vault Consulting.

Year-to-date sales are up by 7.5pc, with exports up by 21.3pc and domestic sales up by 0.6pc over the period. HDPE sales are up by 9.3pc, LDPE sales are up by 6.4pc and LLDPE sales are up by 6pc.

With sales exceeding output in November, producers drew down inventories by around 32mn lb, leaving year-to-date inventories up by around 159mn lb through November.

Demand in December was fairly weak, with multiple

converters taking extended time off for end-of-year holidays. However demand is slowly starting to pick back up in January, as buyers return to reload inventories.

Export prices continued to remain largely steady for now, with traders saying they have heard few fresh offers yet from producers for January. Demand is beginning to pick up slightly, as buyers realize prices have likely reached a bottom and could be on the way up. For now, material is still well accepted in Mexico and other parts of Latin America, as prices are low enough to limit competition from overseas competitors.

Mexico

Mexico demand is starting to pick up slightly with the start of the new year, but with few fresh offers heard in the market, buyers are awaiting a sign of price direction before fully committing. Some aggressive prices were heard in the last weeks of December for linear low density polyethylene (LLDPE) butene and metallocene into Mexico from some US producers, but traders said those low prices appear to have disappeared from the market for now.

Pemex was heard to have resolved its issue with the rail line, and has now resumed shipping rail cars, but their volumes remain limited. Sources said they were offering some LLDPE and some LDPE, but in limited quantities. Material for January was being offered at a slight discount to December levels, which will make the material more competitive with offers from the US.

Import volumes remain largely limited to material from the US for now, with Asia largely out of the picture due to limited volumes and higher prices.

Latin America

The Latin American polyethylene (PE) market was quiet during the first week of the year, with few contracts closed and stable offers from various origins.

Argus heard that high-density polyethylene (HDPE) film offers have returned to the market after a period of short-ages, but at prices considered to be too high.

Indeed, traders in the region predict that prices for the material will generally trend upward in the coming weeks. In the west coast South America (WCSA), an increase of \$40-60/t is expected, with shipments only available in February. Meanwhile, buyers in that region are trying to purchase remaining old stock at lower prices.

US produced material is available to Latin American buyers. Furthermore, a global trader operating in the region reports that Shell has made around 500t of prime material from its new plant available for sale in Latin America this week.

South Korean PE is also available, but its prices are considered too high to be competitive.

On the other hand, offers from the Middle East have practically disappeared for Latin American buyers after being active and competitive in December. According to sources, producers in the Middle East have been focusing on sales to Europe and Asia at the beginning of this year.

In the meantime, Brazil's Braskem decided to do a price rollover for all PE grades in January, after reducing domestic prices in December, and rolling them in November. PE domestic prices cumulate a price contraction from July to January of \$553/t for HDPE, \$648/t for LLDPE, and \$629/t for LDPE, converted by the R\$/USD rate of 5,2433 recorded in December's average.

Braskem said the Triunfo's ethylene/PE ethanol-based units will shut between January and February to conclude the 60,000 t/yr production capacity expansion project, going from 200,000 t/yr to 260,000 t/yr.

From the operational side, PE units are running at reduced rates, with Braskem managing its inventories.

In Argentina, local buyers are still struggling to obtain imported material due to the government's efforts to restrict import licenses and maintain US dollar reserves within the country.

The Argentine Chamber of Chemical Products has expressed concern this week about the lack of approval for import licenses, resulting in local buyers having to obtain material from the only local producer at higher prices.

Europe

The European polyethylene market is slowly waking up after the holiday period. There are indications of improved demand, relative to a weak December, but it is still too early for a clear picture to emerge. January contract price negotiations are getting under way now, with a €95/t reduction in feedstock ethylene contracts the main driver.

Producers will want to use the €95/t decrease in January ethylene contracts to recover some of the steep margin losses in the second half of 2022. But there have been few formal communications to buyers yet. Buyers positions may be more varied. Some are likely to seek at least the monomer decrease to be passed through and some may try to leverage the decrease in utility prices to argue for a larger decrease. But with producers having cut rates in the fourth quarter to manage inventories and stem production of unprofitable tonnes, some converters will be sympathetic to a measured margin recovery if it puts the domestic industry in a more sustainable position.

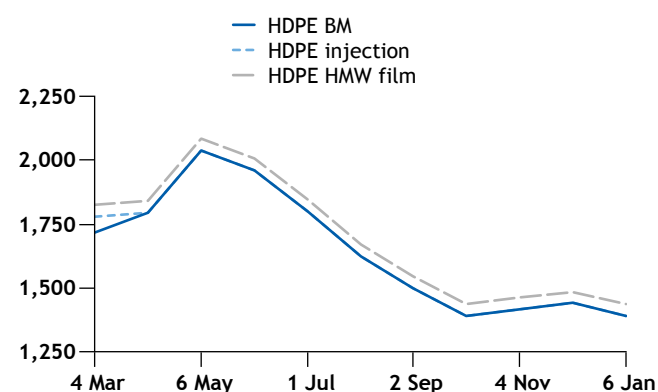
The market remains in a fragile balance, with producers managing operating rates to meet weak demand and maintain disciplined inventory levels after the end of year. Buyers

Western Europe contracts				€/t
	Timing	Argus Δ (month-on-month change)	Contract marker	Low / High ±
LDPE liner film	Dec	-50.0	1,750	-60.0/-30.0
LLDPE butene	Dec	-50.0	1,560	-60.0/-30.0
HDPE injection	Dec	-50.0	1,390	-60.0/-30.0
HDPE HMW film	Dec	-50.0	1,435	-60.0/-30.0
HDPE BM	Dec	-50.0	1,390	-60.0/-30.0

Northwest Europe spot				€/t
	Basis	Price		±
LDPE liner film	del	1,200-1,350	-	0
LLDPE butene	del	1,100-1,200	-	0
HDPE injection	del	1,100-1,200	-	0
HDPE HMW film	del	1,100-1,200	-	0
HDPE BM	del	1,100-1,200	-	0

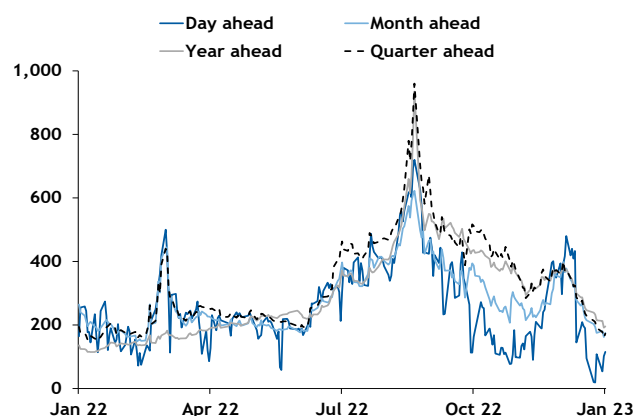
West Europe HDPE contract prices

€/t



German power prices

€/MWh



have few problems covering their core demand at the moment, but the availability of incremental tonnes if demand improves or new supply problems emerge is more limited. There are some continuing plant outages but nothing causing any difficulty for buyers. Production at LDPE and LLDPE-

HDPE units in northern France is planned to resume after maintenance, despite a fire at the neighbouring cracker. In southern France, the restart of another complex with LDPE capacity is continuing.

Gas and electricity prices continued to fall in December, potentially relieving some cost pressures throughout the chain. Mild weather across much of Europe has eroded gas demand, as has lower industrial use. And crucially, with gas inventories relatively high at the start of the year, forward prices for the next month, quarter and year have fallen to their lowest since April 2022.

Even if lower utility prices are sustained, these are unlikely to filter through to household consumers and ease underlying inflationary and demand concerns until the second half of the year at the earliest. But in the short term, there may be some relief on cost pressures at all steps in the value chain, which could help with confidence and reduce competitive disadvantages against other regions.

Producers expect demand to improve in January, relative to a very weak December, as destocking pressure at customers eases. Order books show an improvement, but with many converters taking extended production breaks over the holiday period and in no rush to restart at high rates, it will take a few weeks for a better demand picture to emerge.

Producer and customer inventories are under control because of the production curbs, but warehouse inventories are still heard to be high and import pressures will remain throughout January and February at least. There are no signs yet that the US cold snap has disrupted expected flows from the US, the impact on US operations and the balance being much less than during the 2021 winter storm, and the market situation is very different because of weak demand, rather than the surging global demand previously.

Spot activity has been extremely limited and may take a few weeks to pick up again. Everyone is monitoring the market for indications of how demand may develop in the coming weeks and months, but there is little urgency from buyers or sellers.

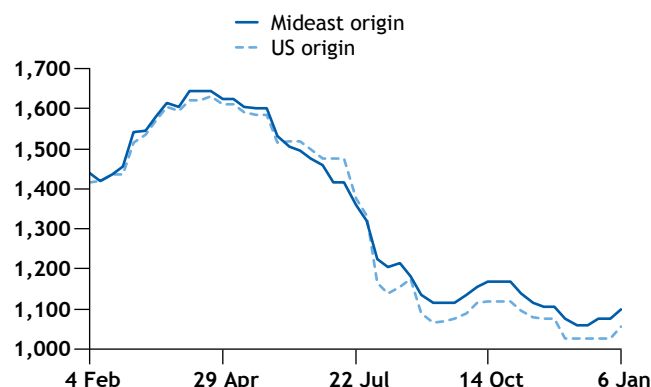
Russia and CIS

Russian markets were inactive due to public holidays.

Russia and CIS domestic			Roubles/t	
Basis	Price			±
LDPE 15803	cpt inc VAT	123,000-130,000	-	0
LDPE 15303	cpt inc VAT	128,000-133,000	▼	-500
LDPE 10803	cpt inc VAT	117,000-121,000	-	0
HDPE injection	cpt inc VAT	112,000-112,000	-	0
HDPE HMW film	cpt inc VAT	112,000-112,000	-	0
HDPE pipe/BM	cpt inc VAT	112,000-123,000	-	0

Turkey LLDPE film prices

\$/t



Turkey

Polyethylene (PE) import prices into Turkey increased this week because of reduced supply in the country and increased low-stock pressure among traders.

The volume of PE offers into Turkey reduced this week as freight rates into India and China are lower than rates to Turkey, offering higher netbacks to Middle Eastern producers and reducing supplies of polymers to Turkey. Producers expect prices to rise further but set against this, demand in Turkey remains low and will curb the increase. In addition to already high energy costs, an increase in the Turkish minimum wage has reduced Turkish converters' competitiveness. And demand for end-product is still low because of the stagnating economic atmosphere in the country. Upcoming national elections in June are another factor making market participants cautious. But reduced stock levels and the need to take a position ahead of the Orthodox and Chinese new year holiday periods has forced some traders to buy more polymer products. Extreme weather conditions did not cause severe disruption to the supply of US-origin material. South Korean producers have started scaling back production, which will continue into the first few months of the new year after a disappointing 2022.

Middle East-origin high density polyethylene (HDPE) film was assessed at \$1,080-1,120/t cfr this week, up by \$30/t on the low end and \$40/t on the high end from last week's assessment. US-origin HDPE film was assessed at \$1,030-1,080/t cfr, up by \$30/t on both ends compared with last week's assessment. Russian material was available at \$1,070-1,090/t cfr and Iran-origin HDPE film was offered at \$1,070-1,100/t cpt.

Middle East-origin HDPE blow-moulding was assessed at \$1,080-1,120/t cfr this week, up by \$30/t on the low end and \$40/t on the high end from last week's assessment. US offers were heard at \$1,010-1,050/t cfr and Iran-origin material was available at \$1,070-1,100/t cpt.

Middle East-origin low-density polyethylene (LDPE) was assessed at \$1,120-1,160/t cfr, up by \$20/t on the low end and \$40/t on the high end compared with last week's assessment. Russian offers were heard at \$1,120/t cfr, and US offers were heard at \$1,100-1,120/t cfr. Offers from Iran emerged at \$1,130-1,170/t cpt and Turkish producer Petkim offered its material at \$1,230-1,240/t, plus value-added tax.

Middle East-origin linear low density polyethylene (LLDPE) butene was assessed at \$1,080-1,120/t cfr, an increase of \$30/t on the low end and \$20/t on the high end from last week. US-origin LLDPE butene was assessed at \$1,030-1,080/t cfr, an increase of \$30/t on both ends from last week. Russian offers were also available at \$1,050-1,080/t cfr and Iranian LLDPE was offered at \$1,070-1,100/t cpt.

Egypt

Polyethylene (PE) import prices in Egypt slightly increased this week on limited trading and the unavailability of letters of credit for new transactions.

The Egyptian market is still adjusting to the revised regulatory and financial environment, following a deal signed with the IMF on 27 October, 2022. The Egyptian pound has since depreciated on a daily basis, while suffering from a third devaluation wave in less than a year this week. Some major suppliers are still holding back from offering material in Egypt owing to the high trading and financial risks. The market remains subdued and procurements are on standby, with buyers unable to obtain letters of credit for new transactions. The term deposit rate on the Egyptian pound has increased to 25pc for 12 months as the Egyptian government aims to suppress surging inflation and prices. The high-risk factor in the country also pushes the prices up and creates a premium with adjacent markets such as Turkey.

Middle East-origin HDPE film prices were assessed at \$1,100-1,150/t cif this week, up by \$40/t on the low end and \$20/t on the high end compared with last week's assessment. Middle East-origin LDPE was assessed at \$1,250-1,350/t cif, an increase of \$50/t on both ends compared with last week's assessment. Middle East-origin LLDPE butene was assessed at \$1,100-1,160/t cif, up by \$40/t on the low end and \$30/t on the high end compared with last week's assessment.

Middle East

Gulf Co-operation Council (GCC) PE prices were stable this week as buyers were carefully considering offers from key producers. Producers were actively trying to raise prices. But buyers were resisting proposed price hikes. Low-density PE (LDPE) film remained at \$1,190-1,210/t del GCC. Producers from Saudi Arabia offered cargoes at \$1,240-1,280/t del. But it could not be confirmed if any deals were done.

Linear LDPE (LLDPE) film was stable at \$1,000-1,050/t del GCC. Cargoes from Oman were offered at \$1,020/t del. Cargoes from a key Saudi producer were offered at \$1,120/t del. Cargoes from the UAE were offered at \$1,170/t del. LLDPE hexene held at \$1,540-1,610/t del GCC. LLDPE octene was assessed stable at \$1,660-1,760/t del GCC.

High-density PE (HDPE) film was rolled over at \$1,020-1,080/t del GCC. An Omani producer offered cargoes of HDPE film and HDPE blow moulding at \$1,020/t del. A key Saudi producer offered cargoes of HDPE film at \$1,100/t del.

PE prices were soft to stable in Jordan and Lebanon. Buyers exercised caution as producers tried to maintain or raise prices. LDPE film held at \$1,250-1,270/t del Jordan/Lebanon. A key Saudi producer initially offered cargoes at \$1,300/t del. But this was later reduced to \$1,260/t del. Deals were done at this level.

LLDPE film was \$20/t higher at \$1,100-1,120/t del Jordan/Lebanon. A key Saudi producer offered cargoes at \$1,150/t del. This was later reduced to \$1,120/t del. Deals were done at this level. HDPE film was \$25/t higher at \$1,060-1,080/t del Jordan/Lebanon. A key Saudi producer initially offered cargoes at \$1,100/t del. This was later reduced to \$1,080/t del. Deals were done at this level.

Participants have been mixed about the current market outlook. Some participants raised concerns that plant shutdowns in the US, resulting from the winter storm, could lead to shortages and push up prices. This would be similar to what happened in 2021 when the winter storm hit the US and forced shutdowns at major PE producers. It resulted in elevated PE prices worldwide for the rest of 2021.

Converters are facing difficulties managing inventory levels. Demand for final goods has been weak in recent months. This prompted weak restocking interest. Some participants are bracing for a potential shortage in the coming months as producers take capacities offline for maintenance works. Others are not too concerned as demand has not increased significantly enough to outweigh supply, even at reduced capacities. Saudi PE producer Yansab, an affiliate of state-owned petrochemical producer Sabic, will start a 53-day turnaround at its petrochemical complex in Yanbu on 10 January. The complex has production capacities for 1.3mn t/yr ethylene as well as 400,000 t/yr of LLDPE and HDPE.

China

Chinese domestic PE markets declined with falling futures and crude. Linear low-density PE (LLDPE) futures on the Dalian Commodity Exchange fell to 8,008 yuan/t on 5 January compared with Yn8,202/t on the first trading day in 2023. Demand remained quiet in January because of the earlier lunar new year holiday this year.

Sentiment was mixed. Market participants, especially

overseas participants, mostly held a positive outlook with China's reopening and expect that demand will pick up in the medium term. But current demand is temporarily subdued by the surge in Covid-19 infections and domestic sentiment remained weak. There are labour shortages in downstream converters, because of high infection rates, and may result in shutdowns. Demand may continue to fall because of the earlier lunar new year holiday this year.

Inventories at major Chinese producers Sinopec and PetroChina rebounded to 575,000t from 490,000t a week earlier, before the new year break. Current inventories were lower compared with 670,000t during the same period last year. Major producers tried to maintain lower inventory levels before the new year and Chinese lunar new year holiday, which will begin earlier than usual on 21 January.

Overseas producers slightly reduced their offers this week. Qatari LLDPE was at offered at \$970/t cfr China. A Saudi producer quoted LLDPE at \$970/t and low-density PE (LDPE) at \$1,050/t. US-origin HDPE film was offered at \$950/t and HDPE blow at \$930/t.

HDPE film prices decreased by \$5/t to \$950-980/t cfr China, while LLDPE were unchanged at \$960-990/t cfr China. Spot LDPE increased by \$10/t to \$1,040-1,080/t cfr China. Offers for duty-free metallocene LLDPE remained at \$1,180/t-1,220/t, with spot trade prices moving up to \$1,160-1,200/t cfr China.

Chinese domestic prices fell along with the futures market. LLDPE fell to Yn8,000-8,250/t. HDPE remained the same at Yn8,150-8,300/t. LDPE film prices dropped by Yn50/t to Yn8,750-9,100/t ex-works in east China.

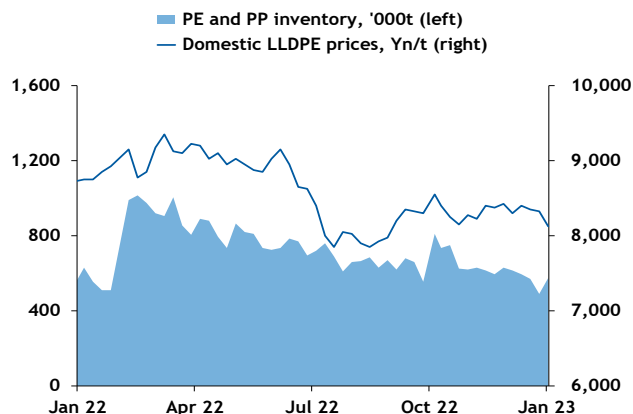
The peak demand season for agricultural film ended with downstream converters cutting their operating rates from a peak level of 60pc. Current operating rates have fallen to 39pc, down by one percentage point from last week. Operating rates in east China's Shandong province were at 40pc, down by three percentage points from last week.

Average operating rates at Chinese PE plants rebounded to 88pc this week with several plants returning on line. Only 2.44mn t/yr of production capacity was shut for maintenance this week. Fujian Refining and Petrochemical shut down its 450,000 t/yr HDPE/LLDPE from 23 December to 12 January. PetroChina Lanzhou's 300,000 t/yr HDPE/LLDPE unit and PetroChina Dushanzi's 120,000 t/yr HDPE/LLDPE unit were shut at the beginning of January.

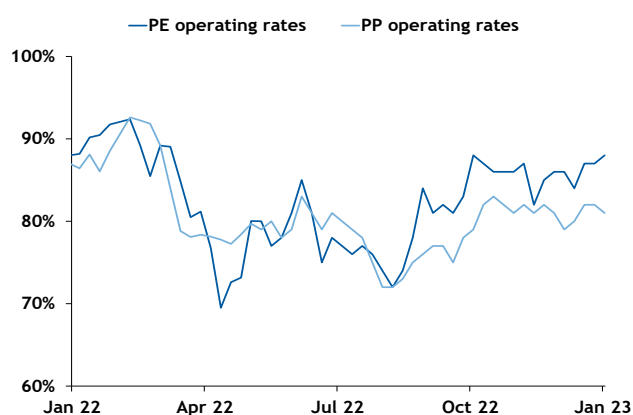
New capacity growth slowed down with delays. Shandong Jinhai's 400,000 t/yr HDPE unit, Guangdong Petrochemical's 400,000 t/yr HDPE and 800,000 t/yr LLDPE/HDPE units, as well as Sinopec Hainan's 300,000 t/yr HDPE and 300,000 t/yr LLDPE/HDPE units have now been delayed to the first quarter of 2023. Another 1mn t/yr of PE capacity is poised

China domestic				Yn/t
	Basis	Price		±
LDPE liner film	ex-works	8,750-9,100	▼	-50
LLDPE butene	ex-works	8,000-8,250	▼	-200
HDPE HMW film	ex-works	8,150-8,300	-	0

Sinopec and PetroChina inventory vs LLDPE prices



China PE, PP plant operating rates



Market highlight

■ Labour shortages at downstream Chinese converters, because of high Covid-19 infection rates, could result in shutdowns.

to start up in 2023, adding to a total of 9.35mn t/yr of new capacity launched during 2021-23.

China's PE export window remained narrow. But exports of PE increased by 10pc from October to 64,840t in November. LDPE and HDPE exports showed noticeable increases at 12pc and 18pc, respectively, over the same period but mainly as a result of re-exporting.

Southeast Asia and Vietnam

Southeast Asian PE prices were stable with limited spot offers and transactions. Most producers and sellers have sold out their allocations for January shipments and new offers for February shipments were not announced yet. Producers with limited PE supplies after continuous production cuts or having planned maintenance in this year's first quarter were trying to raise offers, after seeing improved buying interest.

Sentiment was mixed among regional converters. Some converters have continued resisting price increases and continued to adopt a wait-and-see approach, especially as trading activities in the key Chinese market cool this week approaching the lunar new year holidays. Some converters were keener to replenish PE supplies, with falling inventory levels and expectations of strong seasonal consumption in the first quarter of the year. Vietnamese converters have been replenishing stocks since the past few weeks, possibly to fulfil export orders at the start of the year. In Thailand, PE consumption in the packaging sector is expected to rise should its key tourism sector get a further boost in this year's first quarter, following the return of Chinese tourists. Expectations of stronger consumption in the first quarter and a stronger Thai baht boosted import interest in Thailand.

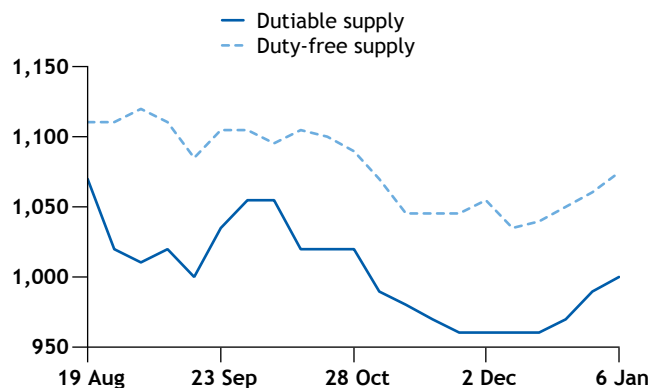
Regional producers were running their upstream cracker and downstream PE plants at reduced rates since last year's fourth quarter, but tighter PE supplies were offset by a seasonal lull in demand. Regional supplies have remained limited with producers maintaining production cuts and supplies from other international producers tightening because of planned maintenances. Buyers have started seeking supplies from new plants like Malaysia's PRefChem. The producer is likely to restart its 350,000 t/yr LLDPE swing unit and 400,000 t/yr HDPE unit in January. Vietnam's Long Son Petrochemical is expected to conduct trial runs at its 500,000 t/yr LLDPE unit from January.

Indonesia's Chandra Asri has continued to operate its upstream cracker and PE plants at 70pc because of continuing issues at its cracker facilities. Thailand's SCG's 800,000 t/yr Rayong-based cracker has remained shut since September last year, with its HDPE production continued to be capped. Malaysia's Lotte Titan has restarted its 220,000 t/yr HDPE unit since late December, with the unit currently operating at around 80pc. Its 115,000 t/yr HDPE unit has continued running at 70pc because of continuing technical issues. Philippines' JG Summit has continued to operate its PE plant at 70pc because of weak production margins.

Dutiable LDPE film prices were stable at \$1,040-1,060/t cfr southeast Asia as a result of limited new offers. Qatari-origin LDPE film offers were made at \$1,050/t levels cfr southeast Asia last week, with deals possibly done. LLDPE

SE Asia LLDPE film prices

\$/t



film prices were raised to \$990-1,010/t cfr southeast Asia, with improved buying ideas. Saudi-origin LLDPE film offers were available at \$1,070/t cfr Thailand and cfr Indonesia but attracted limited buying interest. HDPE film prices rose to \$970-1,000/t cfr southeast Asia with higher deals. Dutiable LLDPE metallocene film prices fell to \$1,090-1,130/t cfr southeast Asia. US-origin LLDPE metallocene film offers were made at \$1,070/t levels cfr southeast Asia, but other details were unclear.

Duty-free LDPE film prices were stable at \$1,160-1,180/t cfr southeast Asia. Thailand- and Malaysia-origin LDPE film offers were made in a wide range of \$1,120-1,180/t cfr southeast Asia. Duty-free LLDPE film prices rose to \$1,060-1,090/t cfr southeast Asia. Philippines-, Thailand- and Singapore-origin LLDPE film offers were at \$1,040-1,100/t cfr southeast Asia, with deals possibly done. HDPE film prices were stable at \$1,050-1,070/t cfr southeast Asia. Thailand-origin HDPE film offers were at \$1,040-1,080/t cfr southeast Asia. Duty-free LLDPE metallocene film prices fell \$1,170-1,190/t cfr southeast Asia, with lower offers.

PE prices held largely stable in Vietnam as a result of limited offers. LDPE film prices rose slightly to \$1,040-1,060/t cfr Vietnam, but overall demand has remained weak. Saudi-origin LDPE film supplies traded at \$1,060-1,070/t cfr Vietnam to consumers. LLDPE film prices were stable at \$980-1,010/t cfr Vietnam. Singapore-origin LLDPE film supplies traded at \$1,030/t levels cfr Vietnam. Saudi-origin LLDPE film offers were at \$1,010-1,030/t cfr Vietnam. Russia-origin LLDPE film offers were at \$985/t cfr Vietnam. HDPE film prices rose slightly to \$980-1,010/t cfr Vietnam. Saudi-origin HDPE film offers were at \$990-1,020/t cfr Vietnam.

South Asia

Indian PE prices rose this week as demand remained firm. LDPE film was \$40/t higher at \$1,100-1,120/t cfr India. Cargoes from the Middle East were offered in this range with deals done. LLDPE film was \$60/t higher at \$1,080-1,100/t cfr

India. Cargoes from the Middle East were offered at \$1,100/t cfr. LLDPE hexene was \$20/t higher at \$1,200-1,220/t cfr, following the increase in LLDPE film prices. HDPE film was \$50/t higher at \$1,050-1,070/t cfr India. Cargoes from the Middle East were offered in this range with deals concluded.

Indian buyers continued restocking this week as converters were eager to replenish inventories. Trading firms noted the increase in demand for prompt cargoes in local markets. Converters were willing to pay additional premiums on cargoes from traders compared with cargoes from local producers. This has been driven by increased demand for final goods locally. Converters manufacturing final goods for export markets continue to face challenges in securing orders as demand for final goods has been weak overseas, especially from customers in the west of Suez.

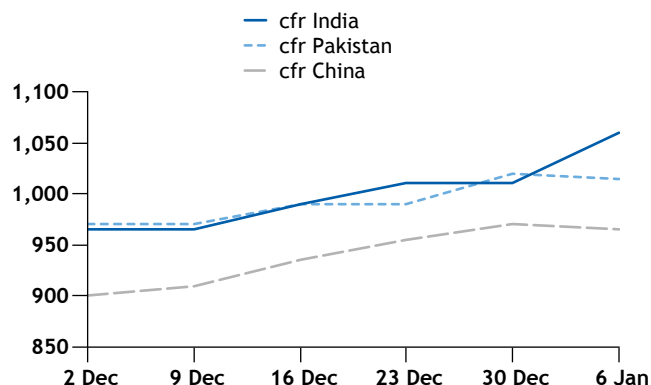
Production in India has been stable, with minimal disruptions. IOC restarted its 350,000 t/yr LLDPE/HDPE swing plant and 300,000 t/yr HDPE plant in Panipat in the middle of December. Participants expect the producer to resume full operating rates by the end of January. This is expected to bolster domestic supplies to balance demand. State-controlled Haldia Petrochemicals faced technical issues at its plant in West Bengal in December. Production was shut briefly to rectify the issue. The producer has since resumed production. Haldia operates a 330,000 t/yr LLDPE plant and a 615,000 t/yr LLDPE/HDPE swing plant.

Pakistani PE was mixed this week as negotiations continued for January shipments. LDPE film was \$40/t higher at \$1,200-1,240/t cfr Pakistan. Cargoes from two Saudi Arabia producers were offered at \$1,200/t and \$1,240/t cfr. Deals were concluded for these cargoes. Buyers were keener on restocking LDPE film inventories as supplies have been limited in recent months. Converters were looking to replenish depleted inventories. LLDPE film was stable at \$1,080-1,110/t cfr Pakistan as spot offers were limited. A key Saudi producer last week offered cargoes at \$1,100/t cfr for January shipment. HDPE film edged \$5/t lower to \$1,000-1,030/t cfr Pakistan. Deals for cargoes from Saudi Arabia were done at this level.

Restrictions on letters of credit (LCs) continue to limit import purchases for Pakistan buyers. Banks have verbally informed customers of their intention to reduce LC quotas because of worsening trade balances and tight US dollar availability. Buyers have not been able to purchase large volumes to hedge against a potential rally in polymer prices. Participants were initially expecting regular openings of LCs for imports of polymers to drop by around 50pc. But with new indications from banks, this is now expected to fall by around 75pc. Sellers to Pakistan have exercised caution and now require buyers to furnish LCs with confirmation. Some

South Asia vs China HDPE prices

\$/t



trading firms and distributors have stopped sales to Pakistan altogether and diverted these initially planned allocations to other regions. Trading firms that continue to focus on Pakistan are mainly firms with excess supplies that are looking to destock aggressively.

Bangladeshi PE prices were rolled over as spot offers stayed limited. LDPE film remained at \$1,120-1,140/t cfr Bangladesh. LLDPE film held at \$1,070-1,090/t cfr Bangladesh. HDPE film was stable at \$1,060-1,080/t cfr Bangladesh. Cargoes from Saudi Arabia were offered at \$1,080/t cfr.

Sri Lanka's PE prices were mixed as negotiations continued for December. LDPE film edged \$10/t lower to \$1,180-1,220/t cfr Sri Lanka. Cargoes from Qatar were offered at \$1,180/t cfr. LLDPE film was \$5/t higher at \$1,080-1,110/t cfr Sri Lanka. Cargoes from Qatar were offered at \$1,110/t cfr. Cargoes from the UAE were offered at \$1,145/t cfr. But some participants deemed this to be too high. HDPE film remained at \$1,080-1,100/t cfr Sri Lanka. Cargoes from Qatar were offered at \$1,080/t cfr. Cargoes from Saudi Arabia were offered at \$1,100/t cfr.

Nepalese PE values rose sharply this week as producers were short on allocations to Nepal. Producers were actively chasing higher netbacks in India and did not have sufficient cargoes left over for Nepalese buyers. LDPE film was \$90/t higher at \$1,250-1,270/t cfr Nepal. Cargoes from India were offered at \$1,190/t fob, with shipping costs at around \$80/t. A key Saudi producer offered cargoes at \$1,250/t cif Kolkata. But it is likely that deals were done at lower levels.

LLDPE film was \$70/t higher at \$1,170-1,190/t cfr Nepal. A key Saudi producer offered cargoes at \$1,120/t cif Kolkata. Cargoes from India were offered at \$1,140/t fob and \$1,170/t fob. Shipping costs ranged between \$50-80/t for these cargoes. HDPE film was \$90/t higher at \$1,200-1,220/t cfr Nepal. A key Saudi producer offered cargoes at \$1,150/t cif Kolkata. Shipping costs for deliveries from India's port of Kolkata to Nepal's dry port of Birgunj were at \$70/t.

FUNDAMENTALS

Global production news

US Gulf coast ethylene units begin post-storm thaw

US ethylene spot prices rose slightly today on the first day of trading after more than a dozen Gulf coast ethylene units shut down amid a burst of sub-freezing weather.

US spot EPC ethylene at Mont Belvieu, Texas, for December traded at least three times at 19.75¢/lb in morning trading, up by 0.5¢/lb from its prior assessment. By the afternoon, another December EPC ethylene deal traded lower at 19.5¢/lb.

Operators of Gulf coast ethane and liquefied petroleum gas (LPG) crackers approached last week's freeze differently, with some shutting down fully ahead of the cold weather, others reducing rates, and still others seeing unplanned upsets as they tried to continue to run.

Motiva Chemical's 700,000 metric tonne (t)/yr mixed-feed cracker in Port Arthur, Texas, had an unplanned shutdown as a result of the freeze, but began restart activities on 26 December, according to a company filing with the Texas Commission on Environmental Quality (TCEQ). That process should run through 31 December.

Chevron Phillips Chemical began to restart its two Cedar Bayou, Texas, crackers on 24 December after shutting them down ahead of the freeze. Start up of the 871,000 t/yr mixed-feed cracker and the larger 1.725mn t/yr ethane cracker is expected to last until 31 January, per a company filing with TCEQ.

Formosa Plastic fared better than most, with reductions in operating rates on its 862,000 t/yr mixed-feed OL-2 cracker and its 1.25mn t/yr OL-3 ethane cracker. The 771,000 t/yr mixed feed OL-1 unit has been shut since July.

High inventory and sluggish demand have helped the US ethylene market avoid a post-freeze price-spike on the scale seen in the wake of the freeze that hit the region in January 2021, when prices rose by 107pc from 28.5¢/lb in late January to a record-high 64.25¢/lb by early March. That freeze also helped plant operators prepare and take seriously the threat of freezing temperatures.

"I was on the phone with my operations team all through Christmas," said one market participant, "but we thankfully got through this with just rate reductions."

S Korea's Hyundai Chemical to shut cracker in February

South Korean petrochemical producer Hyundai Chemical is considering shutting its Daesan-based heavy residual cracker in February, probably for 3-5 months amid persistently eroding cracker production margins.

The producer is aiming to shut its 900,000 t/yr cracker with 450,000 t/yr propylene output, likely from first half of February to end of June. But the exact dates are still under discussion, according to market sources. Downstream units including a 850,000 t/yr polyethylene plant and 500,000 t/yr polypropylene line will also shut because of an absence of feedstock olefins during the cracker shutdown.

Most crackers in South Korea, if not all, are operating their crackers at a reduced rates because of thinning cracker margins since early last year. Cracker margins have been under pressure despite producers cutting cracker rates to reduce olefins output because of weak downstream demand and high feedstock prices. Average naphtha cracker-based margins in 2022, according to Argus calculations settled at a negative \$237/t, a far cry from \$96/t in 2021 and \$310/t in 2020.

Selected cracker operators in Asia are either mulling full shutdowns or extending their cracker turnarounds. South Korea's YNCC is extending its No.3 Yeosu-based cracker shutdown to end of February. Thailand's SCG is also extending its Rayong Olefins cracker shutdown in Map Ta Phut from September to at least mid-January. Taiwan's Formosa will likely keep its No.2 cracker in Mailiao shut for the first quarter of 2023. Philippine's JG Summit is aiming to shut its Batangas-based cracker again in the first quarter of the year because of weak margins.

Hyundai Chemical is a joint venture between Hyundai Oilbank and Lotte Chemical. The company started up its cracker in November 2021.

Japan's Nov cracker rates hit 9-year lows

Japan's average cracker operating rates in November fell to a nine-year low because of weaker domestic and export demand for petrochemical products.

Average cracker operating rates in November were 82.2pc, lower by 12.9 percentage points compared with a year ago and by 2.6 percentage points from October, according to the Japan Petrochemical Industry Association (JPCA).

Operating rates remained below 90pc for four consecutive months, indicating continuous weakness in petrochemical consumption and the Japanese economy. There were no cracker turnarounds in November 2022 and in November 2021.

Rising prices for corporate goods hampered production, while higher commodity prices and a weak Japanese yen curbed demand for consumer goods in November. Domestic polymer shipments for packaging and general consumer goods in November fell from the previous year. Limited car production owing to semiconductor shortages also pressured petrochemical demand, JPCA said. Economic slowdowns in

Plant maintenance, outages and disruptions							
Status	Plant	Location	Grade	Capacity '000t/yr	Duration	Remarks	Source
	Gazprom Neftekhim Salavat	Russia	LDPE	46	1 Aug - 10 Sep	Planned maintenance	Producer
	Ufaorgsintez	Russia	LDPE	90	30 Aug for a month	Planned maintenance	Producer
	Kazanorgsintez	Russia	HDPE	510	20 Sep - 10 Oct	Planned maintenance	Producer
	Stavrolen	Russia	HDPE	300	1 Oct for two weeks	Planned maintenance	Producer
UPDATE	Petro Rabigh	Saudi Arabia	LDPE	160	Dec 2022 for 45 - 50 days	Planned maintenance	Industry
	Yansab	Saudi Arabia	LLDPE/HDPE	400	10 Jan for 53 days	Planned maintenance	Producer
	Yansab	Saudi Arabia	HDPE	400	10 Jan for 53 days	Planned maintenance	Producer
	Equate	Kuwait	LLDPE/HDPE	990	20 Jan - 20 Feb	Planned maintenance	Producer
	OPAL	India	HDPE	340	End Aug	Plant is operating at 85pc	Industry
	OPAL	India	LLDPE/HDPE	720	End Aug	Plant is operating at 85pc	Industry
	Gail	India	HDPE	120	1 Oct	Shutdown due to limited gas availability	Industry
	Gail	India	HDPE	120	1 Oct	Shutdown due to limited gas availability	Industry
	Gail	India	HDPE	250	1 Oct	Shutdown due to limited gas availability	Industry
	Gail	India	LLDPE/HDPE	210	1 Oct	Shutdown due to limited gas availability	Industry
	Gail	India	LLDPE/HDPE	400	1 Oct	Shutdown due to limited gas availability	Industry
UPDATE	Sinopec Zhenhai Phase 2 No.2	China	HDPE	300	5 Mar 2022 - Jan 2023	Maintenance extended	Producer
UPDATE	Haiguo Longyou	China	LLDPE/HDPE	400	Early Apr 2022 - Jan 2023	Maintenance	Producer
UPDATE	Wanhua Petrochemical	China	HDPE	350	12 Nov 2022 - Jan 2023	Maintenance	Producer
UPDATE	Sinopec Yanshan	China	HDPE	80	End Nov 2022 - Jan 2023	Maintenance	Producer
NEW	Fujian Refining and Petrochemical	China	LLDPE/HDPE	450	23 Dec 2022 - 12 Jan 2023	Maintenance	Producer
NEW	Zhejiang Petrochemical Phase 1	China	HDPE	300	24 Dec for one month	Maintenance	Producer
NEW	PetroChina Dushanzi	China	LLDPE/HDPE	120	1 Jan for a few days	Maintenance	Producer
NEW	PetroChina Lanzhou	China	LLDPE/HDPE	300	3 Jan for 5 days	Maintenance	Producer
NEW	PetroChina Daqing	China	LLDPE	70	5 Jan for a few days	Maintenance	Producer
NEW	Sinopec Qilu	China	HDPE	70	5 Jan for a few days	Maintenance	Producer
UPDATE	Thai Polyethylene	Thailand	HDPE	920	Mid-Sep 2022 - Jan 2023	Plant is expected to operate at reduced rates alongside upstream 800,000 t/yr cracker shutdown	Industry
UPDATE	Lotte Chemical Titan	Malaysia	HDPE	115	End Sep 2022	Plant is operating at 70pc	Producer
NEW	Lotte Chemical Titan	Malaysia	HDPE	220	Jan	Plant is operating at 80pc	Producer
NEW	Lotte Chemical Titan	Malaysia	LDPE	230	Jan	Plant is operating at 90pc	Producer
NEW	Chandra Asri	Indonesia	LLDPE/HDPE	400	Jan	Plant is operating at 70pc	Industry
NEW	Chandra Asri	Indonesia	HDPE	336	Jan	Plant is operating at 70pc	Industry

China, the US and Europe reduced export demand in November, especially with the impact of the zero Covid-19 policy in China.

Production of ethylene in November dropped by 13.7pc from a year earlier to 470,700t. Output of low-density polyethylene fell by 16.2pc to 105,300t, while polypropylene decreased by 15.3pc to 180,900t. Polyvinyl chloride production declined by 15.9pc to 109,600t. Output of ethylene glycol also fell by 47.3pc to 24,500t, while acrylonitrile edged down by 3.9pc to 34,200t. Styrene-butadiene rubber production dropped by 48.5pc to 18,500t.

Aromatics output also fell, with xylene down by 10.7pc to 403,100t and benzene declining by 21pc to 248,300t. Toluene production also dropped by 11.4pc to 116,100t.

Japan's ethylene output to recover in 2023-24: IEEJ

Ethylene production in Japan is likely to recover in the April 2023-March 2024 fiscal year, but will remain lower than in

2021-22, according to government-affiliated energy think-tank the Institute of Energy Economics Japan (IEEJ).

The IEEJ expects ethylene production to rise by 2.3pc over the year to 6mn t in 2023-24 as there will be fewer cracker turnarounds. Output in 2022-23 is estimated at 5.9mn t, 3.7pc lower than output in 2021-22, and under 6mn t for the first time since 1993. But domestic demand could rebound with a recovery in industrial activities, the IEEJ said.

Japan's average cracker operating rates during April-November 2022 were at 87pc, 8 percentage points lower than the average in 2021-22, data from the Japan Petrochemical Industry Association (JPCA) shows. Ethylene output in April-November 2022 totalled 3.6mn t, down by 14pc from the same period a year ago.

Japan's average cracker operating rates in November fell to a nine-year low as a result of weaker domestic and export demand for petrochemical goods, and were below 90pc for

New start-ups							
Status	Plant	Location	Grade	Capacity '000t/yr	Start-up	Remarks	Source
UPDATE	Shell Polymers	US	LLDPE	500	3Q 2022		Industry
UPDATE	Shell Polymers	US	HDPE	550	3Q 2022		Industry
UPDATE	Shell Polymers	US	HDPE	550	3Q 2022		Industry
UPDATE	Bayport Polymers	US	HDPE	625	4Q 2022		Industry
	Nova Chemicals	Canada	LLDPE	500	End 2022		Industry
UPDATE	Shandong Jinhai Petrochemical	China	HDPE	400	1Q 2023	Delayed from late 2022	Producer
UPDATE	Guangdong Petrochemical	China	LLDPE/HDPE	800	1Q 2023	Delayed from late 2022	Producer
UPDATE	Guangdong Petrochemical	China	HDPE	400	1Q 2023	Delayed from late 2022	Producer
UPDATE	Sinopec Hainan	China	LLDPE/HDPE	300	1Q 2023	Delayed from late 2022	Producer
UPDATE	Sinopec Hainan	China	HDPE	300	1Q 2023	Delayed from late 2022	Producer
	Qinghai Damei	China	LLDPE/HDPE	300	2023	Delayed from 2021	Producer
	China Coal Yulin	China	HDPE	350	2023		Producer
	Ningxia Baofeng Phase 3	China	HDPE	400	Jun 2023		Producer
	Ningxia Baofeng Phase 3	China	LDPE	250	Jun 2023		Producer
	HPCL-Mittal Energy Limited	India	LLDPE/HDPE	800	1Q 2023	Start-up delayed from 4Q 2022	Producer
	HPCL-Mittal Energy Limited	India	HDPE	450	1Q 2023	Start-up delayed from 4Q 2022	Producer
UPDATE	JG Summit Petrochemical	Philippines	HDPE	250	Nov 2022	Started trial runs in mid-November Plant is shut after a fire at the Pengerang Integrated Complex, expected to restart in January 2023	Industry
UPDATE	PRefChem	Malaysia	LLDPE/HDPE	350	Aug 2023	Plant is shut after a fire at the Pengerang Integrated Complex, expected to restart in January 2023	Industry
UPDATE	PRefChem	Malaysia	HDPE	400	Sep 2022	Plant is shut after a fire at the Pengerang Integrated Complex, expected to restart in January 2023	Industry
UPDATE	Long Son Petrochemical	Vietnam	LLDPE	500	1H 2023	Trial runs expected in January 2023	Producer
	Long Son Petrochemical	Vietnam	HDPE	450	1H 2023		Producer

four consecutive months, implying weakness in the Japanese economy. Japan's petrochemical industry has been hit by the Russia-Ukraine conflict, China's Covid-19 restrictions, limited domestic car output and reduced commodity demand on the back of a weaker Japanese yen, the JPCA said.

China's Nov naphtha imports hit high, more from Russia

Chinese naphtha imports hit a fresh high of 341,000 b/d in November, supported by deliveries from Russia rising to the highest in nearly four years, mainly to meet cracker demand.

The country's naphtha imports have been on an upward trend since June but dipped in October, before rising by 34.2pc on the month to the highest in at least five years in November, customs data show. The November imports were also up by 171.3pc from 125,500 b/d a year earlier.

This was supported by deliveries from Russia rising to a near four-year high of 70,000 b/d, accounting for around 21pc of total Chinese naphtha imports last month. Shipments from Russia were last higher in pre-Covid February 2019, at 72,000 b/d. Gasoline blenders in China could have profited from taking Russian naphtha that is trading at deep discounts to non-Russia origin cargoes because of low demand for Russia-origin product, market participants said.

The spike in total imports could be a result of new major naphtha-fed crackers starting up in China in recent months. These include private-sector Zhejiang Petrochemical's 1.4mn t/yr No.3 cracker that started up in late August, private-se-

tor Shenghong Petrochemical's 1.1mn t/yr Lianyungang-based cracker that achieved on-specification ethylene production on 1 December and plans by state-controlled Sinopec Hainan Petrochemical to run its 1mn t/yr cracker in late December.

Chinese cracker operating rates stood at around 85-90pc in November, which could have led to higher demand for light naphtha as a cracker feed during the month. Most crackers in China are part of integrated refinery complexes, which means they get their feedstock naphtha from refineries. But domestic supplies may not be sufficient for some large crackers, which will then have to import feedstock from elsewhere to cover their requirements, a Taiwan-based trader told *Argus*.

Light naphtha, which is used in the cracking pool, made up around 48.8pc of China's total naphtha imports in November, data from oil analytics firm Vortexa show. China also imported heavier grades such as heavy naphtha and full-range naphtha. Full-range naphtha made up about 35.8pc of the total arrivals in November, while about 15.5pc were of heavy naphtha.

These heavier grades are not used for cracking but likely used to produce aromatics such as benzene, toluene and xylene, the Taiwan-based trader said. China could have also imported heavier naphtha grades for gasoline blending, which is in turn exported, market participants said.

Chinese oil product exports hit a 17-month high in November, customs data show, after China issued its fifth

batch of product export quotas for this year at the end of September. Gasoline exports from China in particular rose to an 18-month high of 420,000 b/d in November, up by 84.5pc compared with a year earlier.

Packaging and downstream applications

Spanish plastic tax comes into force

Spain has implemented a plastic packaging tax of €450/t on the manufacture and import of plastic non-reusable packaging material, effective from 1 January.

Plastic packaging that can be refilled or reused are exempt from the tax. Single-use plastic packaging that contains recycled content from either mechanical or chemical recycling is also exempt, although recycled content should be certified by an accredited entity.

The tax has been implemented following significant debate, opposition and uncertainty from the industry. Some market participants were hoping the tax would be postponed again, having previously been delayed twice. Even late into December, some sectors were applying significant pressure to delay the implementation further.

The tax is expected to create over €700 million in revenue according to environmental campaign group Greenpeace's estimations.

Viewpoint: US polymer recyclers see weak 2023 market

Falling virgin polymers prices have significantly driven down demand and prices for US recycled polymers in the last part of 2022, and some market participants expect those conditions to continue into early 2023, largely for reasons outside of the industry's control.

"Most of our issues are just fundamentals, not event-driven issues," one producer said. "We've gotten numb to the aftereffects of economic issues caused by the Ukraine war, and inflation is continuing to cause demand to drop."

US-recycled polymer supply is falling as cooler weather brings down consumption of plastic bottles, but bale and recycled resin prices remain volatile and low because of reduced consumer demand.

Falling prices for virgin polymers have also pressured recycled polymer prices. High-density polyethylene (HDPE) blow-molding FAS Houston prices have fallen by 45pc since May to 39¢/lb. Virgin polypropylene has followed a similar trajectory.

A market segment that has been hit particularly hard is the decking and piping industry. Reduced demand and thin margins are expected by participants to continue into 2023, as rising mortgage rates have slowed and housing starts and construction. Housing starts in October fell by 6.1pc from September and housing completions fell by 6.4pc, according to US Census Bureau statistics. Housing construction could

slow further in 2023, putting more pressure on demand for recycled polymer piping and decking.

"It feels like earlier this year, we were running at 90 miles per hour, and now we're at 70," one market participant said. "It's like everything is still working, but has slowed to a crawl."

But some buyers are largely positive about the future, highlighting the start of new recycling operations that add to the supply of recycled material, although supply is not yet expected to increase to the point where sourcing will not be a regular concern for some buyers.

"Markets have been like this before," one participant said. "This level of pricing and demand is not too far out of the norm if you look more than two years in the past. But after many of us hit record prices earlier this year, it feels different."

Recyclers generally agree that prices and demand have likely hit a floor, but many see concerns about high inflation and a possible recession as preventing a demand surge at the start of the new year.

"We're near the bottom if we're not already past it," one recycler said. "There could be a little bit of a bump at the beginning due to seasonal effects in 2023, but it will all depend on the economy."

recycled polymers prices are still highly influenced by virgin polymer prices, despite a spate of recycling commitments made by multinational conglomerates and large US companies. As some of the corporate commitments have been waylaid, delayed, and dropped, according to a November report by the Ellen MacArthur Foundation, low virgin polymers prices are expected to continue putting downward pressure on recycled plastics prices and demand throughout 2023.

Economic view

China's business confidence fell to its lowest since January 2013, a survey by World Economics showed, reflecting the impact of surging Covid-19 cases on economic activity with the abrupt lifting of many pandemic control measures. The index fell to 48.1 in December from 51.8 in November, showed the World Economics' survey of sales managers at over 2,300 companies conducted in the first half of December. The index was the lowest since the survey began in 2013. But next year could see some improvement. China's top leaders said they will focus on boosting the economy next year, hinting at business-friendly policies, further support for the property market while likely scaling back fiscal stimulus. At a recent two-day Central Economic Work Conference, Chinese president Xi Jinping and other senior officials pledged to revive consumption and support the private sector, a marked shift from recent years.

Euro zone gross domestic product (GDP) grew by slightly

Global polymer freight rates						\$/t
Origin	Destination	Argus Low	Argus High	±	Source	
Americas						
Houston	Shanghai	32	45	▲	Freightos Derived	
Houston	Mersin	52	52	-	Freightos Derived	
Houston	Genoa	36	55	-	Freightos Derived	
Houston	Valencia	36	53	▲	Freightos Derived	
Houston	Antwerp	24	40	▼	Freightos Derived	
Houston	Santos	37	65	▼	Freightos Derived	
Houston	Buenos Aires	47	71	-	Freightos Derived	
Houston	Buenaventura	102	106	▼	Freightos Derived	
Houston	Callao	102	111	-	Freightos Derived	
Houston	Guayaquil	102	107	-	Freightos Derived	
Houston	Valparaiso	129	152	▼	Freightos Derived	
Santos	Rotterdam	91	91	-	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	6	16	-	Freightos Derived	
Jebel Ali	Singapore	8	8	-	Freightos Derived	
Jebel Ali	Melbourne	188	194	-	Freightos Derived	
Jebel Ali	Tauranga	176	192	-	Freightos Derived	
Jebel Ali	Antwerp	43	56	-	Freightos Derived	
Jebel Ali	Buenaventura	184	184	-	Freightos Derived	
Jebel Ali	Callao	181	181	-	Freightos Derived	
Port Said	Mersin	10	15	-	Freightos Derived	
Port Said	La Spezia	15	25	-	Freightos Derived	
Port Said	Antwerp	25	35	-	Freightos Derived	
Southeast Asia						
Singapore	Karachi	40	59	▲	Freightos Derived	
Singapore	Mumbai Nhava Sheva	32	56	-	Freightos Derived	
Singapore	Colombo	35	50	▲	Freightos Derived	
Singapore	Melbourne	81	105	-	Freightos Derived	
Singapore	Tauranga	187	214	-	Freightos Derived	
Vung Tau	Antwerp	107	136	▼	Freightos Derived	
Vung Tau	Genoa	117	129	▼	Freightos Derived	

Global polymer freight rates						\$/t
Origin	Destination	Argus Low	Argus High	±	Source	
Northeast Asia						
Busan	Mersin	83	144	▲	Freightos Derived	
Busan	Koper	121	136	▲	Freightos Derived	
Busan	Genoa	107	119	▲	Freightos Derived	
Busan	Valencia	113	138	▲	Freightos Derived	
Busan	Antwerp	55	87	▼	Freightos Derived	
Busan	Durban	170	210	-	Freightos Derived	
Busan	Santos	65	69	-	Freightos Derived	
Busan	Buenaventura	64	66	▼	Freightos Derived	
Busan	Callao	64	66	▼	Freightos Derived	
Busan	Melbourne	48	48	-	Freightos Derived	
Busan	Tauranga	95	108	▲	Freightos Derived	
Shanghai	Nagoya	21	21	-	Freightos Derived	
Shanghai	Laem Chabang	5	11	▼	Freightos Derived	
Shanghai	Port Klang	8	13	▼	Freightos Derived	
Shanghai	Karachi	40	65	▲	Freightos Derived	
Shanghai	Mumbai Nhava Sheva	27	63	-	Freightos Derived	
Shanghai	Chennai	39	67	▲	Freightos Derived	
Shanghai	Colombo	44	65	▲	Freightos Derived	
Shanghai	Chittagong	75	95	-	Freightos Derived	
Shanghai	Mersin	98	135	▲	Freightos Derived	
Shanghai	Koper	127	145	▲	Freightos Derived	
Shanghai	Genoa	101	122	▼	Freightos Derived	
Shanghai	Valencia	99	137	-	Freightos Derived	
Shanghai	Antwerp	53	82	▲	Freightos Derived	
Shanghai	Rotterdam	48	83	▲	Freightos Derived	
Shanghai	Durban	175	189	-	Freightos Derived	
Shanghai	Santos	61	69	▲	Freightos Derived	
Shanghai	Manzanillo	57	62	-	Freightos Derived	
Shanghai	Buenaventura	53	58	▼	Freightos Derived	
Shanghai	Callao	58	61	▼	Freightos Derived	
Shanghai	San Antonio, Chile	58	62	▼	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.

more than initially estimated, data from the European statistics agency Eurostat showed, with household spending and business investment propping up the economy. Eurostat said GDP growth in the third quarter was 0.3pc in the 19-country euro area in the July-September period from the previous quarter and 2.3pc year-on-year, above its flash estimates of 0.2pc and 2.1pc published in mid-November.

The US economy showed signs of slowing with retail sales and manufacturing dropping in November, but the labor market remained resilient as employers largely hold onto workers. Retail sales fell in November by the most in nearly a year in a broad-based decline reflecting the strain of inflation and a shift toward spending on services. Several factory

gauges showed contraction, burdened by higher borrowing costs and weaker demand.

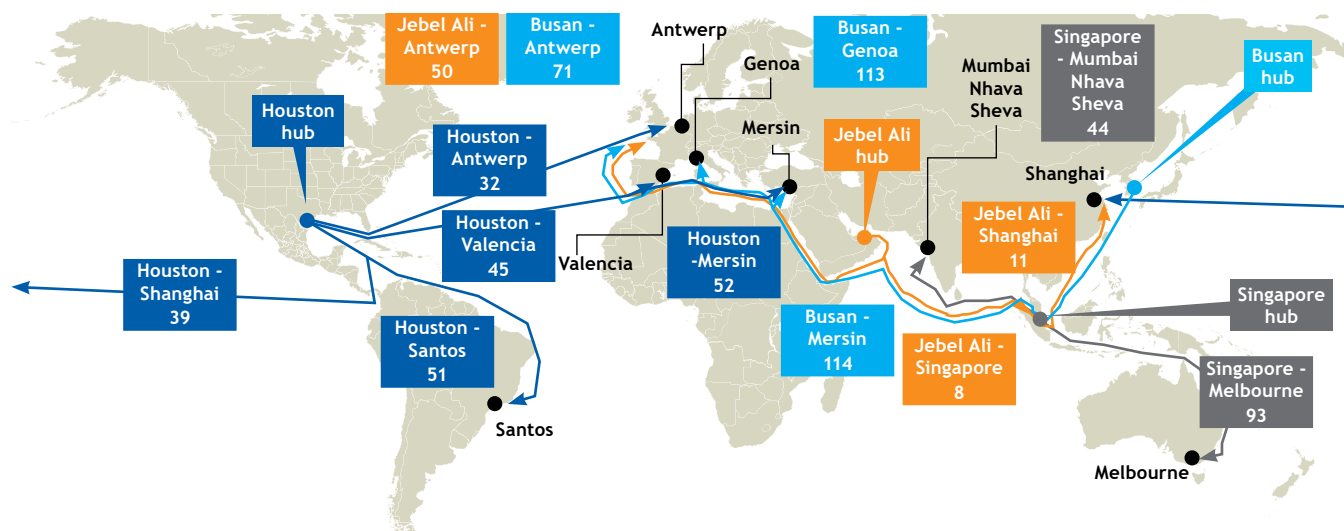
Currency

The US Dollar has seen mixed movement amid widespread market uncertainty.

Supply chain and shipping

China is easing the handling of Covid-19 as restrictions are being lifted. The easing of restrictions is expected to improve the efficiency of the supply chain, according to shipping experts. A more efficient supply chain, in addition to soft demand due to fear of recession, is expected to put

POLYETHYLENE ROUTES BY EXPORTING PORT



a downward pressure in spot rates in the following months, according to analysts.

Long-term rates will drop faster as older, much more expensive contracts expire and new, much lower contracts are signed, some analysts say. But long-term freight rates are not expected to fall below spot rates during the first half of 2023, according to shipping experts.

More ships added to California shore power law

Additional vessel types will now have to comply with California emissions measures aiming to curb particulate matter and nitrogen oxide emissions.

Container ships, cruise and refrigerated cargo ships visiting California ports, such as Los Angeles and San Francisco, are required to adopt a method to cut their emissions as of 1 January 2023.

Shipowners will most likely comply with this regulation by plugging into shoreside power, which is also known as cold ironing. This enables a ship to be plugged into electric power while docked at a port and to turn off its engine, keeping the vessel in operation. If a ship is not equipped with shore power capability, a shipowner can apply for a temporary exception to the California Air Resources Board, the state agency in charge with implementing this law.

This initiative was originally passed in 2007 and went into effect in 2014. An updated version was signed into state law in 2020 to add more vessel types that would need to comply.

In addition to the ships that fall under this regulation beginning this month, other vessels such as roll-on/roll-off ships

QUOTE OF THE WEEK

"We do expect some tightness in LLDPE and HDPE."
— Middle East participant

are required to comply beginning 1 January 2025. Tanker vessels calling the ports of Los Angeles and Long Beach must also begin compliance on that date. All other tanker vessels must comply by 1 January 2027. Government and military ships are exempt from this law.

California commercial harbor craft vessels, like bunker barges, ferries, pilot boats, must burn renewable diesel as of 1 January 2023. This measure is also aimed at cutting particulate matter and nitrogen oxide emissions.

Brazil's cargo handling by rail fell in November

Brazil's cargo handling by rail fell in November 2022 from a year earlier, driven by a decrease in iron ore shipments.

Rail cargo totalled 30.1bn metric tonnes transported/kilometer (t/km) in November 2022, down by 3.3pc from 31.2bn t/km in November 2021, according to Brazil's national association of railway carriers (ANTF). Cargo transport by rail in November fell by 11pc from the previous month.

Iron ore handling reached 20.7bn t/km, down from 22.3bn t/km a year earlier. Container transport rose to 393mn t/km from 346mn t/km.

Fuel volumes reached 649mn t/km, compared with

605mn t/km a year earlier. Agricultural bulk cargo totalled 5.9bn t/km, up from nearly 5.2bn t/km last year. Handling of other cargoes reached 2.45bn t/km from 2.44bn t/km.

Freight transport totalled 340.7bn t/km in January-November 2022, practically stable from the same period in 2021.

In the same period, 94.8pc of iron ore and 49pc of soybean and soybean meal exported from Brazil reached ports by rail, according to ANTF data, up by 0.5 and 3 percentage points, respectively, from the same period in 2021.

Rail transport accounted for 50.5pc of corn and 48.7pc of sugar exports, down by 6.8 and 4.8 percentage points, respectively.

ANTF represents railroad operators responsible for cargo transport on the 13 rail networks run by Brazil's private sector, which covers about 30,000km (18,640 miles). It monitors agricultural bulk cargo, iron ore, fuels, containers and other cargoes, such as cellulose, coal and steel.



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