

## China Oil &amp; Gas

# Weekly Theme: Declined in JKM triggers spot imports; diesel demand rebounds

Industry Overview

## Spot LNG imports increase amid a decline in JKM

According to industrial consultancy JLC, several China tier-2 buyers (including the major city gas companies) actively expanded their spot LNG imports against the backdrop of a decline in JKM for consecutive days (JKM swap future increased by 2.2% WoW to US\$8.30/mmbtu in the week ended 1 Mar). All purchased spot LNG cargos are likely to be delivered in late-March to mid-May. We attribute this to 1) competitive cost (US\$8.3/mmbtu) compared with long-term contract price (c.US\$10/mmbtu) and domestic LNG selling price (US\$12.6/mmbtu); 2) low inventory levels after heating season for tier-2 buyers; 3) increasing availability to utilize the LNG terminal belonging to PipeChina, and the LNG receival amount is expected to increase by 150% YoY in Mar/Apr 2024. Meanwhile, SOEs also purchased certain amount of spot LNG to dilute total imported LNG costs and complement gas storages.

## Rebound in diesel demand after CNY holidays

Mar-Apr is the traditional peak season for diesel. Per JLC, in the week ended 1 Mar, China diesel demand rebounded along with people from infrastructure construction, logistics, and farming fully returning to work after CNY holiday season. Operators are also willing to build diesel stocks for future consumption. Meanwhile, gasoline demand was quiet given lacking holiday support. On the supply side, SOE refineries plan to raise diesel output, considering the scheduled refining facility maintenance in late-March. Limited incremental volume from Shandong teapot refineries given ongoing maintenance and tougher regulation, in our view. According to our tracked data, export arbitrage spreads of diesel between Singapore and China widened WoW to a positive US\$6.0/b (+US\$6.1/b WoW), while gasoline spread narrowed WoW to positive US\$6.41/b (-US\$3.7/b WoW), indicating a rebound in diesel market and quiet gasoline market.

## CNPC's O&G industry outlook report key takeaways

CNPC's Economics & Technology Research Institute (ETRI) published a report on China oil and gas industry outlook on 28 Feb. We summarize our key takeaways: 1) China oil demand is expected to be 764mnt in 2024, growing at a much slower pace of 1% vs. 11.5% in FY23, mainly due to losing momentum from post-pandemic recovery and booming EV consumption; 2) refined products demand is likely to peak in the next two years, with the diesel/gasoline/kerosene consumption this year estimated at 196/165/39mnt, -3/+1/+13% respectively, which could suggest a 50mnt surplus (10% higher than last year); 3) refining capacity would grow by 2.7% YoY to 961mntpa in 2024 amid two mega-complexes (Yulong Petrochemical and Zhenhai Petrochemical & Refining) potentially coming online in FY24; 4) crude throughput is forecast to rise 2% YoY to 752mnt, with the average refinery utilization rate at 78.3%, slightly lower than 78.9% in FY23; 5) natural gas demand in 2024 is projected at 415.7bcm, +6% YoY and the gas import volume is likely to reach 179.1bcm, +8% YoY.

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CNY: Chinese New Year

SOE: state owned enterprise

More abbreviations in appendix

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## Weekly updates

Oil prices: Brent oil price increased 2.4% WoW to US\$83.6/b and WTI oil price increased 4.6% WoW to US\$80.0/b in the week ended 1 Mar 2024. WTI discount to Brent narrowed to US\$3.6/b.

Factors supporting oil prices include:

- *Reuters* reports that OPEC+ has decided to extend the voluntary oil production cuts of 2.2mbd (Saudi Arabia: 1mbd, Russia: 0.5mbd, Iraq: 0.22mbd, UAE: 0.16mbd) into the 2Q24 (vs. 1Q24);
- *EIA data* shows that OECD commercial crude oil & other liquids inventory was still lower than 5-year average level (2,742mb in Feb24 vs. five-year avg of 2,861mb);
- *Reuters* reports that the annual increase in US personal consumption expenditure (PCE) through Jan was the smallest since Feb 2021, indicating a cooling down inflation and making June interest rate cuts possible;
- *Bloomberg* reports that EIA sees US oil demand reached 4-year high in 2023 and will hold steady at the level in 2024, expecting domestic fuel consumption to increase from 20.33mbd last year to 20.39mbd this year;

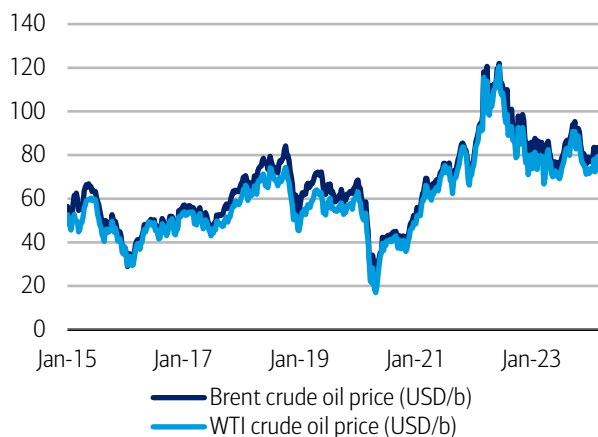
Factors suppressing oil prices include:

- The US rigs count increased to 625 rigs (oil rigs +3 WoW to 506 and gas rigs -1 WoW to 119) through the week ended 1 Mar 2024;
- The US commercial crude oil inventory increased 4mb WoW to 447mb through the week ended 23 Feb 2024;
- The US crude output (one-week lag) was flat WoW at 13.3mbd through the week ended 23 Feb 2024;

*Bloomberg* reports that Russia decided to ban gasoline exports since 1 Mar for six months amid rising domestic demand and refineries' maintenance needs.

**Exhibit 1: Brent and WTI weekly prices**

Brent oil price increased 2.4% WoW to US\$83.6/b and WTI oil price increased 4.6% WoW to US\$80.0/b in the week ended 1 Mar 2024

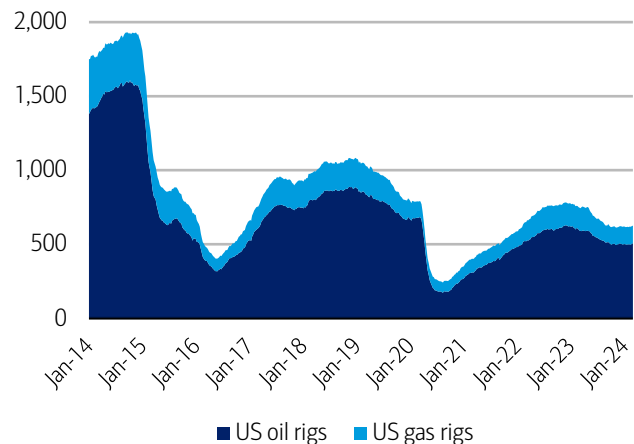


Source: Bloomberg, BofA Global Research

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**Exhibit 2: US weekly oil and gas rig count**

Oil rigs +3 and gas rigs -1 WoW

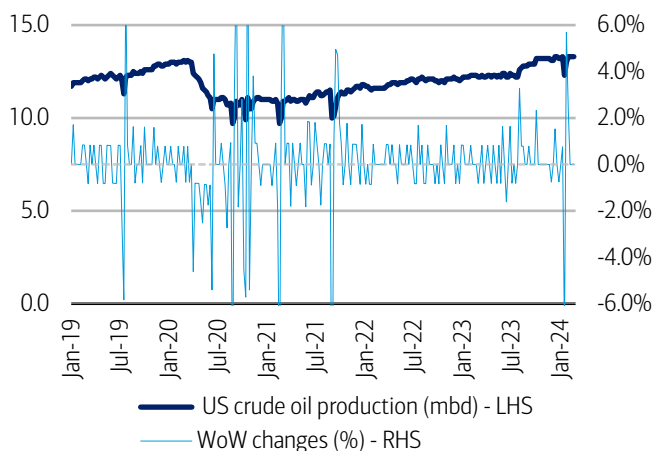


Source: Baker Hughes, Bloomberg, BofA Global Research

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**Exhibit 3: US crude oil production**

Flat WoW at 13.3mbd

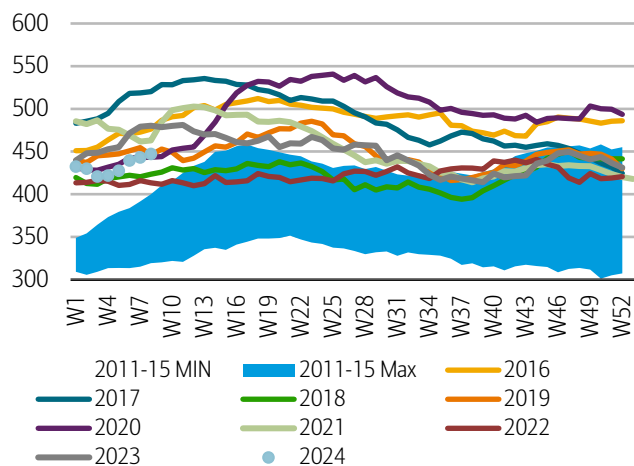


Source: EIA, Bloomberg, BofA Global Research

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**Exhibit 4: US weekly crude oil inventory (mb)**

Increased 4mb WoW to 447mb

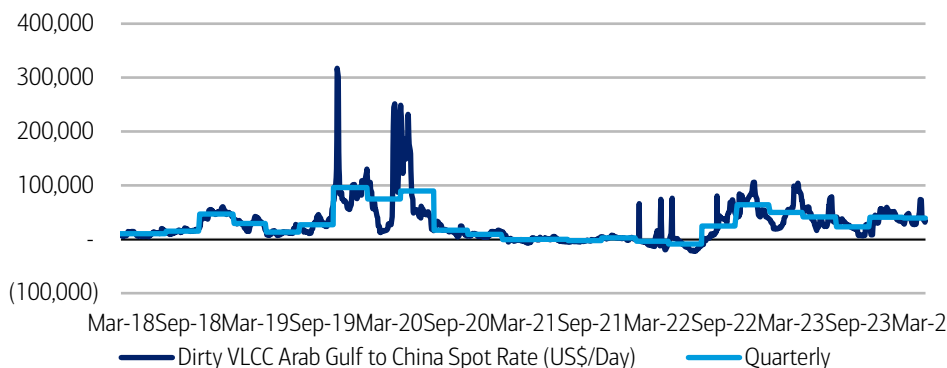


Source: EIA, Bloomberg, BofA Global Research

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**Exhibit 5: Dirty VLCC Arab Gulf to China spot rate (US\$/day)**

Crude oil shipping cost from Arab Gulf to China



Source: Bloomberg, BofA Global Research

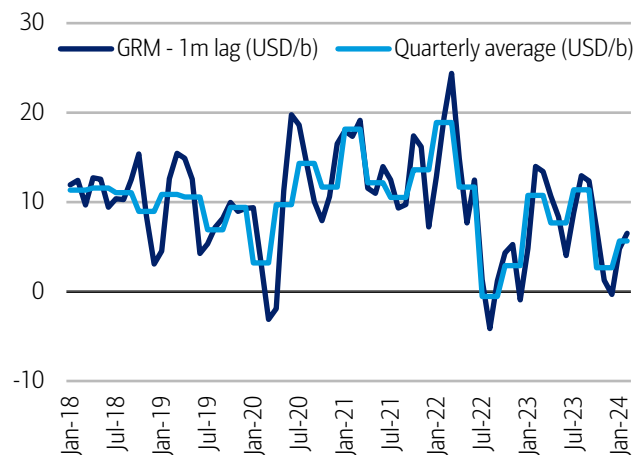
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## Refining

- China's refining margin (one-month crude price lag) in Feb 2024 rose to US\$6.5/b, from US\$4.8/b in Jan 2024. YTD, average GRM came in at US\$5.7/b;
- National Development and Reform Commission (NDRC) raised gasoline and diesel retail prices by RMB125/ton and RMB120/ton in the latest round of price adjustment on 4 Mar 2024; prices are now RMB9,105/ton and RMB8,065/ton, respectively. The next round of price adjustment is scheduled for 18 Mar;
- The run rate of independent refineries in Shandong in the week ended 1 Mar 2024 decreased WoW to 54.3% vs. 62.1% in Jan 2024. The YTD rate averaged 57.7% in 2024, vs 61.9% in 2023;
- Based on one-month lag crude price, China diesel crack margin was flat WoW at US\$17.6/b and gasoline crack margin was flat WoW at US\$10.8/b in the week ended 1 Mar 2024;
- Compared with Singapore Dubai Crack margin, the export arbitrage spread for diesel widened WoW to a positive US\$6.0/b (+US6.1/b WoW) and for gasoline narrowed WoW to positive US\$6.41/b (-US\$3.7/b WoW) in the week ended 1 Mar 2024.

### Exhibit 6: China gross refining margin (GRM) with 1month lag in crude prices

Profit of US\$6.5/b in Feb 2024, vs. US\$4.8/b in the previous month

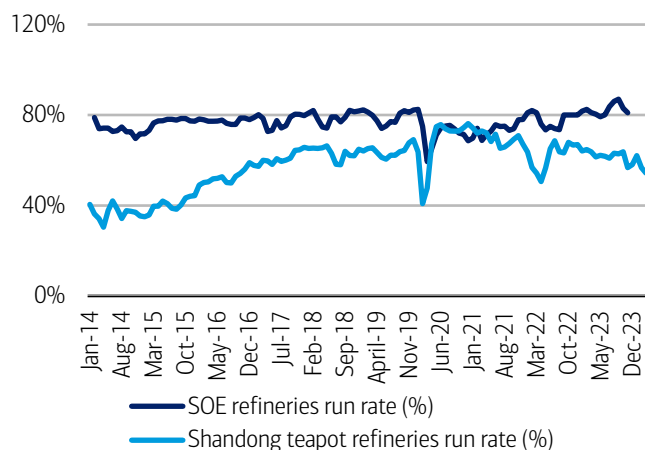


Source: Wind, BofA Global Research estimates

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### Exhibit 7: Shandong teapots refinery run rates (%)

Average run rate of teapots declined to 54.3% vs. 62.1% in Jan for the week ended 1 Mar

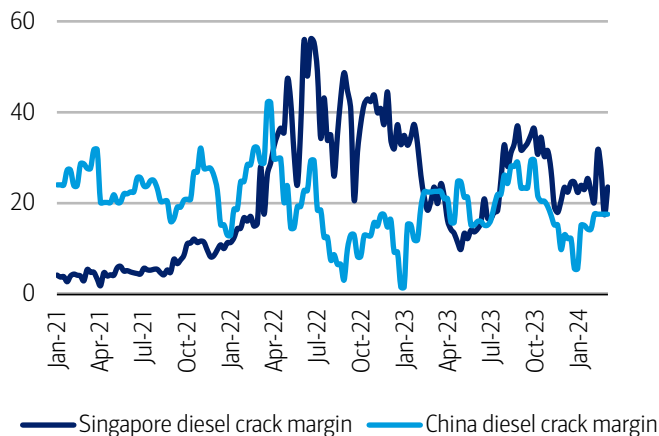


Source: Bloomberg, S&P Global, BofA Global Research

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**Exhibit 8: Diesel crack margin in China vs. Singapore (US\$/b)**

China diesel crack margin was US\$17.6/b for the week ended 1 Mar

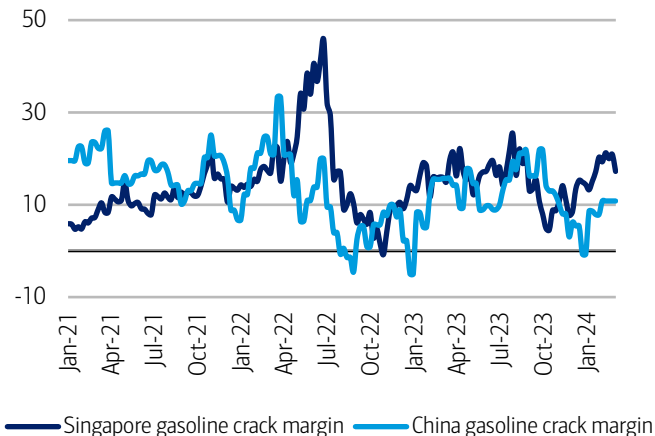


Source: Bloomberg, Wind, BofA Global Research

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**Exhibit 9: Gasoline crack margin in China vs. Singapore (US\$/b)**

China gasoline crack margin was US\$10.8/b for the week ended 1 Mar

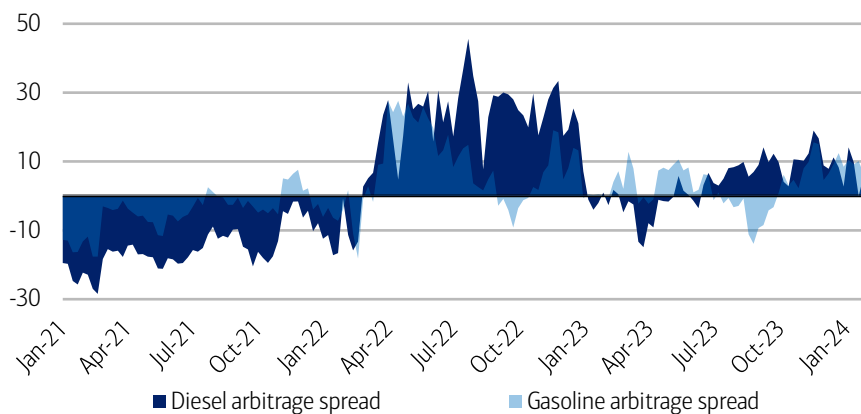


Source: Bloomberg, Wind, BofA Global Research

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**Exhibit 10: Diesel/gasoline export arbitrage spread**

Export arbitrage spread for diesel widened WoW to positive US\$6.0/b (+US\$6.1/b WoW) and that for gasoline narrowed to positive US\$6.4/b (-US\$3.7/b WoW), respectively, for the week ended 1 Mar



Source: Bloomberg, Wind, BofA Global Research

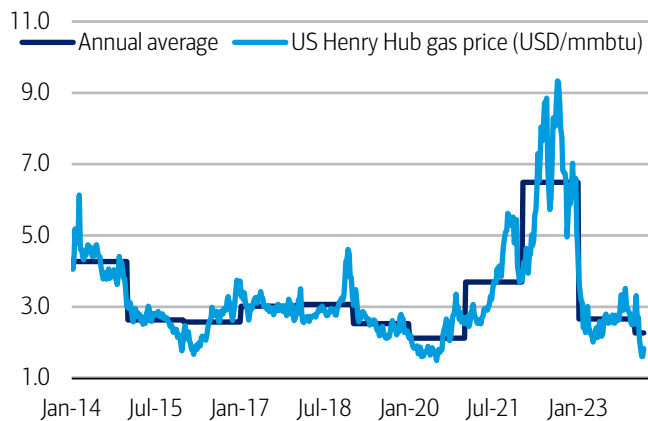
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## Natural gas

- The US Henry Hub natural gas price increased by 14.5% WoW to US\$1.84/mmbtu in the week ended 1 Mar 2024, 39.0% lower YoY;
- The Netherlands TTF natural gas price increased by 10.0% WoW to US\$8.15/mmbtu in the week ended 1 Mar 2024, 41.8% lower YoY;
- The JKM swap future increased by 2.2% WoW to USD8.30/mmbtu (US\$0.15/mmbtu premium over TTF) in the week ended 1 Mar 2024;
- *Bloomberg* reports that Asia LNG prices have fallen below the long-term contract rates, tempting buyers to procure spot cargoes than receiving delivery from long-term contract;
- *Reuters* reports that Qatar will lift its natural gas production up despite the recent collapse of Asian LNG price, betting on rising demand in Europe and Asia.

### Exhibit 11: US Henry Hub natural gas price (US\$/mmbtu)

Increased by 14.5% WoW to US\$1.84/mmbtu

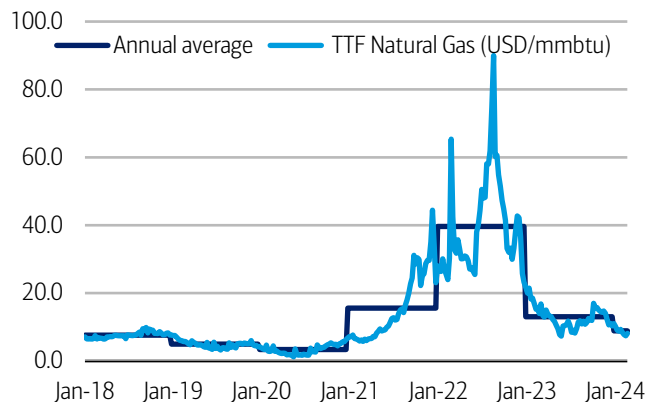


Source: Bloomberg, BofA Global Research

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### Exhibit 12: Netherlands TTF Natural gas price (US\$/mmbtu)

Increased by 10.0% WoW to US\$8.15/mmbtu

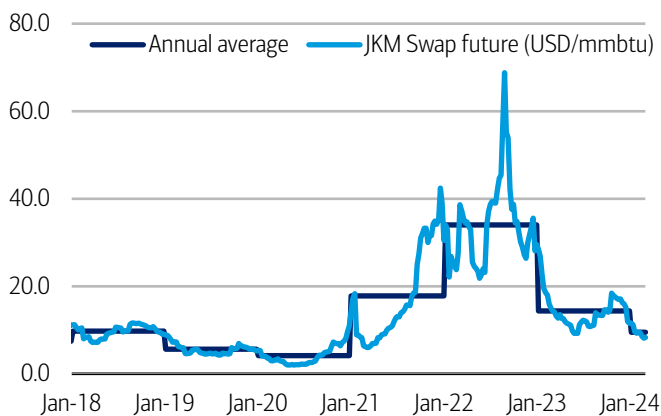


Source: Bloomberg, BofA Global Research

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### Exhibit 13: Northern Asia LNG-JKM swap future (US\$/mmbtu)

Increased by 2.2% WoW to USD8.30/mmbtu



Source: Bloomberg, BofA Global Research

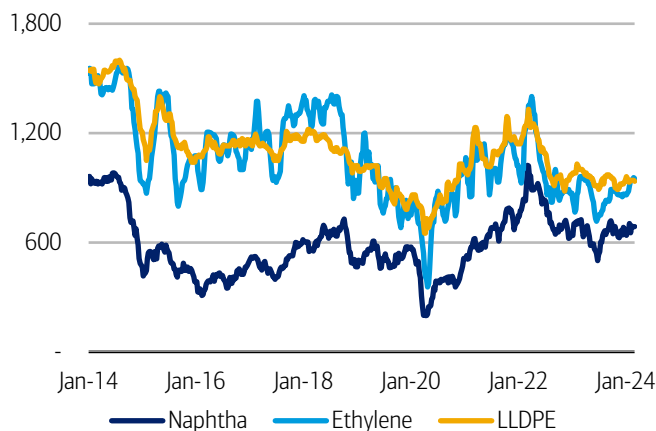
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## Chemicals

- Northeast Asia LLDPE price decreased WoW to US\$936/ton and PP price increased WoW to US\$874/ton in the week ended 1 Mar 2024;
- LLDPE-ethylene spread maintained a loss of US\$15/ton;
- PP-propylene spread expanded WoW to US\$58/ton;
- East China m-MDI price increased by 2% WoW to RMB21,200/ton and p-MDI price increased by 3% WoW to RMB17,100/ton in the week ended 1 Mar 2024.

### Exhibit 14: Northeast Asia naphtha, ethylene and LLDPE prices (US\$/ton)

Ethylene price and LLDPE price decreased WoW

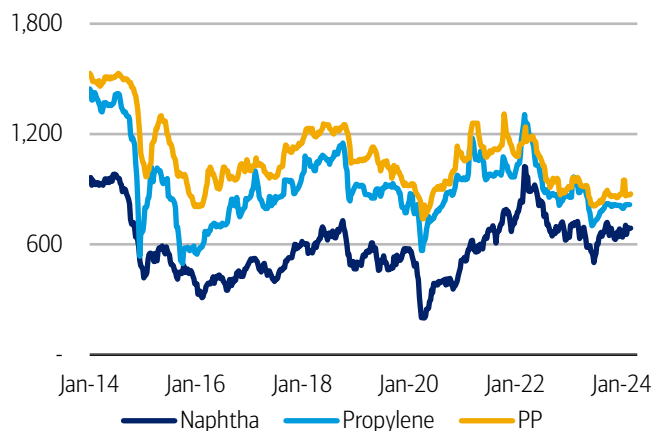


Source: Wind, BofA Global Research

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### Exhibit 15: Northeast Asia naphtha, propylene and PP prices (US\$/ton)

Propylene price flat and PP price increased WoW

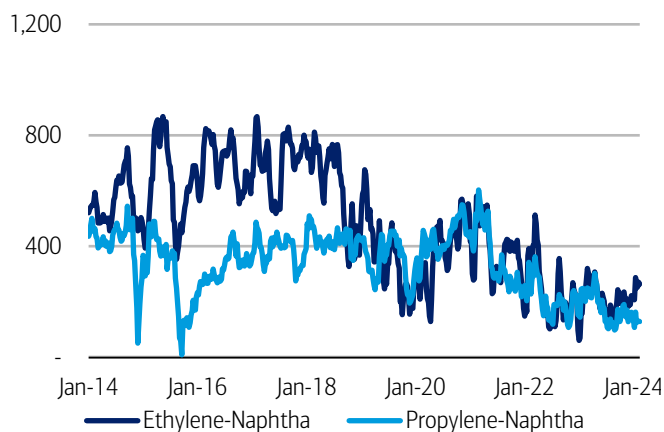


Source: Wind, BofA Global Research

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### Exhibit 16: Northeast Asia ethylene/propylene-naphtha spread (US\$/ton)

Ethylene-naphtha spread and propylene-naphtha spread narrowed WoW

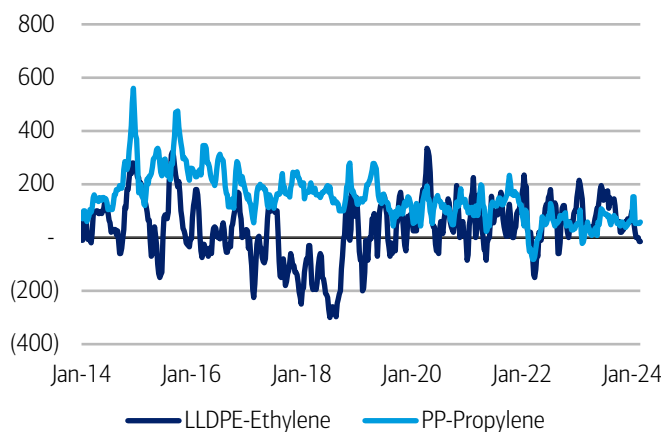


Source: Wind, BofA Global Research

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### Exhibit 17: Northeast Asia LLDPE-ethylene and PP-propylene spread (US\$/ton)

LLDPE-ethylene spread flat and PP-propylene spread expanded WoW

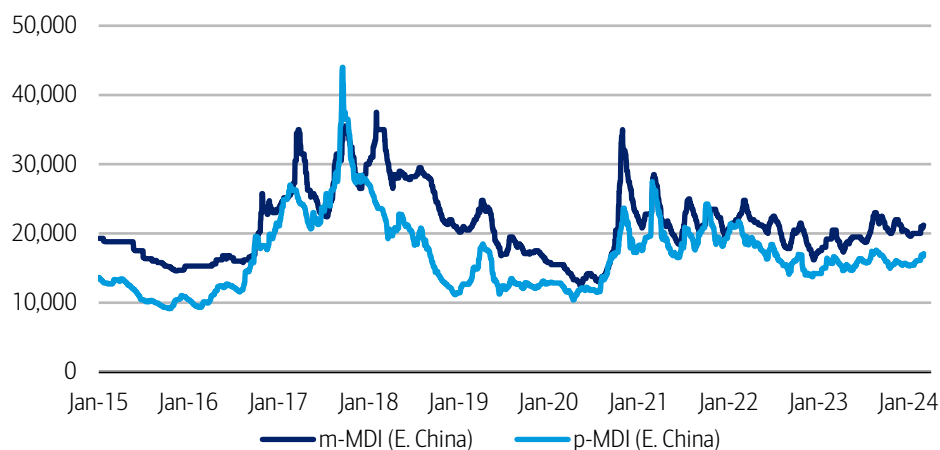


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**Exhibit 18: East China m-MDI and p-MDI price (RMB/ton)**

East China m-MDI price increased by 2% WoW to RMB21,200/ton and p-MDI price increased by 3% WoW to RMB17,100/ton in the week ended 1 Mar



Source: Wind, BofA Global Research

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## Appendix

**Exhibit 21: Abbreviations**

Abbreviations used in the report

Abbreviation	Full name	Abbreviation	Full name
bbl/b	Barrel(s)	m-MDI	Monomeric methylene diphenyl isocyanate
bnt	Billion tons	mntpa	Million tons per year
CCS	Carbon capture and storage	MoM	Month on month
CDU	Crude distillation unit	mnt	Million tons
cm	Cubic meters	MTBE	Methyl tert-butyl ether
CNPC	China national petroleum corporation	NBS	National bureau of statistics
EOR	Enhanced oil recovery	NDRC	National Development and Reform Commission
EVA	Ethylene vinyl acetate	PTR	PetroChina
FDPE	Full density polyethylene	p-MDI	Polymeric methylene diphenyl isocyanate
GRM	Gross refining margin	PP	Polypropylene
HDPE	High density polyethylene	SNP	Sinopec
JKM	Japan/Korea Marker (Northeast Asian spot price index for LNG delivered ex-ship to Japan and Korea)	SOE	State owned enterprise
ktpa	Thousand tons per year	t	Ton(s)
LLDPE	Linear low-density polyethylene	TTF	Title transfer facility
LNG	Liquefied natural gas	UHMWPE	Ultra-high molecular weight polyethylene
mb	Million barrels	VLCC	Very large crude carrier
mbd	Million barrels per day	WoW	Week on week
mmbtu	Metric million British thermal unit	WTI	West Texas Intermediate
mmt	Million metric tons	YoY	Year on year
MDI	Methylene diphenyl isocyanate	YTD	Year to date

Source: BofA Global Research

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