

US Oil and Gas

OIM# 655: impacts of Red Sea attacks on refiners pale with upcoming maintenance

Industry Overview

Rising freight may have only modest impact on margins

Ahead of earnings season for the US oils, the impact and risk of potential market disruption of the ongoing tensions in the Red Sea on US refining margins has become one of the most debated aspects of the sector outlook, albeit any conclusions remain fluid, subject to how the situation evolves. Quantifying the magnitude on product markets is clearly imprecise at best. However, if we consider that the incremental cost of delivery translates to higher net backs for US refiners, we believe it is reasonable to consider some uplift in realized margins as the de-facto cost of supply has increased.

While the disruption only impacts the Red Sea transit, tying up vessels on longer journeys means de-facto shipping availability has tightened. With Russian product cargoes excluded through sanctions, the backfill for European product supplies that had been seen from Mid-East refiners, may now benefit US & Brazilian exporters. At the simplest level, the impact so far is on tanker rates, with long haul transport routes from the Middle East to Europe increased, as an indicative order of magnitude by ~\$5/bbl. However, when pro-rated to the proportion of product that moves between the US and Europe (say, 25% US distillate exports, or 1,000 bpd) then it seems reasonable that the spike in tanker rates may translate to only a \$1/bbl - \$2/bbl impact on margins. In the grand scheme of things, we call the impact marginal versus the seasonal changes in refining margins we expect over the course of the year. Remember that as we examined in last week's OIM, less than 10% of global crude flows transit through the Red Sea.

Winter storms & Spring maintenance have bigger impacts

With this week's DOE we have our first glimpse into the impacts from winter storm Heather. Commercial crude stocks fell 9.2mm bbls pushing inventories to the bottom of the 5-year range noting domestic production impacts from weather that the EIA suggests could be as high as 1mnbd from 'freeze offs'. Refined products are another story. Despite refining utilization falling by 7.1% to 85.5%, again on weather issues, gasoline inventories still increased by 4.9 mm bbls albeit with the help of net imports rising by 500,000 bpd w/w. Distillate declined - but only by 1.4mm bbls.

While both products are following seasonal trends, gasoline remains well above the 5yr average whereas distillate stocks are still below the 5-year average, inventories are above levels at this time last year with minimal impact so far from the winter storm.

From here, the focus turns to the upcoming Spring maintenance season. Here we see outages in 2024 at a similar level to 2019; but 2019 refinery capacity was 1.3mm b/d higher suggesting a bigger proportional level of downtime. On balance, elevated maintenance may prove to be the catalyst to resume positive margin revisions for US refiners – in contrast to a declining forward oil curve and weak US natural gas prices. Refiners in 2024 may well be setting up as the best house in a mediocre neighborhood.

Please save the date for our 21st dedicated US refining conference which will take place 'in person' on March 14th in New York City.

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Exhibit 1: BBG vs. Actuals (mbbls)

Gasoline draws while crude inventories build

Crude Stocks	
Est	(908)
Actual	(9,233)
Diff	(8,325)
Distillate Stocks	
Est	578
Actual	(1,417)
Diff	(1,995)
Gasoline Stocks	
Est	1,414
Actual	4,912
Diff	3,498
Utilization	
Est	92.0%
Actual	85.5%
Diff	(908)

Source: EIA

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OPEC – organization of petroleum exporting countries
E&P – exploration and production
IEA – international energy agency
DOE – department of energy
OIM – oil inventory monitor
bpd – barrel per day
bbl – barrel

DUC – drilled uncompleted

OIM #655

Exhibit 2: Summary DOE

Summary of DOE Weekly Statistics

	Current	Prev	Change	%
Crude Oil	420.7	429.9	(9.233)	-2.1%
of which cushing	30.1	32.1	(2.008)	-6.3%
Lower 48 Production	11.900	12.900	(1.000)	-7.8%
Motor Gasoline	253.0	248.1	4.912	2.0%
Gasoline production	8.325	9.4	(1.040)	-0.1
Gasoline demand	7.880	8.269	(0.389)	-4.7%
Gasoline demand cover	32.1	30.0	2.104	7.0%
Distillate	133.3	134.8	(1.417)	-1.1%
of which Heating Oil	5.9	6.3	(0.378)	-6.0%
of which Diesel	127.4	128.4	(1.039)	-0.8%
Distillate demand	3.8	3.6	0.139	3.8%
Distillate demand cover	35.2	37.0	(1.732)	-4.7%
Jet Fuel	41.9	40.9	0.941	2.3%
Jet fuel demand	1.5	1.3	0.218	16.8%
Jet fuel demand cover	27.6	31.5	(3.913)	-12.4%
Residual	26.3	26.8	(0.542)	-2.0%
Resid demand	0.5	0.4	0.167	45.0%
Resid demand cover	48.8	72.3	(23.438)	-32.4%
Utilization	85.5%	92.6%	-7.1%	na
Product Stocks	1241.1	1263.4	-22.3	-0.8%

Source: DOE

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Crude and products inventory change

Exhibit 3: Distillate inventory by PADD

Distillate inventories drew by -1418 kbbls

BBG Estimates	578
Actual stock change	(1,417)
Exports	1,120
Imports	201
Prod / consumption net	716
Production	4,500
Product Supplied	(3,784)
PADD 1	(73)
PADD 2	(880)
PADD 3	(661)
PADD 4	98
PADD 5	98
Total	(1,418)

Source: BofA Global Research, Bloomberg

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Exhibit 4: Crude inventory by PADD

Crude inventories drew by -9233 kbbls

BBG Estimates	(908)
Actual stock change	(9,233)
Exports (Monthly avg)	4,434
Imports	5,580
Prod / consumption net	(5,580)
Production	12,300
Product Supplied	(17,880)
PADD 1	(193)
PADD 2	(5,168)
PADD 3	(3,792)
PADD 4	(1,490)
PADD 5	1,410
Total	(9,233)

Source: BofA Global Research, Bloomberg

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Exhibit 5: Gasoline inventory by PADD

Gasoline inventories built by 4914 kbbls

BBG Estimates	1,414
Fnsh'd MoGas stock chn'g	(188.9)
Exports	717
Imports	83
Prod / consumption net	445
Production	8,325
Product Supplied	(7,880)
PADD 1	2,304
PADD 2	1,305
PADD 3	(410)
PADD 4	119
PADD 5	1,596
Total	4,914

Source: BofA Global Research, Bloomberg

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Exhibit 6: Jet inventory by PADD

Jet inventories built by 941 kbbls

BBG Estimates	941
Actual stock change	941
Exports	82
Imports	(441)
Prod / consumption net	112
Production	1,628
Product Supplied	(1,516)
PADD 1	712
PADD 2	439
PADD 3	(459)
PADD 4	(65)
PADD 5	314
Total	941

Source: BofA Global Research, Bloomberg

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Red Sea impacts on oil and gas

Rising freight costs have only modest impact on margins

Ahead of earnings season for the US oils and for refiners in particular, the impact and risk of potential market disruption of the ongoing tensions in the Red Sea on US refining margins has become one of the most debated aspects of the sector outlook, albeit any conclusions remain fluid, subject to how the situation evolves. Quantifying the magnitude on product markets is clearly imprecise at best. However, if we consider that the incremental cost of delivery translates to higher net backs for US refiners, we believe it is reasonable to consider some uplift in realized margins as the de-facto cost of supply is increased.

In this week's OIM we summarize our understanding of how tanker rates and by inference the cost of supply for products in the Atlantic basin may be impacted. The data is derived partly from our own transport team, led by Ken Hoexter's recent call with Scorpio tankers but also the significant data sources available from Bloomberg and other 3rd party shipping sources.

- While the disruption only impacts the Red Sea transit, tying up vessels on longer journeys means shipping availability has tightened;
- With Russian product cargoes excluded through sanctions, the backfill for European product supplies that has been from Mid-East refiners, may now benefit US & Brazilian exporters;
- At the simplest level, the impact so far is on tanker rates, with long haul transport routes from the Middle East to Europe increased, as an indicative order of magnitude by ~\$5/bbl;

However, when pro-rated to the proportion of product that moves between the US and Europe (say, 25% US distillate exports, or 1,000 bpd) then it seems reasonable that the spike in tanker rates may translate to only a \$1/bbl - \$2/bbl impact on margins.

In the grand scheme of things, we call the impact marginal versus the seasonal changes in refining margins we expect over the course of the year.

For oil, remember that as we examined in last week's OIM, less than 10% of global crude flows transit through the Red Sea.

Framing impacts on oil vessels from the Red Sea

After Houthi attacks started in the Red Sea oil prices and refining margins have been bid up on concerns over the uncertain impact to shipments through a route that normally sees 12% of global seaborne trade and <10% of seaborne oil flows. The impact on shipping is clearly fluid and still evolving with an uncertain duration. However, tapping readily available industry data we can frame how the industry has responded so far, with perhaps obvious impacts in transit times for redirected shipping and freight rates.

- MarciTrace shows crude and refined product tanker traffic through the Red Sea was resilient through Dec-23 which averaged 76 vessels per day, down by only 2 vs the month prior and 3 versus the average daily traffic seen from Jan to Nov of last year.
- Notably traffic temporarily bottomed at 66 vessels per day from Dec 18th to 22nd when the conflict intensified but quickly recovered. This compares to Kpler data that tracked 236 ships across all of the Red Sea and Gulf of Aden in Dec, similar to the 230 daily average in Nov.

However, this is not to say there has been no impact: some 32 vessels were diverted from the Red Sea to the Cape of Good Hope in 2H Dec-23, most of which were

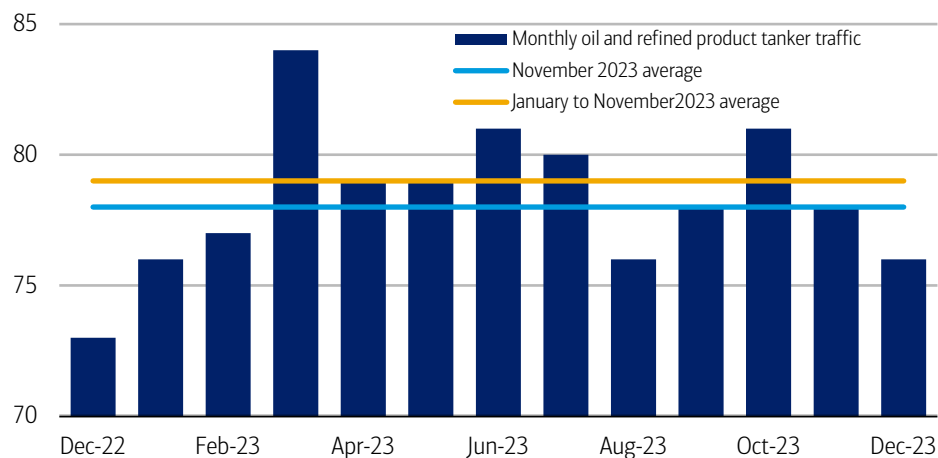


chartered by companies who announced a pause on Red Sea movement. Notable is that both BP and Equinor have announced a pause on shipping through the Red Sea.

For reference, container ship traffic was down 28% from Nov to Dec. Not anecdotal. Industry commentary notes Russian has increasingly used the Red Sea route as product is directed away from Europe in the wake of sanctions.

Exhibit 7: Red Sea crude and refined product tanker traffic

December only saw a minor decline in tank traffic through the Red Sea



Source: MarciTrace, BofA Global Research

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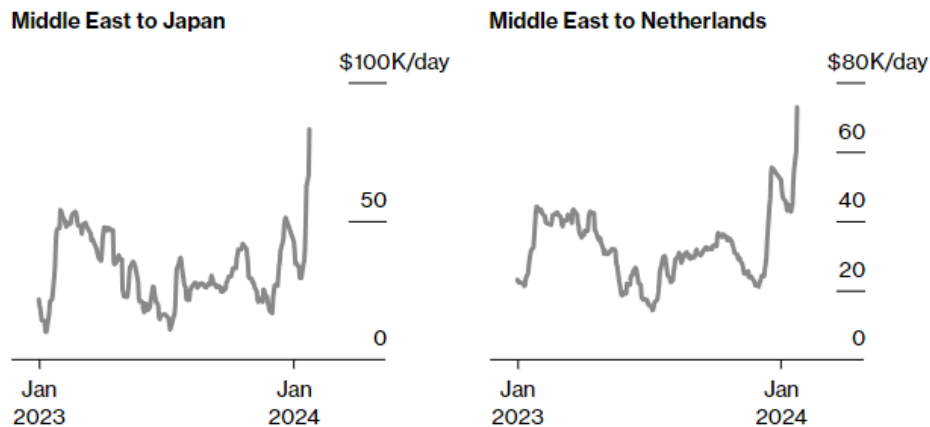
Shipping and insurance costs have increased

Data from S&P insights suggests insurance rates initially climbed when the Houthi attacks started. More tangible data comes from analytics firm Marhelm, who have noted chartering rates have roughly doubled since the start of December. For example:

- it now costs as much as \$85,000 per day to ship oil on a Suezmax tanker (800,000 – 1mm bbls) and \$75,000 a day to use an Aframax vessel (500,000 – 800,000 bbls)
- For smaller vessels cost have also increased. Ships carrying 600,000 bbls of fuel from the Middle East have seen costs increase into the new year on the escalating conflict.
- As of January 23rd charting from the Middle East to Japan cost \$83,000 per day and \$73,000 a day for the same vessel from the Middle to Netherlands.

Exhibit 8: Cost to ship fuel from Middle East

Daily costs to ship fuel out of the Middle East rise sharply when Houthi attacks start



Source: Baltic Exchange, Bloomberg

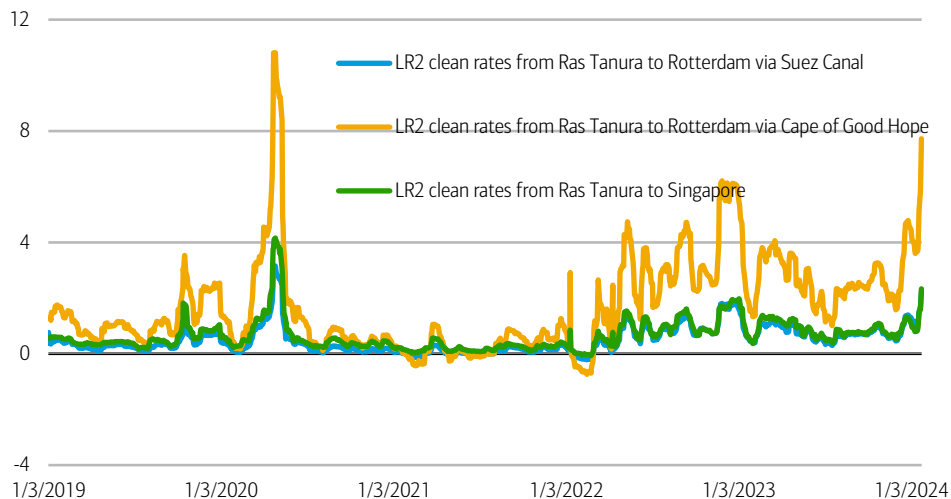
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Looking at LR2 (long range) clean rates, those typically used between the US and Europe, have seen prices significantly rise second only to rates seen in 2020.

- Currently an LR2 vessel costs \$7.72/bbl to travel from Saudi Arabia to Rotterdam via the Cape of Good Hope which compares to \$2.25/bbl via the Suez Canal a \$5.50 differential caused by the 15 day longer travel.
- At the start of December the same routes were \$1.58 and \$0.46/bbl respectively but the escalating conflict that continues to drag out has significantly added a risk premium to both routes.
- Meanwhile the route from Saudi Arabia to Singapore has risen from \$0.41/bbl at the start of December to \$2.33/bbl even though the shipments do not travel through the Red Sea.

Exhibit 9: LR2 clean rates

Rates measured in \$/bbl have blown out in 2024



Source: Bloomberg

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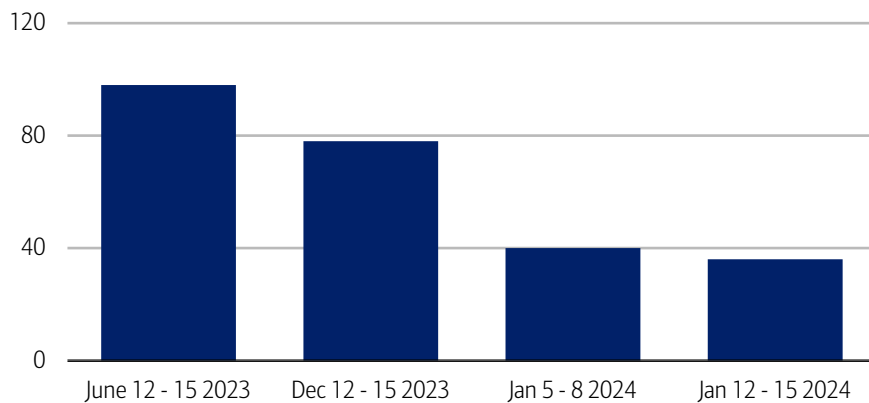
November and December may have been relatively resilient but 2024 looks to have seen a decline.



So far this month Bloomberg vessel tracking data has seen the number of oil and refined product vessels passing through Bab el-Mandeb (the 18 mile wide straight where tanker traffic is limited to a 2 mile wide channel) fall significantly.

Exhibit 10: Oil and refined product vessels passing Bab el-Mandeb

2024 has seen a decline in oil vessels



Source: Bloomberg

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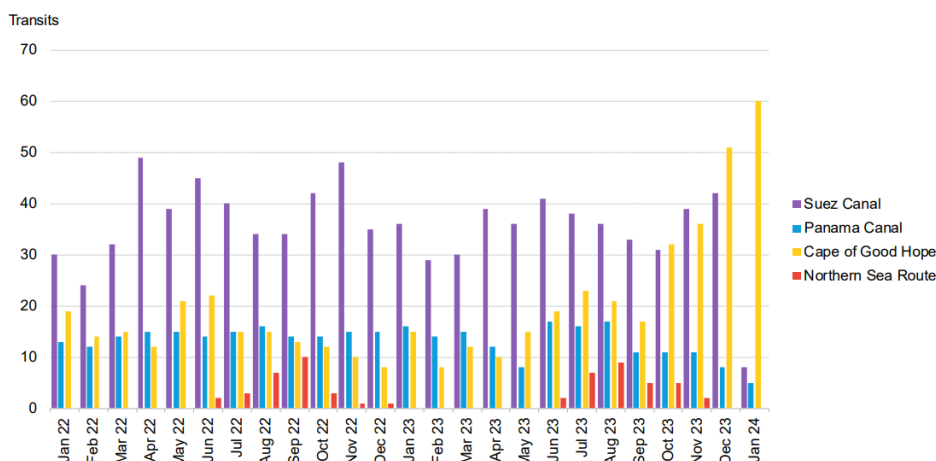
Red Sea impacts on LNG

In-line with oil vessels LNG has seen a similar month over month decline in traffic into the Suez Canal and a subsequent increase in the use of the Cape of Good Hope as shipments have been re-routed, perhaps adding marginal upside pressure on international natural gas prices that may need to take into account the increased shipping costs and delay arrivals but partially offset by not paying the Suez canal fees.

One such supplier, Qatar Energy, who is expected to ship more than 75 mmt of LNG in 2023 announced a pause on shipping through the Red Sea and re-routing to the Cape of Good Hope. Meanwhile S&P has noted that sellers have also shifted to favoring inter-basin trading activity due to increased geopolitical tensions and delayed shipping times.

Exhibit 11: Laden LNG Transits

Cape of Good Hope has become the primary route for international LNG as shippers try to avoid the regional conflict in the Red Sea



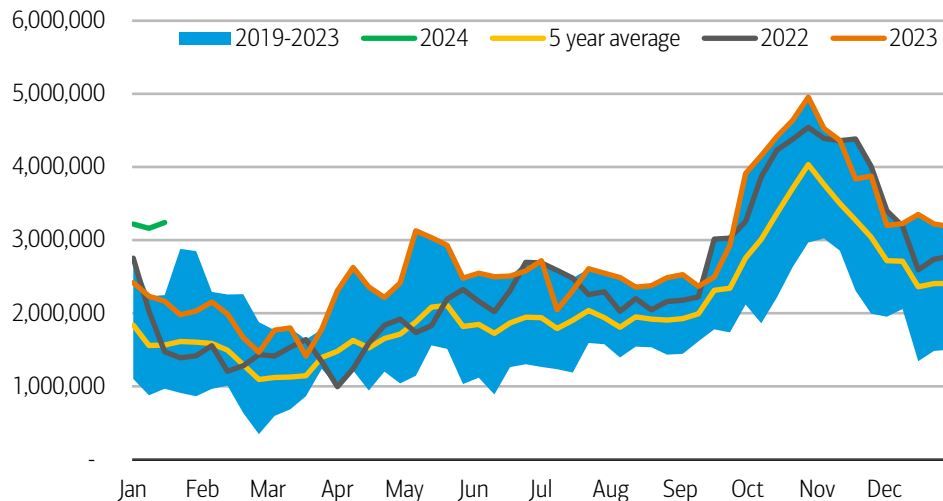
Source: BNEF

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As might be expected, with the longer route the metric tons of LNG on water for more than 20 days has held roughly flat into January, contrary to seasonal trends and resulting in supply on the water well above the 5-year range.

Exhibit 12: LNG on water more than 20 days

LNG shipments broke from seasonal trends when Houthis attacks started



Source: BofA Global Research, Bloomberg

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DOE Review

With this week's DOE we have our first glimpse into the impacts from winter storm Heather.

- commercial crude inventories fell by 9.2mm bbls w/w led by draws in PADD 2, 3, and 4, leaving inventories to the bottom of the 5-year range. Cushing fell by 2mm bbls w/w.
- Exports declined by 600 kbd while imports fell by 1.84 mnbd exacerbating the affects from domestic production impacts from weather, which that EIA suggests could be as high as 1mnbd from 'freeze offs'.

Crude impacts appear to have been led by the Bakken with 3rd party reports indicating peak loss of 650,000 bpd (over 50% of basin production) with several hundred thousand barrels of capacity still offline.

The effects of the winter storm are still being felt out, but initial impacts look to have reset the domestic inventories lower, a potential near term support for price.

Refined products are another story. Despite refining utilization falling by 7.1% from 92.6% to 85.5%, again on weather curtailments gasoline inventories still increased by 4.9 mm bbls with the help net imports rising by 500,000 bpd w/w. Distillate declined, but only by 1.4mm bbls.

- Gasoline and distillate inventories are both following seasonal trends. However, gasoline continues to hold well above the 5-year average and 2023 levels.
- While distillate stocks are still below the 5-year average, inventories are above levels at this time last year.

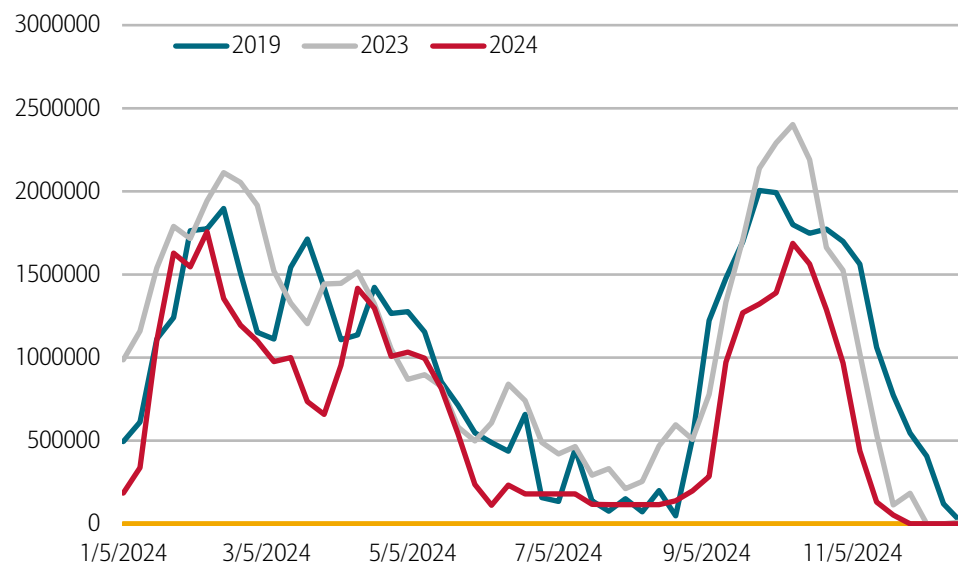
For refined products the impact from the winter storm looks to be minimal so far. From here we see the focus turning to the upcoming maintenance season from February to mid-March. On this point, comments from Delek EVP of operations Joseph Israel, suggested at an industry conference in Houston suggested that the 2024 spring turnaround season would be 'one of the heaviest on record'. As a sense check, the chart below shows expected outages in 2024 at a similar level to 2019 which had 1.3 million b/d more refining capacity to maintain. On balance, elevated maintenance may well prove the catalyst to resume positive margin revisions for US refiners – in contrast to a



declining forward oil curve and weak US natural gas prices. As we suggested in our recent year ahead report, refiners in 2024 may well be setting up as the best house in a mediocre neighborhood.

Exhibit 13: Crude unit outages

Heavy planned maintenance season adds upside risk to margins



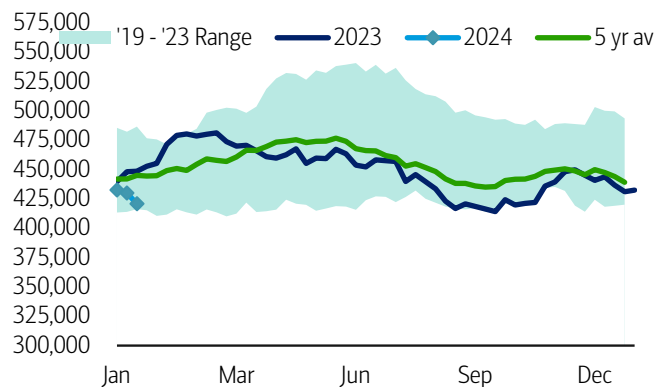
Source: IRR

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Crude oil stocks

Exhibit 14: Crude Stocks

Crude Stocks -2.1% Lower w/w and -4.2% Lower y/y

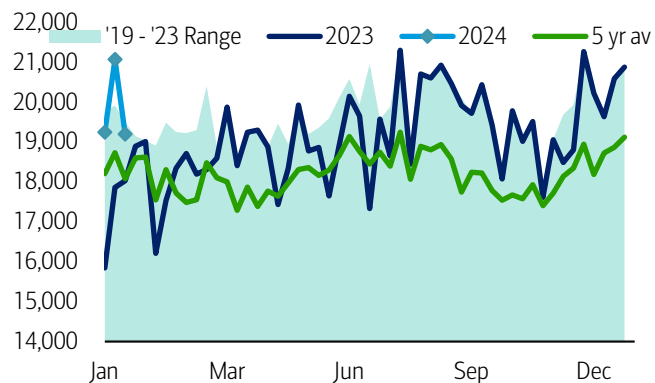


Source:DOE

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Exhibit 16: Crude Implied Demand (000 bpd)

Crude Implied Demand -8.9% Lower w/w and 16.9% Higher y/y

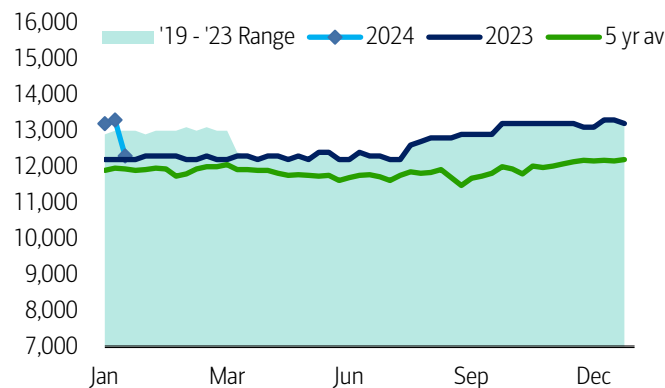


Source:DOE

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Exhibit 18: Crude Production

Crude Production -7.5% Lower w/w and 9.0% Higher y/y

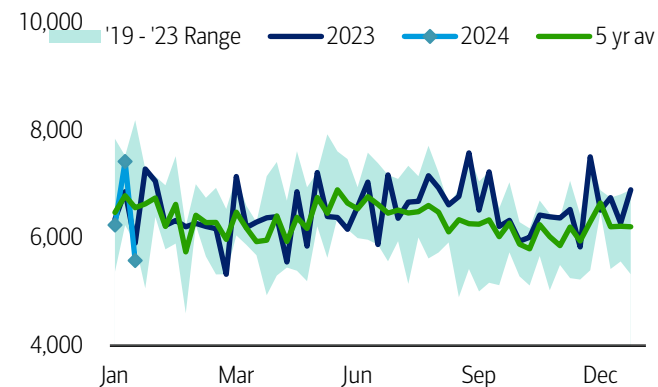


Source:DOE

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Exhibit 15: Crude Imports

Crude Imports -24.8% Lower w/w and 25.7% Lower y/y

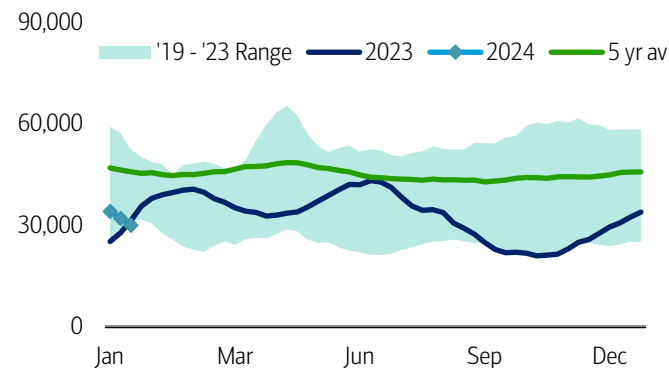


Source:DOE

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Exhibit 17: Cushing Inventory

Cushing Inventory -6.3% Lower w/w and -10.1% Lower y/y

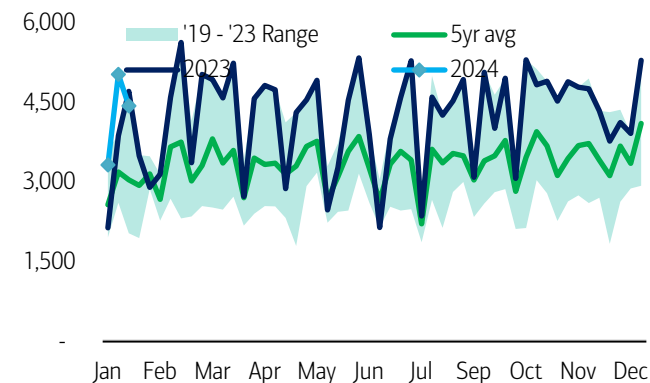


Source:DOE

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Exhibit 19: Crude Oil Exports

Crude Oil Exports -11.8% Lower w/w and 6.8% Lower y/y



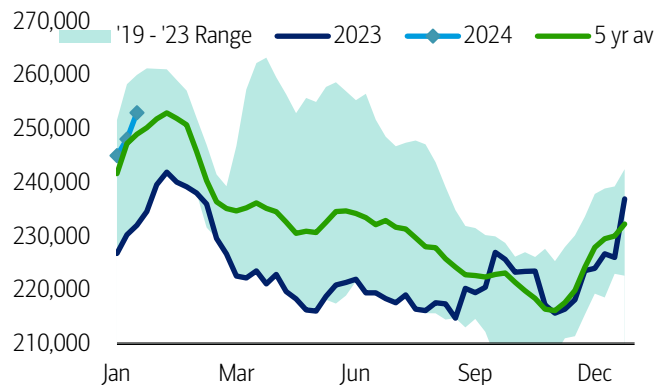
Source:DOE

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Gasline stocks

Exhibit 20: Gasoline Stocks

Gasoline Stocks 2.0% Higher w/w and 6.9% Higher y/y

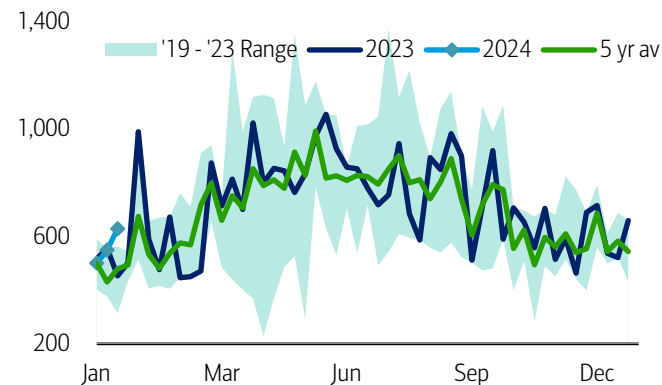


Source:DOE

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Exhibit 21: Gasoline Imports

Gasoline Imports 14.4% Higher w/w and 21.2% Higher y/y

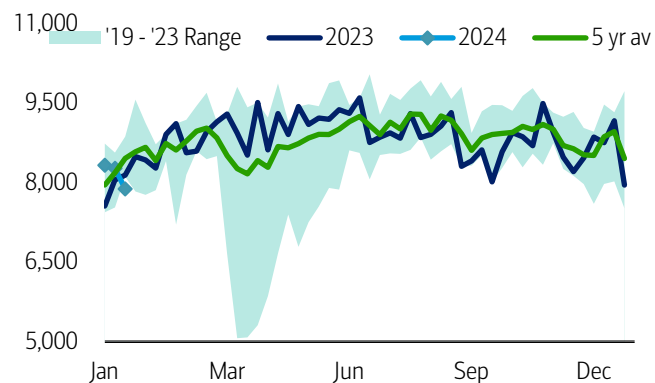


Source:DOE

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Exhibit 22: Gasoline Product Supplied (000 bpd)

Gasoline Product Supplied -4.7% Lower w/w and 1.6% Lower y/y

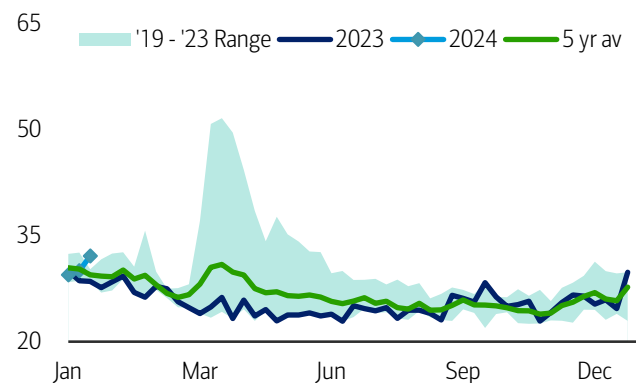


Source:DOE

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Exhibit 23: Gasoline Demand Cover

Gasoline Demand Cover 7.0% Higher w/w and 5.3% Higher y/y

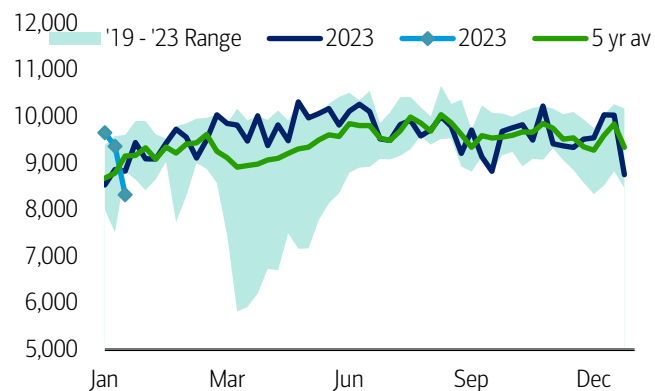


Source:DOE

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Exhibit 24: Gasoline Production

Gasoline Production -11.1% Lower w/w and 6.0% Lower y/y

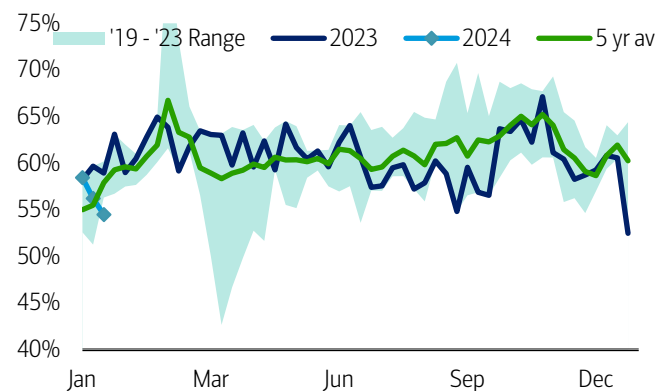


Source:DOE

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Exhibit 25: Gasoline Yield

Gasoline Yield 2.9% Higher w/w and -6.2% Lower y/y



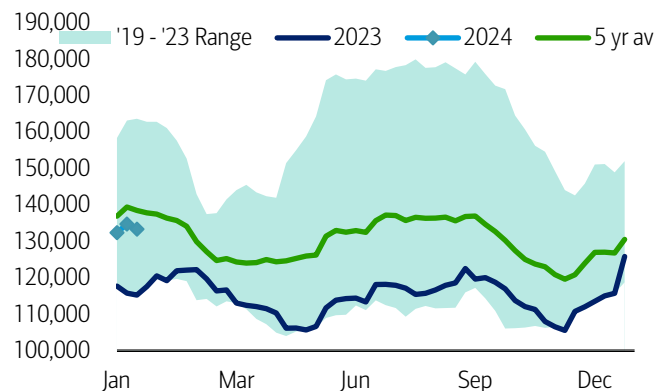
Source:DOE

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Distillate stocks

Exhibit 26: Distillate Stocks

Distillate Stocks -1.1% Lower w/w and 16.9% Higher y/y

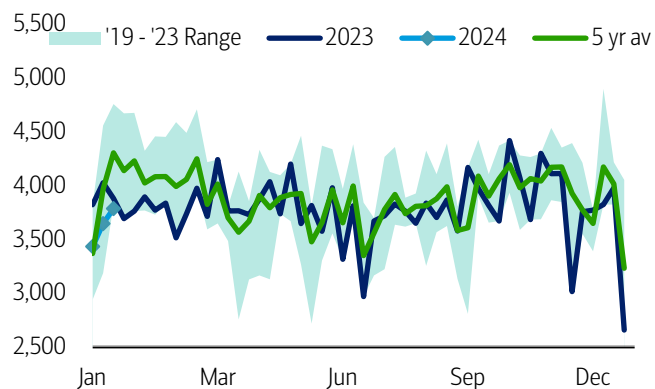


Source:DOE

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Exhibit 28: Distillate Product Supplied (000 bpd)

Distillate Product Supplied 3.8% Higher w/w and -6.0% Lower y/y

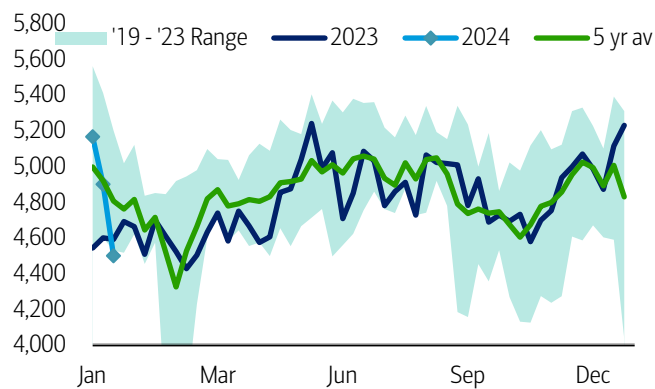


Source:DOE

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Exhibit 30: Distillate Production

Distillate Production -8.2% Lower w/w and 6.8% Lower y/y

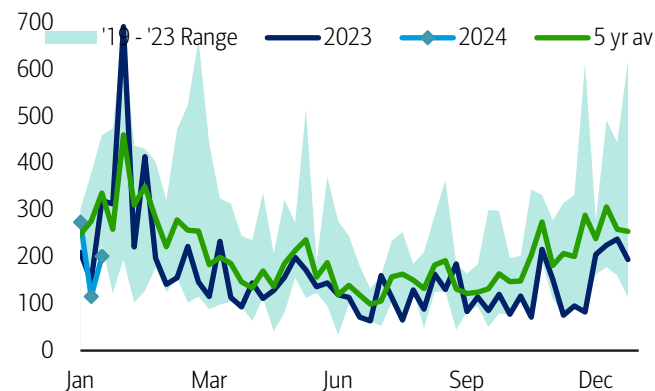


Source:DOE

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Exhibit 27: Distillate Imports

Distillate Imports 74.8% Higher w/w and -64.1% Lower y/y

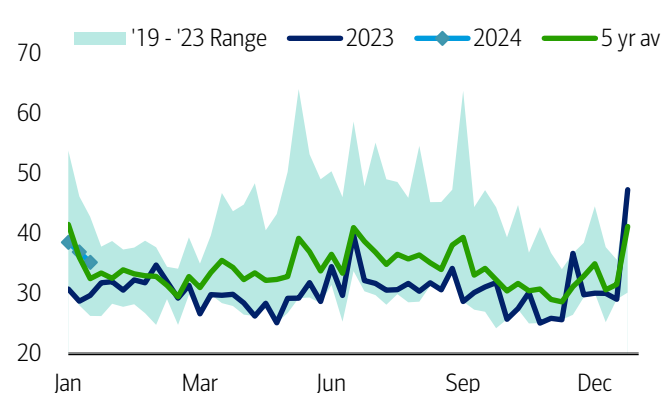


Source:DOE

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Exhibit 29: Distillate Demand Cover

Distillate Demand Cover -4.7% Lower w/w and 24.4% Higher y/y

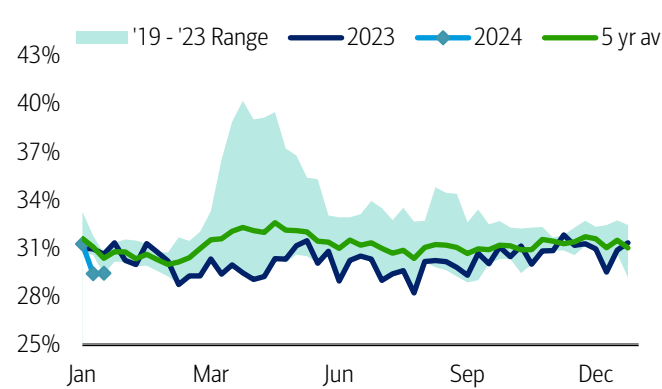


Source:DOE

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Exhibit 31: Distillate Yield

Distillate Yield 0.1% Higher w/w and -3.9% Lower y/y



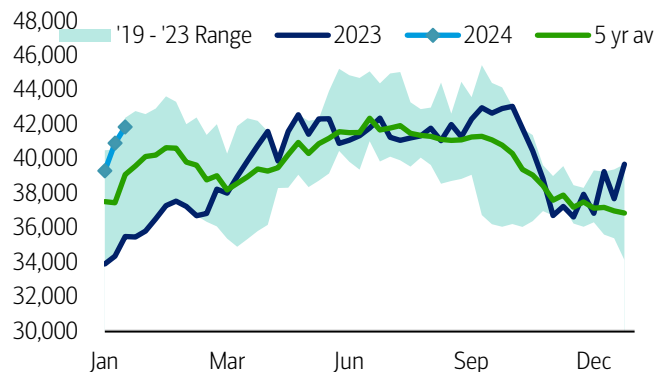
Source:DOE

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Jet stocks

Exhibit 32: Jet Stocks

Jet Stocks 2.3% Higher w/w and 15.3% Higher y/y

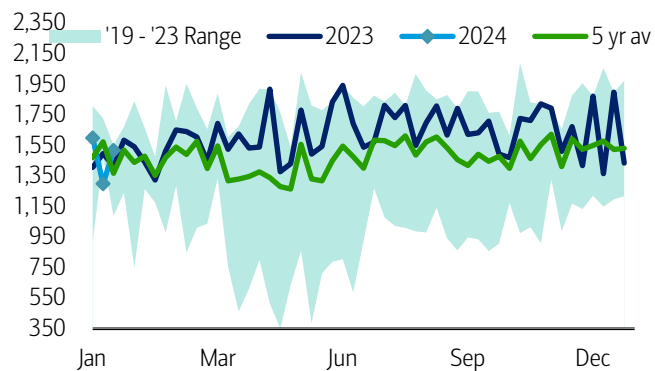


Source:DOE

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Exhibit 34: Jet Implied Demand (000 bpd)

Jet Product Supplied 16.8% Higher w/w and -8.1% Higher y/y

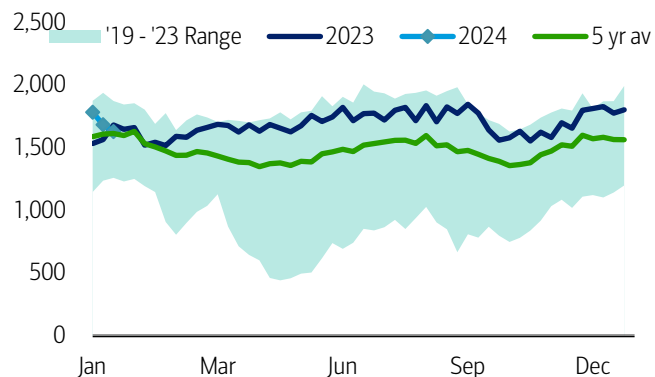


Source:DOE

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Exhibit 36: Jet Production

Jet Production -3.3% Lower w/w and 0.1% Lower y/y

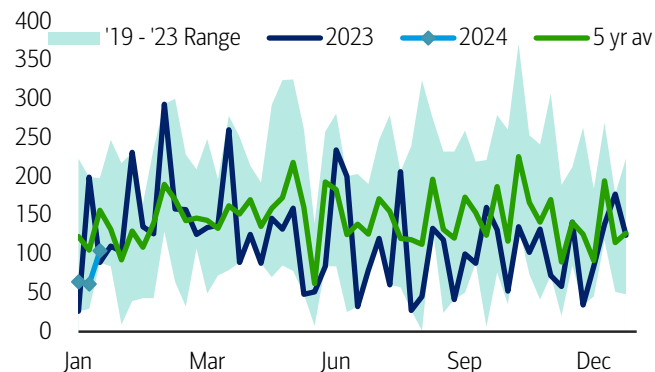


Source:DOE

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Exhibit 33: Jet Imports

Jet Imports 70.5% Higher w/w and -31.5% Higher y/y

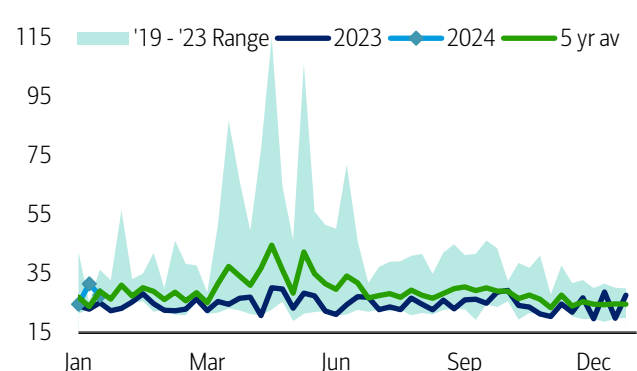


Source:DOE

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Exhibit 35: Jet Demand Cover

Jet Demand Cover -12.4% Lower w/w and 25.4% Higher y/y

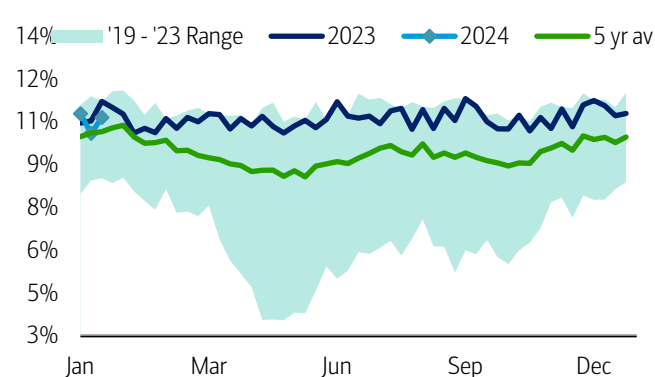


Source:DOE

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Exhibit 37: Jet Yield

Jet Yield 5.5% Higher w/w and -9.9% Lower y/y



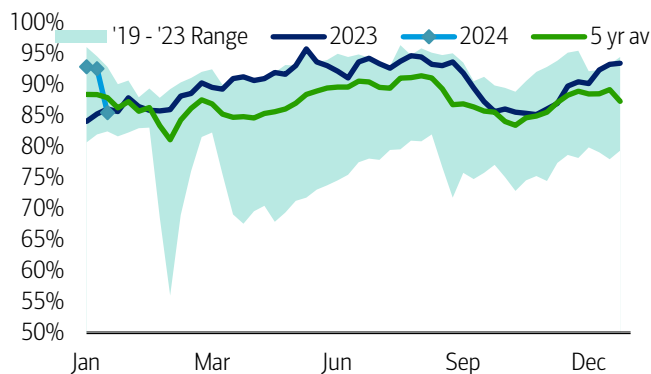
Source:DOE

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Refinery Utilization

Exhibit 38: Utilization

Refinery Utilization -7.7% Lower w/w and 7.5% Lower y/y

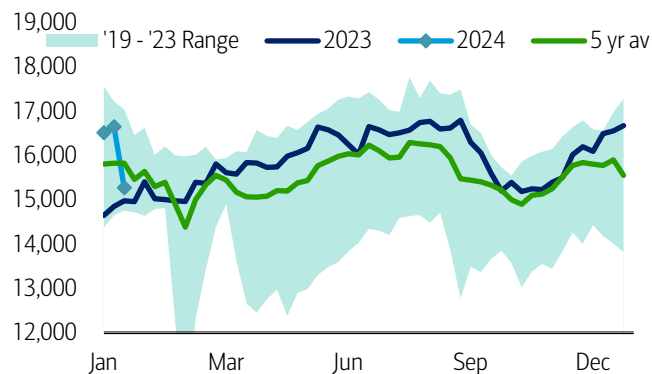


Source:DOE

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Exhibit 39: Crude Throughput

Crude Throughput -8.3% Lower w/w and 11.2% Higher y/y

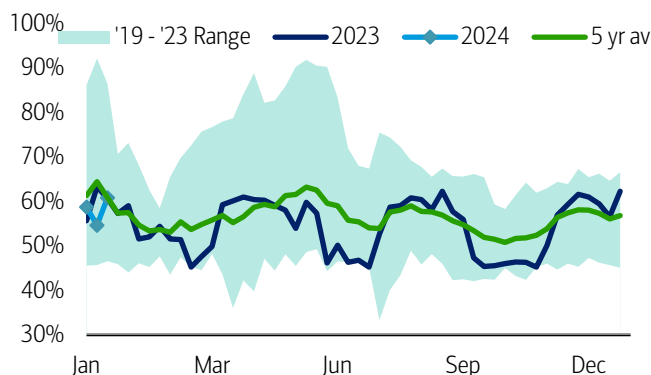


Source:DOE

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Exhibit 40: PADD I Utilization

PADD 1 Utilization Higher w/w and -15.3% Lower y/y

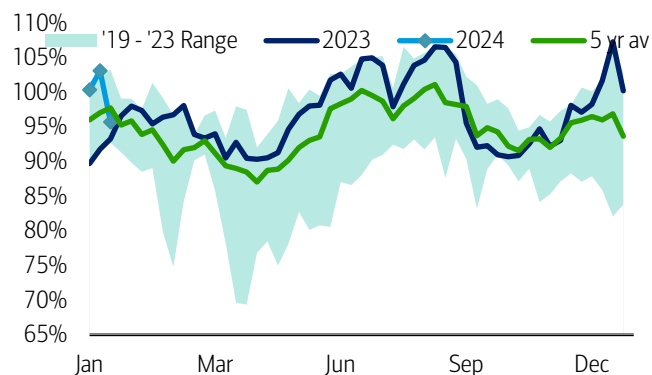


Source:DOE

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Exhibit 41: PADD II Utilization

PADD 2 Utilization -15.8% Lower w/w and 27.0% Higher y/y

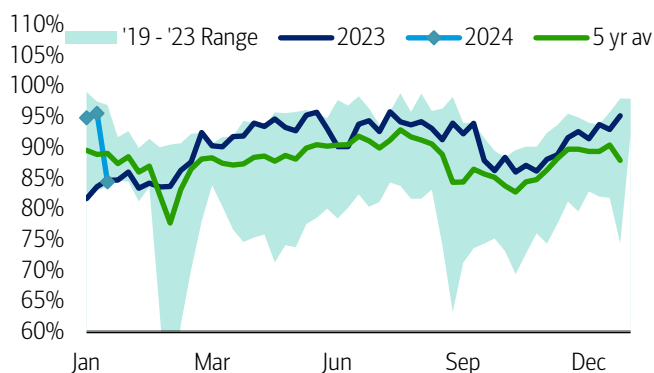


Source:DOE

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Exhibit 42: PADD III Utilization

PADD 3 Utilization -10.6% Lower w/w and 6.8% Lower y/y

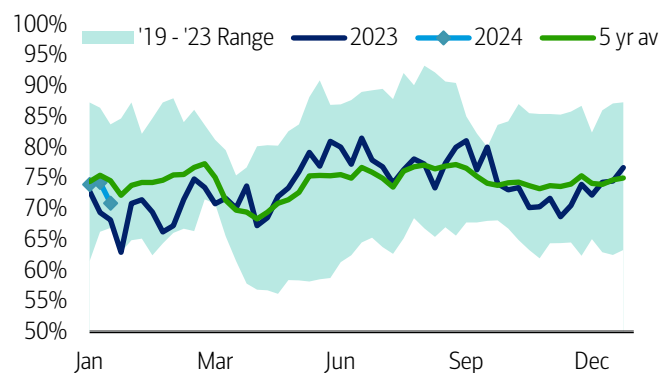


Source:DOE

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Exhibit 43: PADD V Utilization

PADD 5 Utilization -4.7% Lower w/w and 8.0% Higher y/y



Source:DOE

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Crude demand coverage

Exhibit 44: US Crude Demand Cover
US Crude Demand Cover 6.7% Higher w/w and -13.8% Lower y/y

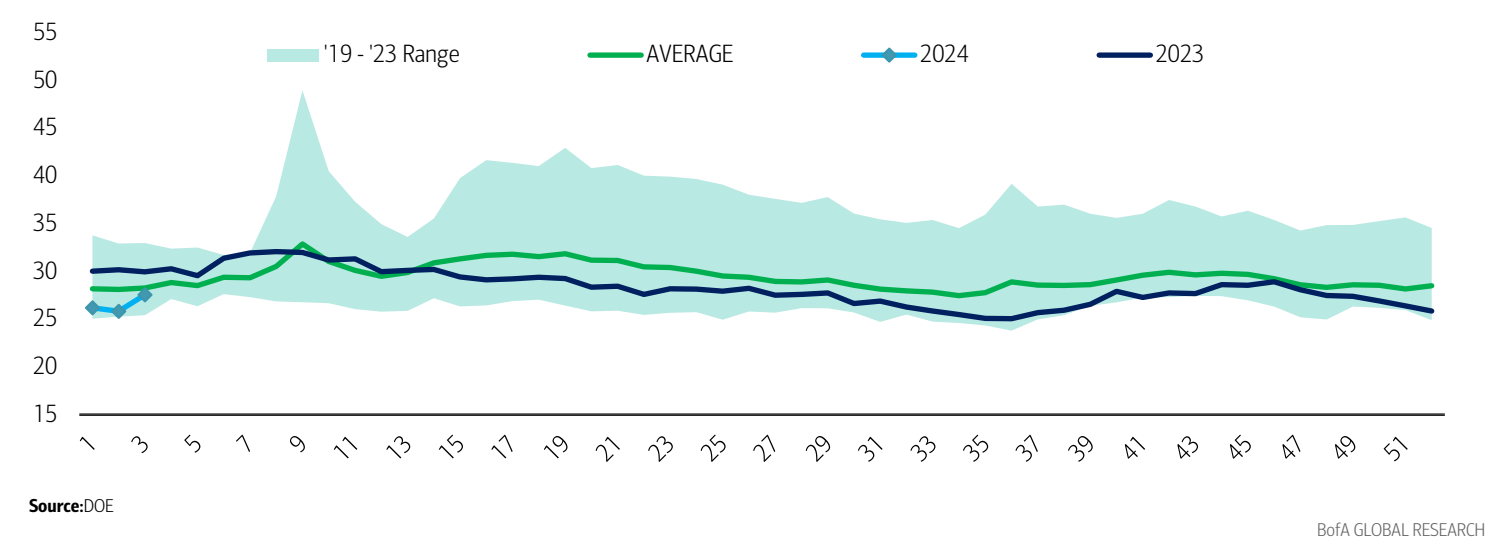
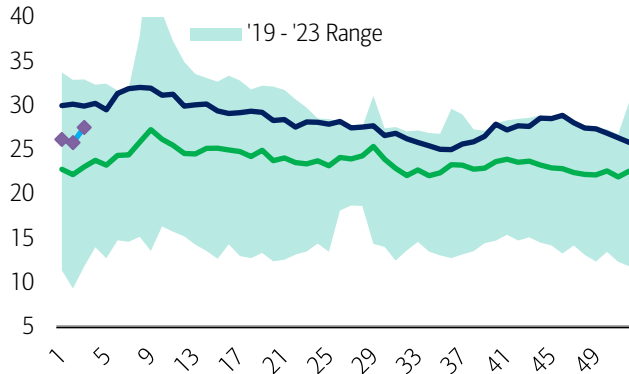


Exhibit 45: PADD I Crude Demand Cover

PADD 1 Crude Demand Cover -12.4% Lower w/w and 18.9% Higher y/y

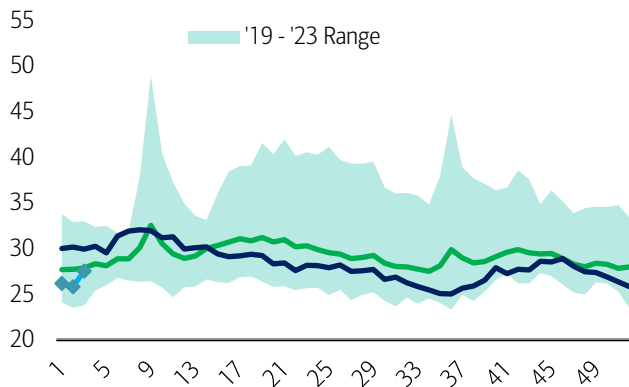


Source:DOE

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Exhibit 47: PADD III Crude Demand Cover

PADD 3 Crude Demand Cover 3.7% Higher w/w and 0.8% Higher y/y

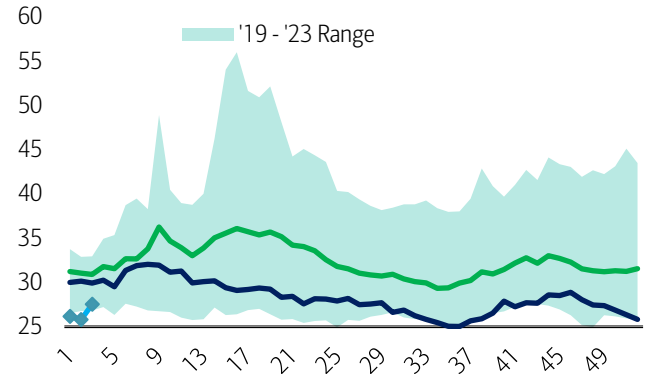


Source:DOE

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Exhibit 46: PADD II Crude Demand Cover

PADD 2 Crude Demand Cover 2.8% Higher w/w and -14.5% Lower y/y

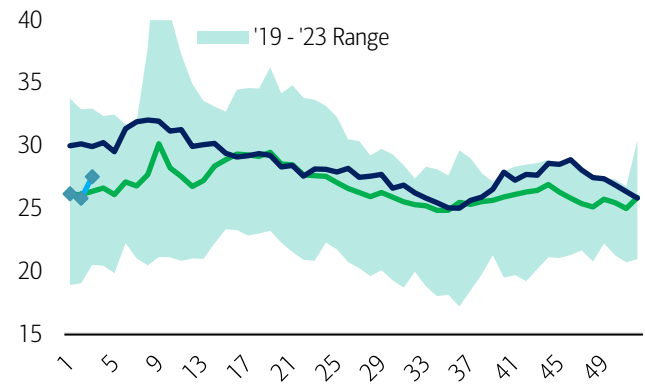


Source:DOE

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Exhibit 48: PADD V Crude Demand Cover

PADD 5 Crude Demand Cover 7.9% Higher w/w and -7.5% Lower y/y



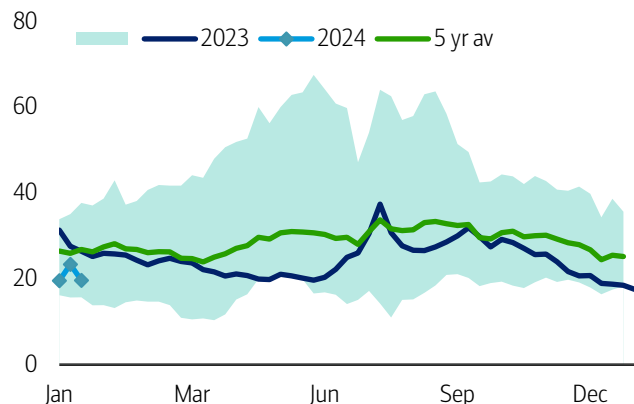
Source:DOE

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NGL pricing

Exhibit 49: Ethane

Ethane Price is -22.3% Lower w/w and -5.3% Lower y/y

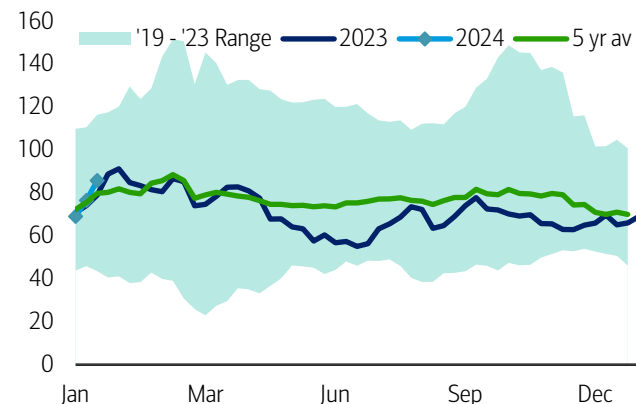


Source: Bloomberg

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Exhibit 50: Propane

Propane Price is 4.7% Higher w/w and -8.2% Lower y/y

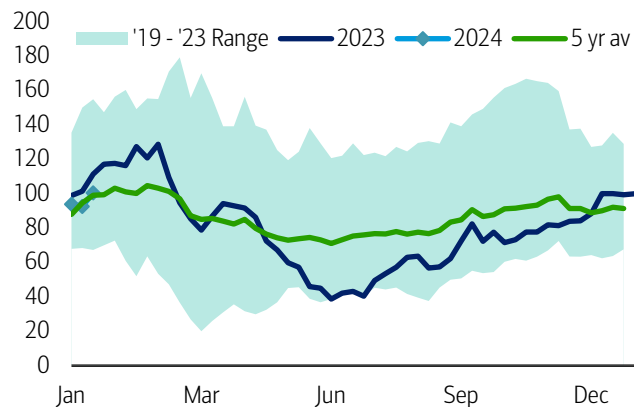


Source: Bloomberg

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Exhibit 51: Butane

Butane Price is 7.0% Higher w/w and -18.6% Lower y/y

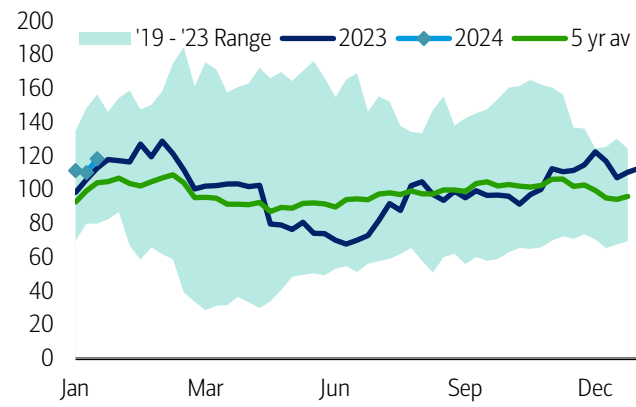


Source: Bloomberg

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Exhibit 52: Isobutane

Isobutane Price is 7.7% Higher w/w and -4.0% Higher y/y

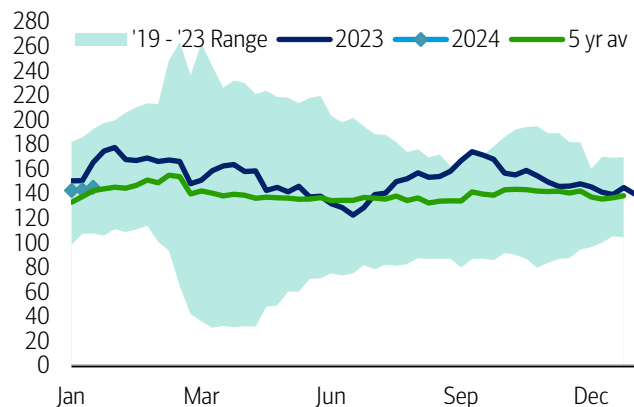


Source: Bloomberg

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Exhibit 53: Natural Gasoline

Natural Gasoline Price is -0.1% Lower w/w and -18.8% Lower y/y

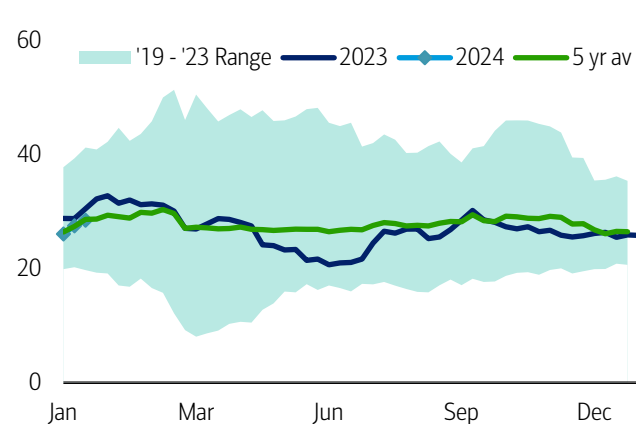


Source: Bloomberg

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Exhibit 54: NGL Composite Barrel

NGL Composite Barrel is -72.1% Lower w/w and -5.6% Lower y/y



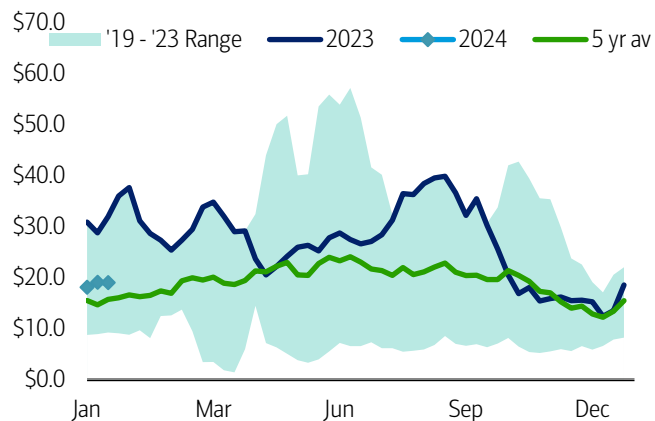
Source: Bloomberg

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Crack spreads

Exhibit 55: Gulf Coast 321

Gulf Coast 321 LLS -9.0% Lower w/w and -45.8% Lower y/y

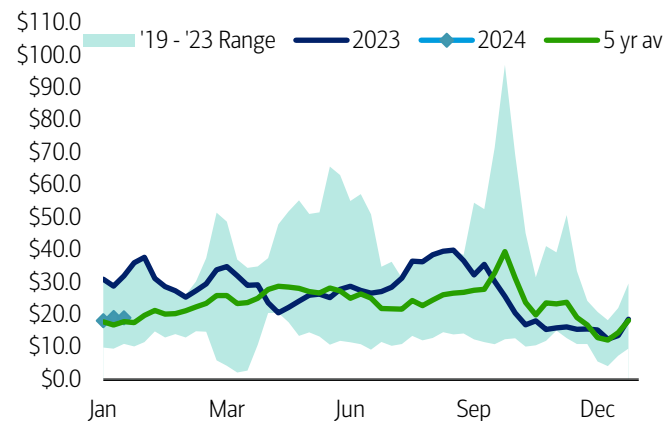


Source: Bloomberg

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Exhibit 56: West Coast 321

West Coast 321 ANS -15.0% Lower w/w and -59.8% Lower y/y

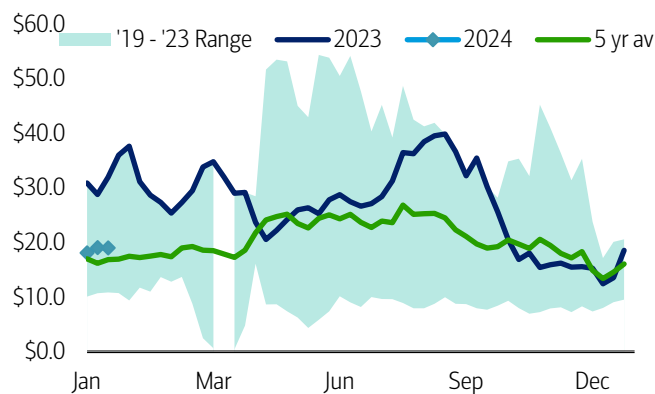


Source: Bloomberg

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Exhibit 57: Northeast 321

New York 321 Brent -1.8% Lower w/w and -44.2% Lower y/y

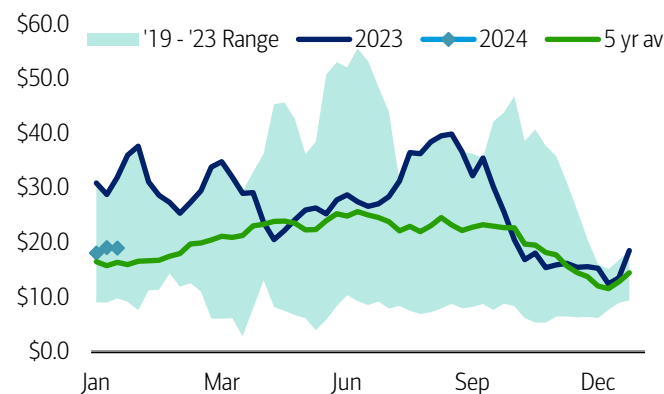


Source: Bloomberg

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Exhibit 58: Midcont 321

Mid Cont 321 WTI -28.0% Lower w/w and -75.4% Lower y/y

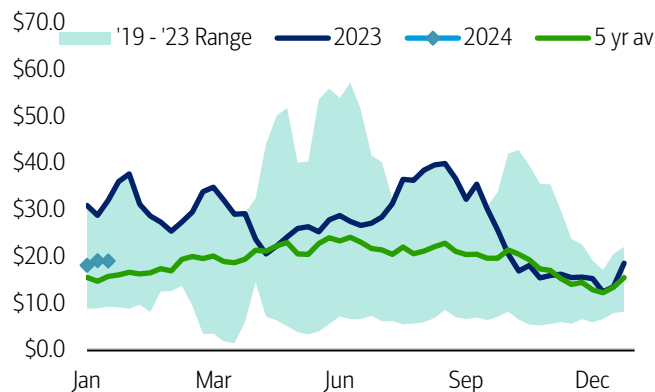


Source: Bloomberg

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Exhibit 59: NWE 321

Northwest Europe 321 Brent

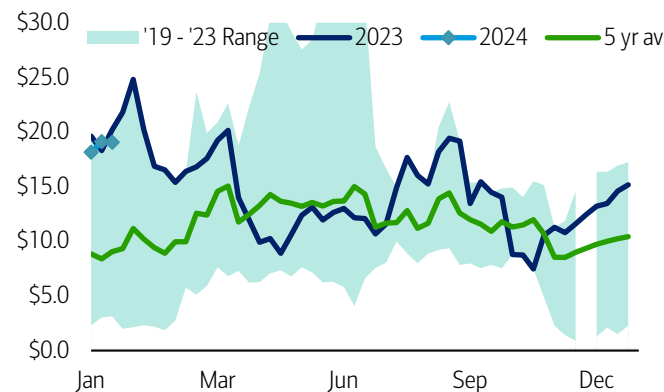


Source: Bloomberg

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Exhibit 60: Dubai 321

Dubai 321 11.3% Higher w/w and -36.4% Lower y/y



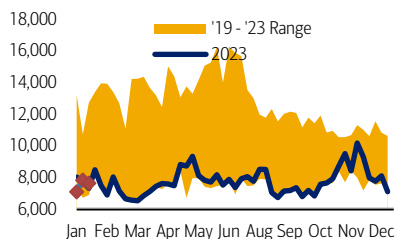
Source: Bloomberg

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Regional Breakdown

Exhibit 61: PADD 1 Crude Stock

PADD 1 Crude Stock -12.1% Lower w/w and -17.8% y/y

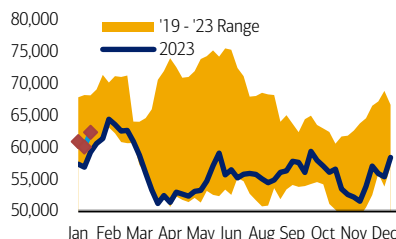


Source: EIA

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Exhibit 62: PADD 1 Gasoline Stock

PADD 1 Gasoline Stock 1.2% Higher w/w and -7.3% y/y

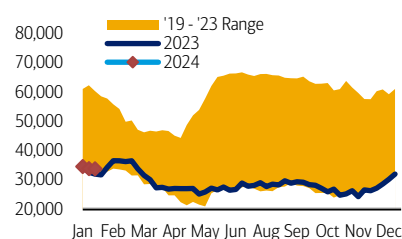


Source: EIA

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Exhibit 63: PADD 1 Distillate Stock

PADD 1 Distillate Stock -0.3% Lower w/w and -32.7% y/y

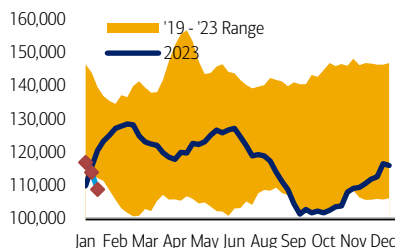


Source: EIA

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Exhibit 64: PADD 2 Crude Stock

PADD 2 Crude Stock -2.5% Lower w/w and -18.6% y/y

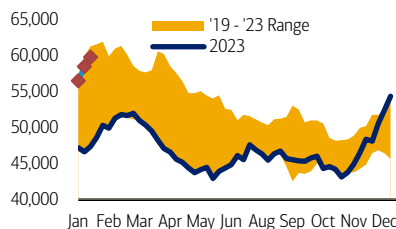


Source: EIA

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Exhibit 65: PADD 2 Gasoline Stock

PADD 2 Gasoline Stock 7.5% Higher w/w and -4.1% y/y

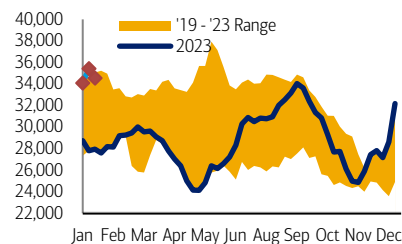


Source: EIA

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Exhibit 66: PADD 2 Distillate Stock

PADD 2 Distillate Stock 6.7% Higher w/w and -1.4% y/y

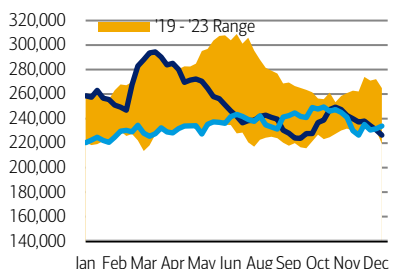


Source: EIA

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Exhibit 67: PADD 3 Crude Stock

PADD 3 Crude Stock -1.2% Lower w/w and -13.4% y/y

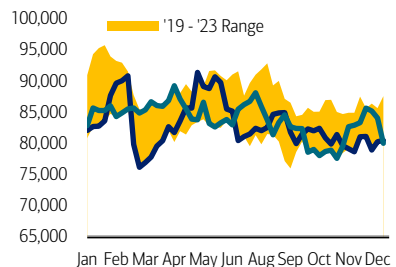


Source: EIA

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Exhibit 68: PADD III Gasoline Stocks

PADD 3 Gasoline Stock 2% Higher w/w and -14.5% y/y

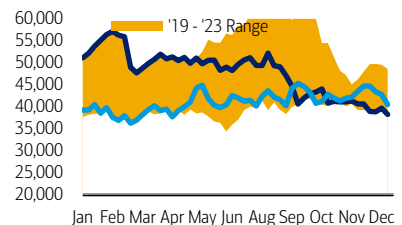


Source: EIA

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Exhibit 69: PADD III Distillate Stocks

PADD 5 Distillate Stock 1% Higher w/w and -1.3% y/y

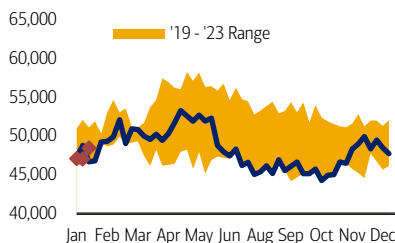


Source: EIA

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Exhibit 70: PADD 5 Crude Stock

PADD 5 Crude Stock 6.1% Higher w/w and -2.0% y/y

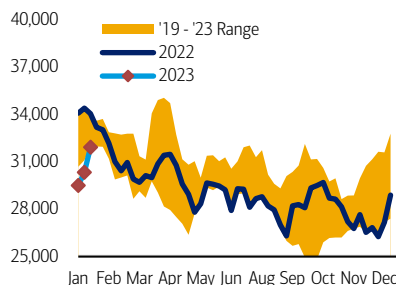


Source: EIA

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Exhibit 71: PADD 5 Gasoline Stock

PADD 5 Gasoline Stock 6.5% Higher w/w and -13.0% y/y

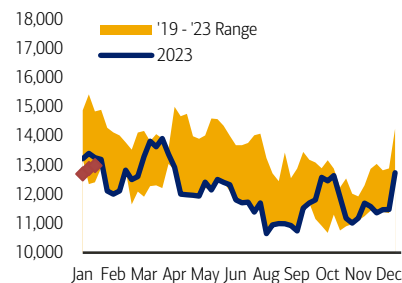


Source: EIA

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Exhibit 72: PADD 5 Distillate Stock

PADD 5 Distillate Stock 1.6% Higher w/w and -15.2% y/y



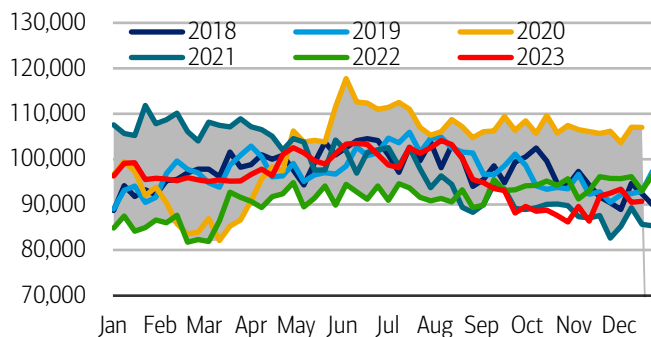
Source: EIA

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Amsterdam, Rotterdam, Antwerp

Exhibit 73: Total ARA Petroleum Stocks (thousand barrels)

Inventories -4% lower w/w

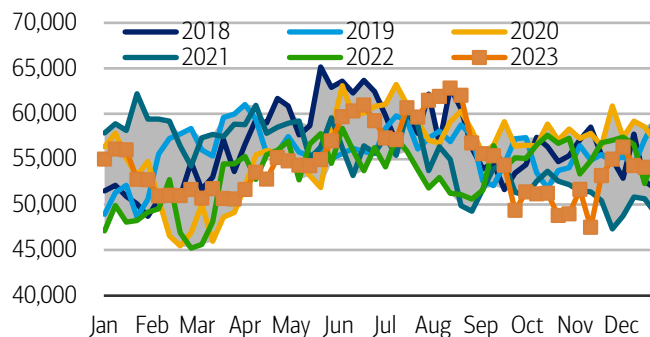


Source: Genscape, PJK

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Exhibit 74: Genscape ARA Crude Stocks (thousand barrels)

Inventories -16% lower w/w

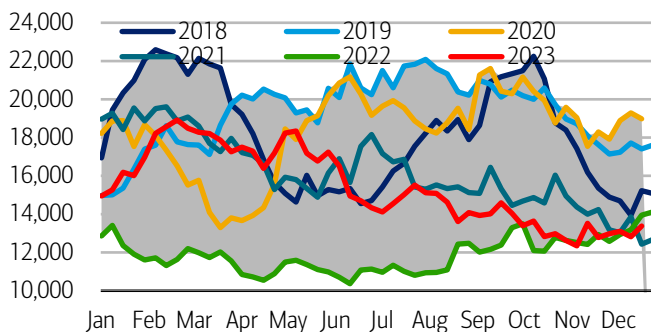


Source: Genscape, PJK

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Exhibit 75: ARA Gasoil Stocks (thousand barrels)

Inventories -6% lower w/w

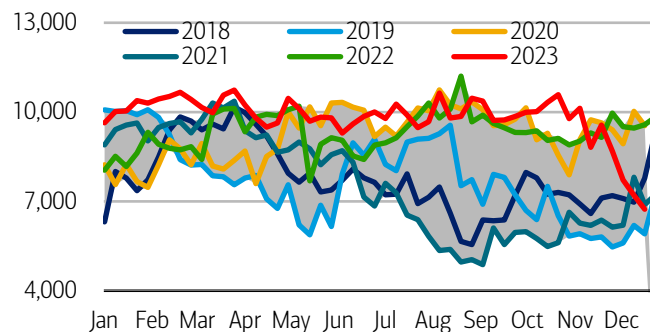


Source: Genscape, PJK

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Exhibit 76: ARA Gasoline Stocks (thousand barrels)

Inventories 7% higher w/w

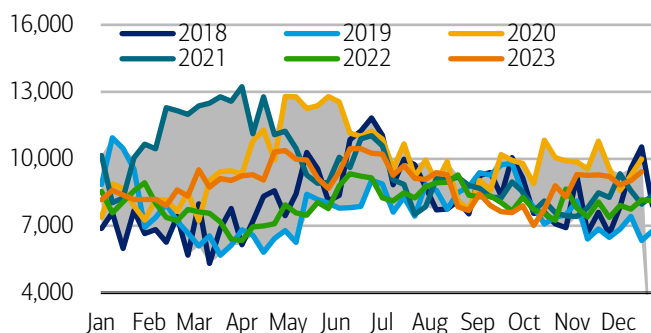


Source: Genscape, PJK

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Exhibit 77: ARA Fuel Oil Stocks (thousand barrels)

Inventories -5% lower w/w

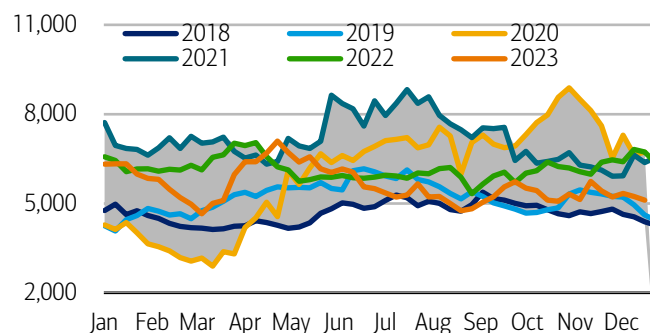


Source: Genscape, PJK

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Exhibit 78: ARA Jet Stocks (thousand barrels)

Inventories -2% lower w/w



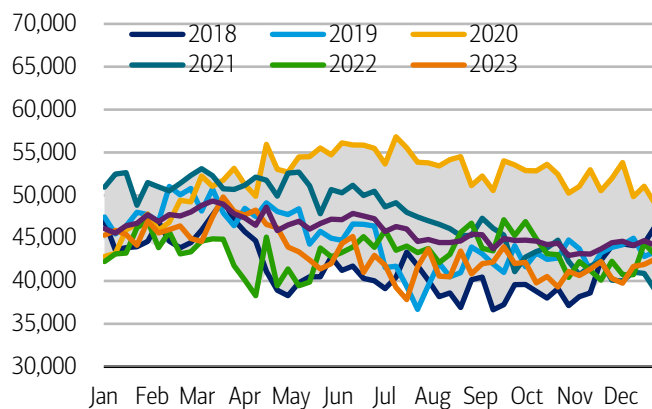
Source: Genscape, PJK

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Singapore

Exhibit 79: Total Singapore Light Distillate, Middle Distillate and Residue Stocks (thousand barrels)

Inventories -1% lower w/w

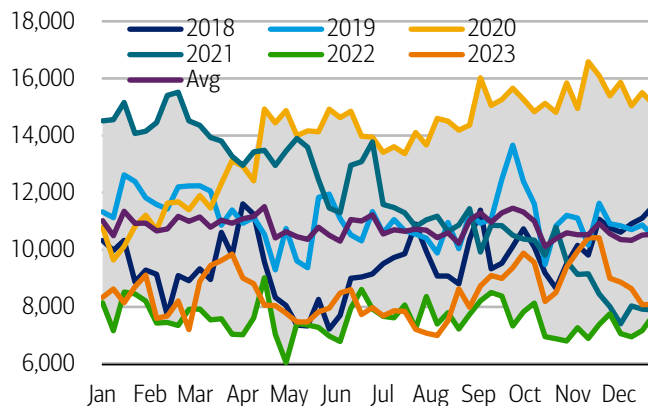


Source: International Enterprise

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Exhibit 80: Singapore Middle Distillate Stocks (thousand barrels)

Inventories -3% lower w/w

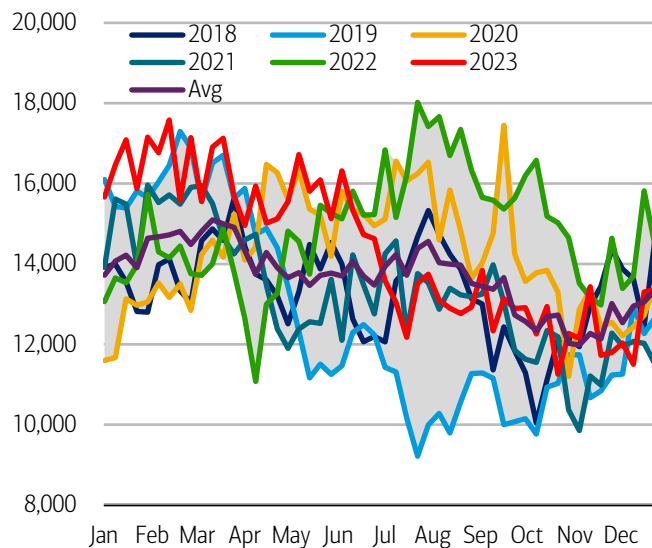


Source: International Enterprise

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Exhibit 81: Singapore Light Distillate Stocks (thousand barrels)

Inventories 1% higher w/w

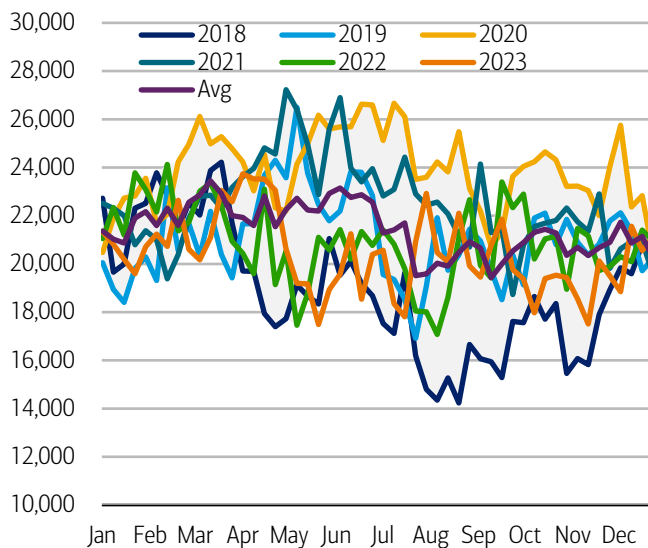


Source: International Enterprise

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Exhibit 82: Singapore Residue Stock (thousand barrels)

Inventories -2% lower w/w

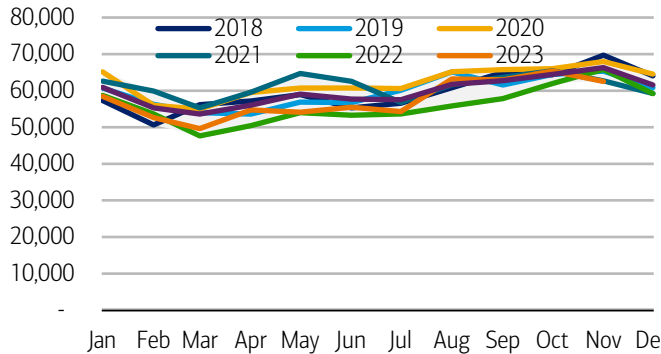


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Japan

Exhibit 83: Japan Total Product Stock (thousand barrels)

Inventories -4% lower w/w

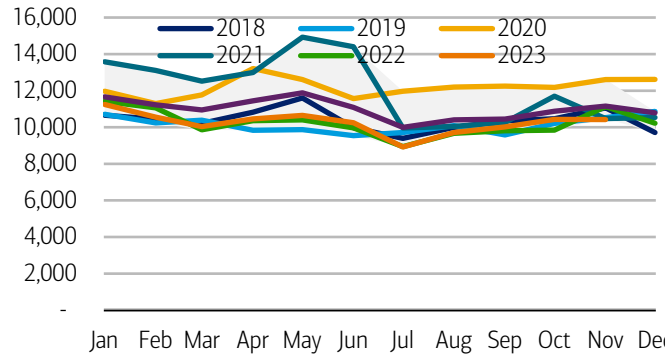


Source: Ministry of Economy Trade and Industry of Japan

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Exhibit 84: Japan Gasoline Stock (thousand barrels)

Inventories -0% lower w/w

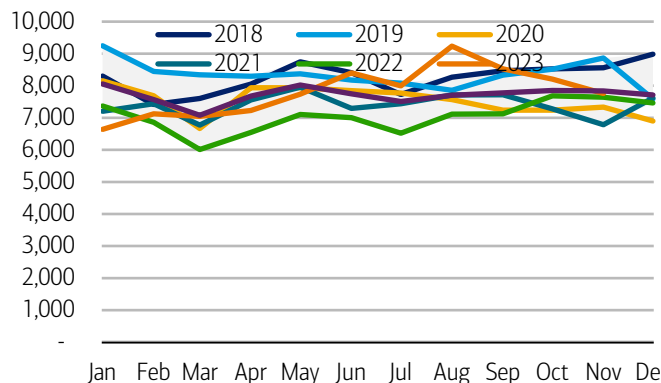


Source: Ministry of Economy Trade and Industry of Japan

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Exhibit 85: Japan Fuel Oil Stock (thousand barrels)

Inventories -5% lower w/w

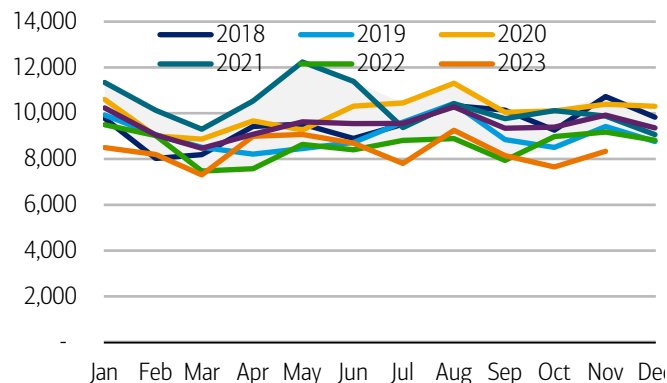


Source: Ministry of Economy Trade and Industry of Japan

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Exhibit 86: Japan Gas Oil Stock (thousand barrels)

Inventories 9% higher w/w

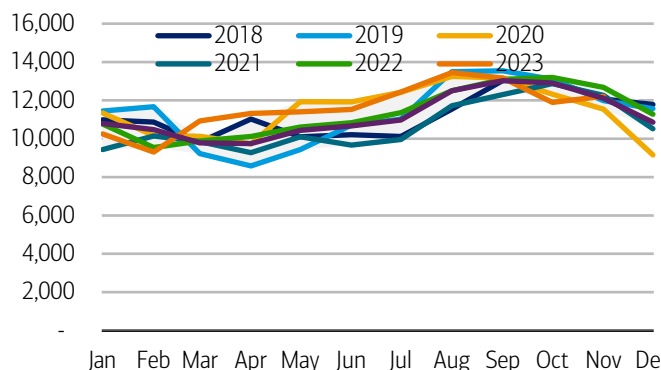


Source: Ministry of Economy Trade and Industry of Japan

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Exhibit 87: Japan LPG Stock (thousand barrels)

Inventories 3% higher w/w

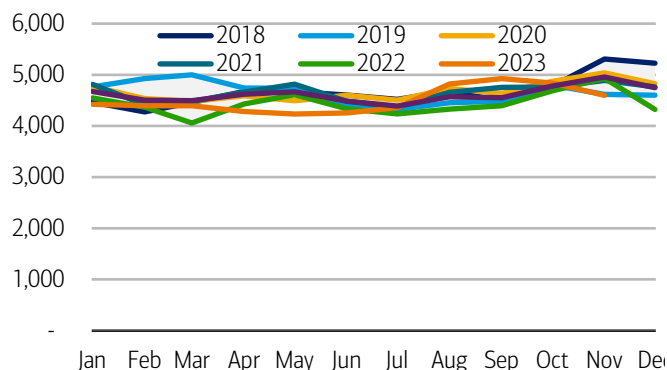


Source: Ministry of Economy Trade and Industry of Japan

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Exhibit 88: Japan Heavy Fuel Oil Stock (thousand barrels)

Inventories -5% lower w/w



Source: Ministry of Economy Trade and Industry of Japan

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Exhibit 89: Reported Global Oil and Product Stocks

Crude oil Decreased -8,293 thousand barrels and Products Increased 4,310 thousand barrels

Current

	Crude	Products	Light Distillates	Middle Distillates	Heavy Distillates / Residue	For Week Ended
US	777,188	454,442	252,977	175,198	26,267	1/19/2024
Japan	69,126	89,322	33,091	36,675	19,557	1/14/2024
ARA		35,543	6,414	19,021	10,108	1/18/2024
Singapore		41,842	12,436	6,903	22,503	1/17/2024
Fujairah		18,013	6,702	2,715	9,112	1/22/2024

Previous

	Crude	Products	Light Distillates	Middle Distillates	Heavy Distillates / Residue
US	785,501	450,548	248,065	175,674	26,809
Japan	69,106	87,289	32,648	37,596	17,045
ARA		36,599	5,996	19,996	10,607
Singapore		42,404	12,274	7,115	23,015
Fujairah		18,013	6,039	2,581	9,393

Stock Change

	Crude	Products	Light Distillates	Middle Distillates	Heavy Distillates / Residue
US	(8,313)	3,894	4,912	(476)	(542)
Japan	20	2,033	443	(922)	2,512
ARA		(1,056)	418	(975)	(498)
Singapore		(562)	162	(212)	(512)
Fujairah		-	-	-	-
Plus / Minus	(8,293)	4,310	5,935	(2,585)	960

Source: EIA, International Enterprise Singapore, Jetroleum Association of Japan, FEDCom/S&P Global Platts

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Disclosures

Important Disclosures

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R1}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R1} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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