



Houlihan Lokey

Oil and Gas

INDUSTRY UPDATE | Q1 2023



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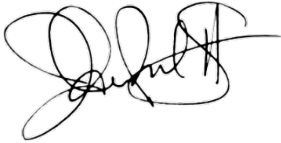
Houlihan Lokey Oil and Gas Update

Dear Clients and Friends,

Houlihan Lokey is pleased to present its Oil and Gas Industry Update for Q1 2023.

We have included an overview of trends in the oil and gas industry, commodity pricing, public capital markets, M&A, A&D, and financing activity, along with key data to help you stay ahead in our dynamic and constantly evolving industry. We hope you find this quarterly update to be informative and that it serves as a valuable resource to you in staying abreast of the market. If there is additional content you would find useful for future updates, please don't hesitate to call or email us with your suggestions. We look forward to staying in touch with you.

Regards,



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Key Quarterly Trends

Oil Supply/Demand Dynamics

- WTI prices through Q1 '23 were range bound between ~\$60–\$85/bbl as market participants weighed (i) the increase in demand from China following the abrupt end of its zero-COVID policy, (ii) relatively tight global inventories, and (iii) the probability (and depth) of a global recession on the horizon.
 - More recently, WTI prices have weakened to ~\$70/bbl given stress in the banking system following the collapse of select regionals (Silicon Valley Bank, Signature Bank, First Republic) as well as the takeover of Credit Suisse by UBS.
 - However, tail prices have remained steadily above \$60, a level that still supports both production and upside development across many global basins.
 - On April 2, 2023, OPEC+ announced a surprise cut of ~1.2 MMBbl/d, characterizing the move as precautionary to stabilize the market.
 - Depressed oil prices during the last down cycle and the upstream sector's broad current focus on returning capital to shareholders have contributed to an environment of underinvestment in exploration and development globally.
 - As a result, the majority of commodity analysts are currently bullish on future oil prices, including forecasting YE 2023 +/- \$100/bbl WTI.
- Russian oil supply dynamics continue to have a material effect on global crude prices.
 - Despite the price cap on seaborne Russian oil, Russian crude and refined product volume exports are at post-invasion highs of ~4 MMBbl/d and ~2 MMBbl/d, respectively.⁽¹⁾
 - On December 5, 2022, the European Union, G7, and Australia instituted a price cap of \$60/bbl on each cargo of seaborne Russian oil.
 - As such, businesses are barred from shipping, financing, and insuring Russian oil cargoes, unless it is below the prevailing price cap.
 - Russian crude flows have generally shifted to those countries that have not imposed financial sanctions; China, India, and Turkey have emerged as key destinations for Russian crude, somewhat mitigating the intended effect of the western sanctions.

(1) As of May 5, 2023. As per WallStreet Research.

Key Quarterly Trends (cont.)

Natural Gas Supply/Demand Dynamics

- Title Transfer Facility (TTF, the European benchmark) spot prices have declined ~91.3%⁽²⁾ from their peak of \$90 experienced on August 26, 2022, largely due to (i) a relatively warm winter, (ii) the ramp-up of LNG import to replace Russian pipeline gas, (iii) the resulting build in natural gas inventories, and (iv) alternative power generation fuel sources (coal, wood, nuclear, renewables).
 - Europe experienced its third warmest January on record in 2023,⁽³⁾ during which EU natural gas inventories were only depleted to ~64.1% capacity, their highest seasonal level in years.⁽⁴⁾
 - In July 2022, in order to reduce its member states' reliance on Russian energy, the EU unveiled a European Gas Demand Reduction Plan to cut members' gas usage by 15% during the period from August 2022 through March 2023 vs. 2017–2021 average consumption levels.
- Similar to TTF, Henry Hub (HH) gas prices have declined significantly (~40.5%) since Q4 '22 due to rising U.S. storage inventories resulting from a combination of (i) a relatively mild winter and (ii) temporary closure of the Freeport LNG terminal.
 - U.S. gas inventories have risen by ~0.3 Tcf since March 17, 2023,⁽⁵⁾ an unusual surplus for the season, after being at a significant deficit to average levels through Q3 '22, when wholesale prices surged above \$9/mcf.
 - Analysts expect drilling activity to decline most sharply in gas-weighted basins (Appalachia, Mid-Con, and even Haynesville and West Texas).
 - On March 8, 2023, Freeport LNG received approval from the Federal Energy Regulatory Commission (FERC) and Pipeline and Hazardous Materials Safety Administration (PHMSA) to resume the third of its three LNG trains at its ~2 Bcf/d liquefaction facility.
- Despite the recent decline in HH natural gas prices noted above, continued global demand and regional price differentials have incentivized U.S. LNG exporters to expand current capacity and consider establishing new export terminals.
 - The most recent commissioned U.S. LNG export facility, Calcasieu Pass LNG, placed all of its liquefaction trains (~1.3 bcf/d) in service in August 2022.
 - In addition to Golden Pass LNG, which started construction in 2019, two more projects (Plaquemines LNG and Corpus Christi Stage III) on the U.S. Gulf Coast have recently begun construction.
 - Once completed, the three export projects under construction will expand U.S. LNG peak export capacity by a combined ~5.7 Bcf/d by 2025.
 - As per Reuters, about a dozen developers hope to make final investment decisions (FID) this year.

(2) S&P Capital IQ as of May 22, 2023.

(3) EU's Copernicus Climate Change Service.

(4) GIE Aggregated Gas Storage Inventory as of May 15, 2023.

(5) EIA.

Key Quarterly Trends (cont.)

M&A&D Markets

- Based on what we are directly experiencing across Houlihan Lokey oil and gas deal volume, A&D buyers and sellers both remain highly interested in transacting, although commodity price volatility and macroeconomic uncertainty have resulted in prolonged times to closing and/or “paused” processes.
 - ~\$8.7 billion of reported transaction value in Q1 ‘23 (vs. ~\$13.5 billion in Q4 ‘22).
- Significant transaction backlog would suggest a rebound in M&A&D activity is likely in the near term as both commodity prices and macroeconomic factors stabilize.
 - As we enter Q2 ‘23, we are experiencing the M&A&D window opening, particularly among public-to-public M&A and public-to-private A&D.
- Cash flow multiples are becoming more reflective of an “output” of value rather than an “input” to or limit on value, as forward curves flatten/move to contango.
 - Public gas operator NTM⁽⁶⁾ EBITDA multiples have increased, implying that investors are valuing those companies at a gas price reflective of the strip being in contango and gas-weighted assets are gaining relative favor in this environment.
- Oil-and-gas-related secondaries activity shows some signs of activity; at the same time, there are discussions with parties regarding the possible formation of dedicated, energy-focused secondaries investors.

Selected Upstream Metrics

(\$ in billions)

	Q1-22	Q4-22	Percent Change (Q1-23 vs.)		
			Q1-23	Q1-22	Q4-22
A&D					
Amount	\$6.0	\$8.3	\$4.4	-26.2%	-46.6%
Transactions	72	66	49	-31.9%	-25.8%
M&A					
Amount	\$8.2	\$5.2	\$4.2	-48.5%	-19.3%
Transactions	6	3	6	0.0%	100.0%

Debt Capital Markets

- While high-yield activity continues to be muted, energy has led recent issuance, indicating increasing institutional appetite/green shoots for E&P issuers.
 - Energy high-yield index OAS spreads have remained significantly tighter compared to the broader high-yield index.
 - As of March 31, 2023, the energy high-yield index spread was 380 bps (up 9.2% vs. Q1 ‘22) compared to the broader high-yield index spread of 458 bps (up 33.5% since Q1 ‘22).
- Following the collapse of Silicon Valley Bank, Signature Bank, and First Republic and the resultant deposit drain witnessed at regional banks, RBL banks have voiced concerns over the macroeconomic impact on capital ratios/capital availability and therefore continue to remain highly selective.
- Private credit providers remain highly active across numerous products.

(6) Refers to next 12 months.

Key Quarterly Trends (cont.)

Debt Capital Markets (cont.)

- The oil and gas securitization market continues to mature, especially with respect to time-to-completion and hedging requirements.
- VPPs are emerging as an attractive alternative to securitizations in many similar circumstances.
- Drilling capital is available and an expanding universe of interest has broadened the range of available alternatives.

Equity Capital Markets

- A growing portion of the broader LP universe is bullish E&P and is once again seeking to deploy more capital into the industry.
 - While capital formation remains selective, the upstream sector cash-on-cash returns are expanding the LP universe.
 - Certain sponsors with top-tier track records are continuing to raise funds with success, although the latest funds are generally smaller than previous vintages and taking longer to close.
 - Sponsors are concentrating capital into a smaller number of teams/assets.
- Energy's contribution to the S&P 500 on a market cap basis has been increasing (~4.4%) but remains materially below energy's contribution on a levered cash flow basis (>13%).
 - This highlights the potential for generalist capital to rotate into E&P equities, and for E&P valuation metrics to improve as a result.

Other Trends

- Recent geopolitical events and attractive industry returns have shifted the dialogue gradually from ESG to energy security in a more balanced manner.
- Inventory scarcity driving M&A&D, reflected in public operators' focus on acquiring assets with significant quality undeveloped inventory and, in many instances, even reducing activity on the acquired acreage to "land bank" for the future.
 - Buyers are attributing meaningful value to quality undeveloped locations and becoming increasingly comfortable leaning into strip prices.
- Robust commodity prices in 2022 have left majors/large public independents with record cash balances that they are encouraged by shareholders to (i) return via dividends and (ii) use to acquire companies/assets as opposed to expanding budgets for drilling programs.
- In response to weakened gas prices, operators have dropped 16 gas rigs (~10.2%) since May 5 while noting that service costs have begun to decline.

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Houlihan Lokey is the trusted advisor to more top decision-makers than any other independent global investment bank.

Energy and Power M&A

2020-2022 M&A Advisory Rankings All U.S. Energy & Power Transactions

	Advisor	Deals
1	Houlihan Lokey	70
2	Jefferies	59
3	Evercore Partners	57
4	Citi	56
5	JP Morgan	55

Source: Refinitiv.

No. 1 M&A Advisor for All U.S. Energy and Power Transactions

Corporate Finance

2022 M&A Advisory Rankings Global Transactions Under \$1 Billion

	Advisor	Deals
1	Houlihan Lokey	381
2	Rothschild	369
3	JP Morgan	217
4	Lazard	206
5	Goldman Sachs	203

Source: Refinitiv. Excludes accounting firms and brokers.

No. 1 Global M&A Advisor Under \$1 Billion

Leading Capital Markets Advisor

Financial and Valuation Advisory

1998 to 2022 Global M&A Fairness Advisory Rankings

	Advisor	Deals
1	Houlihan Lokey	1,232
2	JP Morgan	1,030
3	Duff & Phelps, A Kroll Business	938
4	Morgan Stanley	725
5	BofA Securities	710

Source: Refinitiv. Announced or completed transactions.

No. 1 Global M&A Fairness Opinion Advisor Over the Past 25 Years

1,000+ Annual Valuation Engagements

Financial Restructuring

2022 Global Distressed Debt & Bankruptcy Restructuring Rankings

	Advisor	Deals
1	Houlihan Lokey	58
2	PJT Partners	30
3	Lazard	29
4	Rothschild	25
5	Moelis	21

Source: Refinitiv.

No. 1 Global Investment Banking Restructuring Advisor

1,500+ Transactions Completed, Valued at More Than \$3.0 Trillion Collectively

Global Oil and Gas Footprint: Fully Integrated Team

Houlihan Lokey's Oil & Gas Group provides global coverage via more than 80 dedicated financial professionals, including specialized bankers, A&D/technical advisory, valuation, and capital markets teams.

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Cross-Product Industry Team



Technical/A&D

- More than \$50 billion in combined transactions
- Specialists in:
 - Technical advisory
 - Asset dispositions/swaps
 - Equity/working interest sales
 - JV structuring/partner identification

Mergers and Acquisitions

- No. 1 Global M&A advisor under \$1 billion*
- Corporate M&A/spinoff advisory, structuring, negotiation, and execution
- Extensive reach in market trends and relationships
- Specialize in tailored processes to maximize value for our clients

Recapitalization/Restructuring

- No. 1 global recapitalization/restructuring advisor
- We have been engaged in the most notable energy recapitalizations/restructurings of the recent and prior commodity downturn cycles

Financial Advisory

- No. 1 global M&A fairness opinion advisor over the past 25 years**
- 1,000+ annual valuation engagements
- Transaction advisory services, including ability to bundle due diligence and quality of earnings services

Capital Markets

- ~\$25 billion of capital raised and \$12 billion advised on over the past two years
- Market leader in custom/bespoke structure
- Deep expertise in driving optimal positioning, structure/terms, and syndication

Source: Refinitiv.

*Excludes accounting firms and brokers.

**Announced or completed transactions.

Trusted Advisor

- During the past several years, Houlihan Lokey's fully integrated, cross-product Oil & Gas Group has advised on numerous capital-raise, M&A, corporate finance, and recapitalization assignments in the E&P industry.

Veteran Leadership Team

- The Oil & Gas investment banking team is a cross-product, global, industry-dedicated team of more than 80 highly experienced professionals.
- They come from a diverse set of backgrounds, including E&P companies, midstream companies, other investment banks, investment funds, and research/brokerage shops.
- The A&D/technical group is led by a team of technically focused professionals from the industry, with an average of more than 25 years of industry experience.

Selected Transactions⁽¹⁾

<p>has combined in an all-stock merger with</p> <p>Financial Advisor</p>	<p>has divested substantially all of its oil and gas assets to</p> <p>Sellside Advisor</p>	<p>has sold substantially all its assets, pursuant to Section 363 of the U.S. Bankruptcy code, to</p> <p>Company Advisor</p>	<p>has been acquired by</p> <p>Financial Advisor & Fairness Opinion</p>	<p>has been acquired by</p> <p>Financial Advisor & Fairness Opinion</p>	<p>has been acquired by</p> <p>Sellside Advisor</p>
<p>has sold a 37.5% wellbore interest in certain Legacy PDP assets to</p> <p>Sellside Advisor</p>	<p>has acquired the assets of</p> <p>Buyside Advisor</p>	<p>a portfolio company of</p> <p>Reserve-Based Lending Facility Refinancing</p> <p>\$500,000,000</p> <p>Exclusive Placement Agent</p>	<p>has acquired</p> <p>Company Advisor</p>	<p>has completed a "merger-of-equals" with</p> <p>Sellside Advisor and Fairness Opinion</p>	<p>has completed the refinancing of Senior Secured Notes through a combined issuance of Term Loan B and new Senior Secured Notes</p> <p>\$1,870,000,000</p> <p>Joint Lead Arranger & Joint Lead Manager</p>

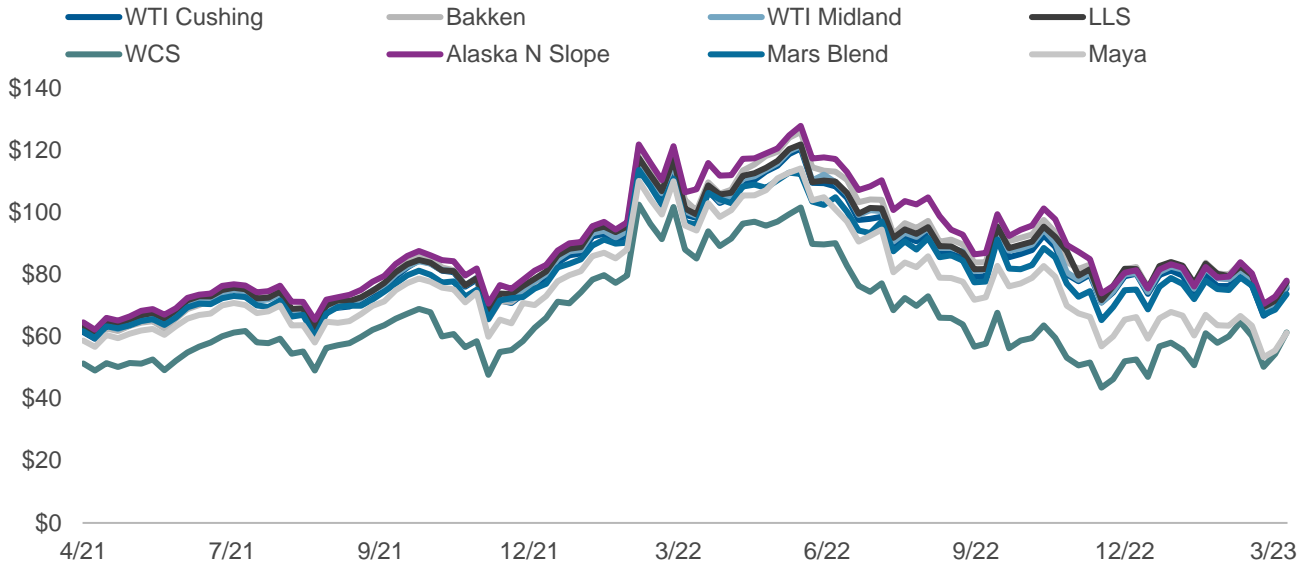
Tombstones included herein represent transactions closed from 2018 forward.

(1) Please reach out to Manny VEDI at 832.319.5135 or MVEDI@HL.com for additional Oil & Gas Group qualifications.

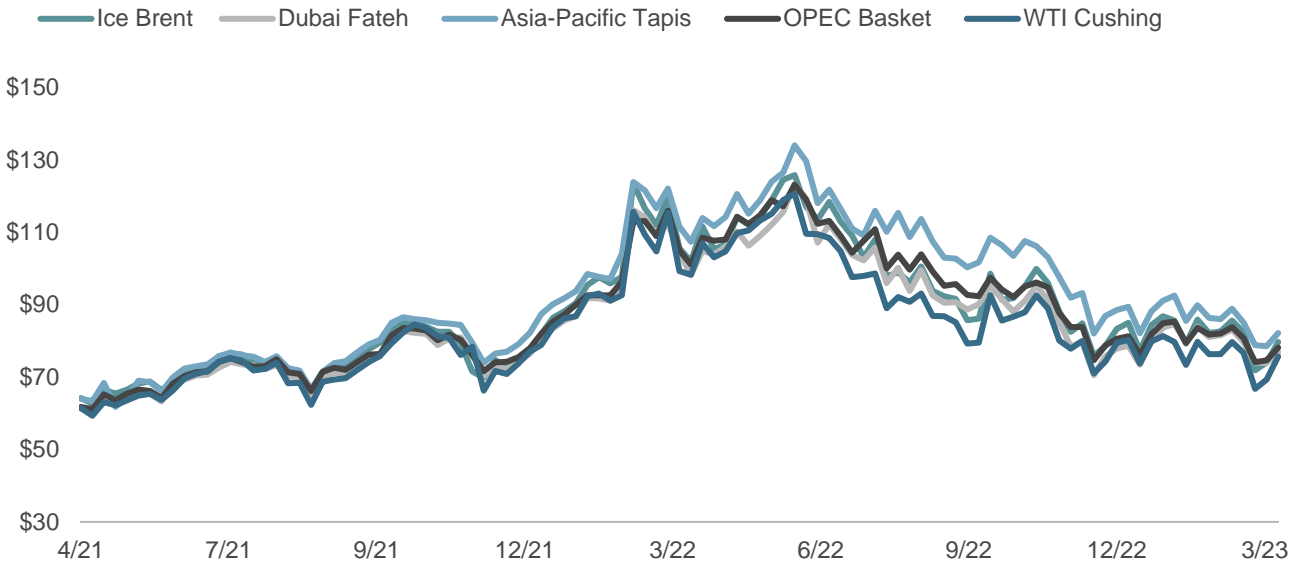
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Spot Pricing

North American Spot Prices (\$/bbl)

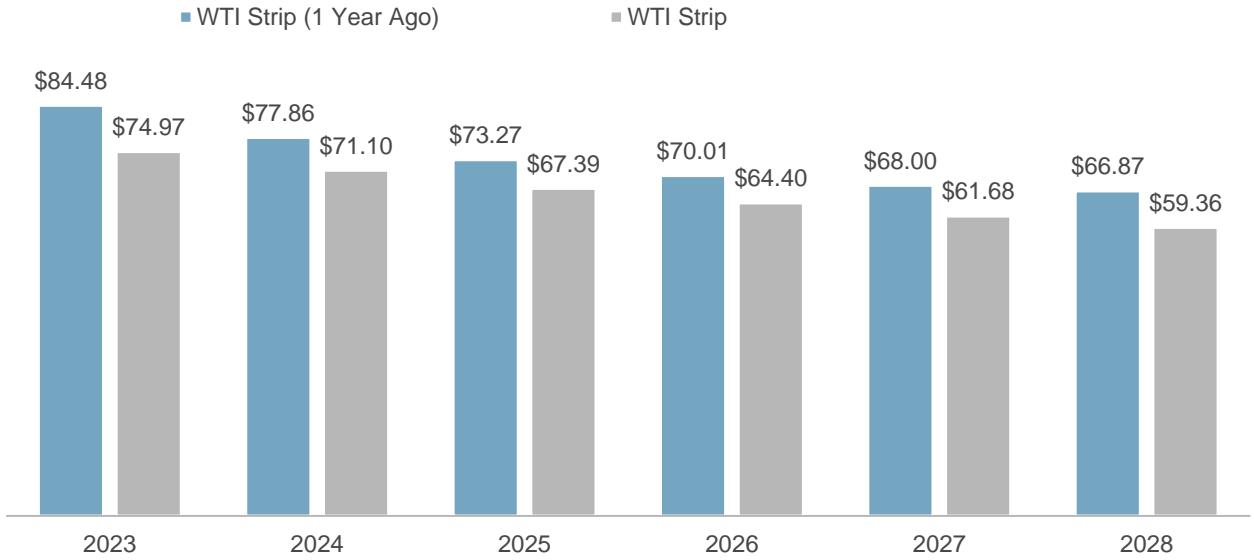


International Spot Prices (\$/bbl)

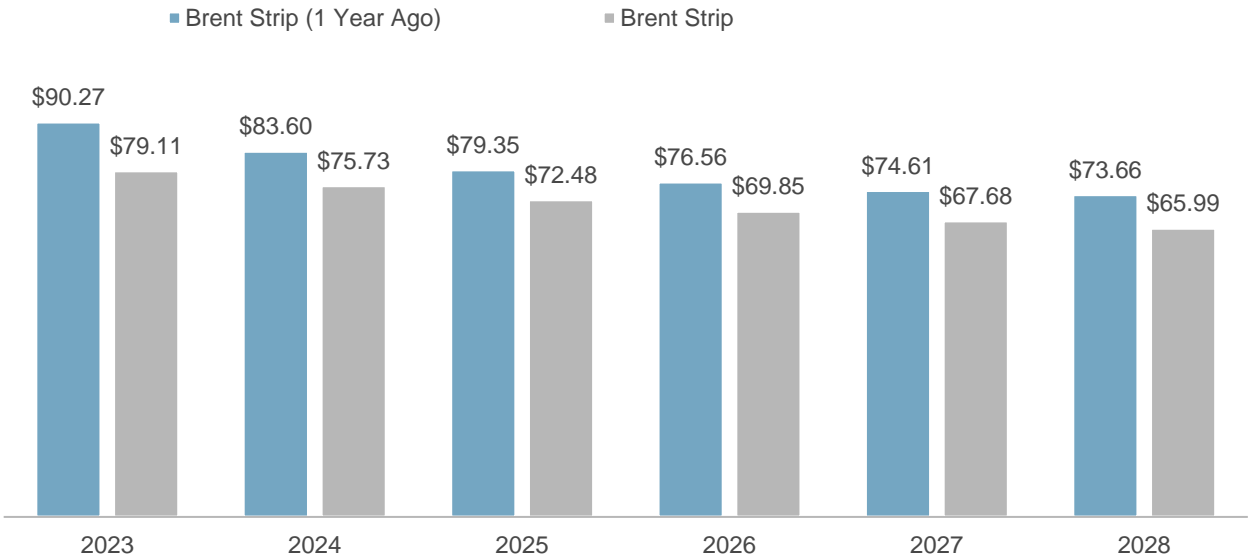


Strip Pricing

WTI Cushing Strip Pricing Comparison (\$/bbl)



Brent Strip Pricing Comparison (\$/bbl)

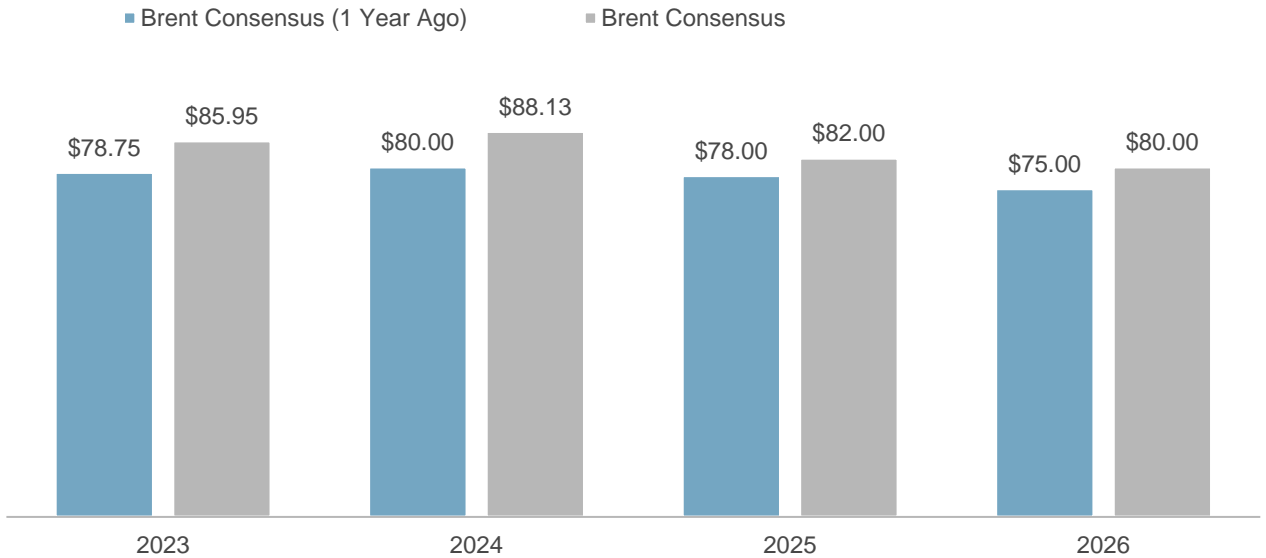


Consensus Pricing

WTI Cushing Consensus Pricing Comparison (\$/bbl)



Brent Consensus Pricing Comparison (\$/bbl)



Differentials

Regional Crude Oil Spot Pricing (\$/bbl)

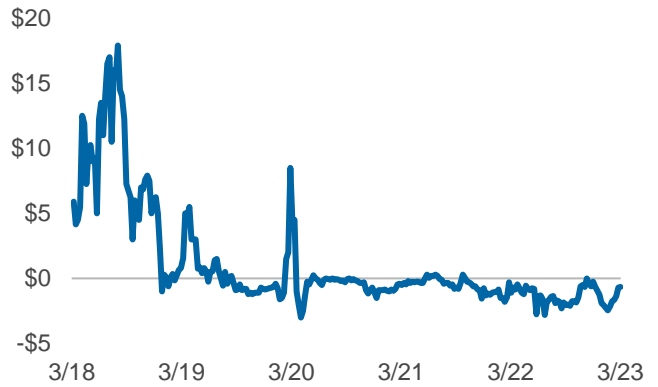
Region	3/31/2023	3/31/2022	12/31/2022	YoY % Change	QoQ % Change
Brent	\$79.7	\$106.6	\$85.0	-25.2%	-6.2%
<i>Brent—WTI Cushing</i>	\$4.0	\$6.3	\$4.7		
WTI Cushing	\$75.7	\$100.3	\$80.3	-24.5%	-5.7%
<i>WTI Cushing—Brent</i>	(\$4.0)	(\$6.3)	(\$4.7)		
WTI Midland	\$76.3	\$101.3	\$80.5	-24.6%	-5.2%
<i>WTI Cushing—WTI Midland</i>	(\$0.6)	(\$1.0)	(\$0.3)		
Bakken	\$77.5	\$104.8	\$82.5	-26.0%	-6.0%
<i>WTI Cushing—Bakken</i>	(\$1.8)	(\$4.5)	(\$2.2)		
Eagle Ford Light	\$72.2	\$96.8	\$76.7	-25.4%	-6.0%
<i>WTI Cushing—Eagle Ford Light</i>	\$3.5	\$3.5	\$3.5		
WTS	\$74.8	\$99.0	\$78.0	-24.5%	-4.2%
<i>WTI Cushing—WTS</i>	\$0.9	\$1.3	\$2.3		
WCS	\$61.4	\$89.5	\$52.6	-31.4%	16.6%
<i>WTI Cushing—WCS</i>	\$14.3	\$10.8	\$27.6		
Maya	\$61.2	\$96.3	\$66.3	-36.4%	-7.7%
<i>Maya—WCS</i>	(\$0.1)	\$6.8	\$13.7		
Mars	\$73.7	\$97.5	\$75.2	-24.5%	-2.0%
<i>WTI Cushing—Mars</i>	\$2.0	\$2.8	\$5.1		
LLS	\$77.6	\$102.1	\$81.8	-24.0%	-5.1%
<i>LLS—Maya</i>	\$16.4	\$5.8	\$15.5		
ANS	\$78.1	\$106.8	\$81.4	-26.9%	-4.1%
<i>Brent—ANS</i>	\$1.6	(\$0.2)	\$3.6		

Differentials (\$/bbl)

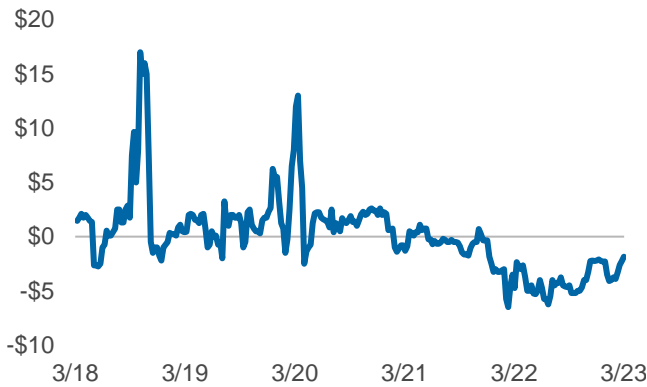
Brent—WTI Cushing



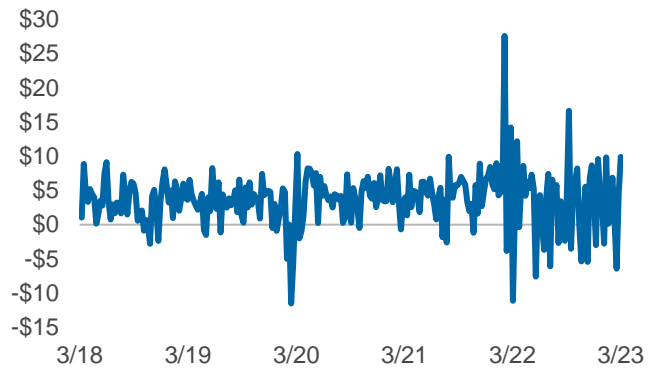
WTI Cushing—WTI Midland



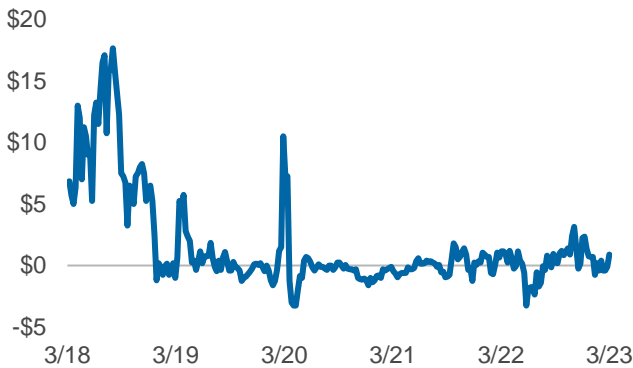
WTI Cushing—WTI Bakken Clearbrook



WTI Cushing—Eagle Ford Light



WTI Cushing—WTS

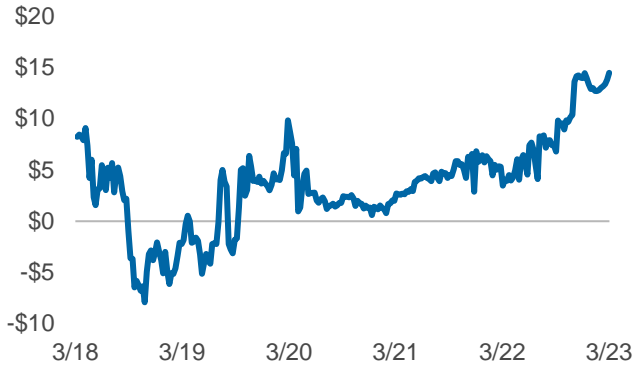


WTI Cushing—WCS



Differentials (\$/bbl) (cont.)

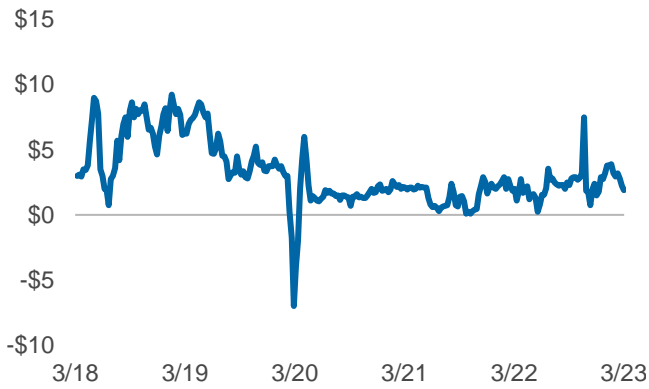
WTI Cushing—Maya



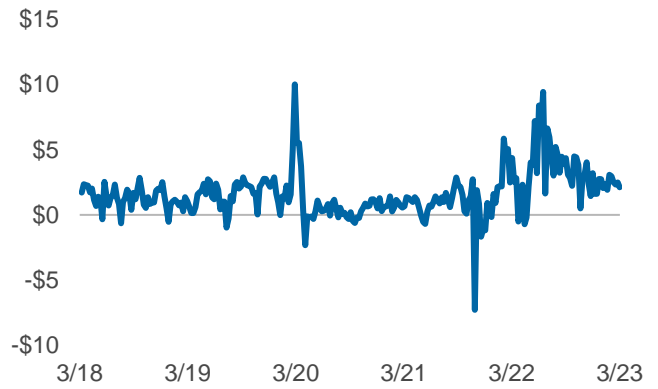
WTI Cushing—Mars



LLS—WTI Cushing



Brent—LLS



LLS—Mars

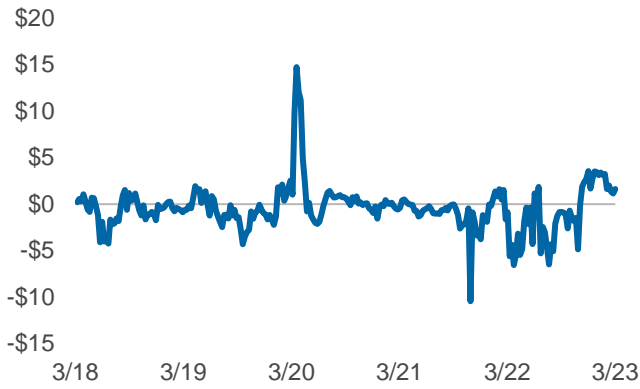


Bakken—ANS

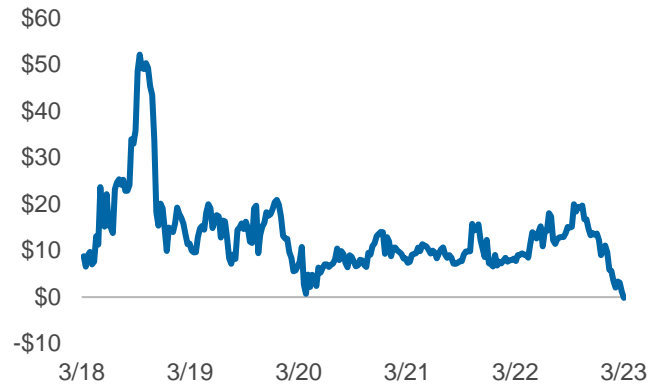


Differentials (\$/bbl) (cont.)

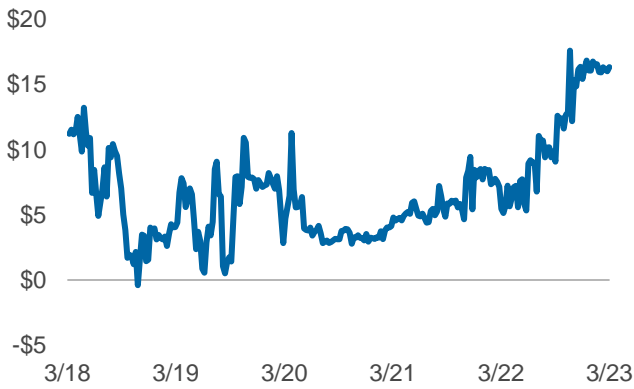
Brent—ANS



Maya—WCS

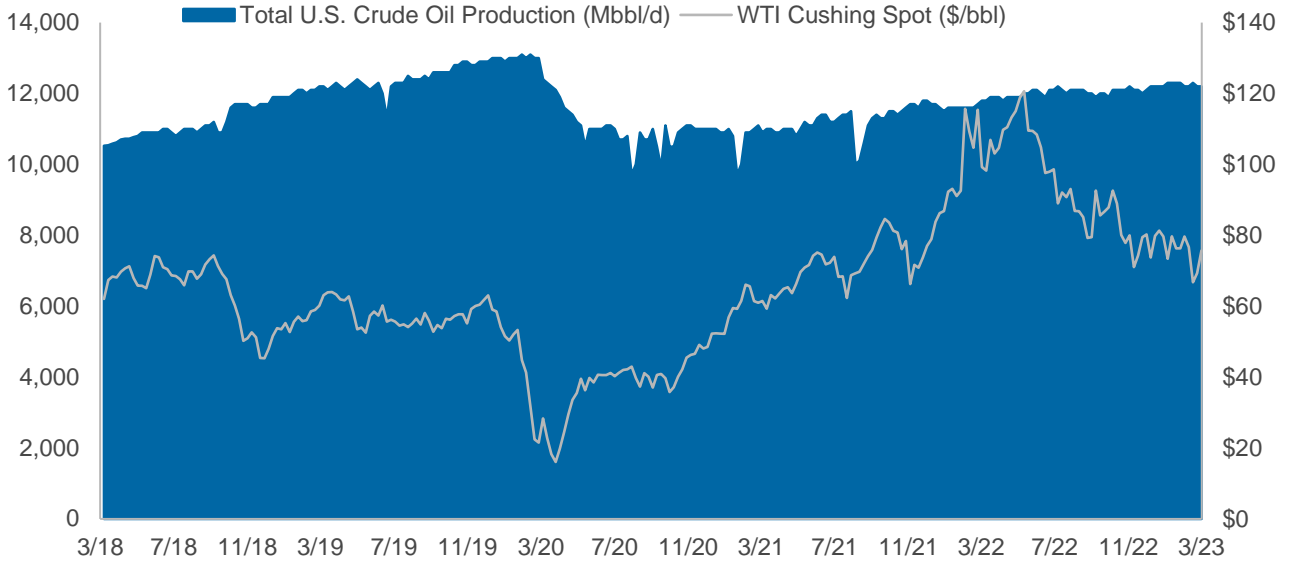


LLS—Maya



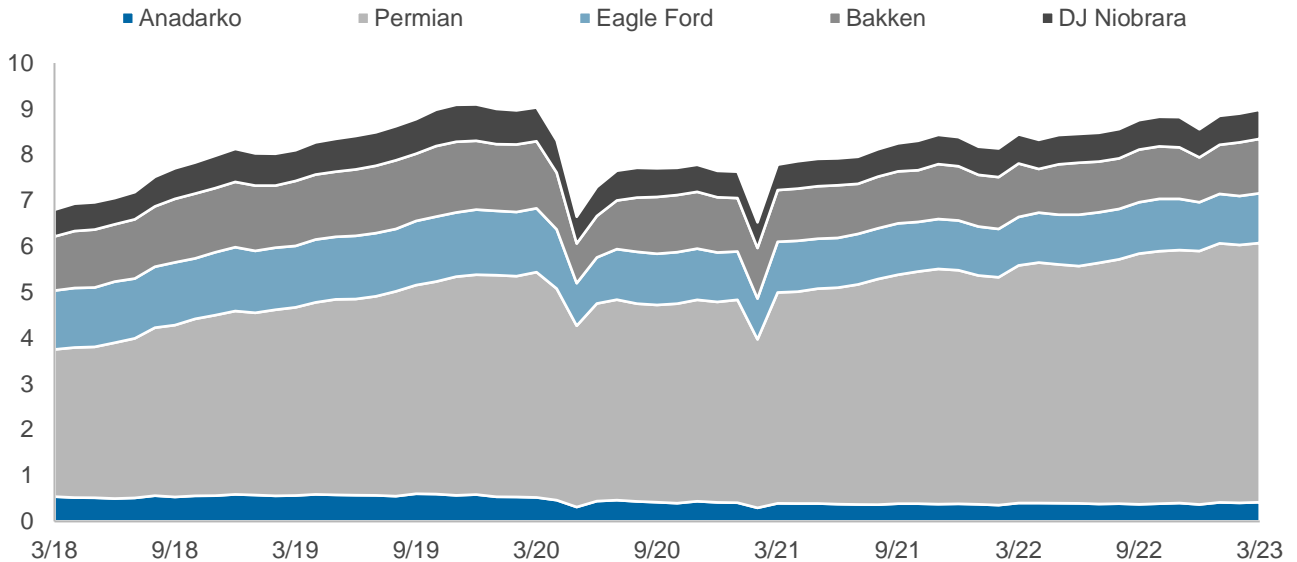
Production

U.S. Production (Mbb/d) vs. WTI (\$/bbl)



Note: Data collected on a weekly basis and subject to a one-week lag for production.

Production in Select Regions (MMbb/d)⁽¹⁾



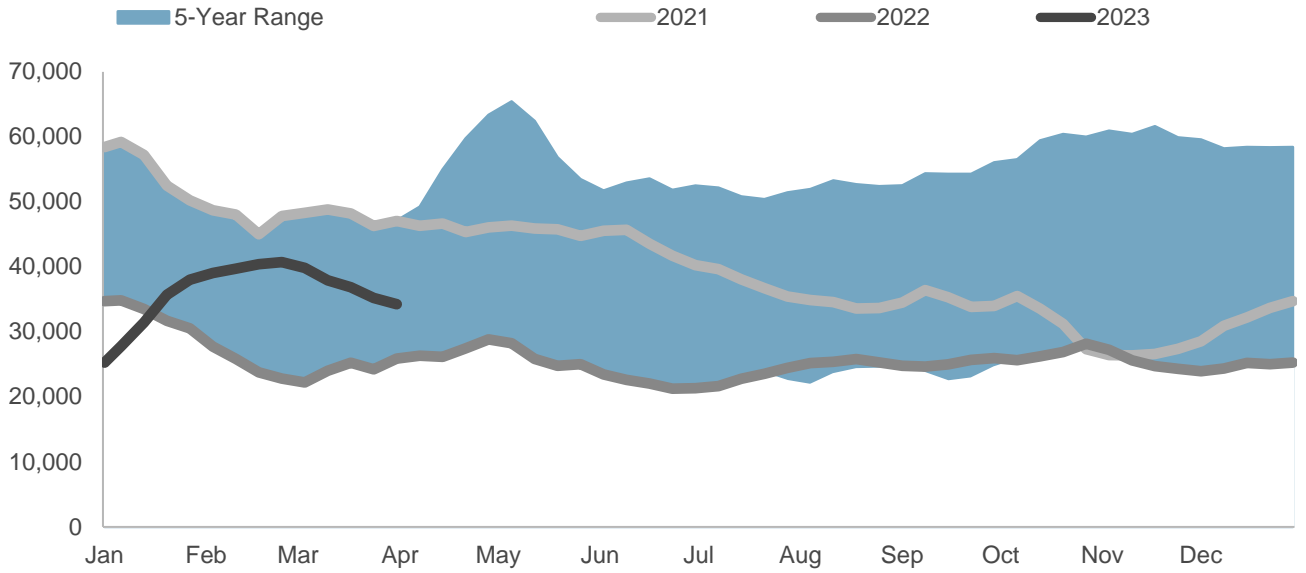
Notes: All data as of March 31, 2023. Data collected on a monthly basis.

Sources: Bloomberg, EIA.

(1) EIA's drilling productivity report uses recent data on the total number of drilling rigs in operation, along with estimates of drilling productivity and estimated changes in production from existing wells, to provide estimated changes in production for key regions.

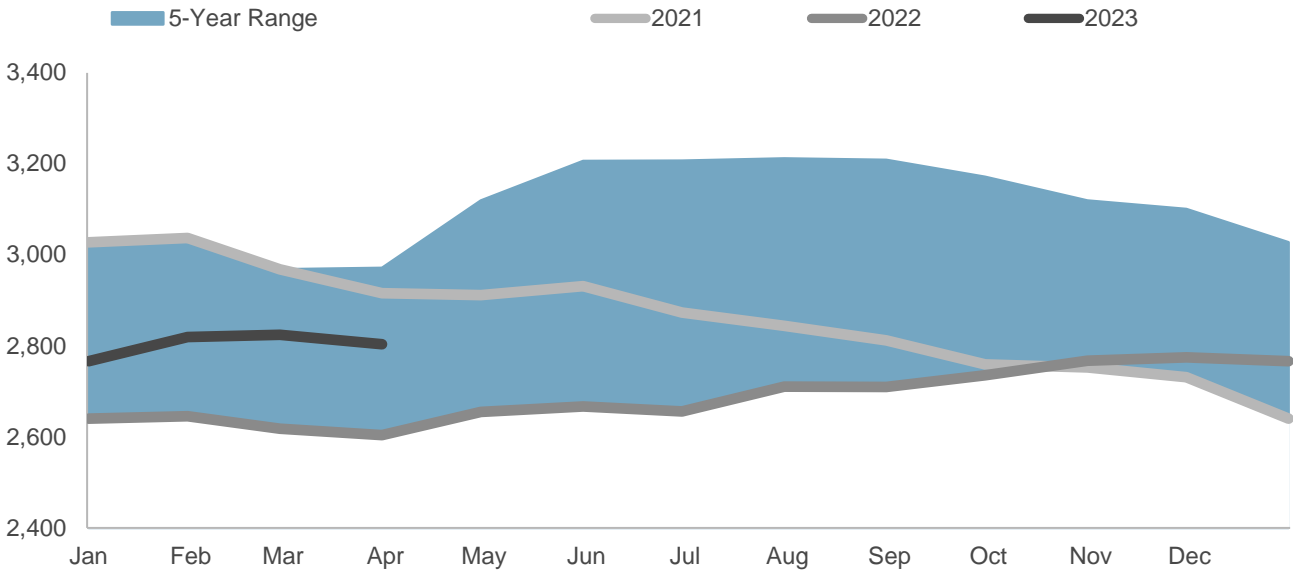
Inventory

U.S. Cushing Crude Inventory (Mbbl)



Note: Data collected on a weekly basis.

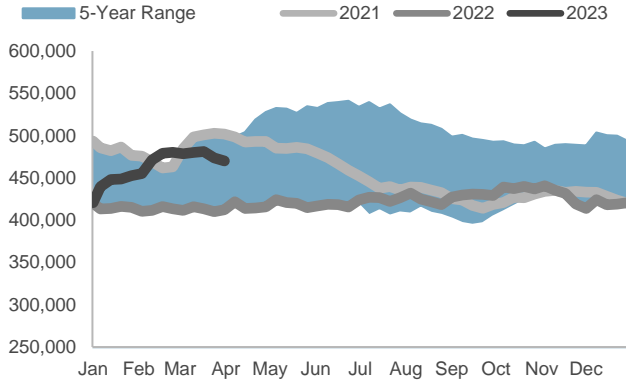
OECD Commercial Inventories (MMbbl)



Note: Data collected on a monthly basis.

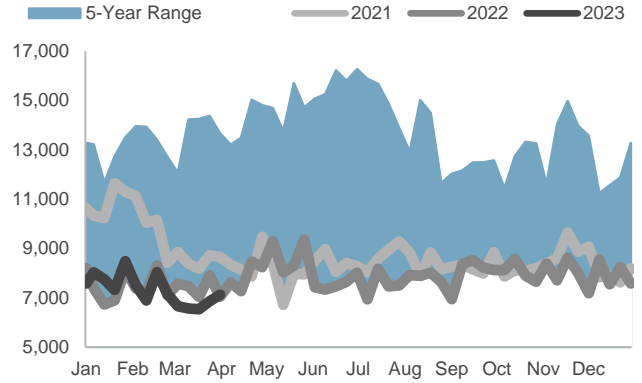
Inventory (Mbbl)

Overall U.S. Crude Inventory

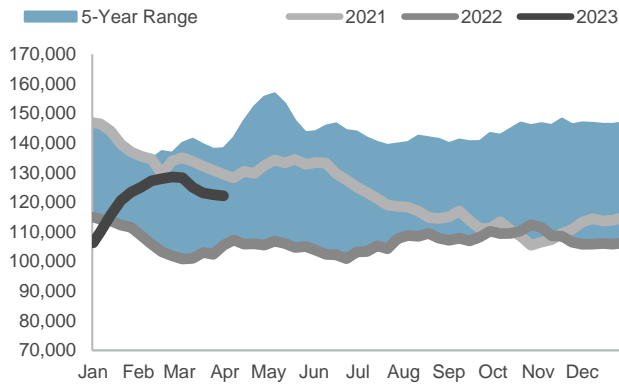


Note: Excludes strategic petroleum reserve (SPR).

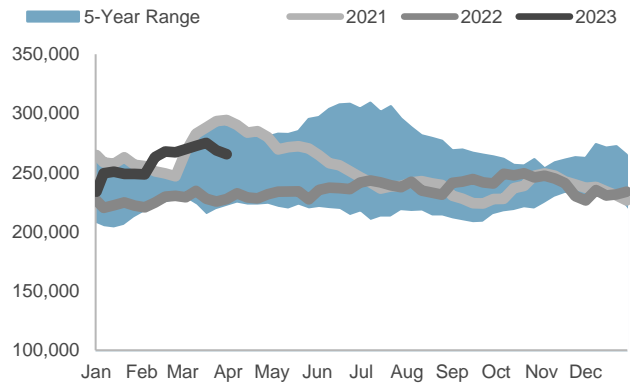
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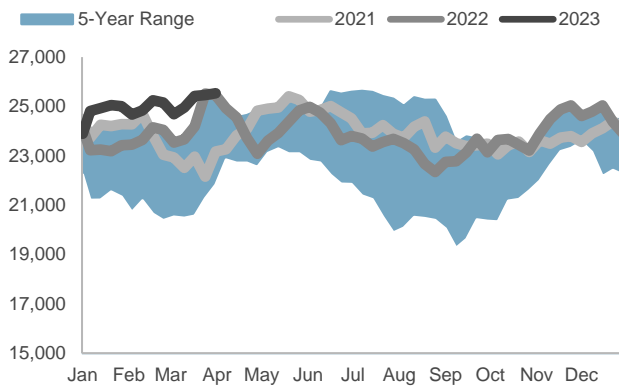
PADD II



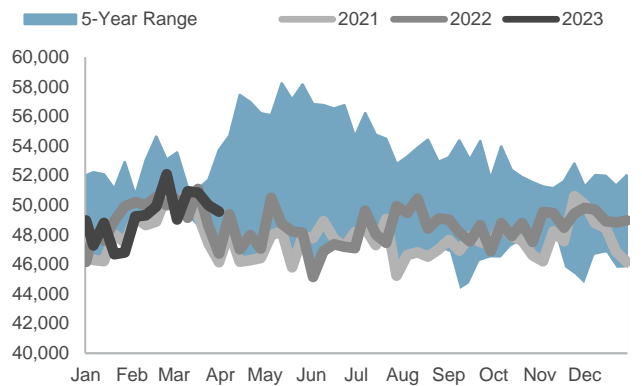
PADD III



PADD IV

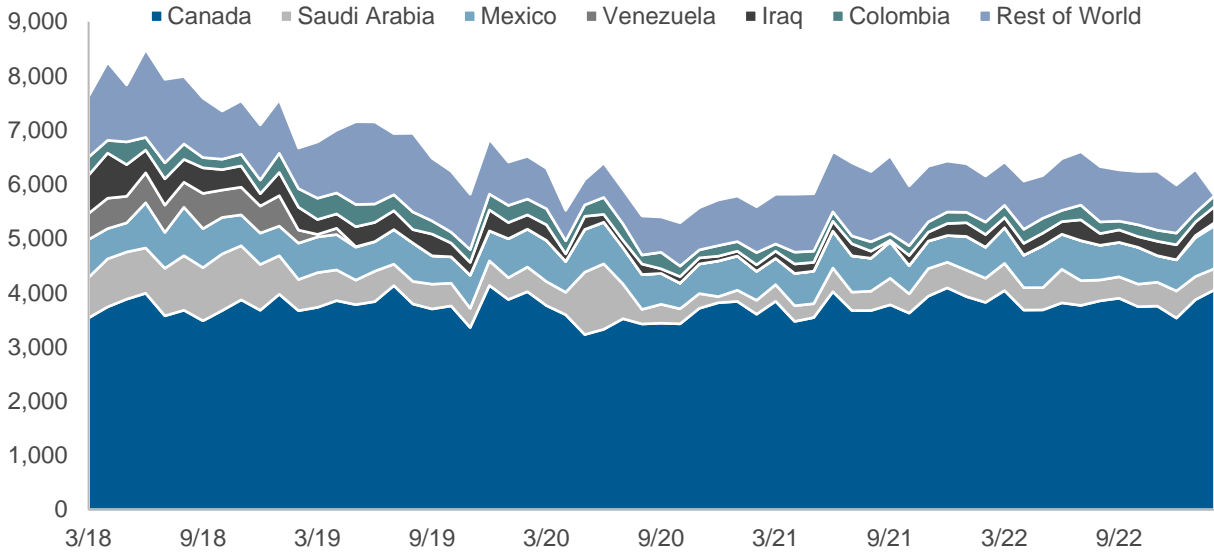


PADD V



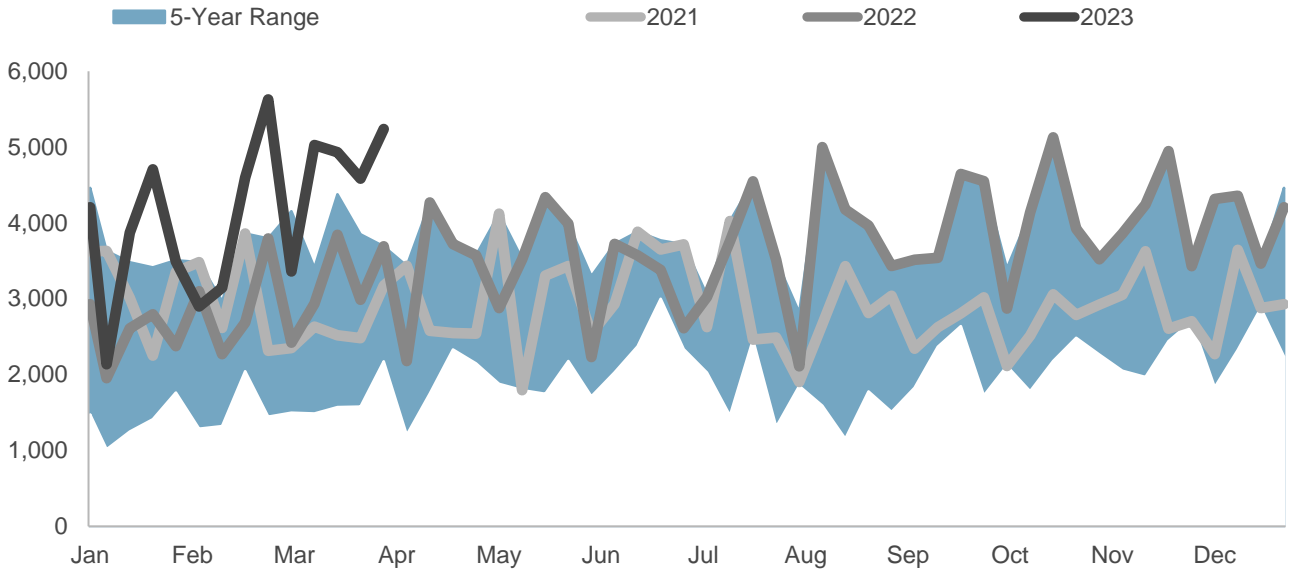
Trade

U.S. Crude Imports by Country (Mbb/d)



Note: Data collected on a monthly basis and subject to a two- to four-month lag.

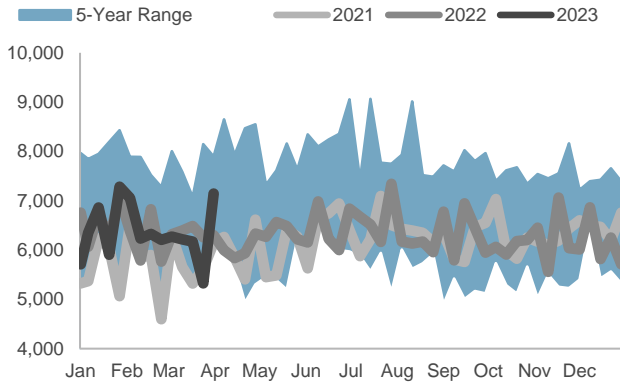
Total U.S. Crude Exports (Mbb/d)



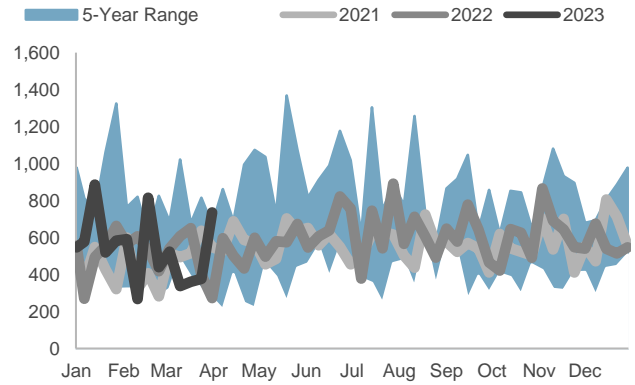
Note: Data collected on a weekly basis.

U.S. Commercial Crude Imports by Destination (Mbb/d)

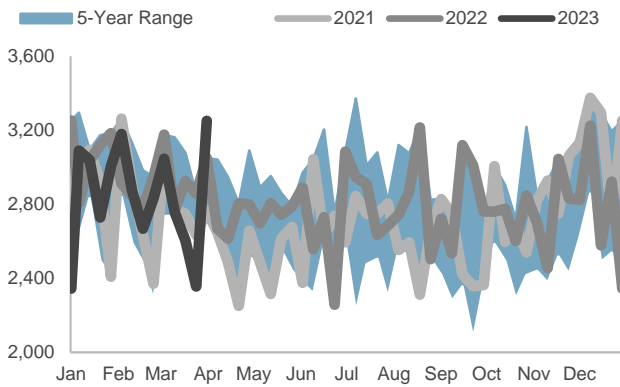
Overall U.S. Commercial Crude Imports



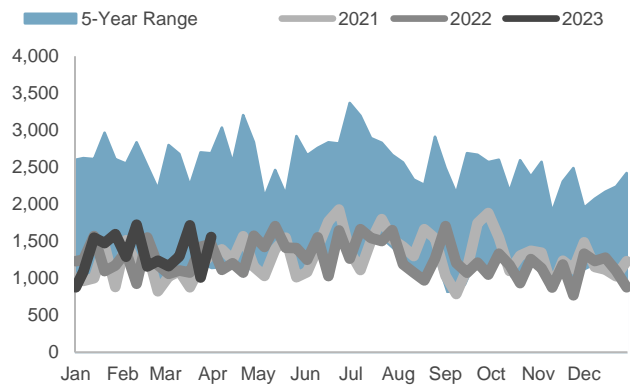
Destination—PADD I



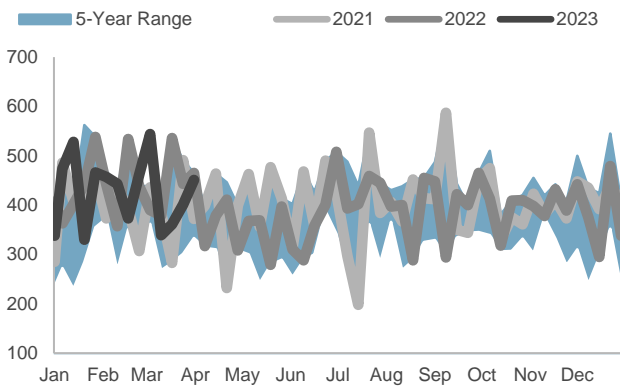
Destination—PADD II



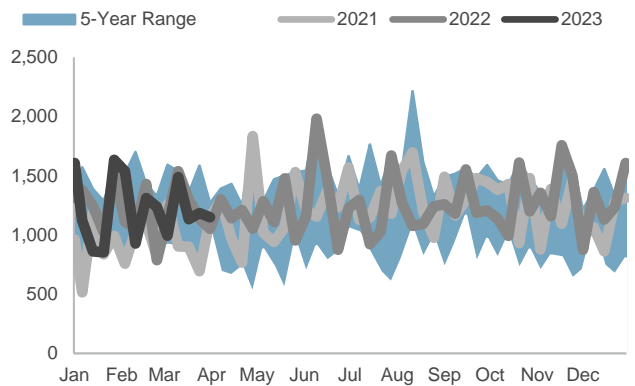
Destination—PADD III



Destination—PADD IV

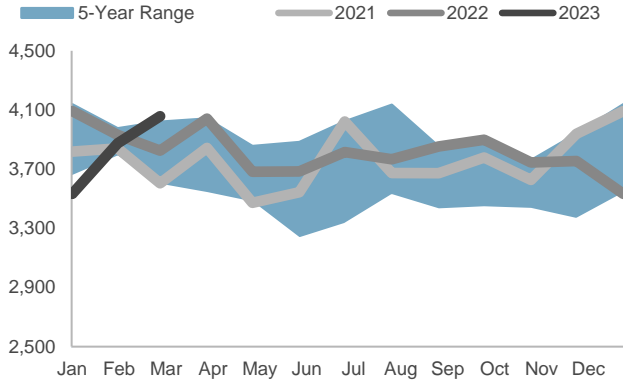


Destination—PADD V

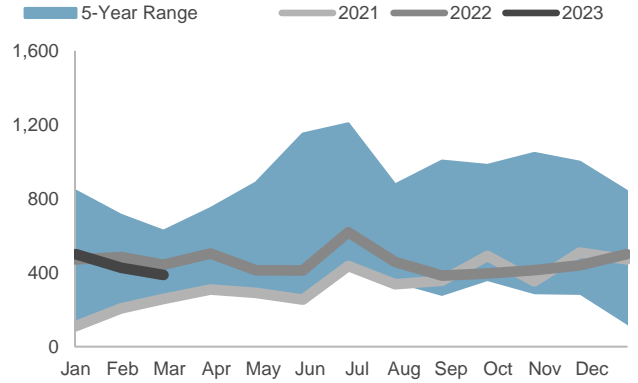


U.S. Imports by Country (Mbb/d)

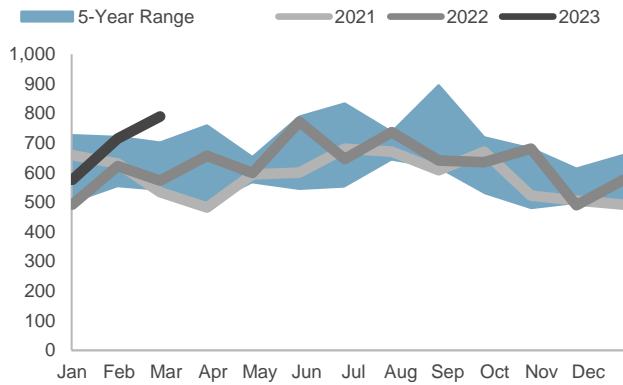
Canada



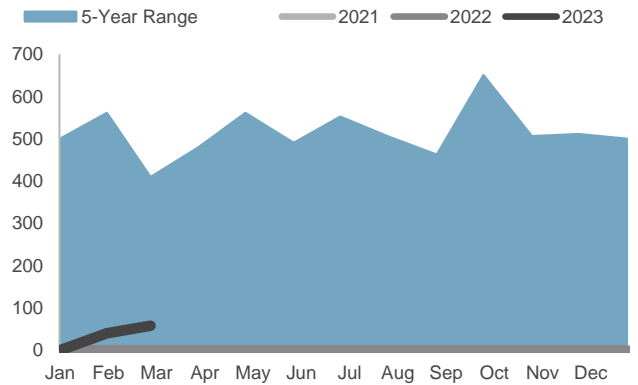
Saudi Arabia



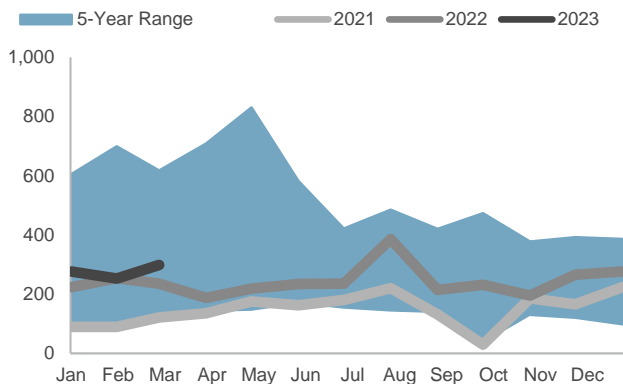
Mexico



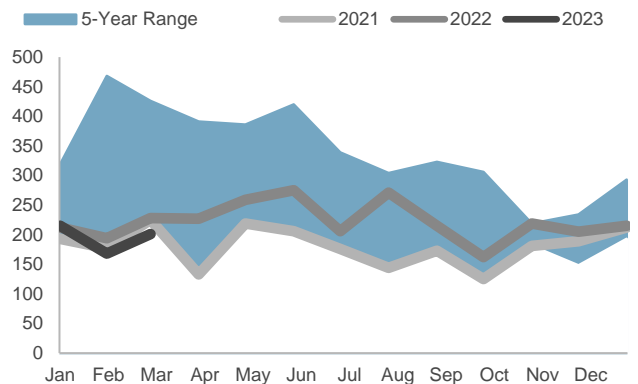
Venezuela



Iraq



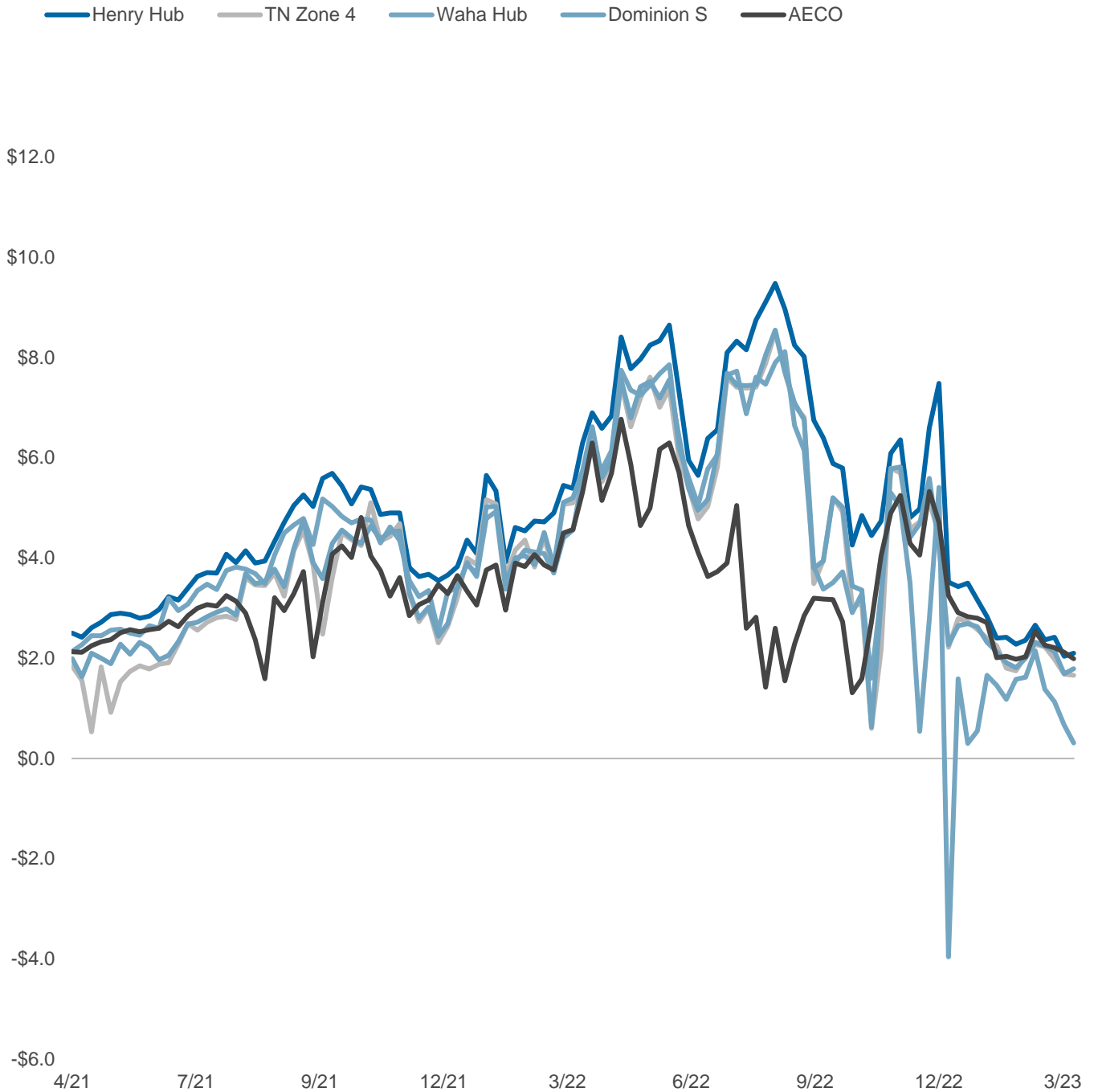
Colombia



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Natural Gas Spot Pricing

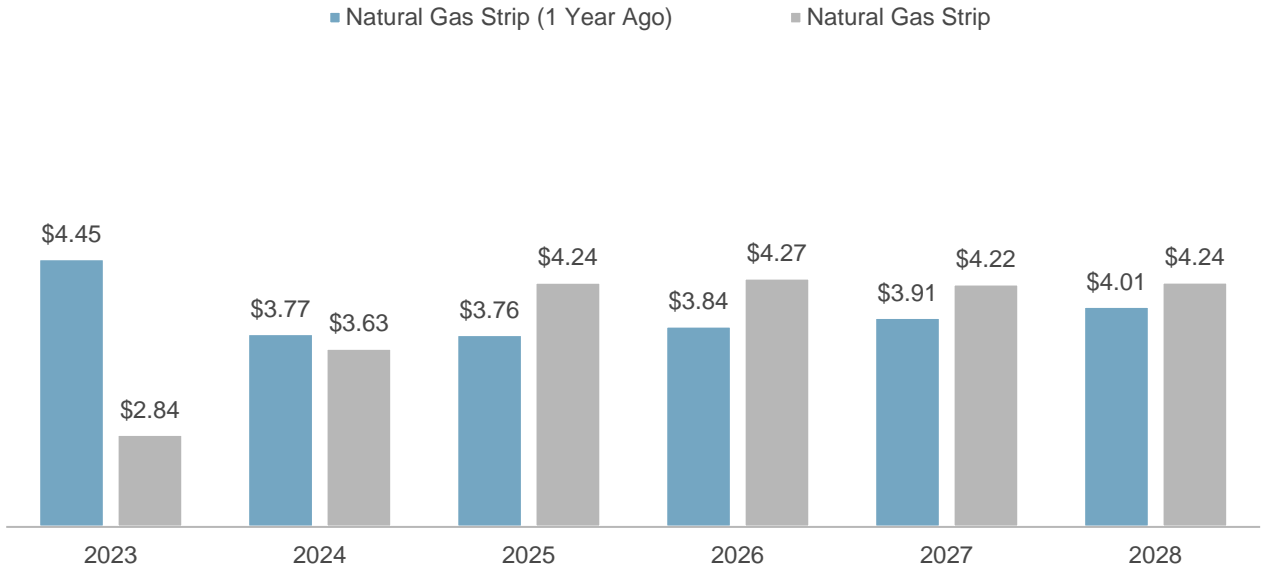
Pricing (\$/MMbtu)



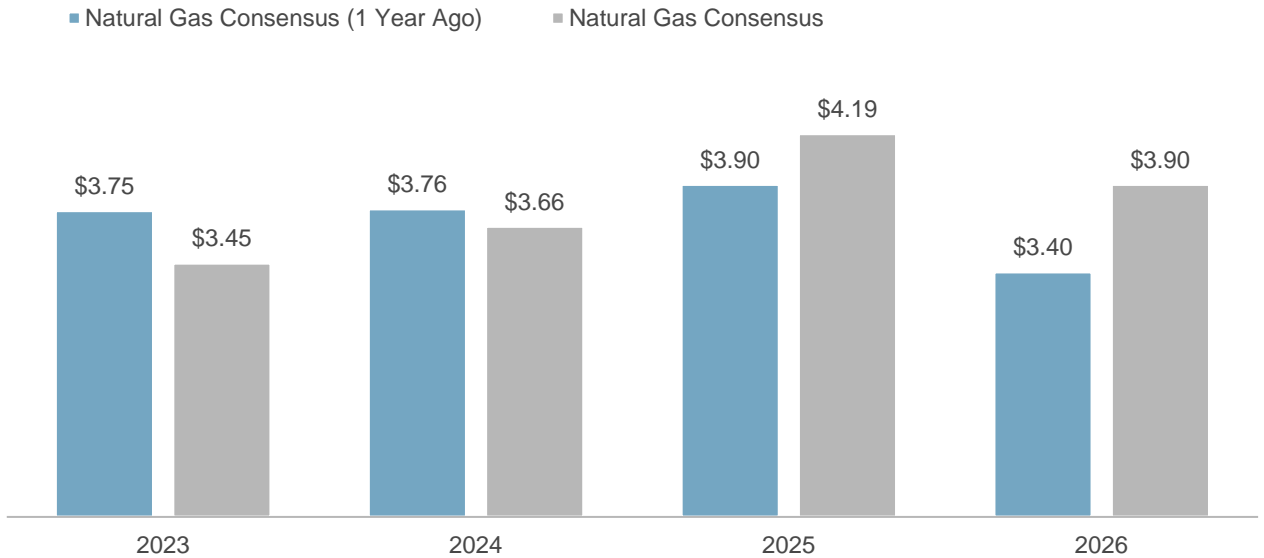
Notes: All data as of March 31, 2023. Data collected on a weekly basis.
Source: Bloomberg.

Natural Gas Pricing

Strip Pricing Comparison (\$/MMbtu)

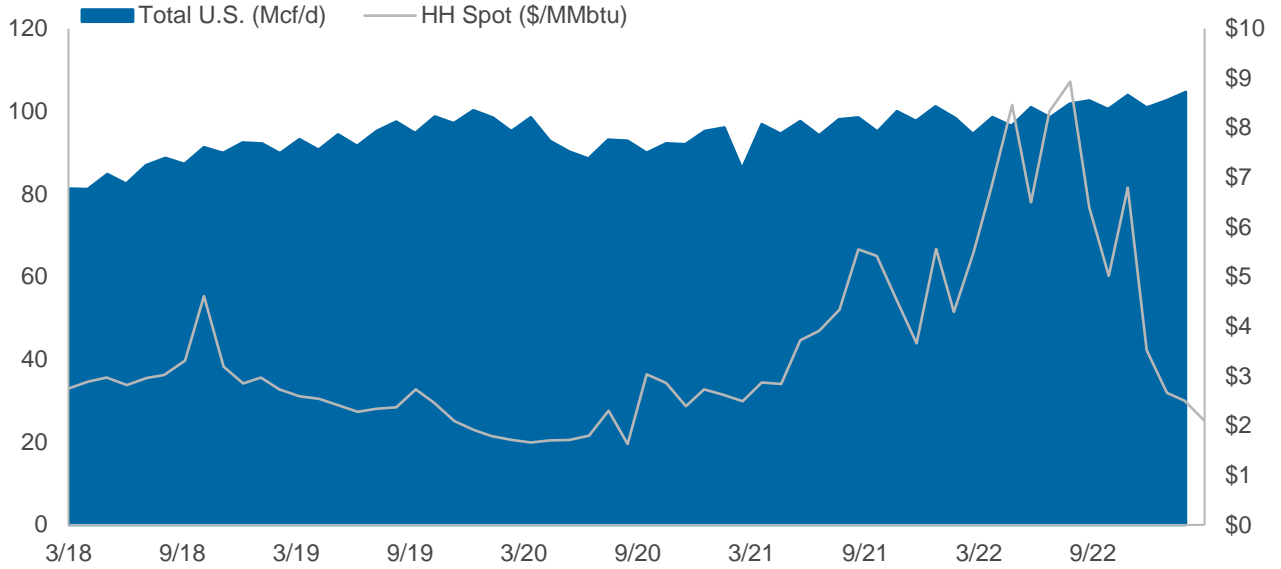


Consensus Pricing Comparison (\$/MMbtu)



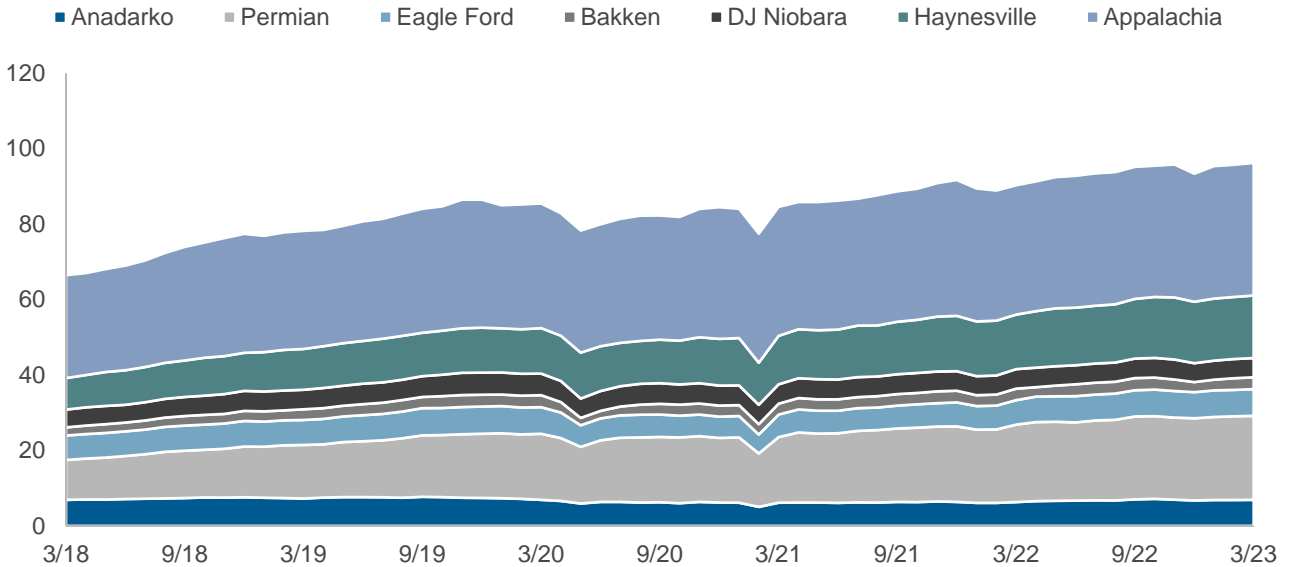
Natural Gas Production

Total U.S. Dry Natural Gas Production (Bcf/d)



Note: Data collected on a monthly basis and subject to a two-month lag for production.

Select Dry Natural Gas Production by Regions (Bcf/d)⁽¹⁾



Notes: All data as of March 31, 2023. Data collected on a monthly basis.

Sources: Bloomberg, EIA.

(1) EIA's drilling productivity report uses recent data on the total number of drilling rigs in operation, along with estimates of drilling productivity and estimated changes in production from existing wells, to provide estimated changes in production for key regions.

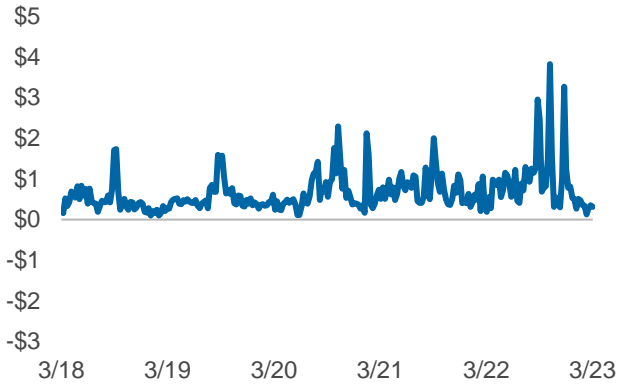
Differentials

Regional Natural Gas Spot Pricing (\$/MMbtu)

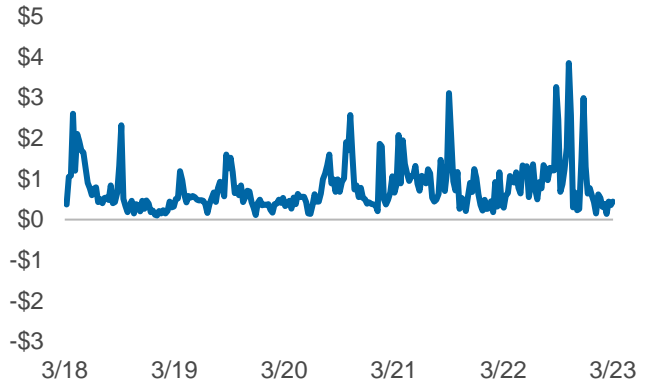
Region	3/31/2023	3/31/2022	12/31/2022	YoY % Change	QoQ % Change
Henry Hub	\$2.1	\$5.5	\$3.5	-61.7%	-40.3%
<i>Benchmark</i>					
Dominion South	\$1.8	\$5.3	\$2.3	-65.9%	-21.1%
<i>Henry Hub—Dominion South</i>	\$0.3	\$0.2	\$1.3		
TN Zone 4	\$1.7	\$5.3	\$2.2	-68.4%	-25.2%
<i>Henry Hub—TN Zone 4</i>	\$0.4	\$0.2	\$1.3		
AECO	\$2.0	\$4.5	\$3.3	-55.4%	-38.8%
<i>Henry Hub—AECO</i>	\$0.1	\$1.0	\$0.3		
Waha Hub	\$0.3	\$5.0	(\$4.0)	-93.7%	-107.8%
<i>Henry Hub—Waha</i>	\$1.8	\$0.5	\$7.5		

Natural Gas—Differentials (\$/MMbtu)

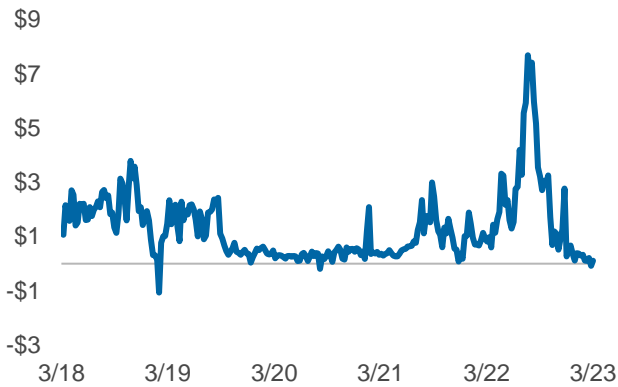
HH—Dominion South



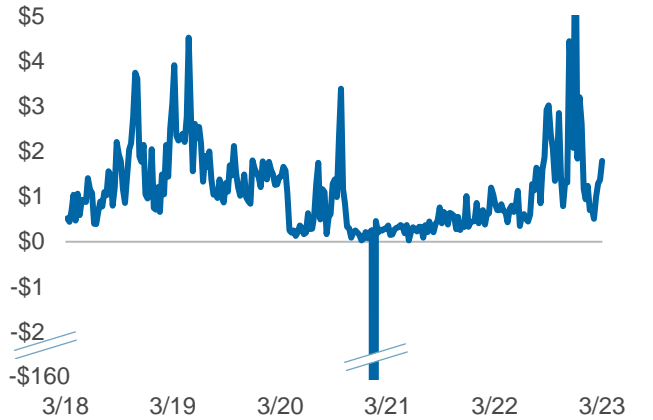
HH—TN Zone 4



HH—AECO

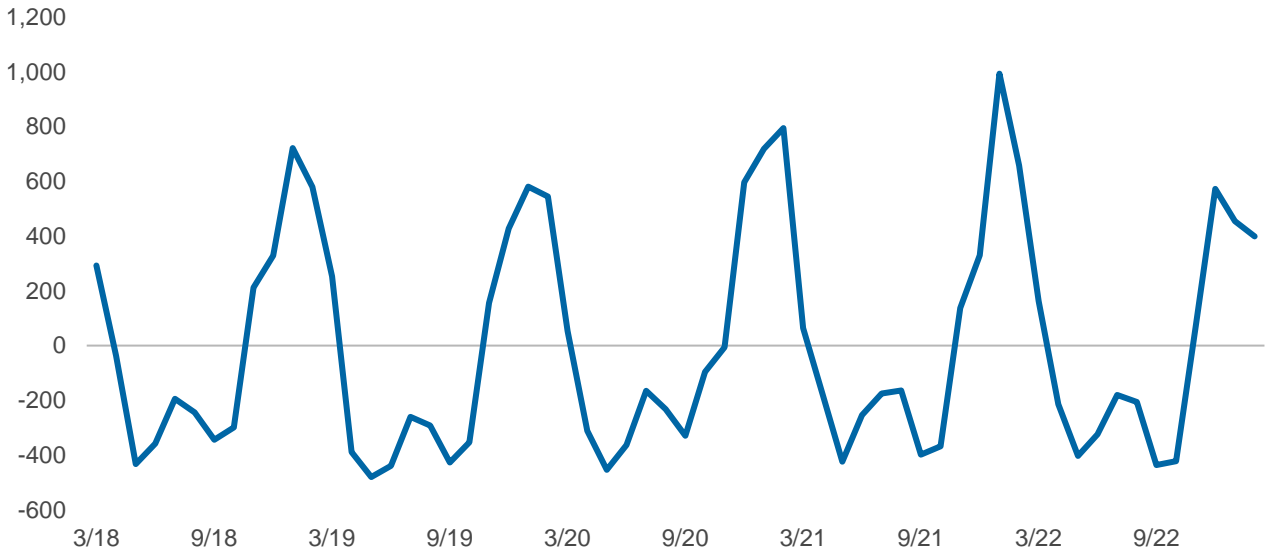


HH—Waha Hub



Natural Gas

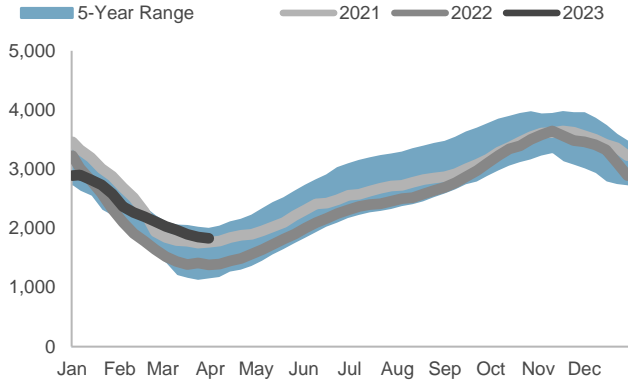
U.S. Natural Gas Withdrawal (Bcf)



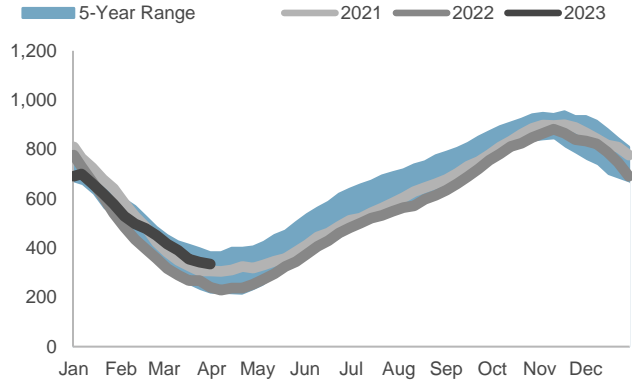
Note: Data collected on a monthly basis and subject to irregular updates.

Natural Gas Storage (Bcf)

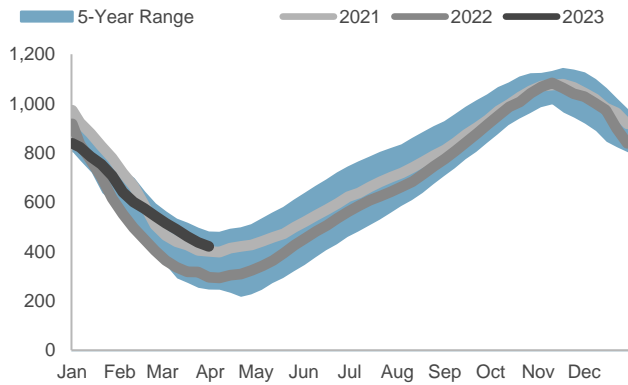
Total U.S.



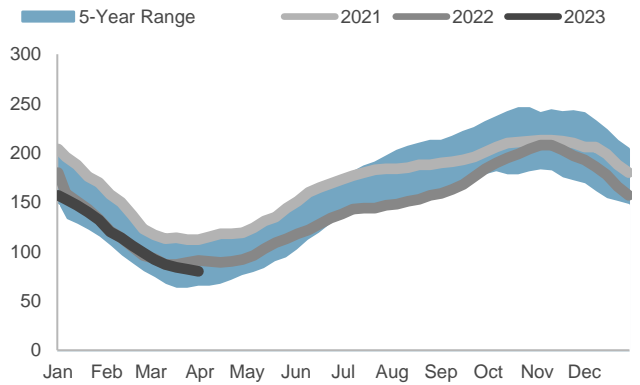
East



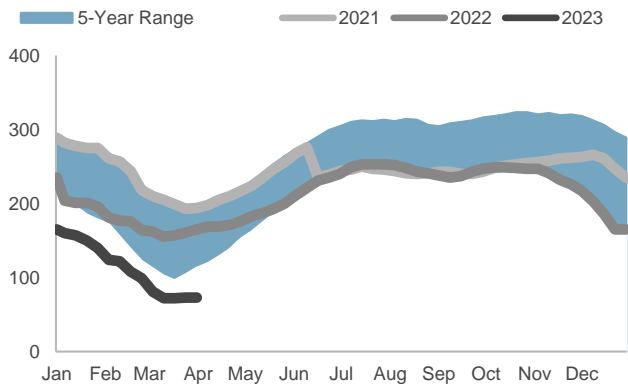
Midwest



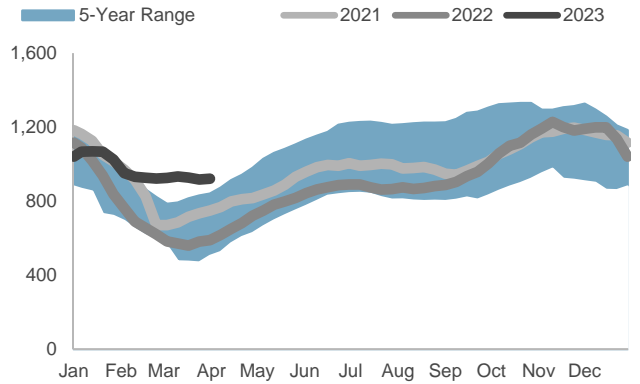
Mountain



Pacific

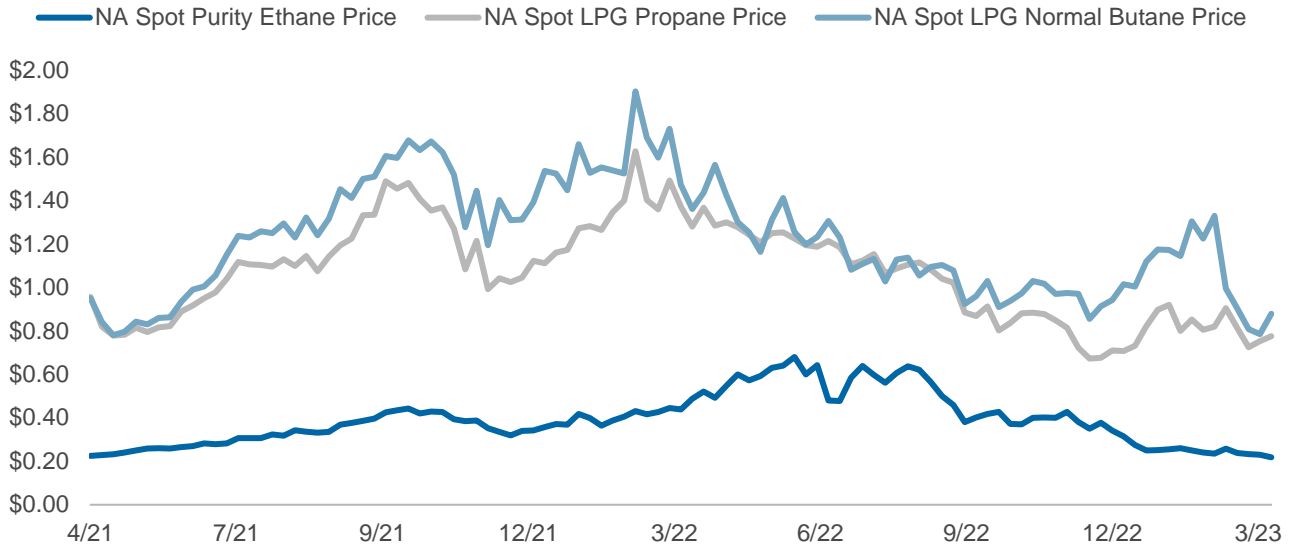


South Central



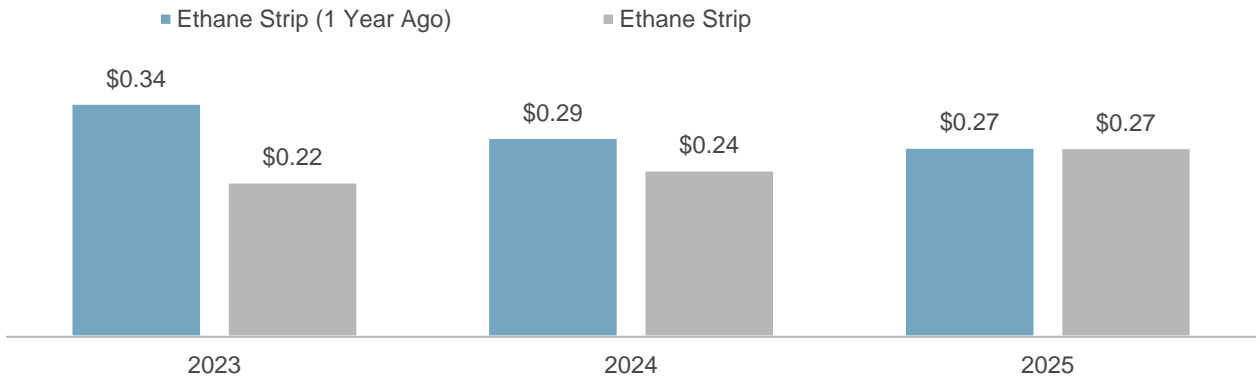
NGLs Spot Pricing

Pricing (\$/gal)

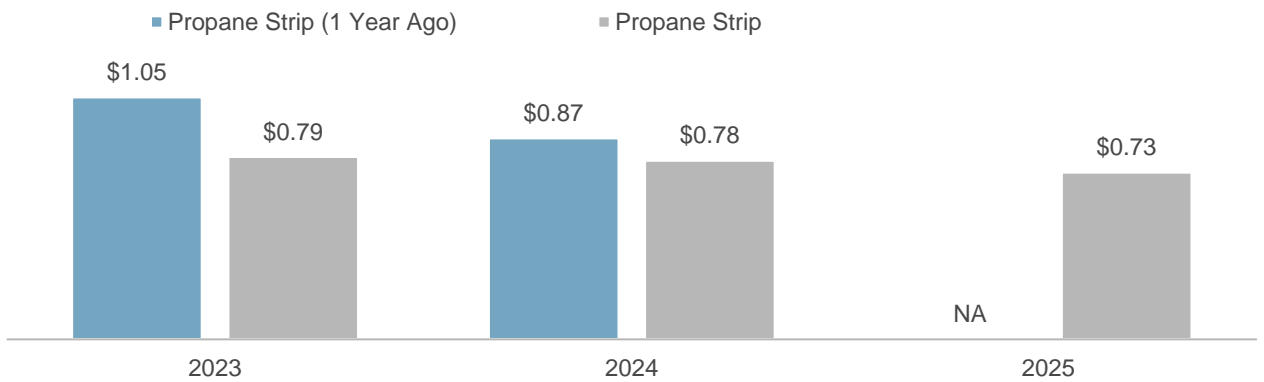


NGLs Strip Pricing

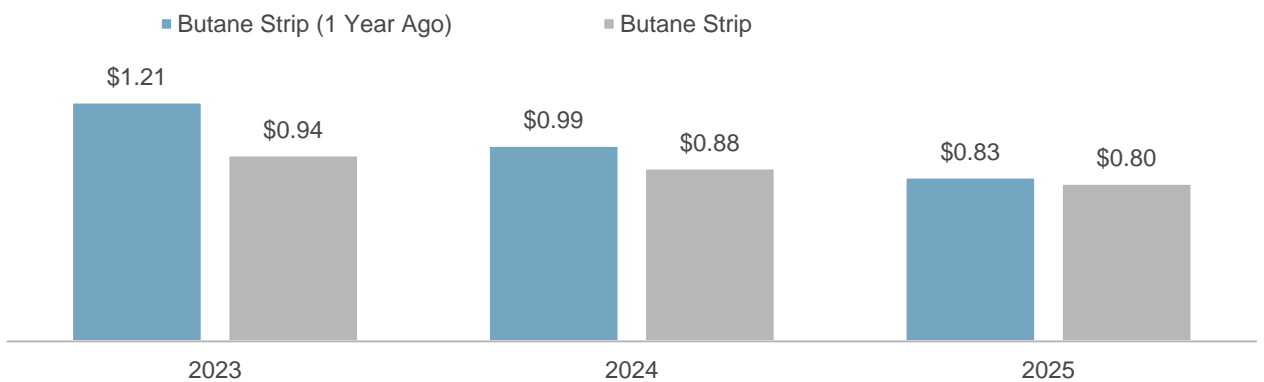
Ethane Strip Pricing Comparison (\$/gal)



Propane Strip Pricing Comparison (\$/gal)

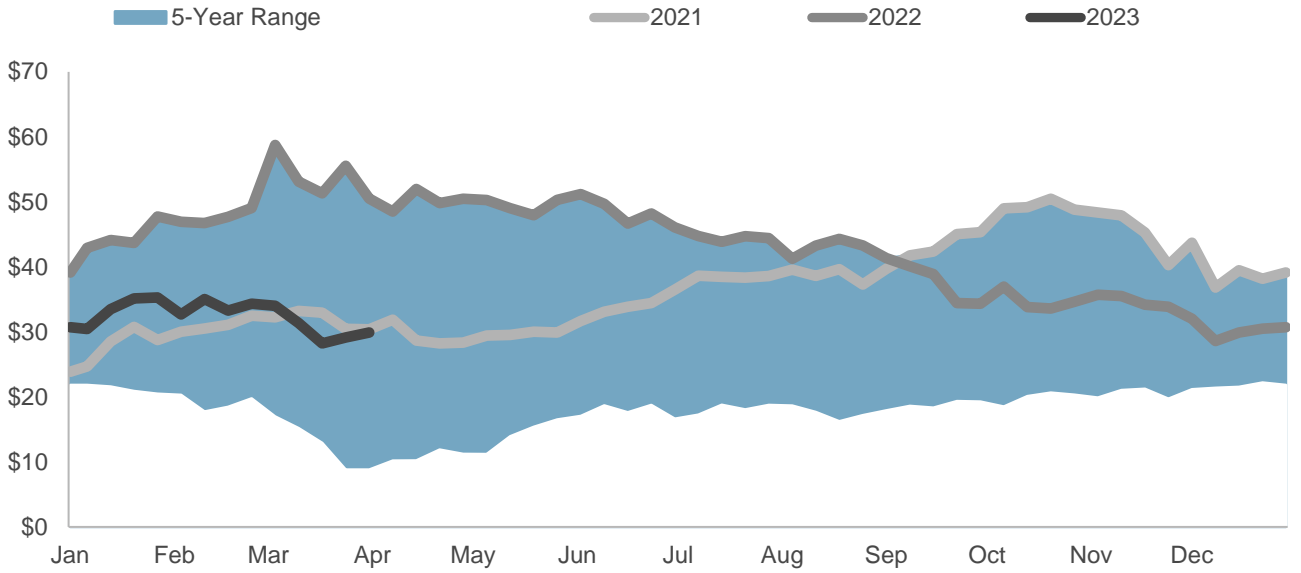


Butane Strip Pricing Comparison (\$/gal)



NGLs Frac Spreads

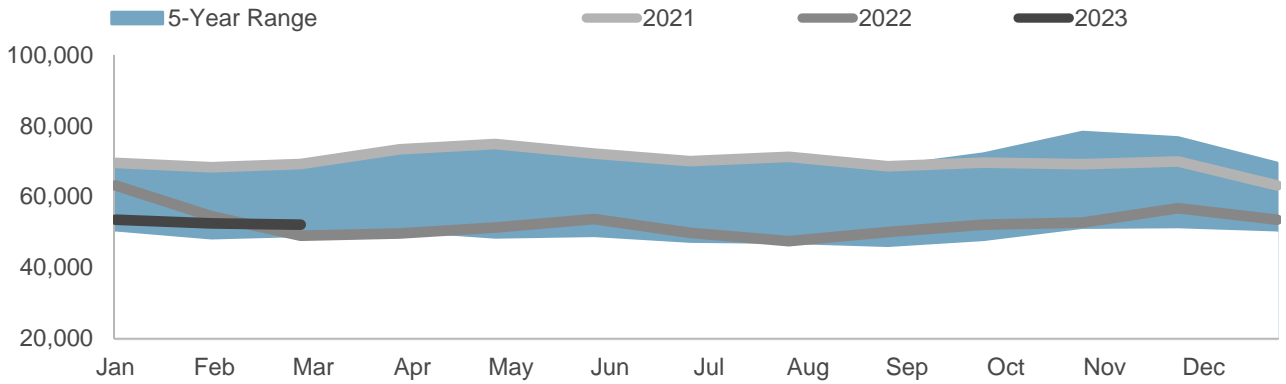
Mont Belvieu Frac Spread (\$/bbl)



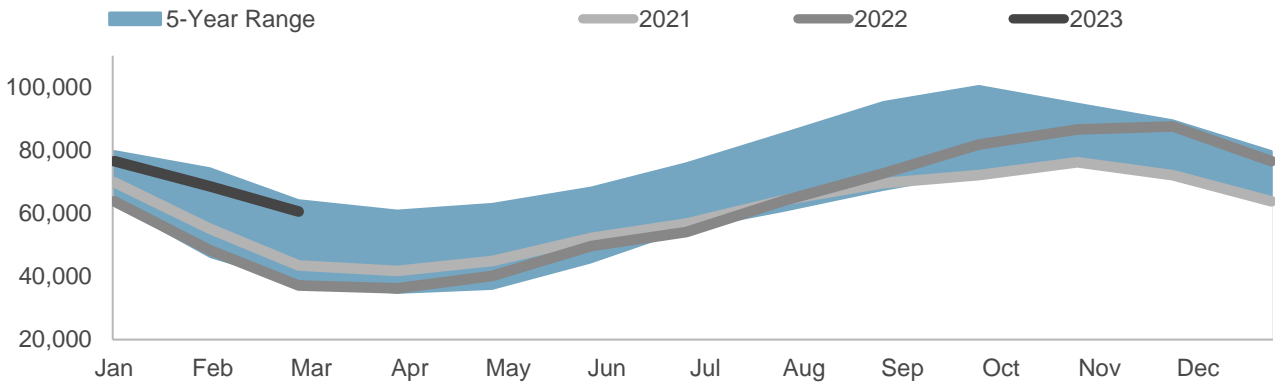
Note: All data as of March 31, 2023.
Source: Bloomberg.

NGLs Inventory

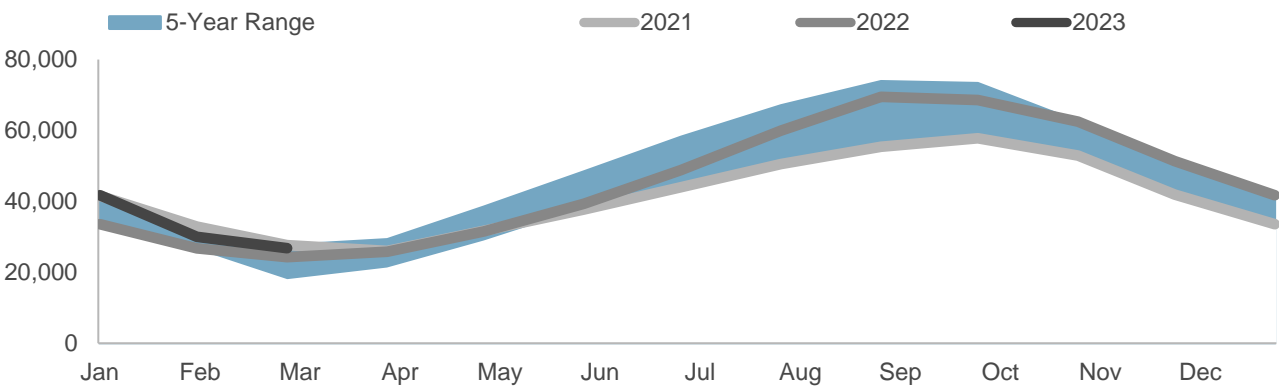
U.S. Ending Stocks Ethane (Mbbbls)



U.S. Ending Stocks Propane (Mbbbls)

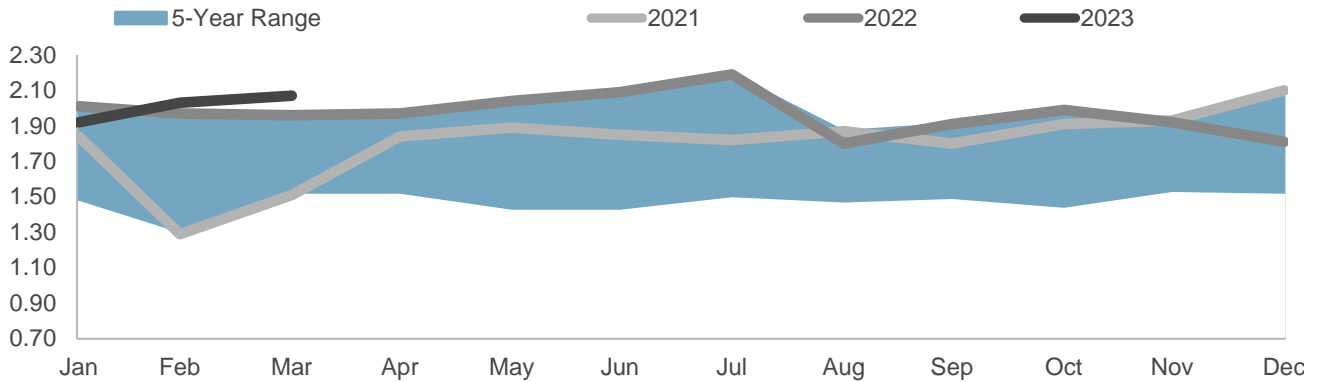


Normal Butane/Butylene (Mbbbls)

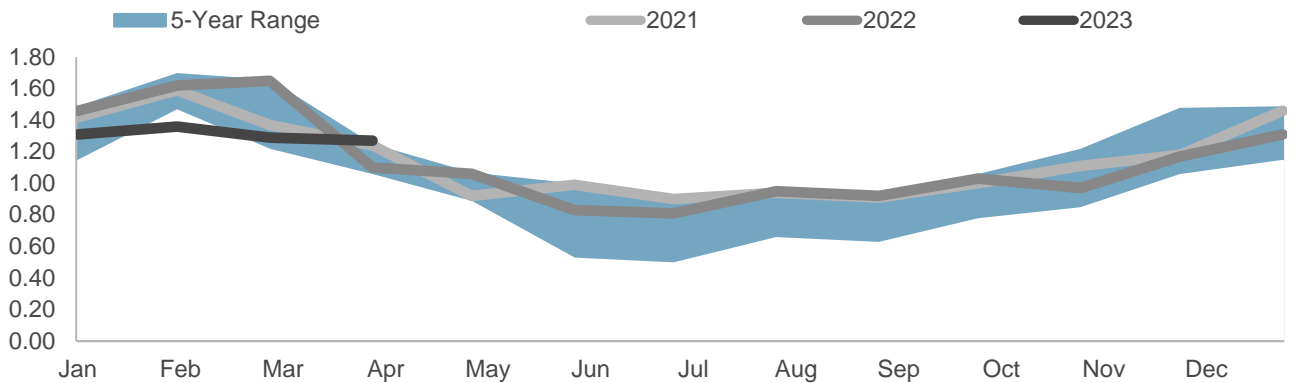


NGLs Consumption

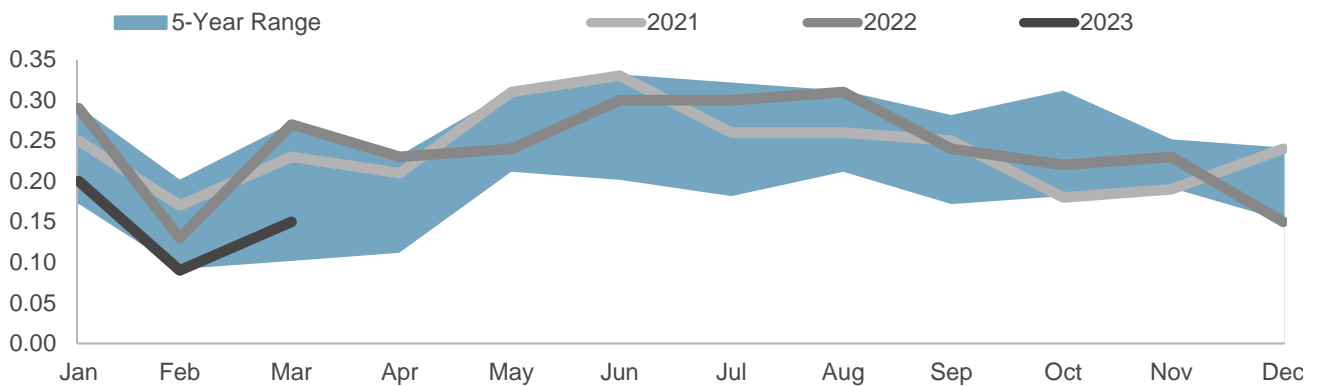
U.S. Ethane/Ethylene Consumption (MMboe/d)



U.S. Propane/Propylene Consumption (MMboe/d)

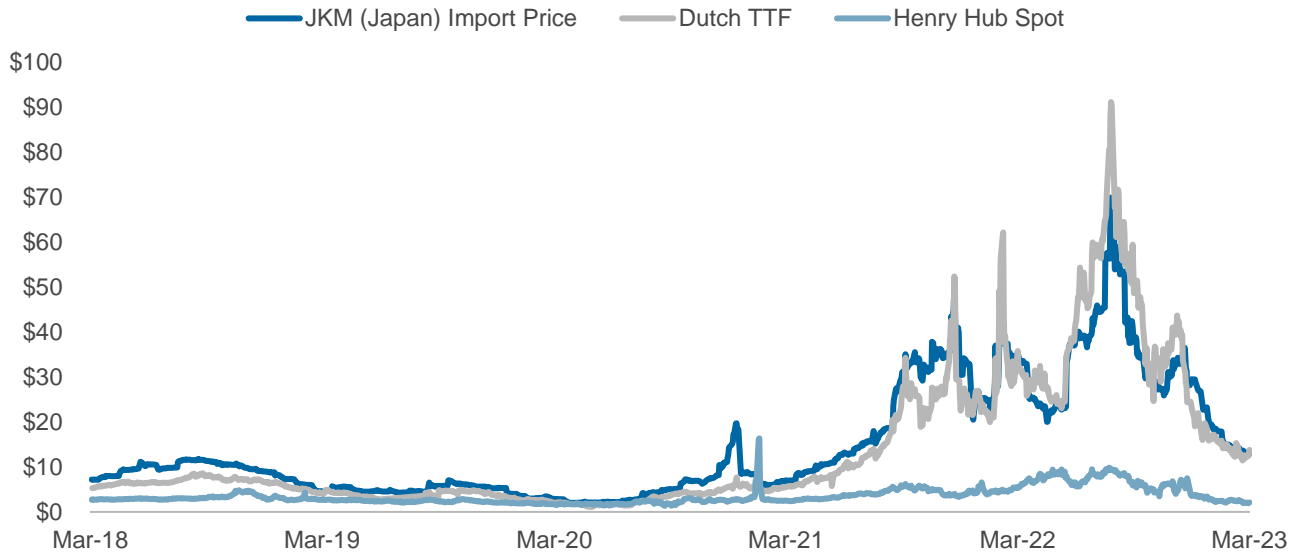


U.S. Butane/Butylene Consumption (MMboe/d)

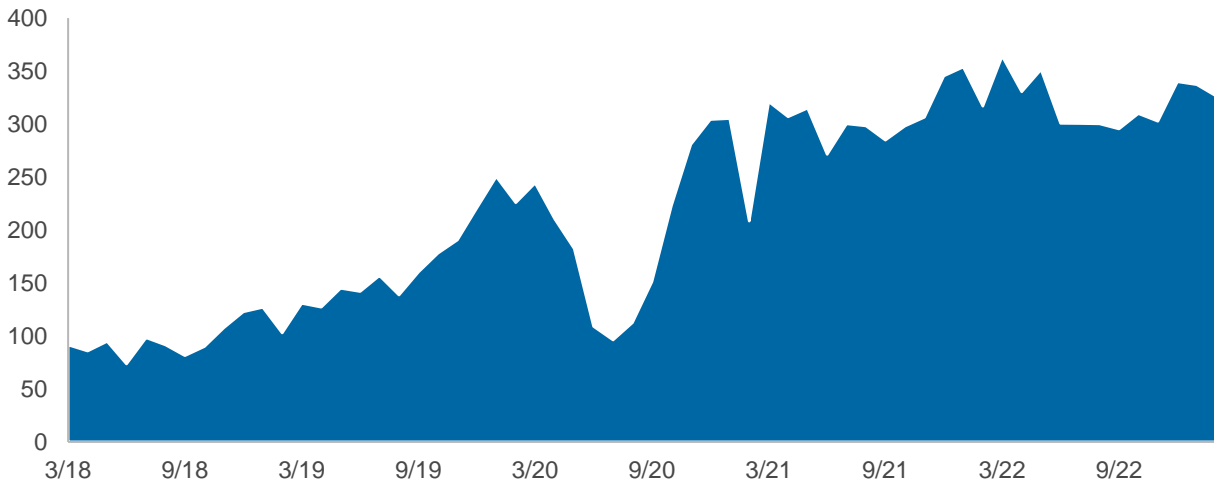


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Spot Pricing (\$/MMbtu)



U.S. LNG Exports (Bcf/month)

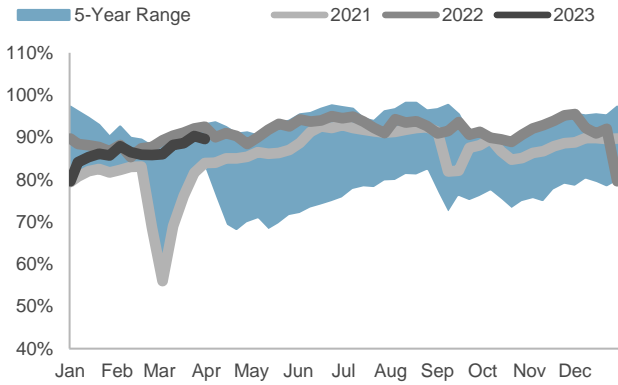


Note: Data collected on a monthly basis and subject to a two-month lag.

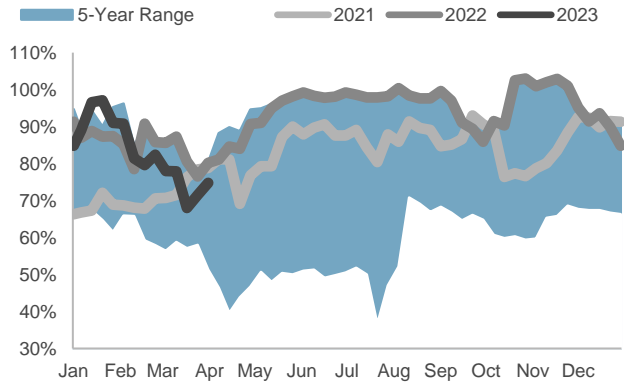
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Refining—Utilization (%)

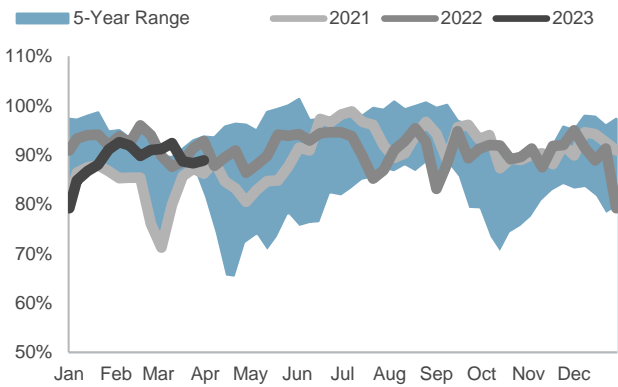
Total U.S.



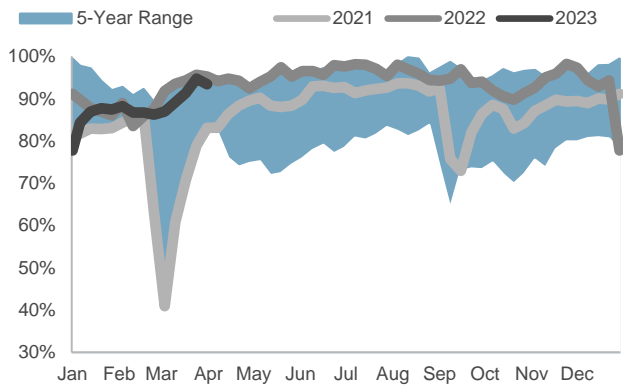
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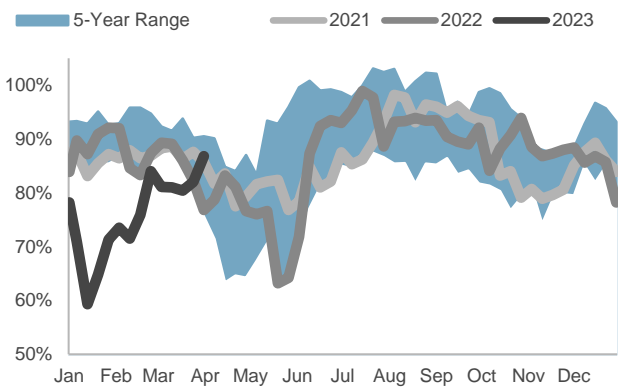
PADD II



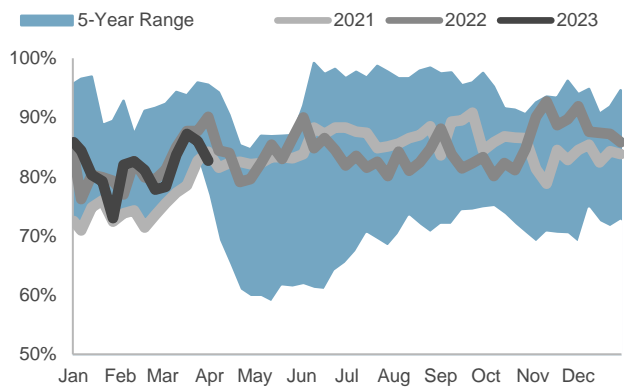
PADD III



PADD IV



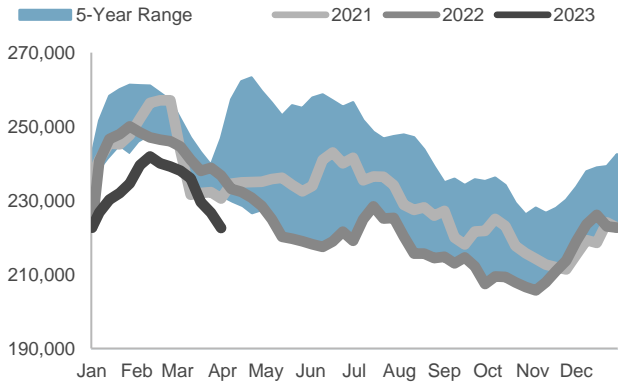
PADD V



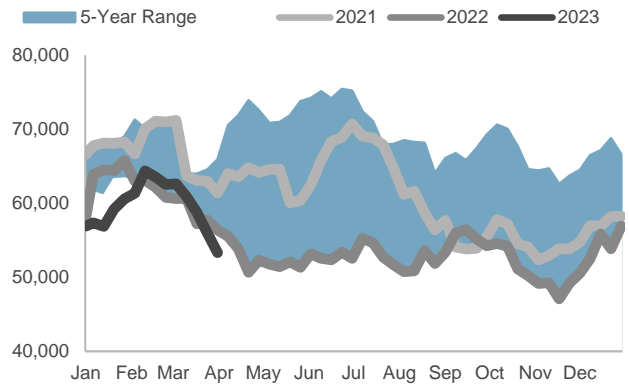
Notes: All data as of March 31, 2023. Data collected on a weekly basis.
Source: Bloomberg.

Refining—Motor Gasoline Inventory (Mbbl)

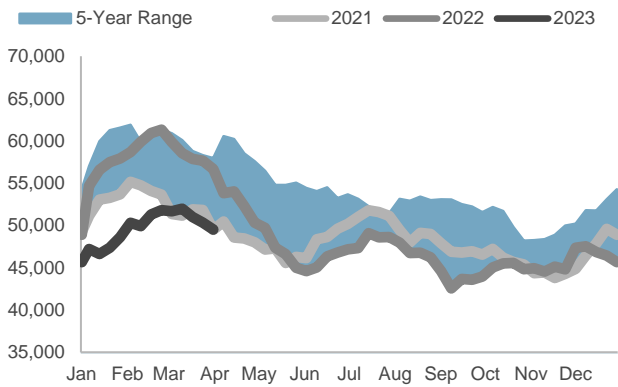
Total U.S.



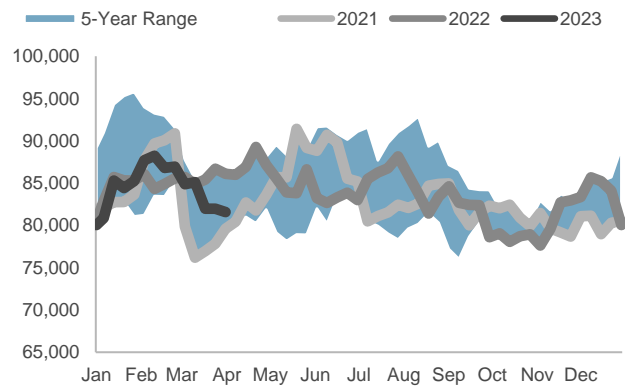
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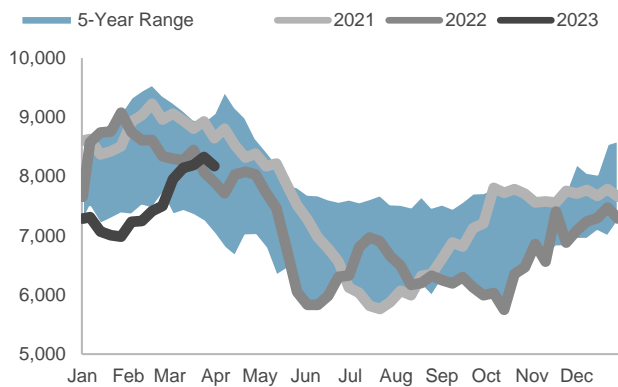
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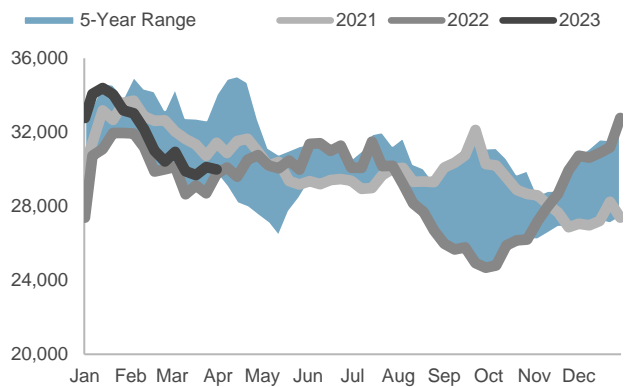
PADD III



PADD IV

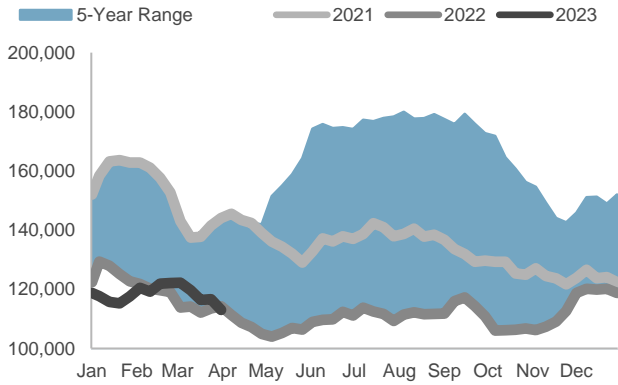


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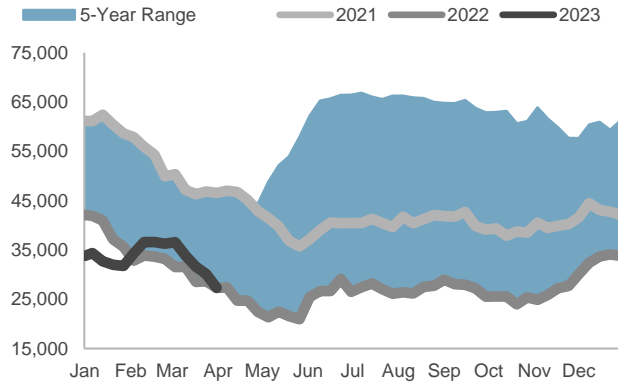


Refining—Distillate Fuel Oil Inventory (Mbbl)

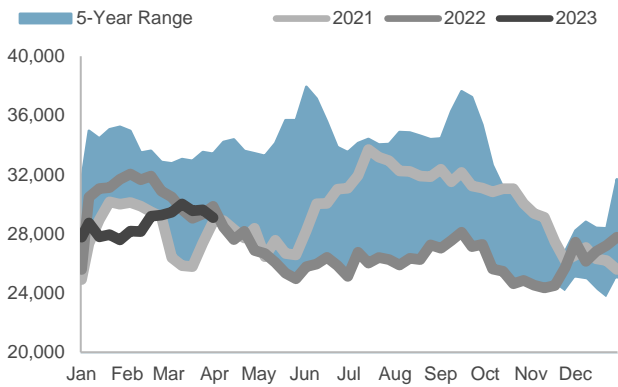
Total U.S.



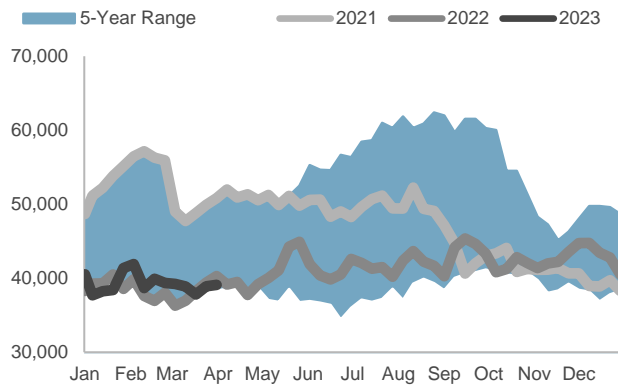
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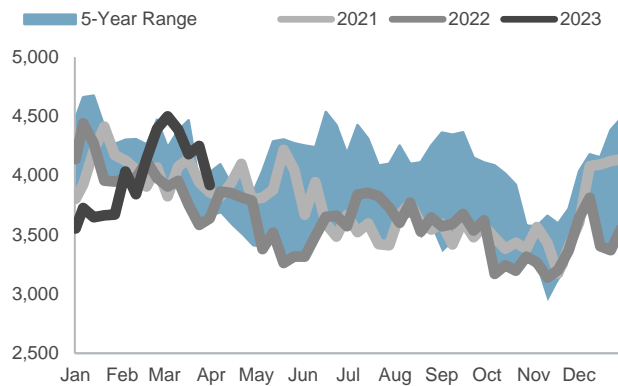
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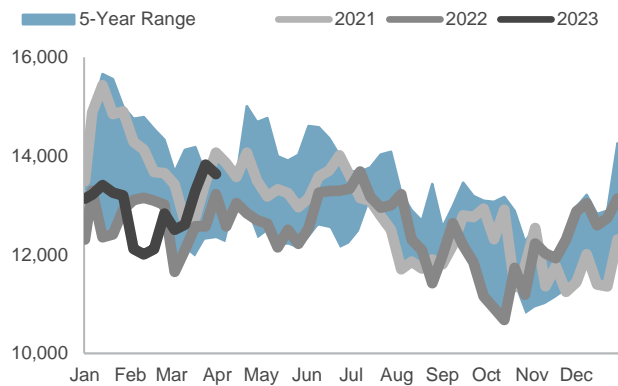
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PADD IV

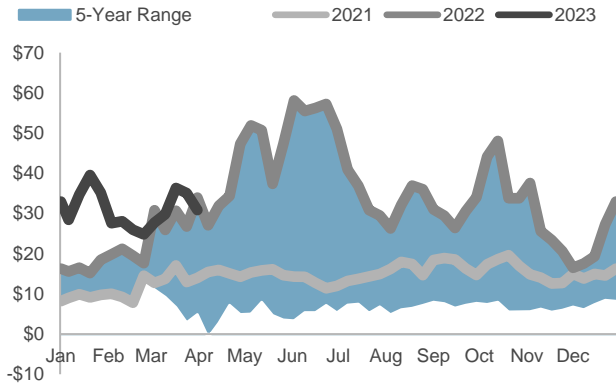


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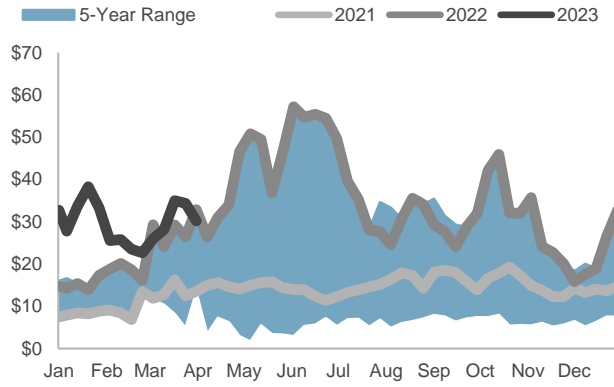


Refining—3:2:1 Crack Spreads (\$/bbl)

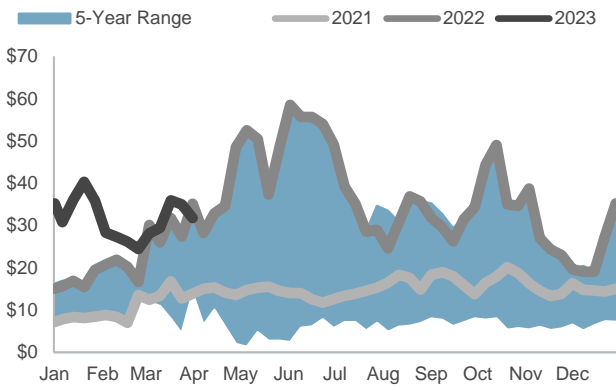
WTI Cushing (U.S. Gulf Coast)



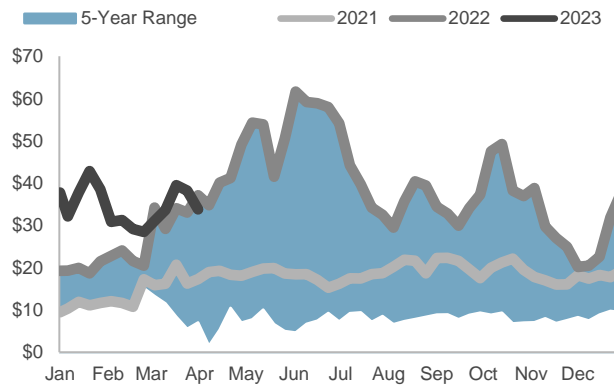
WTI Midland (U.S. Gulf Coast)



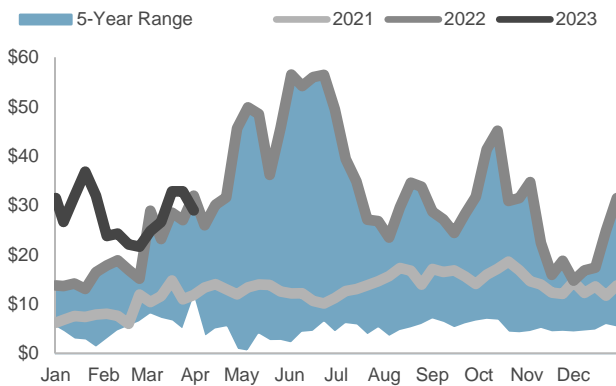
WTS Midland (U.S. Gulf Coast)



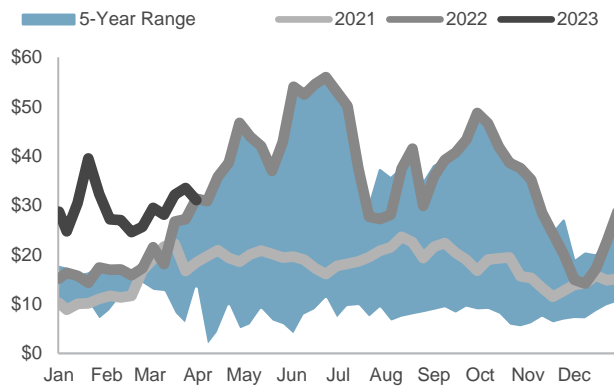
WTI Cushing ULSD (U.S. Gulf Coast)



LLS (U.S. Gulf Coast)



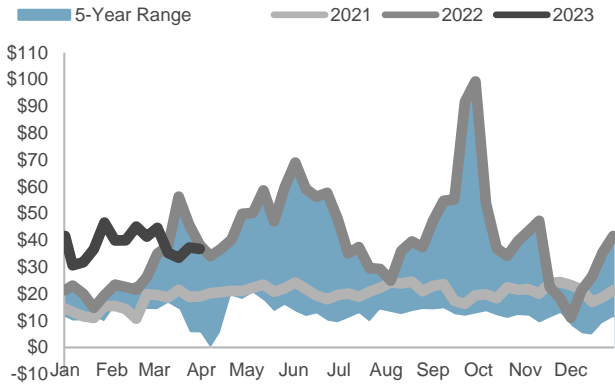
WTI Midland ULSD (U.S. Mid-Continent)



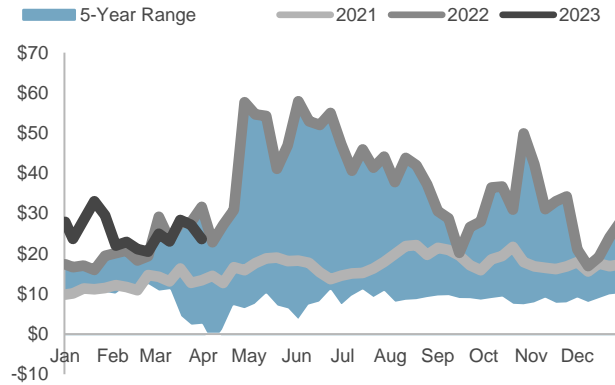
Notes: All data as of March 31, 2023. Data collected on a weekly basis.
Source: Bloomberg.

Refining—3:2:1 Crack Spreads (\$/bbl) (cont.)

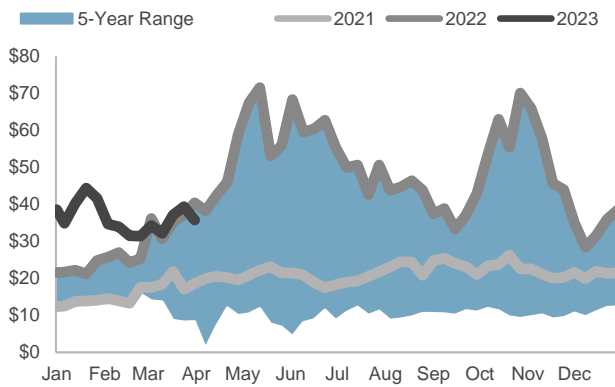
ANS (U.S. West Coast)



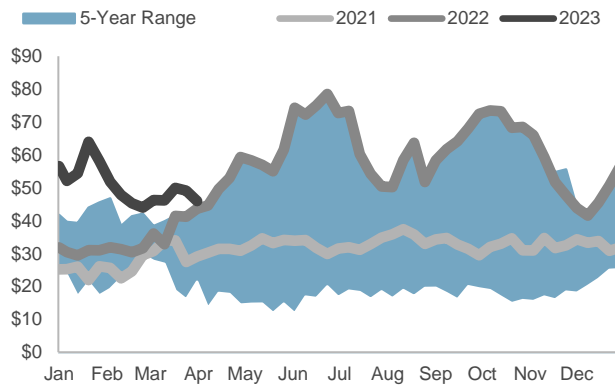
WTI Cushing (NYH RBOB Gasoline)



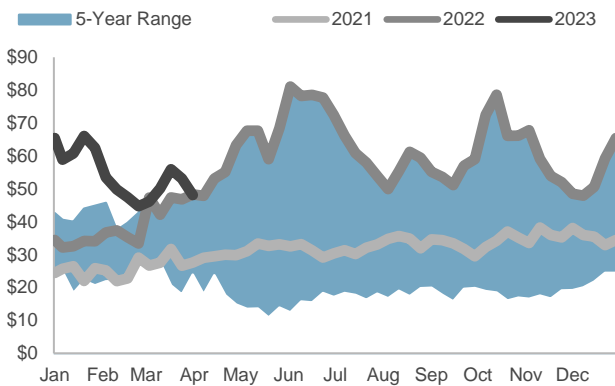
WTI Cushing ULSD (NY Harbor)



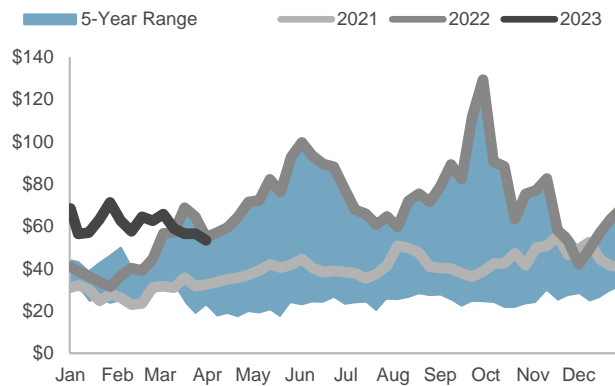
WCS (U.S. Mid-Continent)



WCS (U.S. Gulf Coast)



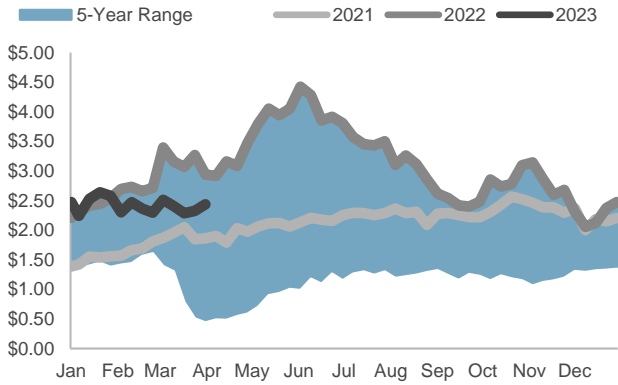
WCS (San Francisco)



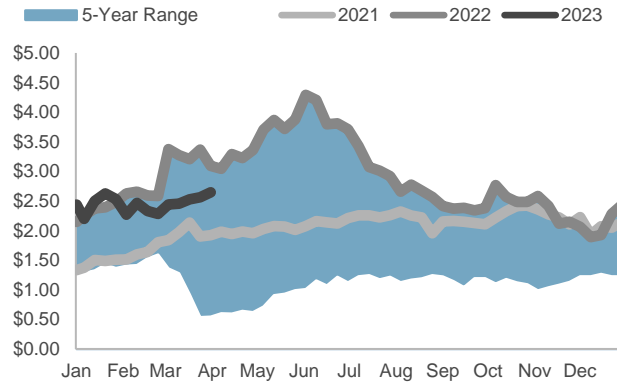
Notes: All data as of March 31, 2023. Data collected on a weekly basis.
Source: Bloomberg.

Refining—Product Prices (\$/gal)

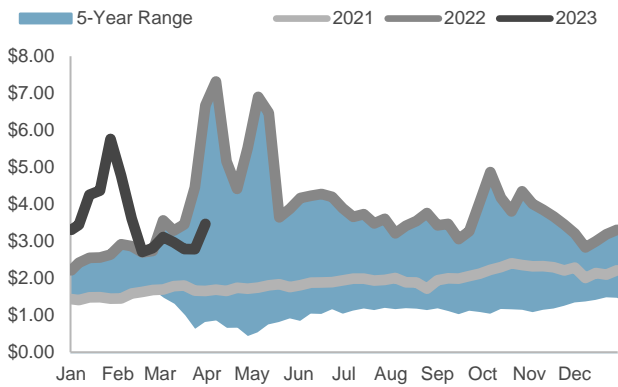
84 RBOB Gasoline (NY Harbor)



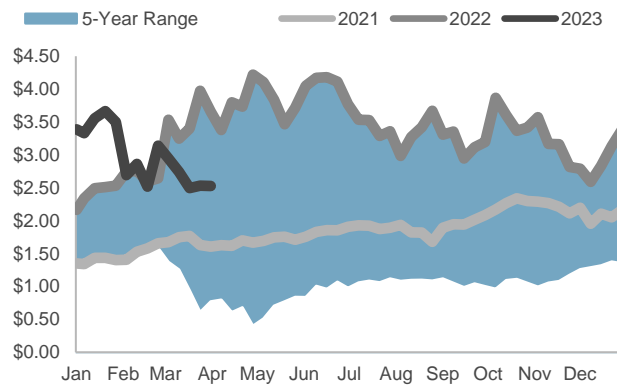
84 RBOB Gasoline (U.S. Gulf Coast)



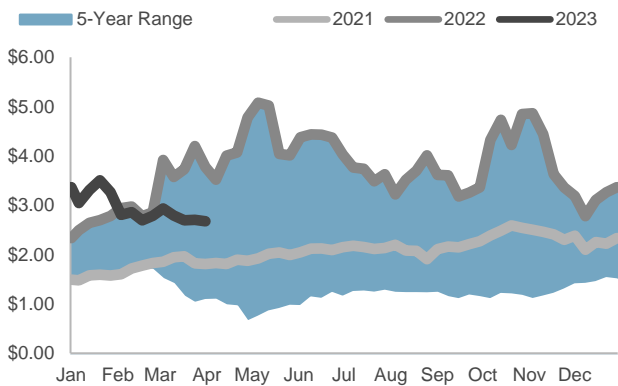
54-Grade Jet Fuel (NY Harbor)



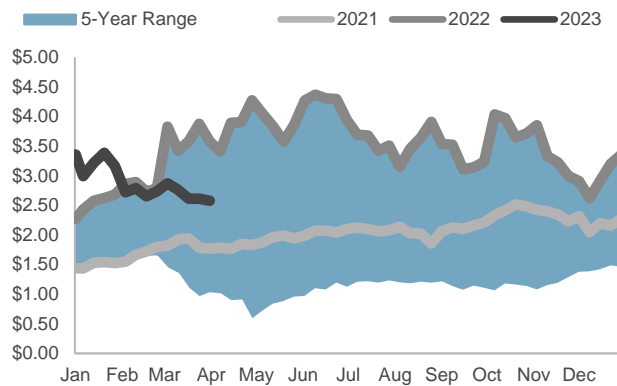
54-Grade Jet Fuel (U.S. Gulf Coast)



ULSD (NY Harbor)



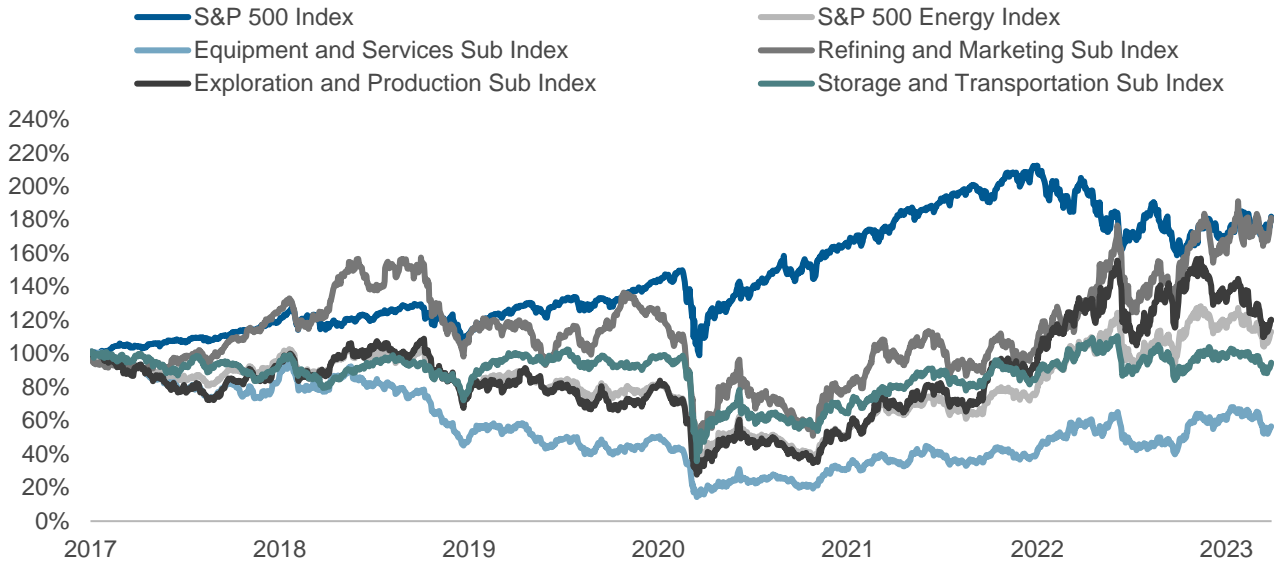
ULSD (U.S. Gulf Coast)



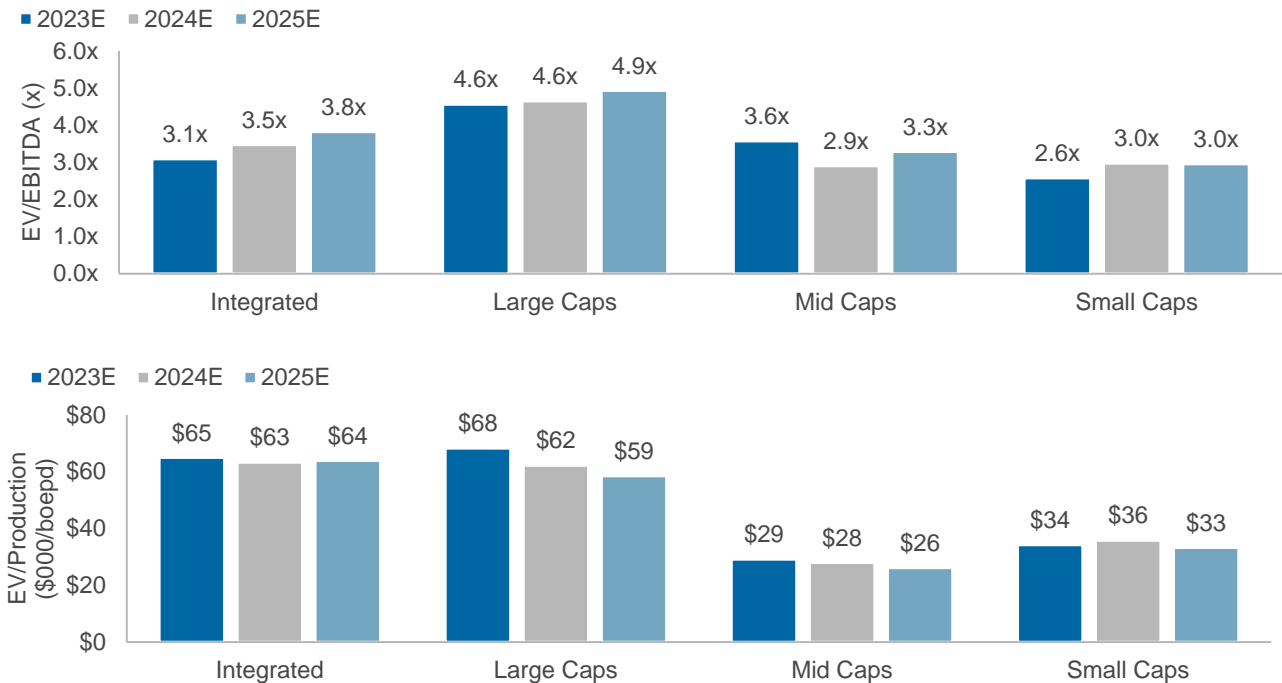
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Public Equity Markets Overview

Indexed Stock Price Performance (January 1, 2017 = 100%)



Public E&P Company Trading Metrics



Note: Trading multiples are based on share price and market data listed as of March 31, 2023, and broker consensus future earnings estimates from S&P Capital IQ as of March 31, 2023.
Source: S&P Capital IQ.

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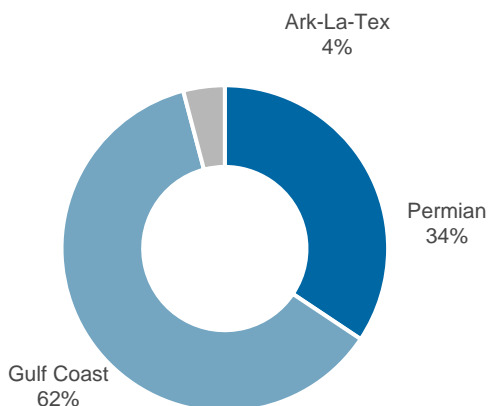
M&A (\$ in billions)

U.S. Region	2021	2022	YTD March		%Δ vs. 2022
			2022	2023	
Multi-Region	\$15.8	\$11.1	\$0.3	\$0.0	-100%
Permian	26.5	14.6	3.8	3.0	-22%
Gulf Coast	2.4	5.7	0.0	5.3	NMF
Rockies	7.7	8.8	7.2	0.0	-100%
Mid-Continent	1.1	1.0	0.0	0.0	-100%
Appalachia	4.0	8.3	2.8	0.0	-100%
Ark-La-Tex	8.1	0.3	0.0	0.4	NMF
Gulf of Mexico	1.2	1.3	0.0	0.0	-100%
West Coast	0.2	4.8	0.1	0.0	-100%
Alaska	0.0	0.0	0.0	0.0	NMF
Total	\$66.9	\$55.8	\$14.2	\$8.7	-39%

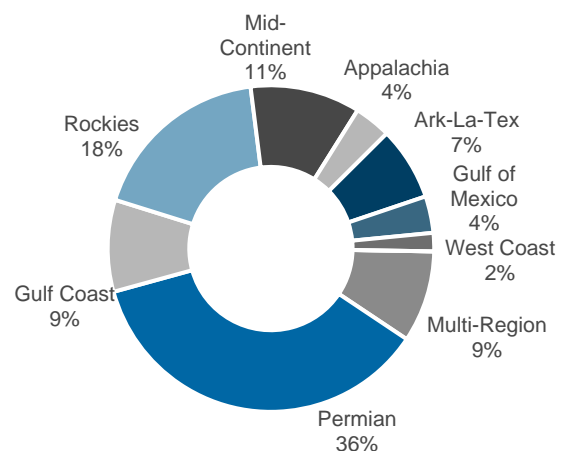
M&A (Deal Count)

U.S. Region	2021	2022	YTD March		%Δ vs. 2022
			2022	2023	
Multi-Region	43	23	5	5	0%
Permian	141	66	21	20	-5%
Gulf Coast	52	42	6	5	-17%
Rockies	67	50	17	10	-41%
Mid-Continent	102	56	13	6	-54%
Appalachia	28	14	6	2	-67%
Ark-La-Tex	32	17	3	4	33%
Gulf of Mexico	10	14	6	2	-67%
West Coast	6	7	1	1	0%
Alaska	5	2	0	0	NMF
Total	486	291	78	55	-29%

M&A—2023 (\$ in billions)



M&A—2023 (Deal Count)

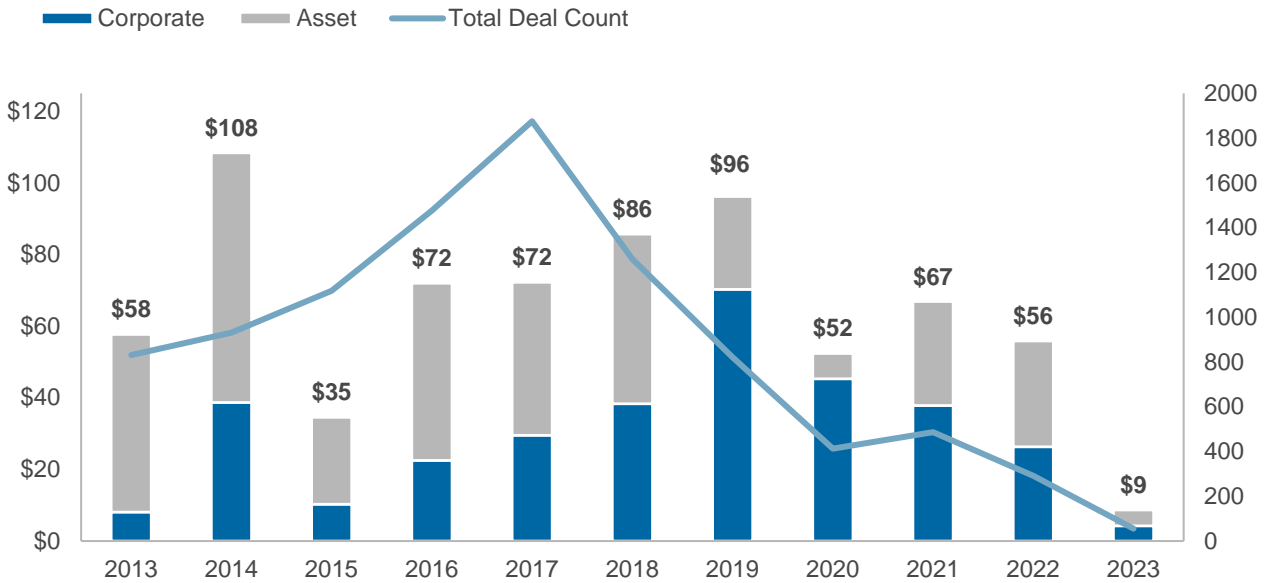


Note: All data as of March 31, 2023.

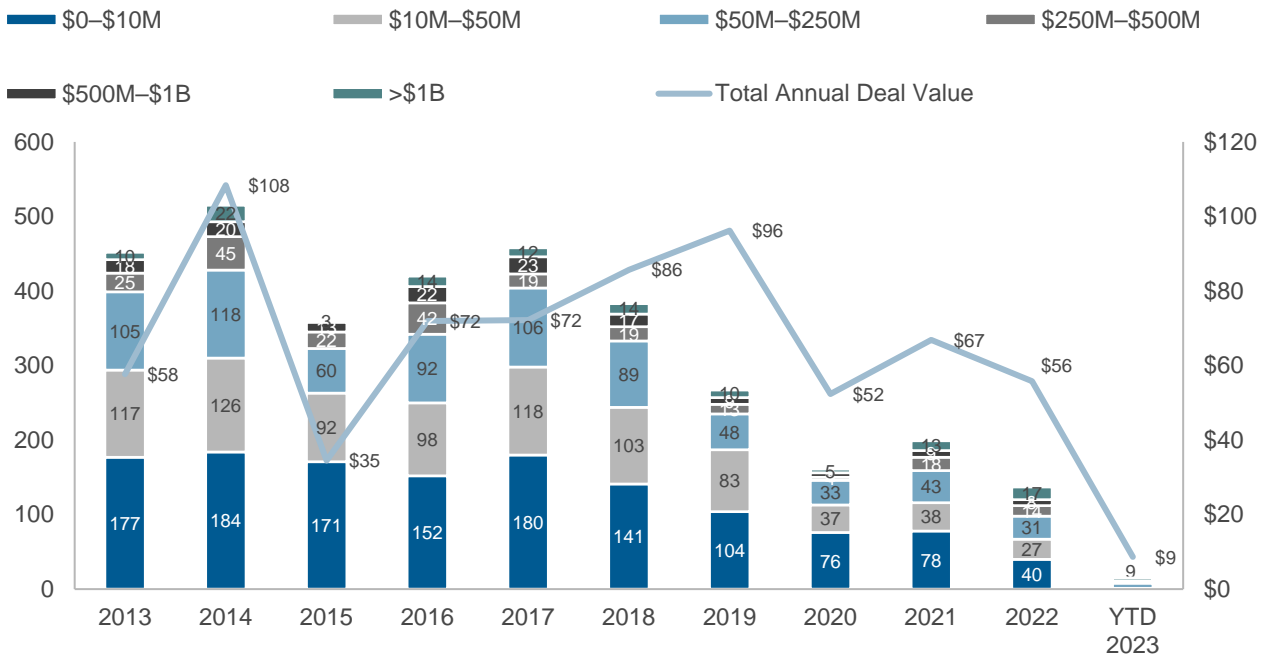
Source: Enverus based on selection criteria of seller assets being located in the U.S. Current year may not include values for all announced transactions or findings. Historical amounts may be adjusted as additional information is available.

Historical E&P Transaction Activity

U.S. Transactions Since 2013 (\$ in billions)



U.S. Transactions by Deal Size Since 2013⁽¹⁾ (\$ in billions)



Note: All data as of March 31, 2023.

(1) Deal count excludes transactions without a publicly disclosed deal value.

YTD refers to year-to-date.

Source: Enverus based on selection criteria of seller assets being located in the U.S.

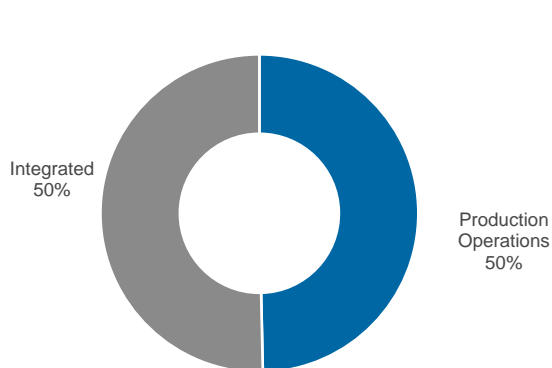
M&A (\$ in billions)

Segment	2021	2022	YTD March		%Δ vs. 2022
			2022	2023	
Drilling and Completion	\$0.8	\$1.0	\$0.0	\$0.0	-100%
Production Operations	0.7	0.5	0.0	0.3	NMF
Information Services	0.0	3.1	0.0	0.0	NMF
Integrated	0.8	0.2	0.0	0.3	NMF
Other	0.0	0.0	0.0	0.0	NMF
Total	\$2.3	\$4.8	\$0.1	0.6	NMF

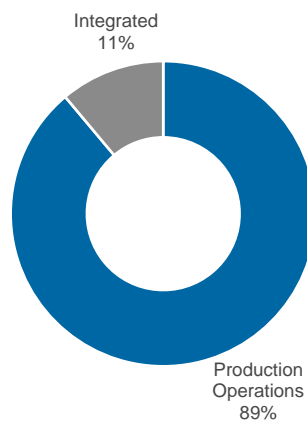
M&A (Deal Count)

Segment	2021	2022	YTD March		%Δ vs. 2022
			2022	2023	
Drilling and Completion	13	20	6	0	-100%
Production Operations	34	31	6	8	33%
Information Services	13	8	3	0	-100%
Integrated	9	8	2	1	-50%
Other	0	0	0	0	NMF
Total	69	67	17	9	-47%

M&A—2023 (\$ in billions)



M&A—2023 (Deal Count)



Downstream

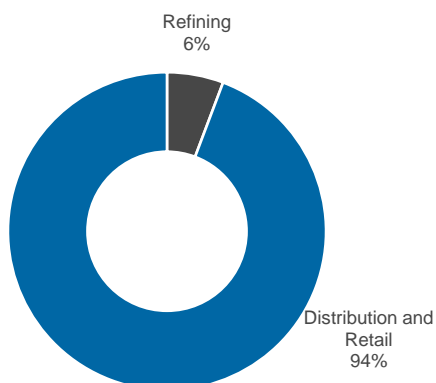
M&A (\$ in billions)

Segment	2021	2022	YTD March		%Δ vs. 2022
			2022	2023	
Refining	\$0.1	\$0.2	\$0.0	\$0.1	NMF
Multiple	4.4	1.4	0.2	0.0	-100%
Distribution and Retail	6.2	3.8	0.1	1.5	NMF
Terminals/Storage	1.5	0.4	0.4	0.0	-100%
Shipping	0.1	0.8	0.6	0.0	-100%
Total	\$12.2	\$6.6	\$1.3	\$1.6	16%

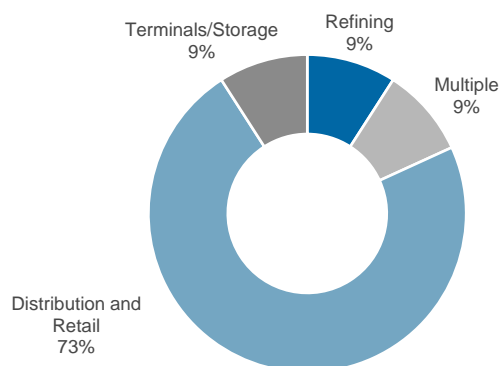
M&A (Deal Count)

Segment	2021	2022	YTD March		%Δ vs. 2022
			2022	2023	
Refining	1	2	0	1	NMF
Multiple	8	3	1	1	0%
Distribution and Retail	75	55	11	8	-27%
Terminals/Storage	12	6	3	1	-67%
Shipping	4	8	4	0	-100%
Total	100	74	19	11	-42%

M&A—2023 (\$ in billions)



M&A—2023 (Deal Count)



Note: All data as of March 31, 2023.

Source: Enverus based on selection criteria of seller headquarters being located in the U.S.

Midstream

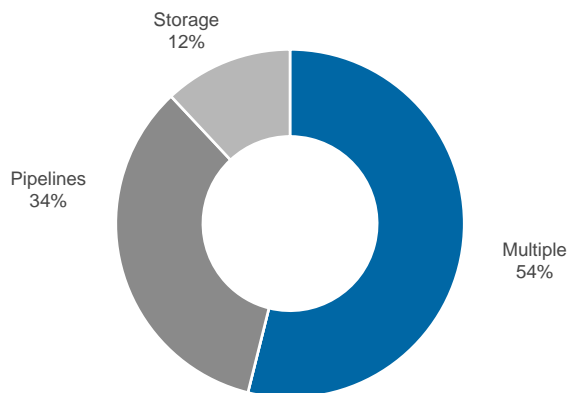
M&A (\$ in billions)

Segment	2021	2022	YTD March		%Δ vs. 2022
			2022	2023	
Multiple	\$30.8	\$11.7	\$2.4	\$1.7	-32%
Gathering/Processing	2.9	11.6	5.0	0.0	-100%
Gas Processing	0.0	0.0	0.0	0.0	NMF
Pipelines	1.6	2.4	1.8	1.1	-41%
Oil Tankers	1.0	0.1	0.0	0.0	NMF
Storage	0.9	0.0	0.0	0.4	NMF
Total	\$37.2	\$25.8	\$9.3	\$3.1	-67%

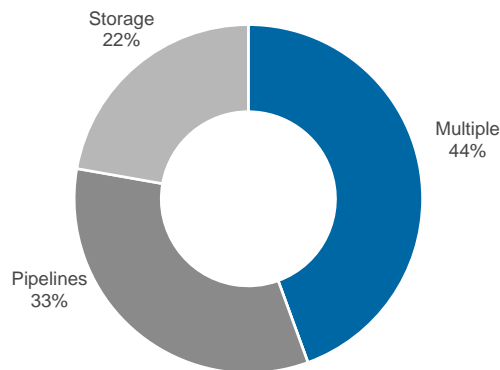
M&A (Deal Count)

Segment	2021	2022	YTD March		%Δ vs. 2022
			2022	2023	
Multiple	16	12	2	4	100%
Gathering/Processing	17	23	8	0	-100%
Gas Processing	0	0	0	0	NMF
Pipelines	11	9	2	3	50%
Oil Tankers	2	1	0	0	NMF
Storage	2	0	0	2	NMF
Total	48	45	12	9	-25%

M&A—2023 (\$ in billions)



M&A—2023 (Deal Count)



Note: All data as of March 31, 2023.

Source: Enverus based on selection criteria of seller headquarters being located in the U.S.

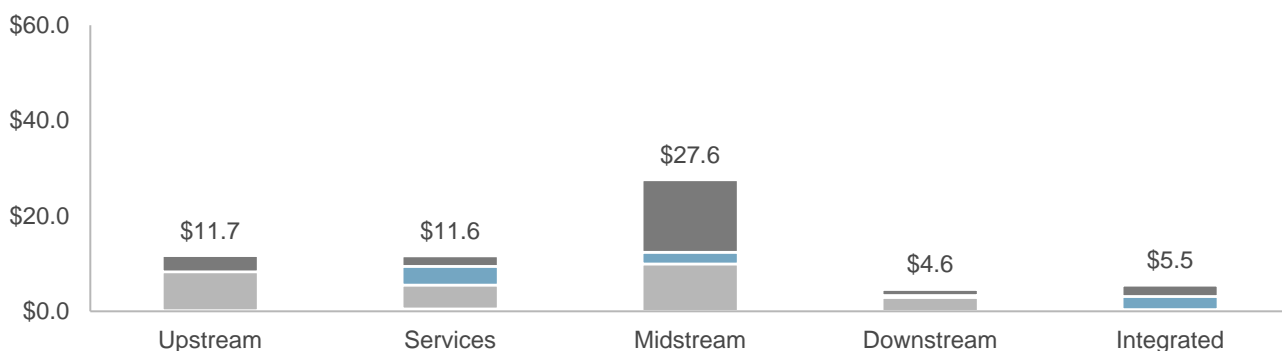
Financing by Instrument

Financing by Instrument (\$ in billions)

Capital	2021	2022	YTD March		%Δ vs. 2022
			2022	2023	
Upstream					
Equity	\$1.4	\$0.1	\$0.0	\$0.1	NMF
Credit Facility	45.0	59.9	2.0	8.2	317%
Loan	2.5	1.5	0.0	0.0	NMF
Bond	30.3	9.0	4.2	3.4	-19%
Other	0.5	0.1	0.1	0.0	NMF
Total	\$79.6	\$70.6	\$6.2	\$11.7	88%
Services					
Equity	\$0.5	\$0.5	\$0.1	\$0.5	NMF
Credit Facility	7.5	19.2	1.2	5.0	308%
Loan	6.4	6.0	0.3	3.9	NMF
Bond	7.3	0.3	0.2	2.2	NMF
Other	0.6	0.0	0.0	0.0	NMF
Total	\$22.3	\$26.0	\$1.8	\$11.6	539%
Midstream					
Equity	\$1.2	\$0.0	\$0.0	\$0.0	NMF
Credit Facility	41.0	53.5	10.9	9.9	-9%
Loan	2.4	9.1	0.8	2.5	NMF
Bond	29.4	23.5	7.3	15.2	108%
Other	1.7	1.0	1.0	0.0	-100%
Total	\$75.7	\$87.1	\$19.9	\$27.6	39%
Downstream					
Equity	\$0.1	\$0.0	\$0.0	\$0.0	NMF
Credit Facility	4.7	28.8	0.7	2.9	NMF
Loan	0.9	1.1	0.0	0.4	NMF
Bond	6.4	1.0	1.0	1.3	NMF
Other	0.0	0.0	0.0	0.0	NMF
Total	\$12.1	\$30.9	\$1.7	\$4.6	165%
Integrated					
Equity	\$0.8	\$0.6	\$0.1	\$0.0	NMF
Credit Facility	1.9	7.7	1.0	0.4	-65%
Loan	1.4	0.0	0.0	2.8	NMF
Bond	13.7	6.1	4.3	2.4	-45%
Other	0.2	0.0	0.0	0.0	NMF
Total	\$18.0	\$14.3	\$5.4	\$5.5	1%
Grand Total	\$207.9	\$228.9	\$35.0	\$60.9	74%

Financing by Instrument—2023 (\$ in billions)

■ Equity ■ Credit Facility ■ Loan ■ Bond ■ Other



Notes: All data as of March 31, 2023. Current year may not include values for all announced transactions or findings.

Historical amounts may be adjusted as additional information is available.

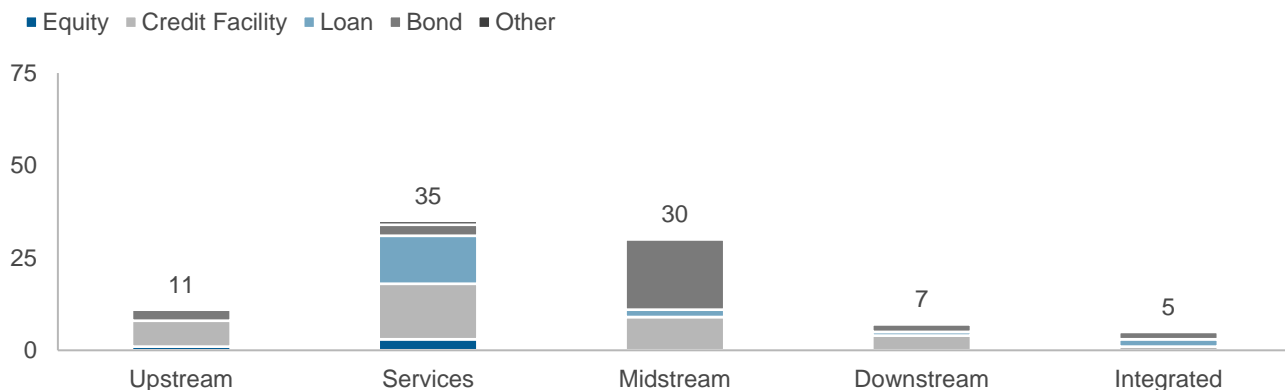
Source: Enverus.

Financing by Instrument (cont.)

Financing by Instrument (Count)

Capital	2021	2022	YTD March		%Δ vs. 2022
			2022	2023	
Upstream					
Equity	14	1	0	1	NMF
Credit Facility	48	68	5	7	40%
Loan	9	4	0	0	NMF
Bond	49	13	5	3	-40%
Other	7	1	1	0	NMF
Total	127	87	11	11	0%
Services					
Equity	9	6	3	3	NMF
Credit Facility	40	55	11	15	36%
Loan	23	18	4	13	NMF
Bond	16	6	2	3	NMF
Other	10	2	1	1	NMF
Total	98	87	21	35	67%
Midstream					
Equity	5	0	0	0	NMF
Credit Facility	38	39	9	9	0%
Loan	6	8	2	2	NMF
Bond	41	37	11	19	73%
Other	10	1	1	0	NMF
Total	100	85	23	30	30%
Downstream					
Equity	1	0	0	0	NMF
Credit Facility	9	19	3	4	NMF
Loan	6	2	0	1	NMF
Bond	9	2	2	2	NMF
Other	0	0	0	0	NMF
Total	25	23	5	7	40%
Integrated					
Equity	1	2	1	0	NMF
Credit Facility	3	8	1	1	NMF
Loan	3	0	0	2	NMF
Bond	18	8	5	2	-60%
Other	1	0	0	0	NMF
Total	26	18	7	5	-29%
Grand Total	376	300	67	88	31%

Financing by Instrument—2023 (Deal Count)

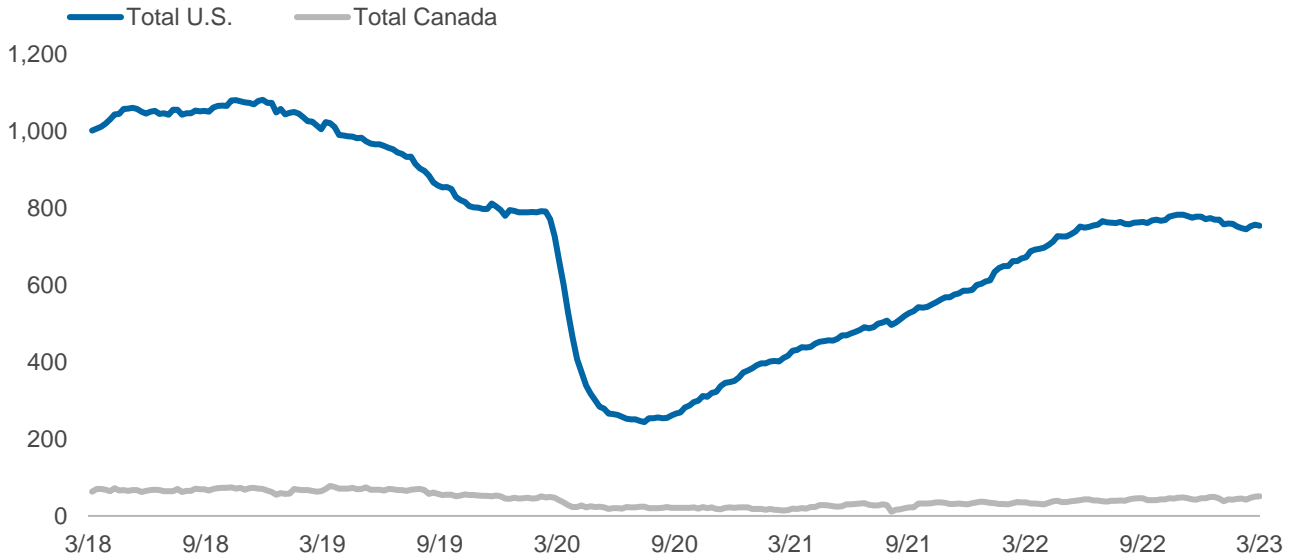


Notes: All data as of March 31, 2023. Current year may not include values for all announced transactions or findings. Historical amounts may be adjusted as additional information is available. Source: Enverus.

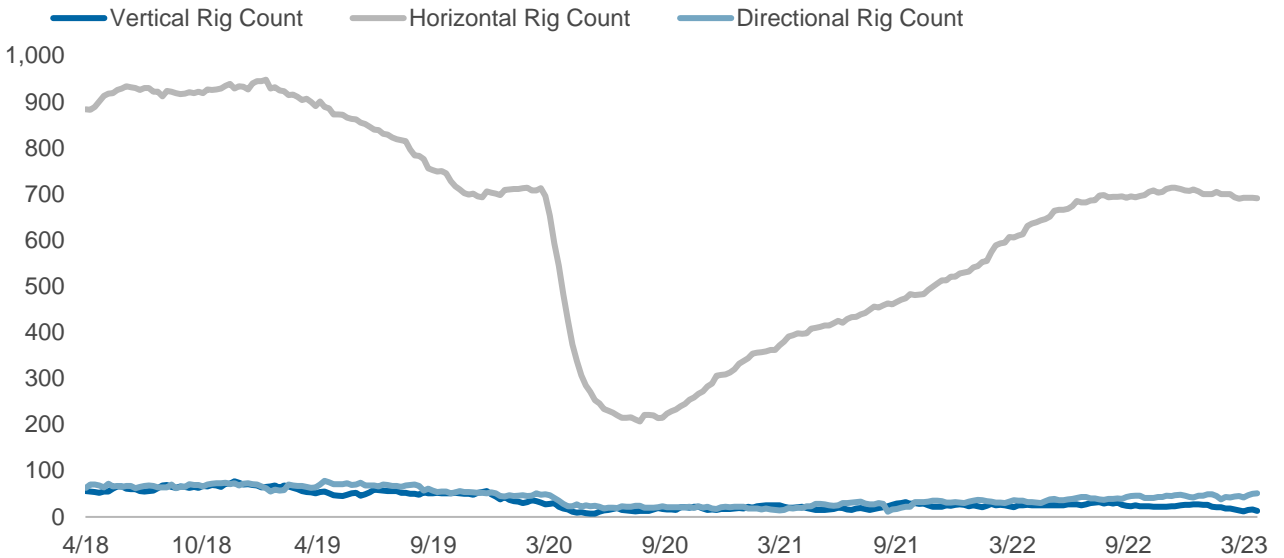
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Rigs

Total U.S. vs. Canada Rigs

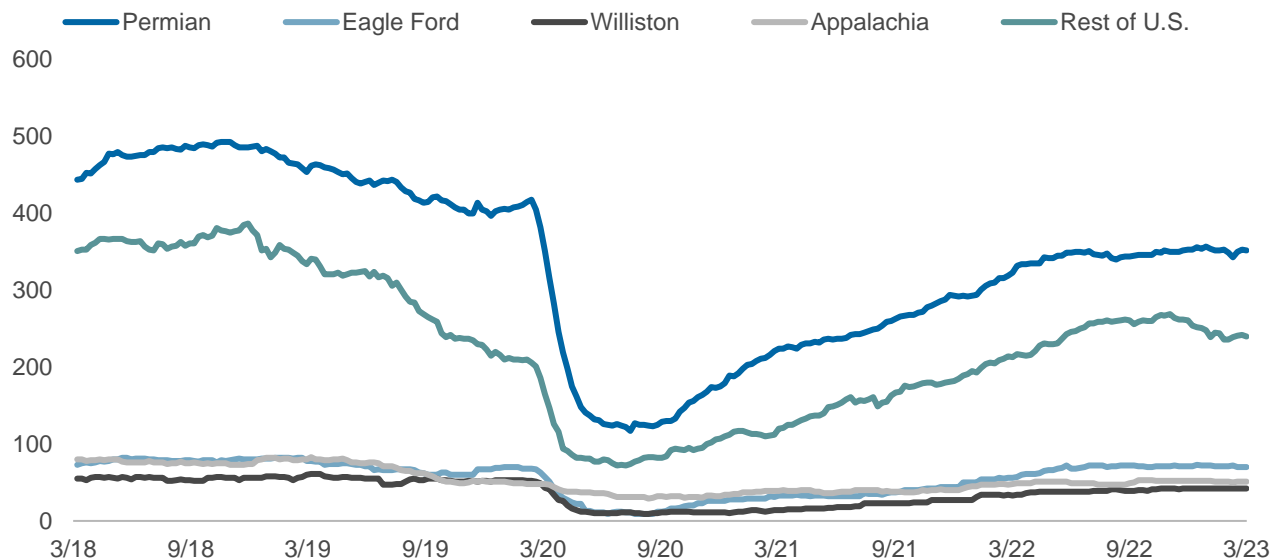


U.S. Rig Counts by Vertical, Horizontal, and Directional



Rigs (cont.)

U.S. Rigs by Regions

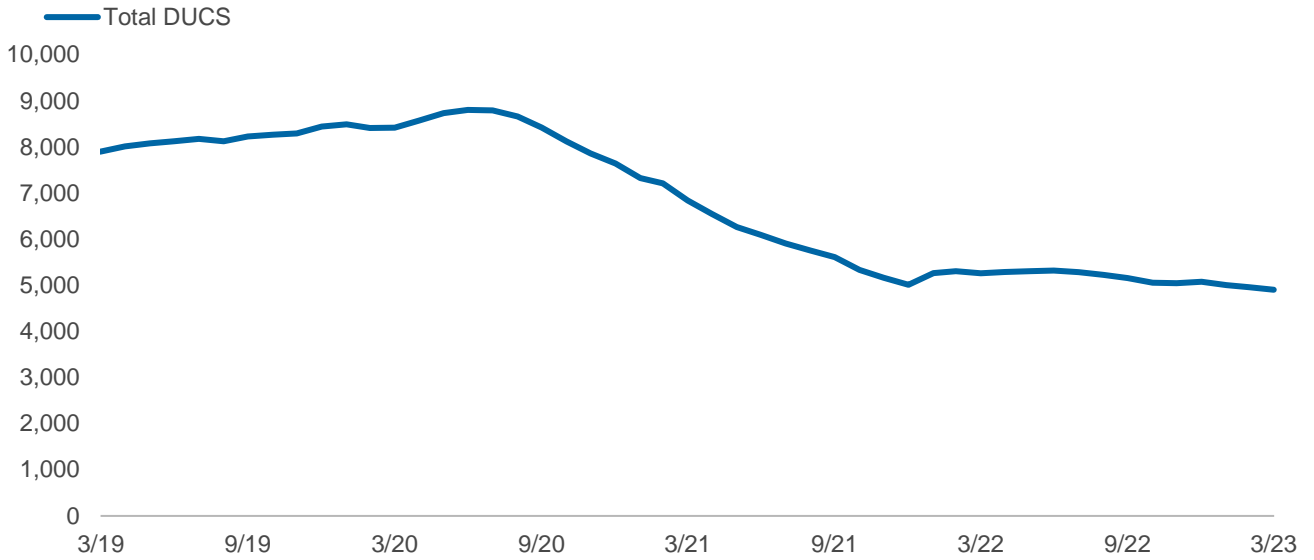


Change in Rig Counts

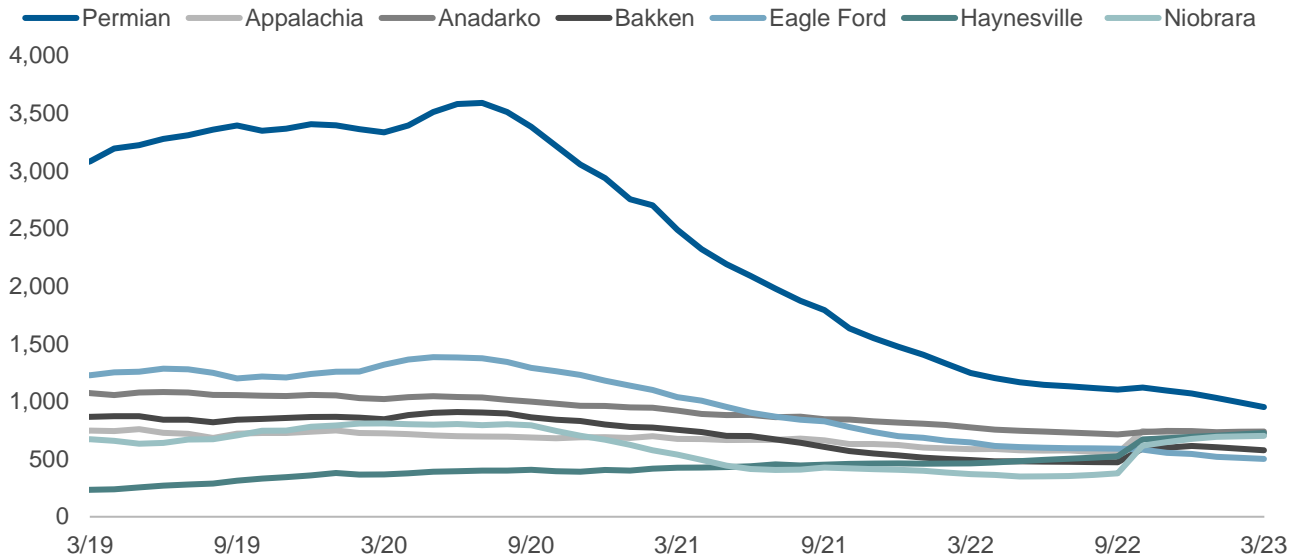
Region	3/31/2023	3/31/2022	12/31/2022	YoY % Change	QoQ % Change
Permian	352	319	353	10.3%	-0.3%
Eagle Ford	70	56	71	25.0%	-1.4%
Williston	42	34	42	23.5%	0.0%
Marcellus	40	36	39	11.1%	2.6%
Cana Woodford	31	24	26	29.2%	19.2%
DJ Niobrara	18	14	17	28.6%	5.9%
Granite Walsh	6	4	8	50.0%	-25.0%
Haynesville	66	67	72	-1.5%	-8.3%
Utica	11	11	13	0.0%	-15.4%
Rest of U.S.	119	105	138	13.3%	-13.8%
Total	755	670	779	12.7%	-3.1%

Rigs (cont.)

Total U.S. DUCs



Total DUCs by Basin



About Houlihan Lokey

Houlihan Lokey (NYSE:HLI) is a global investment bank with expertise in [mergers and acquisitions](#), [capital markets](#), [financial restructuring](#), and [financial and valuation advisory](#). The firm serves corporations, institutions, and governments worldwide with offices in the Americas, Europe, the Middle East, and the Asia-Pacific region. Independent advice and intellectual rigor are hallmarks of the firm’s commitment to client success across its advisory services. Houlihan Lokey is the No. 1 investment bank for global M&A transactions under \$1 billion, the No. 1 M&A advisor for the past eight consecutive years in the U.S., the No. 1 global restructuring advisor for the past nine consecutive years, and the No. 1 global M&A fairness opinion advisor over the past 25 years, all based on number of transactions and according to data provided by Refinitiv.

Locations



Industry Expertise

Product Expertise

- Mergers and Acquisitions
- Capital Markets
- Financial Restructuring
- Financial and Valuation Advisory
- Private Funds Advisory

Dedicated Industry Groups

- Business Services
- Consumer, Food, and Retail
- Energy
- Financial Services
- FinTech
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