Houlihan Lokey

Oil and Gas

INDUSTRY UPDATE | **Q4 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 Q4 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

Q4 2023 RECAP

The fourth quarter of 2023 was marked by a re-emergence of multi-billion dollar announced global transactions, including, among others:

- ExxonMobil and Pioneer Natural Resources (~$60 Billion)
- Chevron and Hess (~$53 Billion)
- Harbour and Wintershall Dea (~$11.7 Billion)
- Occidental and CrownRock (~$12 Billion)
- TGNR and Rockcliff Energy ($2.7 Billion)

Additionally, multiple small and mid-cap transactions across both U.S. basins and in multiple regions around the world have been announced and/or closed.

This continued 2023 M&A transaction activity was especially encouraging for industry participants, given the commodity price volatility that persisted throughout Q4 '23. As is typical, significant commodity price volatility indicates a market that is struggling to assess the balance of supply and demand driven by various factors. In Q4 '23, this ranged from global daily production of crude oil and natural gas as well as post-Russia trade flows to global production constraints, including those self-imposed by OPEC+, to global conflict (such as in Ukraine and Israel/Gaza), among other drivers.

Furthermore, the improvement in public and private capital markets activity within the oil and gas sector suggests a return of capital to the industry and confidence in the cash flow opportunities. Capital returned both in the form of new high yield debt issuances and even equity IPOs, such as Mach Natural Resources LP.

These trends coming together paint a hopeful picture for the future of the oil and gas industry from both a global operational perspective as well as on a cash-on-cash investment return basis.

OIL SUPPLY/DEMAND DYNAMICS

- Daily WTI and Brent benchmark prices declined throughout Q4 '23 to $70–$75/bbl in response to various supply and demand factors, including, among others:
  - Supply-side impacts, such as the announcement of OPEC+ production cuts and shipping disruptions in the Red Sea.
    - On November 30, OPEC+ announced additional voluntary production cuts of 2.2 million bbls/d, resulting in total spare capacity of 6+ million bbls/d across the group.
    - As an offset, in December, Angola announced its decision to leave OPEC after 16 years of membership to maintain its production level of at least 1 million bbls/d.[1]
    - As of January 26, Yemeni Houthi forces have carried out dozens of attacks on commercial ships in the Red Sea since mid-November, complicating efforts by the U.S. and its allies to secure a critical global shipping lane;[2] in response, the U.S. and the U.K. have executed retaliatory drone strikes.
    - U.S. crude production and exports hit records of 13.2 million bbls/d[3] and 4.5 million bbls/d,[3] respectively, in Q4 '23, despite the U.S. rig count falling by ~20.2%[4] over the course of the year.
    - Throughout Q4 '23, China's crude imports declined to a de minimis amount as the country instead drew from inventory, in contrast to their import levels of ~2 million bbls/d earlier in the year.[5]

(1) Bloomberg Markets.
(2) Wall Street Journal.
(3) EIA.
(4) Baker Hughes.
(5) Wall Street Research.

Key Quarterly Trends (cont.)

NATURAL GAS SUPPLY/DEMAND DYNAMICS

- Title Transfer Facility spot price moderated through Q4 '23 to $10.68/mcf [6] due to a combination of storage inventories in excess of the five-year average.
  - At of the end of Q4 '23, EU natural gas inventories were ~13% higher than the five-year average.[7]
    - The build-in inventories can be attributed to (i) a relatively warm 2022–2023 winter, (ii) the replacement of Russian pipeline volumes with ramped-up LNG imports, (iii) the adoption of alternative power generation fuel sources (coal, wood, nuclear, renewables), and (iv) implementation of efficiency measures across the EU.
  - European industrial gas demand rebounded by ~9% on a year-over-year basis by November but remained ~22% lower than average over the 2017–2021 period.[8]
- U.S. natural gas prices declined by ~43.5% on a year-over-year basis primarily due to strong domestic production and the "El Niño Effect," causing unusually warm winters in 2022 and 2023.
  - Per the EIA, as of December 29, 2023, U.S. gas inventories stood at 3.5 Tcf, a level ~13% greater than the five-year seasonal average.
    - To put it into perspective, a year ago, as Henry Hub prices were >$6 MMcf, domestic inventories were ~6% below the five-year average, drained by exports to Europe and a sweltering summer.[9]
- U.S. LNG exports hit an annual record high of ~88.9 mt in 2023, propelled by the return of the Freeport LNG facility (6 mt) to full service and the first full-year output from Venture Global LNG's Calcasieu Pass facility (3 mt).[10]
  - The U.S. is poised to surpass Qatar to become the largest global exporter of LNG.
- Continued global demand and massive U.S. natural gas reserves have incentivized LNG producers to expand capacity in the long term via the construction of new export terminals.
  - According to Reuters, approximately a dozen developers hope to make FIDs this year.
  - The most recently commissioned U.S. LNG export facility, Calcasieu Pass LNG, placed all its liquefaction trains (~1.3 bcf/d) in service in August 2022.
  - In addition to Golden Pass LNG, which started construction in 2019, two other projects (Plaquemines LNG and Corpus Christi Stage III) on the U.S. Gulf Coast have recently begun construction.
    - Once completed, these three export projects will expand U.S. LNG export capacity by a combined ~5.7 bcf/d by 2025.[11]
- In response to political pressures, the Biden Administration has recently threatened to slow LNG facility permitting and construction.

M&A&D MARKETS

- M&A&D buyers and sellers remain highly interested in transacting, and previously stalled deal processes have revived throughout 2023, including during Q4.
  - M&A&D was particularly active among public-to-public and public-to-private M&A with a trend of mega deals accelerating in Q4 '23.
    - The majority of recent corporate/M&A deals have been all-stock transactions at modest premiums to the seller's prevailing stock price.

(6) S&P Capital IQ as of December 29, 2023.
(7) GIE Aggregated Gas Storage Inventory as of December 31, 2023.
(8) ICIS.
(9) EIA.
(10) Reuters.
(11) EIA.

Key Quarterly Trends (cont.)

M&A&D MARKETS (CONT.)

– Significant deal backlog would suggest a rebound in M&A&D activity is likely to continue in the near term as both commodity prices and the macroeconomic environment stabilize.

– Cash flow multiples are becoming more reflective of an "output of" value rather than an "input to" or limit on value.

Selected Upstream Metrics

($ in Billions)				Q4 '23 % vs.				2022 %
	Q4 '22	Q3 '23	Q4 '23	Q4 '22	Q3 '23	2022	2023	vs. 2023
A&D								
Amount	$8.3	$5.1	$4.3	-48.6%	-15.8%	$29.5	$26.9	-8.7%
Transactions	66	48	31	-53.0%	-35.4%	270	177	-34.4%
M&A								
Amount	$5.2	$9.5	$139.7	NMF	NMF	$26.3	$164.7	526.0%
Transactions	3	4	8	166.7%	100.0%	21	23	9.5%

DEBT CAPITAL MARKETS

– High yield activity increased sequentially in Q4 '23, indicating increasing institutional appetite and green shoots for issuers from the oil and gas industry.

- Offerings were across the upstream, midstream, downstream, and oilfield service sectors.
  - Notable Q4 '23 issuers include, among others:
    - Venture Global ($4.5 Billion)
    - Civitas Resources ($1 Billion)
    - Hilcorp ($600 Million)
    - Genesis ($600 Million)
    - Kinetik ($500 Million)
    - Vital Energy ($500 Million)
    - Helix Energy Solutions ($300 Million)
- Energy High Yield Index OAS spreads have remained tighter compared to the broader High Yield Index.
  - As of December 31, 2023, the Energy High Yield Index spread was 301 bps compared to the broader High Yield Index spread of 369 bps.[12]

– Private credit providers remain highly active across numerous products.

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

(12) Bloomberg.

Key Quarterly Trends (cont.)

EQUITY CAPITAL MARKETS

- On October 27, 2023, Mach Natural Resources LP (Mach) priced its IPO at $19 per share to receive net proceeds of ~$170 million.
  - Mach is an independent upstream oil and gas company focused on the Anadarko Basin region of Western Oklahoma, Southern Kansas, and the panhandle of Texas.
  - As of January 30, 2024, Mach had an enterprise value of ~$1.7 billion.[13]
- A growing portion of the broader LP universe is bullish on E&P, given attractive cash returns, and is, therefore, once again seeking to deploy more capital into the industry.
  - 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 take longer to close.
  - Sponsors are concentrating capital into a smaller number of teams/assets, "re-upping" with proven and historically successful players.
- Energy's contribution to the S&P 500 on a market cap basis has been increasing (currently standing at ~4.7%) but remains materially below energy's contribution on a levered cash flow basis of 10.2%.

OTHER TRENDS

- The wave of public company-led consolidation is propelled by tier 1 inventory scarcity and public equity investors' focus on shareholder returns and capital discipline.
- Based on public disclosure post-announced public M&A transactions, there is an expectation that Q4 '23's consolidation wave may drive a future wave of non-core asset divestitures, creating substantial buying opportunities for:
  - Exxon Mobil ~$10+ Billion
  - Chevron ~$12–$15 Billion
  - Oxy ~$4–$6 Billion
- Tier 1 inventory scarcity has resulted in increased (i) discussions regarding new technologies/strategies to enhance recovery factors, such as refracs, data analytics, etc., and (ii) interest from certain large caps to consider conventional and international assets.
- Oil-and-gas-related continuation fund and other industry-dedicated secondary transaction activity show increasing signs of picking up; there has been a nascent emergence of dedicated or flexible energy-and-infrastructure-focused secondary investment vehicles from both traditional and unique players.

(13) S&P Capital IQ Pro as of January 30, 2024.

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
- 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.

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.

Financial Advisory

- No. 1 global M&A fairness opinion advisor over the past 25 years.**
- 2,000+ annual valuation engagements.
- Transaction advisory services, including the ability to bundle due diligence and quality of earnings services.

Source: LSEG (formerly 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 70 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.

Featured Transactions(1)

Vital Energy has signed definitive agreements to acquire substantially all the assets of HENRY, TH City Investments, Maple Energy for 9.57mm shares, 4.98mm convertible preferred shares, and $300mm of cash — Buyside Advisor

Northwoods Energy, a portfolio company of Apollo, has been acquired by OneRock Energy Holdings, LLC, an investment vehicle of PAN Capital Management LP — Sellside Advisor

Vital Energy has acquired 70% of the assets of Forge energy II — Buyside Advisor

NOG has acquired 30% of the assets of Forge energy II — Buyside Advisor

Quarter North Energy has sold its P&A business — Sellside Advisor

Clear Fork, Inc. Eagle Permian Partners has sold Eastern Shelf assets to Peak 10 Energy — Sellside Advisor

ApexEnergy, LLC has been acquired by an Undisclosed Buyer — Sellside Advisor

Rockdale has sold substantially all its assets, pursuant to Section 363 of the U.S. Bankruptcy code, to Repsol — Company Advisor

Falcon Minerals has combined in an all-stock merger with Desert Peak Minerals — Financial Advisor

Vine Energy has been acquired by Chesapeake Energy — Financial Advisor & Fairness Opinion

Laredo Petroleum has sold a 37.5% wellbore interest in certain Legacy PDP assets to Sixth Street — Sellside Advisor

Laredo Petroleum has acquired the assets of Sabalo — Buyside Advisor

Tombstones included herein represent transactions closed from 2021 forward.

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

01 HOULIHAN LOKEY SNAPSHOT



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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

2023 M&A Advisory Rankings
U.S. Energy & Power Transactions Under $1 Billion

	Advisor	Deals
1	**Houlihan Lokey**	**17**
2	Piper Sandler	11
3	RBC Capital Markets	11
4	Barclays	9
4	Jefferies	9

Source: LSEG (formerly Refinitiv).

No. 1 M&A Advisor for U.S. Energy and Power Transactions Under $1 Billion

Corporate Finance

2023 M&A Advisory Rankings
All Global Transactions

	Advisor	Deals
1	**Houlihan Lokey**	**352**
2	Rothschild	349
3	Goldman Sachs	300
3	JP Morgan	300
5	Morgan Stanley	253

Source: LSEG (formerly Refinitiv).
Excludes accounting firms and brokers.

No. 1 Investment Bank for All Global M&A Transactions

Financial and Valuation Advisory

1999–2023 Global M&A Fairness Advisory Rankings

	Advisor	Deals
1	**Houlihan Lokey**	**1,247**
2	JP Morgan	1,035
3	Duff & Phelps, A Kroll Business	977
4	UBS	884
5	Morgan Stanley	716

Source: LSEG (formerly Refinitiv).
Announced or completed transactions.

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

2,000+ Annual Valuation Engagements

Financial Restructuring

2023 Global Distressed Debt & Bankruptcy Restructuring Rankings

	Advisor	Deals
1	**Houlihan Lokey**	**73**
2	PJT Partners	64
3	Rothschild	51
4	Lazard	37
5	Evercore Partners	27

Source: LSEG (formerly Refinitiv).

No. 1 Global Investment Banking Restructuring Advisor

1,700+ Transactions Completed, Valued at More Than $3.5 Trillion Collectively

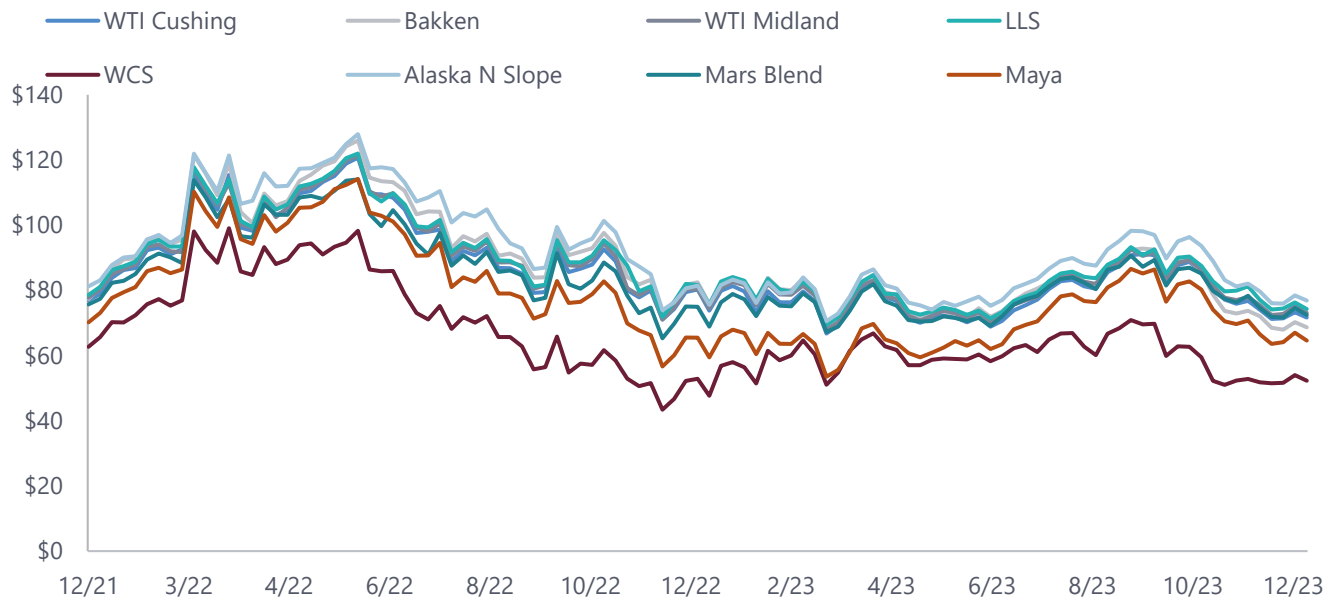
02 CRUDE OIL



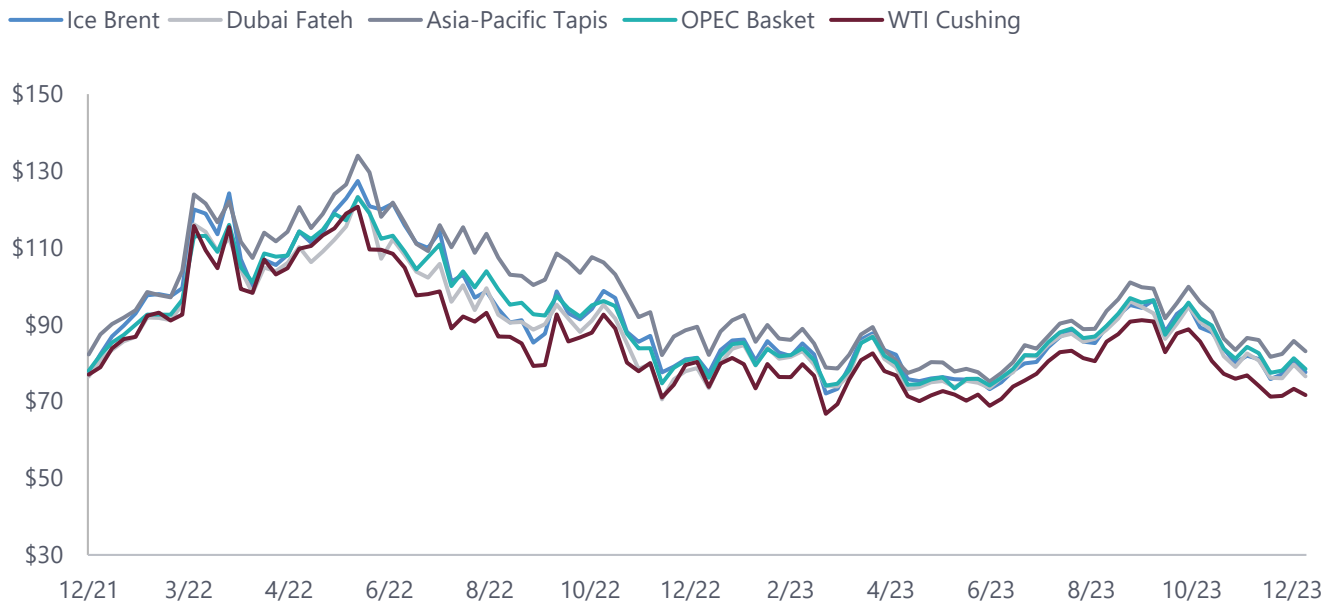
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Spot Pricing

North American Spot Prices ($/bbl)



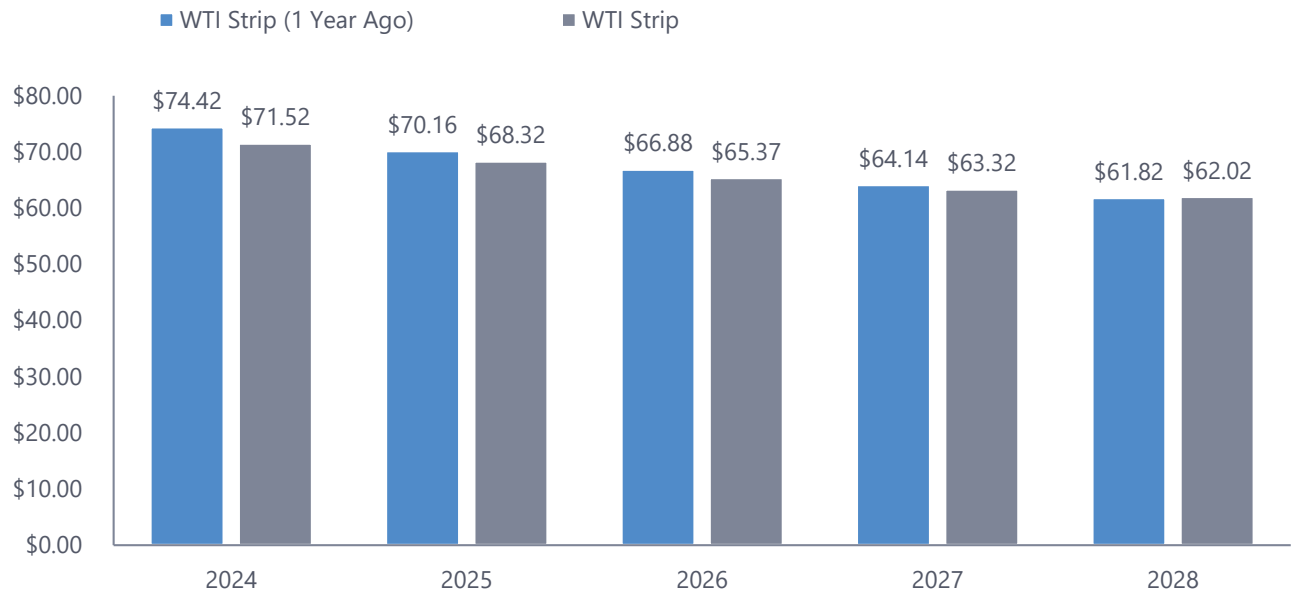
International Spot Prices ($/bbl)



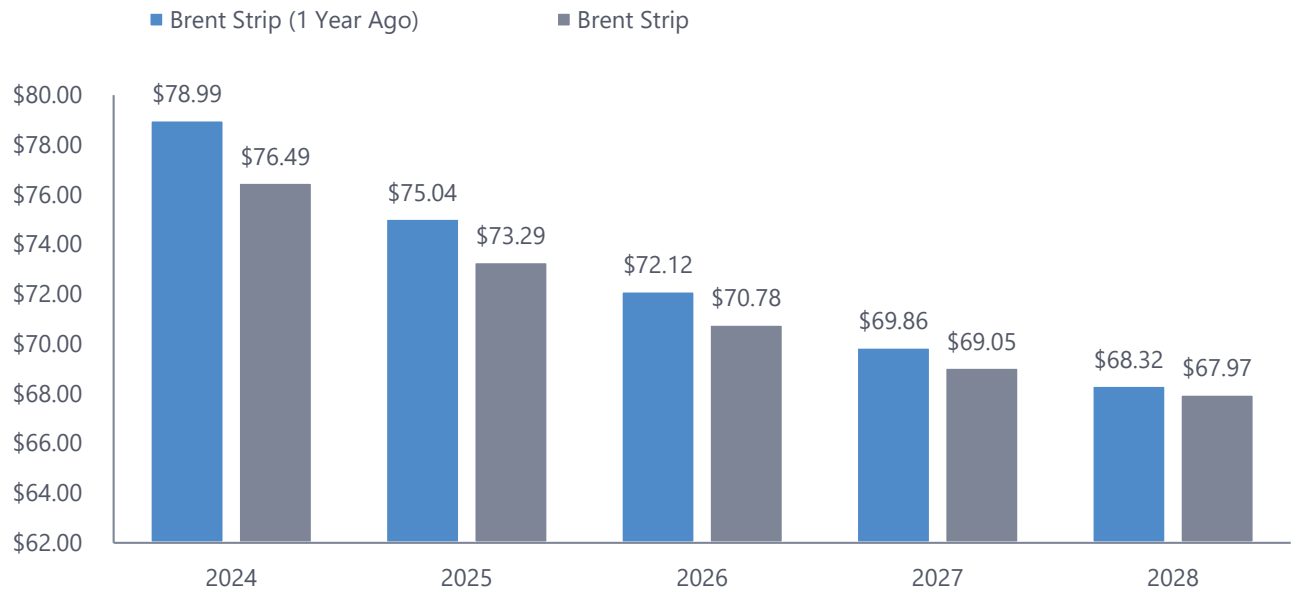
Notes: All data as of December 31, 2023. Data collected on a weekly basis.
Source: Bloomberg.

Strip Pricing

WTI Cushing Strip Pricing Comparison ($/bbl)



Brent Strip Pricing Comparison ($/bbl)



Notes: All data as of December 31, 2023. Represents the average price for each year.
Source: S&P Capital IQ.

Differentials

Region	12/31/2023	12/31/2022	9/30/2023	YoY % Change	QoQ % Change
Brent	$77.6	$85.0	$96.3	-8.7%	-19.4%
Brent—WTI Cushing	*$5.9*	*$4.7*	*$5.5*		
WTI Cushing	$71.7	$80.3	$90.8	-10.7%	-21.1%
WTI Cushing – Brent	*($5.9)*	*($4.7)*	*($5.5)*		
Bakken	$68.7	$82.5	$92.5	-16.7%	-25.8%
WTI Cushing—Bakken	*$3.0*	*($2.2)*	*($1.7)*		
Eagle Ford Light	$68.1	$76.7	$87.3	-11.2%	-21.9%
WTI Cushing—Eagle Ford Light	*$3.5*	*$3.5*	*$3.5*		
WCS	$52.3	$52.6	$72.5	-0.6%	-27.9%
WTI Cushing—WCS	*$19.4*	*$27.7*	*$11.3*		

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

Differentials ($/bbl)

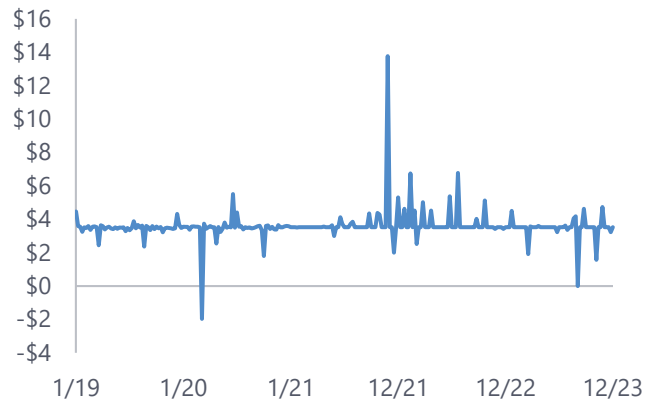
Brent—WTI Cushing



WTI Cushing—WTI Bakken Clearbrook



WTI Cushing—Eagle Ford Light



WTI Cushing—WCS



LLS—Mars



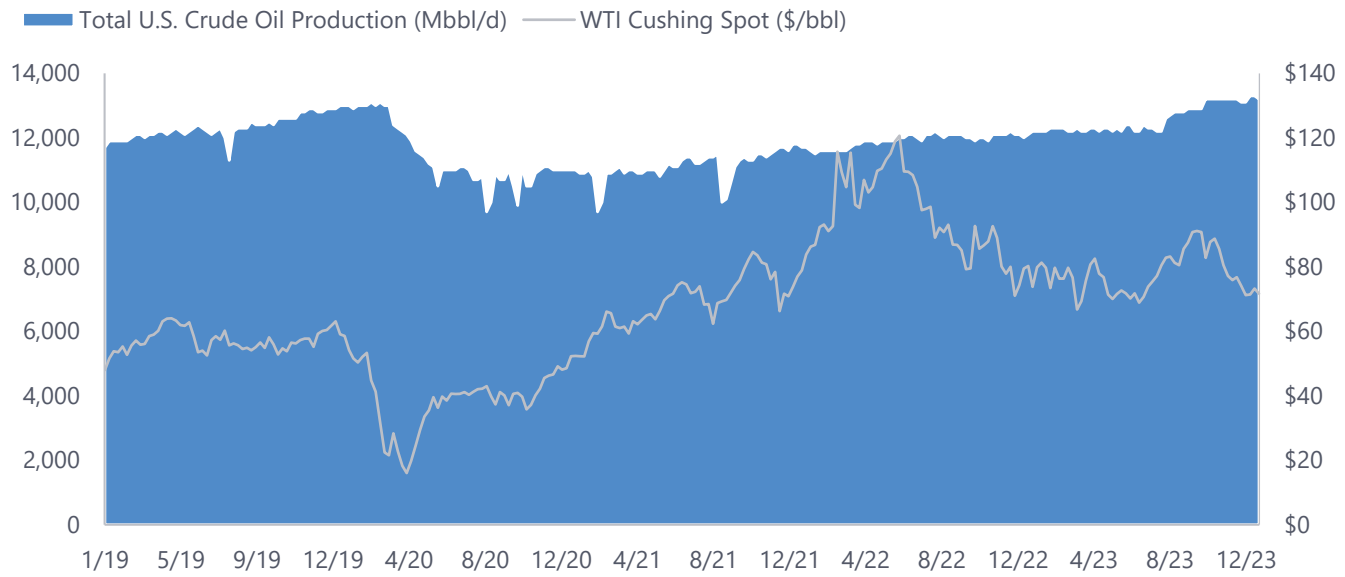
Bakken—ANS



Notes: All data as of December 31, 2023. Data collected on a weekly basis.
Sources: Bloomberg and S&P Capital IQ.

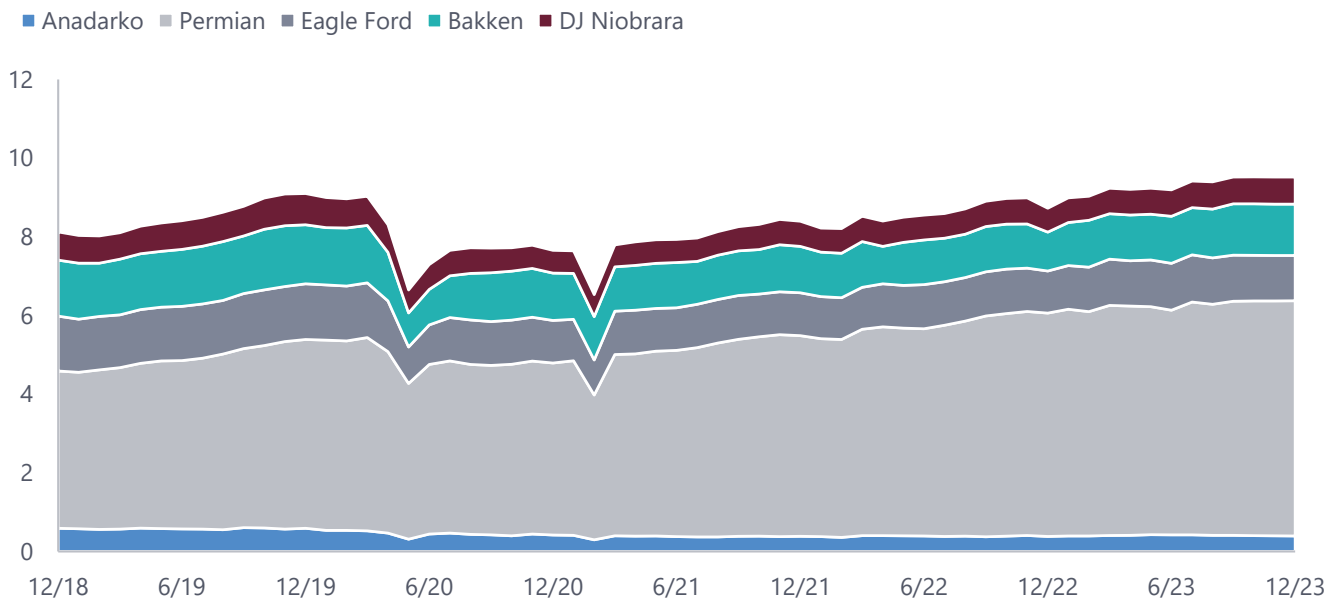
Production

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



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

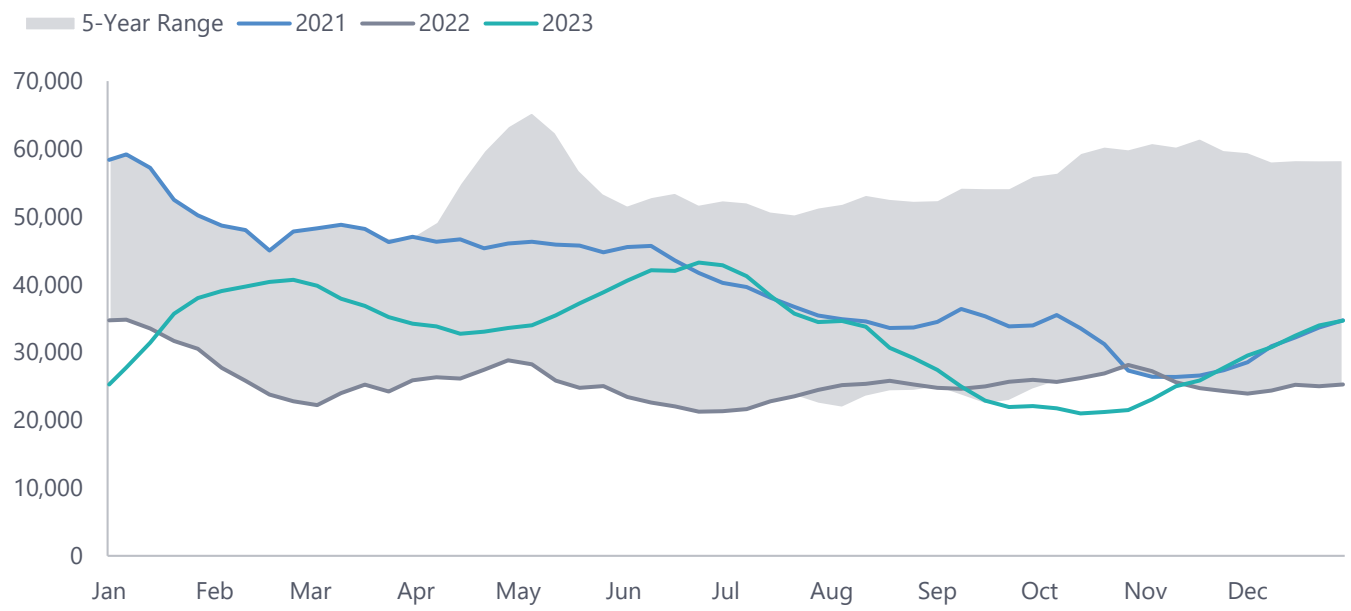
Production in Select Regions (MMbbl/d)(1)



Notes: All data as of December 31, 2023. Data collected on a monthly basis.
Sources: Bloomberg and 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.

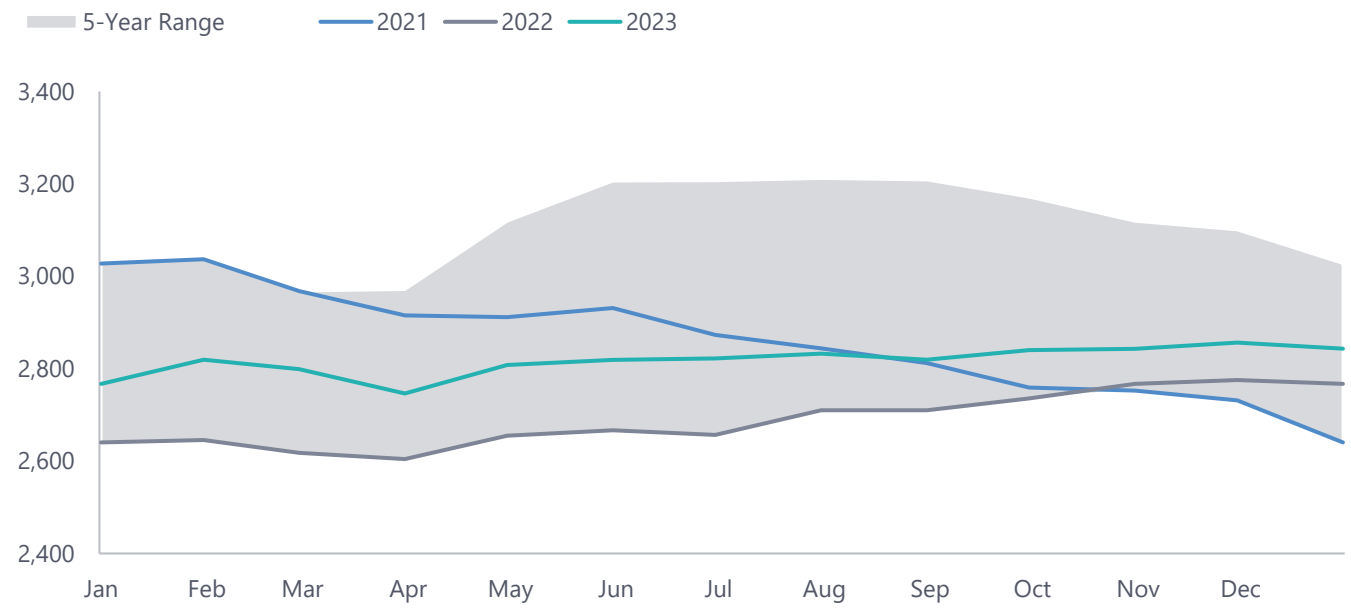
Inventory

U.S. Cushing Crude Inventory (Mbbl)



Note: Data collected on a weekly basis.

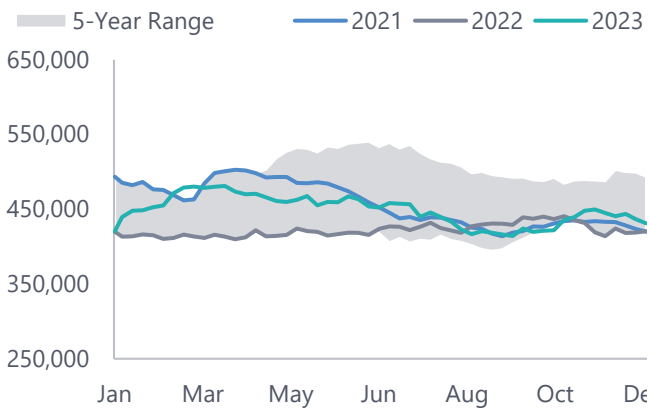
OECD Commercial Inventories (MMbbl)



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

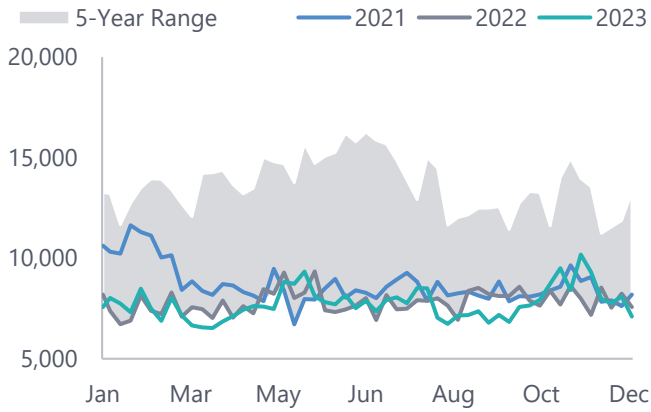
Inventory (Mbbl)

Overall U.S. Crude Inventory

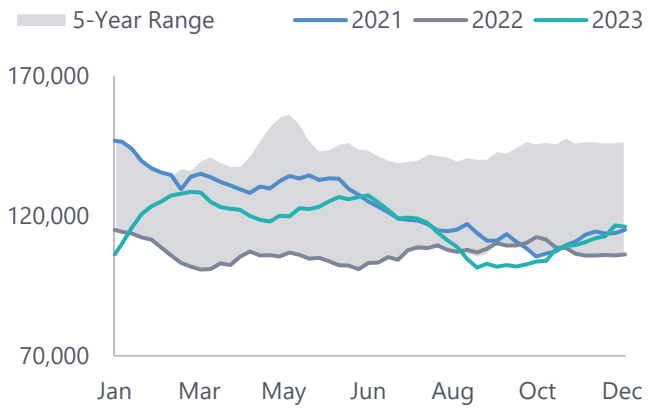


Note: Excludes strategic petroleum reserve (SPR).

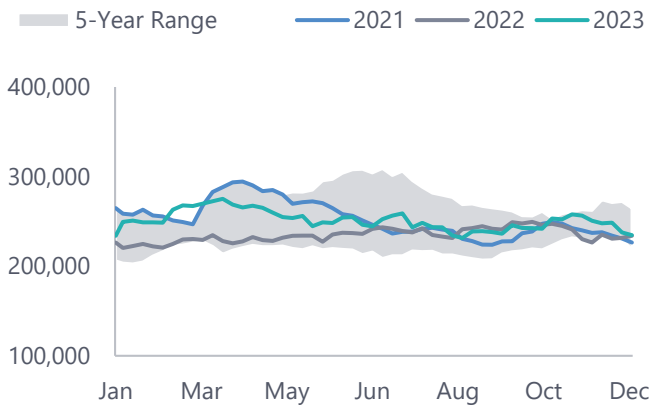
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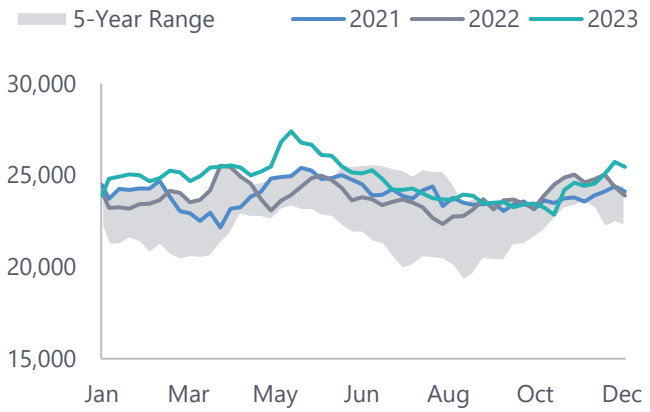
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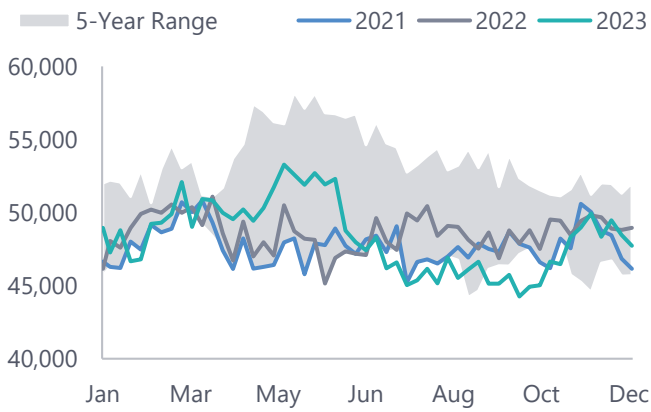
PADD III



PADD IV



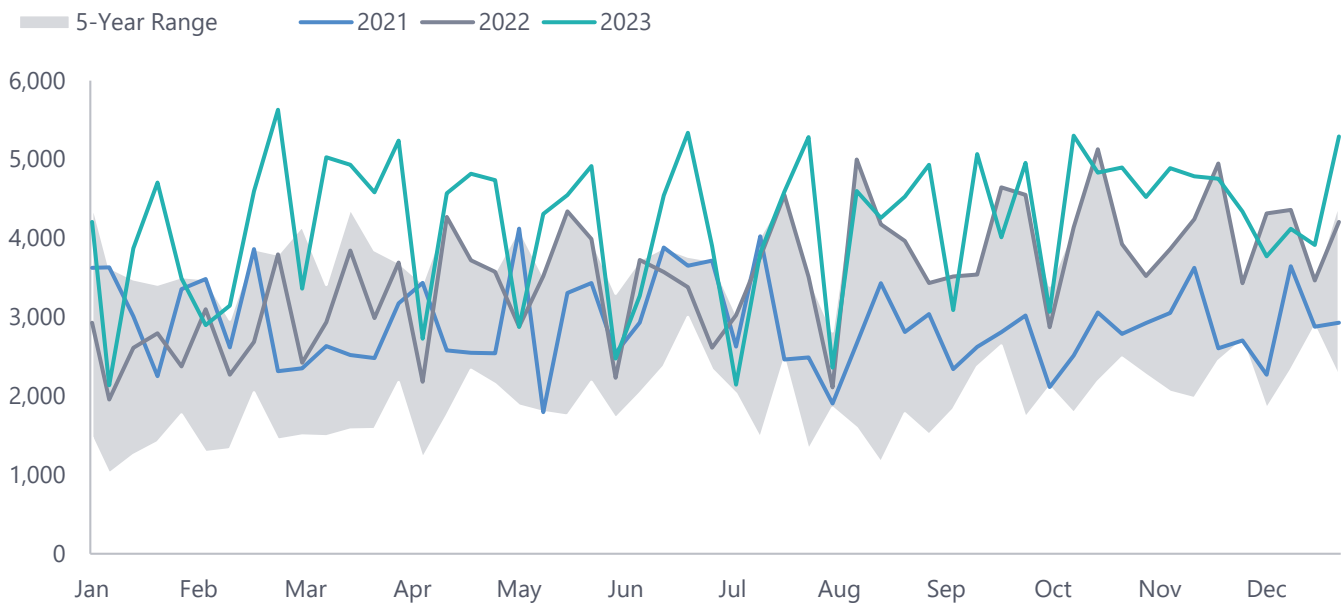
PADD V



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

Trade

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



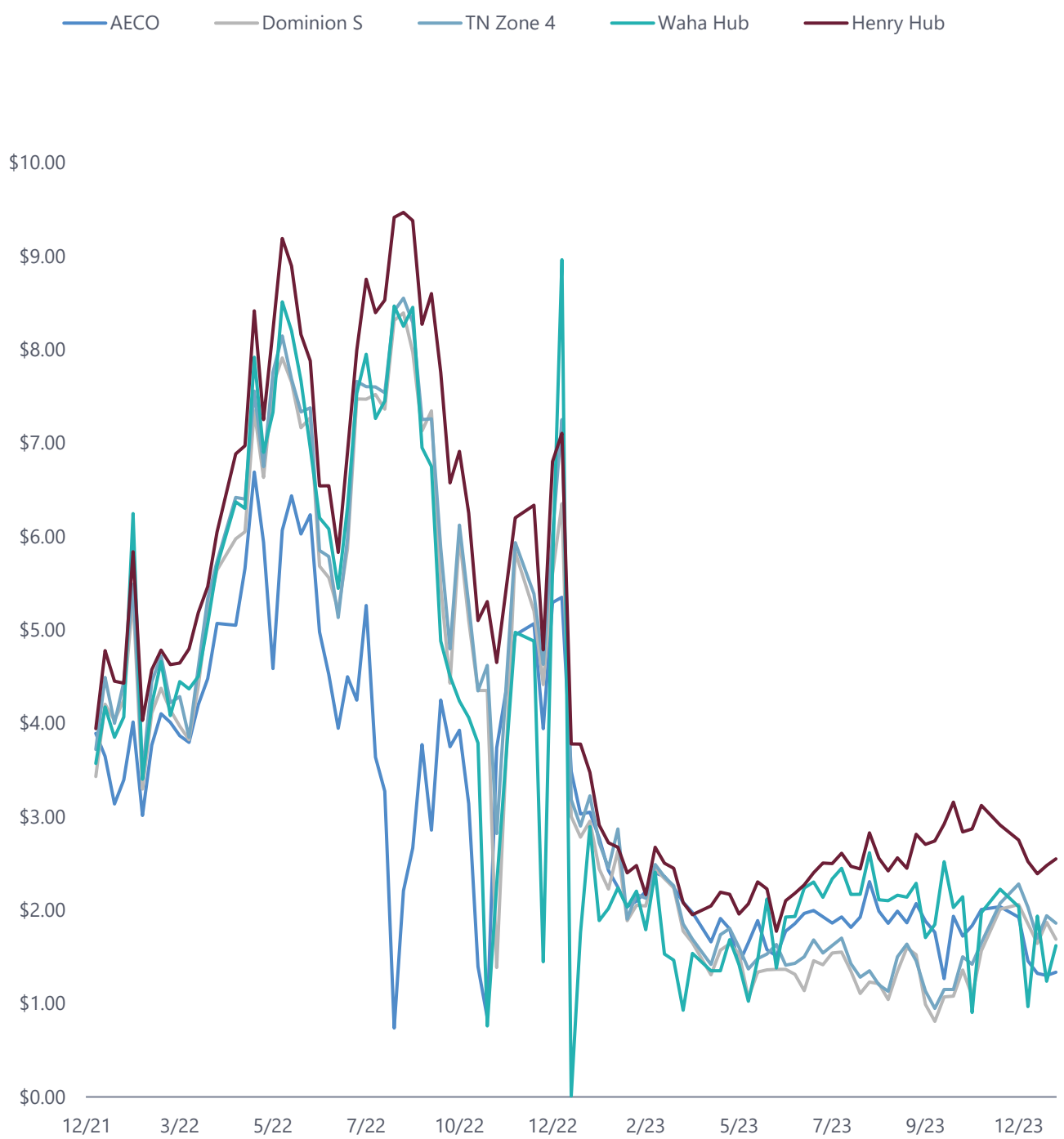
Note: Data collected on a weekly basis.

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

03 NATURAL GAS AND NGLS

Natural Gas Spot Pricing

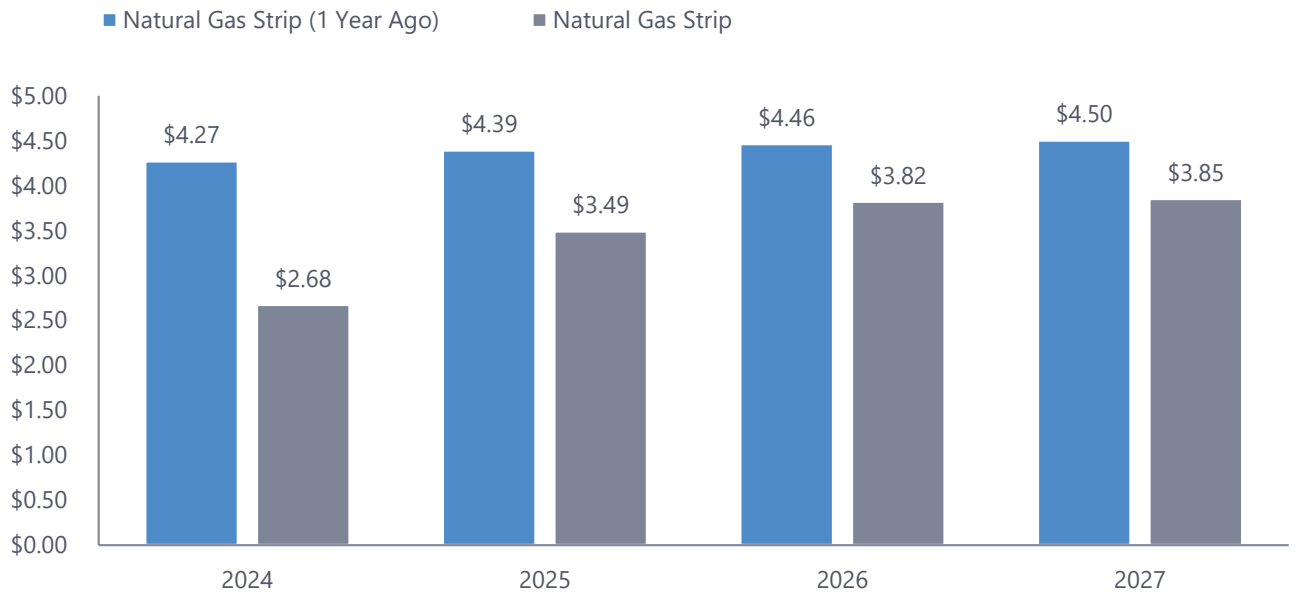
Pricing ($/MMbtu)



Notes: All data as of December 31, 2023. Data collected on a monthly basis.
Source: S&P Capital IQ.

Natural Gas Pricing

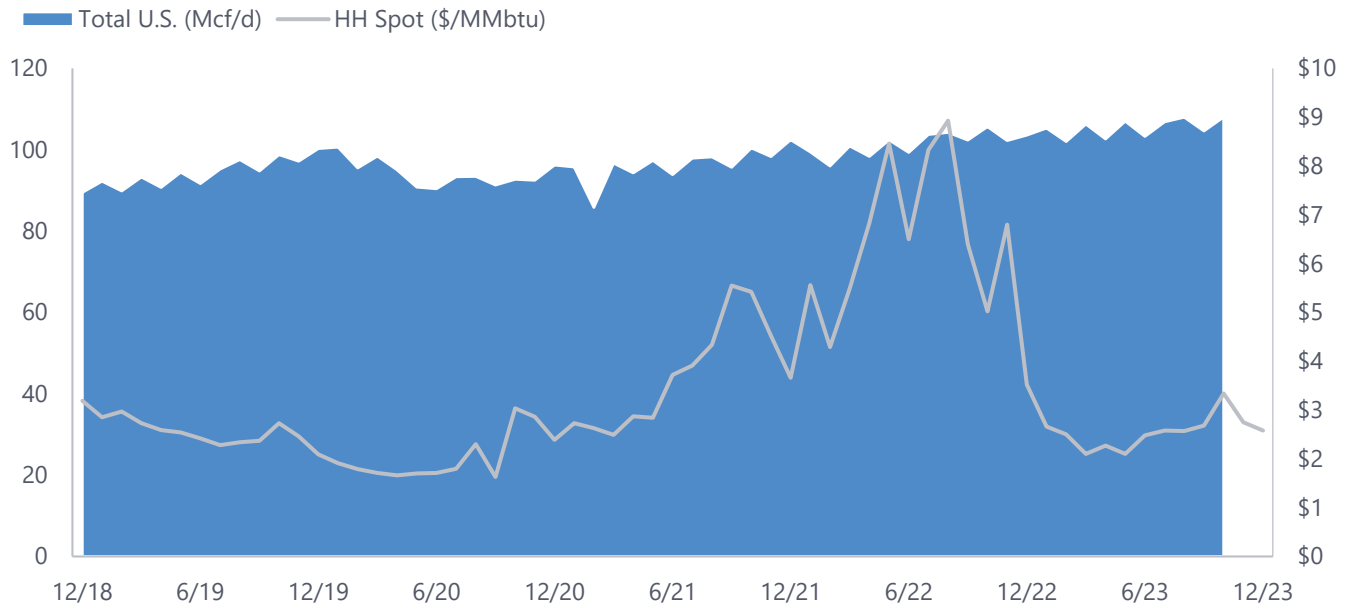
Strip Pricing Comparison ($/MMbtu)



Notes: All data as of December 31, 2023. Represents the average price for each year.
Source: S&P Capital IQ.

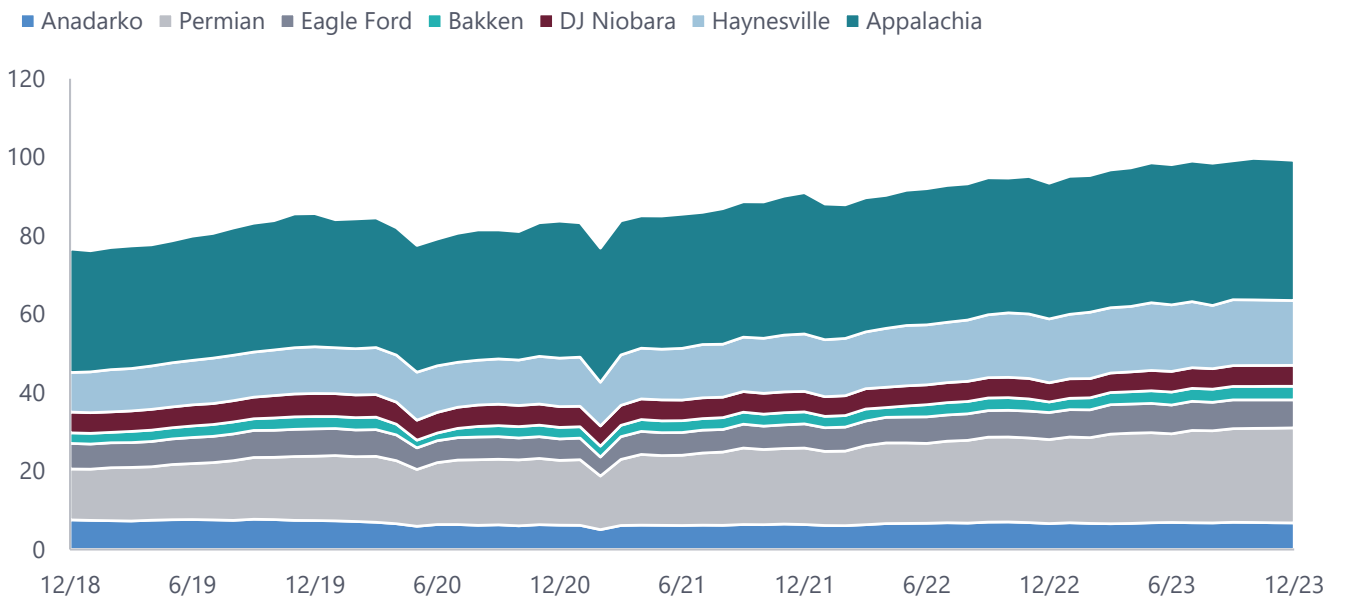
Natural Gas Production

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 December 31, 2023. Data collected on a monthly basis.
Sources: Bloomberg and 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

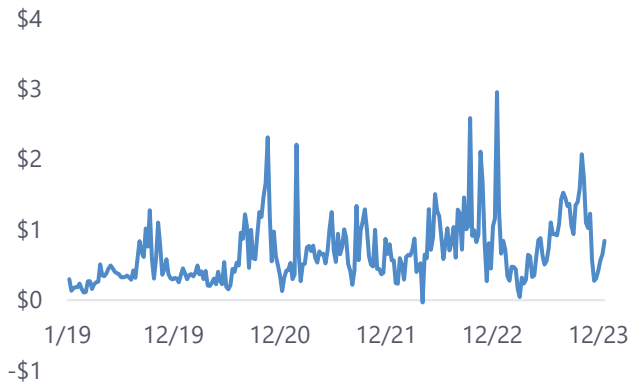
Regional Natural Gas Spot Pricing ($/MMbtu)

Region	12/31/2023	12/31/2022	9/30/2023	YoY % Change	QoQ % Change
Henry Hub	$2.58	$3.52	$2.68	-26.7%	-3.7%
Benchmark					
Dominion South	$1.78	$2.27	$0.91	-21.6%	95.6%
Henry Hub—Dominion South	*$0.80*	*$1.25*	*$1.77*		
TN Zone 4	$1.79	$2.22	$0.86	-19.5%	107.8%
Henry Hub—TN Zone 4	*$0.79*	*$1.30*	*$1.82*		
AECO	$1.30	$3.25	$1.79	-60.0%	-27.4%
Henry Hub—AECO	*$1.28*	*$0.27*	*$0.89*		
Waha Hub	$1.35	($3.96)	$1.58	-134.1%	-14.6%
Henry Hub—Waha	*$1.23*	*$7.48*	*$1.10*		

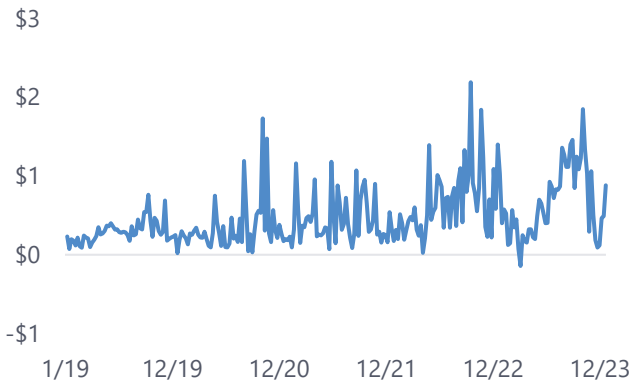
Notes: All data as of December 31, 2023. Data collected on a daily basis.
Source: Bloomberg.

Natural Gas—Differentials ($/MMbtu)

HH—Dominion South



HH—TN Zone 4



HH—AECO



HH—Waha Hub



Notes: All data as of December 31, 2023. Data collected on a weekly basis.
Source: S&P Capital IQ.

Natural Gas

U.S. Natural Gas Withdrawal (Bcf)

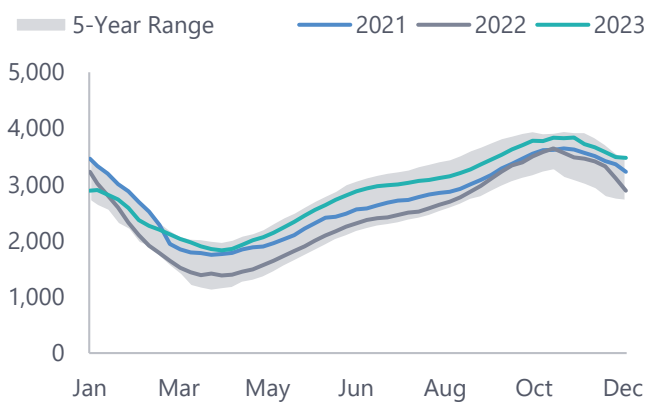


Note: Data collected on a monthly basis and subject to irregular updates.

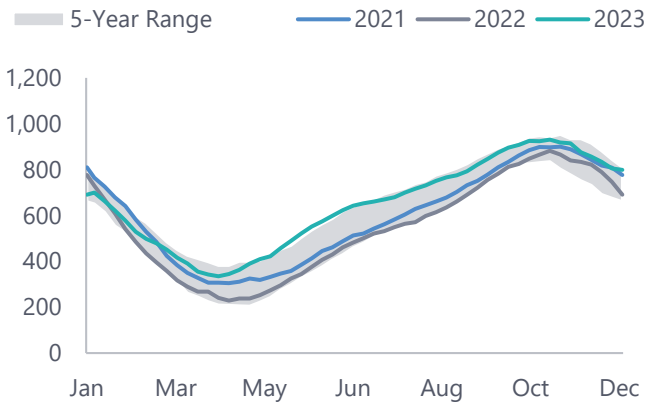
Note: All data as of December 31, 2023.
Source: Bloomberg.

Natural Gas Storage (Bcf)

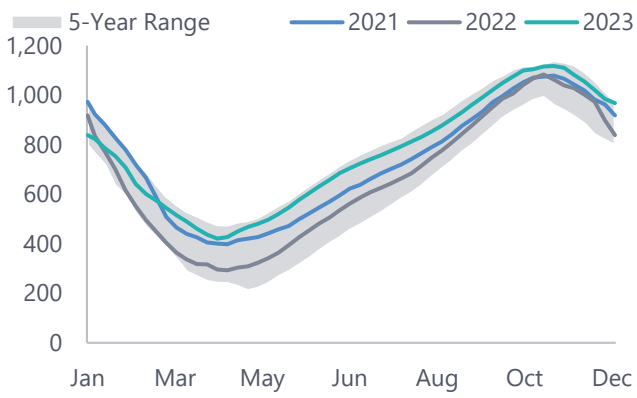
Total U.S.



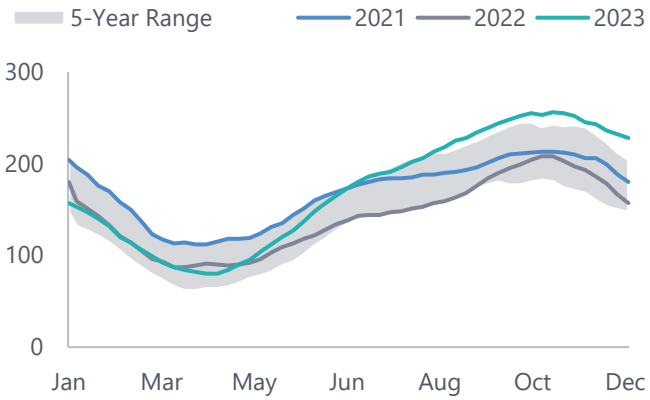
East



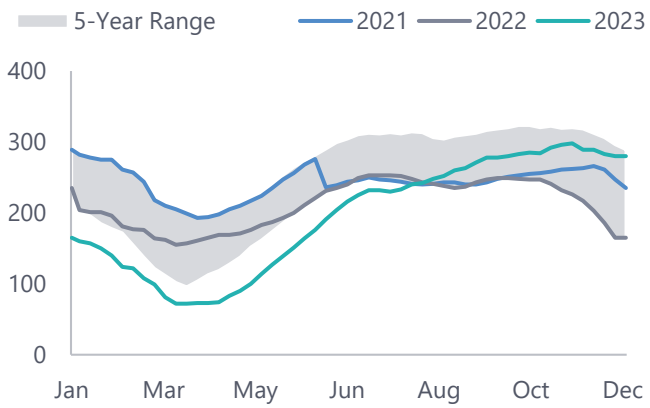
Midwest



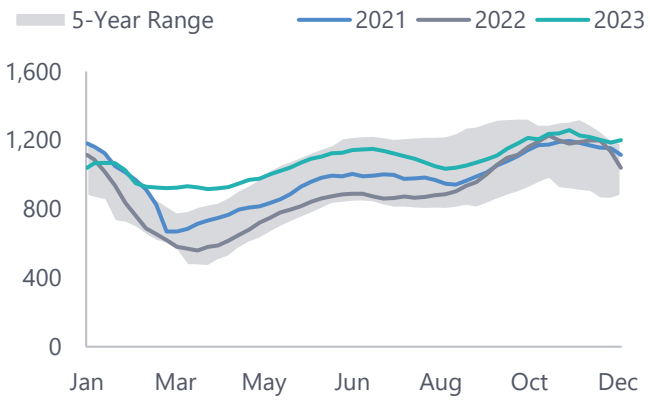
Mountain



Pacific



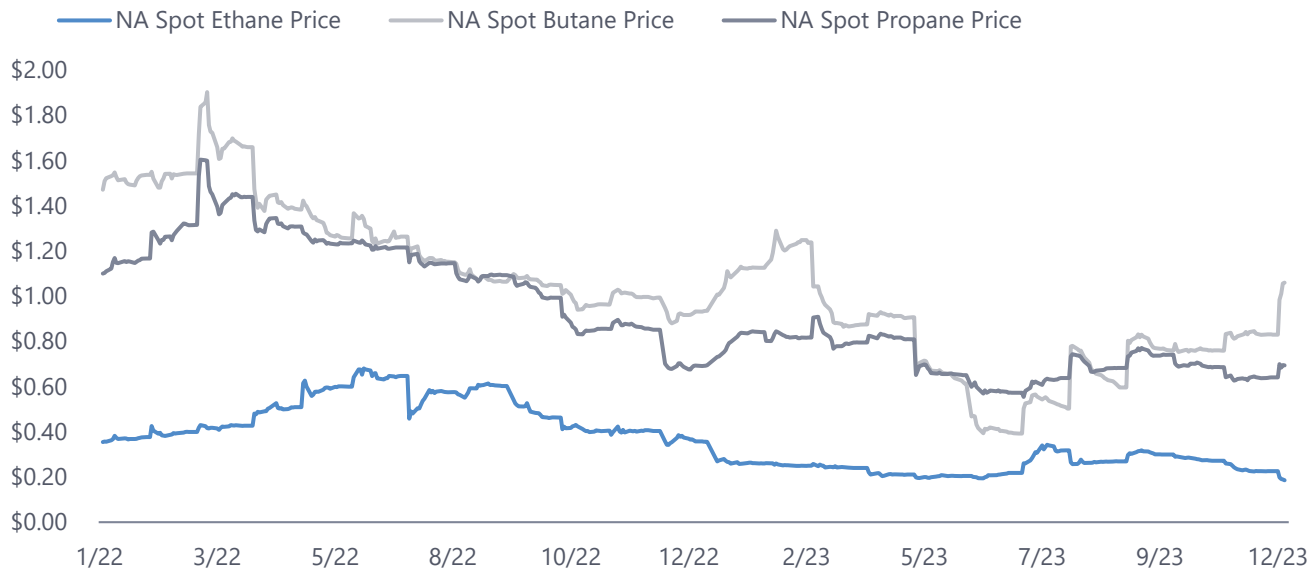
South Central



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

NGLs Spot Pricing

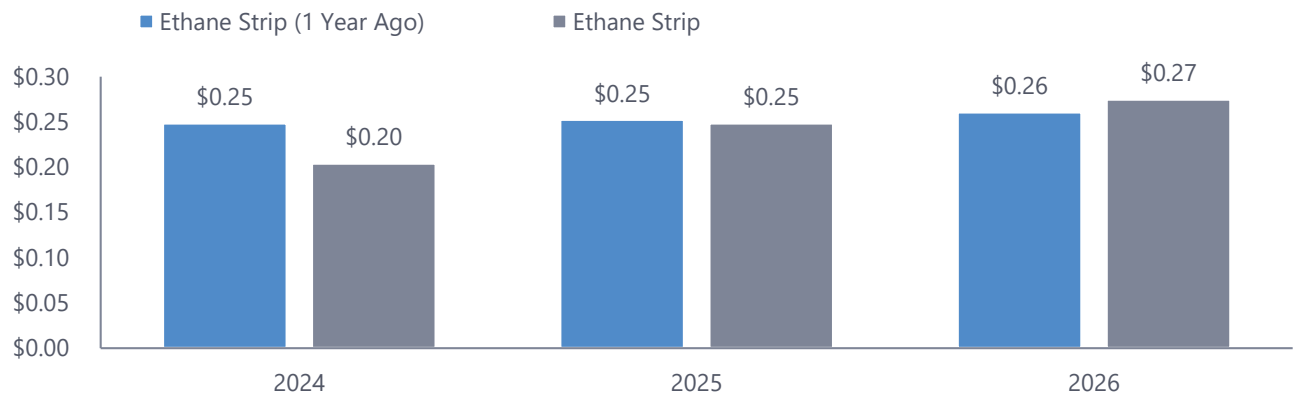
Pricing ($/Gal)



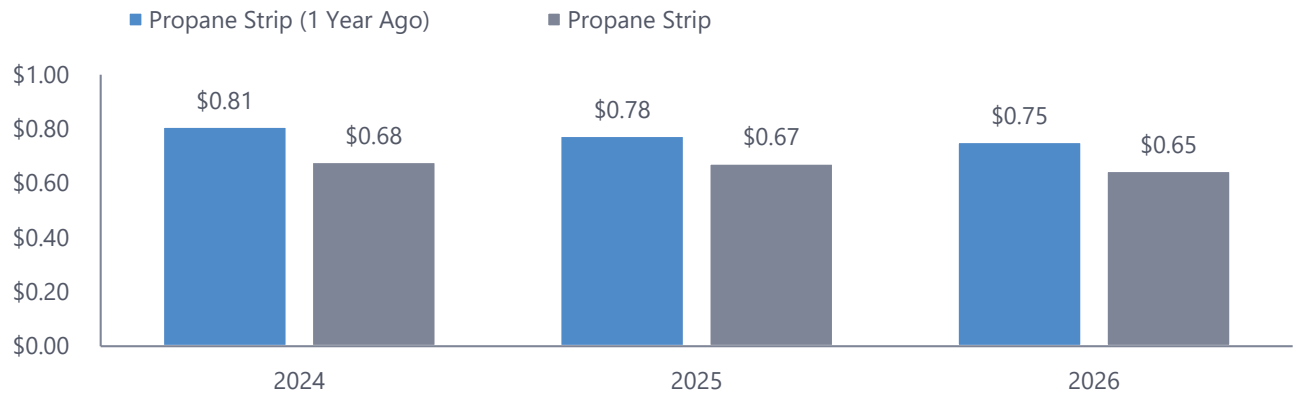
Notes: All data as of December 29, 2023. Data collected on a daily basis.
Source: S&P Capital IQ.

NGLs Strip Pricing

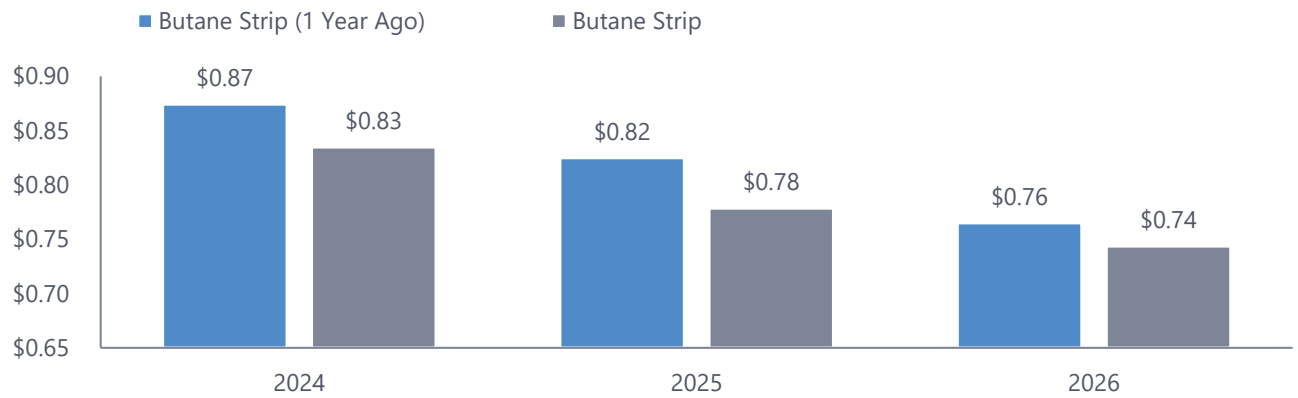
Ethane Strip Pricing Comparison ($/Gal)



Propane Strip Pricing Comparison ($/Gal)



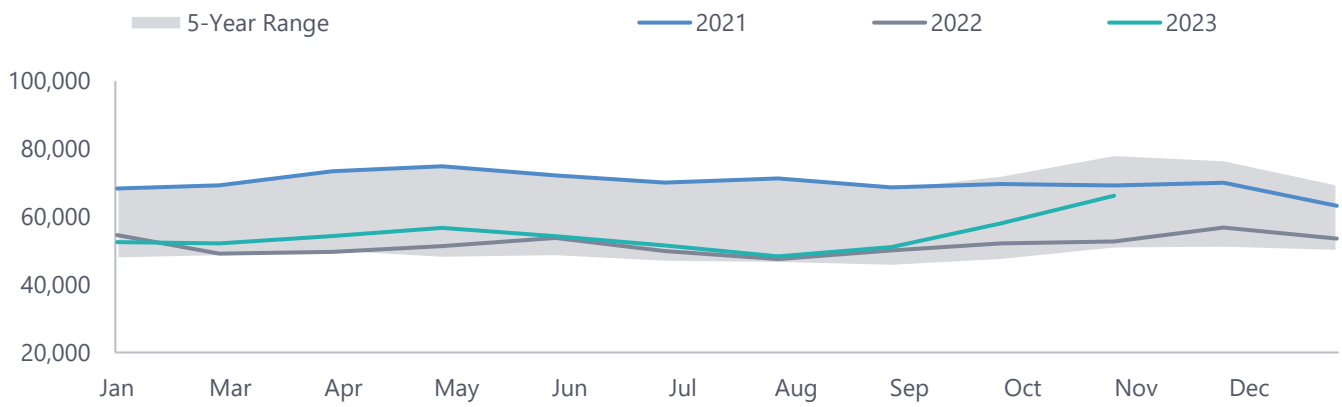
Butane Strip Pricing Comparison ($/Gal)



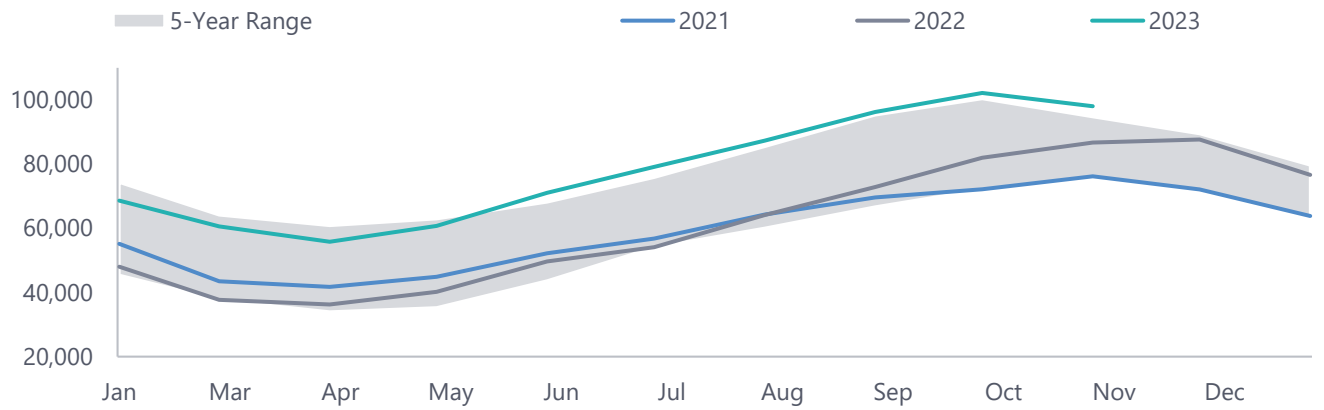
Notes: All data as of December 31, 2023. Represents the average price for each year.
Source: S&P Capital IQ.

NGLs Inventory

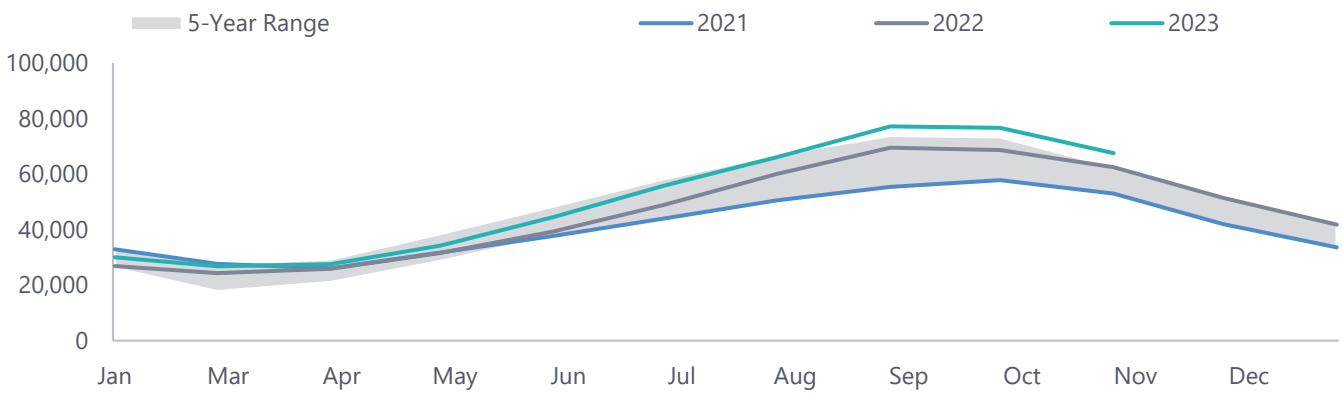
U.S. Ending Stocks Ethane (Mbbls)



U.S. Ending Stocks Propane (Mbbls)



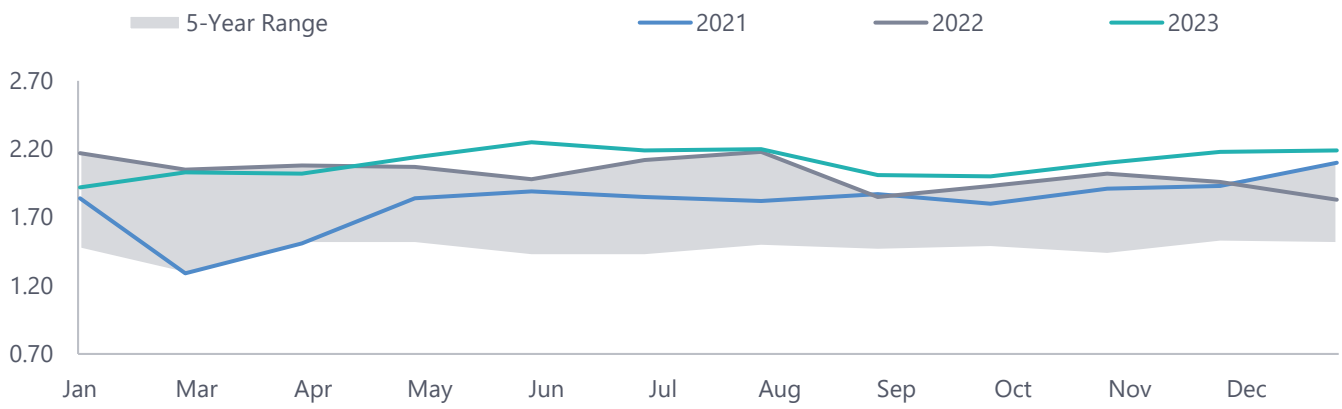
Normal Butane/Butylene (Mbbls)



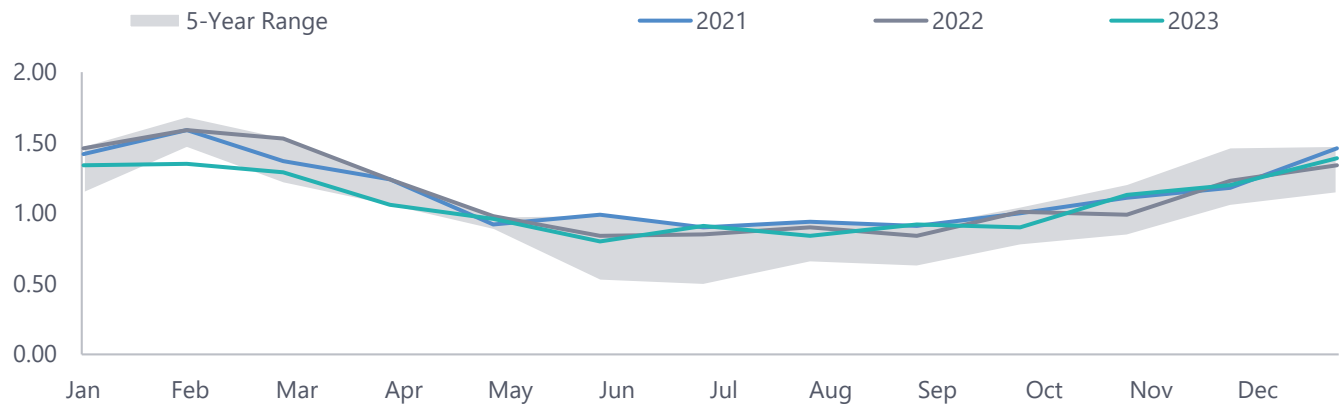
Notes: All data as of December 31, 2023. Data collected on a monthly basis and subject to a two-month lag.
Source: Bloomberg.

NGLs Consumption

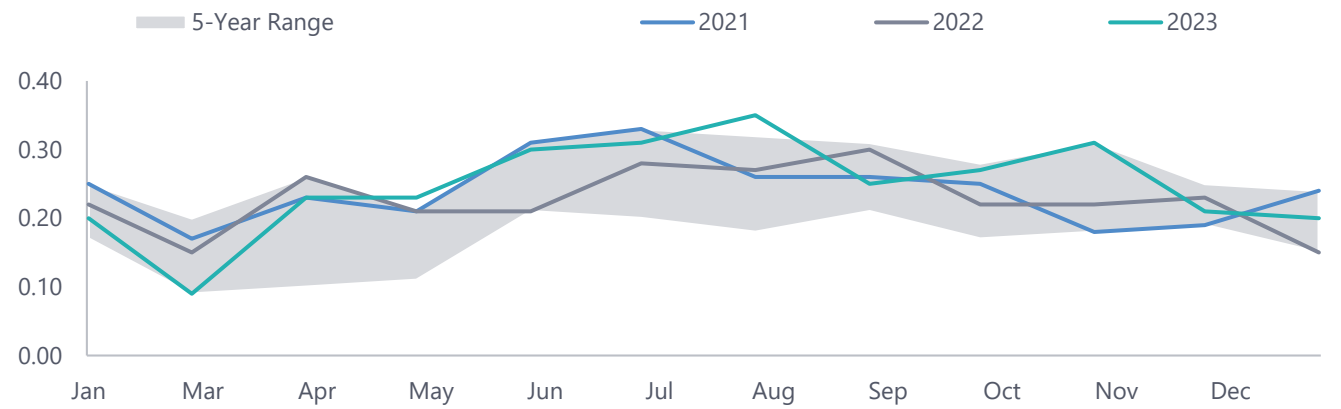
U.S. Ethane/Ethylene Consumption (MMboe/d)



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



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



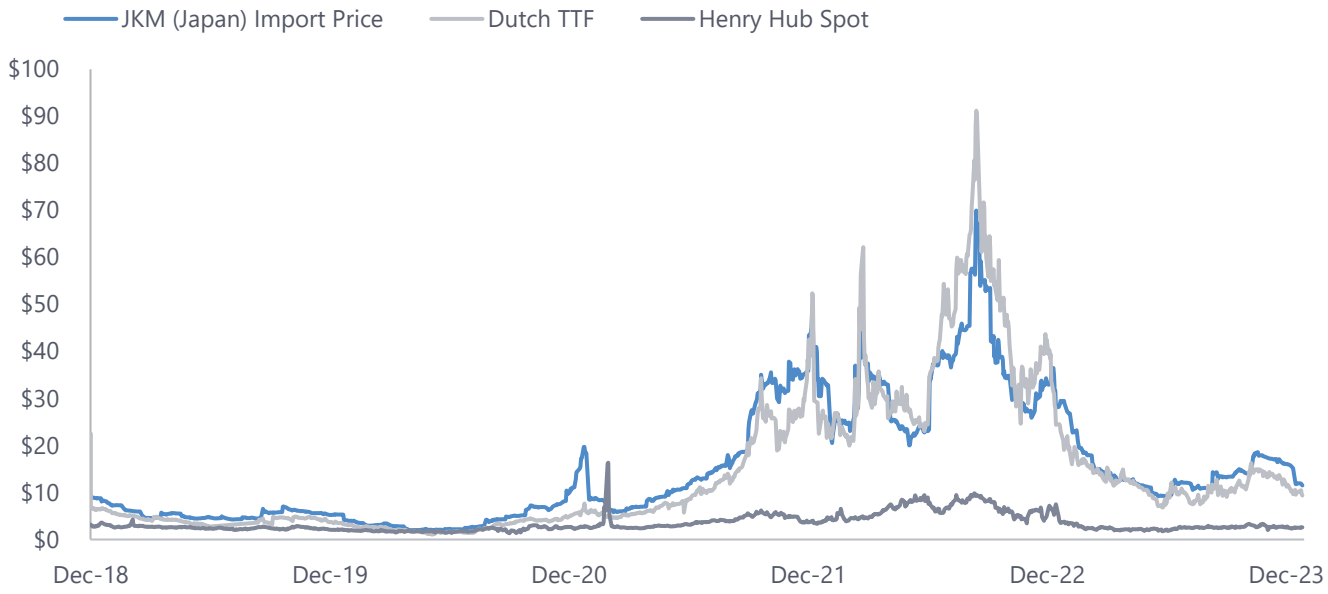
Notes: All data as of December 31, 2023. Data collected on a monthly basis and subject to a two-month lag.
Source: Bloomberg.

04 LNG

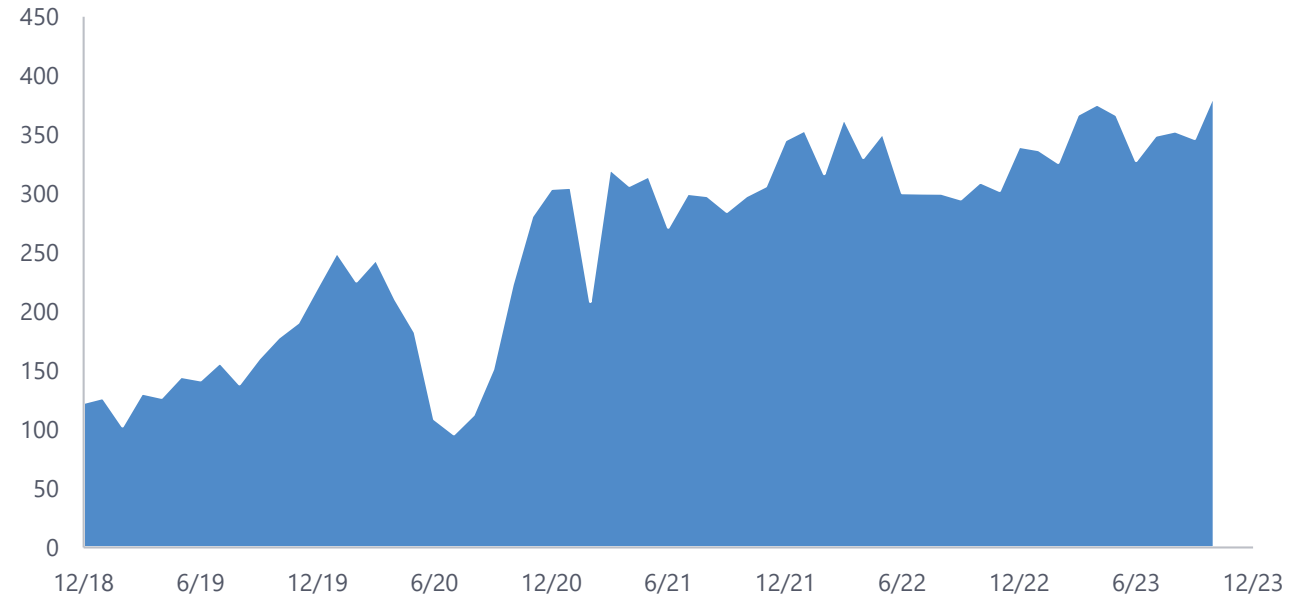
Houlihan Lokey

LNG

Spot Pricing ($/MMbtu)



U.S. LNG Exports (Bcf/Month)



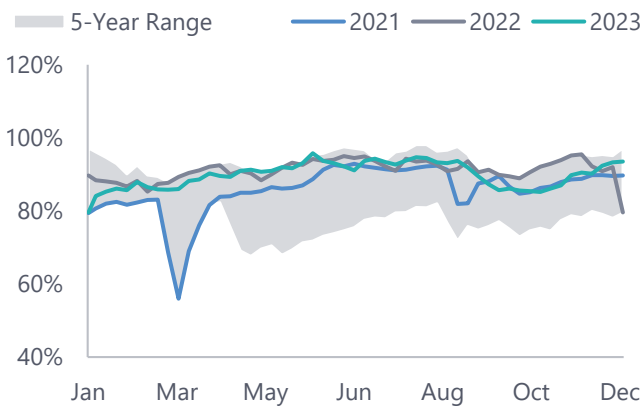
Note: Data collected on a monthly basis and subject to a two-month lag.

Notes: All data as of December 31, 2023. Spot pricing data collected daily. Exports data collected on a monthly basis. JKM refers to Japan Korea Marker. Dutch TTF refers to Dutch Title Transfer Facility.
Source: Bloomberg.

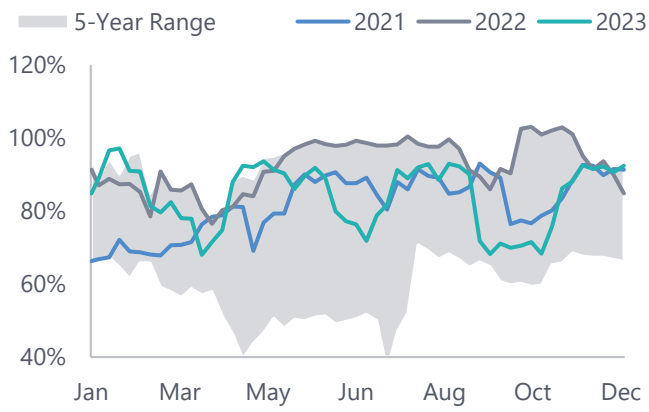
05 REFINING

Refining—Utilization (%)

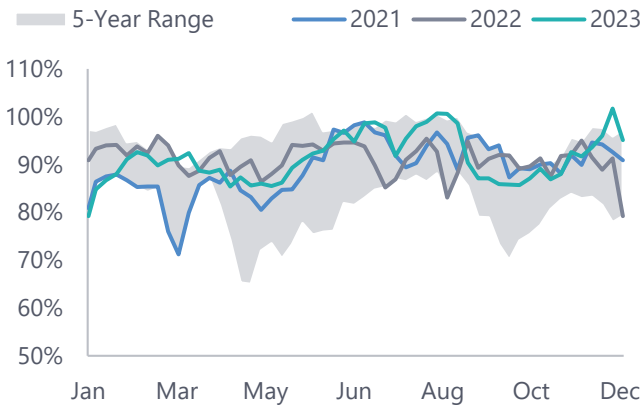
Total U.S.



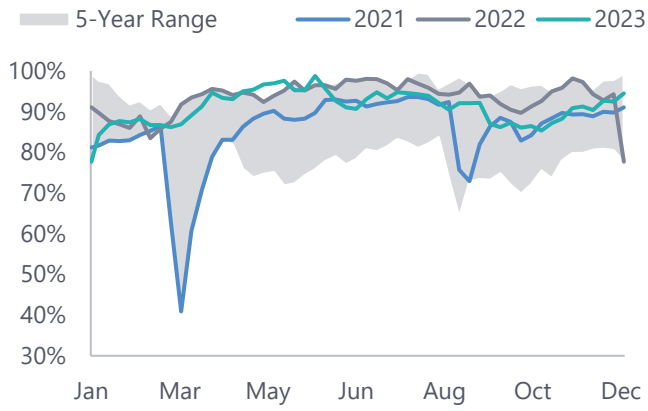
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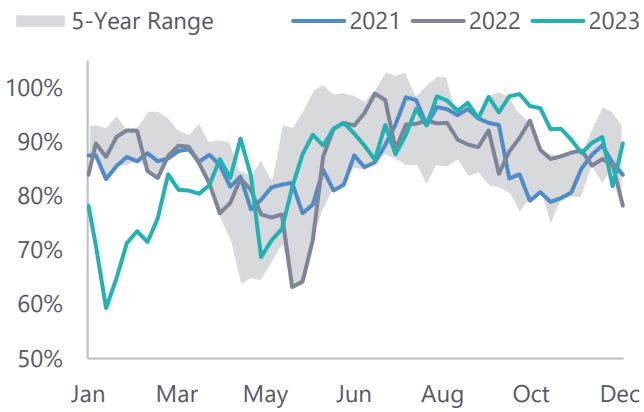
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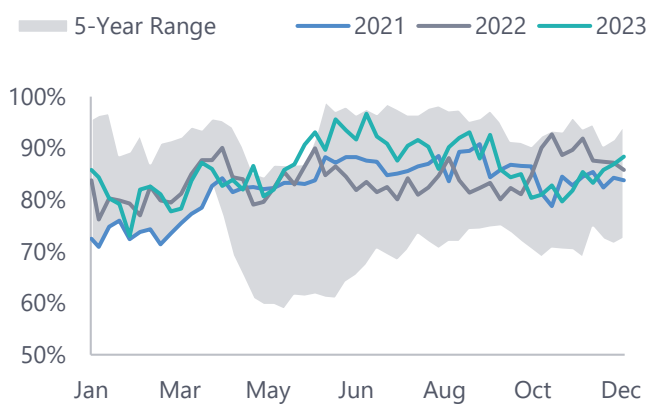
PADD III



PADD IV



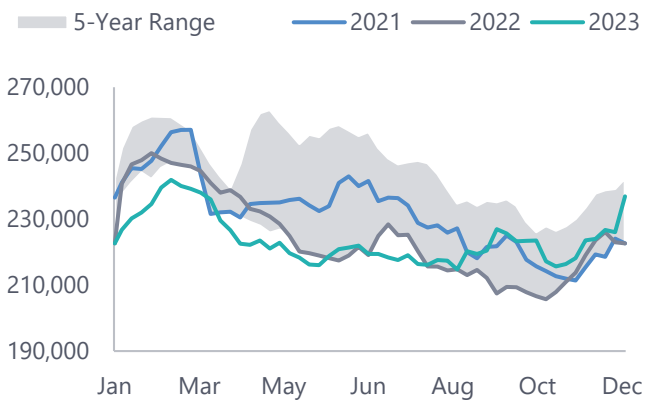
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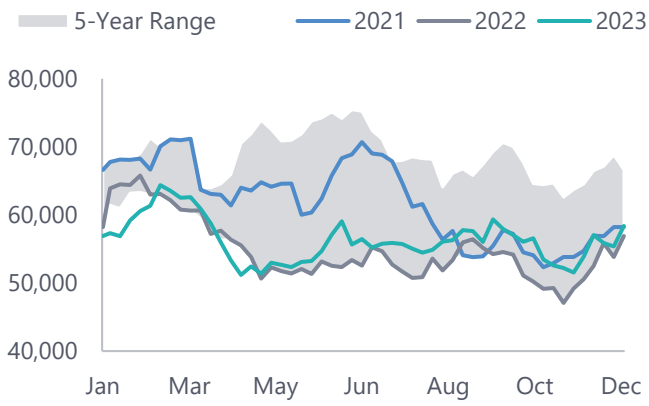
Notes: All data as of December 31, 2023. Data collected on a weekly basis.
Source: Bloomberg.

Refining—Motor Gasoline Inventory (Mbbl)

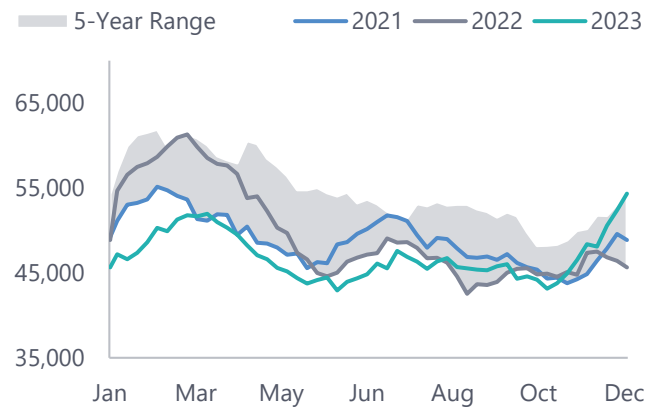
Total U.S.



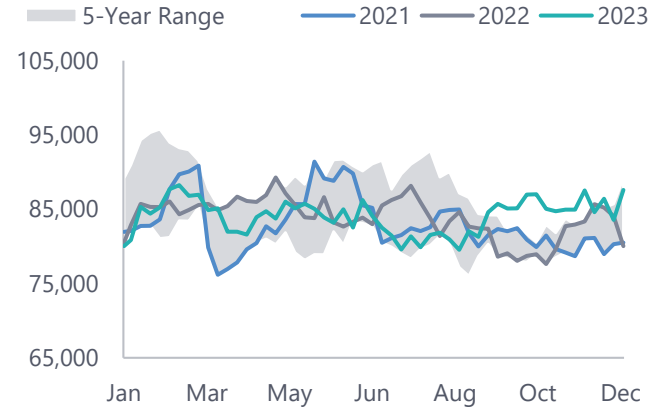
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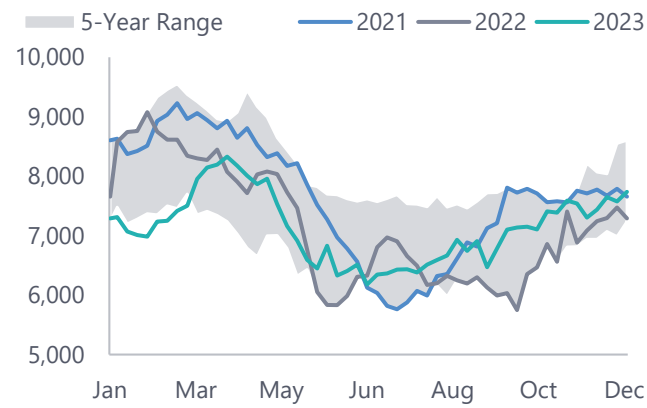
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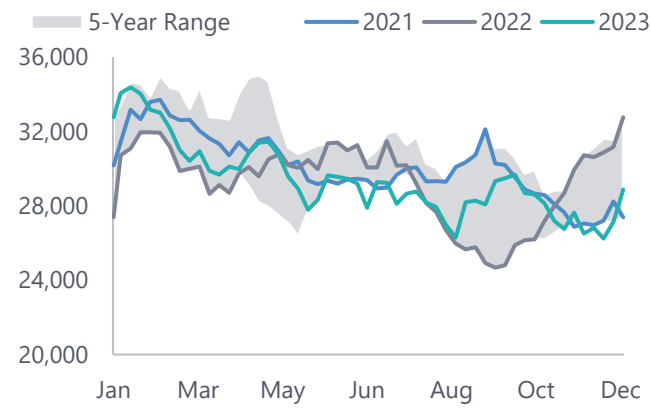
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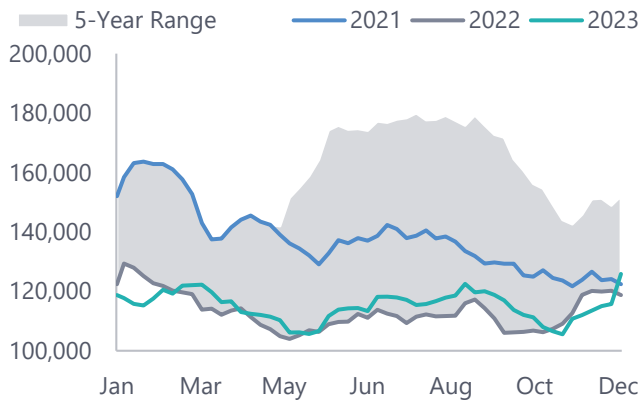
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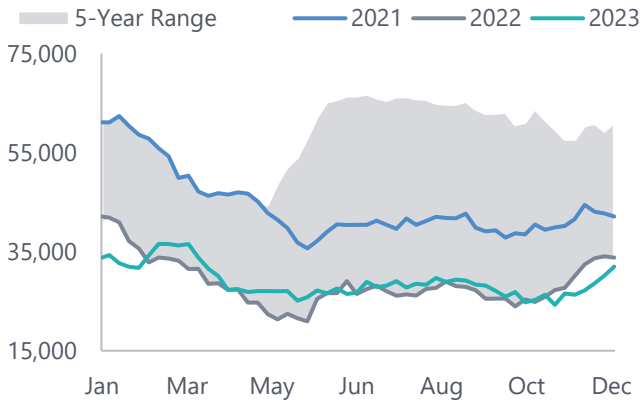
Notes: All data as of December 31, 2023. Data collected on a weekly basis.
Source: Bloomberg.

Refining—Distillate Fuel Oil Inventory (Mbbl)

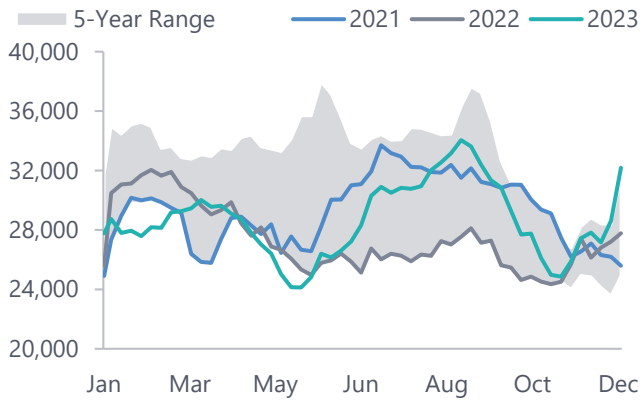
Total U.S.



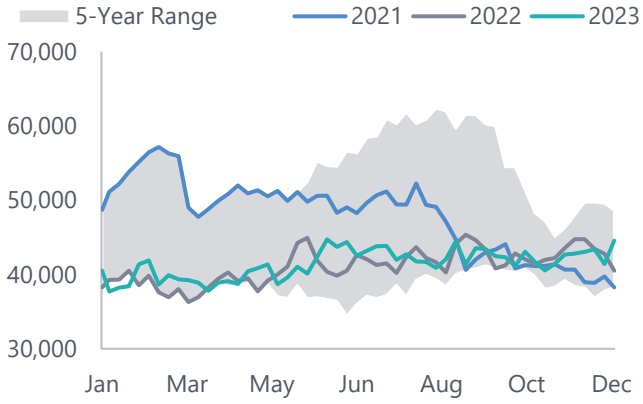
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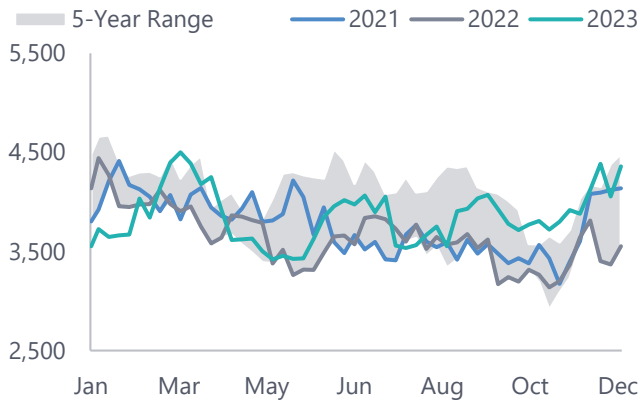
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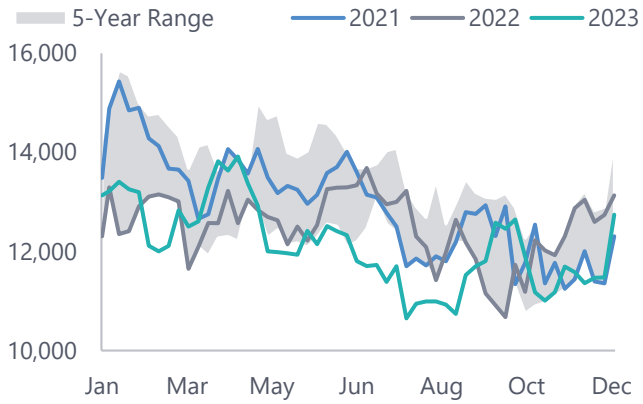
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PADD IV



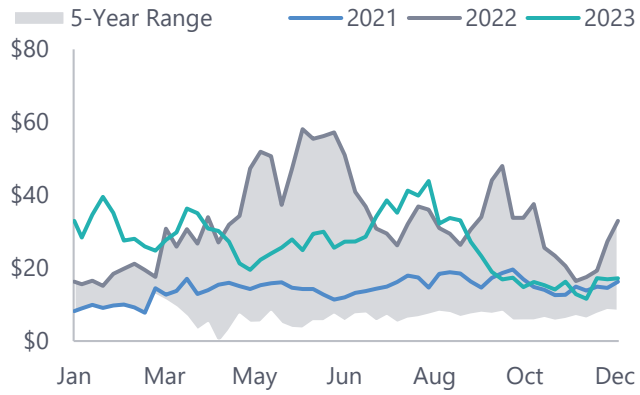
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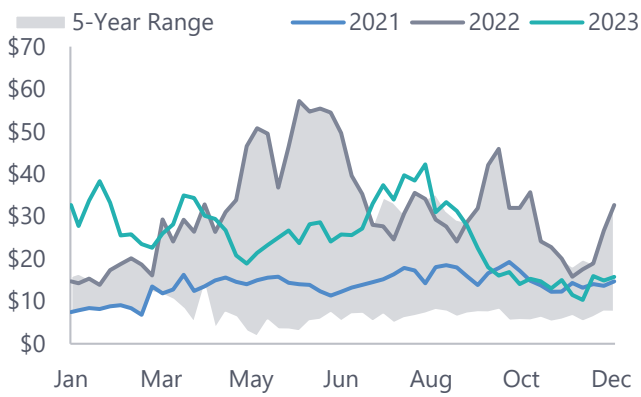
Notes: All data as of December 31, 2023. Data collected on a weekly basis.
Source: Bloomberg.

Refining—3:2:1 Crack Spreads ($/bbl)

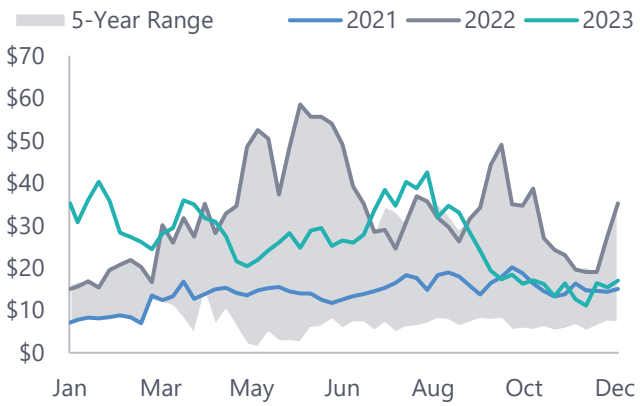
WTI Cushing (U.S. Gulf Coast)



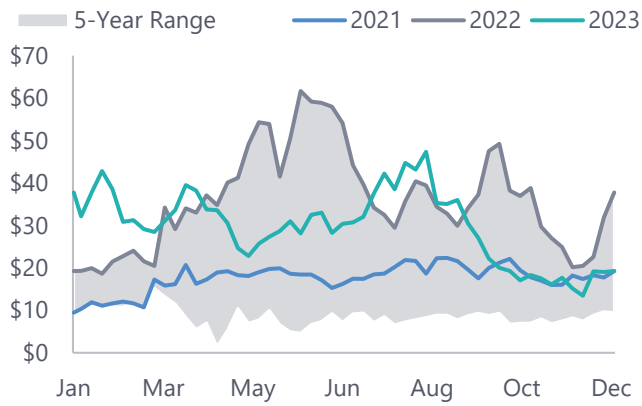
WTI Midland (U.S. Gulf Coast)



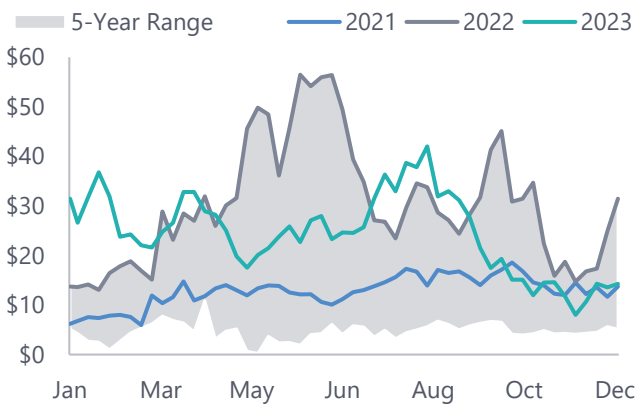
WTS Midland (U.S. Gulf Coast)



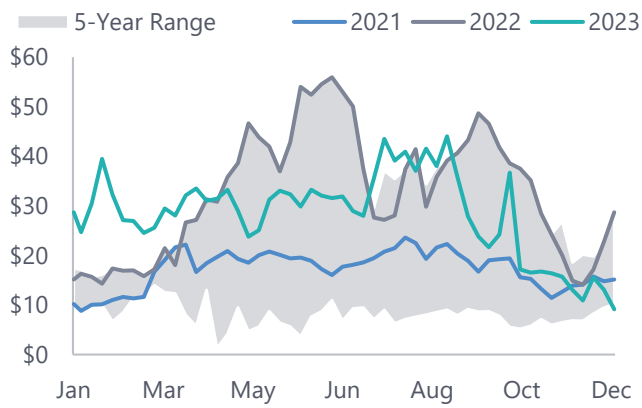
WTI Cushing ULSD (U.S. Gulf Coast)



LLS (U.S. Gulf Coast)



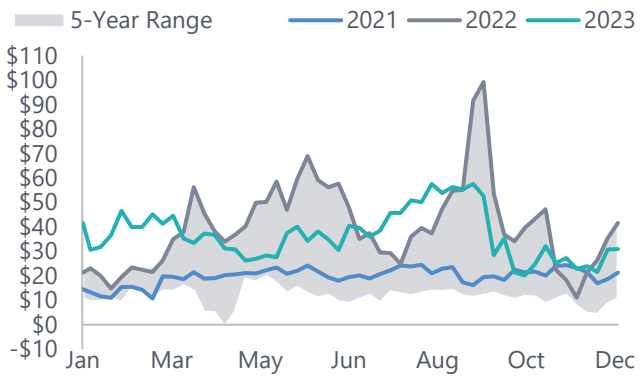
WTI Midland ULSD (U.S. Mid-Continent)



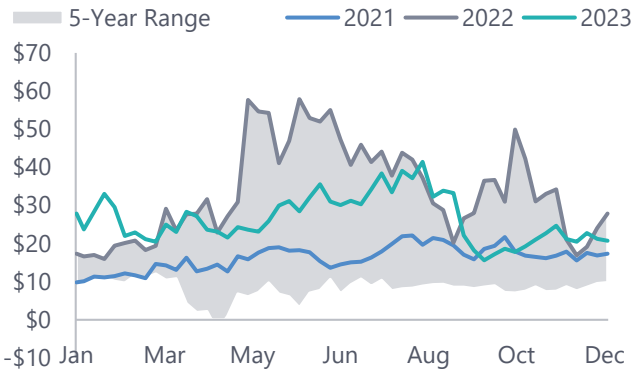
Notes: All data as of December 31, 2023. Data collected on a weekly basis.
Source: Bloomberg.

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

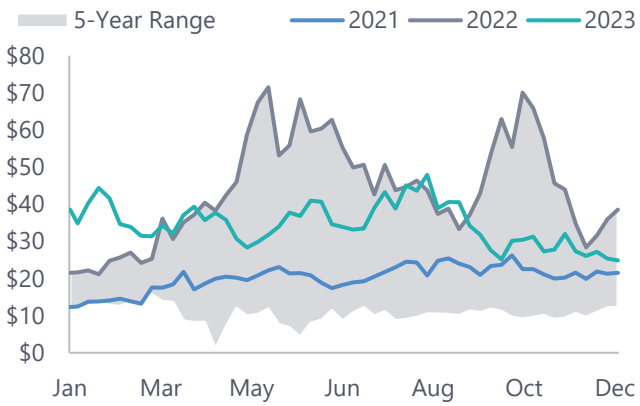
ANS (U.S. West Coast)



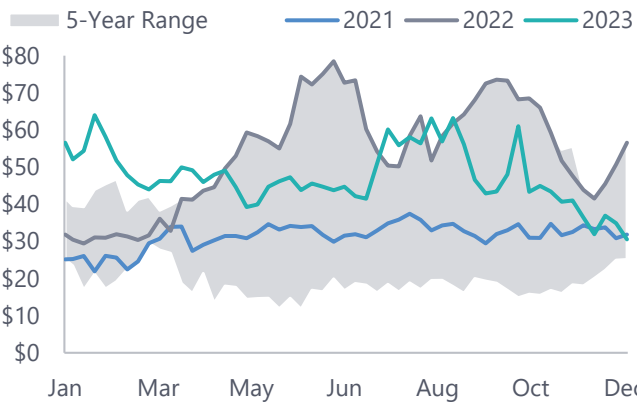
WTI Cushing (NYH RBOB Gasoline)



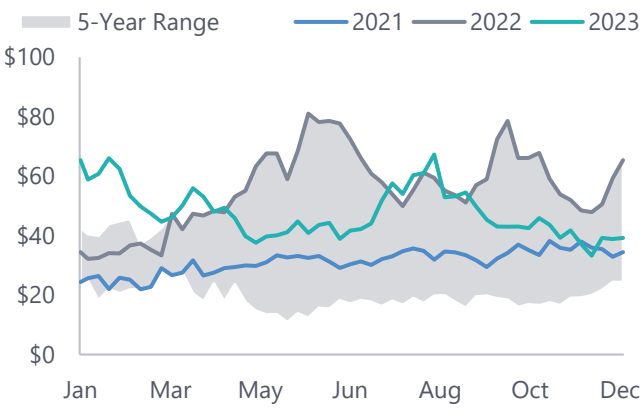
WTI Cushing ULSD (NY Harbor)



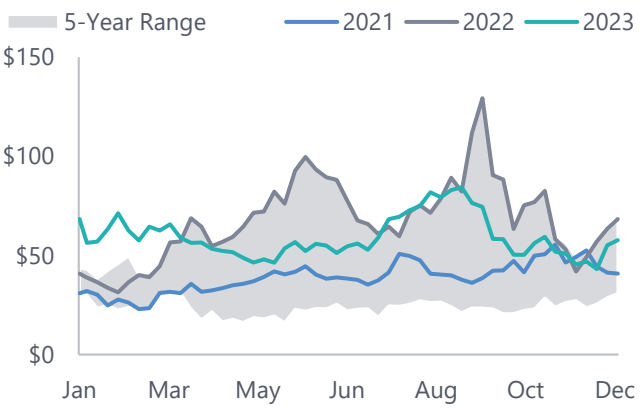
WCS (U.S. Mid-Continent)



WCS (U.S. Gulf Coast)



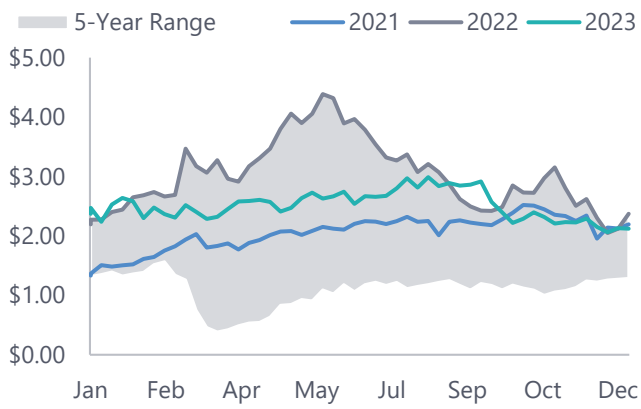
WCS (San Francisco)



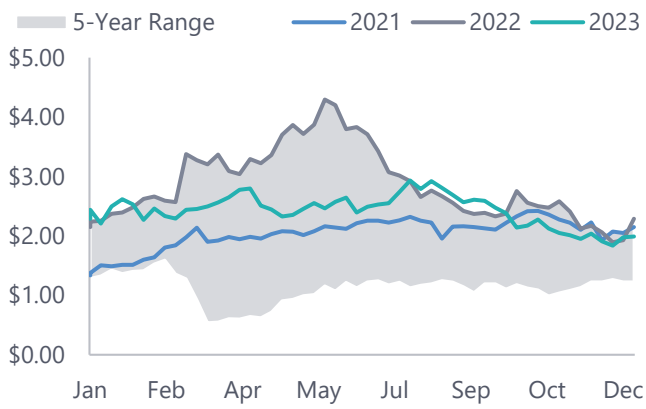
Notes: All data as of December 31, 2023. Data collected on a weekly basis.
Source: Bloomberg.

Refining—Product Prices ($/Gal)

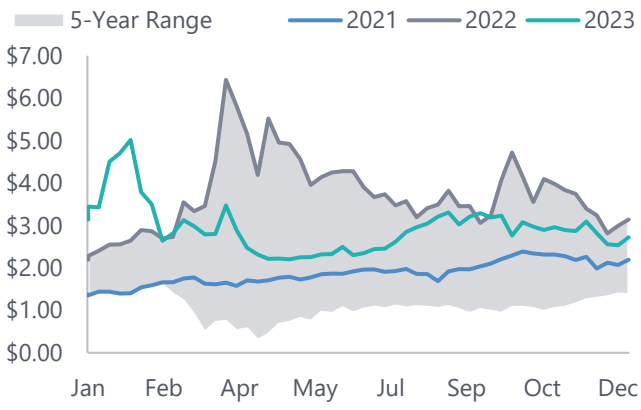
84 RBOB Gasoline (NY Harbor)



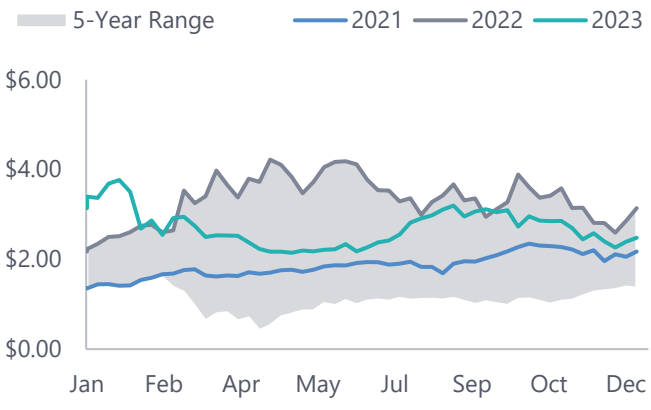
84 RBOB Gasoline (U.S. Gulf Coast)



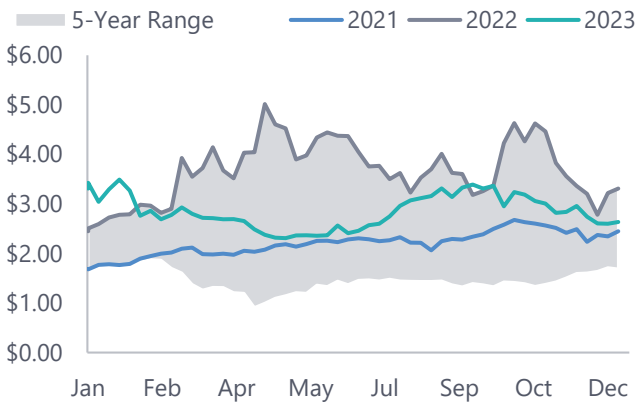
54-Grade Jet Fuel (NY Harbor)



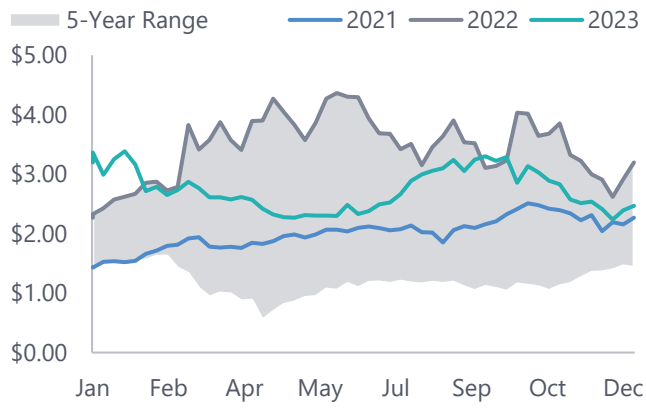
54-Grade Jet Fuel (U.S. Gulf Coast)



ULSD (NY Harbor)



ULSD (U.S. Gulf Coast)



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

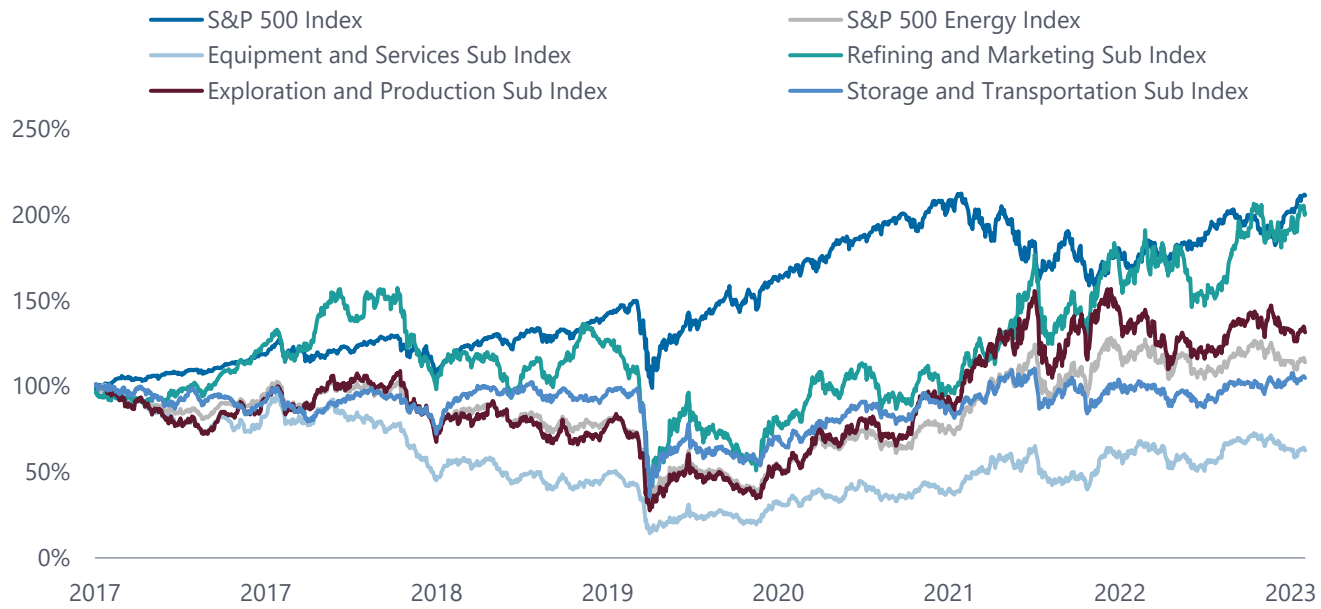
06 PUBLIC EQUITY MARKETS OVERVIEW



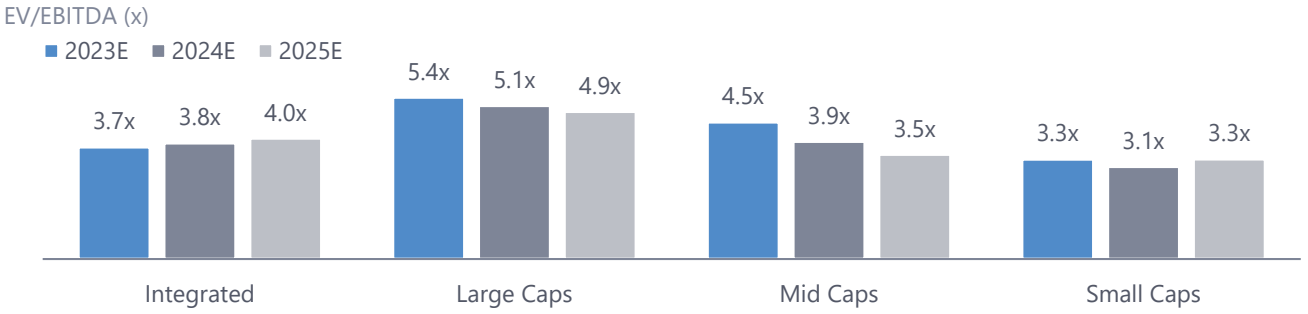
Houlihan Lokey

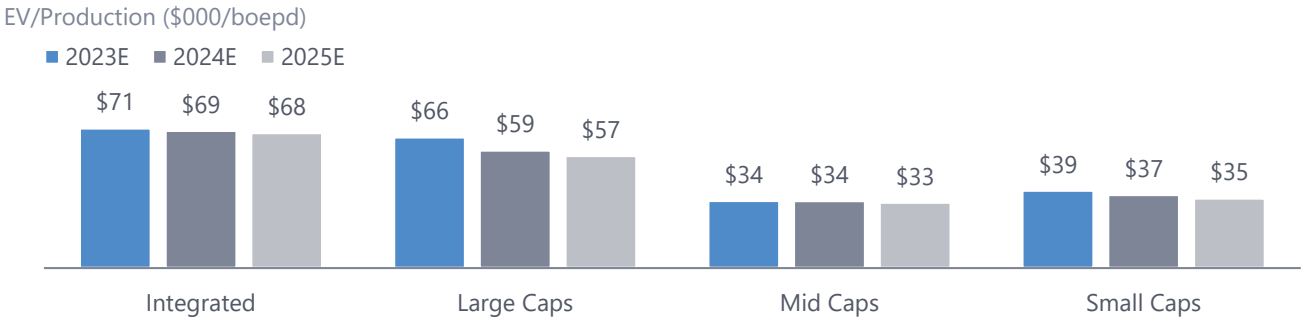
Public Equity Markets Overview

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 December 31, 2023, and broker consensus future earnings estimates from S&P Capital IQ as of December 31, 2023.
Source: S&P Capital IQ.

07 M&A AND FINANCING ACTIVITY



Houlihan Lokey

E&P

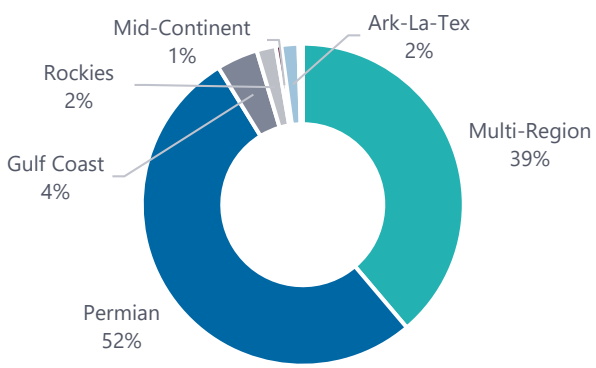
M&A ($ in Billions)

U.S. Region	2021	2022	2023	%Δ 2023 vs. 2022
Multi-Region	$15.8	$11.1	$74.3	NMF
Permian	26.5	14.6	100.3	NMF
Gulf Coast	2.4	5.7	7.9	39%
Rockies	7.7	8.8	3.7	-58%
Mid-Continent	1.1	1.0	1.1	6%
Appalachia	4.0	8.3	0.2	-98%
Ark-La-Tex	8.1	0.3	3.3	NMF
Gulf of Mexico	1.2	1.3	0.8	-40%
West Coast	0.2	4.8	0.1	-99%
Alaska	0.0	0.0	0.0	NMF
Total	**$66.9**	**$55.8**	**$191.6**	**243%**

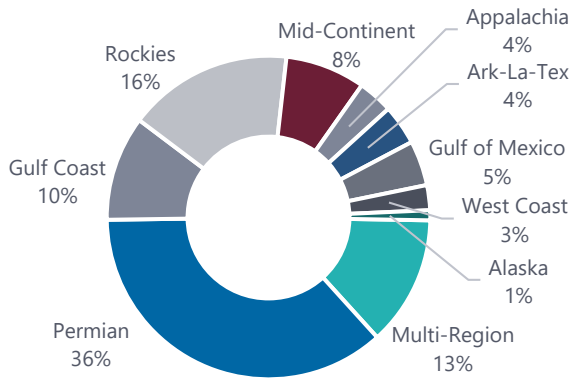
M&A (Deal Count)

U.S. Region	2021	2022	2023	%Δ 2023 vs. 2022
Multi-Region	43	23	26	13%
Permian	141	66	73	11%
Gulf Coast	52	42	21	-50%
Rockies	67	50	33	-34%
Mid-Continent	102	56	16	-71%
Appalachia	28	14	7	-50%
Ark-La-Tex	32	17	8	-53%
Gulf of Mexico	10	14	9	-36%
West Coast	6	7	5	-29%
Alaska	5	2	2	0%
Total	**486**	**291**	**200**	**-31%**

M&A—2023 ($ in Billions)



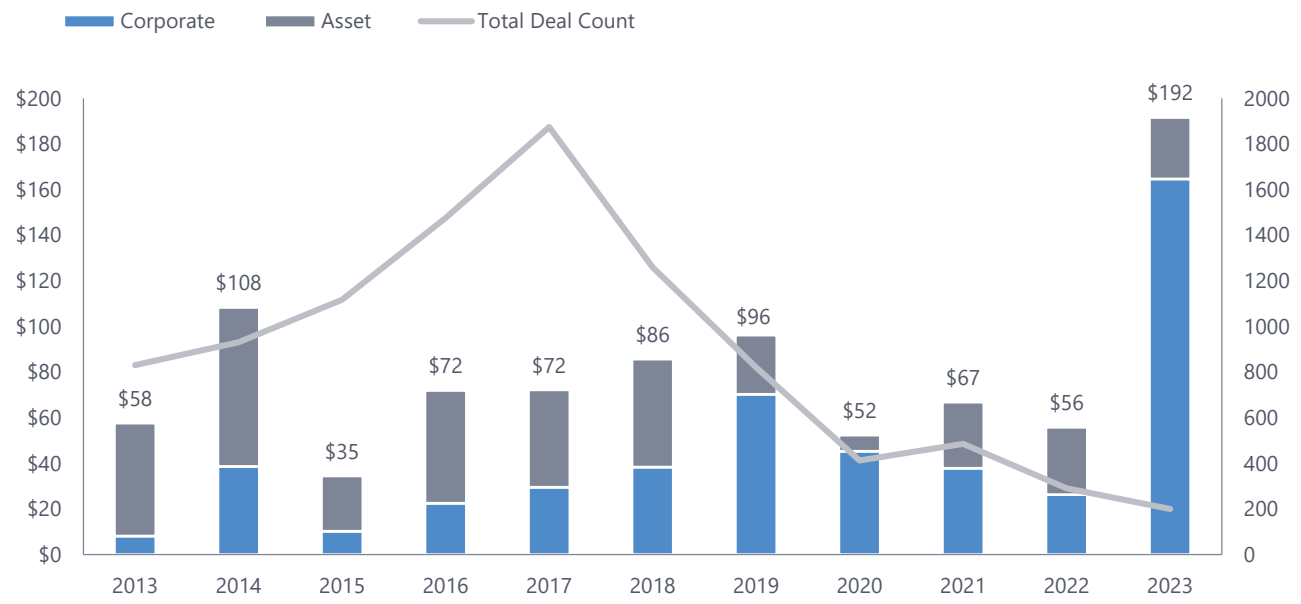
M&A—2023 (Deal Count)



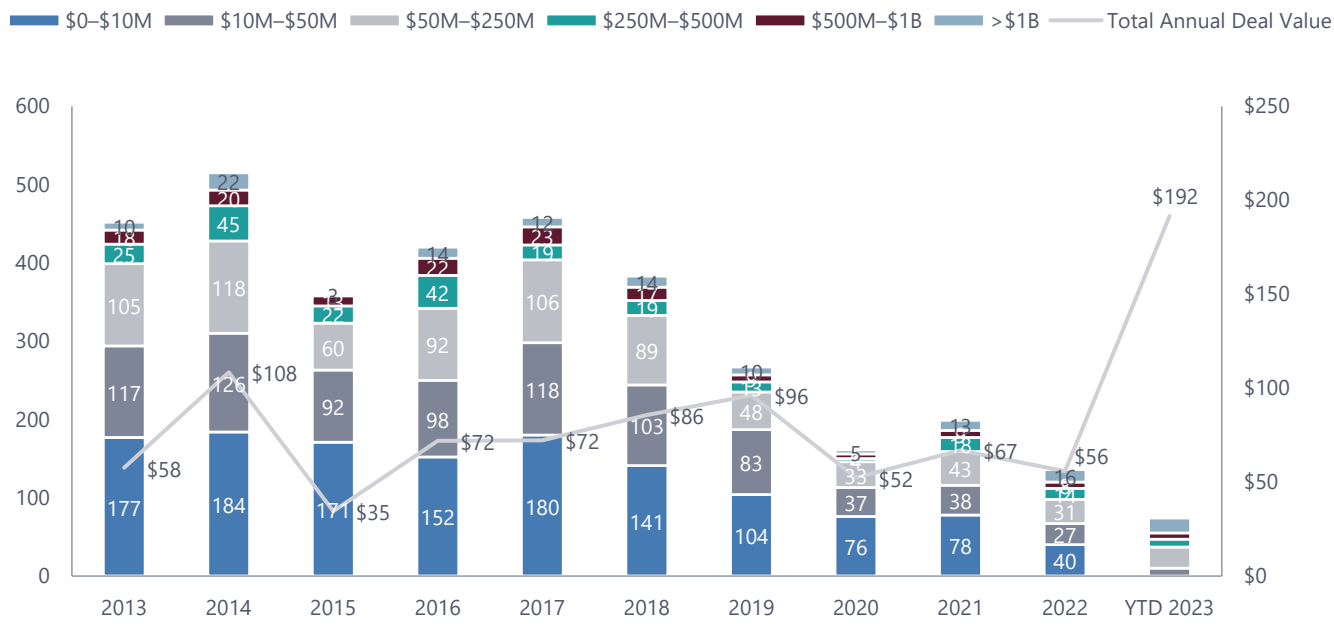
Notes: All data as of December 31, 2023. GOM refers to Gulf of Mexico. Current year may not include values for all announced transactions or findings. Historical amounts may be adjusted as additional information is available.
Source: Enverus, based on selection criteria of seller assets being located in the U.S.

Historical E&P Transaction Activity

U.S. Transactions Since 2013 ($ in Billions)



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



Notes: All data as of December 31, 2023. YTD refers to year-to-date.
(1) Deal count excludes transactions without a publicly disclosed deal value.
Source: Enverus, based on selection criteria of seller assets being located in the U.S.

OFS

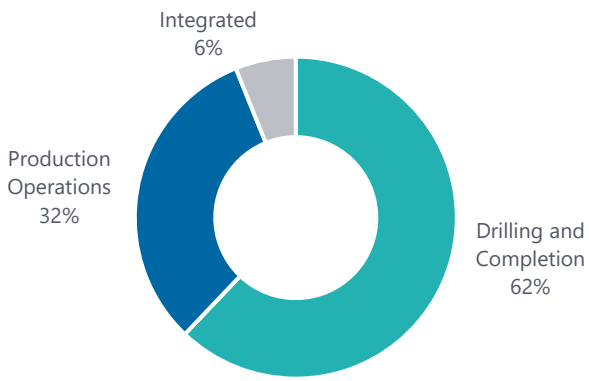
M&A ($ in Billions)

Segment	2021	2022	2023	%Δ 2023 vs. 2022
Drilling and Completion	$0.8	$1.0	$3.3	218%
Production Operations	0.7	0.5	1.7	209%
Information Services	0.0	3.1	0.0	-99%
Integrated	0.8	0.2	0.3	NMF
Total	**$2.3**	**$4.8**	**$5.3**	**9%**

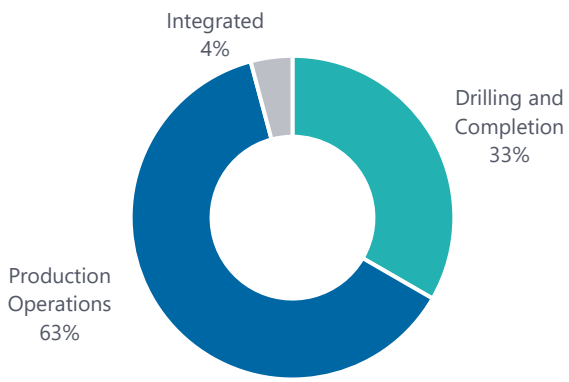
M&A (Deal Count)

Segment	2021	2022	2023	%Δ 2023 vs. 2022
Drilling and Completion	13	20	8	-60%
Production Operations	34	31	15	-52%
Information Services	13	8	2	-75%
Integrated	9	8	1	-88%
Total	**69**	**67**	**26**	**-61%**

M&A—2023 ($ in Billions)



M&A—2023 (Deal Count)



Note: All data as of December 31, 2023.
Source: Enverus, based on selection criteria of seller headquarters being located in the U.S.

Downstream

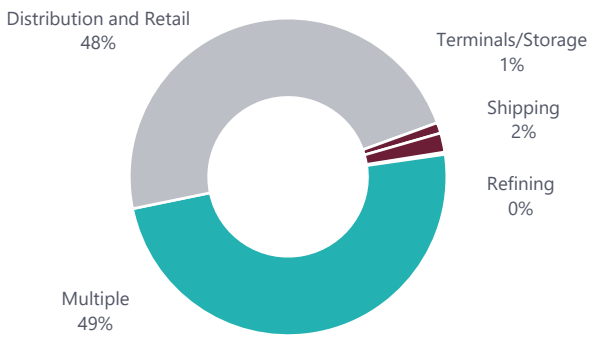
M&A ($ in Billions)

Segment	2021	2022	2023	%Δ 2023 vs. 2022
Refining	$0.1	$0.2	$0.1	NMF
Multiple	4.4	1.4	18.8	NMF
Distribution and Retail	6.2	3.8	18.3	380%
Terminals/Storage	1.5	0.4	0.4	16%
Shipping	0.1	0.8	0.7	-9%
Total	**$12.2**	$6.6	$38.3	481%

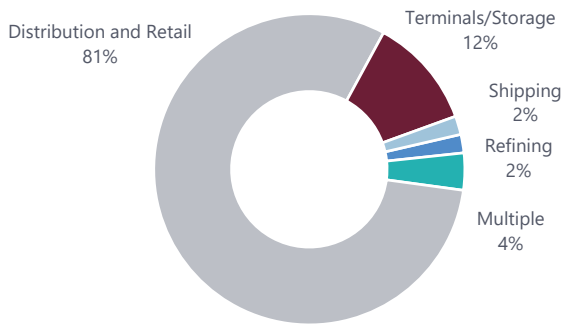
M&A (Deal Count)

Segment	2021	2022	2023	%Δ 2023 vs. 2022
Refining	1	2	1	NMF
Multiple	8	3	2	-33%
Distribution and Retail	75	55	42	-24%
Terminals/Storage	12	6	6	0%
Shipping	4	8	1	-88%
Total	**100**	74	52	-30%

M&A—2023 ($ in Billions)



M&A—2023 (Deal Count)



Note: All data as of December 31, 2023.
Source: Enverus, based on selection criteria of seller headquarters being located in the U.S.

Midstream

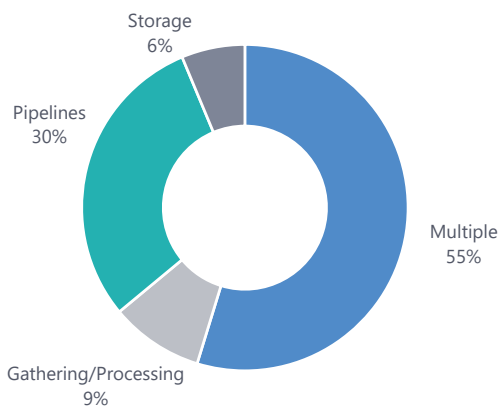
M&A ($ in Billions)

Segment	2021	2022	2023	%Δ 2023 vs. 2022
Multiple	$30.8	$11.7	$12.8	9%
Gathering/Processing	2.9	11.6	2.2	-81%
Pipelines	1.6	2.4	6.9	193%
Oil Tankers	1.0	0.1	0.0	NMF
Storage	0.9	0.0	1.5	NMF
Total	**$37.2**	$25.8	$23.3	-9%

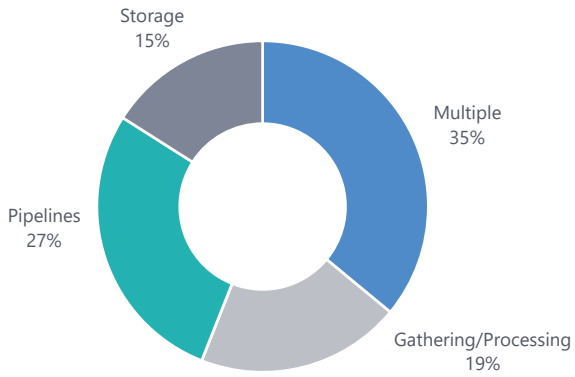
M&A (Deal Count)

Segment	2021	2022	2023	%Δ 2023 vs. 2022
Multiple	16	12	9	-25%
Gathering/Processing	17	23	5	-78%
Pipelines	11	9	7	-22%
Oil Tankers	2	1	1	NMF
Storage	2	0	4	NMF
Total	**48**	45	26	-42%

M&A—2023 ($ in Billions)



M&A—2023 (Deal Count)



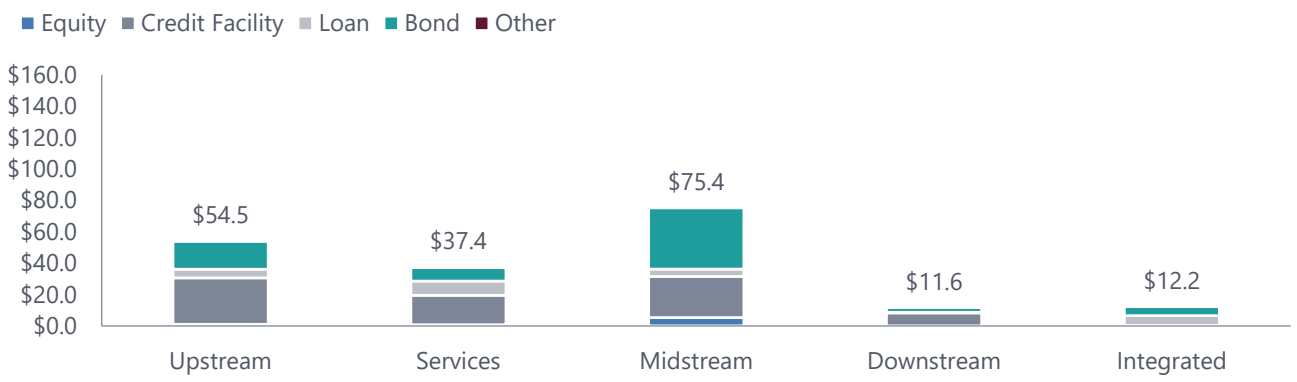
Note: All data as of December 31, 2023.
Source: Enverus, based on selection criteria of seller headquarters being located in the U.S.

Financing by Instrument

Financing by Instrument ($ in Billions)

Capital	2021	2022	2023	%Δ 2023 vs. 2022
Upstream				
Equity	$1.4	$0.1	$1.0	NMF
Credit Facility	45.0	59.9	29.6	-51%
Loan	2.5	1.5	5.5	282%
Bond	30.3	9.0	17.8	98%
Other	0.5	0.1	0.5	NMF
Total	$79.6	$70.6	$54.5	-23%
Services				
Equity	$0.5	$0.5	$0.8	NMF
Credit Facility	7.5	19.2	18.8	-2%
Loan	6.4	6.0	9.0	49%
Bond	7.3	0.3	8.8	NMF
Other	0.6	0.0	0.1	NMF
Total	$22.3	$26.0	$37.4	44%
Midstream				
Equity	$1.2	$0.0	$5.3	NMF
Credit Facility	41.0	53.5	26.2	-51%
Loan	2.4	9.1	4.7	-49%
Bond	29.4	23.5	39.1	66%
Other	1.7	1.0	0.1	-90%
Total	$75.7	$87.1	$75.4	-13%
Downstream				
Equity	$0.1	$0.0	$0.0	NMF
Credit Facility	4.7	28.8	8.2	-71%
Loan	0.9	1.1	0.4	-64%
Bond	6.4	1.0	3.0	NMF
Other	0.0	0.0	0.0	NMF
Total	$12.1	$30.9	$11.6	-62%
Integrated				
Equity	$0.8	$0.6	$0.0	NMF
Credit Facility	1.9	7.7	0.4	-95%
Loan	1.4	0.0	6.2	NMF
Bond	13.7	6.1	5.7	-7%
Other	0.2	0.0	0.0	NMF
Total	$18.0	$14.3	$12.2	-15%
Grand Total	$207.9	$228.9	$191.1	-17%

Financing by Instrument—2023 ($ in Billions)



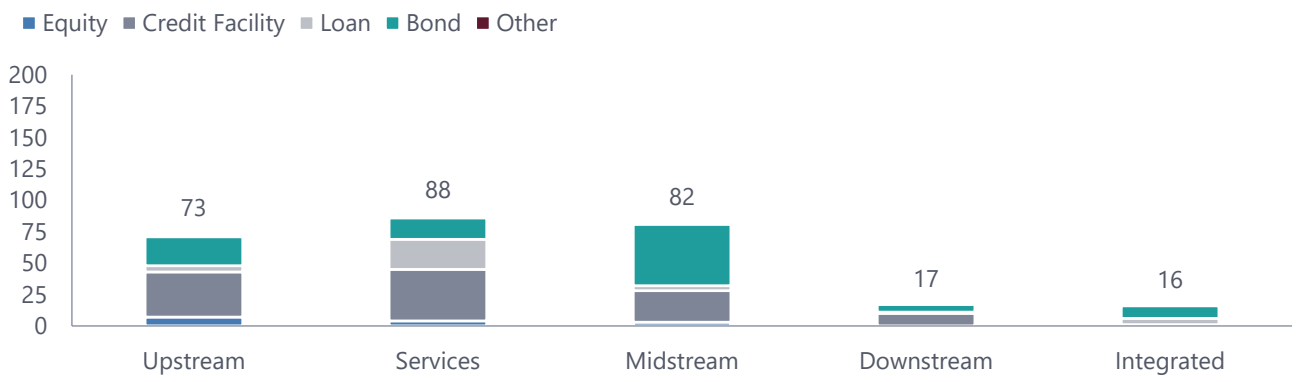
Notes: All data as of December 31, 2023. Current year may not include values for all announced transactions or findings. Historical amounts may be adjusted as additional information is available.
Source: Enverus.

Financing by Instrument (cont.)

Financing by Instrument (Deal Count)

Capital	2021	2022	2023	%Δ 2023 vs. 2022
Upstream				
Equity	14	1	7	NMF
Credit Facility	48	68	36	-47%
Loan	9	4	5	NMF
Bond	49	13	23	77%
Other	7	1	2	NMF
Total	127	87	73	-16%
Services				
Equity	9	6	4	-33%
Credit Facility	40	55	41	-25%
Loan	23	18	24	33%
Bond	16	6	17	183%
Other	10	2	2	NMF
Total	98	87	88	1%
Midstream				
Equity	5	0	3	NMF
Credit Facility	38	39	25	-36%
Loan	6	8	4	-50%
Bond	41	37	49	32%
Other	10	1	1	NMF
Total	100	85	82	-4%
Downstream				
Equity	1	0	0	NMF
Credit Facility	9	19	10	-47%
Loan	6	2	1	NMF
Bond	9	2	6	NMF
Other	0	0	0	NMF
Total	25	23	17	-26%
Integrated				
Equity	1	2	0	NMF
Credit Facility	3	8	1	-88%
Loan	3	0	5	NMF
Bond	18	8	10	25%
Other	1	0	0	NMF
Total	26	18	16	-11%
Grand Total	376	300	276	-8%

Financing by Instrument—2023 (Deal Count)

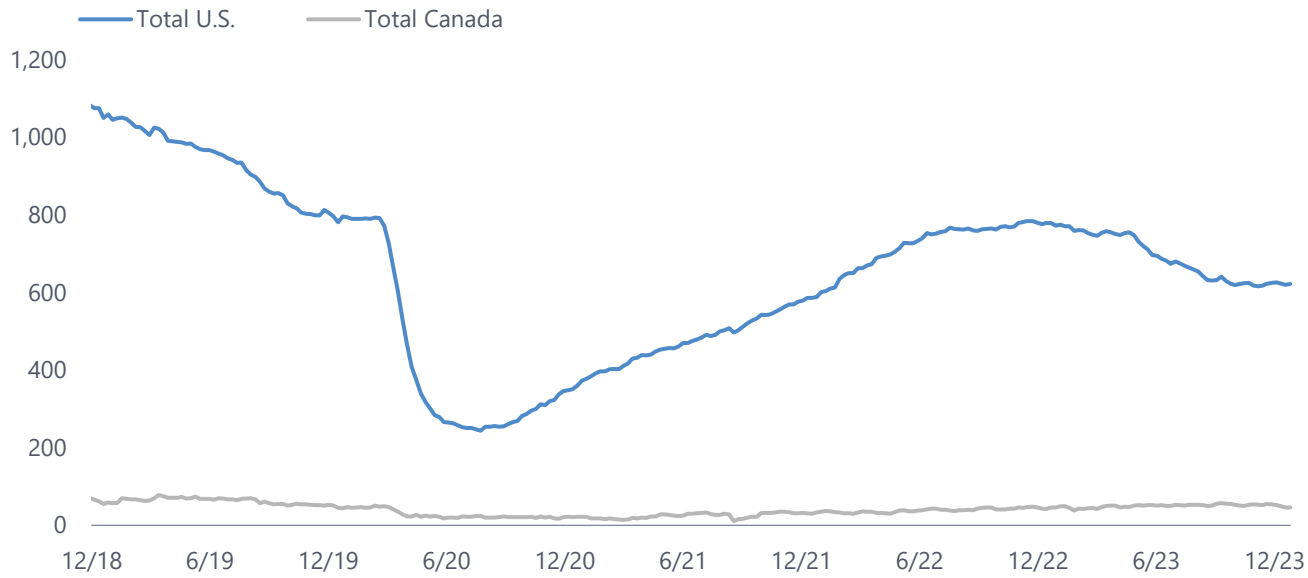


Notes: All data as of December 31, 2023. Current year may not include values for all announced transactions or findings. Historical amounts may be adjusted as additional information is available.
Source: Enverus.

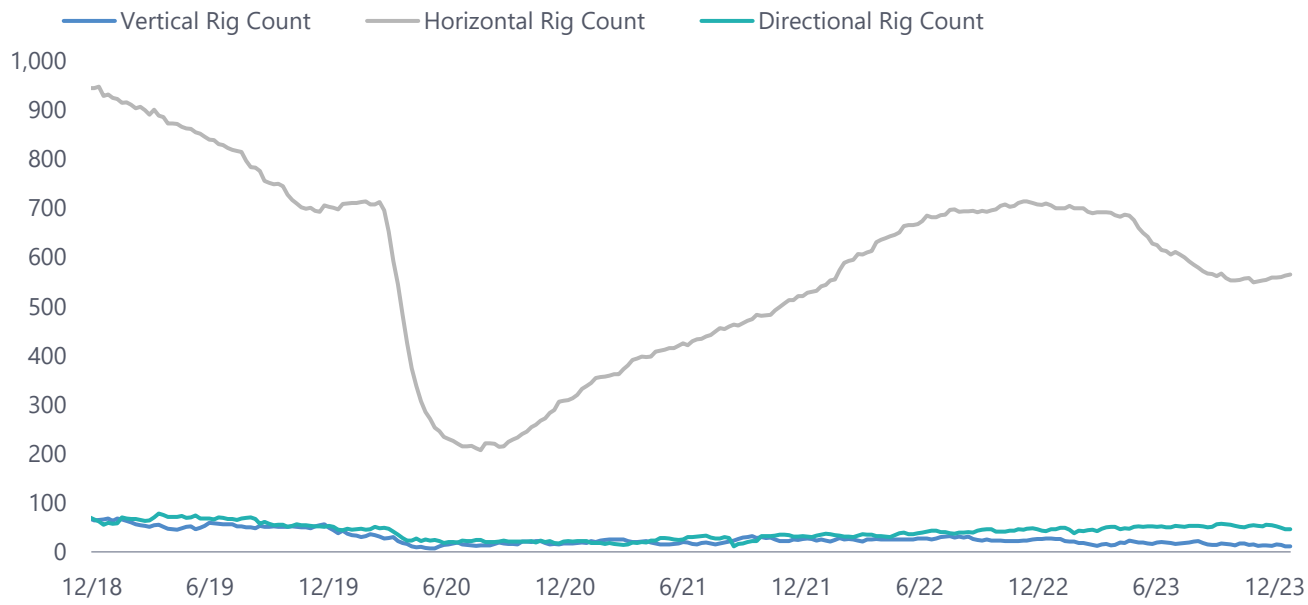
08 RIGS

Rigs

Total U.S. vs. Canada Rigs



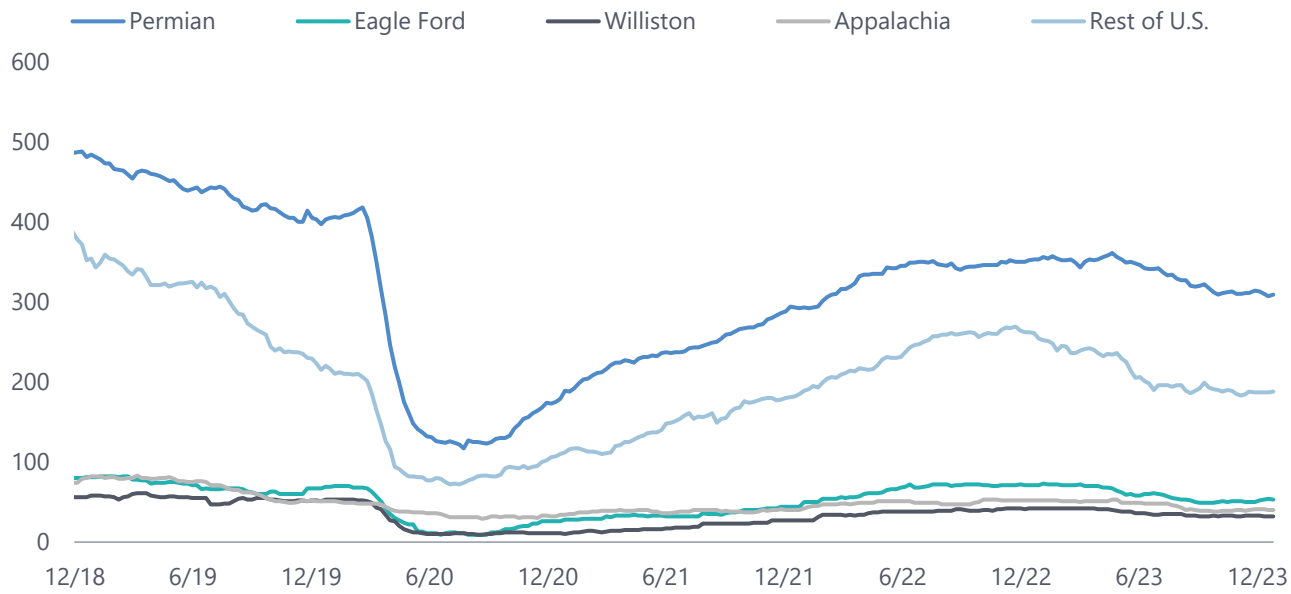
U.S. Rig Counts by Vertical, Horizontal, and Directional



Notes: All data as of December 31, 2023. Data collected on a weekly basis.
Sources: Bloomberg and Baker Hughes.

Rigs (cont.)

U.S. Rigs by Regions



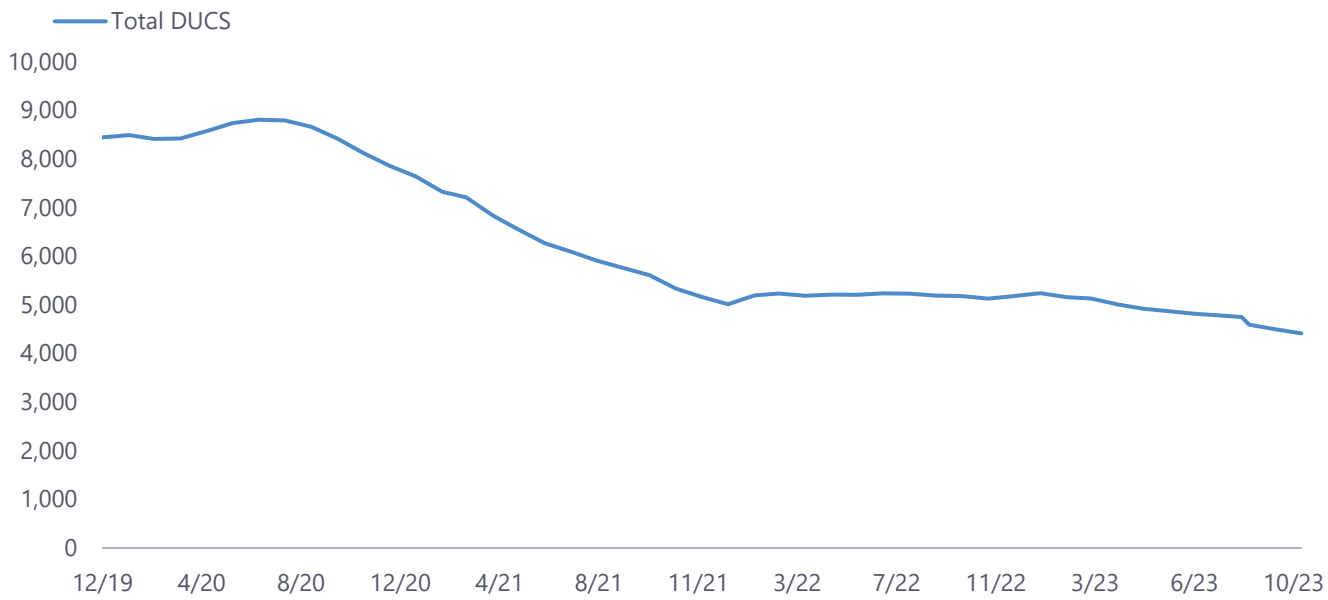
Change in Rig Counts

Region	12/31/2023	12/31/2022	9/30/2023	YoY % Change	QoQ % Change
Permian	309	353	312	(12.5%)	(1.0%)
Eagle Ford	53	71	49	(25.4%)	8.2%
Williston	32	42	33	(23.8%)	(3.0%)
Marcellus	28	39	28	(28.2%)	0.0%
Cana Woodford	22	26	16	(15.4%)	37.5%
DJ Niobara	14	17	14	(17.6%)	0.0%
Granite Walsh	2	8	4	(75.0%)	(50.0%)
Haynesville	44	72	39	(38.9%)	12.8%
Utica	12	13	10	(7.7%)	20.0%
Rest of U.S.	106	138	118	(23.2%)	(10.2%)
Total	**622**	**779**	**623**	**(20.2%)**	**(0.2%)**

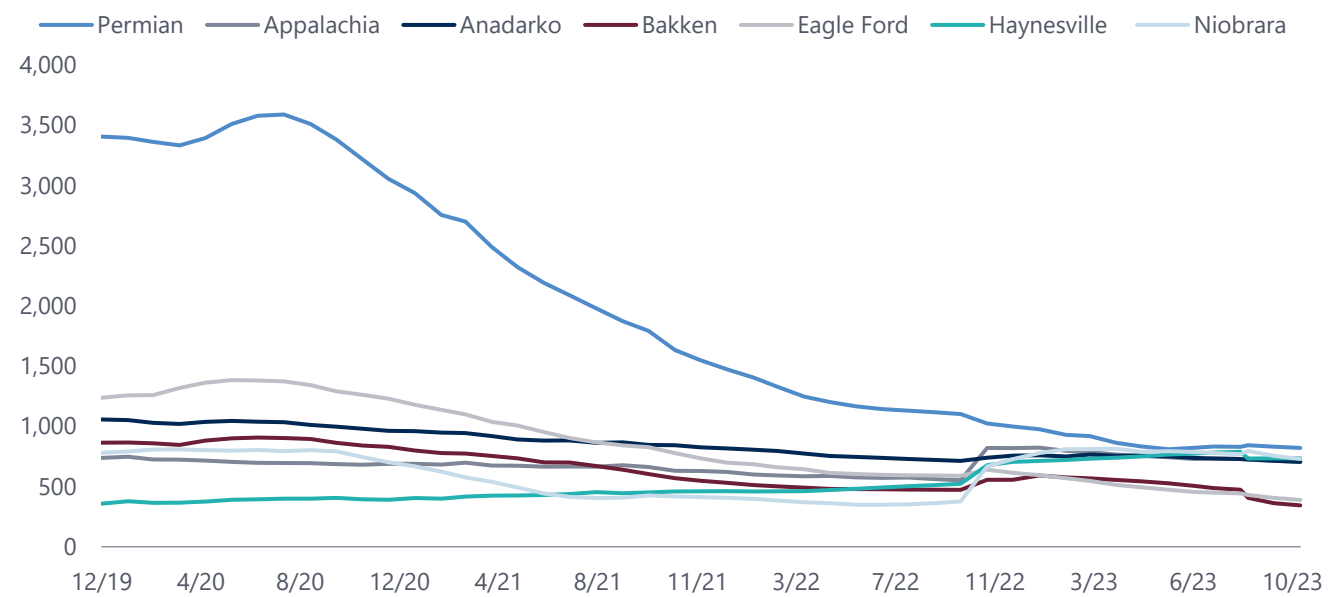
Notes: All data as of December 31, 2023. Data collected on a weekly basis.
Sources: Bloomberg and Baker Hughes.

Rigs (cont.)

Total U.S. DUCs



Total DUCs by Basin



Notes: All data as of December 31, 2023. Data collected on a monthly basis and subject to a one-month lag.
Sources: Bloomberg and Baker Hughes.

About Houlihan Lokey

Houlihan Lokey, Inc. (NYSE:HLI) is a global investment bank with expertise in mergers and acquisitions, capital markets, financial restructuring, and financial and valuation advisory. Houlihan Lokey serves corporations, institutions, and governments worldwide with offices in the Americas, Europe, the Middle East, and the AsiaPacific region. Independent advice and intellectual rigor are hallmarks of the firm's commitment to client success across its advisory services. The firm is the No. 1 investment bank for all global M&A transactions, the No. 1 M&A advisor for the past nine consecutive years in the U.S., the No. 1 global restructuring advisor for the past ten 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 LSEG (formerly Refinitiv).

Locations



Industry Expertise

Product Expertise

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