TD SECURITIES INC. - CANADA

September 5, 2024

■ **Energy Producers**

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WEEKLY REPORT

THE CRUDE FACTS

THE TD COWEN INSIGHT

Weekly Oil Charts

In the following charts, we summarize the key oil data-points for the global crude oil supply/demand outlook. We highlight the following weekly trends:

1) WTI dips below US$70/bbl to kick-off September, hitting a YTD low: WTI spot is sitting at ~US$69/bbl, now down 2% YTD, while Brent is trading at ~US$72.50/bbl, similarly down 2% YTD. In our view, persistent demand weakness concerns through Q3/24 and uncertainty over OPEC+'s next move have weighed on spot prices, with reports that Libyan barrels would soon be returned to market putting additional pressure on prices this week.

2) OPEC+ delays planned October output hike for two months: Given current macro conditions (persistent demand weakness concerns, Libya barrels set to return to market), this was not entirely surprising, in our view. Note, OPEC+ had planned to add 180mbbl/d of production back to the market in October as part of its plan to return 2.2mmbbl/d of curtailments that were in place through Q3/24. We expect OPEC+ to continue to take a proactive stance in managing supply and wouldn't be surprised to see output hikes delayed further should global demand remain challenged.

3) Regional U.S. refining cracks hit YTD lows as refinery utilization continues to trend higher: On average, regional U.S. 321 refining margins sit at US$14.40/bbl, 32% below the five-year-average and 57% below year-ago levels. In our view, continued strong refinery utilization (93%; +4% vs. norms) and below average gasoline demand (-3% vs.norms) is weighing on margins.

Figure 1. Weekly Summary

Crude Oil Pricing (US$/bbl)	Last	Δ 1M	Δ 1Y
Brent - *International*	$75.09	-9%	-8%
WTI	$69.20	-10%	-6%
Ed. Light	$68.16	-8%	6%
LLS	$71.10	-9%	-8%
WCS	$54.33	-11%	2%
Urals	$63.09	10%	9%
US Resource Play Production (mmbbl/d)	**Last**	**Δ 1M**	**Δ 1Y**
Total US	13.3	-1%	4%
Lower 48	12.9	-1%	4%
Eagle Ford	1.2	-1%	1%
Permian	6.8	0%	5%
Bakken	1.3	-1%	2%
Niobrara	0.7	-1%	3%
US Crude Inventories (mmbbl)	**Last**	**Δ 1Y**	**Δ 5 Yr Avg**
US Crude	418	0%	-5%
US Gasoline	219	2%	-2%
US Distillate	123	3%	-10%
Total US Crude Oil Complex	760	1%	-5%
US Crude Oil Demand (mmbbl/d)	**Last**	**Δ 1Y**	**Δ 5 Yr Avg**
US Total Refined Product Demand	20.5	2%	1%
US Gasoline Demand	8.9	-4%	-3%
US Distillate Demand	4.0	3%	0%
US Jet Fuel Demand	1.8	9%	15%
Refining Crack Spreads (US$/bbl) & Utilization	**Last**	**Δ 1Y**	**Δ 5 Yr Avg**
US Mid-continent 3-2-1 Crack Spread	$15.36	-60%	-35%
US Gulf Coast 3-2-1 Crack Spread	$12.37	-62%	-40%
US NYH 3-2-1 Crack Spread	$19.44	-40%	-10%
Refinery Utilization	93%	0%	4%

Source: Bloomberg, TD Cowen

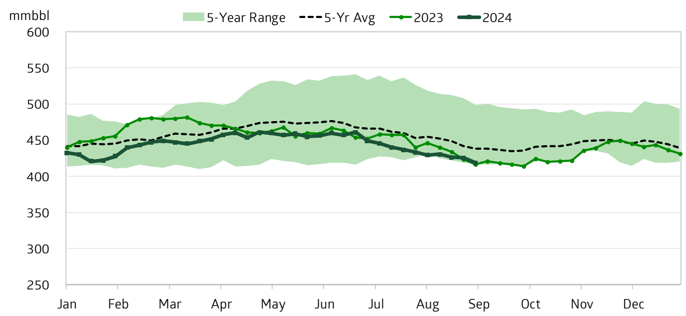
Figure 2 - United States Oil and Oil Product Inventories

DOE Crude Oil Inventories - Period Ending Aug 30, 2024

week/week change in mmbbl	Survey	Actual	Diff.
DOE U.S Crude Oil Inventories	-0.38	-6.87	-6.49
DOE Total Product Inventories	-1.55	-6.40	-4.85

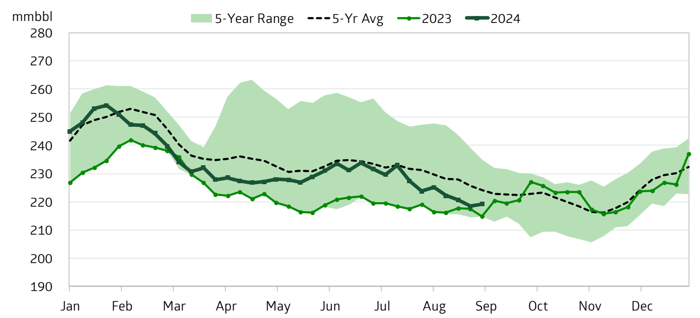
DOE United States Crude Oil Inventories

US Crude Oil Inventories



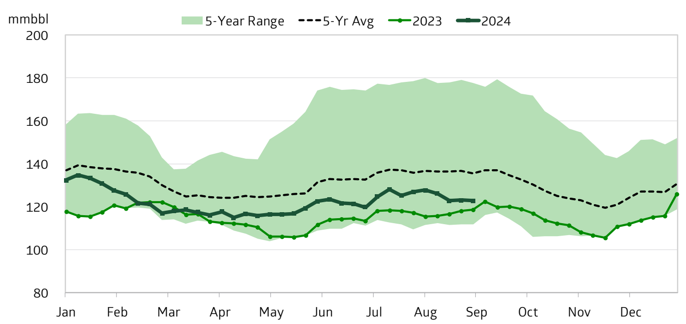
mmbbl	Last	Δ 1Y	Δ 5Y Avg
US Crude Oil Inventories	418	0.4%	-4.5%

US Gasoline Inventories



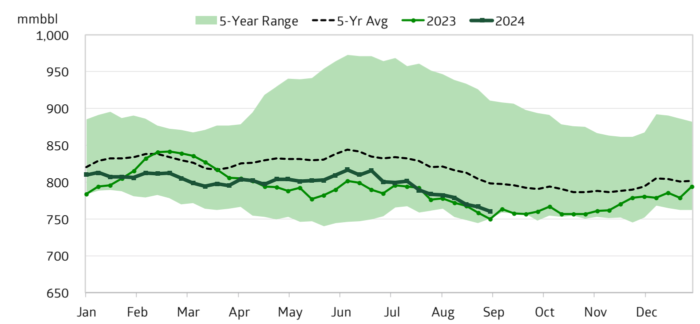
mmbbl	Last	Δ 1Y	Δ 5Y Avg
US Gasoline Inventories	219	2.1%	-2.2%

US Distillate Inventories



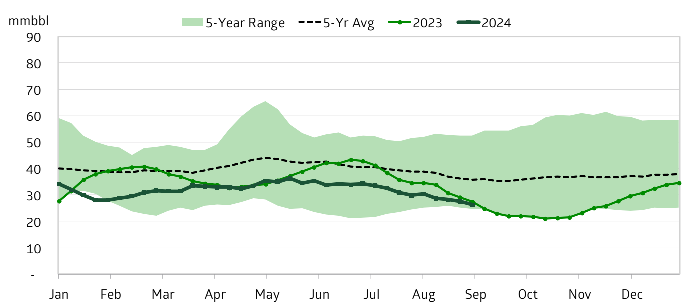
mmbbl	Last	Δ 1Y	Δ 5Y Avg
US Distillate Inventories	123	3.5%	-9.5%

US Total Crude Complex Inventories



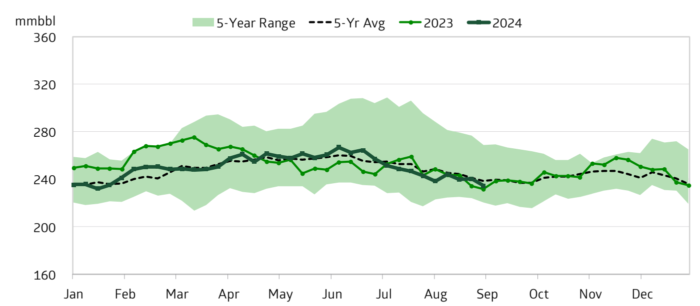
mmbbl	Last	Δ 1Y	Δ 5Y Avg
US Total Crude Complex	760	1.4%	-4.7%

DOE Cushing Crude Inventory



mmbbl	Last	Δ 1Y	Δ 5Y Avg
Cushing Crude Inventory	26	-3.7%	-26.4%

DOE Gulf Coast (PADD 3) Inventory

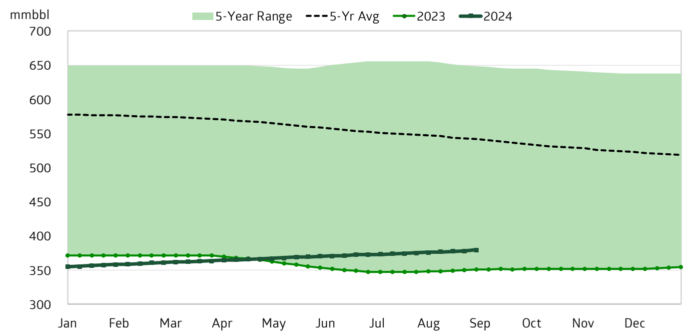


mmbbl	Last	Δ 1Y	Δ 5Y Avg
Gulf Coast (PADD 3) Inventory	234	1.3%	-1.7%

Source: Bloomberg, TD Cowen

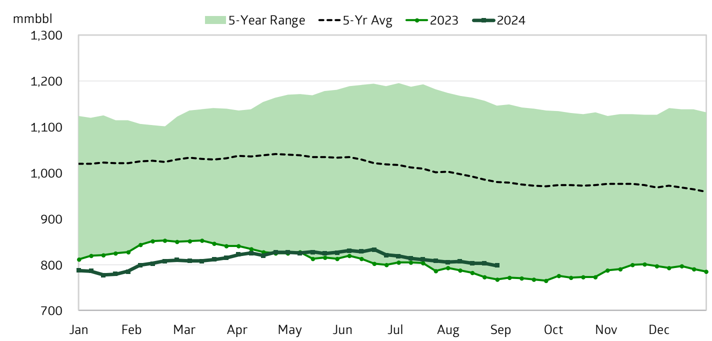
Figure 3 - United States Oil and Oil Product Inventories Cont'd (SPR Inventories and Releases)

DOE US SPR Inventories



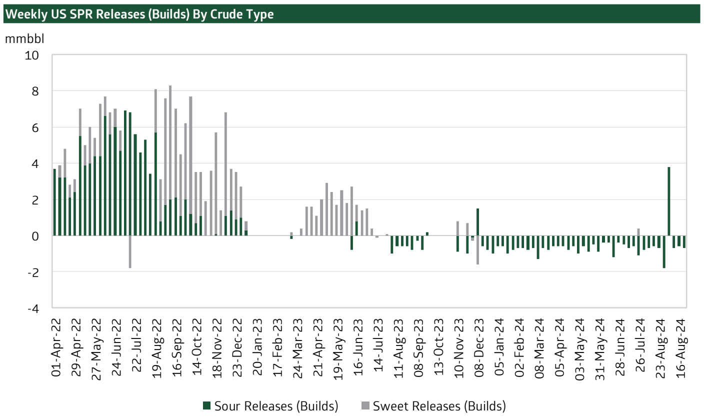
mmbbl	Last	Δ 1Y	Δ 5Y Avg
DOE US SPR Inventories	380	8.4%	-29.9%

DOE US Crude Oil Inventories (Including SPR)

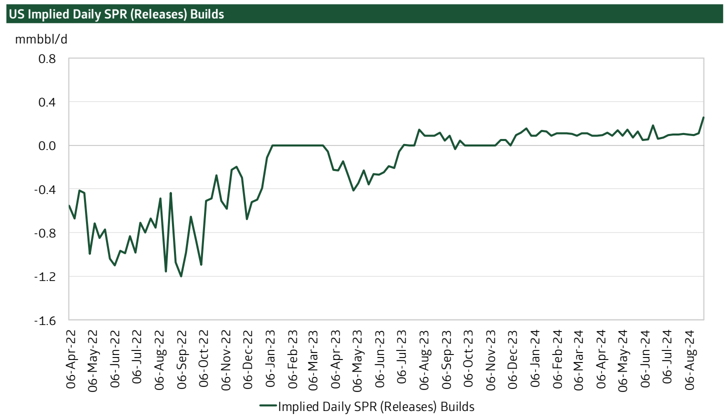


mmbbl	Last	Δ 1Y	Δ 5Y Avg
DOE US Crude Oil Inventories (Including SPR)	798	4.0%	-18.5%

Weekly US SPR Releases (Builds) By Crude Type



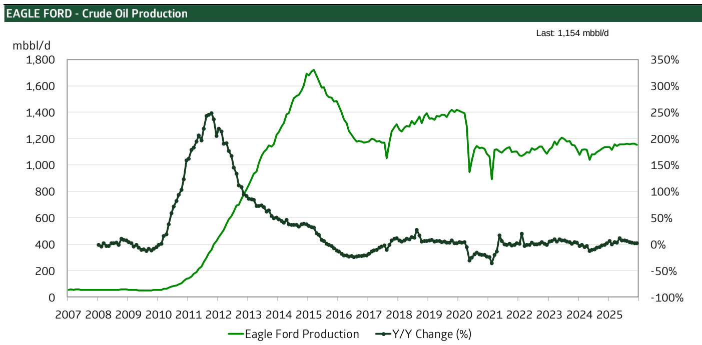
US Implied Daily SPR (Releases) Builds



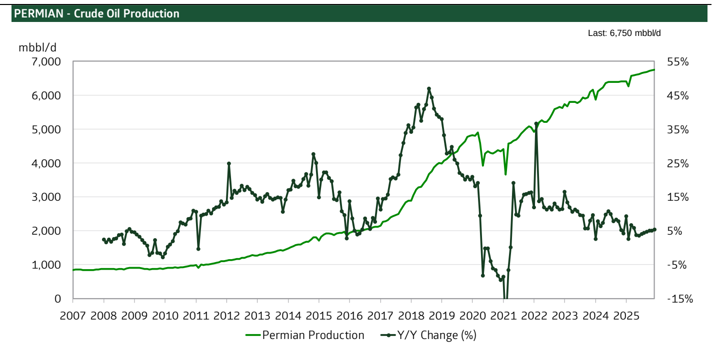
Source: Bloomberg, TD Cowen

Figure 4 - Key Drivers of North American Supply Growth

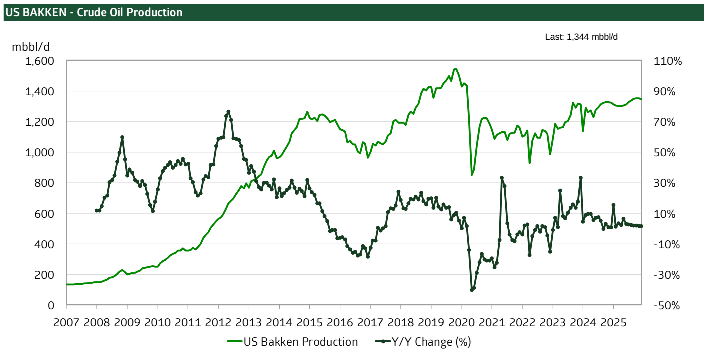
EAGLE FORD - Crude Oil Production



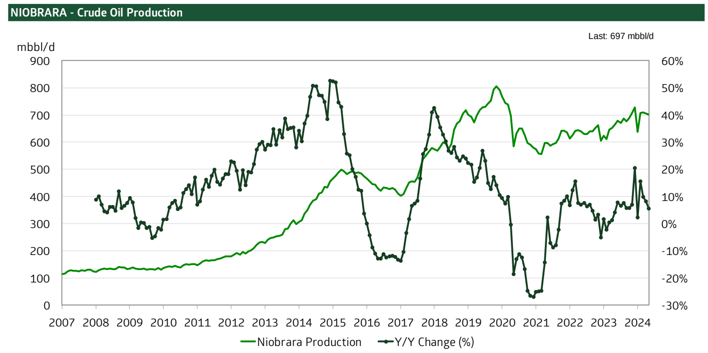
PERMIAN - Crude Oil Production



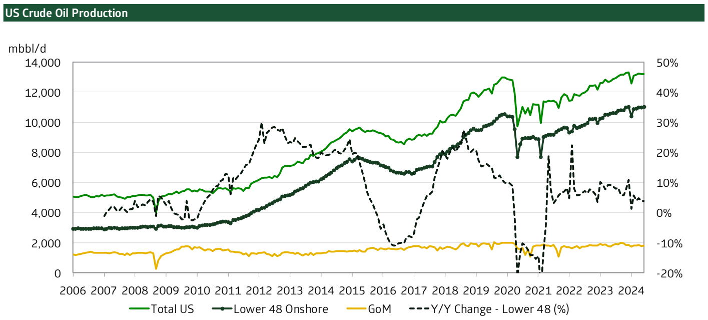
US BAKKEN - Crude Oil Production



NIOBRARA - Crude Oil Production

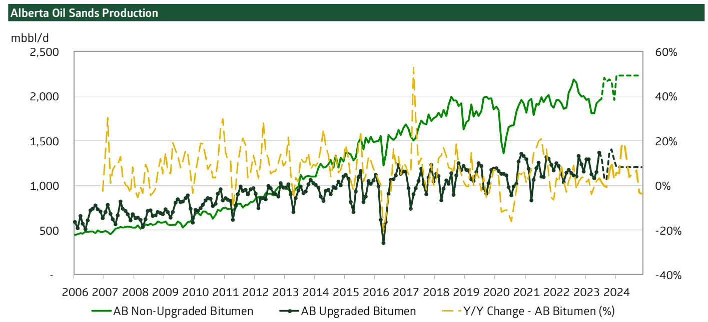


US Crude Oil Production

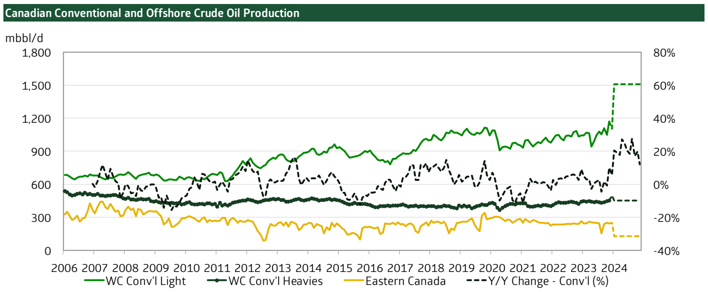


* Data is delayed by three months. For current production data see Exhibit 1.

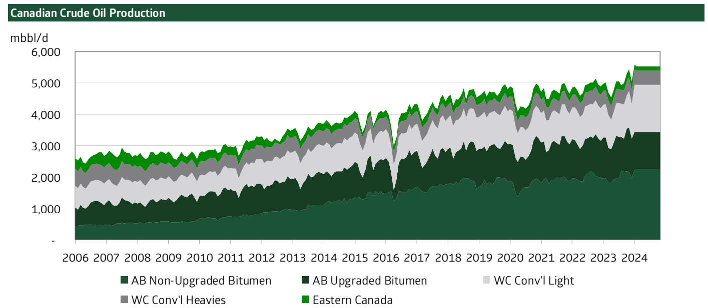
Alberta Oil Sands Production



Canadian Conventional and Offshore Crude Oil Production



Canadian Crude Oil Production

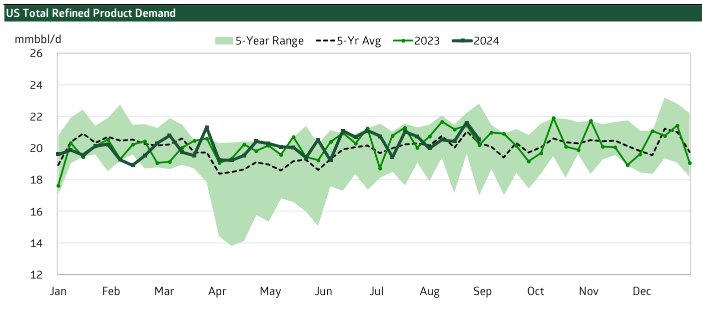


* Production forecasts are based on CER's latest estimates.

Source: Bloomberg, CER, TD Cowen

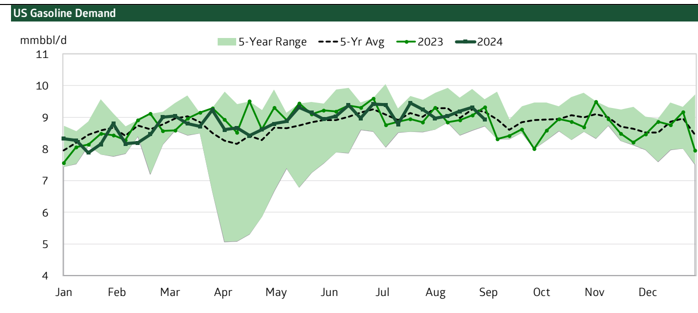
Figure 5 - United States Oil and Oil Product Demand

US Total Refined Product Demand



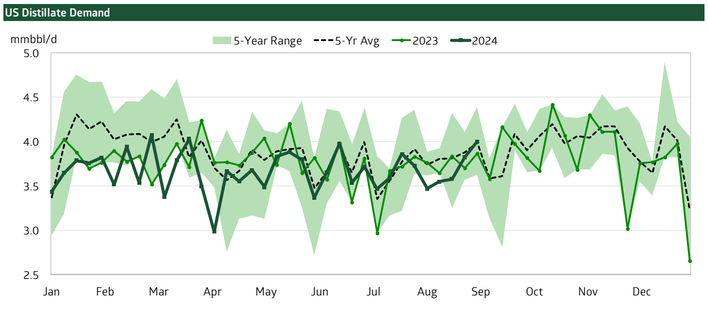
mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
US Total Refined Products Demand	20.5	1.7%	1.2%

US Gasoline Demand



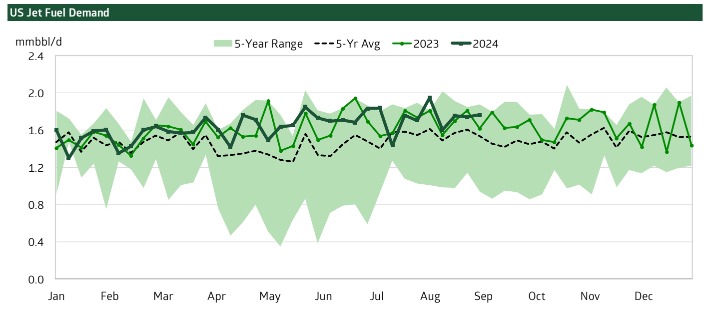
mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
US Gasoline Demand	8.9	-4.1%	-2.6%

US Distillate Demand



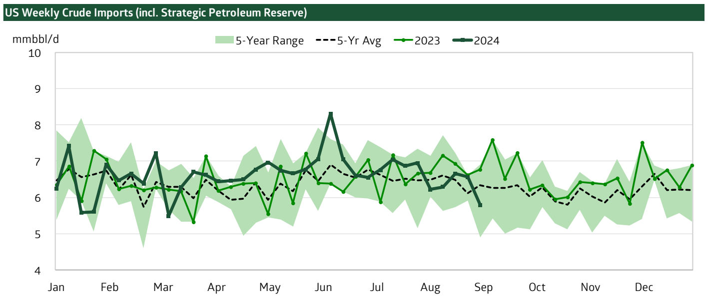
mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
US Distillate Demand	4.0	3.4%	0.3%

US Jet Fuel Demand



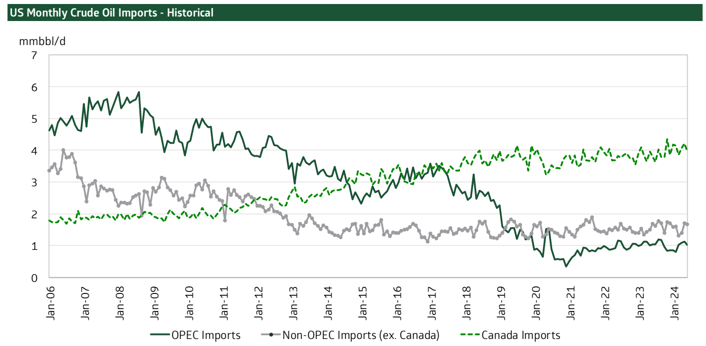
mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
US Jet Fuel Demand	1.8	9.0%	15.0%

US Weekly Crude Imports (incl. Strategic Petroleum Reserve)

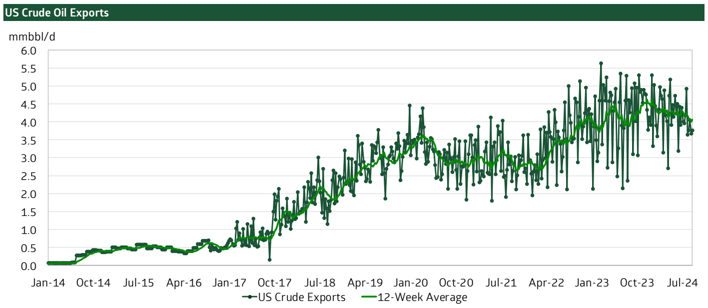


mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
US Crude Imports (incl SPR)	5.8	-14.4%	-8.6%

US Monthly Crude Oil Imports - Historical

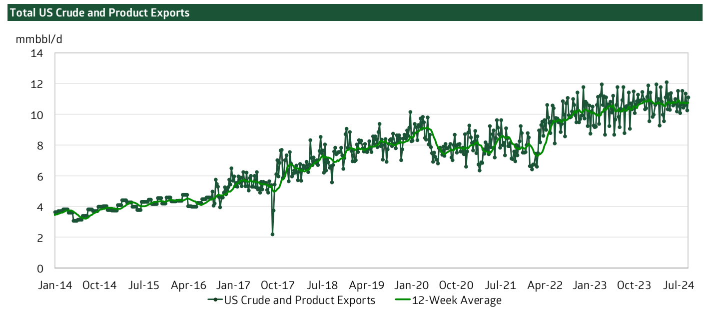


US Crude Oil Exports



mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
US Crude Oil Exports	3.8	-23.8%	7.5%

Total US Crude and Product Exports

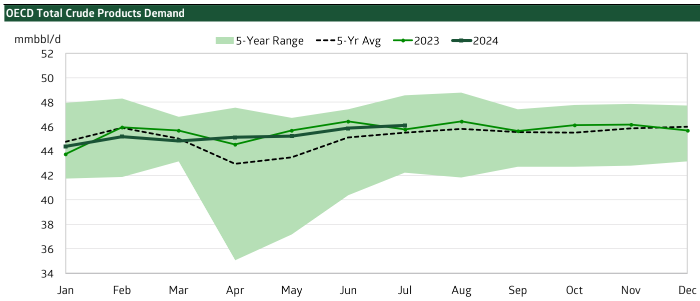


mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
Total US Crude and Product Exports	11.1	-3.0%	21.5%

Source: Bloomberg, TD Cowen

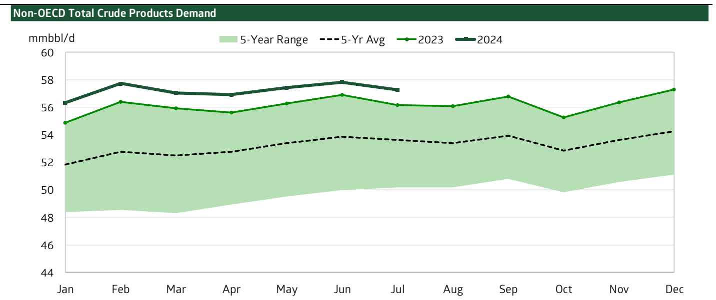
Figure 6 - International Oil and Oil Product Demand

OECD Total Crude Products Demand



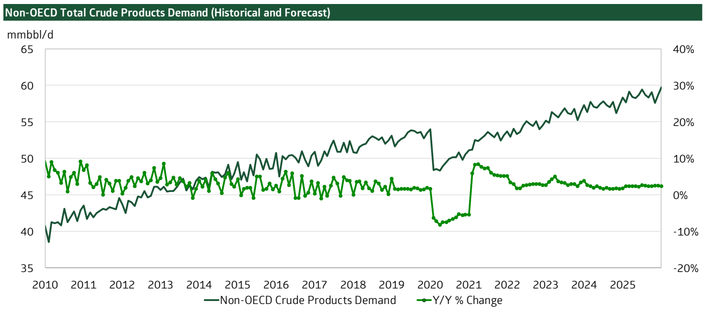
mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
OECD Total Products Demand	46.1	0.7%	1.3%

Non-OECD Total Crude Products Demand



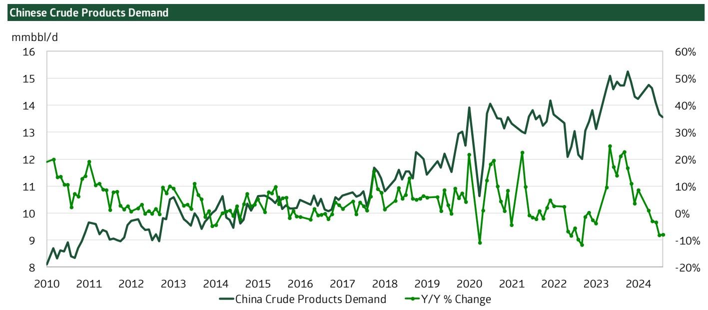
mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
Non-OECD Total Crude Products Demand	57.3	2.0%	6.8%

Non-OECD Total Crude Products Demand (Historical and Forecast)



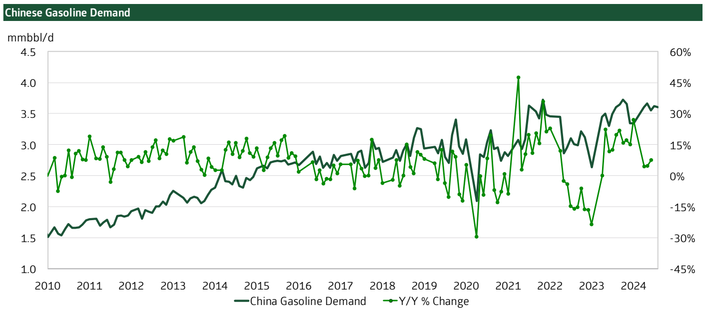
mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
Non-OECD Total Crude Products Demand	57.3	2.0%	6.8%

Chinese Crude Products Demand



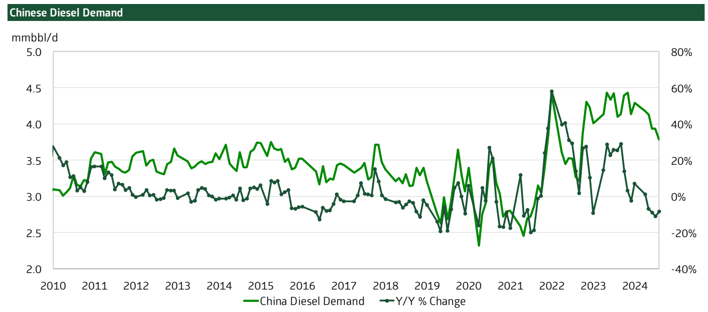
mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
Chinese Total Products Demand	13.6	-8.0%	1.3%

Chinese Gasoline Demand



mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
Chinese Gasoline Demand	3.6	0.1%	11.4%

Chinese Diesel Demand

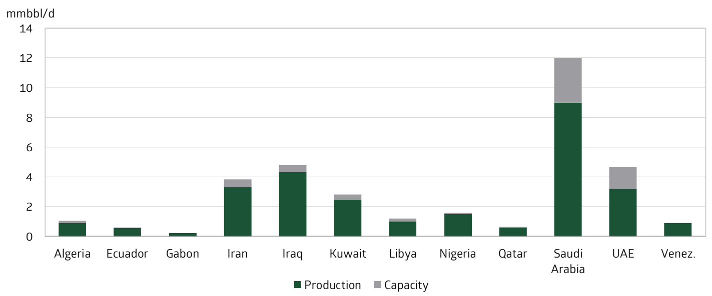


mmbbl/d	Last	Δ 1Y	Δ 5Y Avg
Chinese Diesel Demand	3.8	-7.5%	14.6%

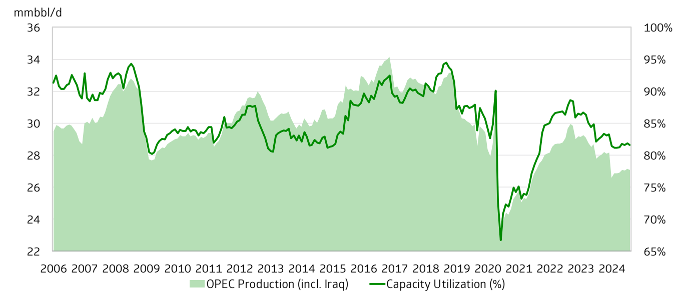
Source: Bloomberg, TD Cowen

Figure 7 - Global Supply Outlook

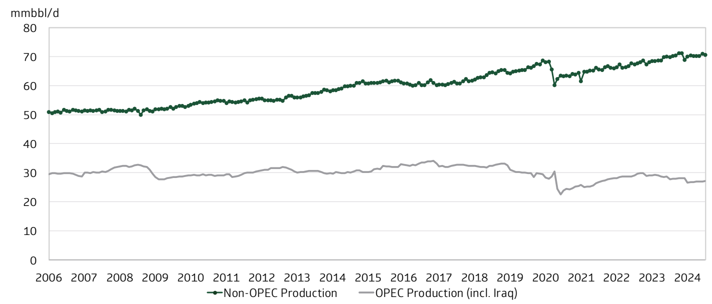
OPEC Production and Excess Capacity



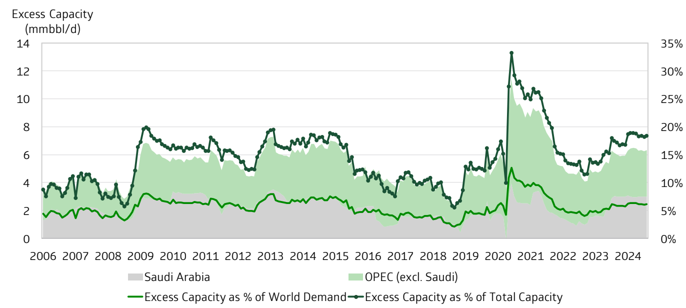
OPEC Utilization



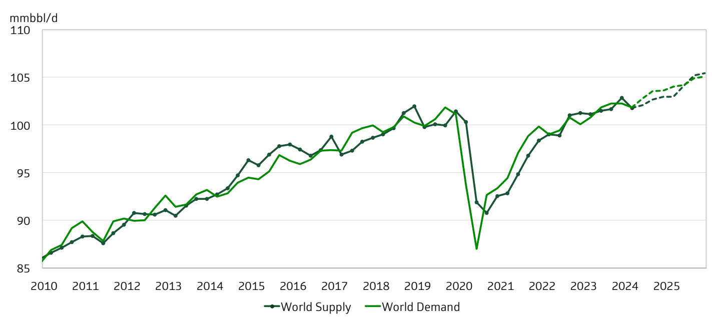
OPEC vs. non-OPEC Production



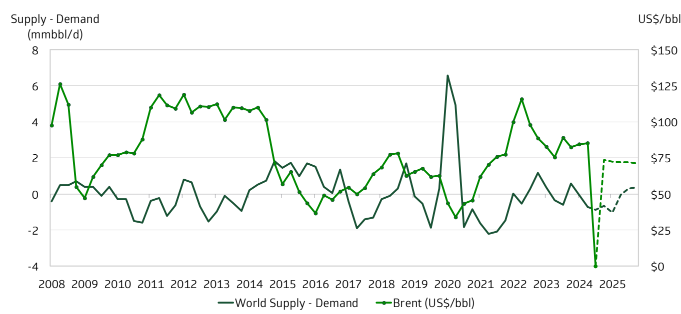
OPEC Excess Capacity



World Supply & Demand



World Supply & Demand vs. Brent Pricing



OPEC Production (Excluding Liquids)

Country (mbbl/d)	Aug-22	Aug-23	Jun-24	Jul-24	Aug-24	Δ Y/Y	Δ M/M	Est. Capacity	Capacity Utilization
Saudi Arabia	10,930	8,980	8,990	9,000	8,990	0.1%	-0.1%	12,000	75%
Iraq	4,430	4,260	4,250	4,320	4,320	1.4%	0.0%	4,800	90%
Iran	2,520	3,100	3,310	3,300	3,300	6.5%	0.0%	3,830	86%
UAE	3,350	3,120	3,170	3,170	3,170	1.6%	0.0%	4,650	68%
Kuwait	2,810	2,560	2,440	2,450	2,470	-3.5%	0.8%	2,820	88%
Nigeria	1,130	1,340	1,430	1,430	1,480	10.4%	3.5%	1,600	93%
Libya	1,080	1,140	1,160	1,150	1,000	-12.3%	-13.0%	1,200	83%
Venezuela	640	800	890	890	900	12.5%	1.1%	890	101%
Algeria	1,030	940	900	900	890	-5.3%	-1.1%	1,060	84%
Republic of The Congo *	270	240	250	240	250	4.2%	4.2%	250	100%
Gabon	200	220	210	220	220	0.0%	0.0%	220	100%
Equatorial Guinea *	100	90	50	60	70	-22.2%	16.7%	70	100%
OPEC 12 [(1)]	**28,490**	**26,790**	**27,050**	**27,130**	**27,060**	**1.0%**	**-0.3%**	**33,390**	**81%**

[*] Qatar, Ecuador and Angola left OPEC as of January 1, 2019, January 1, 2020 and January 1, 2024, respectively and we have excluded them from this list.
Equatorial Guinea and Republic of The Congo joined OPEC during 2017 and 2018.

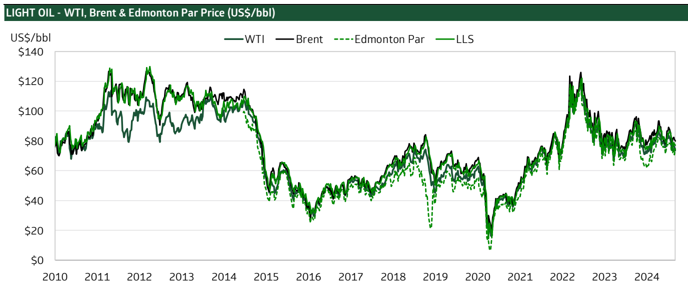
Non-OPEC Production (Including Liquids)

Country/Region (mbbl/d)	Jul-22	Jul-23	May-24	Jun-24	Jul-24	Δ Y/Y	Δ M/M
United States	20,570	21,990	22,730	22,280	22,600	2.8%	1.4%
Russia	11,000	10,620	10,410	10,280	10,280	-3.2%	0.0%
Canada	5,730	5,840	5,810	5,920	6,140	5.1%	3.7%
China	5,060	5,160	5,370	5,350	5,280	2.3%	-1.3%
Brazil	4,170	4,790	4,470	4,710	4,820	0.6%	2.3%
Other Asia & Oceania	3,770	3,980	4,050	4,090	4,070	2.3%	-0.5%
Middle East *	3,330	3,180	3,110	3,110	3,120	-1.9%	0.3%
Other S. America	2,380	2,430	2,510	2,460	2,470	1.6%	0.4%
Africa	2,670	2,700	2,460	2,510	2,460	-8.9%	-2.0%
Norway	1,880	2,070	1,950	1,990	2,110	1.9%	6.0%
Mexico	1,900	2,090	2,000	2,010	1,990	-4.8%	-1.0%
Kazakhstan	1,770	1,860	1,840	1,910	1,920	3.2%	0.5%
Other Europe	1,110	1,100	1,100	1,110	1,130	2.7%	1.8%
Other Eurasia	1,020	990	980	1,000	1,010	2.0%	1.0%
United Kingdom	940	810	780	890	850	4.9%	-4.5%
Guyana	280	390	650	610	610	56.4%	0.0%
Non-OPEC	**67,580**	**70,000**	**70,220**	**70,230**	**70,860**	**1.2%**	**0.9%**

Source: Bloomberg, TD Cowen

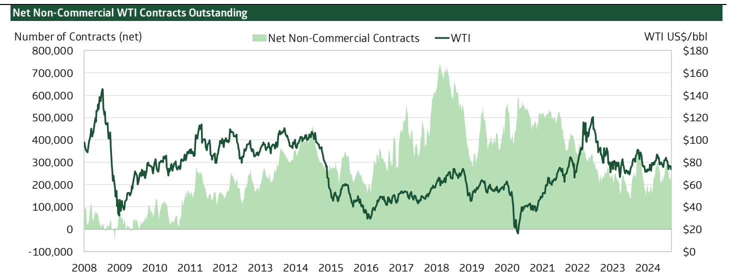
Figure 8 - Pricing for Domestic and Global Benchmarks

LIGHT OIL - WTI, Brent & Edmonton Par Price (US$/bbl)



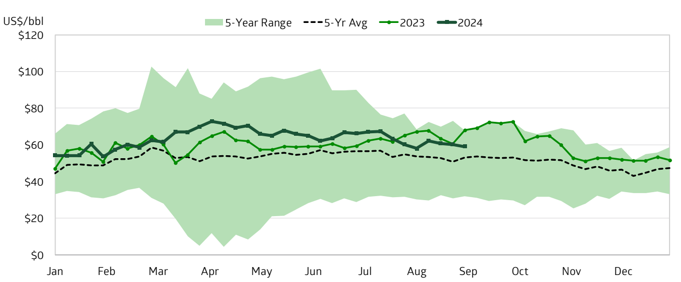
US$/bbl	Last	Δ 1M	Δ 1Y
WTI	$69.20	-9.7%	-6.4%
Brent	$75.09	-8.7%	-7.9%
Edmonton Par	#N/A	#N/A	#N/A
LLS	$71.10	-8.7%	-7.6%

Net Non-Commercial WTI Contracts Outstanding



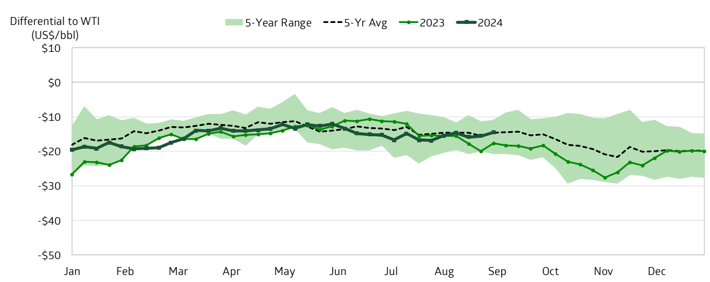
US$/bbl	Last	Δ 1M	Δ 1Y
WTI	$69.20	-9.7%	-6.4%
Net Non-Commercial	226,699	-7.7%	-5.9%

Western Canadian Select (WCS) Price Seasonality (US$/bbl)



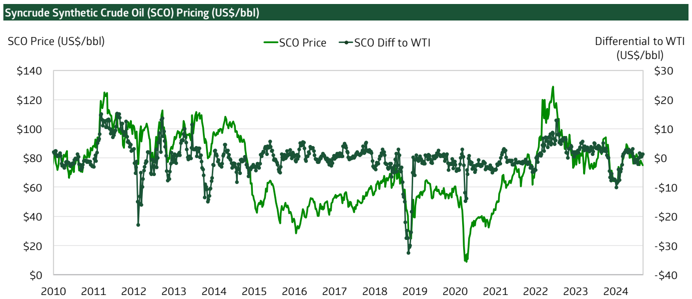
US$/bbl	Last	Δ 1Y	Δ 5 Yr Avg
WCS Price	$54.33	1.7%	10.2%

Western Canadian Select (WCS) Differential Seasonality (US$/bbl)



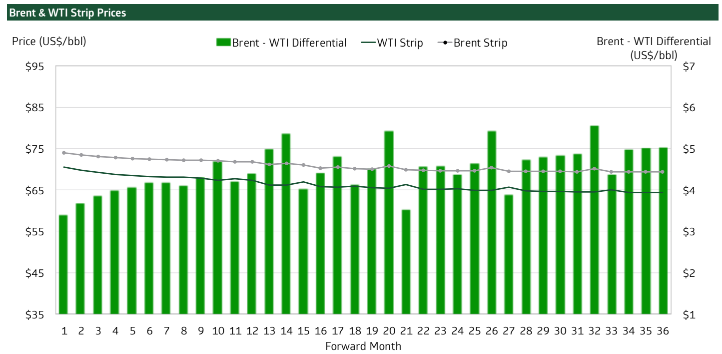
Diff. to WTI (US$/bbl)	Last	Δ 1Y	Δ 5 Yr Avg
WCS Price Differential	-$14.87	27.7%	-0.7%

Syncrude Synthetic Crude Oil (SCO) Pricing (US$/bbl)

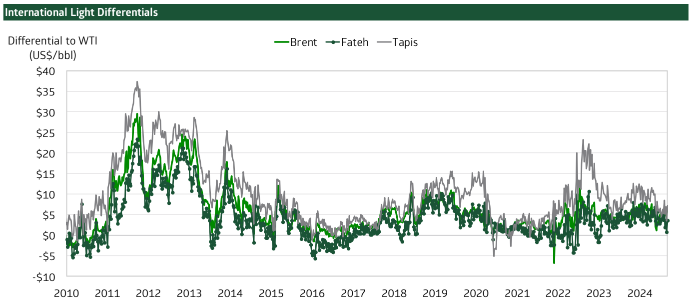


US$/bbl	Last	Δ 1M	Δ 1Y
Synthetic	$70.53	-8.5%	6.2%

Brent & WTI Strip Prices

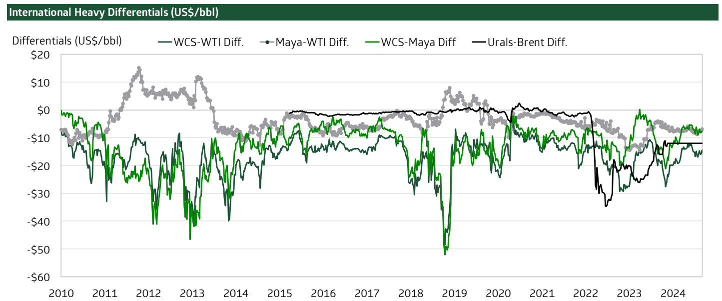


International Light Differentials



Diff. to WTI (US$/bbl)	Last	Δ 1M	Δ 1Y
Brent	$5.88	4.8%	-22.3%
Fateh (Dubai)	$4.42	23.8%	-11.6%
Tapis (Malaysia)	$7.87	14.2%	-31.7%

International Heavy Differentials (US$/bbl)

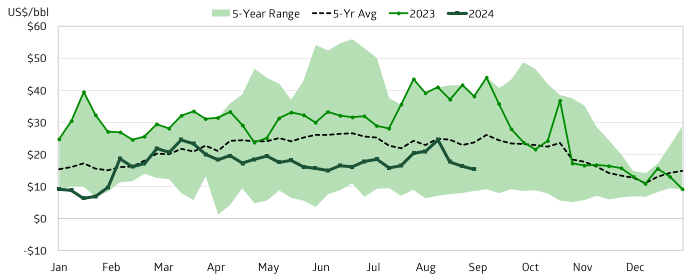


Differentials (US$/bbl)	Last	Δ 1M	Δ 1Y
WCS-WTI	-$14.87	6.7%	27.7%
Maya-WTI	-$7.97	-3.5%	-20.6%
WCS-Maya	-$6.90	16.2%	50.5%
Urals-Brent	-$12.00	0.0%	0.0%

Source: Bloomberg, TD Cowen

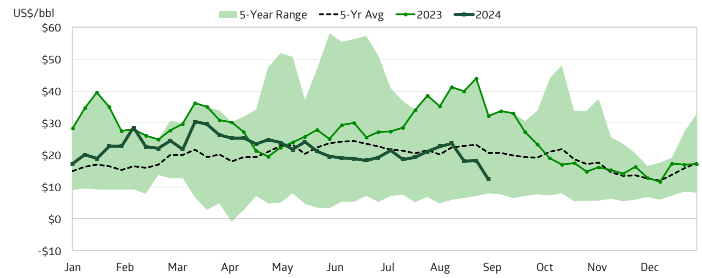
Figure 9 - Refinery Profitability and Utilization

US Mid-continent 3-2-1 Crack Spread



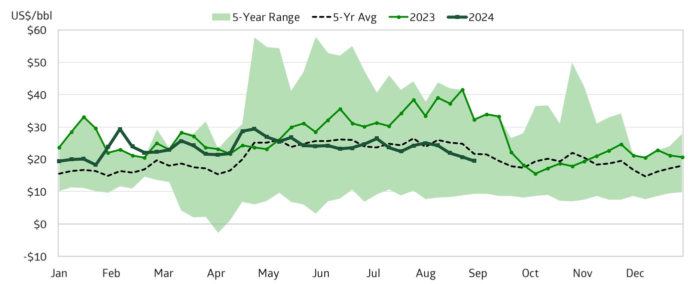
US$/bbl	Last	Δ 1Y	Δ 5 Yr Avg
US Mid-continent	$15.36	-59.6%	-35.2%

US Gulf Coast 3-2-1 Crack Spread



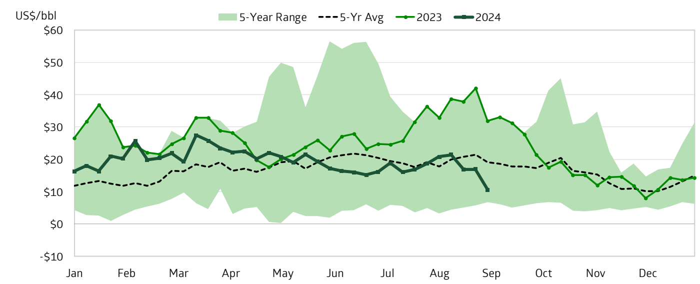
US$/bbl	Last	Δ 1Y	Δ 5 Yr Avg
US Gulf Coast	$12.37	-61.6%	-40.2%

US NYH 3-2-1 Crack Spread



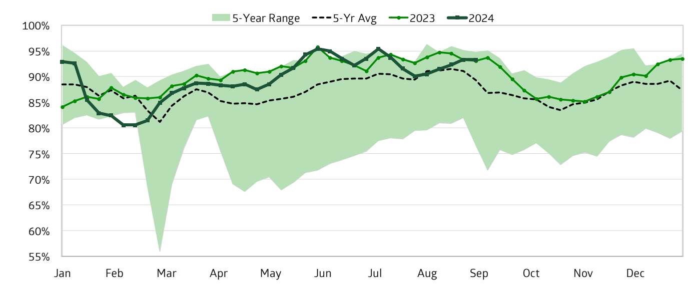
US$/bbl	Last	Δ 1Y	Δ 5 Yr Avg
US New York Harbour	$19.44	-39.7%	-9.8%

LLS Gulf Coast 3-2-1 Crack Spread



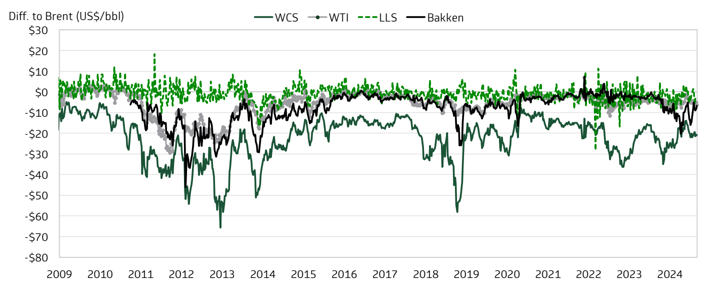
US$/bbl	Last	Δ 1Y	Δ 5 Yr Avg
LLS Gulf Coast	$10.47	-67.2%	-45.2%

Refinery Utilization (% of Capacity)



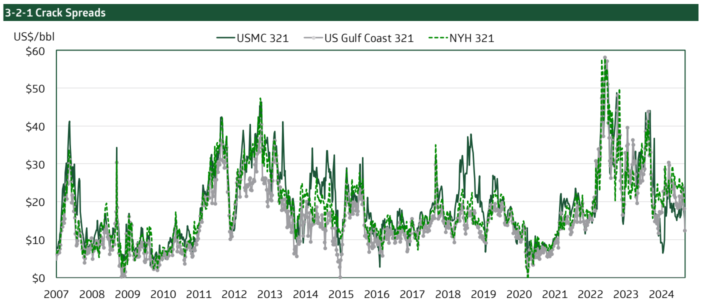
%	Last	Δ 1Y	Δ 5 Yr Avg
Refinery Utilization	93%	0.2%	4.4%

North American Differentials to Brent (US$/bbl)

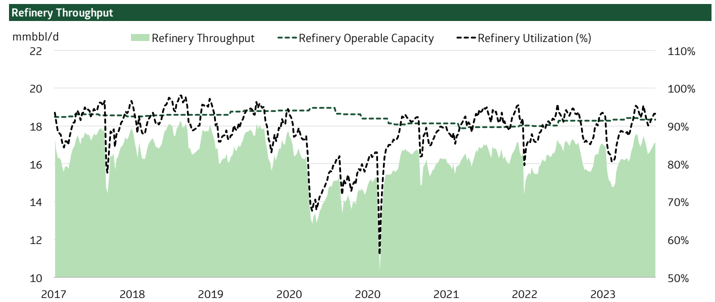


Diff. to Brent (US$/bbl)	Last	Δ 1M	Δ 1Y
LLS	-$3.99	-8.7%	-13.2%
WTI	-$5.88	4.8%	-22.3%
Bakken	-$1.88	-79.2%	-82.2%
WCS	-$20.76	-3.7%	-26.2%

3-2-1 Crack Spreads



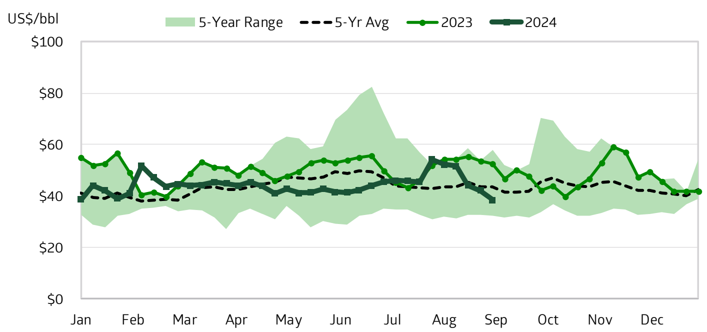
Refinery Throughput



Source: Bloomberg, TD Cowen

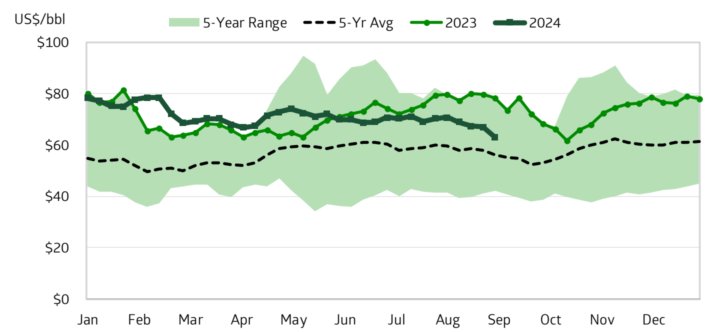
Figure 10 - Refinery Profitability and Utilization - Canada

Edmonton 3-2-1 Crack (US$/bbl)



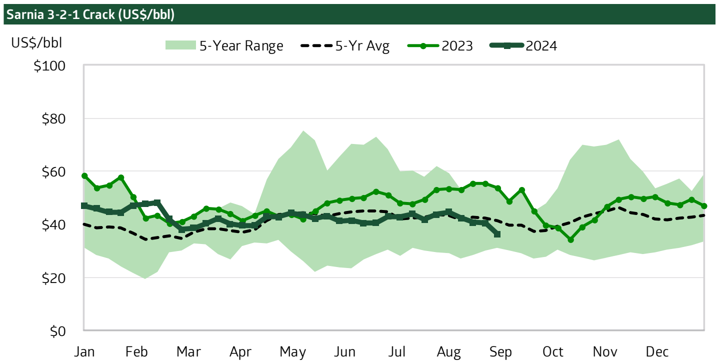
US$/bbl	Last	Δ 1Y	Δ 5 Yr Avg
Edmonton 3-2-1 Crack	$38.52	-26.8%	-11.6%

Montreal 3-2-1 Crack (US$/bbl)



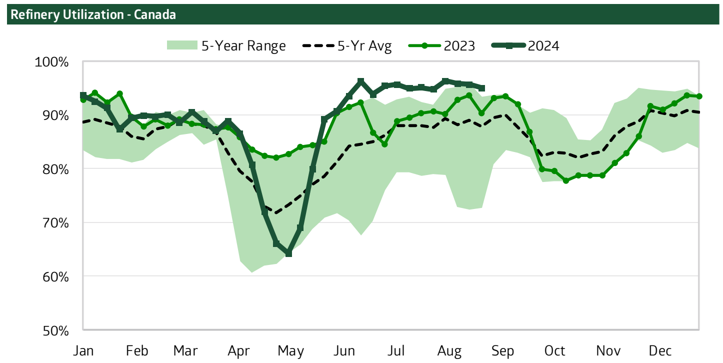
US$/bbl	Last	Δ 1Y	Δ 5 Yr Avg
Montreal 3-2-1 Crack	$63.03	-19.4%	11.9%

Sarnia 3-2-1 Crack (US$/bbl)



US$/bbl	Last	Δ 1Y	Δ 5 Yr Avg
Sarnia 3-2-1 Crack	$36.46	-32.1%	-11.6%

Refinery Utilization - Canada

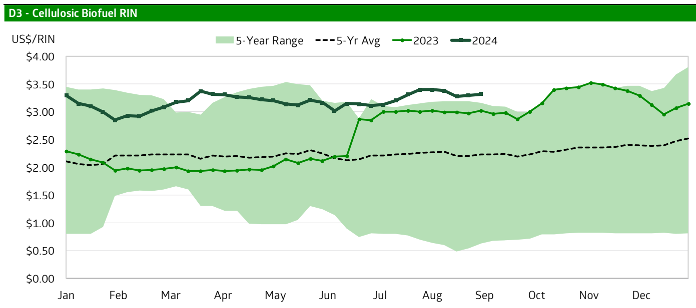


%	Last	Δ 1Y	Δ 5 Yr Avg
Refinery Utilization	95%	4.6%	7.1%

Source: Bloomberg, CER, TD Cowen

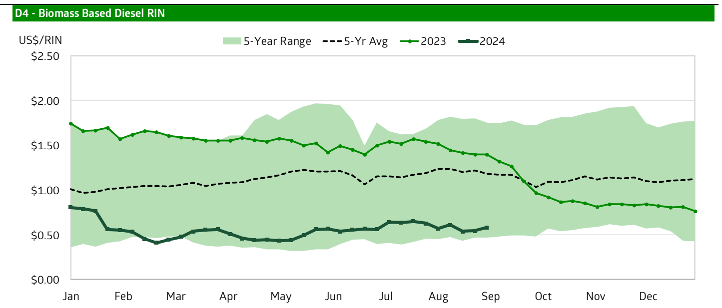
Figure 11 - U.S. Renewable Identification Numbers (RINs) Trading Prices

D3 - Cellulosic Biofuel RIN



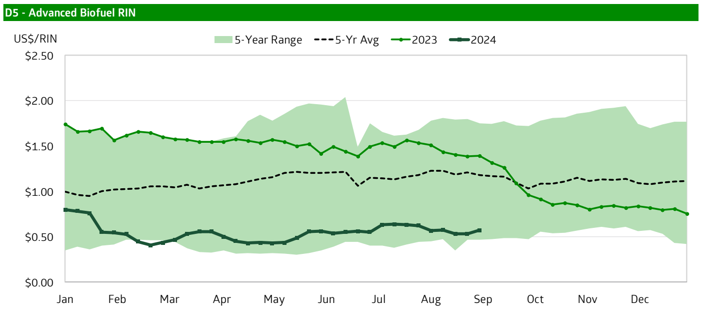
US$/RIN	Last	Δ 1Y	Δ 5 Yr Avg
D3 - Cellulosic Biofuel RIN	$3.32	9.9%	48.7%

D4 - Biomass Based Diesel RIN



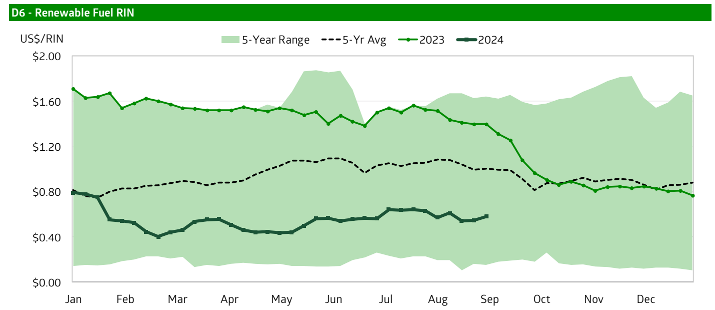
US$/RIN	Last	Δ 1Y	Δ 5 Yr Avg
D4 - Biomass Based Diesel RIN	$0.58	-58.4%	-51.0%

D5 - Advanced Biofuel RIN



US$/RIN	Last	Δ 1Y	Δ 5 Yr Avg
D5 - Advanced Biofuel RIN	$0.57	-59.0%	-51.6%

D6 - Renewable Fuel RIN

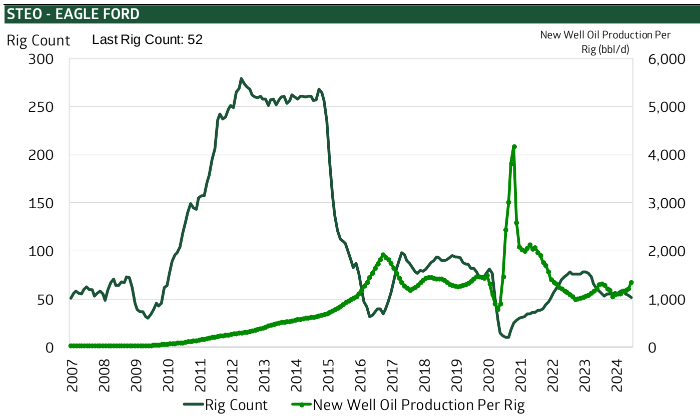


US$/RIN	Last	Δ 1Y	Δ 5 Yr Avg
D6 - Renewable Fuel RIN	$0.58	-58.4%	-42.1%

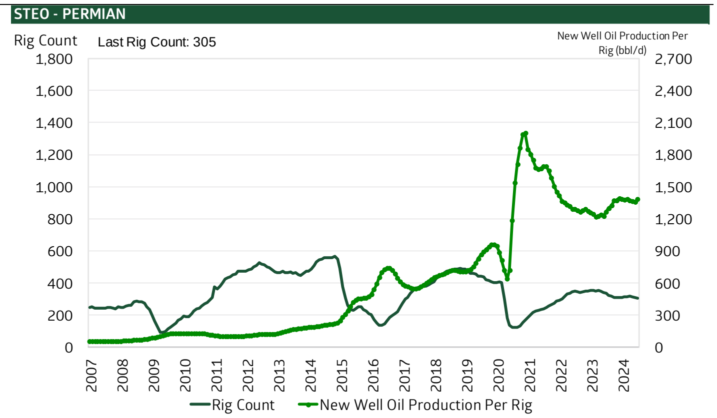
Source: Bloomberg, TD Cowen

Figure 12 - U.S. and International Rig Counts & Rig Productivity for Select U.S. Oil Plays

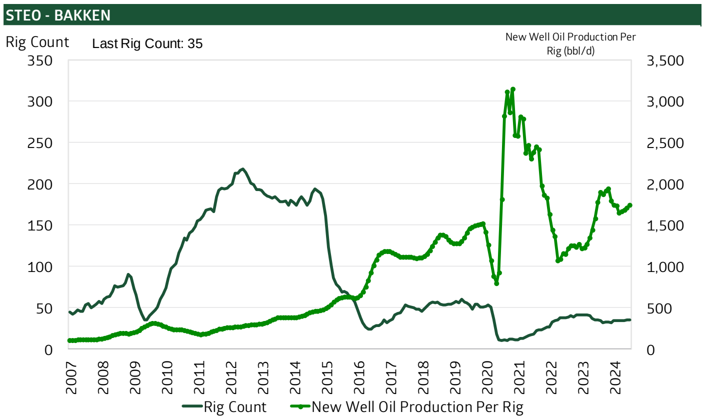
STEO - EAGLE FORD



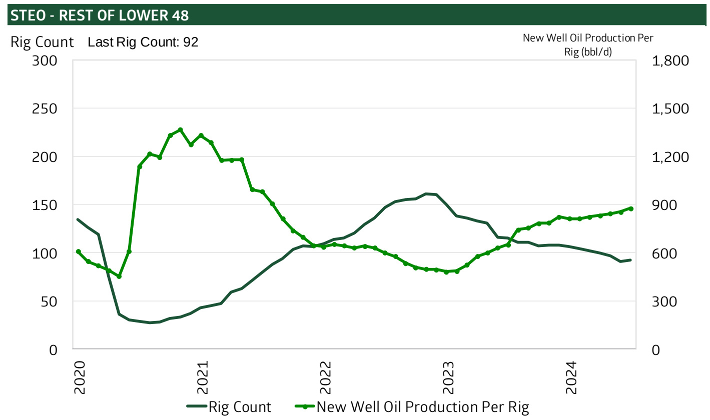
STEO - PERMIAN



STEO - BAKKEN



STEO - REST OF LOWER 48



NORTH AMERICA ROTARY RIG COUNT

	9/1/2023	8/23/2024	8/30/2024	Δ W/W	Δ Y/Y
U.S.					
U.S. Land	611	566	563	-1%	-8%
U.S. Inland Waters	3	0	1	n/a	-67%
U.S. Offshore	17	19	19	0%	12%
Total U.S.	631	585	583	0%	-8%
U.S. Oil	512	483	483	0%	-6%
U.S. Gas	114	97	95	-2%	-17%
U.S. Misc.	5	5	5	0%	0%
Canada					
Canada Oil	115	153	153	0%	33%
Canada Gas	72	66	67	2%	-7%
Total Canada	187	219	220	0%	18%
Total North America	818	804	803	0%	-2%

INTERNATIONAL ROTARY RIG COUNT

	7/31/2023	6/30/2024	7/31/2024	Δ M/M	Δ Y/Y
Latin America	177	161	154	-4%	-13%
Oil	160	150	142	-5%	-11%
Gas	17	16	15	-6%	-12%
Europe	124	119	118	-1%	-5%
Oil	57	51	58	14%	2%
Gas	58	59	57	-3%	-2%
Africa	102	105	108	3%	6%
Oil	85	96	90	-6%	6%
Gas	8	9	9	0%	13%
Middle East	334	342	345	1%	3%
Oil	260	267	259	-3%	0%
Gas	70	69	77	12%	10%
Asia	224	230	209	-9%	-7%
Oil	160	178	172	-3%	8%
Gas	45	42	39	-7%	-13%
Total International	961	957	934	-2%	-3%

* Regional totals include miscellaneous rigs not classified as an oil rig or a gas rig.

* Charts are now based on STEO data (was previously based on DPR data) and the Rest of Lower 48 includes Anadarko and Niobrara

Source: Bloomberg, TD Cowen

VALUATION METHODOLOGY AND RISKS

Valuation Methodology

Energy Producers:

Our target prices for the Canadian Integrateds, E&Ps and Energy Royalties are derived through a combination of: i) a multiple (based on historical trading ranges) applied to forward Debt Adjusted Cash Flow (DACF), and ii) a DCF-based Net Asset Value estimate (NAV).

Investment Risks

Energy Producers:

Risks include: the loss of key employees, disappointing drilling results, volatile commodity prices, operating cost increases, capital cost overruns, product supply and demand, unplanned third-party infrastructure outages, financing/access to capital, government regulations, legislation, royalties, taxes, exchange rates, interest rates and environment and weather concerns.

ADDENDUM

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The recommendation contained in this report was produced at September 5, 2024, 14:35ET. and disseminated at September 5, 2024, 14:35ET.

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As of April 1, 2024, The Research Department of Cowen and Company, LLC merged into TD Securities (USA) LLC.

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Buy (1): The stock is expected to achieve total return of +15% or more over the next 12 months

Hold (2): The stock is expected to achieve a total return that falls between -10% to +15% over the next 12 months

Sell (3): The stock is expected to achieve a total return of -10% or below over the next 12 months

Suspended (4): Due to evolving circumstances and potential conflicts of interest, we can no longer generate what we consider a defensible rating at the current time

Assumption: The expected total return calculation includes annual return and forecasted dividend yield

Cowen and Company, LLC Equity Research Rating Definitions applicable from 6:00PM ET March 22, 2024

Buy (1): The stock is expected to achieve total return of +15% or more over the next 12 months

Hold (2): The stock is expected to achieve a total return that falls between -10% to +15% over the next 12 months

Sell (3): The stock is expected to achieve a total return of -10% or below over the next 12 months

Suspended (4): Due to evolving circumstances and potential conflicts of interest, we can no longer generate what we consider a defensible rating at the current time

Assumption: The expected total return calculation includes annual return and forecasted dividend yield

Cowen and Company, LLC Equity Research Rating Definitions applicable until 5:59PM ET March 22, 2024

Outperform (1): The stock is expected to achieve a total positive return of at least 15% over the next 12 months

Market Perform (2): The stock is expected to have a total return that falls between the parameters of an Outperform and Underperform over the next 12 months

Underperform (3): Stock is expected to achieve a total negative return of at least 10% over the next 12 months

Assumption: The expected total return calculation includes anticipated dividend yield

TD Securities, Inc. Equity Research Rating Definitions applicable from 6:00PM ET March 22, 2024

Buy (1): The stock is expected to achieve total return of +15% or more over the next 12 months

Hold (2): The stock is expected to achieve a total return that falls between -10% to +15% over the next 12 months

Sell (3): The stock is expected to achieve a total return of -10% or below over the next 12 months

Suspended (4): Due to evolving circumstances and potential conflict of interest, we can no longer generate what we consider a defensible rating at the current time.

Assumption: The expected total return calculation includes annual return and forecasted dividend yield

TD Securities, Inc. Equity Research Rating Definitions applicable until 5:59PM ET March 22, 2024

Action List Buy: The stock's total return is expected to exceed a minimum of 15% (with higher thresholds for less liquid, more risky securities) over the next 12 months and it is a top pick in the Analyst's sector.

Buy: The stock's total return is expected to exceed a minimum of 10% (with higher thresholds for less liquid, more risky securities) over the next 12 months.

Speculative Buy: The stock's total return is expected to exceed a minimum of 30% over the next 12 months (with higher thresholds for less liquid securities); however, there is material event risk associated with the investment that could result in a significant loss.

Hold: The stock's total return is expected to be between 0% and 10%, (with higher thresholds for less liquid, more risky securities) over the next 12 months.

Tender: Investors are advised to tender their shares to a specific offer for the company's securities or to support a proposed combination reflecting our view that a superior offer is not forthcoming.

Reduce: The stock's total return is expected to be negative over the next 12 months.

Suspended: Due to evolving circumstances, we can no longer generate what we consider a defensible target price and rating at the current time.

Under Review: Our rating is under review pending additional information and/or analysis. The prior rating should not be relied on.

Not Rated: We do not currently produce a recommendation and a target price on this security.

TD Cowen Equity Research Rating Distribution

Distribution of Ratings/Investment Banking Services (IB) as of 06/30/24

Rating	Count	Ratings Distribution	Count	IB Services/Past 12 Months
Buy	833	67.34%	284	34.09%
Hold	395	31.93%	89	22.53%
Sell	9	0.73%	1	11.11%

TD Cowen Equity Research Rating Distribution Table does not include any subject company for which the equity research rating is currently suspended.

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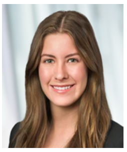

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