

# Crude Oil Market Fundamentals

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# Crude Oil Benchmarks

The composition of crude oil varies greatly, and it is typically graded on its density (measured in API gravity - light, medium, heavy) and sulfur content ( $< 0.5\%$  = 'sweet';  $> 0.5\%$  = 'sour'). As such, there are numerous global crude oil benchmarks, based on the various grades, that are used as a reference point for buyers and sellers. The two major global benchmarks are West Texas Intermediate (WTI) and Brent.

- **West Texas Intermediate (WTI)** - A major North American crude oil benchmark. WTI is a light sweet grade of crude oil, benchmarked to crude oil produced in western Texas with an API gravity of around 40 degrees and priced at Cushing, Oklahoma.
- **Brent** - A major global crude oil benchmark. Similar to WTI, Brent is based on a blend of light sweet crude oils produced in the North Sea with an API gravity of around 40 degrees.
- **Western Canadian Select (WCS)** - A blend of Canadian heavy and bitumen sour crude oils, mixed with sweet synthetic and condensates with an API gravity of around 21 degrees. WCS is priced at Hardisty, Alberta and is often used as the representative price for Canadian heavy crude oils.
- **Edmonton Par** - A light, sweet blend of conventionally produced crude oils in western Canada, and is priced at Edmonton, Alberta. Edmonton Par is also referred to as Mixed Sweet Blend (MSW) and Edmonton Light.

# Summary of Crude Oil Market Fundamentals

## Global Crude Oil and Liquids Supply

- Based on the latest short-term forecast (at the time of this publication) from the US Energy Information Administration (EIA), global crude oil and liquids supply is expected to average 104.4 MMB/d in 2025, up 1.8 MMB/d (+1.7%) from 2024. The EIA has also released its 2026 forecast and is calling for global crude oil and liquids supply of 105.9 MMB/d, representing a 1.5 MMB/d increase relative to its 2025 forecast. In December 2024, OPEC+ announced an extension of its existing supply cuts of 3.7 MMB/d to the end of 2026. The group's additional 2.2 MMB/d of voluntary supply cuts were also extended to the end of September 2026 and will be gradually phased out every month commencing in April 2025.<sup>(1)</sup>

## Global Crude Oil and Liquids Demand

- Based on the average of the January 2025 short-term outlooks from the EIA and OPEC, global crude oil and liquids demand is expected to average 104.7 MMB/d in 2025, up 1.4 MMB/d Y/Y (+1.2%).

## Global Crude Oil and Liquids Supply/Demand Balance

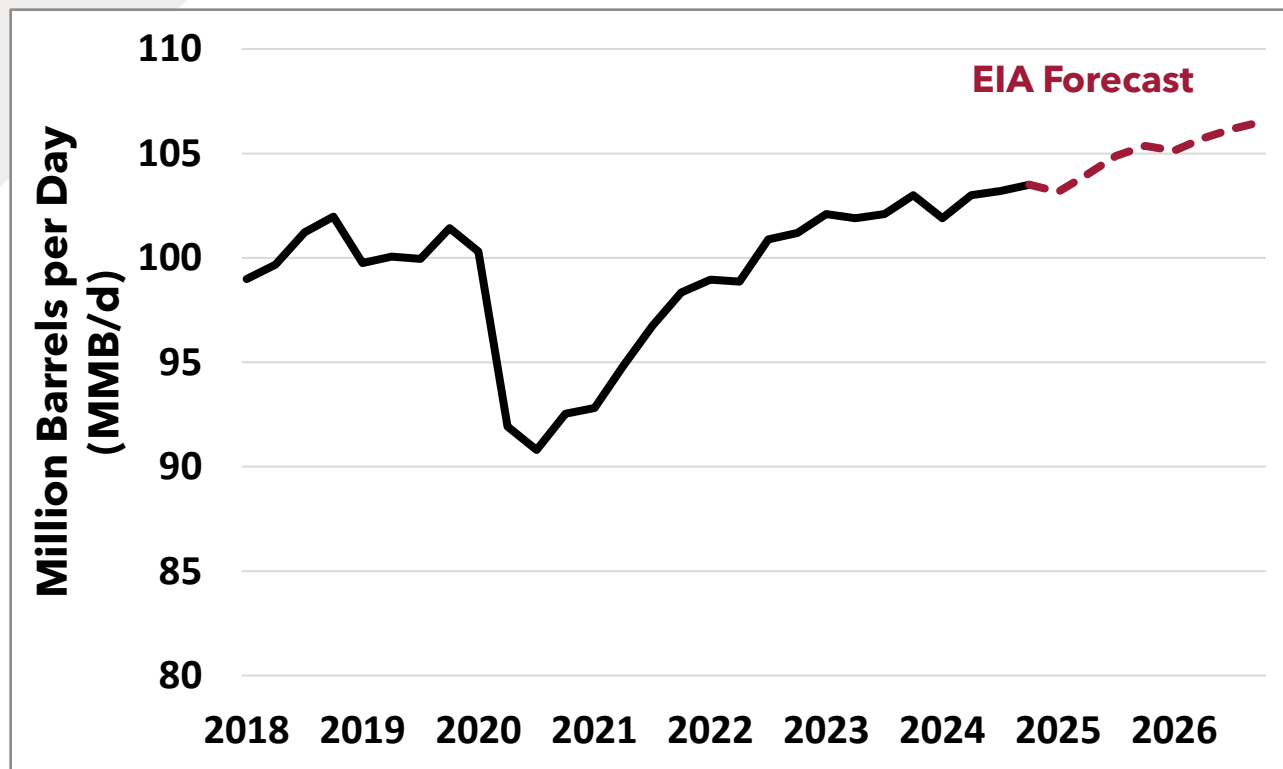
- Based on the latest monthly EIA Short-Term Energy Outlook (Jan 2025), a supply surplus is expected in 2025 as demand growth in 2025 is expected to accelerate from 2024, driven by a marginally improved economic outlook. However, non-OPEC+ supply from the US, Brazil, Guyana, and Canada is expected to exceed demand growth.
- In 2024, price volatility amplified amidst increased geopolitical tensions in the Middle East and the threat of slowing demand growth. WTI has strengthened to begin 2025 driven by increased sanctions on Russian oil from the US. Based on the futures market, the average price for WTI in 2025 is roughly US\$75/B.

## WCSB Supply and Egress

- The amount of egress capacity out of the Western Canadian Sedimentary Basin (WCSB) influences Canadian crude oil prices. The Trans Mountain Expansion Project (TMEP) reached commercial operation in May 2024, adding 590 MB/d of pipeline export capacity, which has had a positive impact on Canadian crude oil differentials.

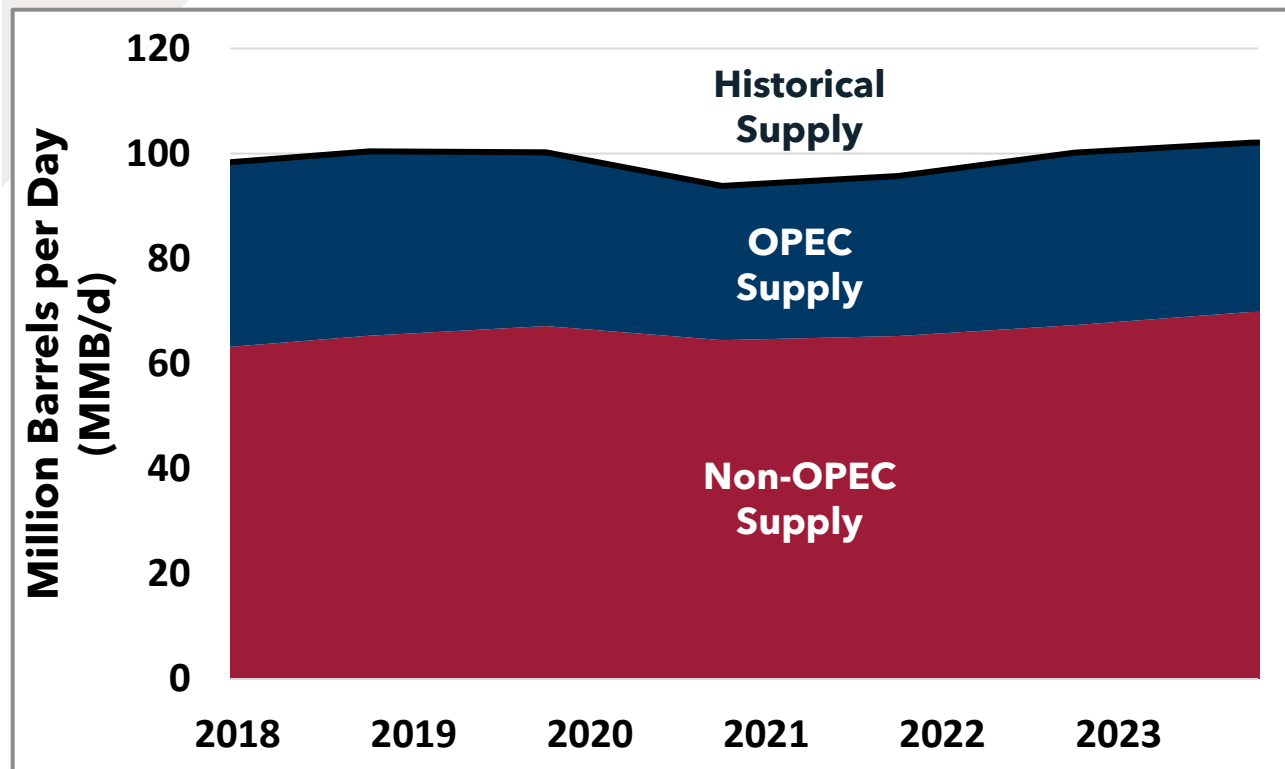
# Global Crude Oil and Liquids

## Short-Term Global Crude Oil and Liquids Supply Outlooks<sup>(1)</sup> | Quarterly | 2018 to 2026e



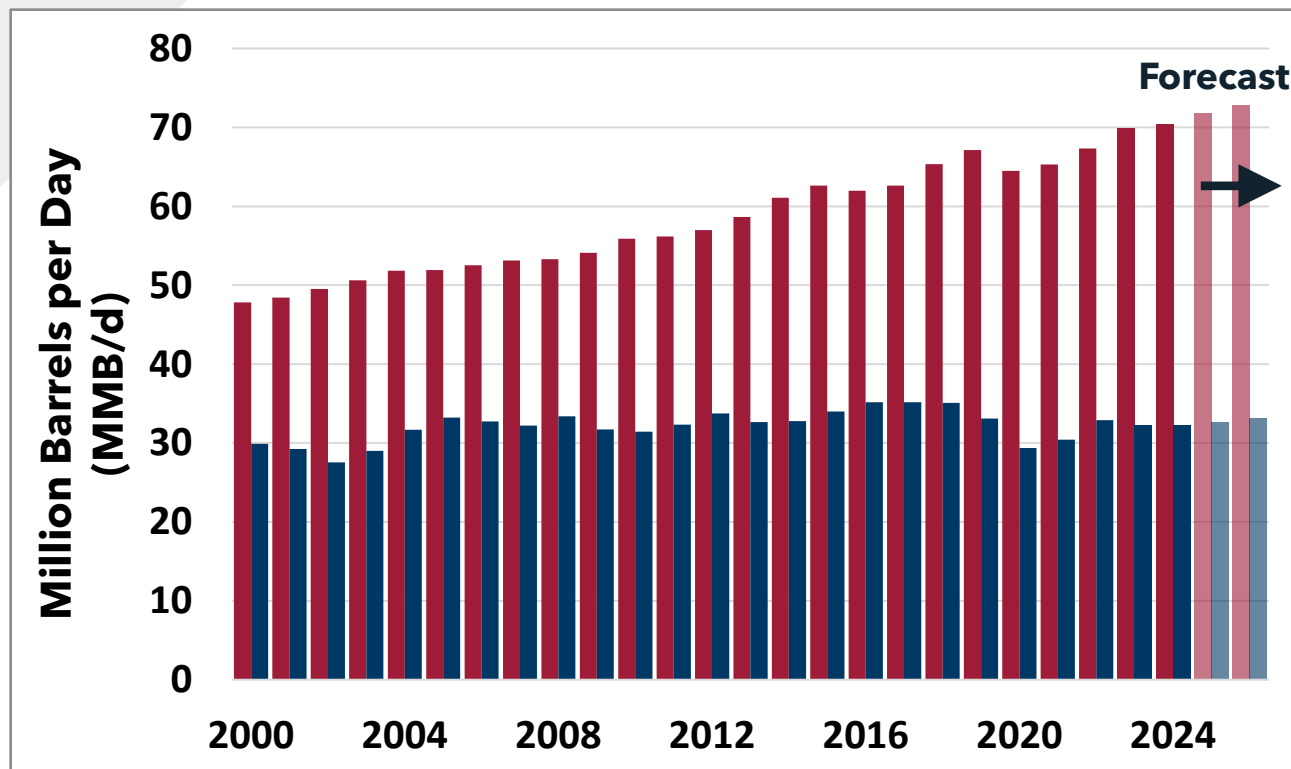
- Based on the January 2025 short-term outlook from the EIA, global crude oil and liquids supply is expected to average 104.4 MMB/d in 2025, up 1.8 MMB/d (+1.7%) from 2024.
- The EIA has released its 2026 forecast and is calling for global crude oil and liquids supply of 105.9 MMB/d, representing a 1.5 MMB/d increase relative to its 2025 forecast.
- The increase in global supply growth year-over-year in 2025 is expected to be driven by the unwinding of OPEC+ production cuts and strong non-OPEC+ production growth.
- Note - this forecast does not consider the sanctions imposed by the US on Russia's oil sector that were announced on January 10<sup>th</sup>.<sup>(2)</sup>

# Global Crude Oil and Liquids Supply by OPEC and Non-OPEC | Annual | 2018 to 2024



- From 2000 to 2024, OPEC's market share has decreased from roughly 38% to 30%.
- Russia, along with several smaller producing countries, make up part of a broader organization called OPEC+. When Russia's production of roughly 10-11 MMB/d is included along with other smaller producers, OPEC+ accounts for closer to 50% of the total global supply.
- Despite the smaller market share, OPEC remains the balancing force in the market, as the cartel has exerted its influence on pricing via its voluntary supply cuts.

# Non-OPEC vs. OPEC Supply Growth | Annual | 2000 to 2026e



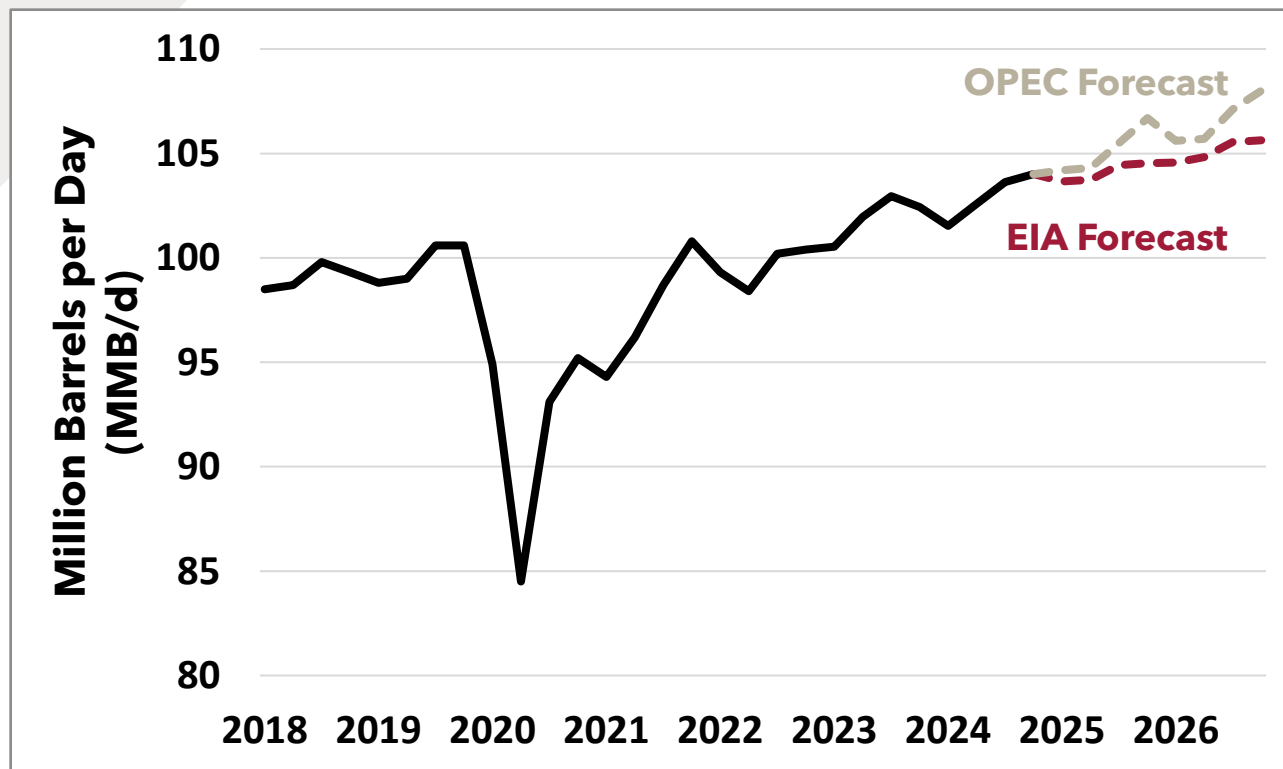
Between 2000 and 2024, non-OPEC supply has grown by over 45% to roughly 69 MMB/d from 70 MMB/d, predominantly driven by the US.

Over the same period, OPEC supply has increased by roughly 10% to 32 MMB/d from 30 MMB/d. However, voluntary production cuts have been in effect since 2020 to stabilize the global supply/demand balance. In December 2024, the group announced an extension of its baseline and voluntary supply cuts into 2026.<sup>1</sup>

Strong growth from non-OPEC countries has limited the cartel's ability to grow volumes.

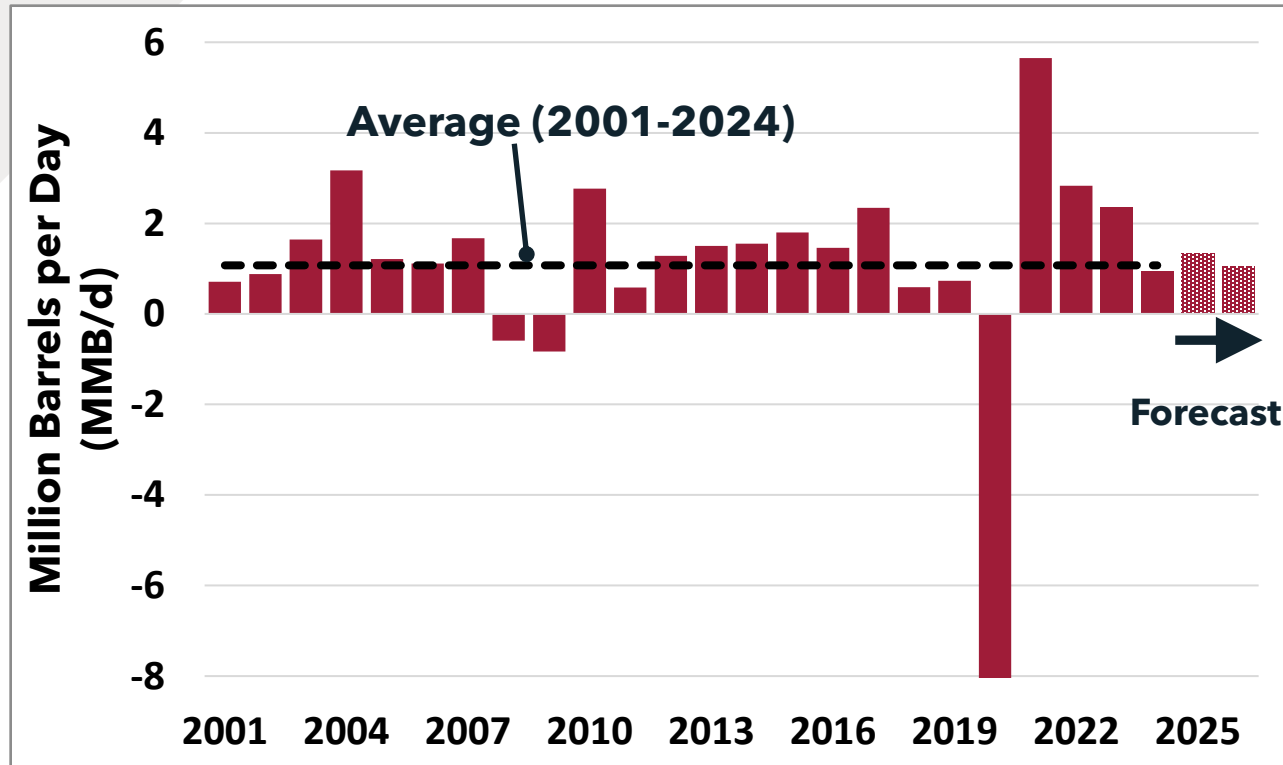


## Short-Term Global Crude Oil and Liquids Demand Outlooks | Quarterly | 2018 to 2026e



- Based on the average of the January 2025 short-term outlooks from the EIA and OPEC, global crude oil and liquids demand is expected to average 104.7 MMB/d in 2025, up 1.4 MMB/d Y/Y (+1.2%).
- Demand growth in 2025 varies by agency. In MMB/d annual growth, the EIA, and OPEC are forecasting 1.3, and 1.5, respectively.
- Moreover, the EIA and OPEC have unveiled their 2026 global crude oil and liquids demand forecasts, which on average call for 105.9 MMB/d (+1.4 MMB/d Y/Y).

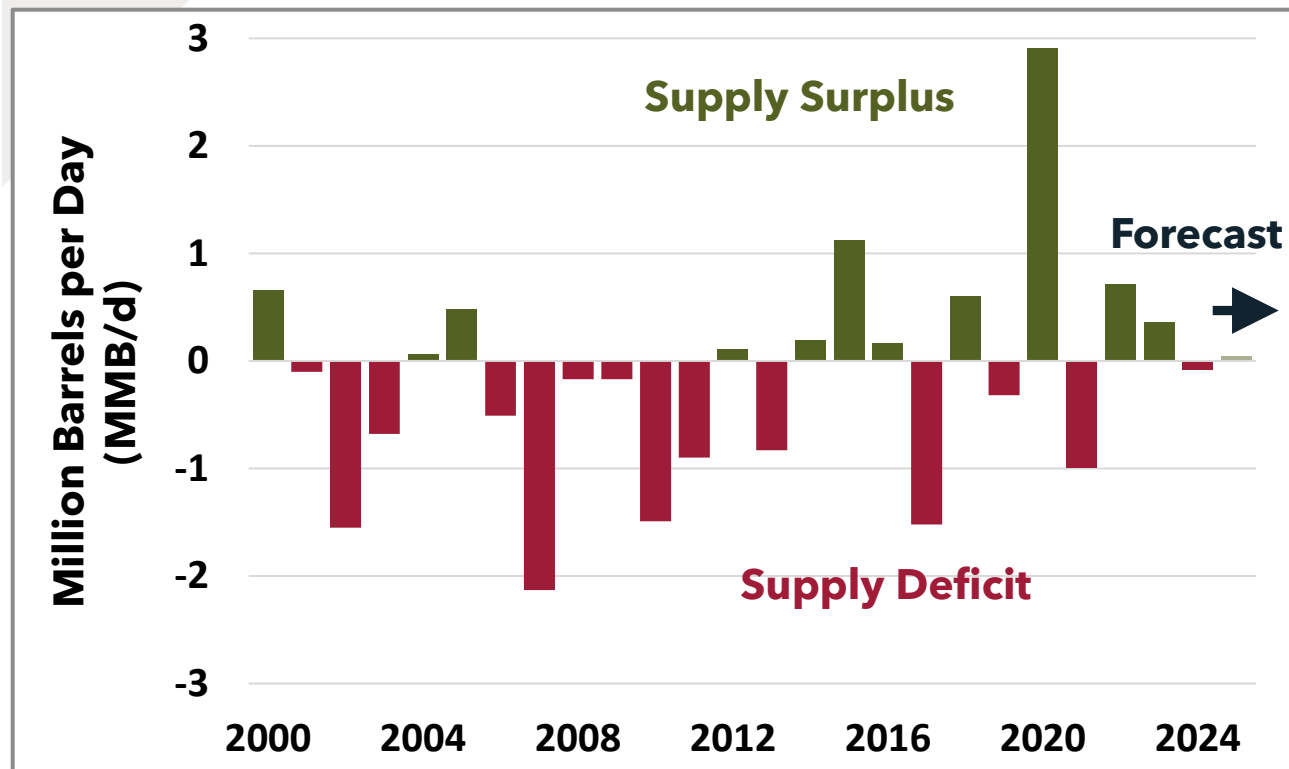
# Annual Demand Growth - EIA | 2001 to 2026e



According to the US Energy Information Administration (EIA), global annual demand growth is poised to accelerate to roughly 1.3 MMB/d in 2025 from 0.9 MMB/d in 2024. Demand growth is expected to be driven by non-OECD countries, namely India.

The EIA's 2025 demand growth expectations exceed the historical annual average of approximately 1.1 MMB/d from 2001 to 2023. Demand growth is expected to be 1.1 MMB/d in 2026, in-line with the historical average.

## EIA Short-Term Global Crude Oil and Liquids Supply/Demand Balance Outlook | Annual | 2000 to 2025e

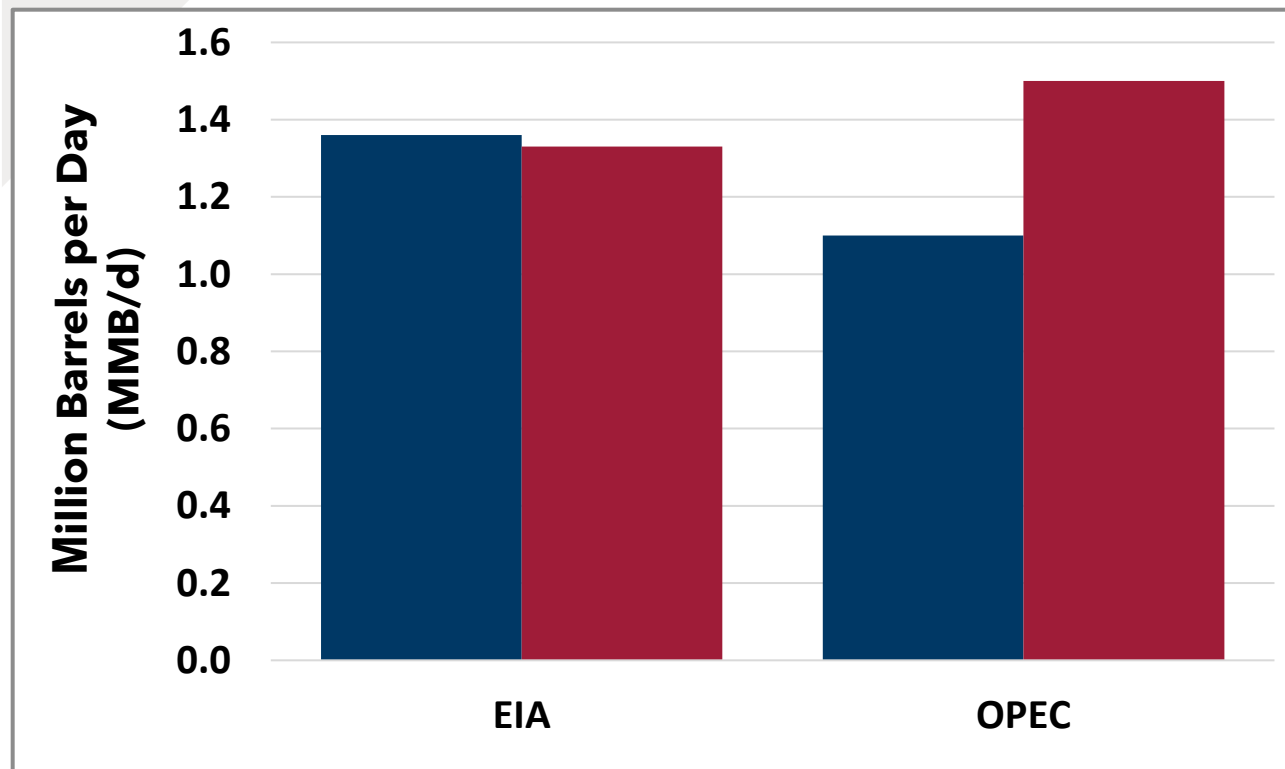


Based on the January 2025 EIA Short-Term Energy Outlook, global supply growth in 2025 is expected to outpace demand, creating a surplus.

Demand growth in 2025 is expected to accelerate from 2024, driven by a marginally improved economic outlook. However, non-OPEC+ supply from the US, Brazil, Guyana, and Canada is expected to exceed demand growth.

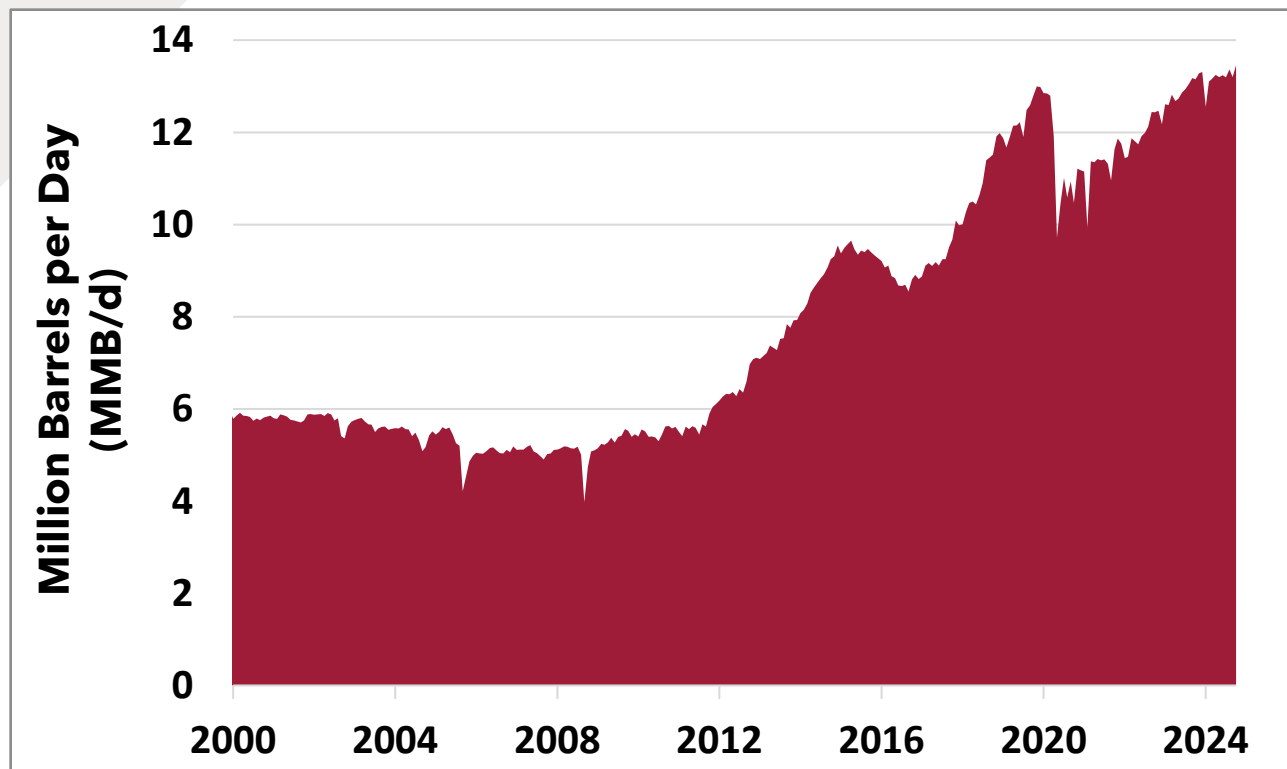
Note - the EIA's forecast does not consider the sanctions imposed by the US on Russia's oil sector that were announced on January 10<sup>th</sup>.<sup>(1)</sup>

# Non-OPEC Supply vs. Global Demand Growth Outlooks | 2025e



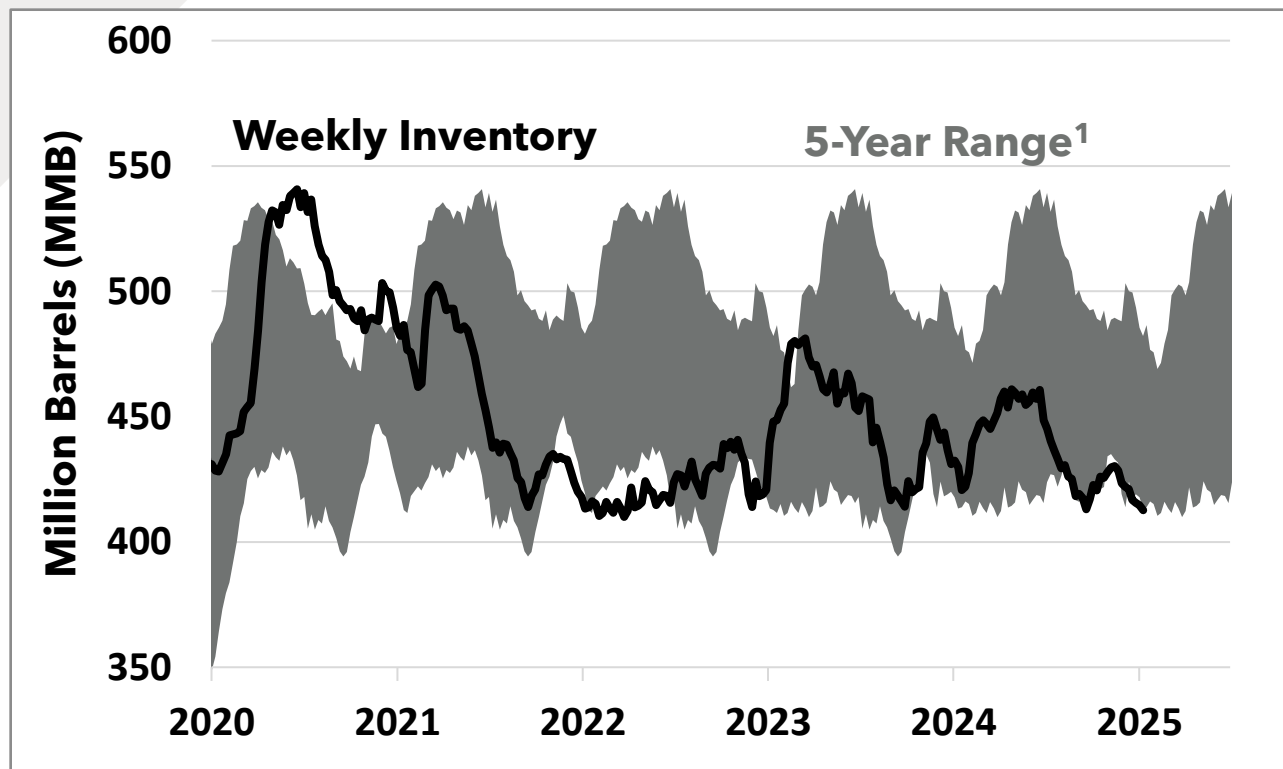
- In 2025, OPEC is forecasting global demand growth to outpace non-OPEC supply growth. Meanwhile, the EIA sees a tighter balance with non-OPEC supply growth eclipsing global demand growth in 2025.
- For context, OPEC is forecasting global demand growth outpacing non-OPEC supply growth by roughly 0.4 MMB/d. In contrast, the EIA is forecasting that non-OPEC supply growth will outpace global demand growth by 0.03 MMB/d
- Major sources of non-OPEC supply growth in 2025 are expected to be the US, Brazil, Guyana, and Canada. Voluntary supply cuts from OPEC+ are required to offset growth from these sources.

# US Crude Oil Production (Excl. NGLs) | Monthly | 2000 to Oct 2024



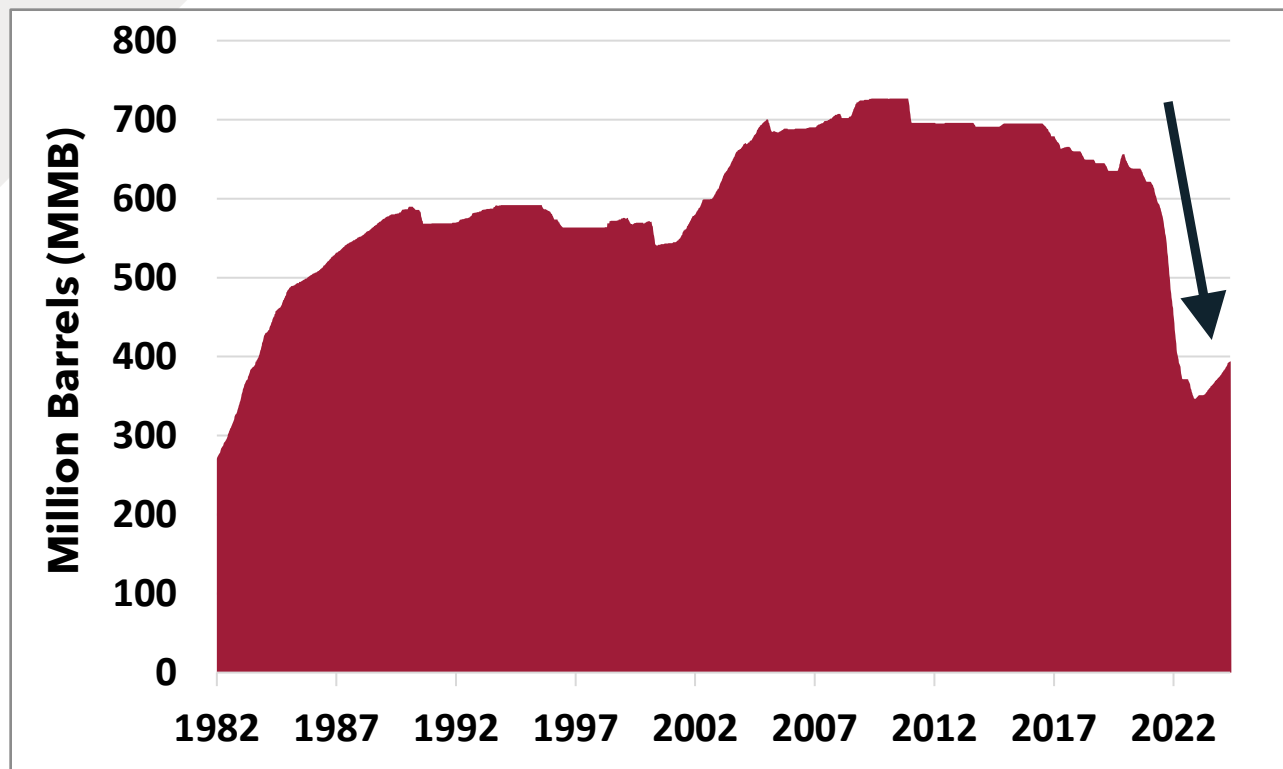
- ▶ The US continues to be a major source of non-OPEC supply growth. As of October 2024, crude oil production was 13.4 MMB/d, up slightly month-over-month compared to 13.2 MMB/d in September 2024 and up year-over-year compared to 13.1 MMB/d in July 2023.
- ▶ In August 2023, US crude oil production surpassed its pre-COVID peak of 13 MMB/d. Despite a declining rig count, US volumes surged in 2023, supported by a robust inventory of drilled but uncompleted (DUC) wells.
- ▶ Following roughly 1 MMB/d of growth in 2023, US production growth slowed in 2024.

# US Commercial Crude Inventories (Excl. SPR) | Weekly | 2020 to Jan 2025



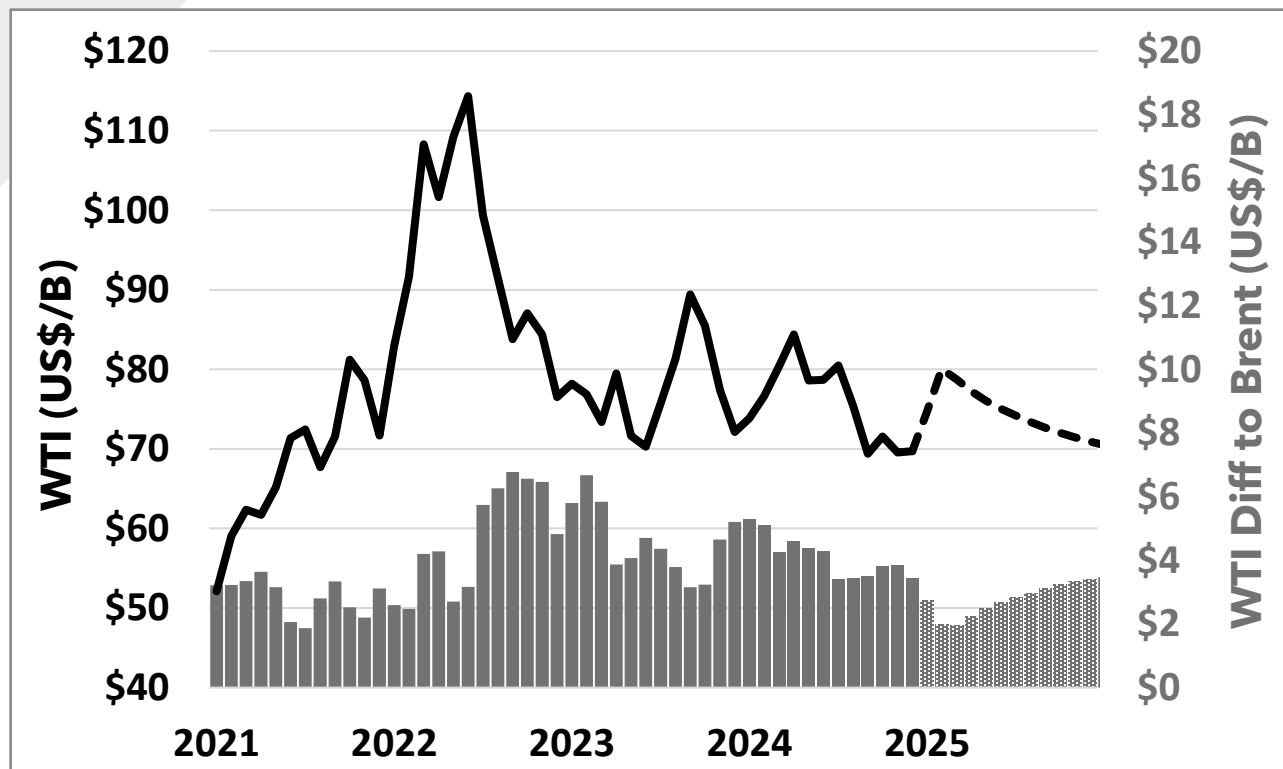
- Given its standing as the top global oil consumer, US commercial crude inventories are a crucial oil market indicator because they are published weekly and are therefore the most real-time, available public data on inventories. Oil market prices are impacted when the weekly data differs from market expectations.
- In 2022, US commercial crude inventories were at or below the minimum of the 5-year range, implying a tight market and supportive of higher prices. The market continues to remain tight, as evidenced by inventory levels.
- The US Strategic Petroleum Reserve (SPR) is not included in this data. In the 2022 energy shock, the SPR was used as a lever to add supply to soften prices.

# US Strategic Petroleum Reserve | Weekly | Aug 20th, 1982 to Jan 10<sup>th</sup>, 2025



- The US Strategic Petroleum Reserve (SPR) is an emergency stockpile of crude oil that was developed in 1975 by the US Department of Energy as a tool to mitigate potential future supply disruptions following the 1973-1974 oil embargo. The SPR currently has an authorized storage capacity of 714 MMB.<sup>1</sup>
- In 2022, the Biden administration authorized the release of 180 MMB from the SPR<sup>2</sup> to combat rising gasoline and other petroleum fuel prices following supply disruptions associated with Russia's invasion of Ukraine. As a result, SPR stockpiles fell to roughly 346 MMB, its lowest level since 1983.
- These volumes will need to be replenished in the future.

# Global Crude Oil Benchmarks | Monthly | 2022 to 2025e

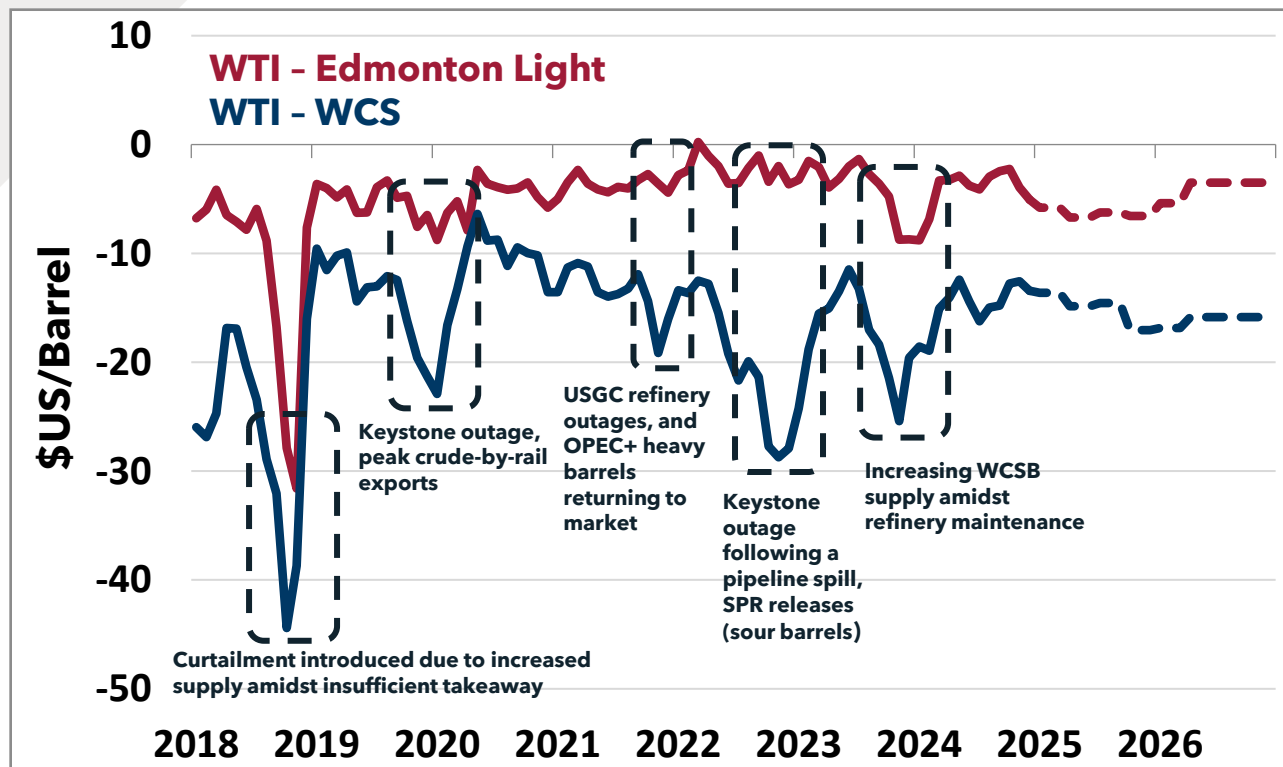


- In 2022, WTI oil price (daily) spiked to over US\$120/B as a result of the energy crisis spurred by Russia's invasion of Ukraine.
- 2023 was a more moderate pricing environment, as WTI averaged approximately US\$78/B, notwithstanding significant volatility.
- In 2024, price volatility amplified amidst increased geopolitical tensions in the Middle East and the threat of slowing demand growth.
- WTI has strengthened to begin 2025 driven by increased sanctions on Russian oil from the US. Looking ahead, based on the futures market, the average price for WTI in 2025 is roughly US\$75/B.



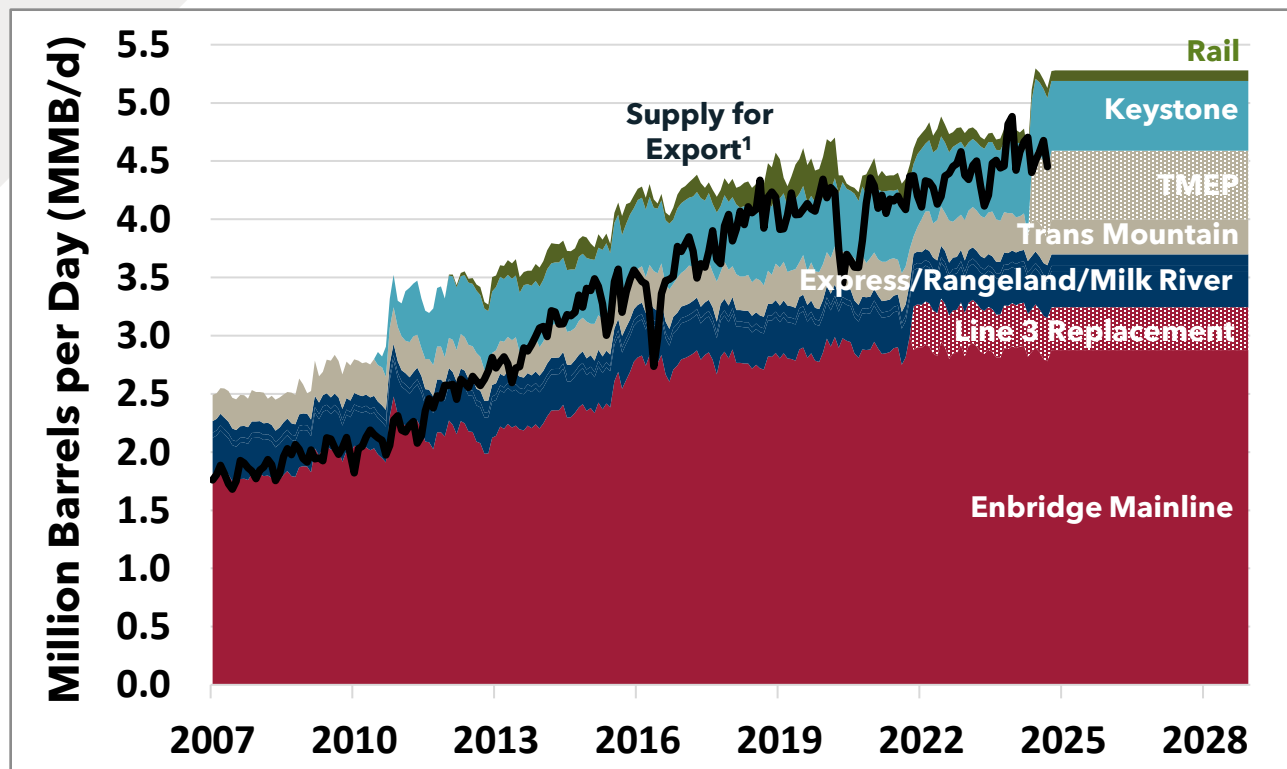
# WCSB Crude Oil

# Canadian Crude Oil Benchmarks | Monthly | 2022 to 2025e



- The Trans Mountain Expansion Project (TMEP) has positively impact crude oil differentials (WTI - Edmonton Light; WTI - WCS); the pipeline reached commercial operation in May 2024.
- Depending on the pace of growth out of the Western Canadian Sedimentary Basin (WCSB), the additional 590 MB/d of pipeline capacity will reduce the risk of total supply exceeding takeaway capacity in the near term, which has historically caused differentials to widen.
- The forward curves for Edmonton Light and Western Canadian Select (WCS) are pricing differentials relative to WTI of US\$(6.33)/B and US\$(15.02)/B for 2025, respectively.

# WCSB Egress Outlook | Pipeline Capacity vs. Supply | Monthly | 2007 to Sep 2024



- Canadian crude oil benchmarks are negatively impacted when supply from the Western Canadian Sedimentary Basin (WCSB) approaches total egress capacity. The Trans Mountain Expansion Project (TMEP) reached commercial operation in May 2024, adding 590 MB/d of pipeline capacity.
- The TMEP should provide a buffer for volumes to grow in the WCSB in the coming years without negatively impacting price differentials.