



**October 7, 2024**



**The TXOGA Chartbook serves as an essential resource for our members and those keen on comprehending the data that narrate ongoing developments within the economy and the oil and gas sectors, both internationally and domestically, including specific trends in Texas.**

## **Key points for the week of October 7, 2024**

- **U.S. economic indicators strengthened.** As non-farm payrolls added 254,000 in September, the unemployment rate dropped to 4.1%, per the Bureau of Labor Statistics (BLS). Yields on high-yield corporate bonds fell by 0.5% week-over-week (w/w) to 11.7%, while 30-day Fed Funds futures remained steady at 4.8%, reducing the risk premium for lower-credit-quality bonds to 6.9%, its lowest since June 2021. Business conditions, as measured by the ADS Index from the Philadelphia Federal Reserve, indicate a continuation of solid GDP growth for Q4 2024.
- **Middle East geopolitics drove oil prices higher, while market fundamentals remained solid.** With the escalation of Middle East tensions, oil prices rose by \$7 per barrel w/w to over \$75 per barrel as of October 4. In weekly U.S. petroleum market data as of September 27 from the Energy Information Administration (EIA), crude inventories rose by 3.9 million barrels w/w but remained at the bottom of the 5-year range. Petroleum net exports of 2.8 million barrels per day (mb/d) held steady, and domestic consumption remained in the top 30% of the 5-year range. As highlighted in the [Chart of the Week](#), Texas sustained near-record high production of crude oil, natural gas, and natural gas liquids (NGL) in September.
- **U.S. natural gas markets remained solid.** As of October 4, Henry Hub natural gas prices fell by 1.8% w/w to \$2.85 per million Btu but remained up by 33% over the past month. While natural gas inventories continued to increase seasonally in preparation for winter, their position within the 5-year range fell for the 13<sup>th</sup> consecutive week. This normalization of inventories has come amid strong consumption and exports, which outpaced historically high production over the past quarter.



➤ **Texas' production sustained near-record highs in September.** TXOGA's projections show that Texas sustained production near 5.7 million barrels per day (mb/d) of crude oil, natural gas marketed production of 33.3 billion cubic feet per day (bcf/d), and 3.8 mb/d of NGLs in September.

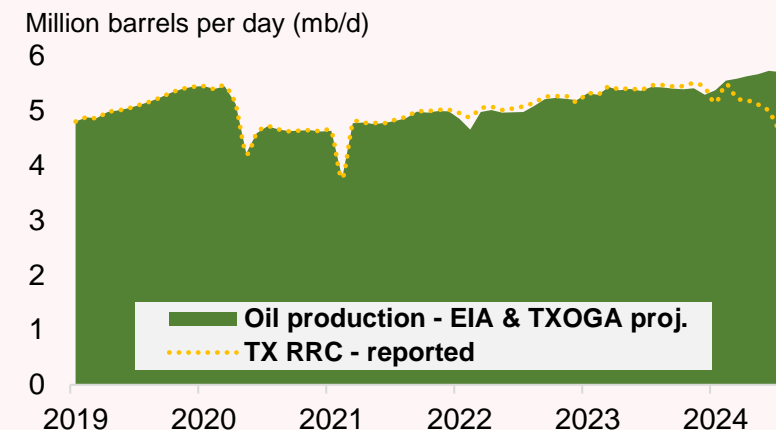
➤ EIA data released on September 30 covering July 2024 were consistent with TXOGA's [projections published on August 12](#):

	<u>TXOGA projection (8/12/24)</u>	<u>EIA report (9/30/24)</u>	<u>Forecast diff.</u>
Crude oil production (mb/d)	5.76	5.71	0.9%
Natural gas marketed production (bcf/d)	32.85	33.34	-1.5%
Natural gas liquids production (mb/d)	3.85	3.85	0.0

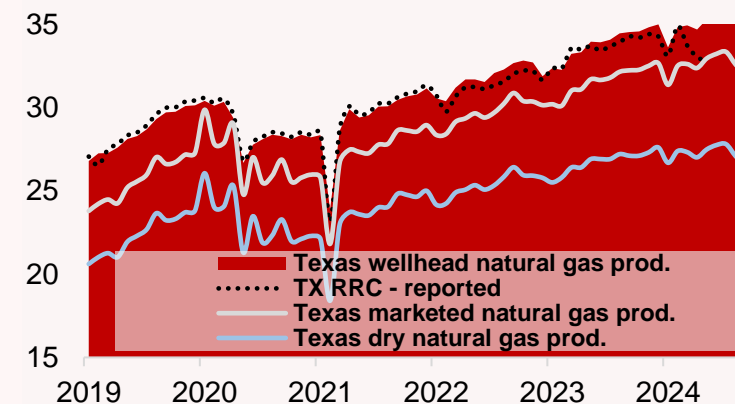
➤ **Texas highlights on EIA data for July 2024**

- Crude oil production: 5.71 mb/d (2nd highest on record)
- Natural gas liquids production: 3.85 mb/d (record high)
- Natural gas gross withdrawals: 35.7 bcf/d (record high)
- Natural gas marketed production: 33.3 bcf/d (record high)

Texas crude oil production, Jan. 2019 – Sep. 2024

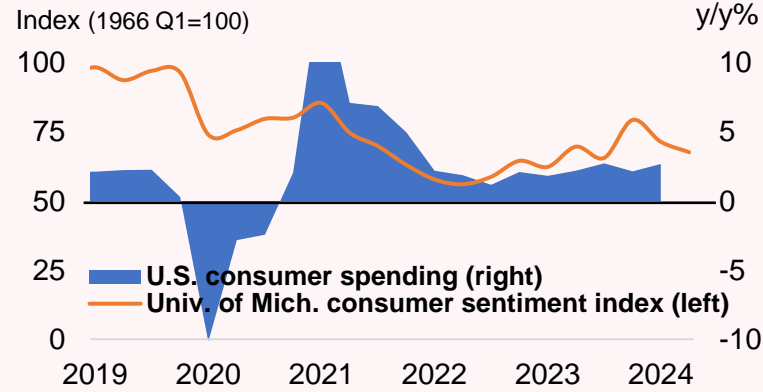


Texas natural gas production, Jan. 2019 – Sep. 2024



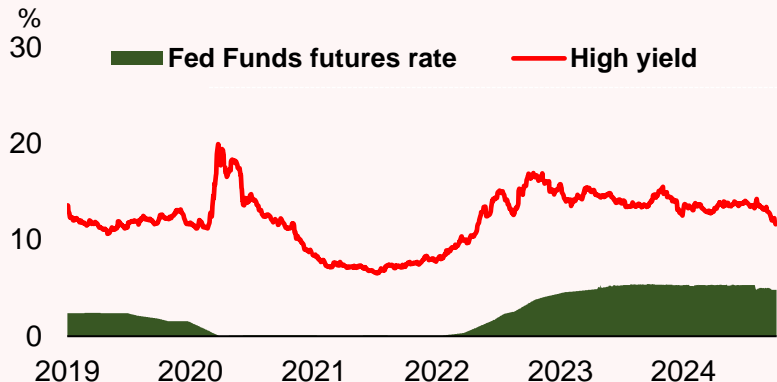
# U.S. economic indicators

## Consumer sentiment vs. spending



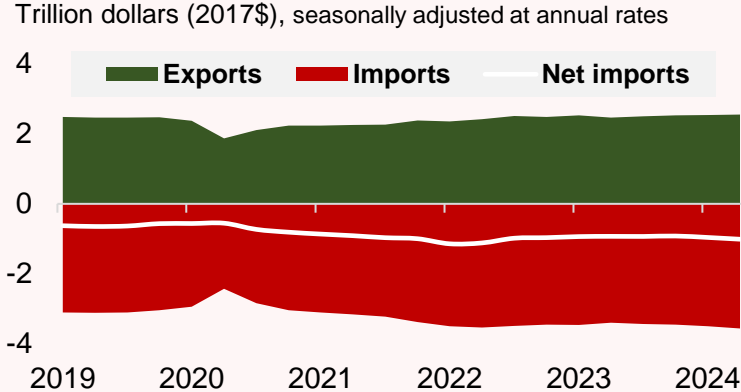
**Consumer resilience.** In updated GDP data from the Bureau of Economic Analysis, consumer spending was slightly revised upwards and remained at growth of 2.7% y/y in Q2 2024. Consumer sentiment rose by 1.8% m/m, according to the University of Michigan's initial survey for September, which historically implies further consumer spending growth for Q3 2024.

## Fed Funds rate and CCC and lower corporate bond yields



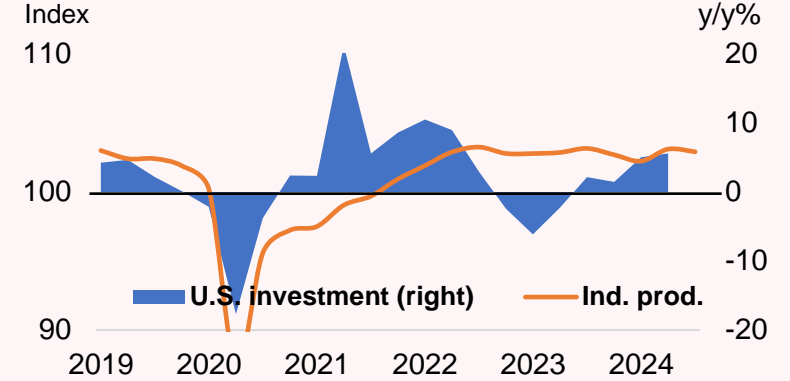
**Decreased bond premium for low credit quality.** High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended Sep. 27, HY rates fell by 0.5% w/w to 11.7%, while Fed Funds futures rate was steady at 4.8%, resulting in a premium for low credit quality of 6.9% -- the lowest since June 2021.

## Real net exports of goods and services



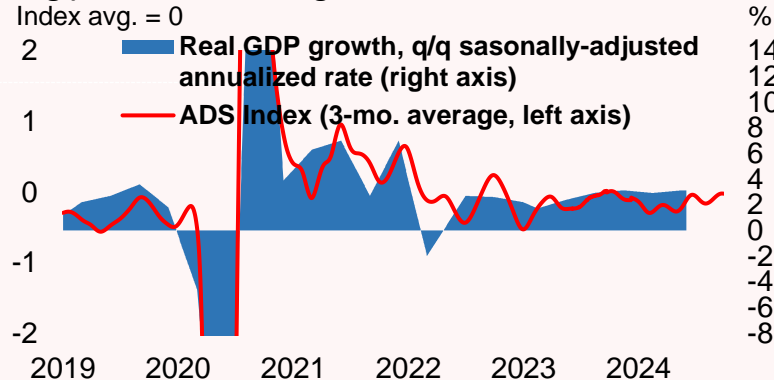
**U.S. petroleum trade surplus revised up for Q2 2024.** The U.S. real trade deficit ran at an annualized rate of \$1.04 trillion in Q2 2024 per BEA. On a nominal basis, the trade surplus for petroleum and products was revised upwards by \$3.1 billion to \$35.7 billion in Q2 2024.

## Industrial production and investment growth



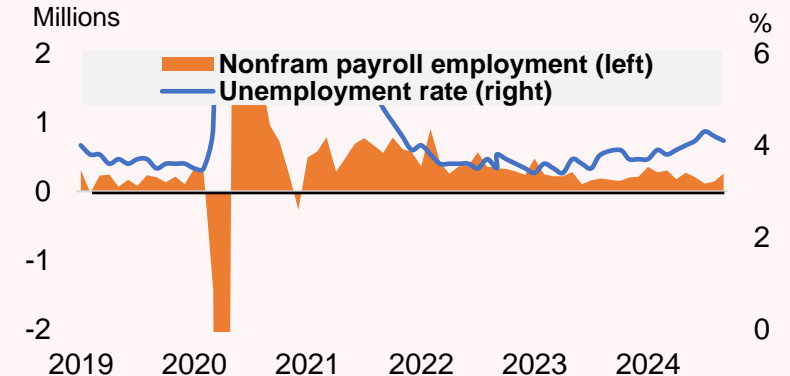
**Solid investment growth.** In updated GDP data for Q2 2024, economy-wide investment grew by 5.6% y/y per BEA. U.S. industrial production rose by 0.8% m/m in August, per the Federal Reserve Board – and continues to suggest investment growth in Q3 2024.

## Aruoba-Diebold-Scotti Business Conditions Index (qtr. avg.) vs. U.S. real GDP growth



**The ADS index stabilized.** The ADS business conditions index, published by the Philadelphia Fed. Res. Bank, is a leading indicator of GDP growth. A rolling 3-month average of the ADS index has accurately reflected real GDP growth and, with readings as of Oct. 3 remained consistent with further growth in Q4 2024.

## Nonfarm payroll employment & unemployment rate

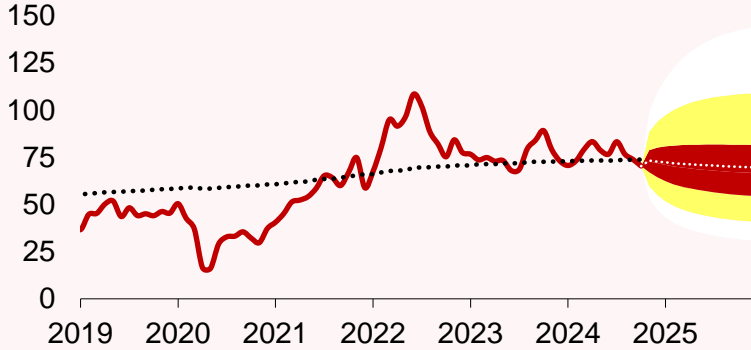


**Labor market conditions strengthened in September.** The employment situation is a lagging indicator of GDP growth. As nonfarm payrolls rose by 254,000—the highest since March—the U.S. unemployment rate fell by 0.1% m/m to 4.1% in September per BLS.

# U.S. oil market indicators

## WTI crude oil price mean reversion analysis

Dollars per barrel (2024\$)



**Futures prices aligned with the historical mean reversion target.** The futures strip remains backwardated (that is, futures prices currently are lower than spot prices). Confidence intervals based on past prices show the potential for greater upside than downside.

## WTI crude prompt month futures prices

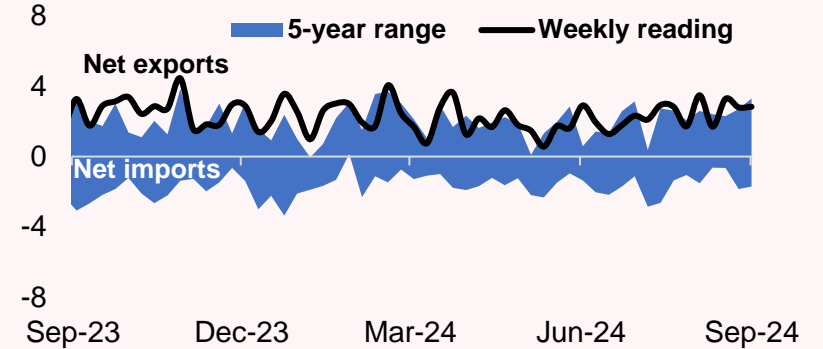
Dollars per barrel



WTI crude oil prices rose by \$7.00 per barrel w/w to over \$75 per barrel as of October 4, as Middle East geopolitical tensions escalated.

## U.S. petroleum net exports (imports)

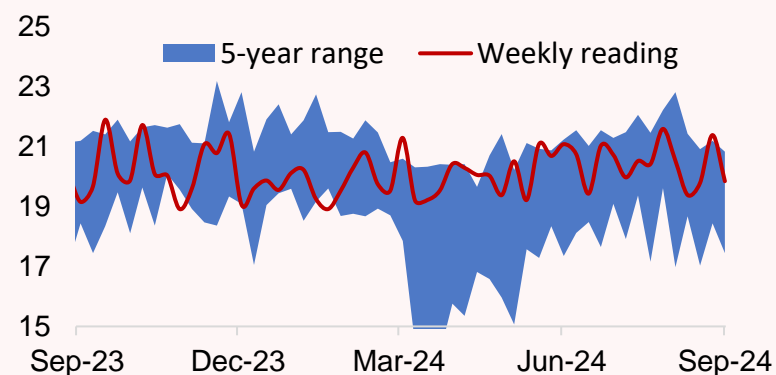
Million barrels per day, mb/d



**Petroleum net exports held steady.** The U.S. was a petroleum net exporter of 2.8 mb/d for the week ended Sep. 27, steady from the prior week.

## U.S. petroleum demand

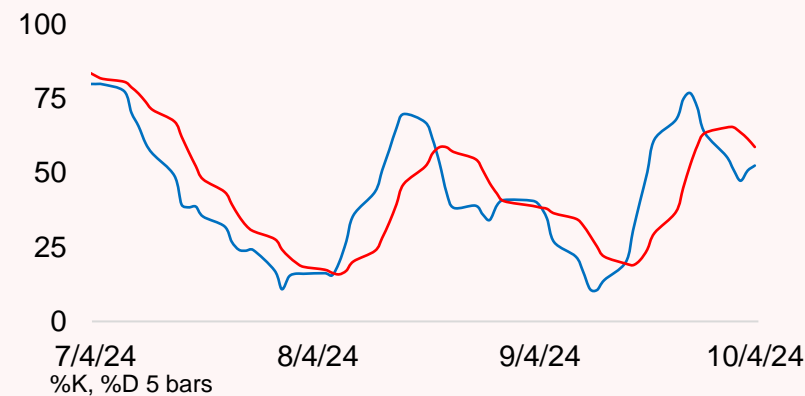
Million barrels per day (mb/d)



**Petroleum demand decreased.** U.S. petroleum demand, as measured by deliveries, fell by 1.5 mb/d w/w to 19.8 mb/d for the week ended Sep. 27 and to the 70<sup>th</sup> percentile of the 5-year range.

## WTI crude prompt month futures slow stochastic

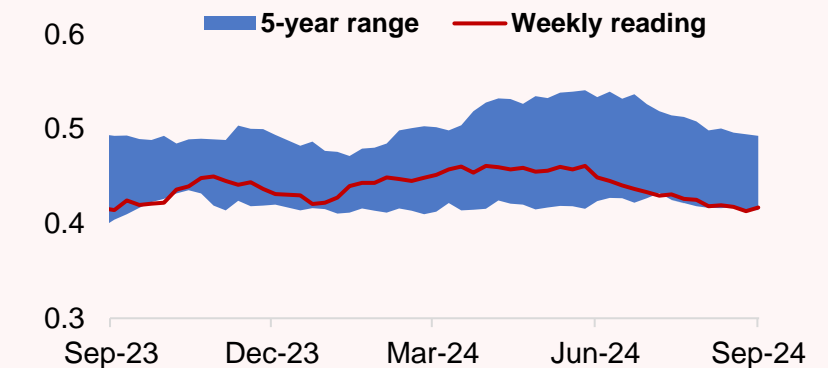
Index level



Price momentum rose during the week ended Oct. 4.

## U.S. ending stocks of crude oil (excluding the SPR)

Billion barrels

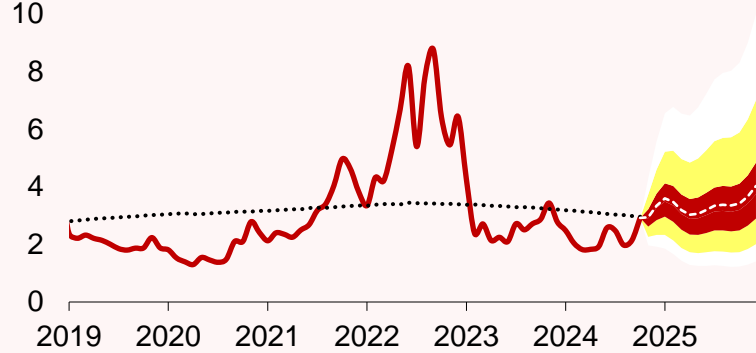


**Inventories increased.** U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) increased by 3.9 million barrels (mb) for the week ended Sep. 27 but remained at the bottom of the 5-year range.

# U.S. natural gas market indicators

## Natural gas price mean reversion analysis

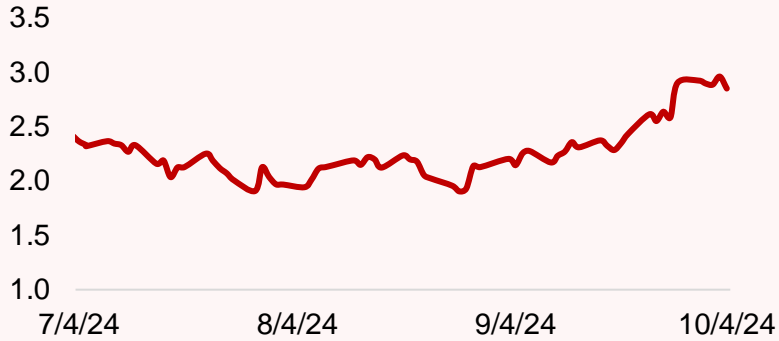
Dollars per mmBtu (2024\$)



Near-term natural gas futures prices have aligned with the historical mean reversion target but rise by 22% between the contracts for delivery in November and January. Confidence intervals based on past prices show the potential for greater upside than downside.

## Natural gas prompt month futures prices

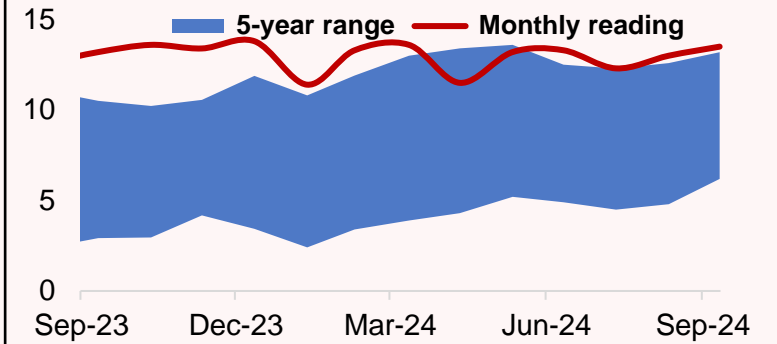
Dollars per million Btu



Natural gas prices at Henry Hub fell by 1.8% w/w to \$2.85 per million Btu for the week ended October 4.

## U.S. natural gas net exports

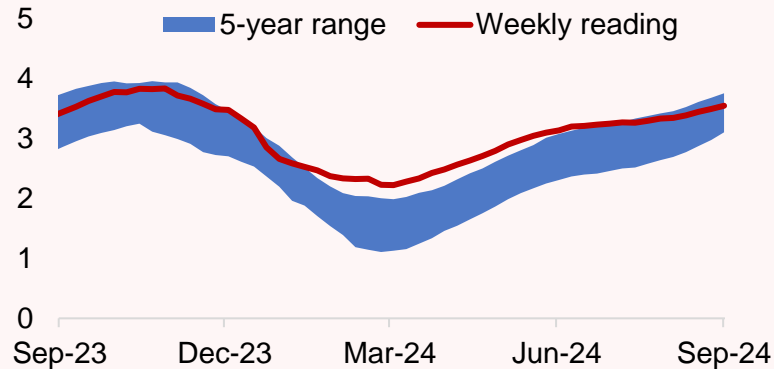
Billion cubic feet per day, bcf/d



Natural gas net exports of 13.5 bcf/d, as projected for September by EIA, rose above the 5-year range and to a record high for the month of September.

## U.S. weekly working gas storage

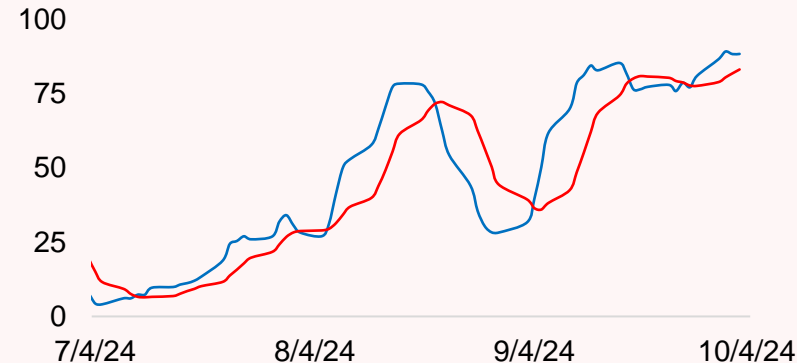
Trillion cubic feet (tcf)



Storage recede further into the 5-year range. Working gas in underground storage rose by 1.6% w/w to 3.55 tcf as of Sep. 27 but fell to the 68<sup>th</sup> percentile within the 5-year range.

## Natural gas futures slow stochastic

Index level

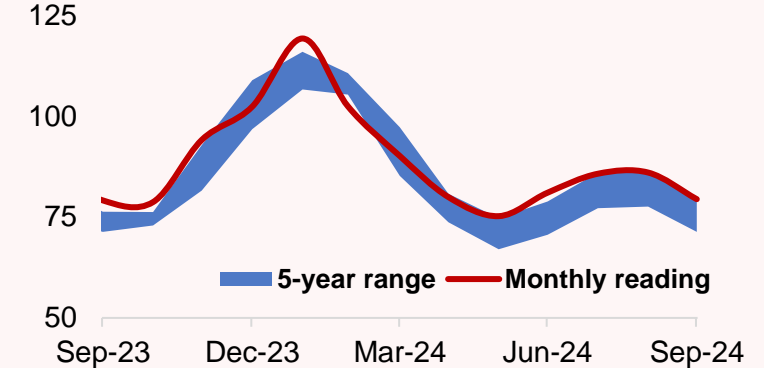


%K, %D 5 bars

Natural gas price momentum slowed during the week ended October 4.

## U.S. natural gas consumption

Billion cubic feet per day, bcf/d

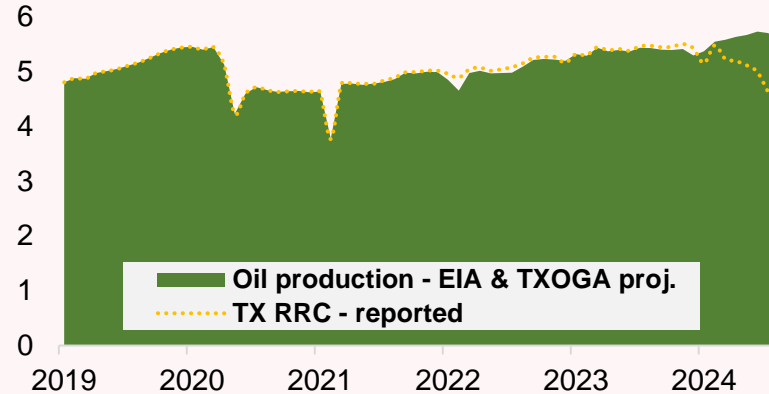


Consumption remained strong. U.S. natural gas consumption of 79.4 bcf/d in September per EIA remained at the top of the 5-year range.

# Texas' oil and natural gas production

Texas crude oil production, Jan. 2019 – Sep. 2024

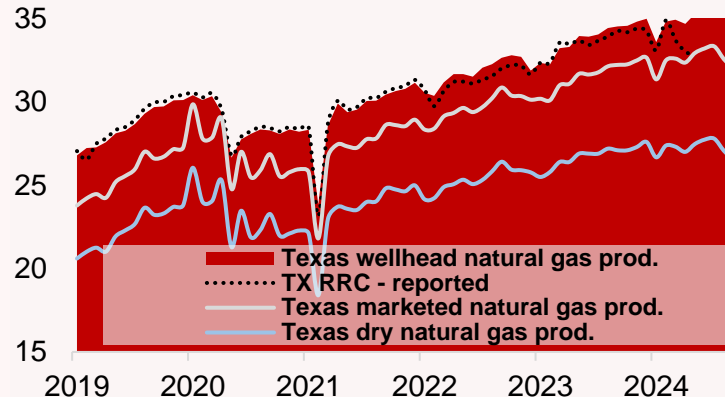
Million barrels per day (mb/d)



**Near-record oil production.** Texas' oil production remained above 5.7 mb/d in July per EIA, and TXOGA estimates that it slipped to 5.62 and 5.65 mb/d in August and September, respectively.

Texas natural gas production, Jan. 2019 – Sep. 2024

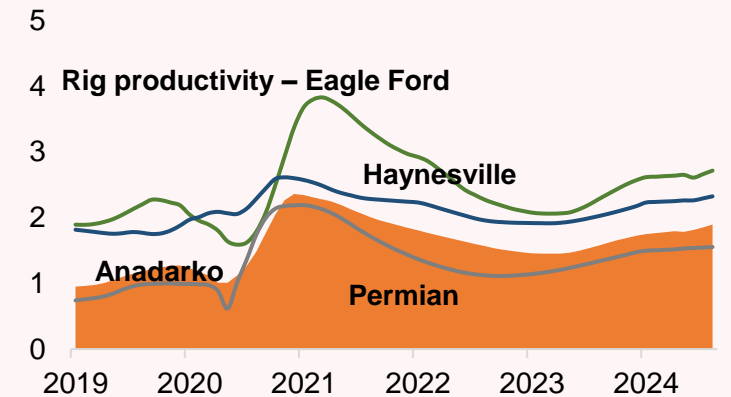
Billion cubic feet per day (bcf/d)



**Record-high natural gas production.** Texas produced record highs of 35.7 bcf/d of natural gas gross withdrawals and 33.3 bcf/d of marketed production in July per EIA. TXOGA estimates that Texas' marketed production was 32.0 bcf/d in September with 26.5 bcf/d of dry gas production.

Texas rig productivity by basin – new monthly prod. per rig

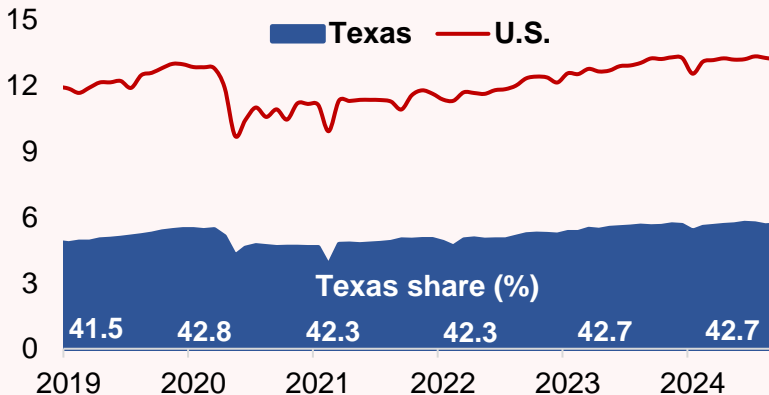
Thousand barrels per day oil-equivalent, kb/dae



**Strong productivity gains.** EIA estimates of rig productivity for August 2024 show continued increases year-over-year across the major Texas basins, including the Anadarko (+13.4% y/y), Eagle Ford (+15.1% y/y), Permian (+17.0% y/y), and Haynesville (+13.0% y/y).

U.S. and Texas crude oil production, Jan. 2019 – Sep. 2024

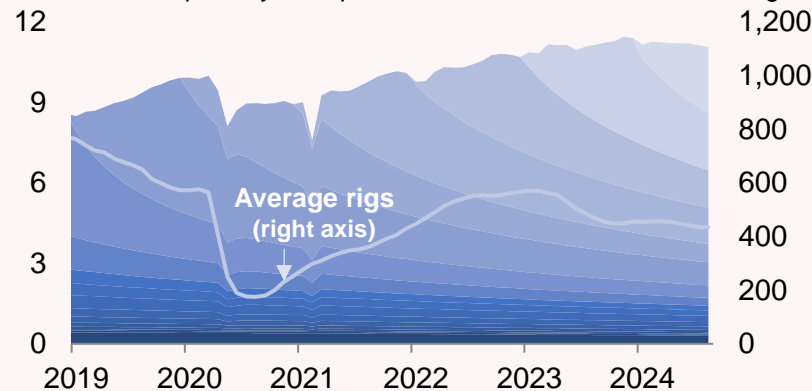
Million barrels per day (mb/d)



**Texas' share remained strong.** Texas accounted for an estimated 42.7% of U.S. crude oil production year-to-date through September by TXOGA's estimates.

Texas shale basin wellhead oil & natural gas production

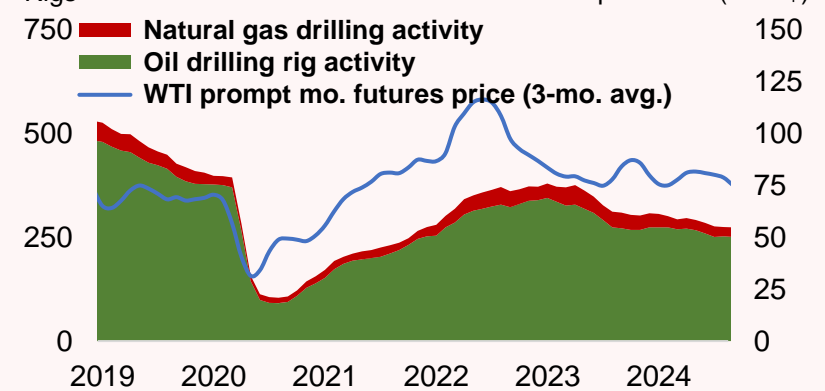
Million barrels per day oil-equivalent



**EIA estimates show oil and natural gas production across Texas shale basins changes in August 2024 Permian (+6.6% y/y) but fallen in the Eagle Ford (-3.3% y/y), Haynesville (-13.7% y/y), and Anadarko (-0.8% y/y) regions.**

Texas drilling activity and WTI crude oil futures prices

Rigs Dollars per barrel (2024\$)

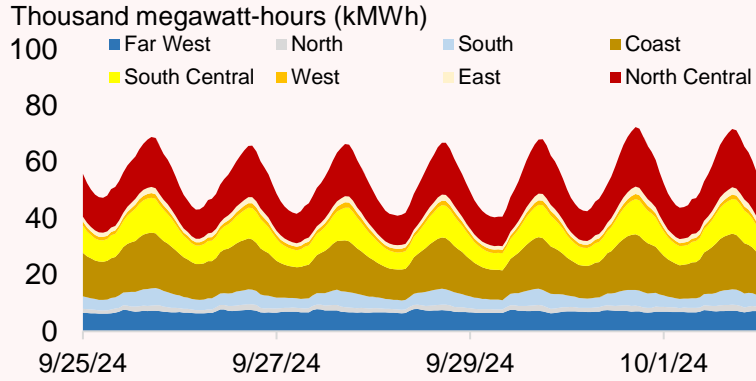


**Texas' drilling rig activity rose** for the week ended October 4 per Baker Hughes. Texas had 253 oil-directed rigs (up by 1 rig w/w) and 26 natural gas-directed rigs (up by 1 rig w/w).

# Texas Electricity Analysis

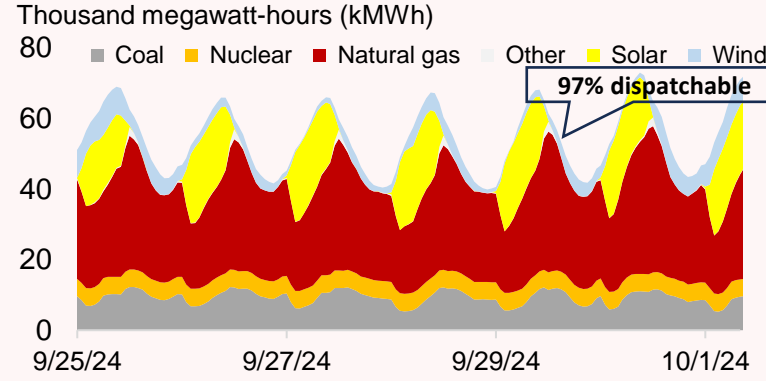


## ERCOT electricity load by region



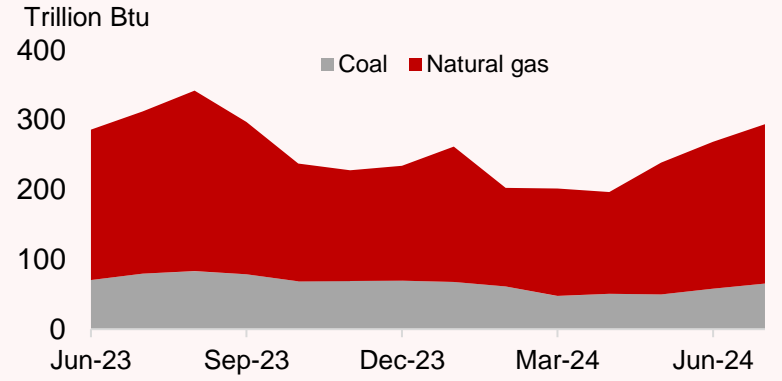
For Sep. 25-Oct. 1, ERCOT's average hourly electricity load was 54.7 kMWh, down by 11.6% w/w, while the maximum load hourly load of 72.4 kMWh fell by 7.1% w/w. Variability was the highest in the South Central and East regions.

## ERCOT hourly electricity generation by source



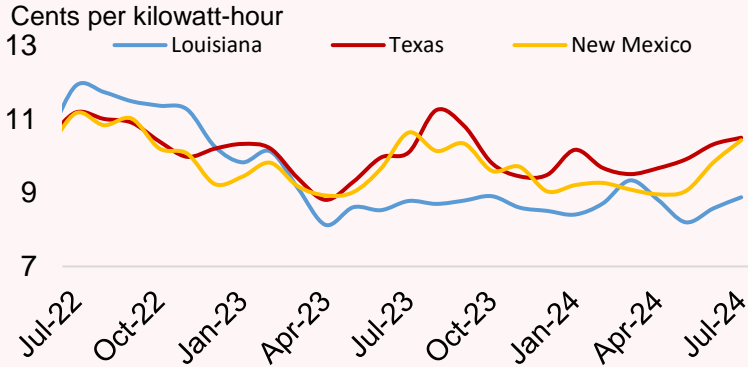
**Thermal and dispatchable resources generated up to 97% of ERCOT's electricity.** ERCOT's hourly electricity generation for the period Sep. 25-Oct. 1 ranged between 40 and 73 kMWh with a standard deviation of 9.2 kMWh. Thermal and dispatchable sources generated 97.2% of the region's power on the morning of Sep. 29, including 63.0% from natural gas.

## Texas electricity plant receipts of natural gas and coal



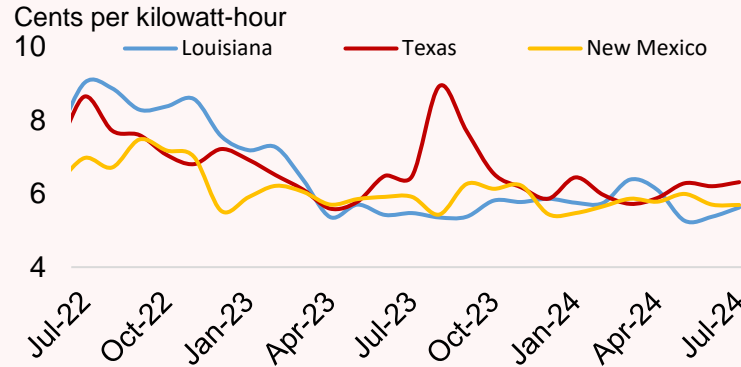
**Texas electricity plant receipts of natural gas and coal increased seasonally but decreased year-over-year by 1.9% y/y and 17.4% y/y, respectively, in July 2024.**

## Electricity prices – average across all end-use sectors



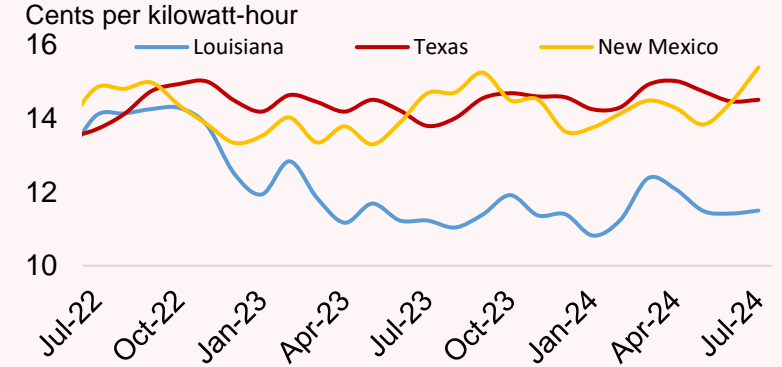
**Texas' electricity prices rose in July.** The average price of electricity in Texas increased by 1.7% m/m in July to 10.50 cents per kWh, compared with 8.88 cents per kWh in Louisiana and 10.43 cents per kWh in New Mexico.

## Industrial electricity prices



**Texas' industrial electricity prices decreased.** Texas' industrial electricity prices averaged 6.31 cents per kWh in July, up by 1.8% m/m. Rates in New Mexico and Louisiana remained lower at 5.69 cents per kWh and 5.62 cents per kWh, respectively.

## Residential electricity prices



**Texas' residential electricity prices rose.** For Texas' residential consumers, the average price of electricity (14.51 cents per kWh) rose by 0.3% m/m from June, remaining above rates in Louisiana (11.50 cents per kWh) but lower than that in New Mexico (15.39 cents per kWh).



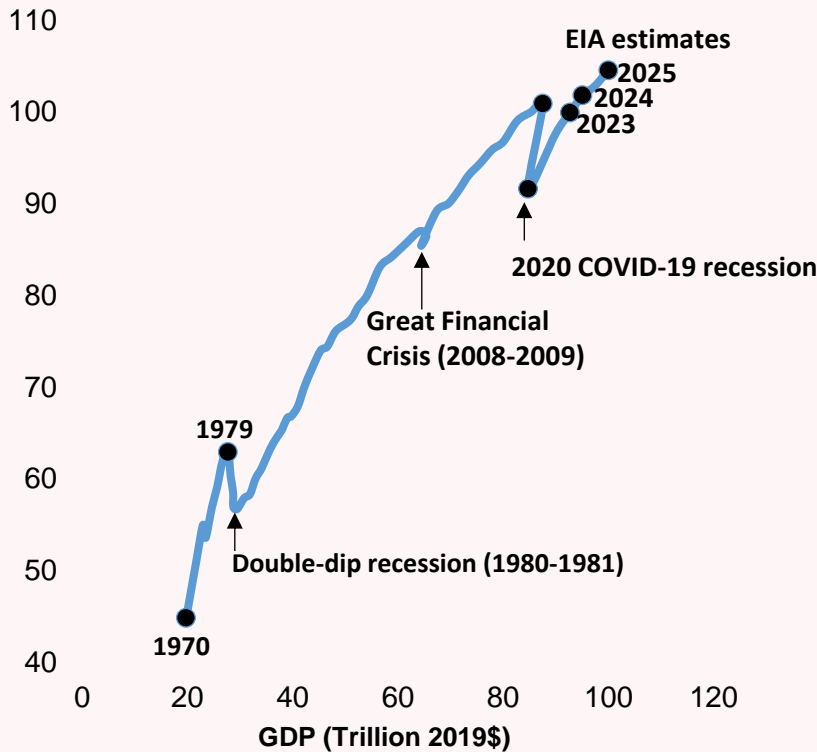
# Global Oil Market Balance Projections to 2025



- **Solid demand and inventory drawdowns.** EIA's August 2024 Short-Term Energy Outlook projects global demand of 102.2 mb/d this year and 104.6 mb/d in 2025 – both record highs.
- **For oil inventories, EIA projects global stock withdrawals to continue through Q2 2025,** including 1.0 mb/d in Q3 2024, 1.3 mb/d in Q4 2024, and 0.9 mb/d in 2025, corresponding with Brent crude oil prices of \$82 in Q4 2024 and \$84 on average in 2025, compared with \$72 per barrel currently.

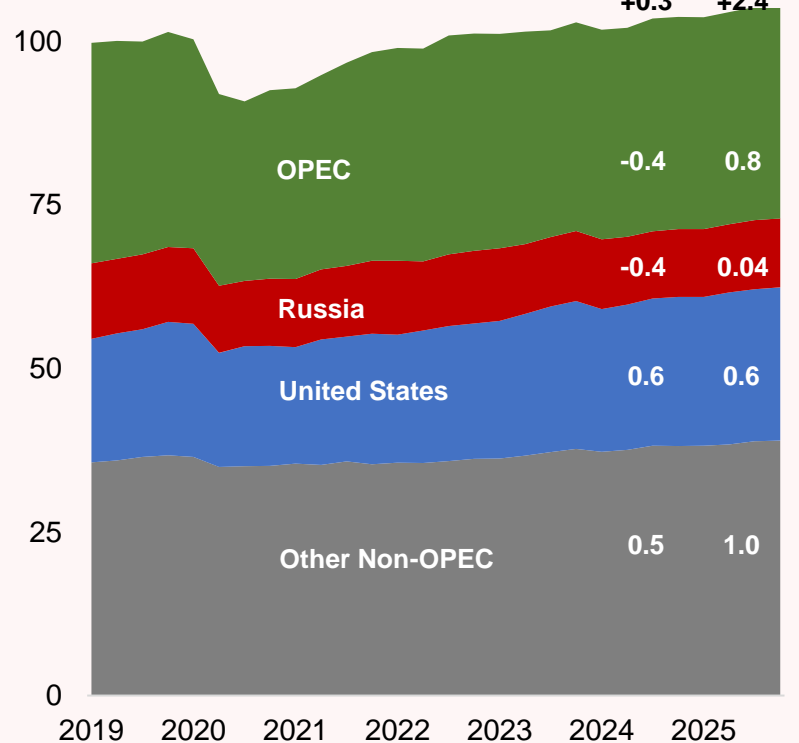
## Global oil demand and GDP

Million barrels per day (mb/d)



## Oil production by country/region

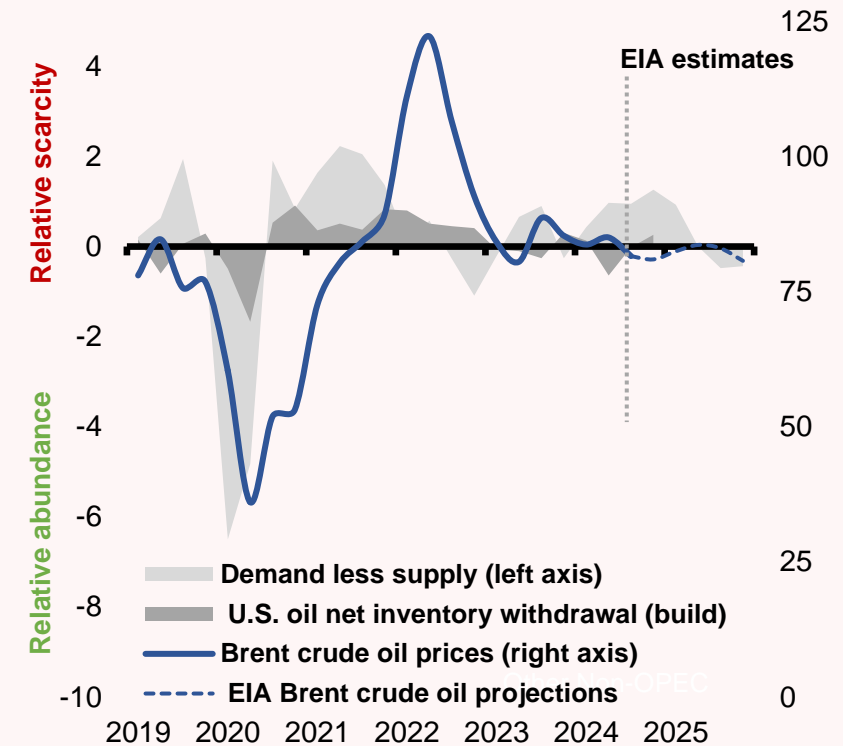
Million barrels per day, mb/d



## Global demand/supply & Brent prices

Million barrels per day (mb/d)

2024\$/Bbl



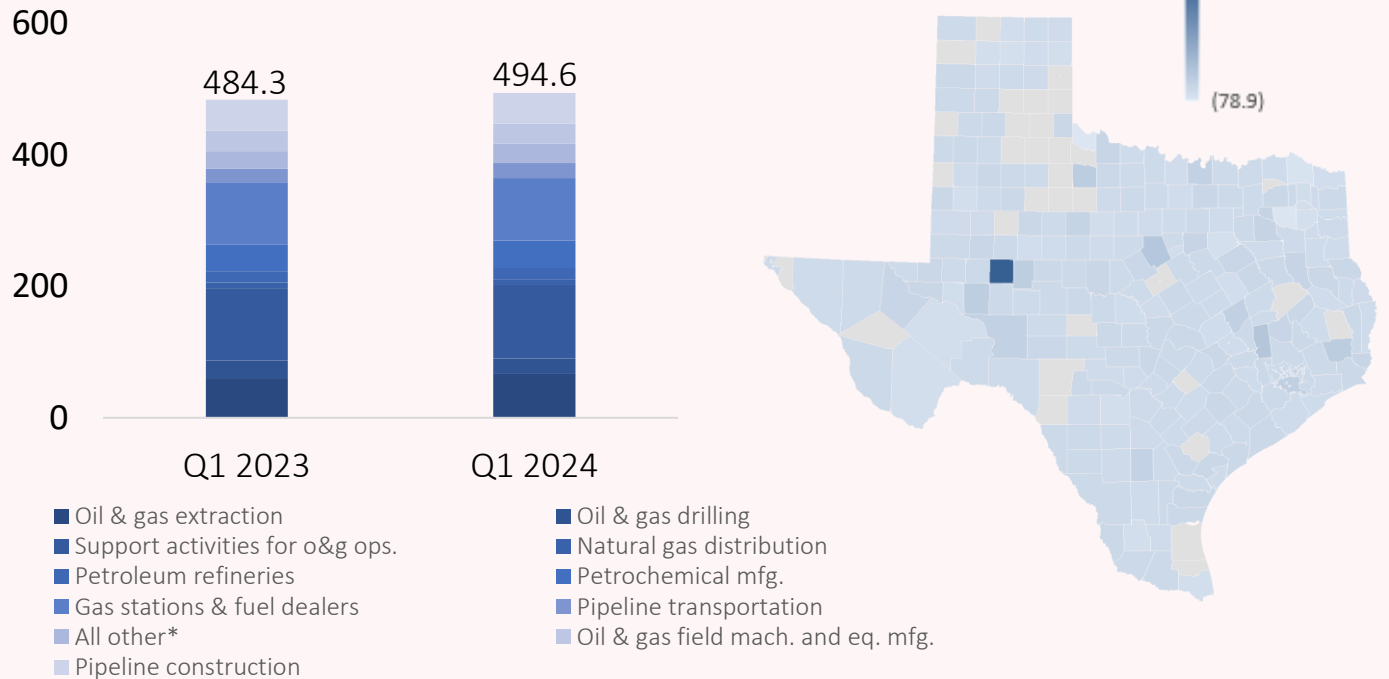
# Texas' oil and natural gas industry wages eclipsed \$20.8 billion in Q1 2024



- ▶ Texas' oil and natural gas industry employment and wages grew by 2.1% y/y and 6.5% y/y, respectively, in Q1 2024, raising the totals to nearly 494,593 jobs and \$20.8 billion in wages – the highest wages since the 2020 pandemic.
- ▶ Two-thirds of the year-over-year job growth occurred in the upstream and supporting services, while another quarter of the job growth occurred in pipeline transportation per the latest data (released on August 20, 2024) from the U.S. Census Bureau and Texas Workforce Commission.

## Texas oil and natural gas industry direct employment rose by +2.1% y/y in Q1 2024

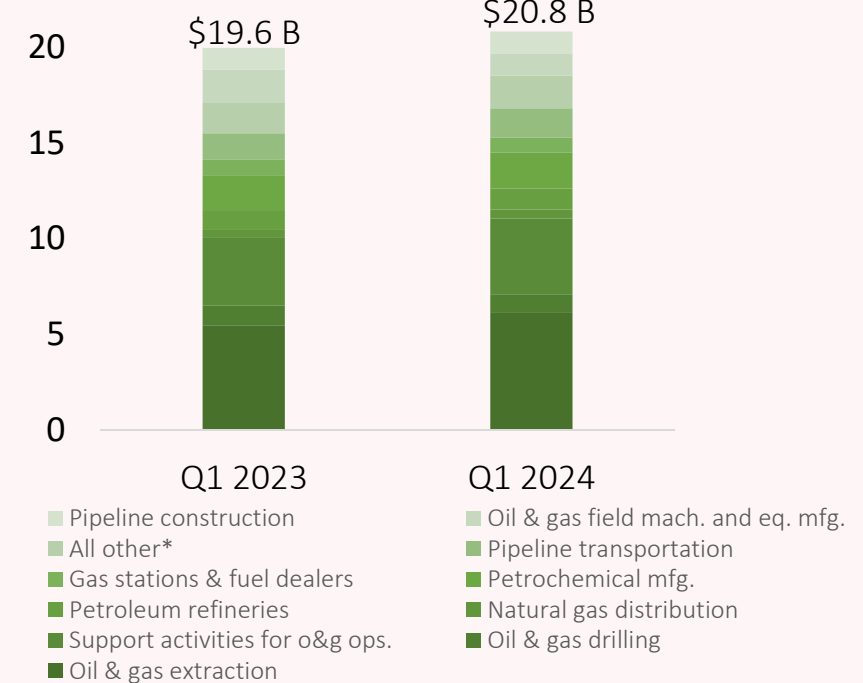
Thousand Jobs



\* Other industry segments include petroleum and pet. product wholesalers, lubricant mfg., asphalt mfg., industrial sand mining, nitrogenous fertilizer mfg., basic organic chem. mfg., plastics and resin mfg.

## Texas oil and natural gas industry direct wages rose by +6.5% y/y in Q1 2024

Billion dollars



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