



**June 3, 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 June 3, 2024**

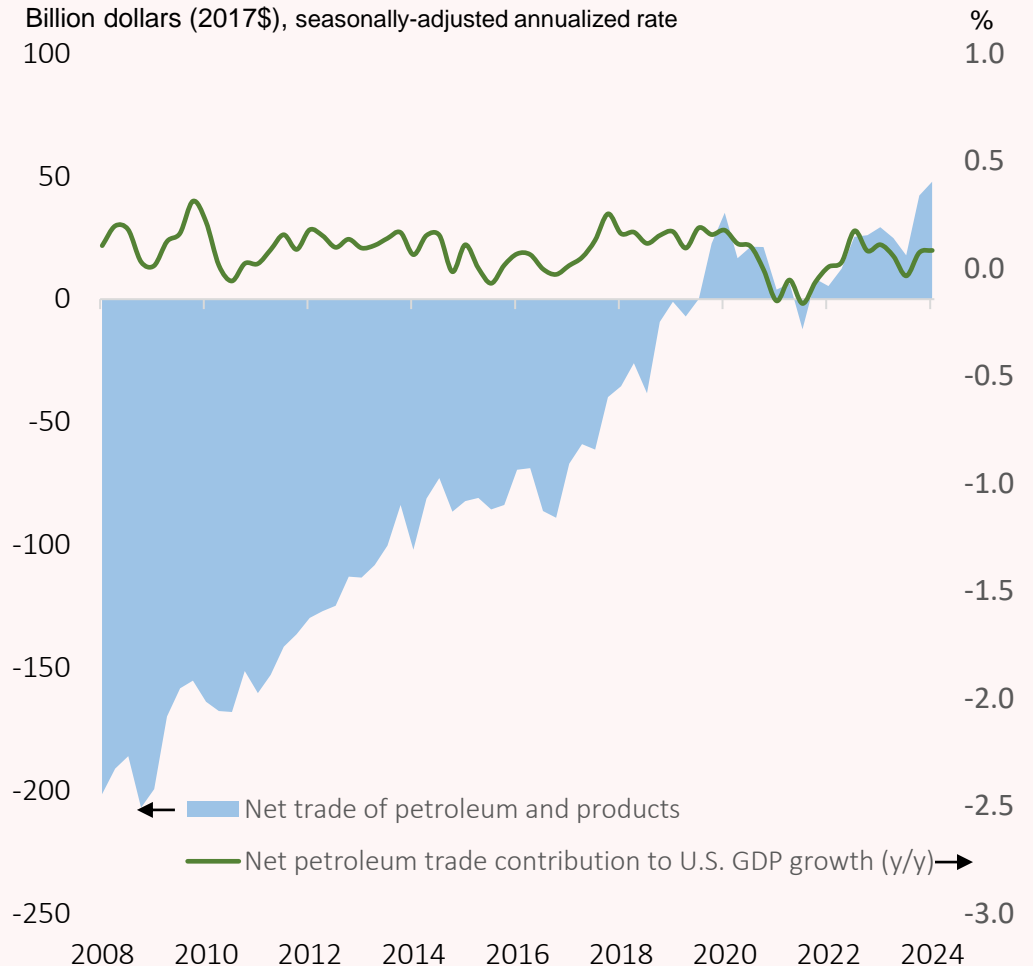
- **U.S. economic indicators were mixed.** Consumer sentiment, as measured by the University of Michigan's survey, was revised upwards in the final May survey but continued to reflect broad-based concerns about inflation, unemployment, and interest rates. The risk premium for low corporate bond credit quality rose by 0.3% week-over-week (w/w) to 13.8%. Yet, the Philadelphia Federal Reserve's ADS Index shows that business conditions remain conducive to GDP growth in Q2 2024. As highlighted in the [Chart of the Week](#), the U.S. trade surplus for oil, natural gas, and related products was revised up in the May GDP report from the Bureau of Economic Analysis (BEA) to a record high of \$47.8 billion, accounting for over one-fifth of U.S. GDP growth in Q1 2024.
- **Oil market fundamentals remained solid.** The global oil market has remained well supplied despite record-high demand. U.S. weekly data showed steady production of 13.1 million barrels per day (mb/d), decreases in petroleum demand, net exports, and crude oil inventories, but a 1.6 mb/d w/w increase in refined product inventories for the summer driving season in data as of May 24, according to the Energy Information Administration (EIA). West Texas Intermediate (WTI) oil prices held steady at \$77 per barrel for the week ended May 31.
- **Natural gas prices held their gains of the past month.** Prices at Henry Hub, which rose by as much as 70% since late April, remained within 5% of their high and near \$2.60 per million Btu for the week ended May 31. Although natural gas storage levels remained 25% above the maximum of the five-year range as of May 24, futures prices for December delivery are currently 40% above the level for July delivery.

# TXOGA Chart of the Week: The U.S. trade surplus for oil, natural gas, and related products drove 20% of U.S. real GDP growth in Q1 2024



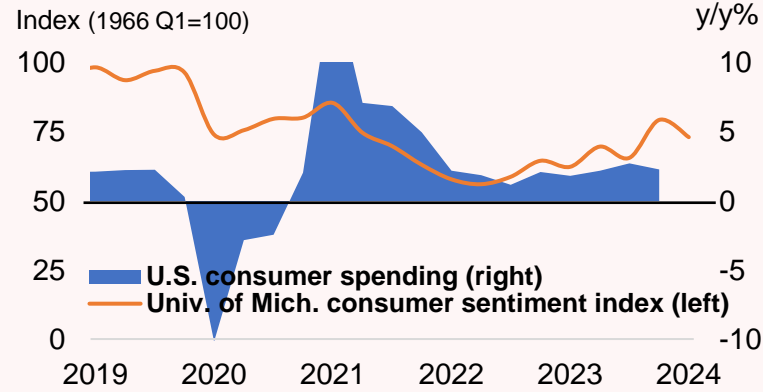
- » In 2007, the U.S. was the world's largest net importer of oil, natural gas, and related products, taking net imports of \$218 billion. However, lower imports due to the Great Financial Crisis (GFC) in 2008 and subsequently the U.S. energy revolution reduced U.S. import dependence.
- » U.S. petroleum trade turned to a surplus starting in Q3 2019 and rose as high as \$35 billion in Q1 2020, before the pandemic displaced demand for a period.
- » In each of the past two quarters, however, the U.S. achieved consecutive records highs for petroleum trade, including an annualized surplus of \$47.8 billion in Q1 2024 that drove over 20% of total U.S. real GDP growth for the quarter, compared with Q1 2023.
- » Furthermore, the U.S. petroleum trade balance's \$267 billion swing (to a surplus of \$47.8 billion in Q1 2024 from a deficit of \$218 billion in 2007) did as much for the economy as the entire increase in federal spending over the period. The entire change in federal fiscal stimulus (that is, expenditures) over the period was \$270 billion. Consequently, the improvement in U.S. petroleum trade by itself—without accounting for its multiplicative value-added effects across the domestic economy—has contributed as much to U.S. real GDP as the entire increase in federal spending since 2007.

### U.S. real petroleum trade and its contributions to GDP



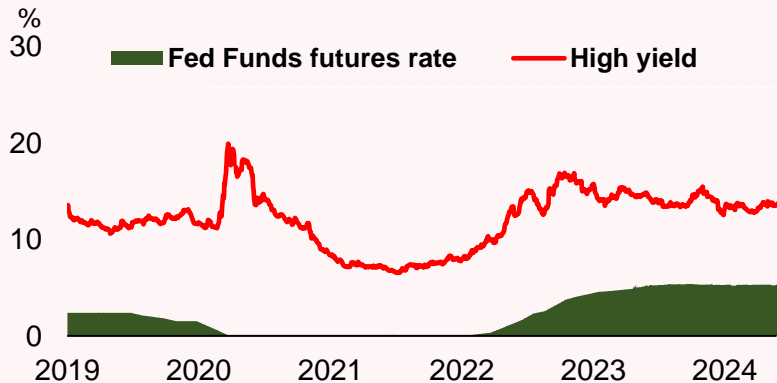
# U.S. economic indicators

## Consumer sentiment vs. spending



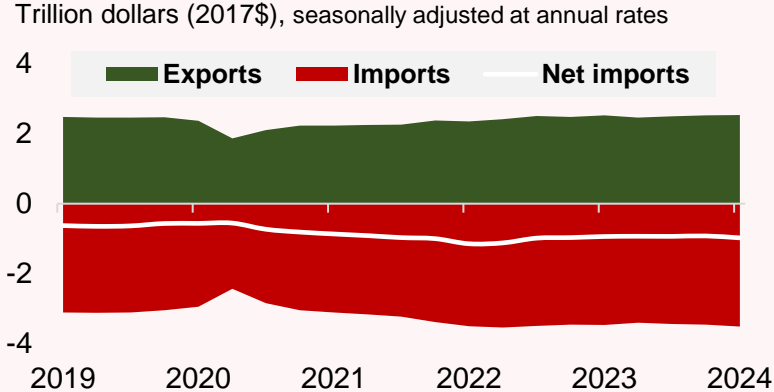
**Consumer sentiment weakened in May**, according to the University of Michigan's survey, but remains consistent with continued consumer spending growth in Q2 2024. The index was revised up to 69.1 in the final May survey, but remained down from 77.2 in April due to broad-based concerns for inflation, unemployment, and interest rates.

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



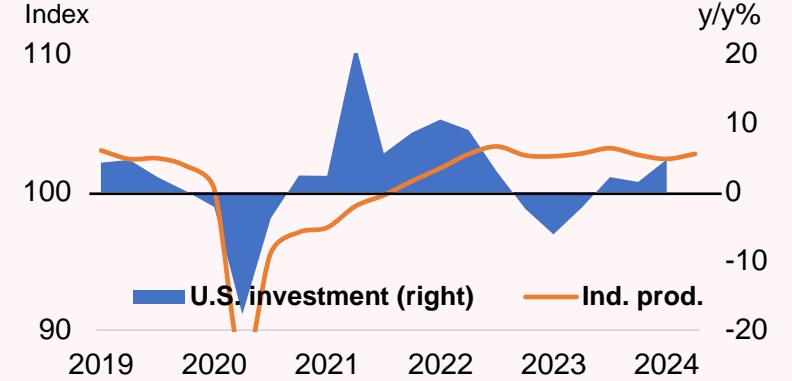
**Bond premium for low credit increased.** High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended May 31, HY rates rose by 0.3% to 13.8%, and the Fed Funds futures was steady at 5.3%, resulting in an increased premium for low credit quality to 8.5%.

## Real net exports of goods and services



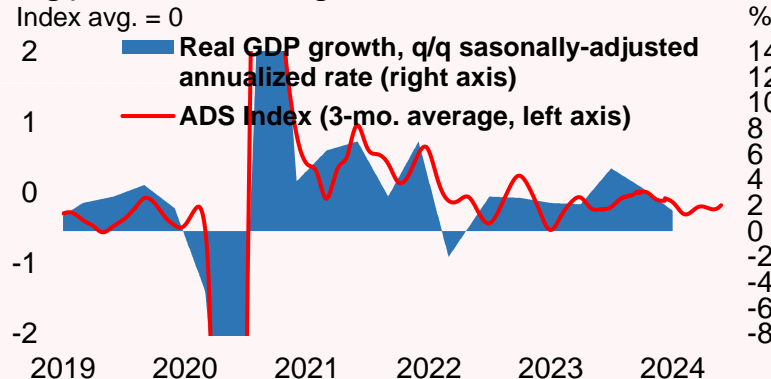
**U.S. trade deficit revised to be larger.** The U.S. real trade deficit ran at an annualized rate of \$975 billion in Q1 2024 per BEA initial estimates. On a nominal basis, the trade surplus for petroleum and products was revised upward to an annualized rate of \$56 billion in Q1 2024, vs. \$36.7 billion a year ago, to the highest quarterly petroleum trade surplus on record.

## Industrial production and investment growth



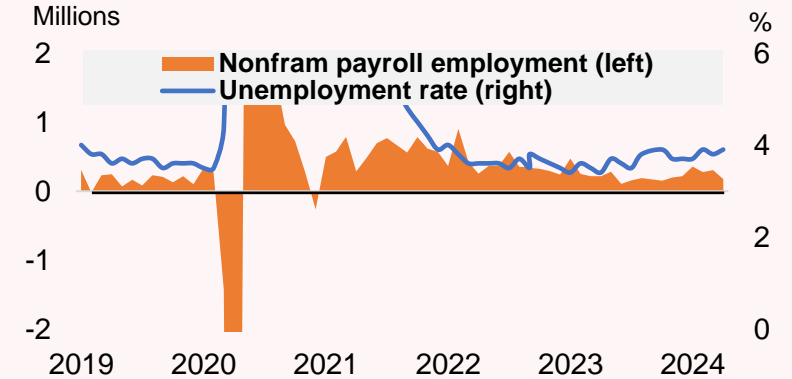
**Industrial production remained steady in April** and consistent with economy-side investment growth, which rose by 4.7% y/y in Q1 2024.

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



**Real GDP growth has continued to grow in line with the ADS index.** 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 accurately reflected growth in Q1 2024 real GDP and remains consistent with GDP growth in Q2.

## Nonfarm payroll employment & unemployment rate



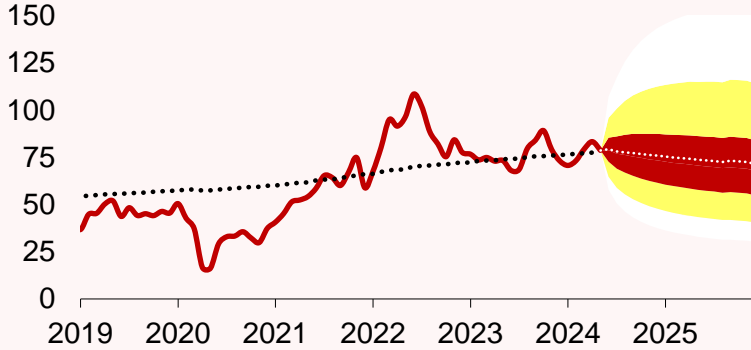
**Lukewarm labor market growth.** The employment situation is a lagging indicator of GDP growth. The U.S. unemployment rate rose by 0.1% m/m to 3.9% in April per BLS, while non-farm payrolls increased by 175,000.



# U.S. oil market indicators

## WTI crude oil price mean reversion analysis

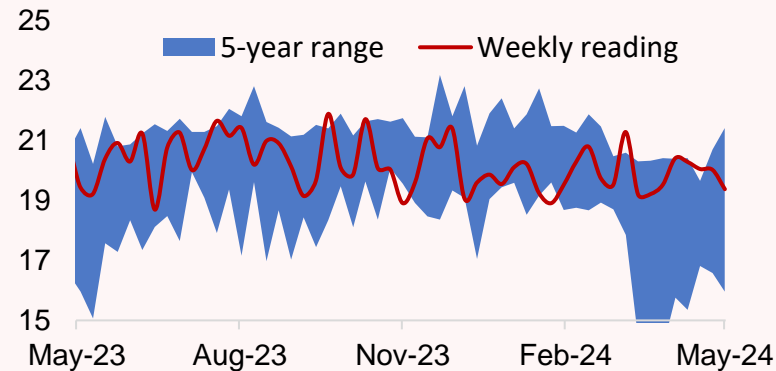
Dollars per barrel (2024\$)



**Near-term futures prices currently align with the historical mean reversion target.** The futures strip remained 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.

## U.S. petroleum demand

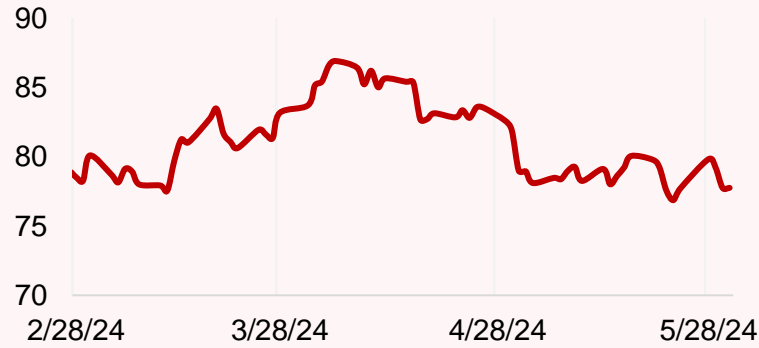
Million barrels per day (mb/d)



**Petroleum demand decreased.** U.S. petroleum demand, as measured by deliveries, decreased by 0.6 mb/d w/w to 19.4 mb/d for the week ended May 24.

## WTI crude prompt month futures prices

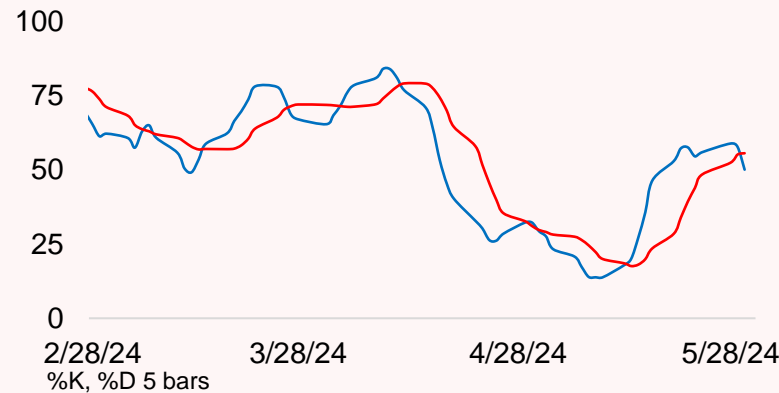
Dollars per barrel



WTI crude oil prices remained near \$77 per barrel for the week ended May 31, reflecting historically solid production and inventories despite strong demand, exports, and Middle East geopolitical uncertainties.

## WTI crude prompt month futures slow stochastic

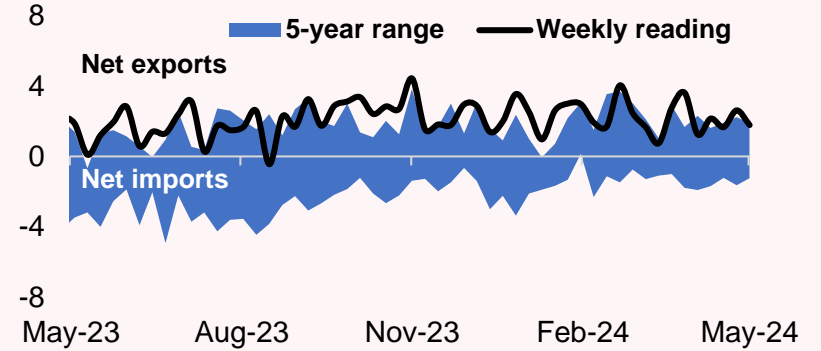
Index level



Price momentum rose and then appeared to pause during the week ended May 31.

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

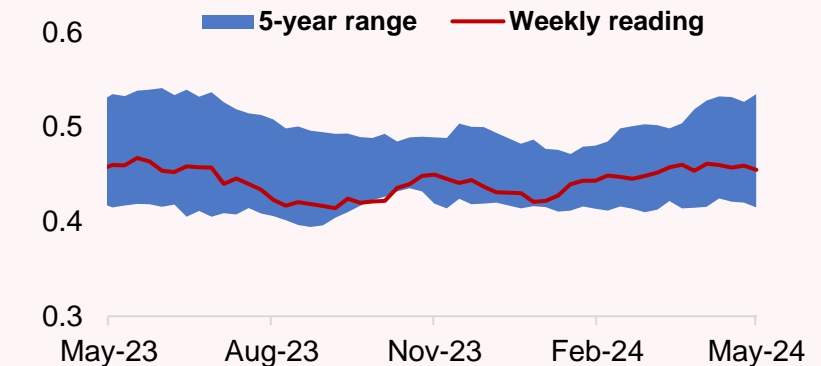
Million barrels per day, mb/d



**Petroleum net exports fell.** The U.S. was a petroleum net exporter of 1.8 mb/d for the week ended May 24, down by 0.8 mb/d from the prior week.

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

Billion barrels

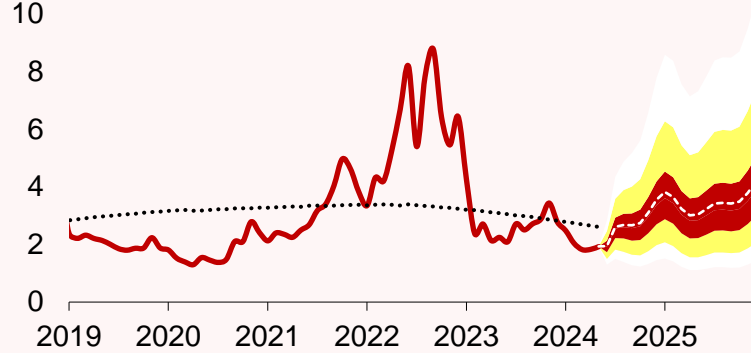


**Inventories decreased.** U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) decreased by 4.2 million barrels (mb) for the week ended May 24.

# U.S. natural gas market indicators

## Natural gas price mean reversion analysis

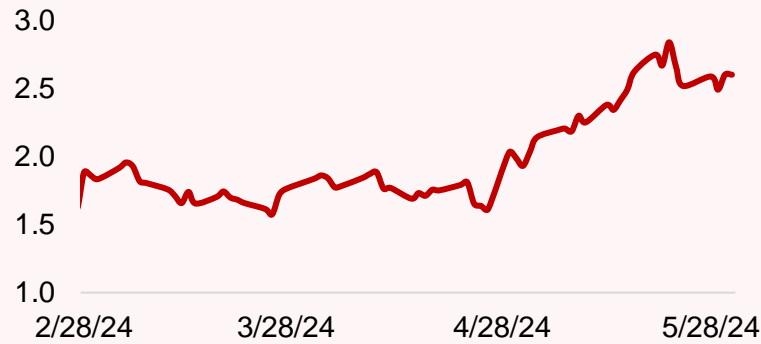
Dollars per mmBtu (2024\$)



Near-term natural gas futures prices have risen to align with the historical mean reversion target but rise by 40% between the June and December contracts. Confidence intervals based on past prices show the potential for greater upside than downside.

## Natural gas prompt month futures prices

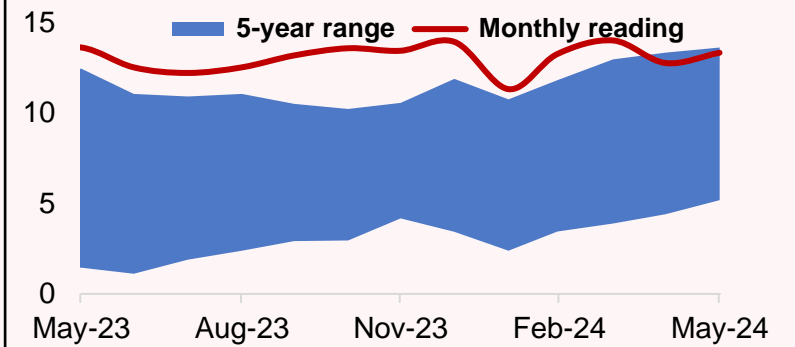
Dollars per million Btu



Natural gas prices at Henry Hub continued held near \$2.60 per million Btu for the week ended May 31 despite historically strong inventory levels.

## U.S. natural gas net exports

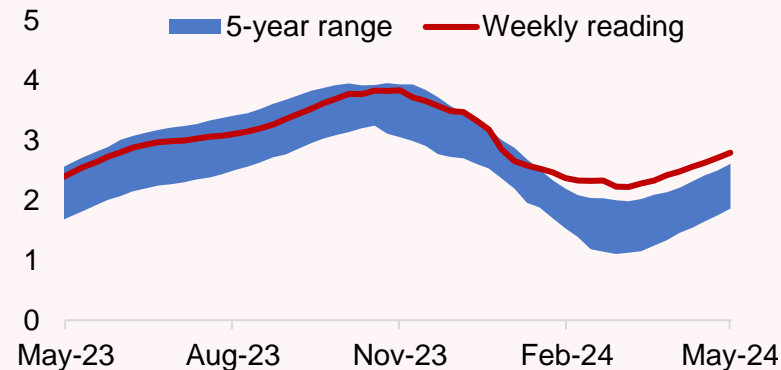
Billion cubic feet per day, bcf/d



Natural gas exports rose. U.S. natural gas net exports in May of 13.3 bcf/d rose from 12.8 bcf/d in April as estimated by EIA.

## U.S. weekly working gas storage

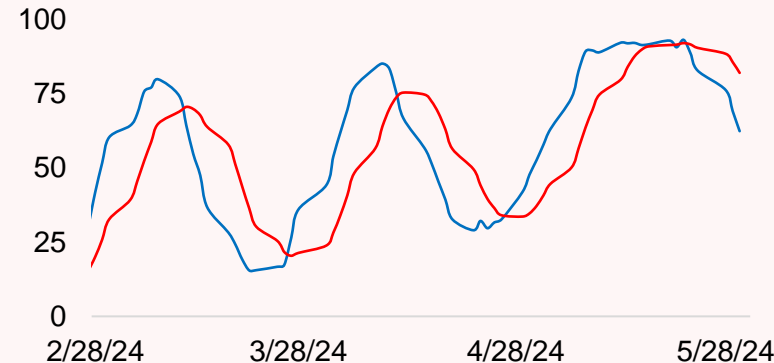
Trillion cubic feet (tcf)



Working gas in underground storage rose by 2.50% w/w to 2.80 tcf as of May 24 and remained above the 5-year range.

## Natural gas futures slow stochastic

Index level

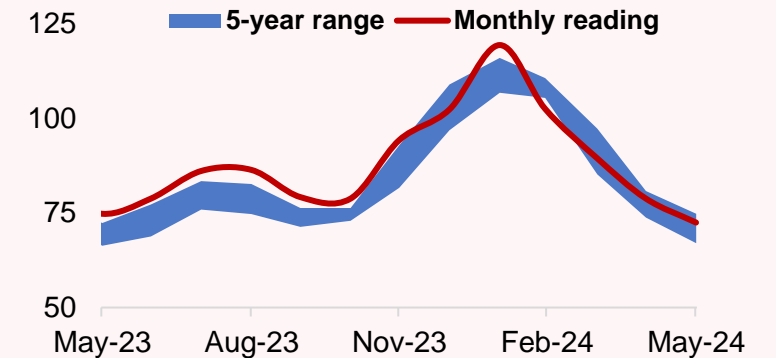


%K, %D 5 bars

Natural gas price momentum decreased during the week ended May 31.

## U.S. natural gas consumption

Billion cubic feet per day, bcf/d

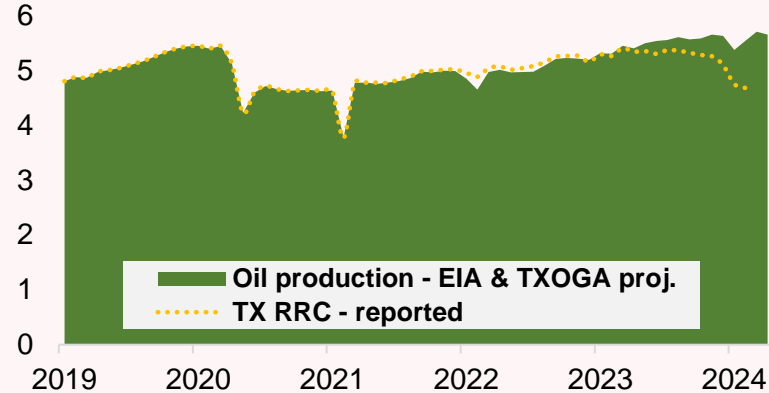


Consumption decreased. U.S. natural gas consumption fell by 2.3 bcf/d y/y to 72.4 bcf/d in May as estimated by EIA.

# Texas' oil and natural gas production

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

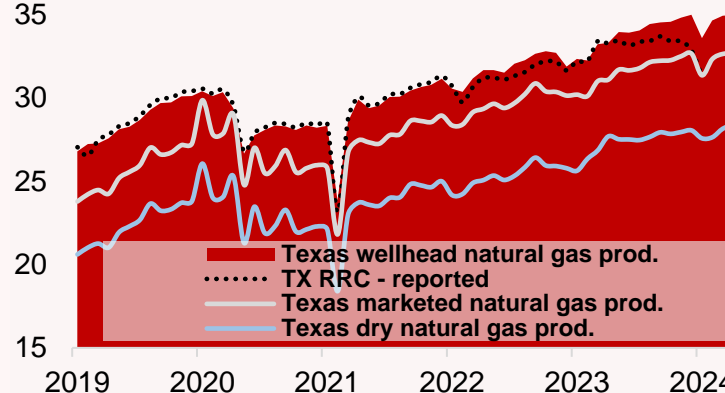
Million barrels per day (mb/d)



**Oil production increased.** Texas' oil production of 5.6 mb/d in February and rebounded following Winter Storm Heather in January per EIA. TXOGA estimates that Texas crude oil production rose to 5.7 mb/d in March and April.

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

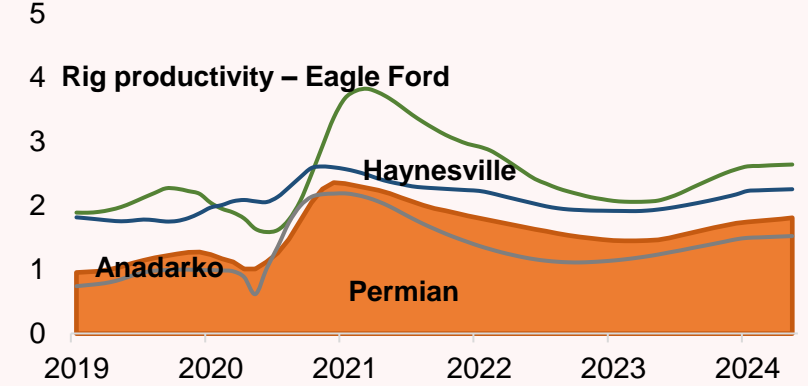
Billion cubic feet per day (bcf/d)



**Natural gas production increased.** Texas' natural gas production of 34.6 bcf/d of gross withdrawals and 32.3 bcf/d of marketed production in Feb. were impacted by Winter Storm Heather per EIA. TXOGA estimates that production rose in April to 35.0 bcf/d of gross withdrawals, 32.7 bcf/d of marketed production, and 28.4 bcf/d of dry gas production.

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

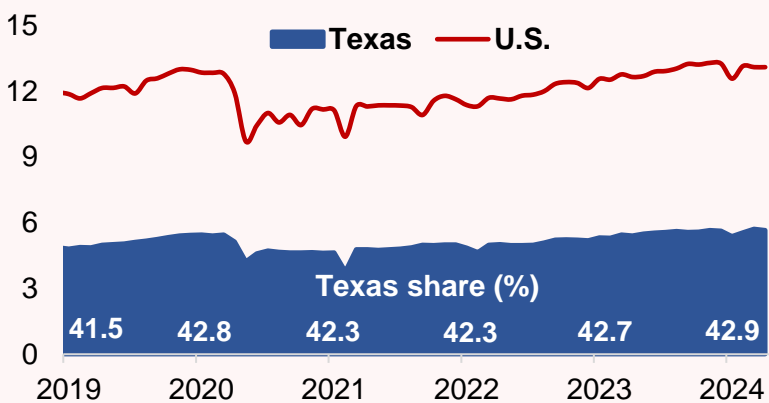
Thousand barrels per day oil-equivalent, kb/dae



**Strong productivity to start the year.** EIA estimates of rig productivity for May 2024 show continued increases year-over-year across the major Texas basins, including the Anadarko (+23.4% y/y), Eagle Ford (+27.1% y/y), Permian (+23.2% y/y), and Haynesville (+16.4% y/y).

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

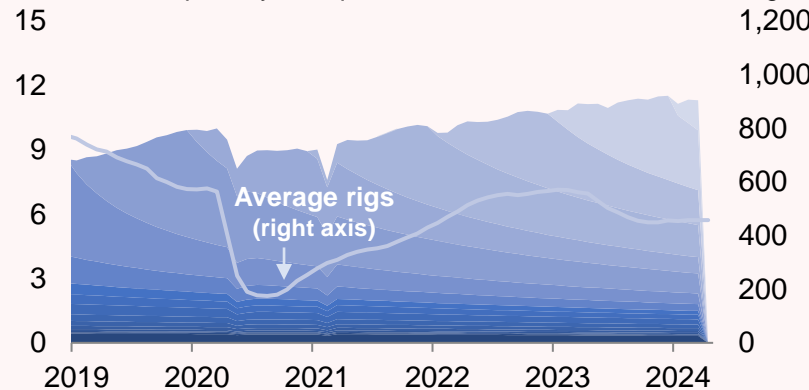
Million barrels per day (mb/d)



**Texas' share increased.** Texas accounted for an estimated 42.9% of U.S. crude oil production year-to-date through April.

Texas shale basin wellhead oil & natural gas production

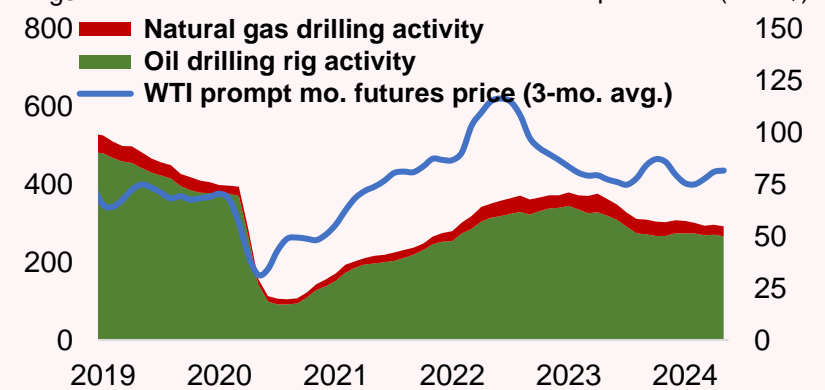
Million barrels per day oil-equivalent



**EIA estimates Apr. 2024 production growth across Texas shale basins** has continued to grow year-over-year in the Permian (+6.5% y/y) but fallen in the Eagle Ford (-0.1% y/y), Haynesville (-2.8% y/y), and Anadarko (-2.6% y/y) regions.

Texas drilling activity and WTI crude oil futures prices

Rigs (left axis), Dollars per barrel (2024\$) (right axis)



**Texas' drilling rig activity held steady** for the week ended May 31 per Baker Hughes. Texas had 261 oil-directed rigs and 26 natural gas-directed rigs, both unchanged from the prior week.

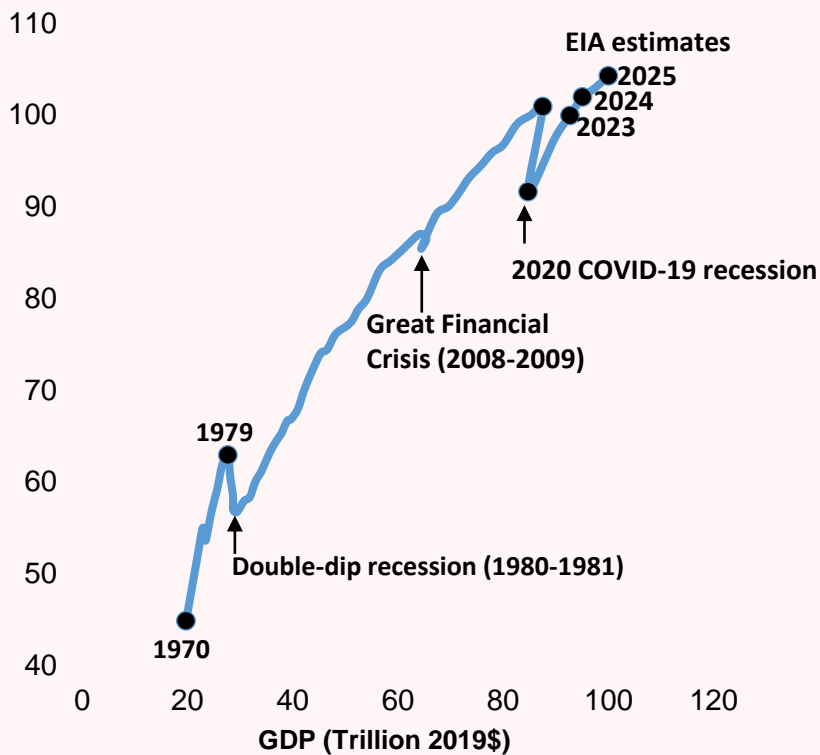
# Global Oil Market Balance Projections to 2025



- Record-high global oil demand of 102.9 mb/d in 2025 and 104.3 mb/d in 2025, which reflect upgrades from last quarter corresponding with stronger economic growth per EIA
- For oil inventories, the EIA projects global stock withdrawals with a deficit of 0.3 mb/d in Q2 2024, corresponding with Brent crude oil prices of \$88 in 2024, compared with \$81 per barrel currently.

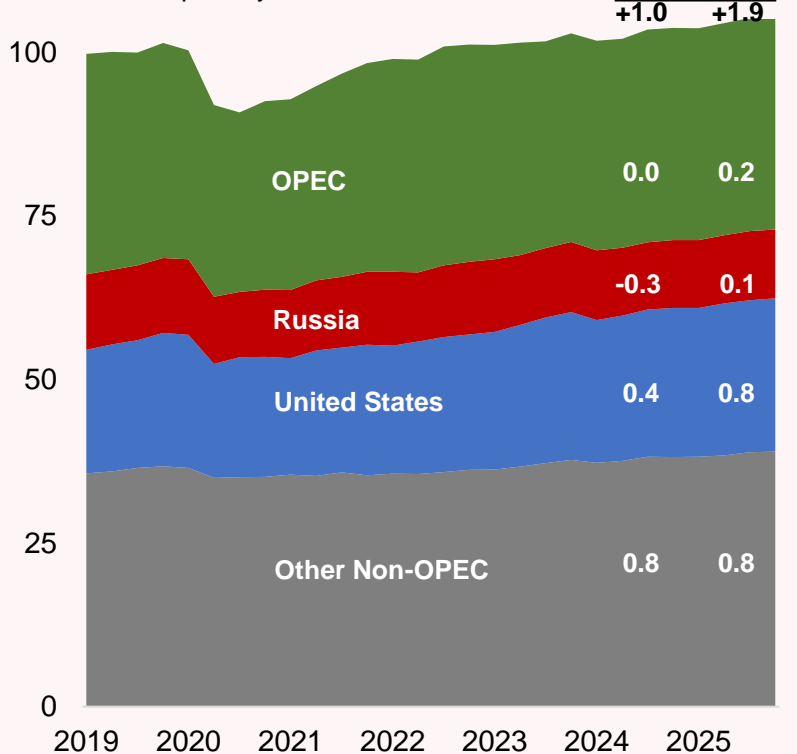
## Global oil demand and GDP

Million barrels per day (mb/d)



## Oil production by country/region

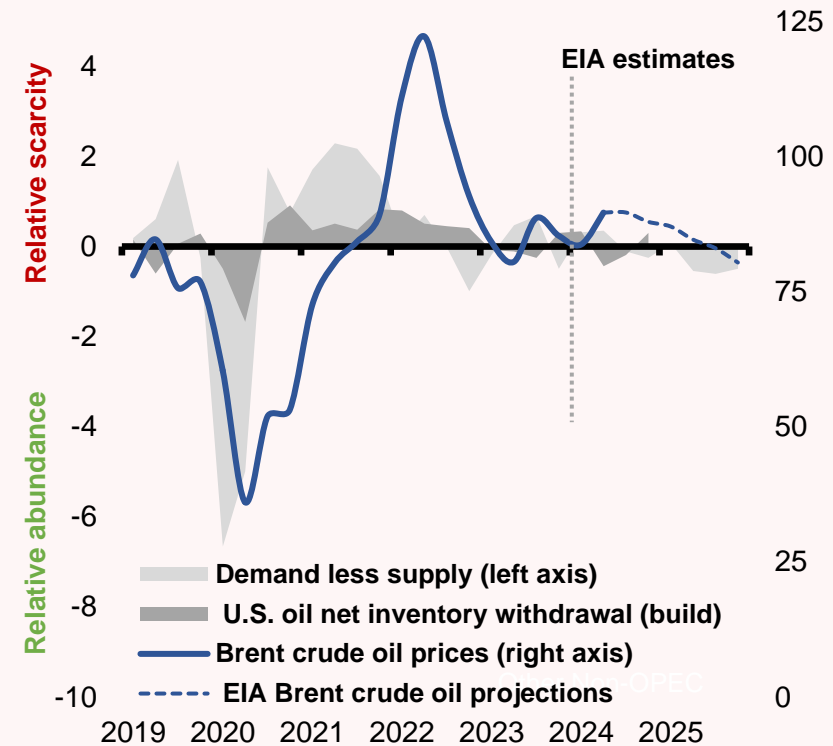
Million barrels per day, mb/d



## Global demand/supply & Brent prices

Million barrels per day (mb/d)

2024\$/Bbl

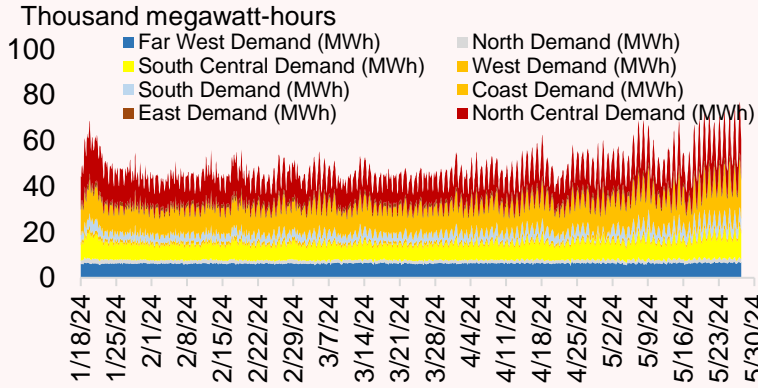




# Texas Electricity Analysis

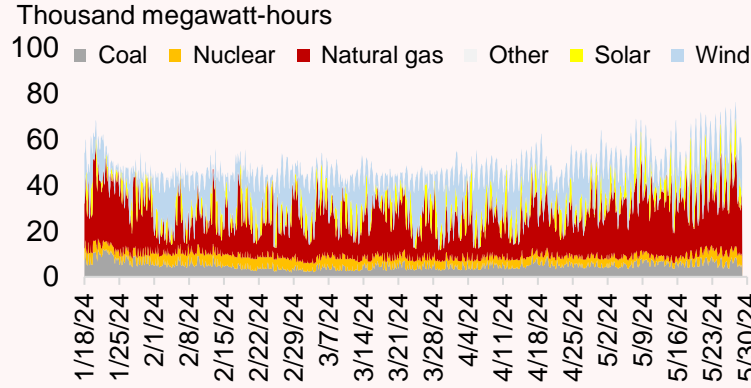


## ERCOT electricity load by region



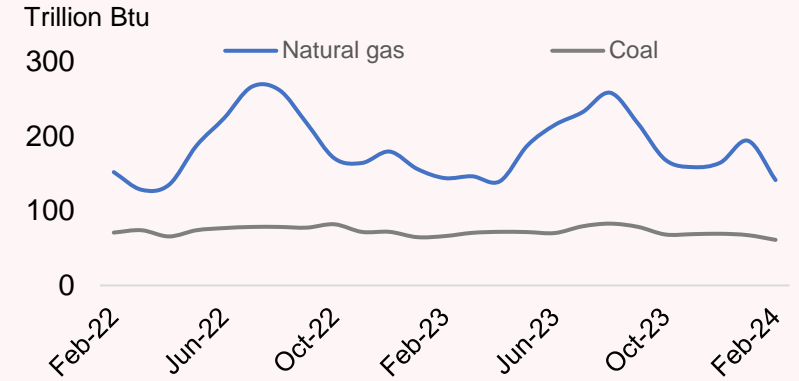
**North and West Texas load increased.** For May 21-28, 2024, ERCOT's average hourly electricity load rose by 16% w/w, while the maximum hourly load rose by 4.6 w/w. Variability was the highest in the South Region but generally decreased versus the prior week, resulting in consistently higher electricity loads across every region.

## ERCOT hourly electricity generation by source



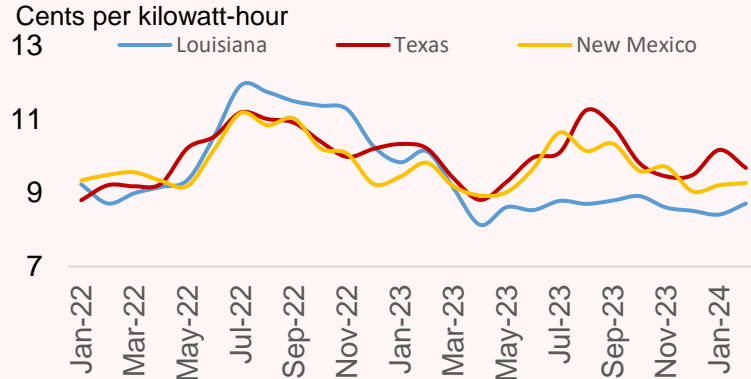
**ERCOT's total generation rose.** ERCOT's hourly electricity generation for the period May 21-28 ranged between 47 and 76 kMWh with a percentage standard deviation of 13.7 – a higher range but steady variation vs. the prior week. Thermal sources contributed as much as 86% of the region's power (down by 5% w/w), and natural gas drove as much as 64% over the period (down by 4% w/w).

## Electricity plant receipts of natural gas and coal



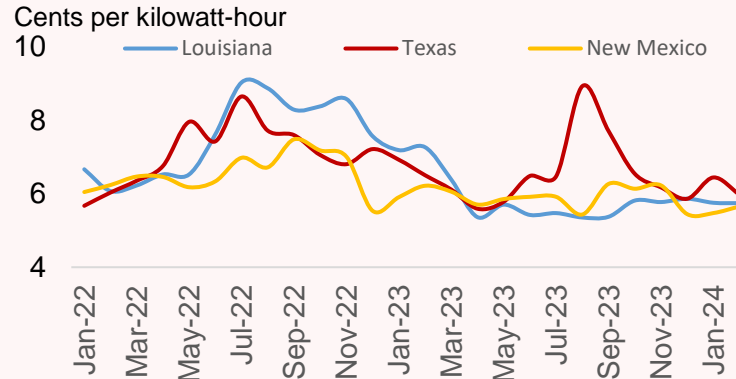
**Texas' lower natural gas receipts enabled by higher inventories.** Although Texas' thermal and dispatchable energy needs have continued to grow, the maximum monthly quantities of natural gas and coal that generators received have fallen over the past two years, thanks at least in part to greater inventories. In the latest data, Texas' natural gas storage of 687 bcf in Feb. 2024 increased by 143 bcf (26.4%) versus its level in Feb. 2022.

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



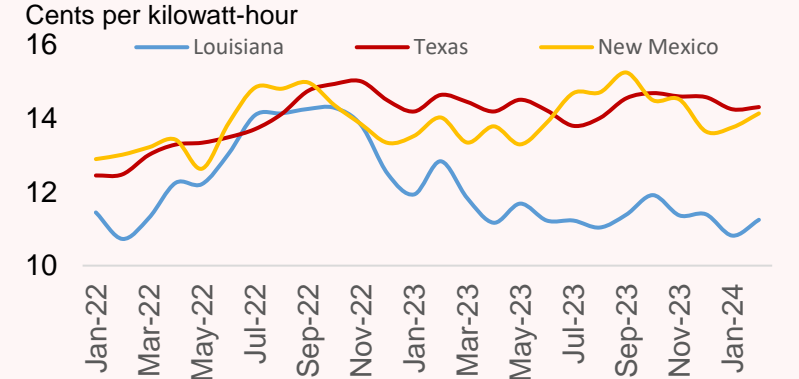
**Texas' electricity prices fell in February.** The average price of electricity in Texas decreased by 4.8% m/m in February. However, Texas' average price remained 4.4% and 11.1% higher than those in Louisiana and New Mexico, respectively.

## Industrial electricity prices



**Texas' industrial electricity prices decreased.** For Texas' industrial consumers, the average price of electricity fell by 8.2% m/m in February. However, Texas' average price remained 4.0% and 5.7% higher than those in Louisiana and New Mexico, respectively.

## Residential electricity prices



**Texas' residential electricity prices increased.** For Texas' residential consumers, the average price of electricity rose by 0.4% m/m in February. Texas' average price remained 27.2% higher than that in Louisiana and 1.2% higher than that in New Mexico.

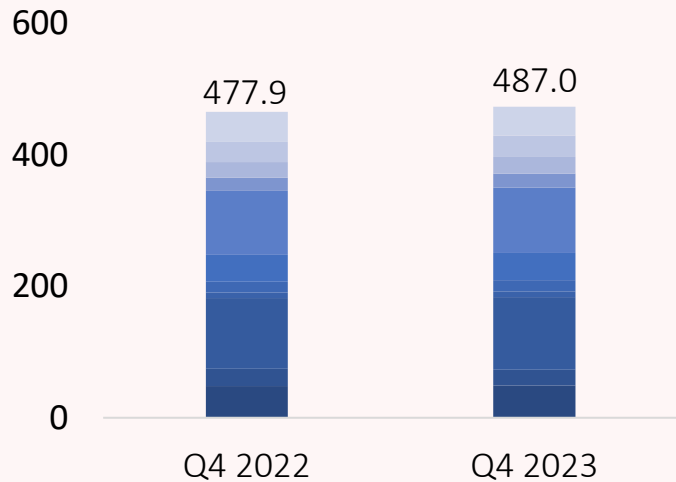
# Texas' oil and natural gas industry wages reached \$14.6 billion in Q4 2023



- ▶ Texas' oil and natural gas industry employment and wages grew by 1.9% y/y and 5.8% y/y, respectively, in Q4 2023, raising the totals to over 487,000 jobs and \$14.6 billion in wages – the highest fourth quarter wages on record.
- ▶ Over 40% of the job growth occurred in the upstream and supporting services, 25% in petroleum wholesale and retail trade, and 20% in oil & gas field machinery and equipment manufacturing per data the latest data (released on May 16, 2024) from the U.S. Census Bureau and Texas Workforce Commission.

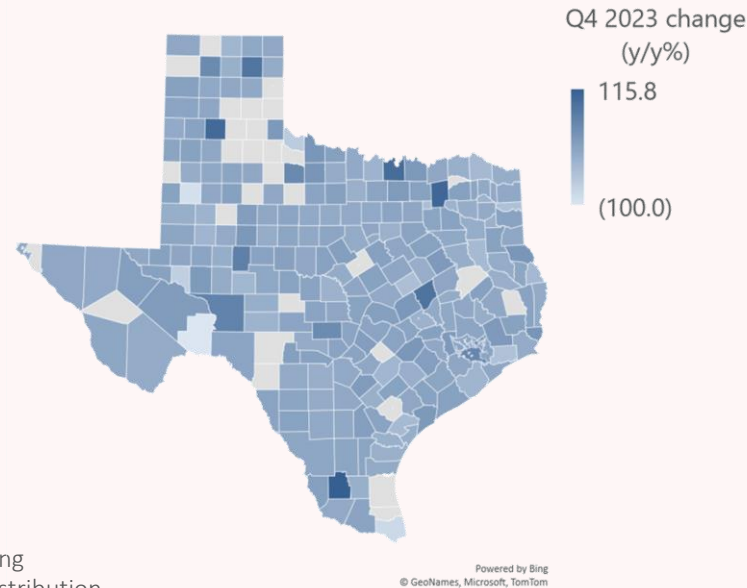
## Texas oil and natural gas industry direct employment rose by +1.9% y/y in Q4 2023

Thousand Jobs



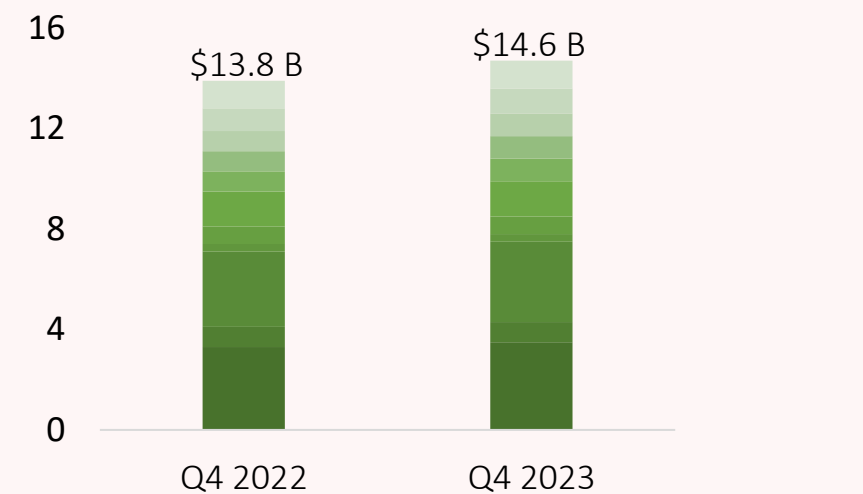
- Oil & gas extraction
- Support activities for o&g ops.
- Petroleum refineries
- Gas stations & fuel dealers
- All other\*
- Pipeline construction
- Oil & gas drilling
- Natural gas distribution
- Petrochemical mfg.
- Pipeline transportation
- Oil & gas field mach. and eq. mfg.

\* 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 +5.8% y/y in Q4 2023

Billion dollars



- Pipeline construction
- All other\*
- Gas stations & fuel dealers
- Petroleum refineries
- Support activities for o&g ops.
- Oil & gas extraction
- Oil & gas field mach. and eq. mfg.
- Pipeline transportation
- Petrochemical mfg.
- Natural gas distribution
- Oil & gas drilling

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