



June 10, 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.

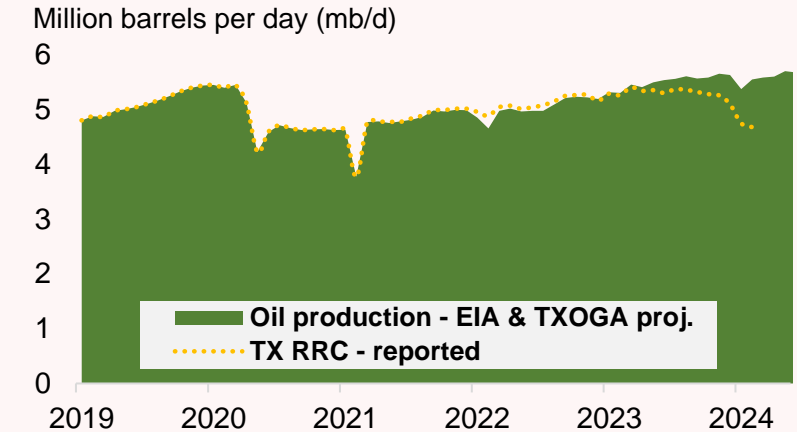
Key points for the week of June 10, 2024

- **U.S. economic indicators continue to show growth.** The employment situation remained solid with non-farm payroll additions of 272,000 in May, and the unemployment rate rose by 0.1% m/m to 4.0%. The Philadelphia Federal Reserve's ADS Index indicates that business conditions remain conducive to GDP growth in Q2 2024, albeit at a relatively slow pace. With U.S. GDP growth revised down to 0.4% year-over-year by the Bureau of Economic Analysis, this softening could reinforce lower price inflation and potentially lead to Federal Funds rate cuts.
- **Oil market fundamentals loosened, and prices fell.** As previously highlighted, the global oil market has remained well-supplied despite record-high demand. This week, news has focused on whether OPEC+ may increase supply to maintain its market share amid expected growth from Brazil, Guyana, and Canada, alongside underappreciated strength from U.S. rig productivity and oil production. U.S. oil production has been sustained above 13 million barrels per day (mb/d) in recent months, according to the Energy Information Administration (EIA). The strong production levels have more than offset domestic demand (20.5 mb/d) and petroleum net exports, which have remained above the top of their five-year ranges as of May 31 per EIA.
- **Natural gas prices rose despite the strongest storage increase since mid-April.** Prices at Henry Hub approached \$2.80 per million Btu for the week ended June 7, despite the strongest weekly gas storage increase since mid-April (+3.5% week-over-week), sustaining levels 25% above the maximum of the five-year range. Futures prices for December delivery are currently over 30% above the level for July delivery.
- As highlighted in the [Chart of the Week](#), TXOGA estimates that Texas produced 5.7 mb/d of crude oil and 32.5 billion cubic feet per day (bcf/d) of natural gas marketed production in May, which both remained near record-high levels.

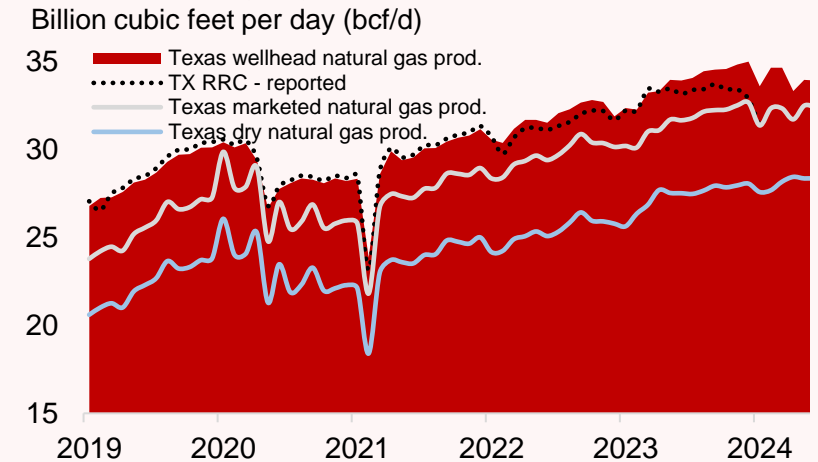


- ▶ **Texas' oil production has remained near its record highs.** EIA estimates that Texas produced 5.6 mb/d in March, and TXOGA estimates that it rose further to a record 5.7 mb/d in May.
- ▶ **Natural gas production edged down from record levels.** Texas' natural gas production at the wellhead of 35.0 bcf/d in December was a record high per EIA, and TXOGA estimates its has sustained 34.0 bcf/d through Q2 2024, corresponding with 32.5 bcf/d of marketed production and 28.3 bcf/d of dry gas production.

Texas crude oil production, Jan. 2019 – May 2024

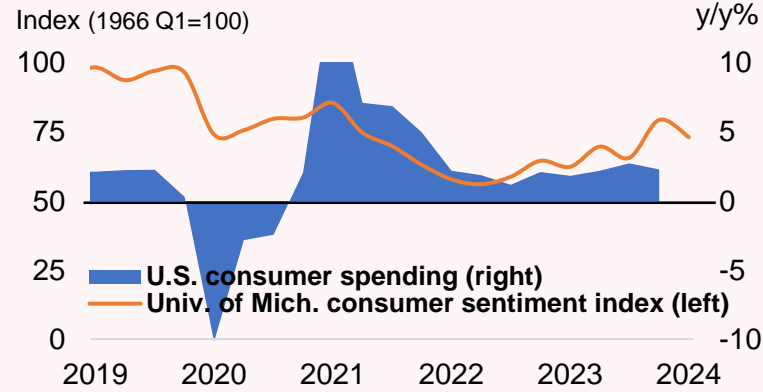


Texas natural gas production, Jan. 2019 – May 2024



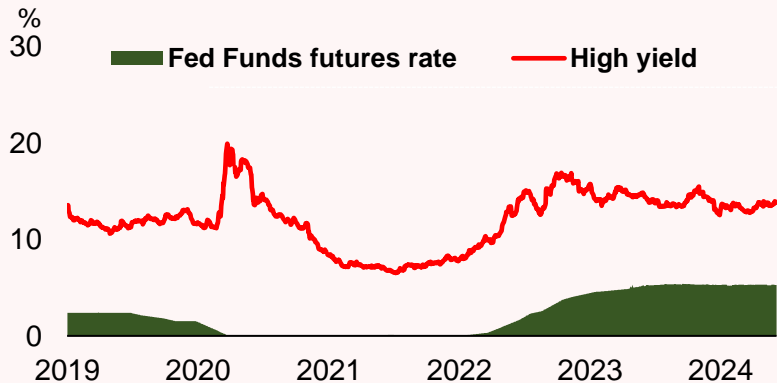
U.S. economic indicators

Consumer sentiment vs. spending



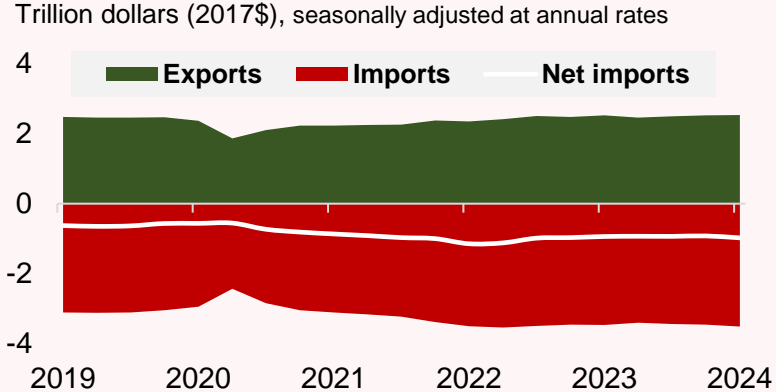
Consumer sentiment weakened in May, according to the University of Michigan's survey, but remains consistent with continued consumer spending growth in Q2 2024. The index was revised up to 69.1 in the final May survey, but remained down from 77.2 in April due to broad-based concerns for inflation, unemployment,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

Fed Funds rate and CCC and lower corporate bond yields



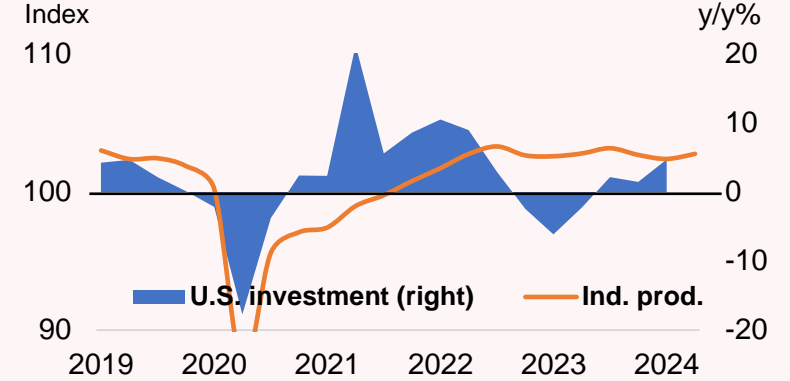
Bond premium for low credit edged up. High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended June 7, HY rates rose by 0.1% to 13.9%, while Fed Funds futures rates remained at 5.3%, resulting in a 0.1% increase in the premium for low credit quality to 8.6%.

Real net exports of goods and services



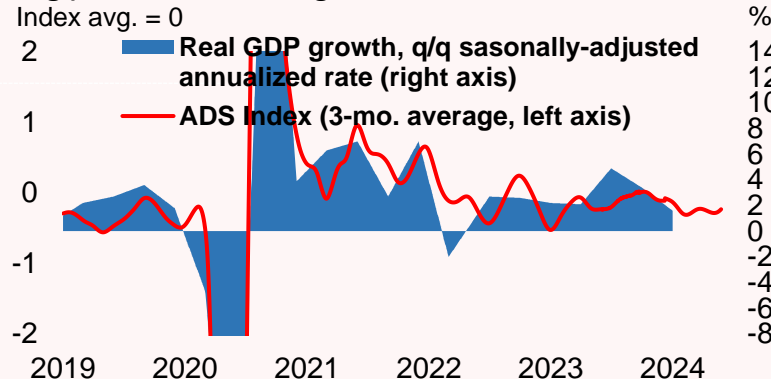
U.S. trade deficit revised to be larger. The U.S. real trade deficit ran at an annualized rate of \$975 billion in Q1 2024 per BEA initial estimates. On a nominal basis, the trade surplus for petroleum and products was revised upward to an annualized rate of \$56 billion in Q1 2024, vs. \$36.7 billion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

Industrial production and investment growth



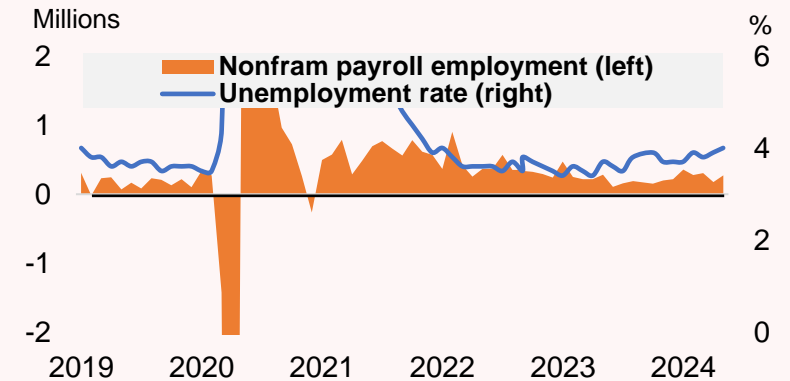
Industrial production remained steady in April and consistent with economy-side investment growth, which rose by 4.7% y/y in Q1 2024.

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

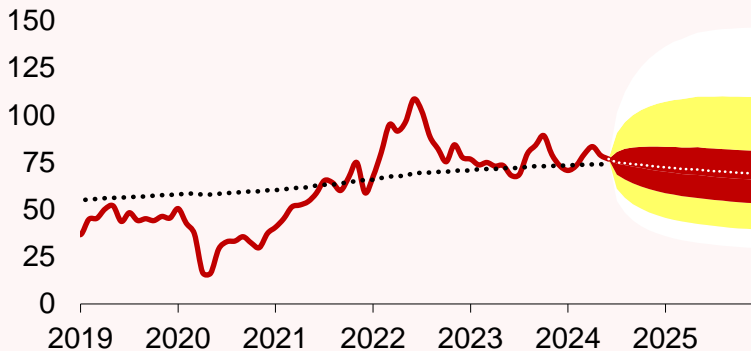


Solid labor market growth. The employment situation is a lagging indicator of GDP growth. The U.S. unemployment rate rose by 0.1% m/m to 4.0% in May per BLS, while non-farm payrolls increased by 272,000.

U.S. oil market indicators

WTI crude oil price mean reversion analysis

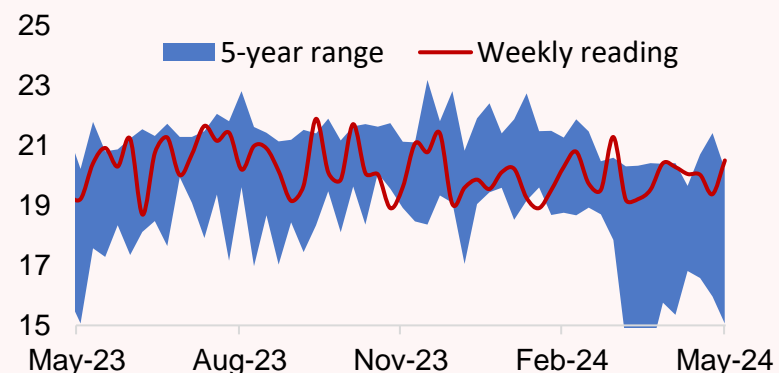
Dollars per barrel (2024\$)



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

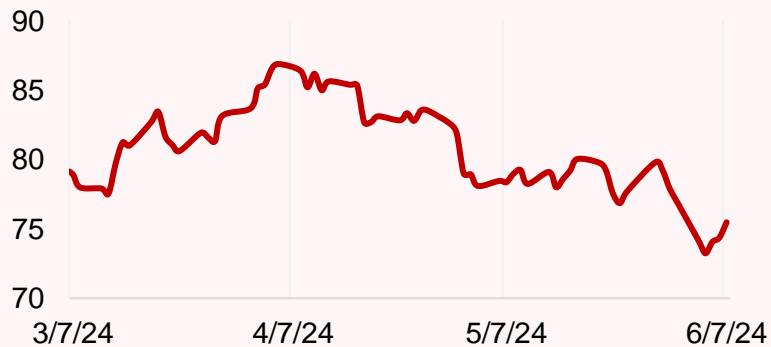
Million barrels per day (mb/d)



Petroleum demand increased. U.S. petroleum demand, as measured by deliveries, decreased by 1.1 mb/d w/w to 20.5 mb/d for the week ended May 31 – at the top of the five-year range.

WTI crude prompt month futures prices

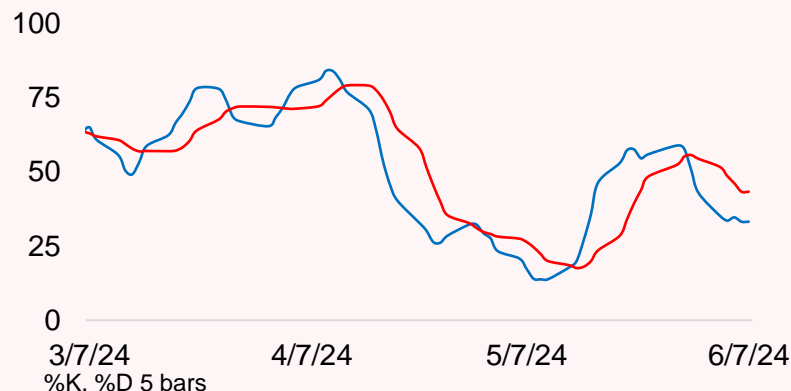
Dollars per barrel



WTI crude oil prices remained fell by \$2 per barrel w/w to near \$75 per barrel for the week ended June 7, reflecting historically solid production and inventories despite strong demand, exports, and Middle East geopolitical uncertainties.

WTI crude prompt month futures slow stochastic

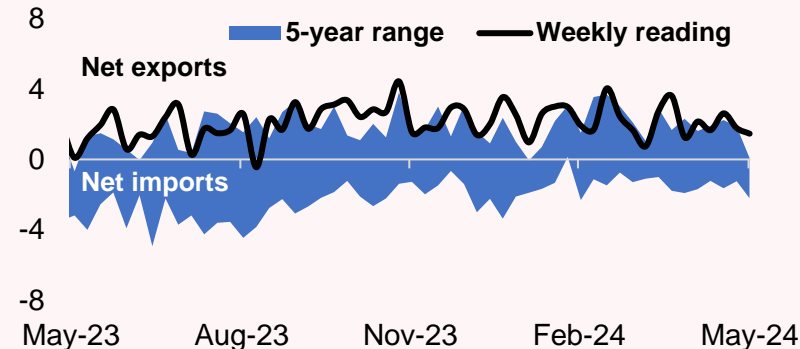
Index level



Price momentum fell during the week ended June 7.

U.S. petroleum net exports (imports)

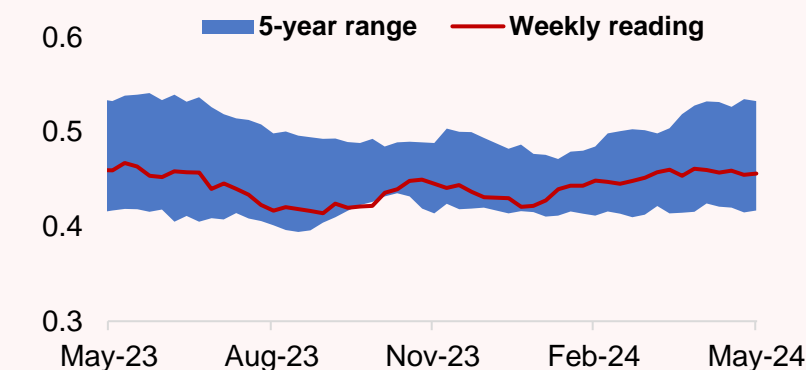
Million barrels per day, mb/d



Petroleum net exports fell. The U.S. was a petroleum net exporter of 1.5 mb/d for the week ended May 31, down by 0.3 mb/d from the prior week but above the five-year range.

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

Billion barrels

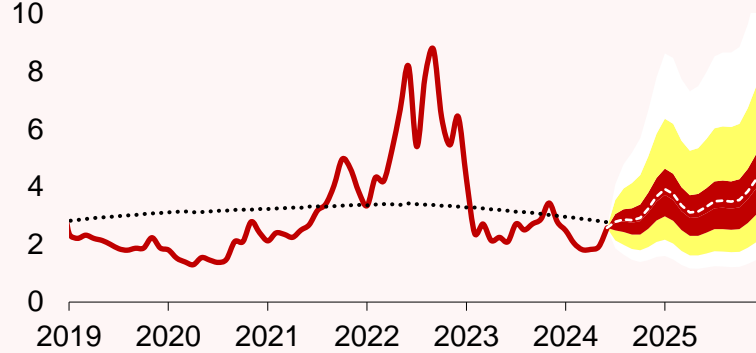


Inventories increased. U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) increased by 1.2 million barrels (mb) for the week ended May 31.

U.S. natural gas market indicators

Natural gas price mean reversion analysis

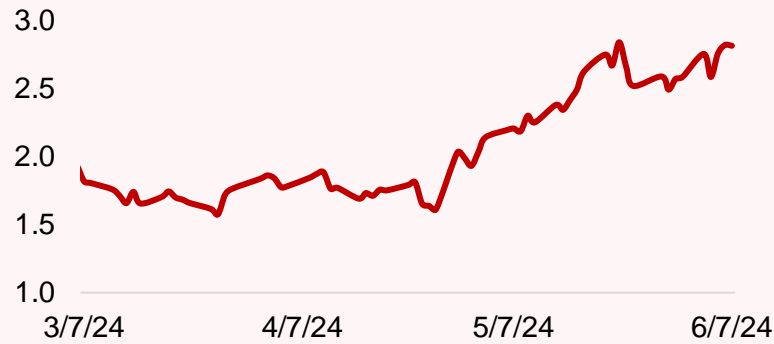
Dollars per mMBtu (2024\$)



Near-term natural gas futures have risen to align with the historical mean reversion target but rise by over 30% between the July and December contracts. Confidence intervals based on past prices show the potential for greater upside than downside.

Natural gas prompt month futures prices

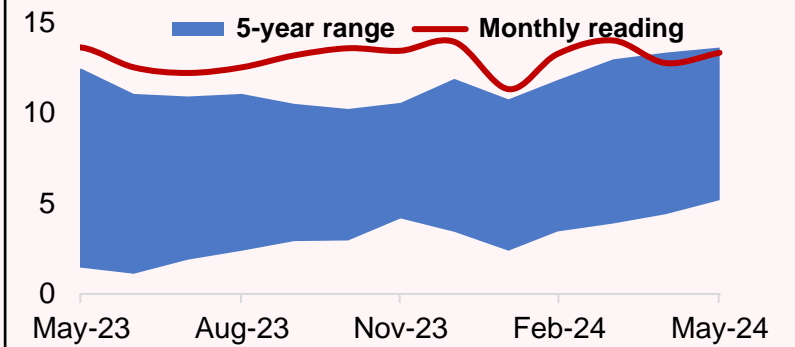
Dollars per million Btu



Natural gas prices at Henry Hub rose to over \$2.90 per million Btu for the week ended June 7 despite historically strong inventory levels.

U.S. natural gas net exports

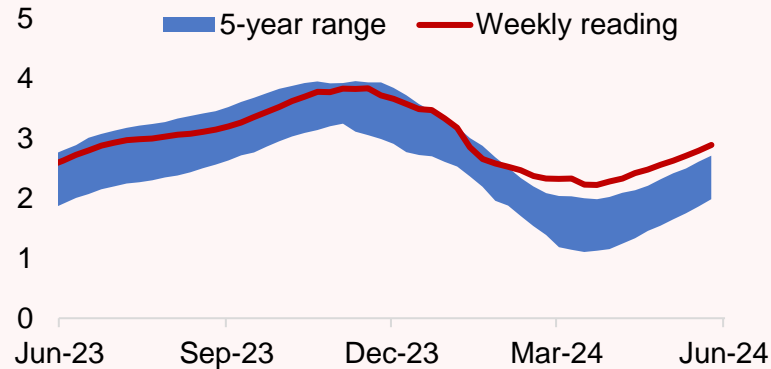
Billion cubic feet per day, bcf/d



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

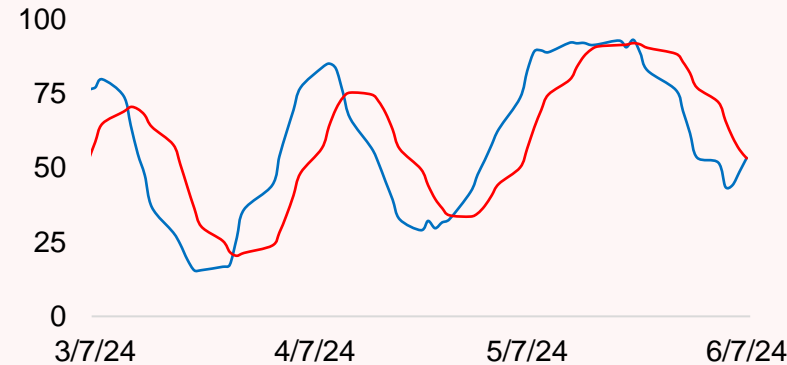
Trillion cubic feet (tcf)



Working gas in underground storage rose by 3.5% w/w to 2.89 tcf as of May 31 and remained above the 5-year range.

Natural gas futures slow stochastic

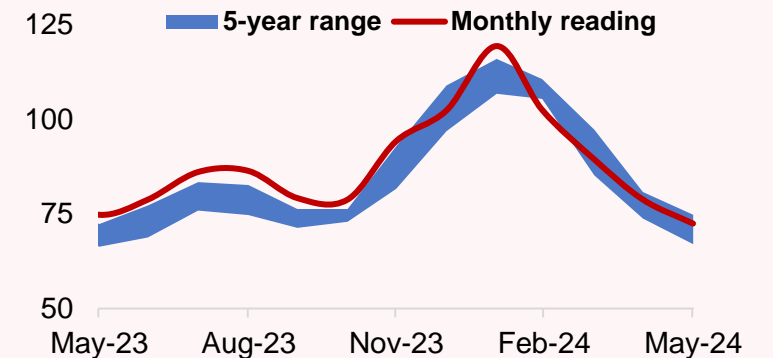
Index level



%K, %D 5 bars
Natural gas price momentum decreased during the week ended June 7.

U.S. natural gas consumption

Billion cubic feet per day, bcf/d

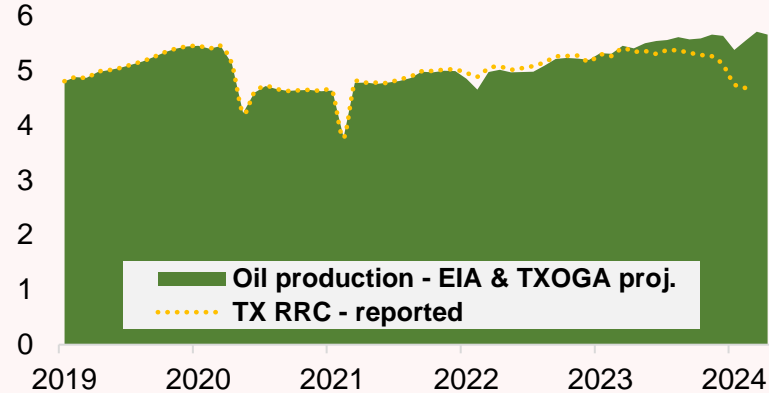


Consumption decreased. U.S. natural gas consumption fell by 2.3 bcf/d y/y to 72.4 bcf/d in May as estimated by EIA.

Texas' oil and natural gas production

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

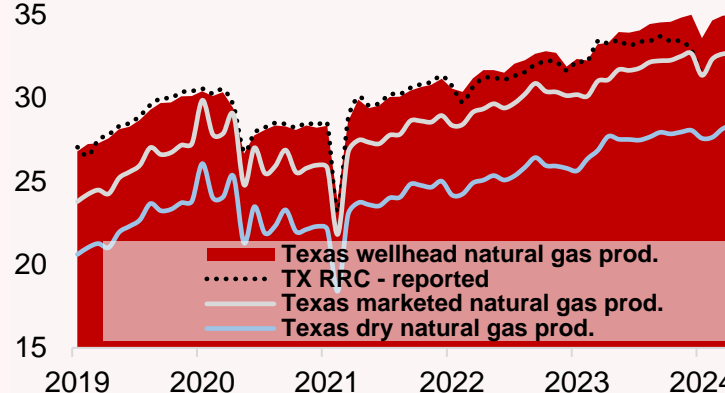
Million barrels per day (mb/d)



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

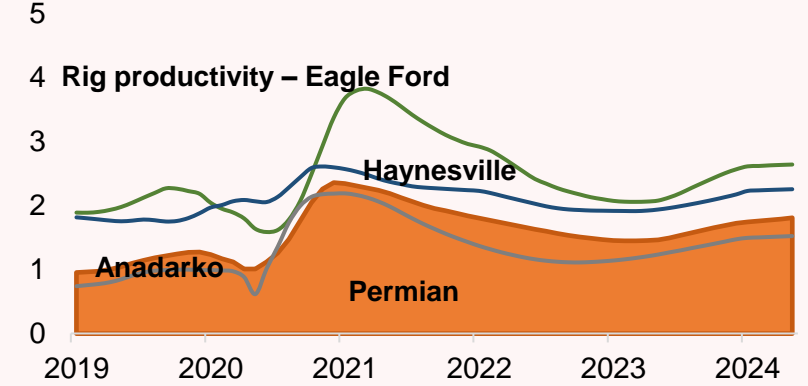
Billion cubic feet per day (bcf/d)



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

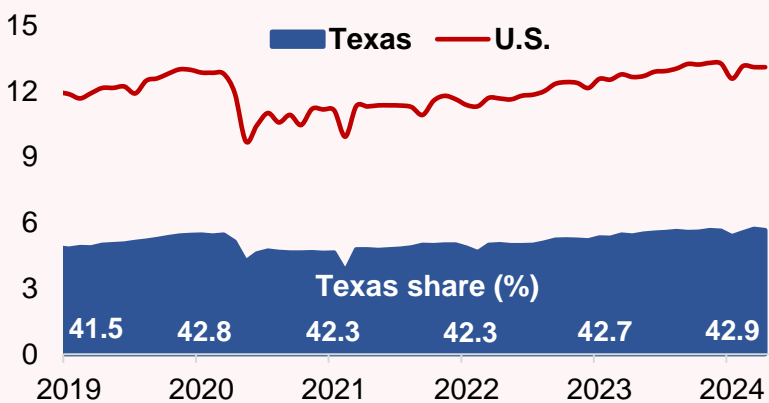
Thousand barrels per day oil-equivalent, kb/dae



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

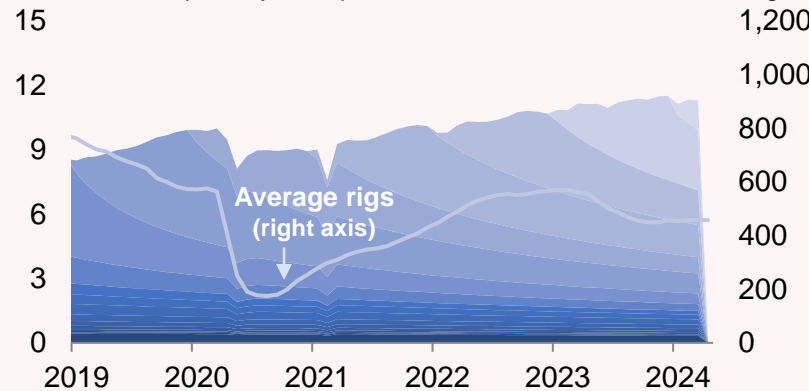
Million barrels per day (mb/d)



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

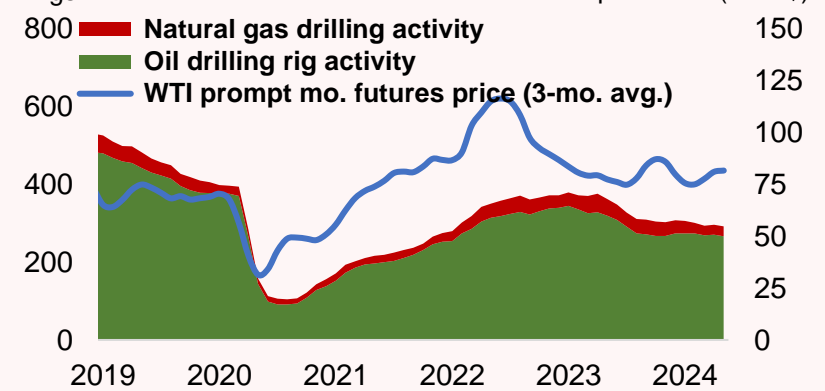
Million barrels per day oil-equivalent



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 June 7 per Baker Hughes. Texas had 261 oil-directed rigs and 26 natural gas-directed rigs, both unchanged from the prior week.

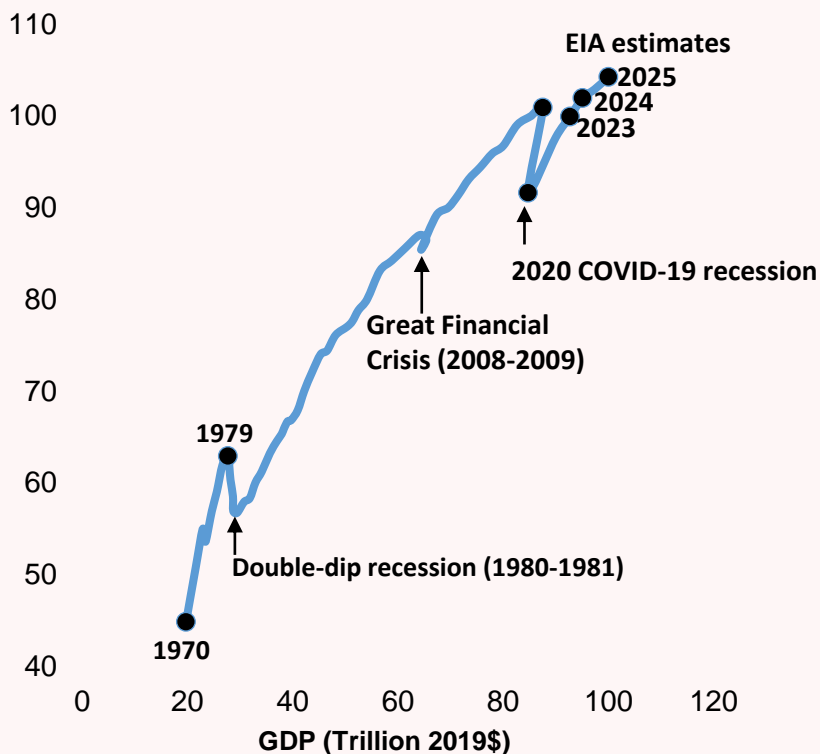
Global Oil Market Balance Projections to 2025



- 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.

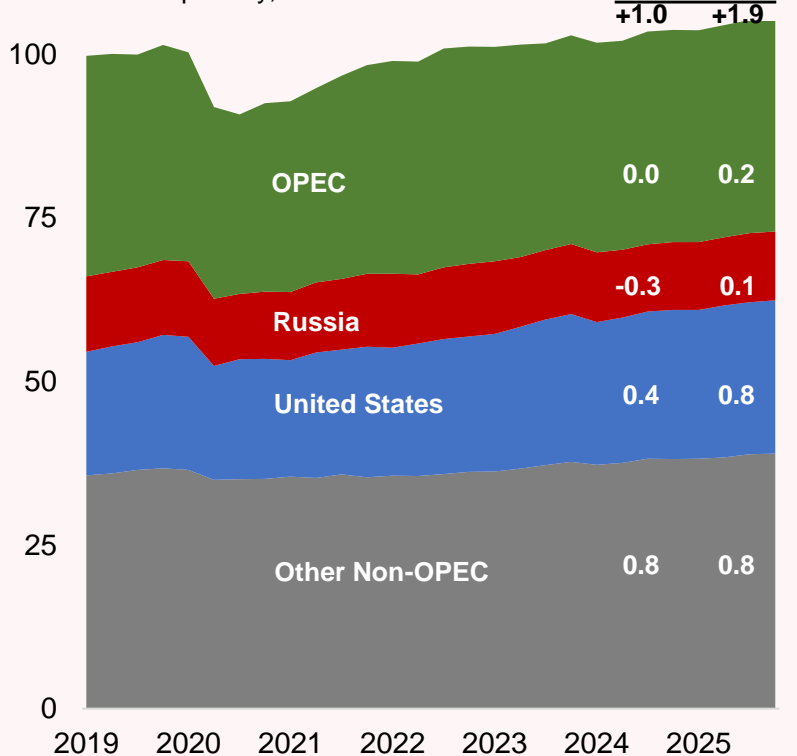
Global oil demand and GDP

Million barrels per day (mb/d)



Oil production by country/region

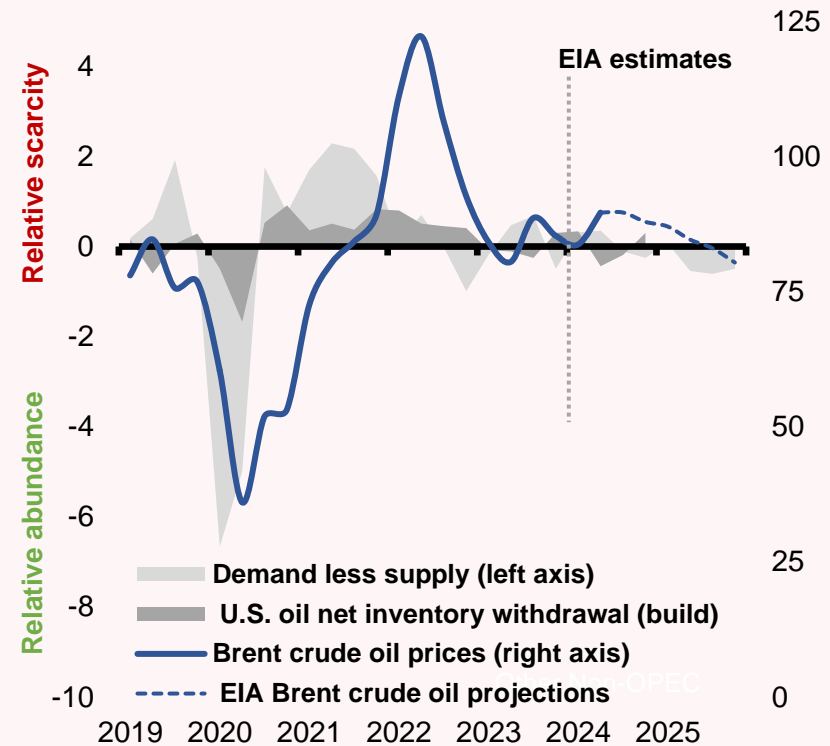
Million barrels per day, mb/d



Global demand/supply & Brent prices

Million barrels per day (mb/d)

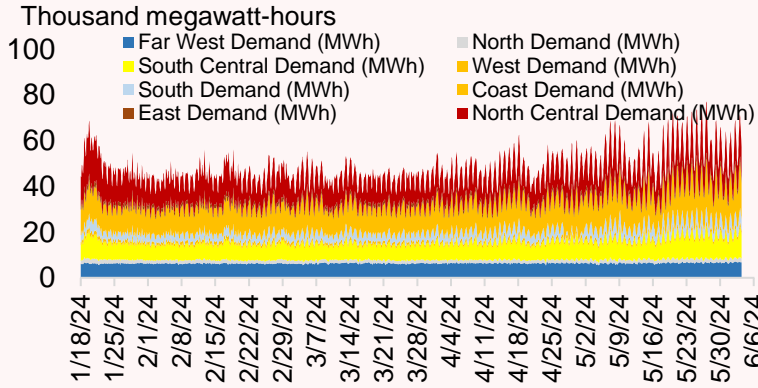
2024\$/Bbl



Texas Electricity Analysis

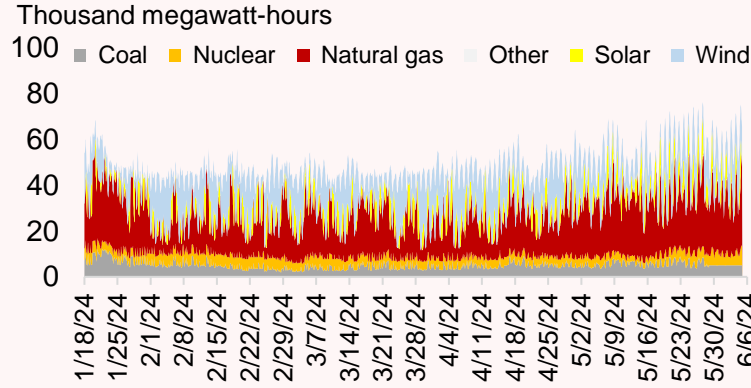


ERCOT electricity load by region



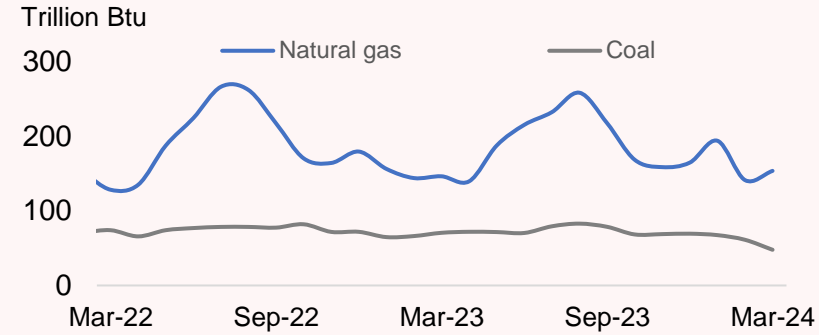
North and West Texas load fell. For May 29-June 4, ERCOT's average hourly electricity load decreased by 6.6% w/w, while the maximum hourly load fell by 1.1 w/w. Variability was the highest in the West, South, and South Central regions.

ERCOT hourly electricity generation by source



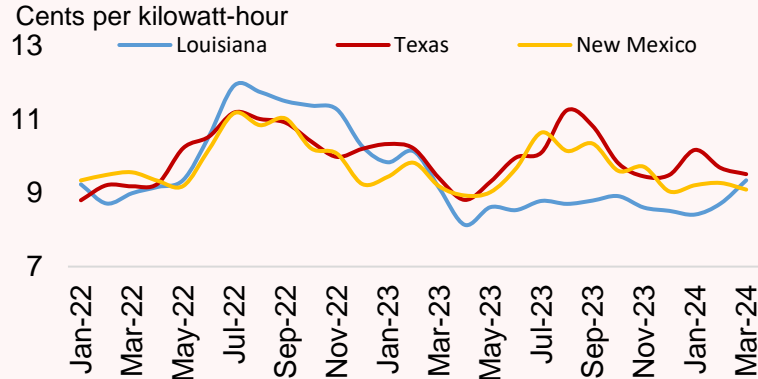
ERCOT's weekly generation fell but increased in variability. ERCOT's hourly electricity generation for the period May 29-June 4 ranged between 43 and 75 kMWh with a percentage standard deviation of 14.8 – a lower range with greater variation vs. the prior week. Thermal sources contributed as much as 79% of the region's power (down by 6% w/w), and natural gas drove as much as 58% over the period (down by 6% w/w).

Electricity plant receipts of natural gas and coal



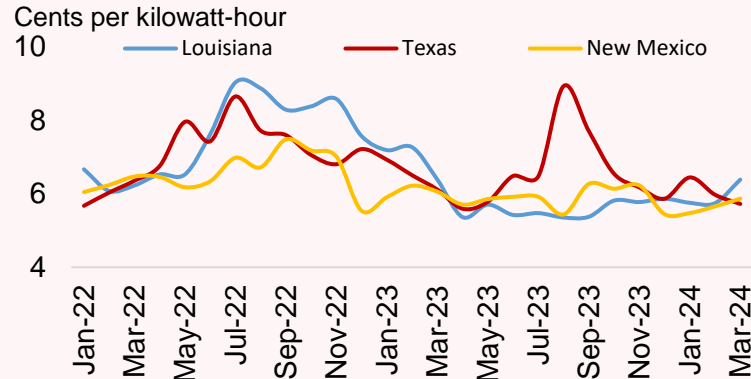
Texas' lower natural gas receipts enabled by higher inventories. Although Texas' thermal and dispatchable energy needs have continued to grow, the maximum monthly quantities of natural gas and coal that generators received have fallen over the past two years, thanks at least in part to greater inventories. 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



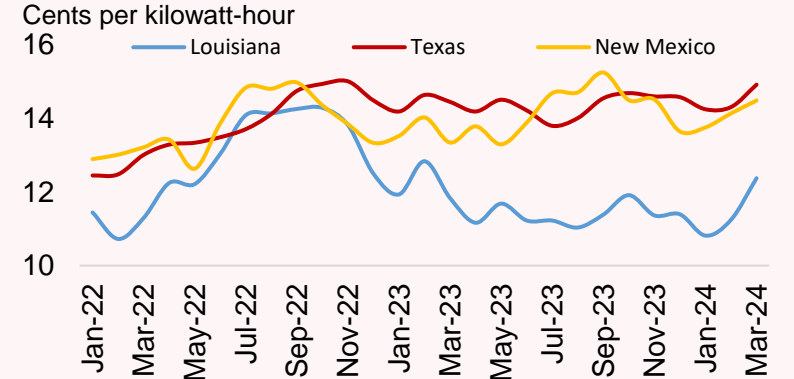
Texas' electricity prices rose in March. The average price of electricity in Texas (9.51 cents per kWh) increased by 1.2% y/y in March, while those in Louisiana and New Mexico remained lower.

Industrial electricity prices



Texas' industrial electricity prices decreased. For Texas' industrial consumers, the 5.72 cents per kWh average price of electricity decreased by 6.4% y/y in March – and returned to be below those in Louisiana and New Mexico.

Residential electricity prices



Texas' residential electricity prices increased. For Texas' residential consumers, the average price of electricity (14.92 cents per kWh) rose by 3.3% y/y in March and remained 3.0% above that in New Mexico and 20.5% above that in Louisiana.

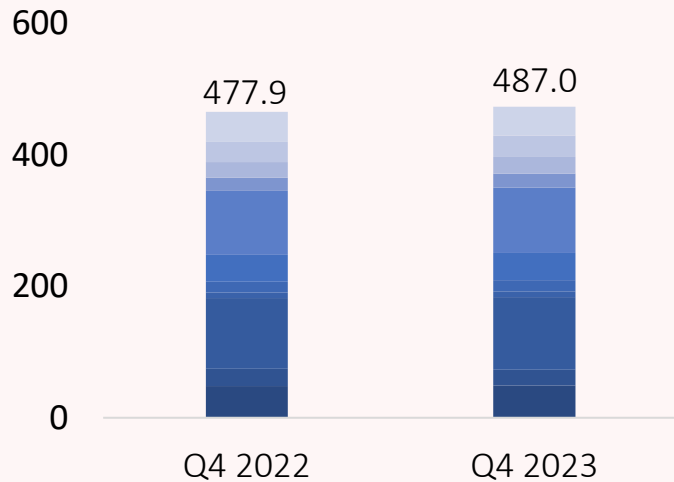
Texas' oil and natural gas industry wages reached \$14.6 billion in Q4 2023



- ▶ 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.

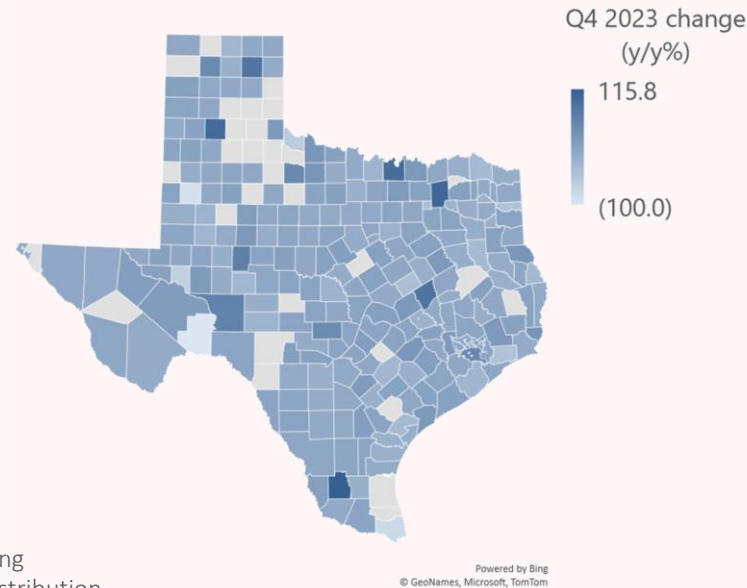
Texas oil and natural gas industry direct employment rose by +1.9% y/y in Q4 2023

Thousand Jobs



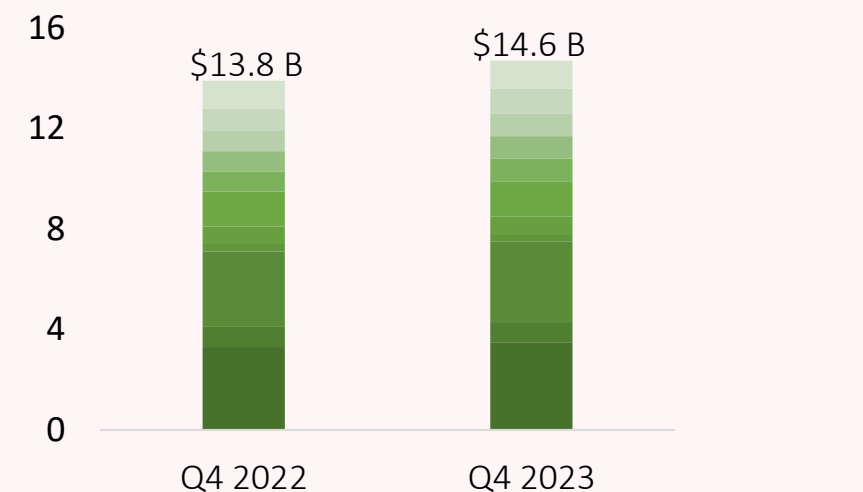
- Oil & gas extraction
- Support activities for o&g ops.
- Petroleum refineries
- Gas stations & fuel dealers
- All other*
- Pipeline construction
- Oil & gas drilling
- Natural gas distribution
- Petrochemical mfg.
- Pipeline transportation
- Oil & gas field mach. and eq. mfg.

* 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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