



**April 29, 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 April 29, 2024

- **U.S. economic indicators were mixed.** Initial GDP growth estimates for Q1 2024 align with the solid consumer spending and business investment trends we've been monitoring. As highlighted in our [Chart of the Week](#), real U.S. oil and natural gas net exports achieved a record surplus of \$45 billion in Q1 2024. Despite this, the U.S. trade deficit expanded to an annualized rate of nearly \$1 trillion, underscoring a strong and growing dependency on imports across the broader economy.
- **Oil market fundamentals remained stable.** Ongoing geopolitical tensions in the Middle East continued to buoy West Texas Intermediate (WTI) crude oil prices around \$84 per barrel. According to Energy Information Administration (EIA) data for the week ended April 19, international demand for U.S. crude and its derivatives climbed to 3.6 million barrels per day (mb/d) (up 0.8 mb/d per day week-over-week, w/w), while domestic demand remained solid at 19.5 million barrels per day, placing it in the top 15% of its five-year range. This activity contributed to a reduction in crude oil inventories by 6.4 million barrels.
- **Prices for natural gas declined as storage levels saw significant increases.** With U.S. marketed production of natural gas estimated at 112.9 billion cubic feet per day as of April 24, and weekly storage levels 36% above their five-year high, futures prices for May delivery dropped to under \$1.60 per million Btu on April 26—marking the lowest April prices since 2020. Notably, natural gas futures prices currently increase by 60% from May to April contracts.
- **Texas' electricity prices decreased.** In February, electricity prices in Texas decreased by 4.8% month-over-month but continued to exceed those in Louisiana and New Mexico. The average price across all end-use sectors in Texas was 4.4% higher than in Louisiana and 11.1% higher than in New Mexico.

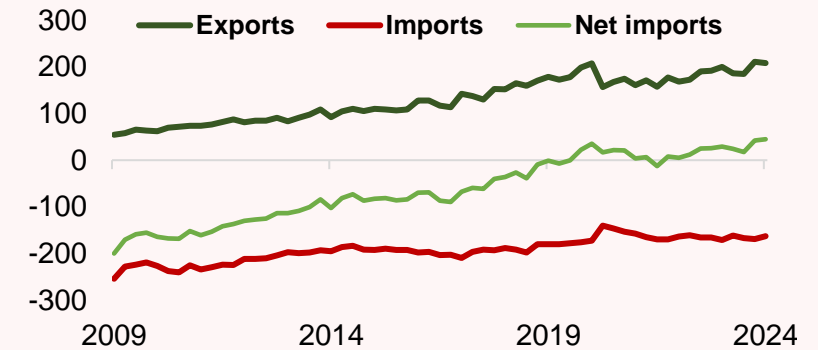
# TXOGA Chart of the Week: U.S. Trade Deficit Widens Despite Record High in Petroleum Net Exports



The U.S. petroleum trade balance shifted from a \$200 billion deficit 15 years ago to a record \$45 billion surplus in Q1 2024

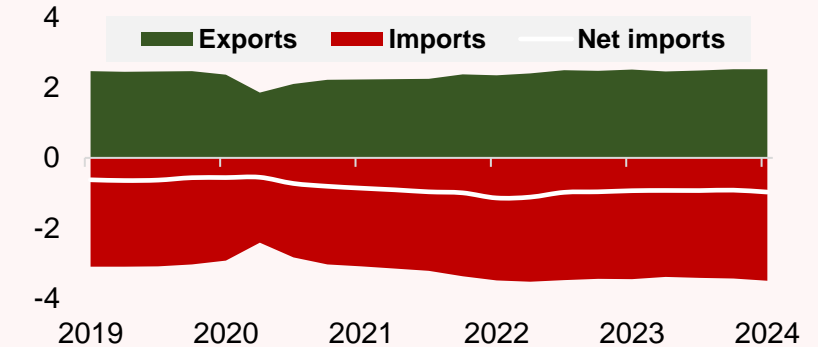
- ▶ In Q1 2024, the U.S. achieved a significant milestone with a record high \$45 billion real trade surplus in petroleum net exports, contrasting with a nearly \$200 billion deficit in Q1 2009. This turnaround was driven by the U.S. energy revolution, which reduced reliance on imported petroleum and boosted exports. Factors contributing to this shift include the lifting of the U.S. crude oil export ban at the end of 2015 and increased exports of natural gas and natural gas liquids. Collectively, oil and natural gas have added \$245 billion to the improvement of the U.S. real trade balance.
- ▶ Despite these substantial gains in energy exports, the broader U.S. trade balance for goods and services remains deeply in deficit, with persistent annual shortfalls of around one trillion dollars. The long-term implications of sustaining such a substantial deficit could be profound. Increased foreign debt could eventually weaken the U.S. dollar and make the economy vulnerable to foreign creditor nations. Persistent deficits may necessitate future adjustments in U.S. fiscal and monetary policies, potentially ceding global economic power to [foreign purchasers](#) of U.S. federal debt.

U.S. petroleum real exports and imports  
Billion dollars (2017\$), seasonally adjusted at annual rates



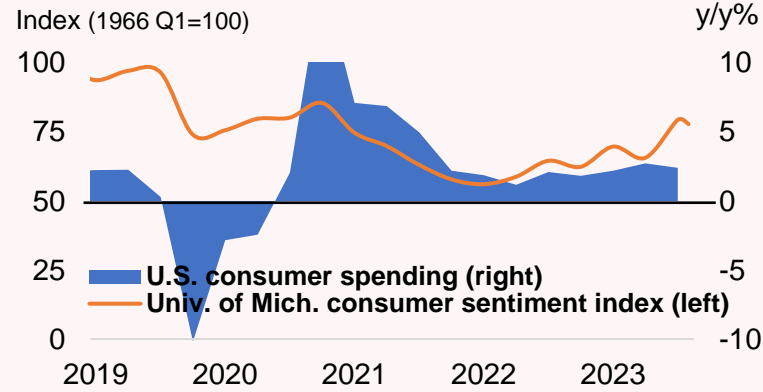
Real net exports of goods and services

Trillion dollars (2017\$), seasonally adjusted at annual rates



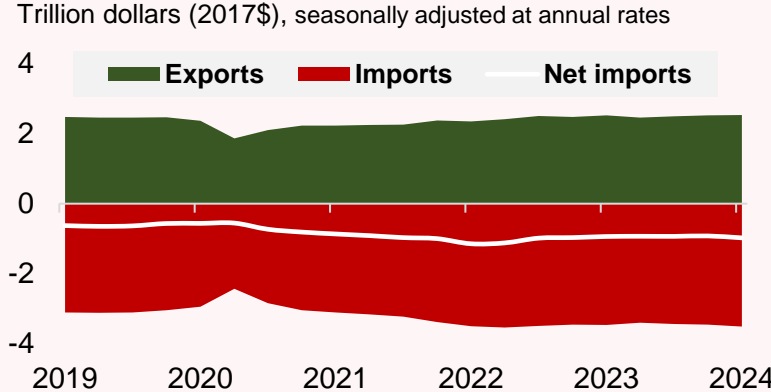
# U.S. economic indicators

## Consumer sentiment vs. spending



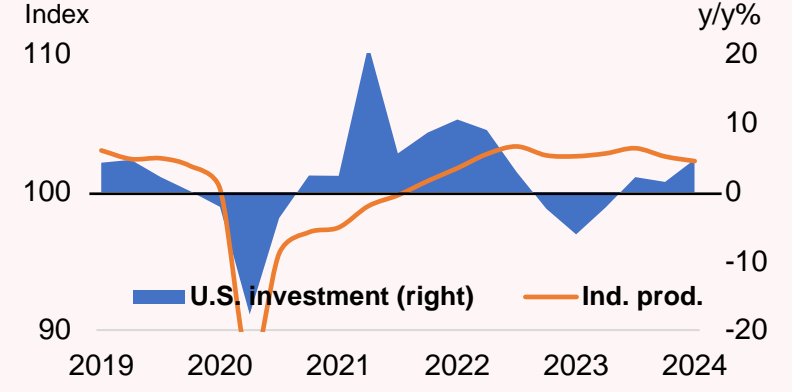
**Consumer spending grew by 2.4% y/y in Q1 2024.** This growth was predicated on improved consumer sentiment, which remained solid with an index reading of 77.9 in the Univ. of Michigan's April 2024 survey. The improvement in consumer sentiment has historically remained consistent with further spending growth in 2024.

## Real net exports of goods and services



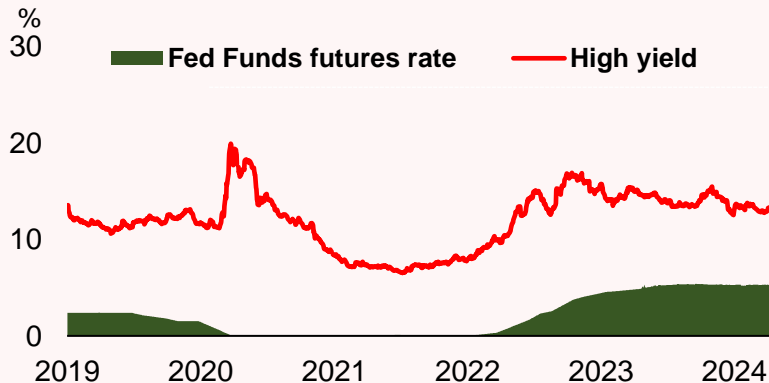
**U.S. trade deficit revised to be larger.** The U.S. real trade deficit ran at an annualized rate of \$973 billion in Q1 2023 per BEA initial estimates. On a nominal basis, the trade surplus for petroleum and products ran at annualized rate of \$52 billion in Q1 2024, up from \$36.7 billion a year ago, to the highest quarterly petroleum trade surplus on record.

## Industrial production and investment growth



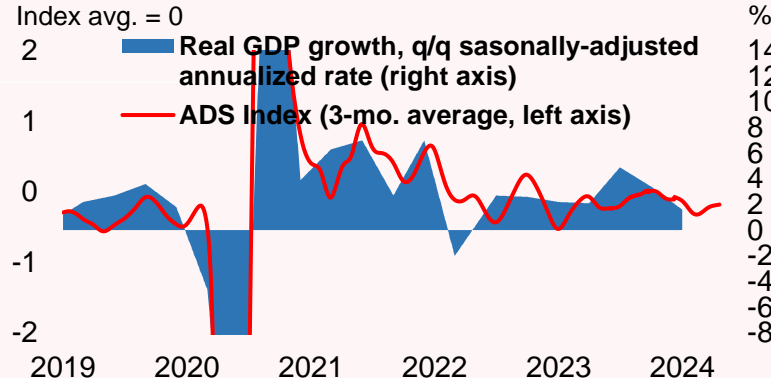
**Industrial production rose by 0.4% m/m in March 2024** and remained consistent with economy-side investment growth, which rose by 4.7% y/y in Q1 2024.

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



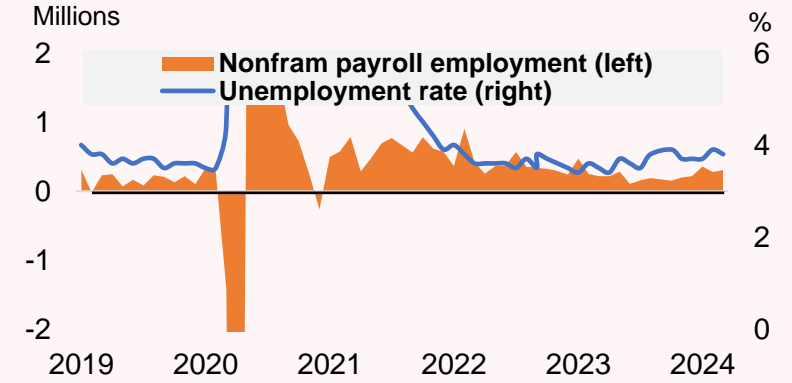
**Decreased bond premium for low credit quality.** High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended Apr. 26, HY rates fell by 0.2% w/w to 13.68% while the Fed Funds futures held steady at 5.33%, lowering the premium for low credit quality to 8.35%.

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



**Real GDP growth continued to grow in line with the ADS index in Q1 2024.** 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 slow GDP growth so far in Q2.

## Nonfarm payroll employment & unemployment rate

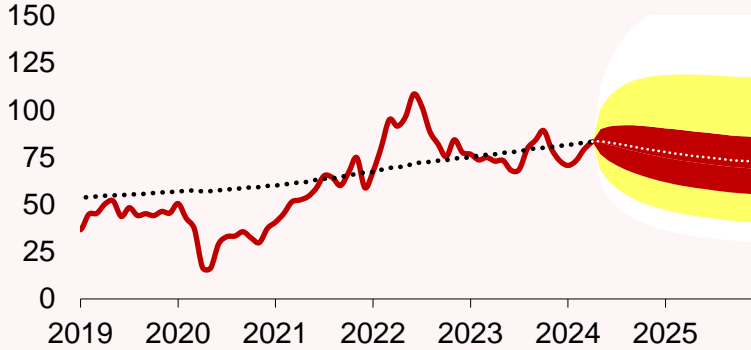


**Higher unemployment rate despite payroll increases.** The employment situation is a lagging indicator of GDP growth. The U.S. unemployment rate fell by 0.1% m/m to 3.8% in March per BLS, while non-farm payrolls rose by 303,000.

# U.S. oil market indicators

## WTI crude oil price mean reversion analysis

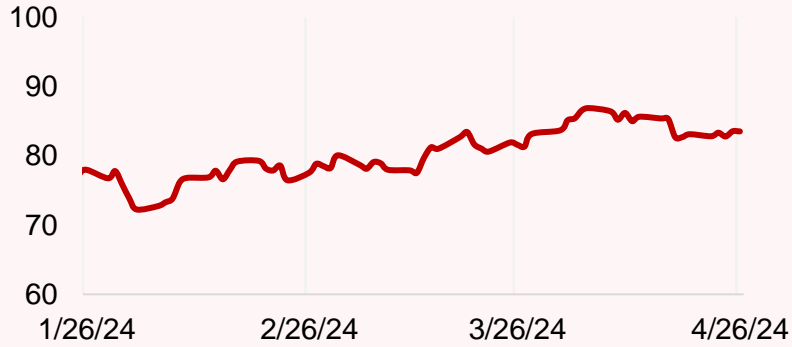
Dollars per barrel (2024\$)



**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.

## WTI crude prompt month futures prices

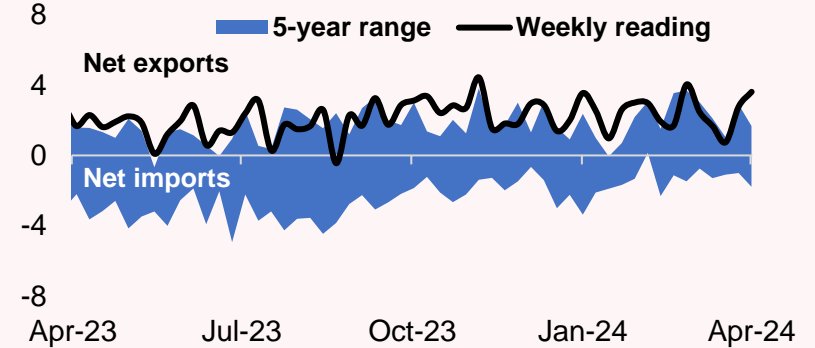
Dollars per barrel



WTI crude oil prices edged up to around \$84 per barrel for the week ended Apr. 26, supported by a Middle East geopolitical premium.

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

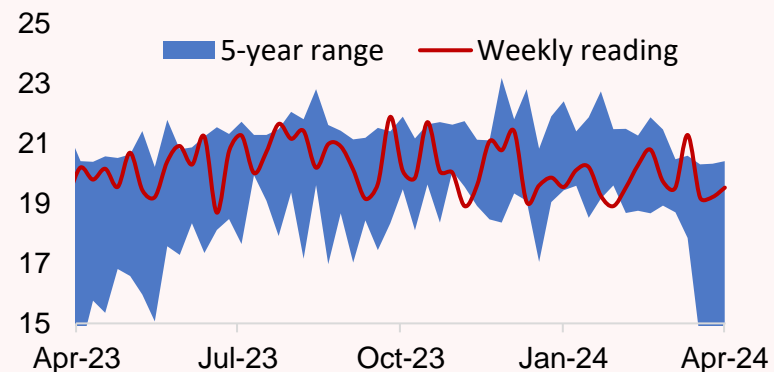
Million barrels per day, mb/d



**Petroleum net exports rose.** The U.S. was a petroleum net exporter of 3.6 mb/d for the week ended Apr. 19, up by 0.8 mb/d from the prior week.

## U.S. petroleum demand

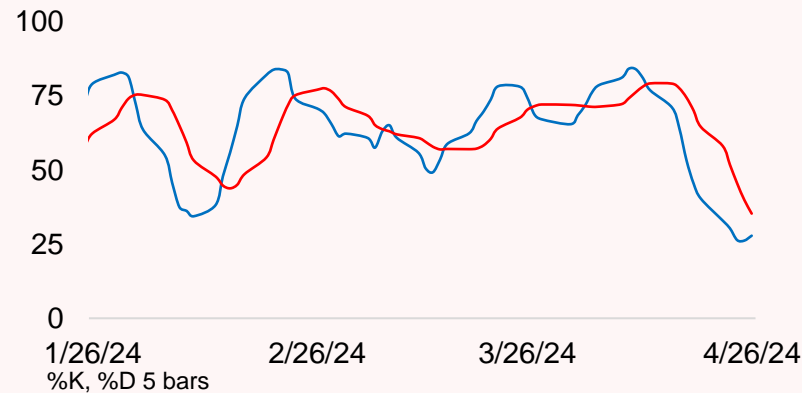
Million barrels per day (mb/d)



**Petroleum demand increased.** U.S. petroleum demand, as measured rose by 0.3 mb/d w/w to 19.5 mb/d for the week ended Apr. 19 and was in the top 20% of the five-year range.

## WTI crude prompt month futures slow stochastic

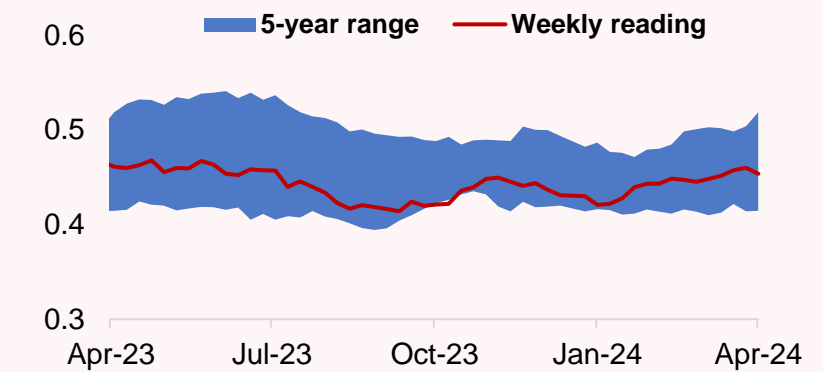
Index level



Price momentum slowed during the week ended Apr. 26.

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

Billion barrels

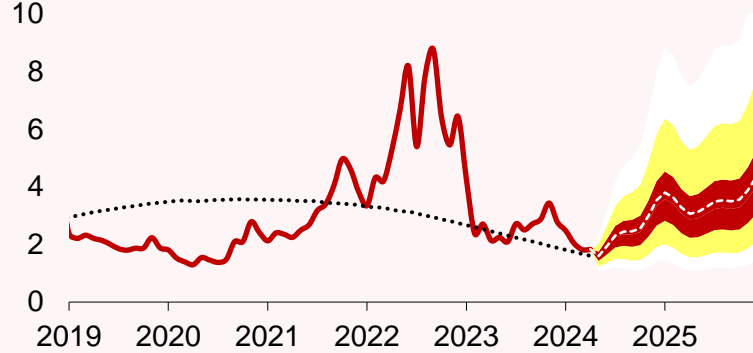


**Inventories decreased.** U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) decreased by 6.4 million barrels (mb) for the week ended Apr. 19.

# U.S. natural gas market indicators

## Natural gas price mean reversion analysis

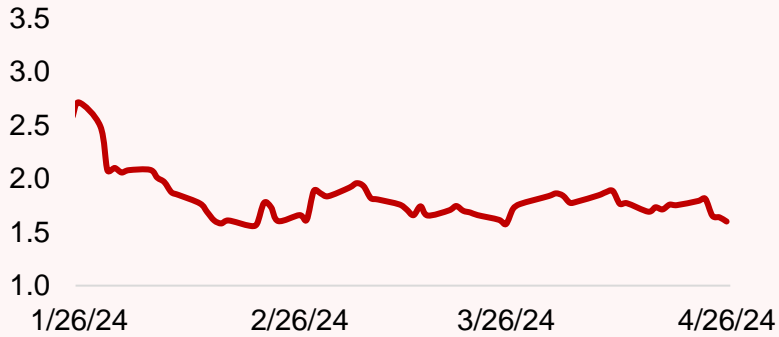
Dollars per mMBtu (2024\$)



**Natural gas futures prices as of Apr. 26 rise by 60% between May and October.** Confidence intervals based on past prices show the potential for greater upside than downside.

## Natural gas prompt month futures prices

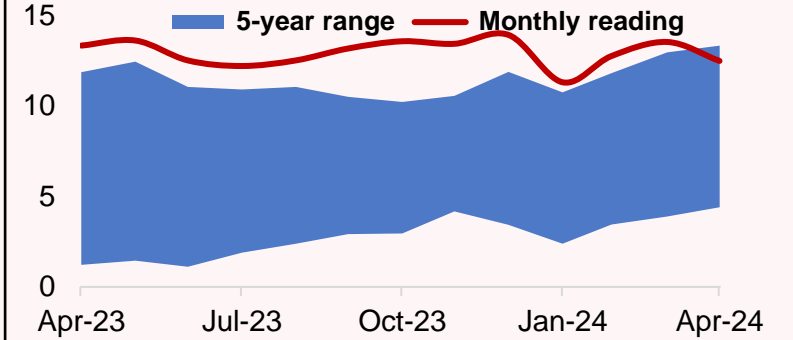
Dollars per million Btu



Natural gas prices at Henry Hub fell to around \$1.60 per million Btu for the week ended Apr. 26, their lowest since February as working as storage continued to exceed its five-year range.

## U.S. natural gas net exports

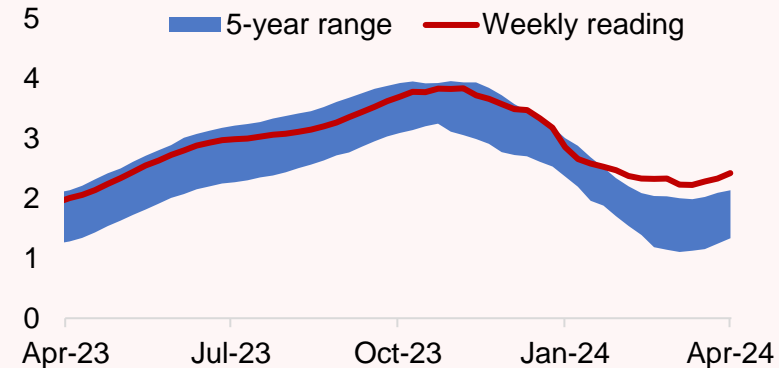
Billion cubic feet per day, bcf/d



**Natural gas exports slipped.** U.S. natural gas net exports in April are projected at 12.5 bcf/d, down from 13.3 bcf/d one year ago, per EIA.

## U.S. weekly working gas storage

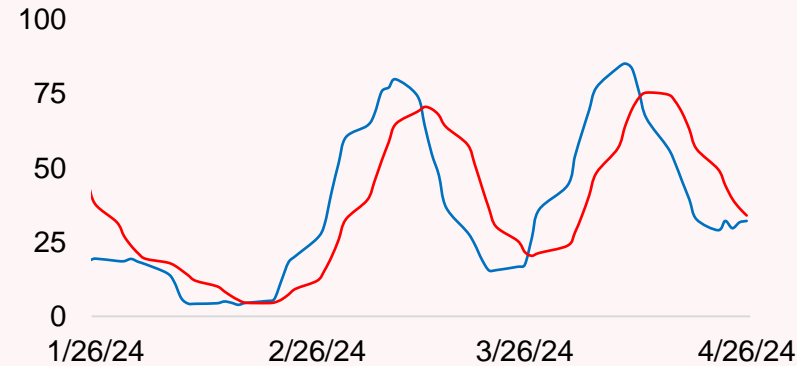
Trillion cubic feet (tcf)



Working gas in underground storage rose by 3.9% w/w to 2.43 tcf as of Apr. 19 and remained above the 5-year range.

## Natural gas futures slow stochastic

Index level

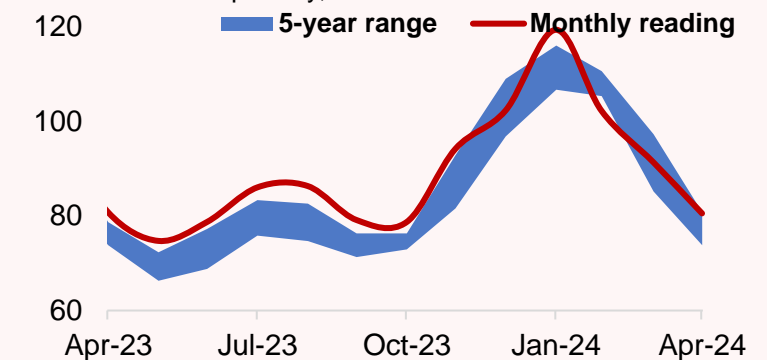


%K, %D 5 bars

Natural gas price momentum fell during the week ended Apr. 19.

## U.S. natural gas consumption

Billion cubic feet per day, bcf/d

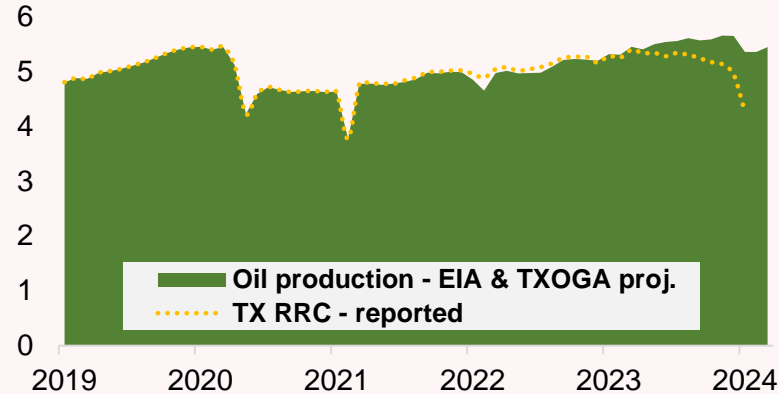


**Consumption decreased.** EIA estimates natural gas consumption to run at 80.5 bcf/d in April, compared with 80.7 bcf/d one year ago.

# Texas' oil and natural gas production

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

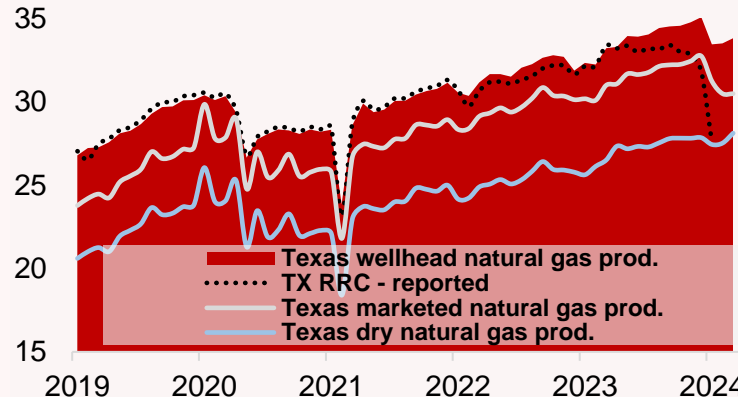
Million barrels per day (mb/d)



**Oil production fell from record highs.** Texas' oil production of 5.4 mb/d in January was impacted by Winter Storm Heather per EIA. TXOGA estimates that Texas crude oil production held steady at 5.4 mb/d in February and March 2024.

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

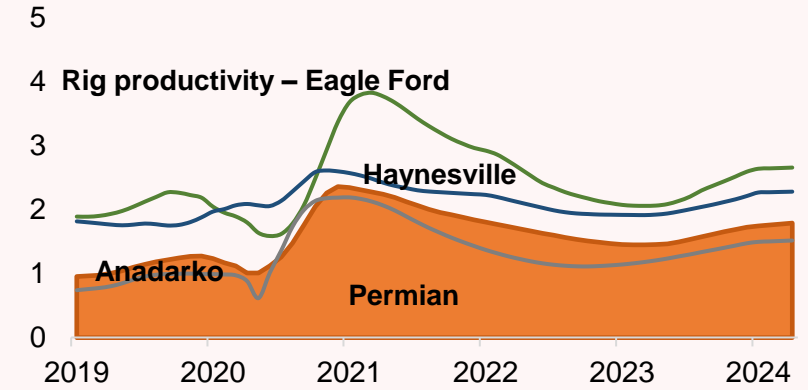
Billion cubic feet per day (bcf/d)



**Natural gas production edged up.** Texas' natural gas production of 33.5 bcf/d of gross withdrawals and 30.5 bcf/d of marketed production in Jan. were impacted by Winter Storm Heather per EIA. TXOGA estimates that production rose in March to 33.8 bcf/d of gross withdrawals, 30.5 bcf/d of marketed production, and 28.1 bcf/d of dry gas production.

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

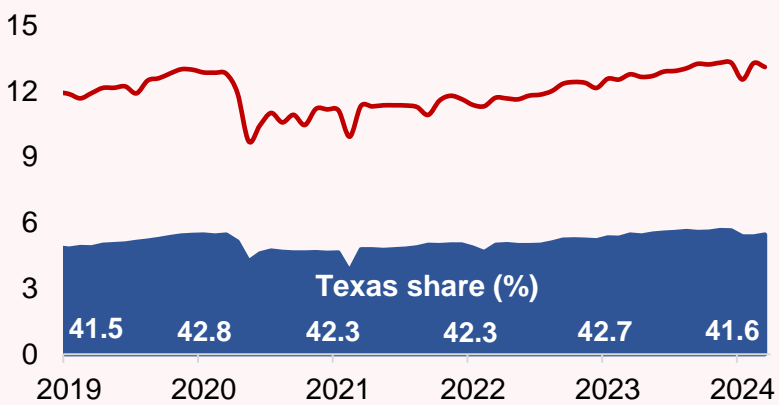
Thousand barrels per day oil-equivalent, kb/dae



**Strong productivity to start the year.** EIA estimates of rig productivity for April 2024 show continued increases year-over-year across the major Texas basins, including the Anadarko (+25.7% y/y), Eagle Ford (+28.8% y/y), Permian (+23.3% y/y), and Haynesville (+18.7% y/y).

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

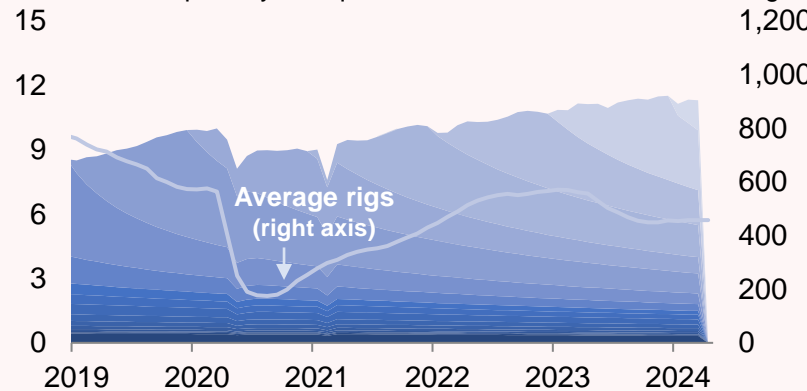
Million barrels per day (mb/d)



**Texas' share fell.** Texas accounted for an estimated 41.6% of U.S. crude oil production in Q1 2024.

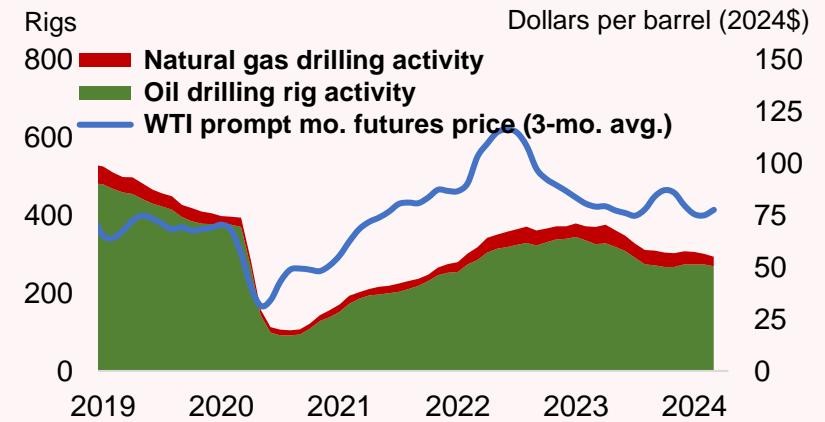
Texas shale basin wellhead oil & natural gas production

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



Texas' drilling rig activity increased for the week ended Apr. 26 per Baker Hughes. Texas had 271 oil-directed rigs (unchanged w/w) and 26 natural gas-directed rigs (up by 1 rig w/w).

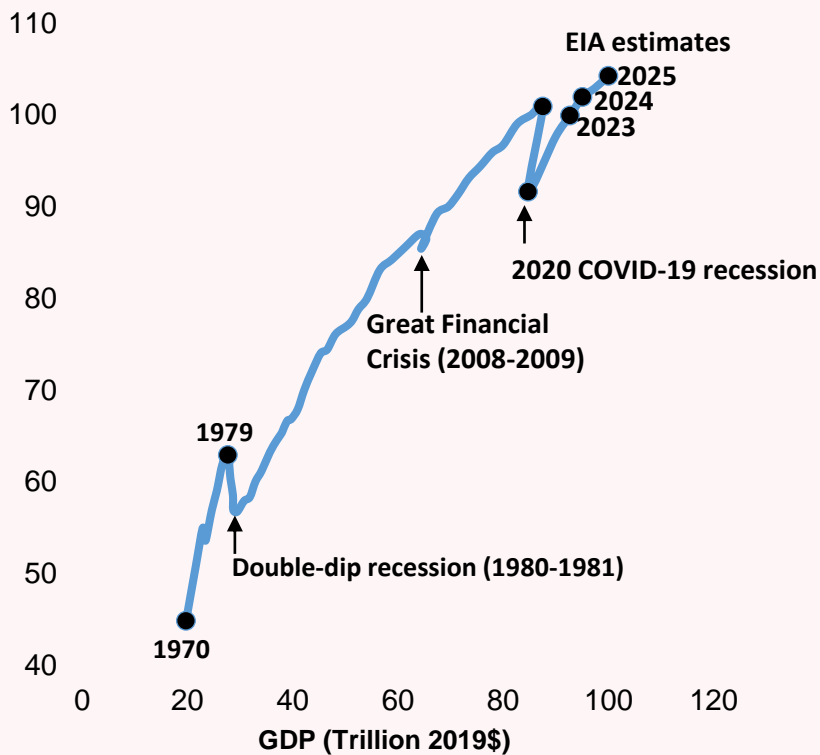
# Global Oil Market Balance Projections to 2025 by EIA



- Further upgrades to record-high demand: eclipsing 104 mb/d by 2025.** EIA's outlook revisions included a material (1%) increase 2023 global consumption and advanced growth into this year that was not expected to occur until 2025.
  - As highlighted in [TXOGA's Quarterly Energy Economics Outlook for Q4 2023](#), EIA's global oil consumption estimates were below those of other major sources.
  - The April 2024 Short-term Energy Outlook ([STEO](#)) increased global oil consumption by 1.0 mb/d to 102.0 mb/d in 2023, by 0.5 mb/d to 102.9 mb/d in 2024, and by 0.6 mb/d to 104.3 mb/d in 2025.
- For oil inventories, the EIA projects global stock withdrawals with a deficit of 0.9 mb/d in Q2 2024,** corresponding with Brent crude oil prices of \$88.55 in 2024, compared with \$89.31 per barrel currently.

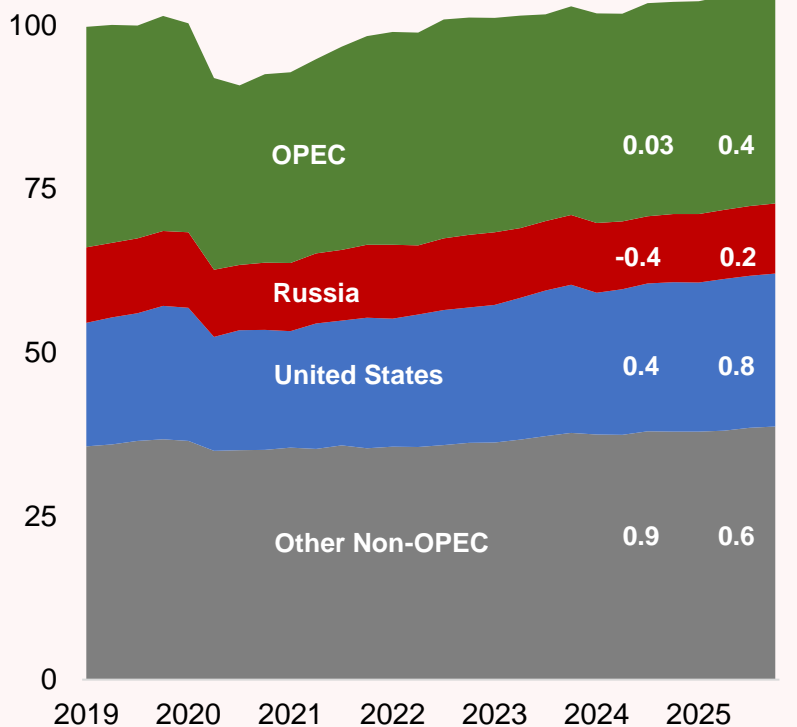
## Global oil demand and GDP

Million barrels per day (mb/d)



## Oil production by country/region

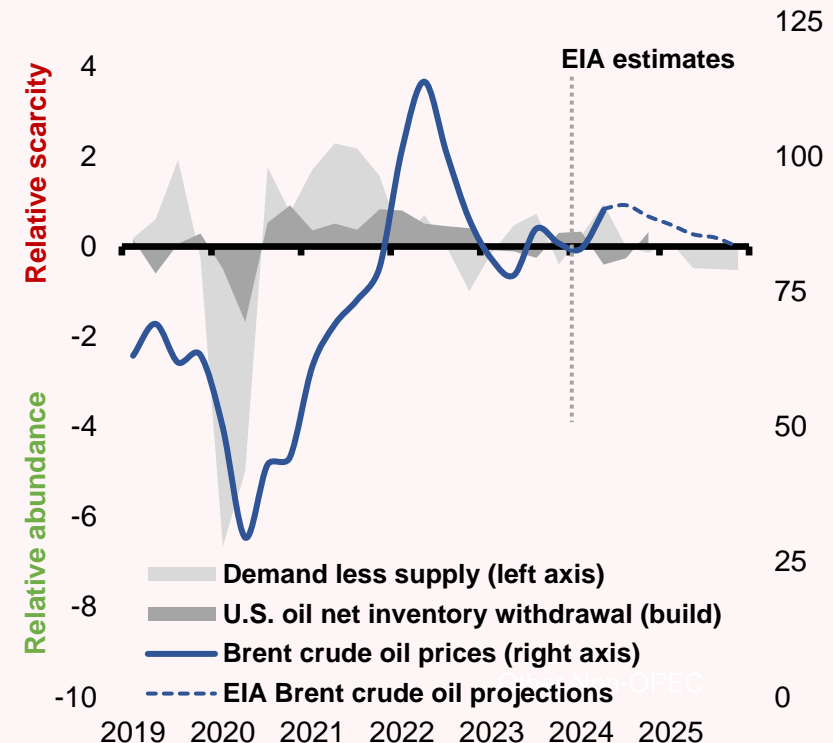
Million barrels per day, mb/d



## Global demand/supply & Brent prices

Million barrels per day (mb/d)

2024\$/Bbl



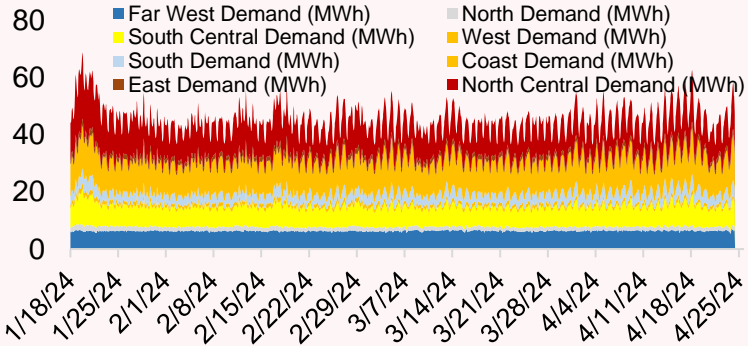


# Texas Electricity Analysis



## ERCOT electricity demand by region

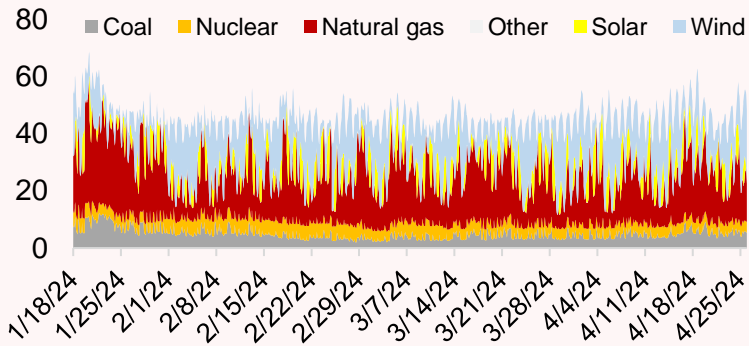
Thousand megawatt-hours



**North and West Texas load increased.** For Apr. 19-25, 2024, ERCOT's average hourly electricity load fell by 5.7% w/w, while the maximum hourly load of rose by 9.8% w/w. Variability, as measured by a percentage standard deviation, was the highest in the West and North Central regions.

## ERCOT hourly electricity generation by source

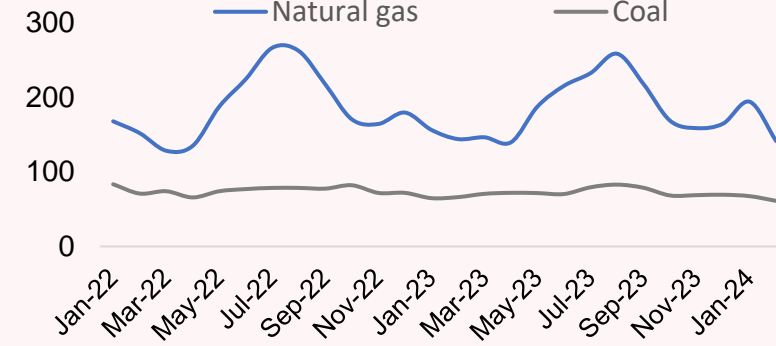
Thousand megawatt-hours



**ERCOT thermal generation increased.** ERCOT's hourly electricity generation for the period Apr. 19-25 ranged between 36 and 58 kWh with a percentage standard deviation of 11.5. Thermal sources contributed as much as 84% of the region's power (down by 6% w/w), and natural gas drove as much as 64% over the period (unchanged w/w).

## Electricity plant receipts of natural gas and coal

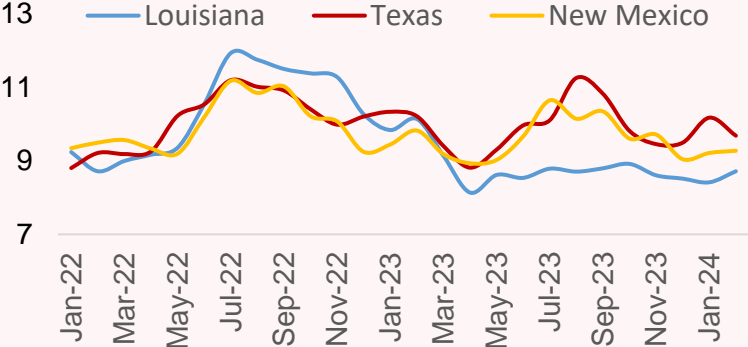
Trillion Btu



**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 675 bcf in Jan. 2024 rose by 50 bcf (8.0%) vs. its level in Jan. 2022.

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

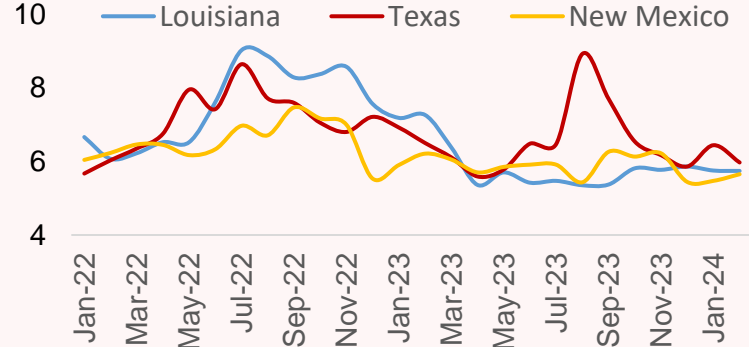
Cents per kilowatt-hour



**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

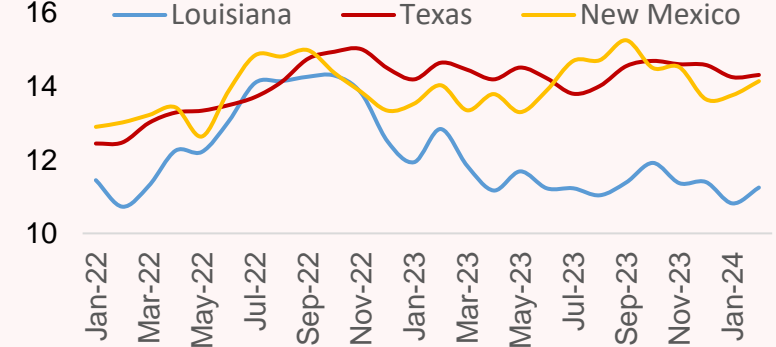
Cents per kilowatt-hour



**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

Cents per kilowatt-hour



**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.

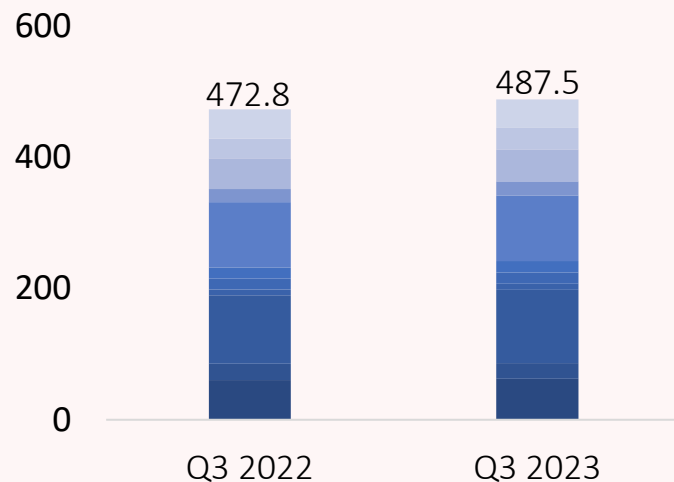
# Texas' oil and natural gas industry's jobs and wages have continued to grow



- Texas' oil and natural gas industry employment rose by 3.1% y/y in Q3 2023 with half of the job growth in upstream support services and another nearly 20% in oil & gas field machinery and equipment manufacturing, per data the latest data (released on Feb. 21, 2024) from the U.S. Census Bureau and Texas Workforce Commission
- Q3 2023 industry wage growth of 3.6% y/y was nearly on par with job growth of 3.1% y/y, which reflected an easing of inflationary pressures

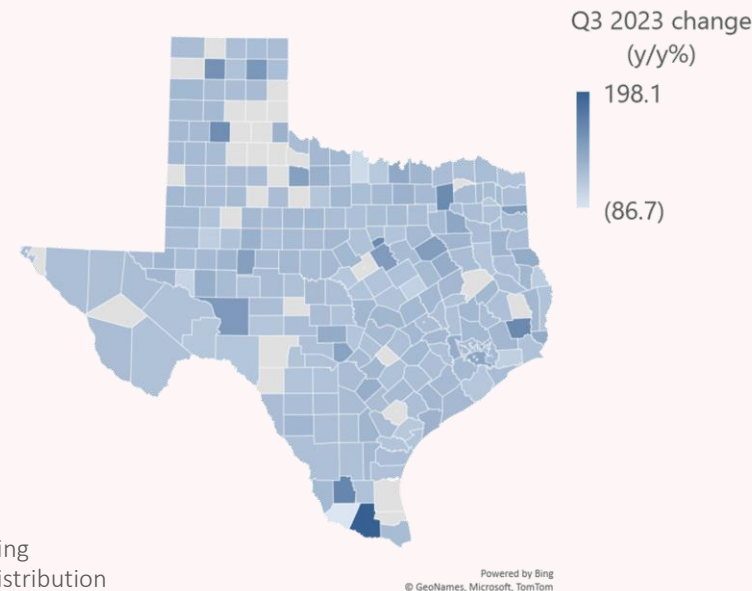
## Texas oil and natural gas industry direct employment rose by +3.1% y/y in Q3 2023

Thousand Jobs



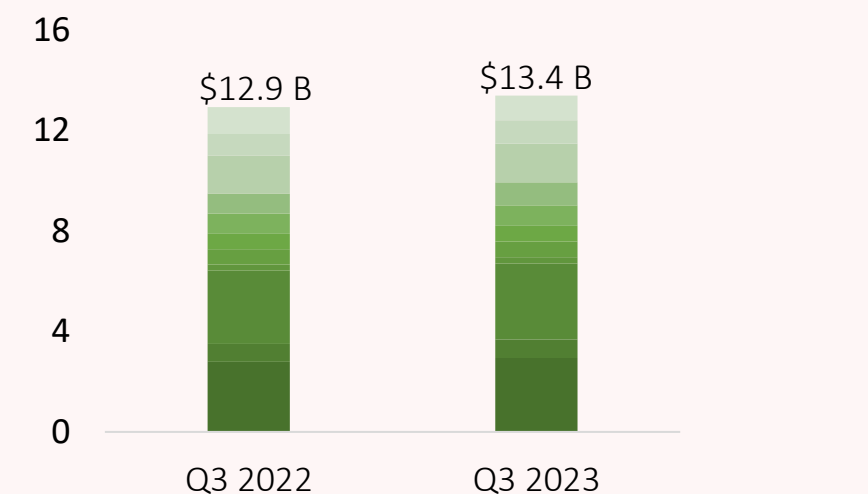
- Oil & gas extraction
- Support activities for o&g ops.
- Petroleum refineries
- Gas stations & fuel dealers
- All other\*
- Pipeline construction
- Oil & gas drilling
- Natural gas distribution
- Petrochemical mfg.
- Pipeline transportation
- Oil & gas field mach. and eq. mfg.

\* 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 +3.6% y/y in Q3 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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