



**May 6, 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 May 6, 2024**

- **U.S. economic indicators weakened.** Consumer sentiment, as measured by the University of Michigan’s survey, was fractionally revised downward in the final April reading. Nonetheless, it remains consistent with ongoing spending growth in Q2 2024. The decline in consumer sentiment aligns with the softening employment situation, where non-farm payroll additions in April were 175,000, down from 315,000 in March. This also led to a 0.1% increase in the unemployment rate, which now stands at 3.9%. Despite the weakening indicators, financial market optimism has increased, anticipating potential Federal Funds rate cuts. This has, in turn, supported U.S. equity valuations, which are closely tied to consumer sentiment and spending.
- **Oil market fundamentals remained solid.** Despite geopolitical uncertainties in the Middle East and prospects of a Federal Funds rate cut, which could potentially weaken the U.S. dollar and boost oil prices based on historical patterns, oil prices fell by 6% week-over-week. Strong U.S. oil production and a 7.3 million barrel domestic inventory increase, even with rising U.S. petroleum demand and exports, led to the decline. As highlighted in the [Chart of the Week](#), the building blocks of modern society—natural gas liquids and petrochemical feedstocks—are key drivers of oil demand globally, nationally, and within Texas.
- **Natural gas prices rose despite strong inventory levels.** Weekly natural gas storage levels are 37% above the top of their five-year range. Despite this, natural gas futures prices point higher and currently reflect an 80% increase between the June and December contracts.

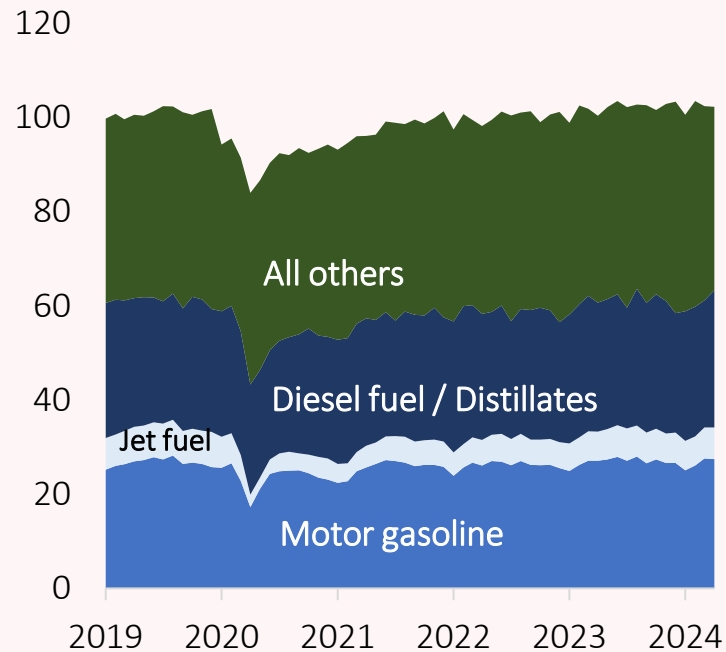
# TXOGA Chart of the Week: Building blocks of modern society – natural gas liquids and petrochemical feedstocks – have driven oil demand at every level



- Led by the growth of natural gas liquids and petrochemical feedstocks, global petroleum demand has achieved new record highs; U.S. demand has held strong; and, Texas' demand reflects remarkable industry expansions across the value chain

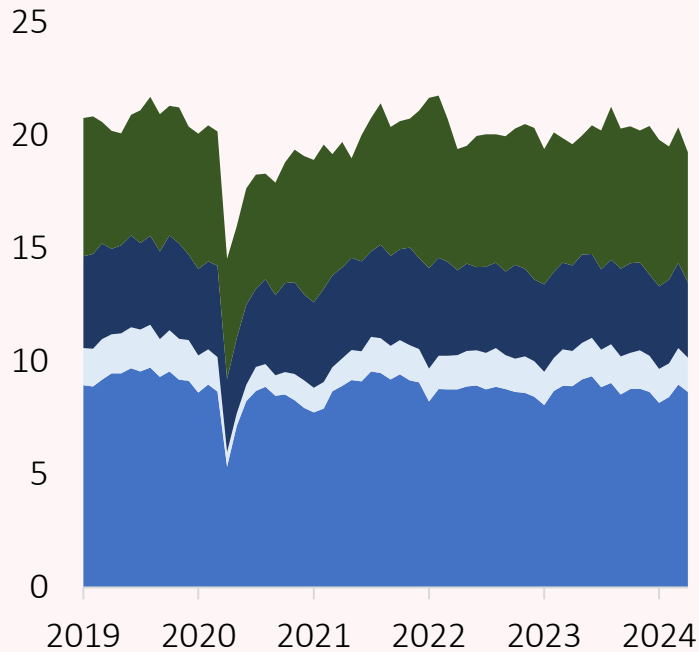
### Global petroleum product demand

Million barrels per day (mb/d)



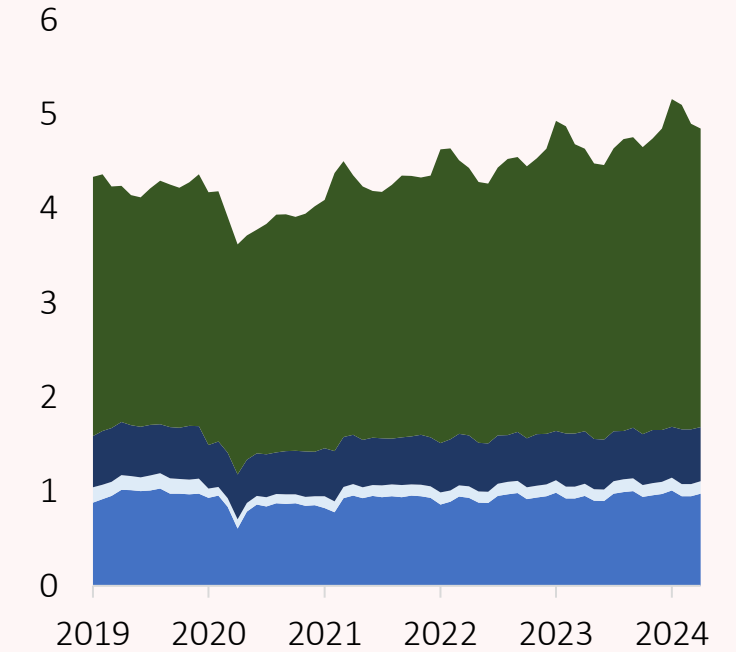
### U.S. petroleum product demand

Million barrels per day (mb/d)



### Texas petroleum product demand

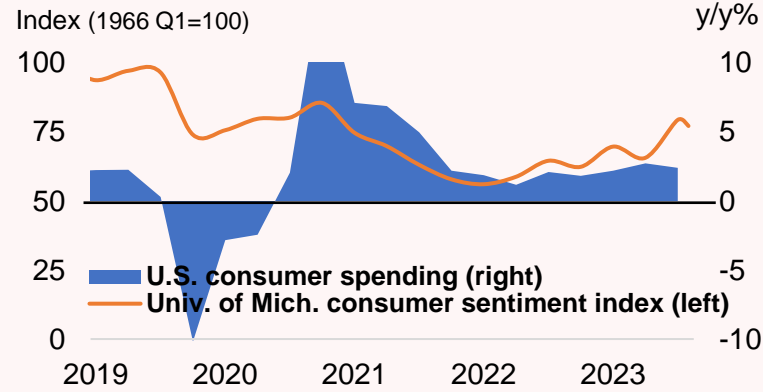
Million barrels per day (mb/d)



■ Gasoline   ■ Jet fuel   ■ Diesel   ■ All others (NGLs, Petrochemical Feedstocks)

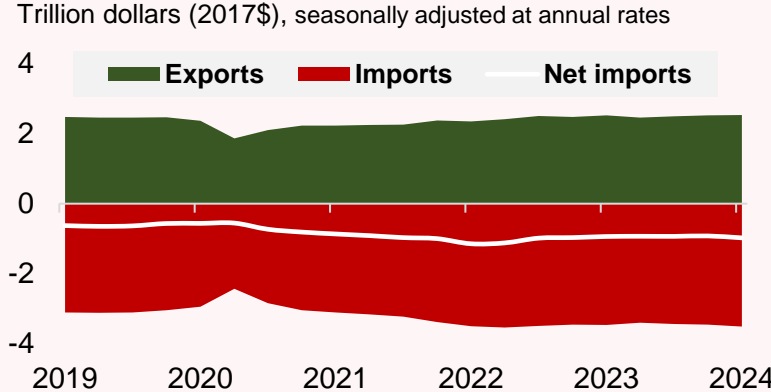
# U.S. economic indicators

## Consumer sentiment vs. spending



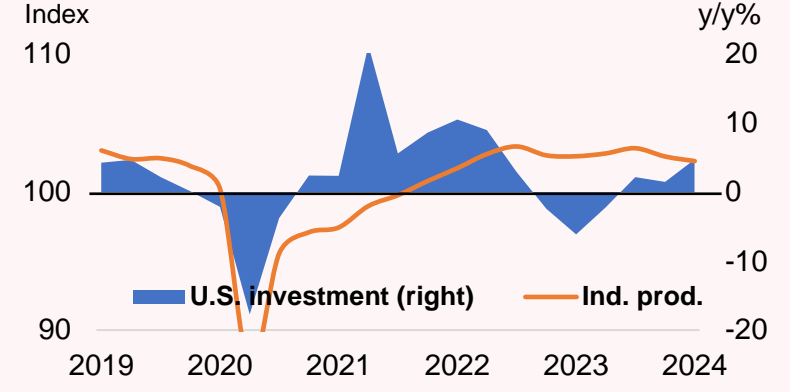
**Consumer spending grew by 2.4% y/y in Q1 2024.** This growth was predicated on improved consumer sentiment, which remained solid with a final April index reading of 77.2 in the Univ. of Michigan's survey. The improvement in consumer sentiment has historically remained consistent with further spending growth in 2024.

## Real net exports of goods and services



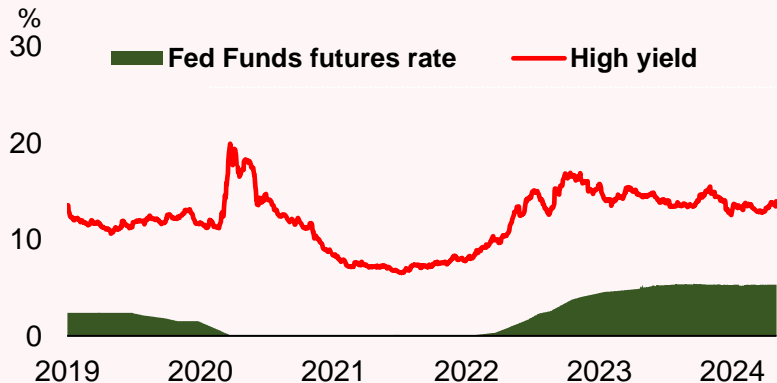
**U.S. trade deficit revised to be larger.** The U.S. real trade deficit ran at an annualized rate of \$973 billion in Q1 2023 per BEA initial estimates. On a nominal basis, the trade surplus for petroleum and products ran at annualized rate of \$52 billion in Q1 2024, up from \$36.7 billion a year ago,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

## Industrial production and investment growth



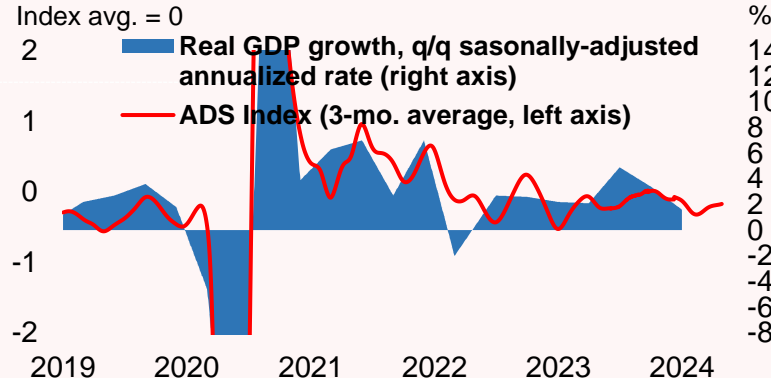
**Industrial production rose by 0.4% m/m in March 2024** and remained consistent with economy-side investment growth, which rose by 4.7% y/y in Q1 2024.

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



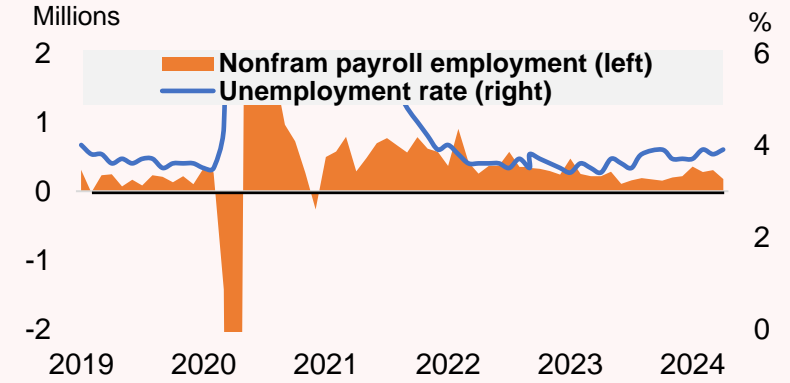
**Increased bond premium for low credit quality.** High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended May 3, HY rates rose by 0.3% w/w to 13.9% while the Fed Funds futures held steady at 5.3%, raising the premium for low credit quality to 8.6%.

## 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 so far in Q2.

## Nonfarm payroll employment & unemployment rate

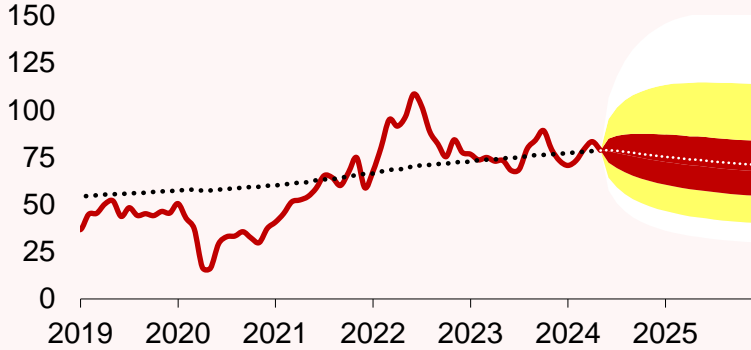


**Lukewarm labor market growth.** The employment situation is a lagging indicator of GDP growth. The U.S. unemployment rate rose by 0.1% m/m to 3.9% in April per BLS, while non-farm payrolls increased by 175,000.

# U.S. oil market indicators

## WTI crude oil price mean reversion analysis

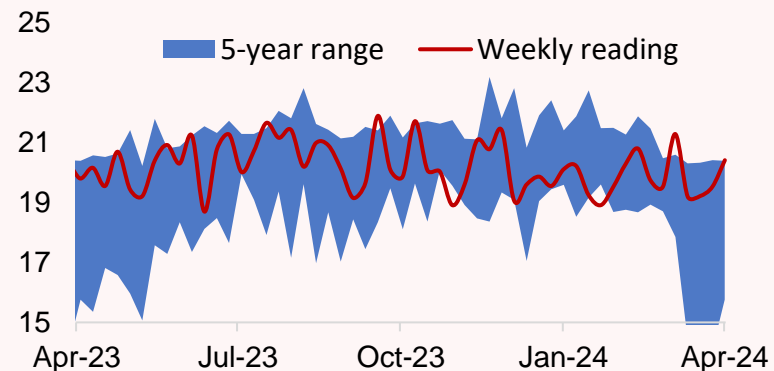
Dollars per barrel (2024\$)



**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

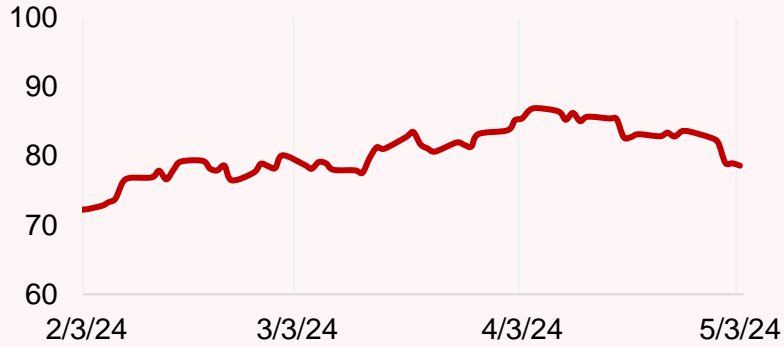
Million barrels per day (mb/d)



**Petroleum demand increased.** U.S. petroleum demand, as measured rose by 0.9 mb/d w/w to 20.4 mb/d for the week ended Apr. 26 and to the top of the five-year range.

## WTI crude prompt month futures prices

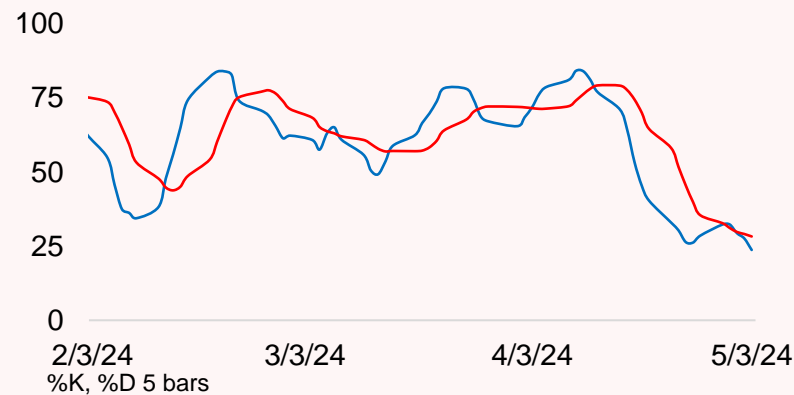
Dollars per barrel



WTI crude oil prices fell below \$79 per barrel for the week ended May 3, reflecting higher inventories despite Middle East geopolitical uncertainties and increased prospects for a Fed Funds rate cut.

## WTI crude prompt month futures slow stochastic

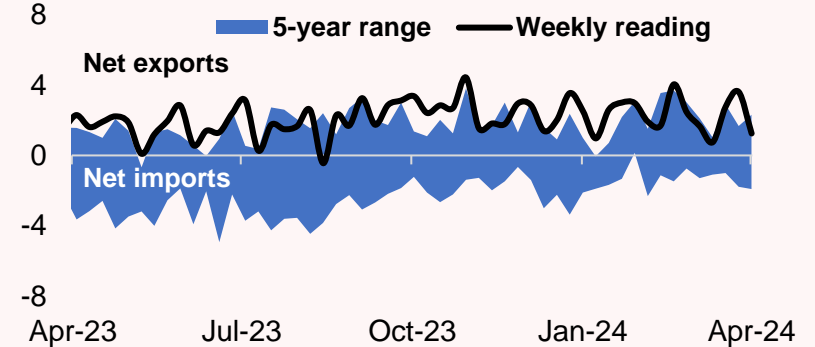
Index level



Price momentum waned during the week ended May 3.

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

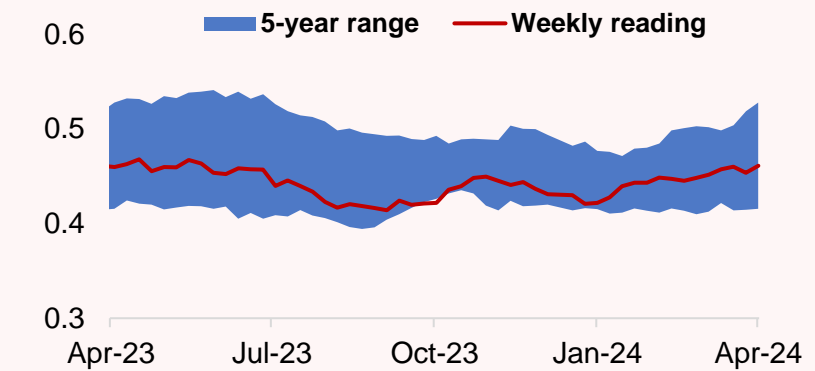
Million barrels per day, mb/d



**Petroleum net exports fell.** The U.S. was a petroleum net exporter of 1.3 mb/d for the week ended Apr. 26, down by 2.4 mb/d from the prior week.

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

Billion barrels

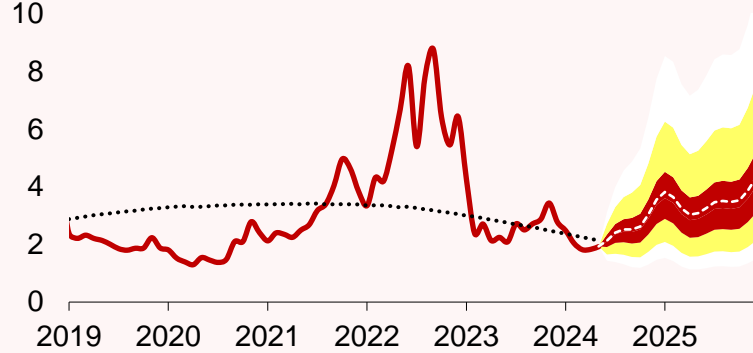


**Inventories increased.** U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) increased by 7.3 million barrels (mb) for the week ended Apr 26.

# U.S. natural gas market indicators

## Natural gas price mean reversion analysis

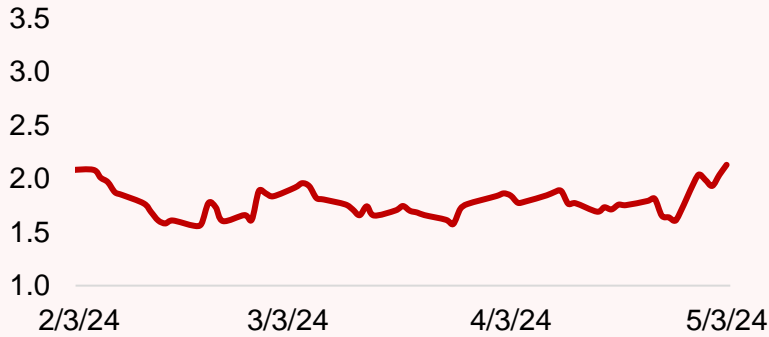
Dollars per mmBtu (2024\$)



Near-term natural gas futures are below the historical mean reversion target, but currently rise by 80% between the June and November contracts. Confidence intervals based on past prices show the potential for greater upside than downside.

## Natural gas prompt month futures prices

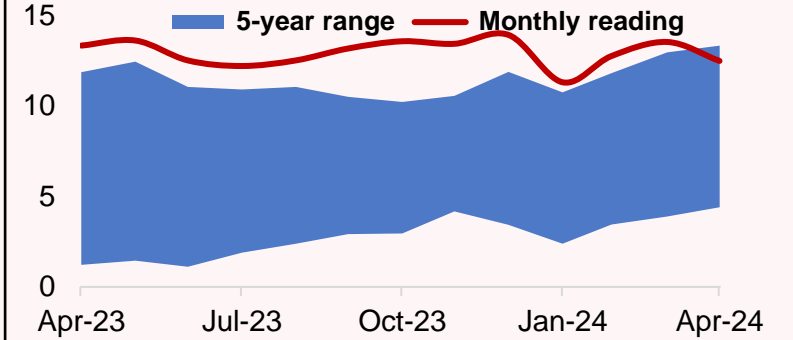
Dollars per million Btu



Natural gas prices at Henry Hub rose broke out above \$2 per million Btu for the week ended May 3 for the first time since February despite historically strong inventory levels and increases.

## U.S. natural gas net exports

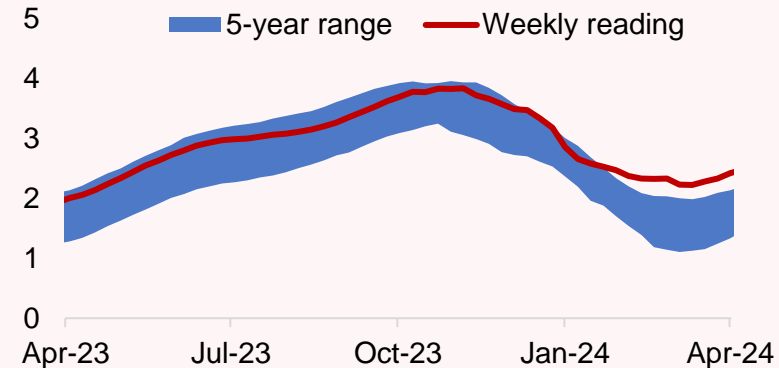
Billion cubic feet per day, bcf/d



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

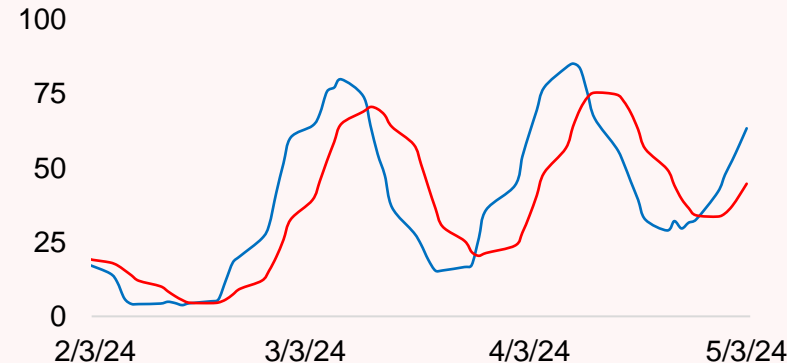
Trillion cubic feet (tcf)



Working gas in underground storage rose by 2.4% w/w to 2.48 tcf as of Apr. 26 and remained above the 5-year range.

## Natural gas futures slow stochastic

Index level

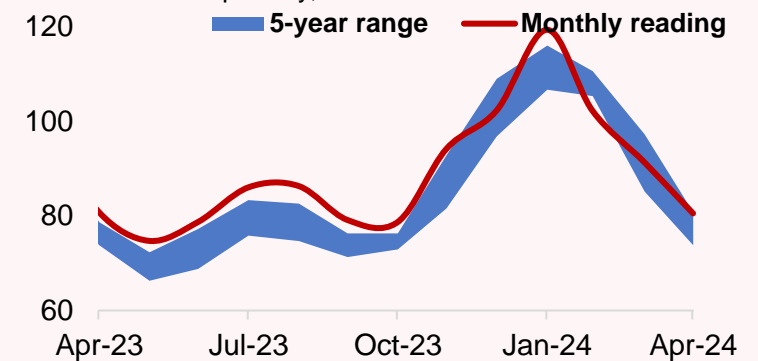


%K, %D 5 bars

Natural gas price momentum turned positive during the week ended May 3.

## U.S. natural gas consumption

Billion cubic feet per day, bcf/d

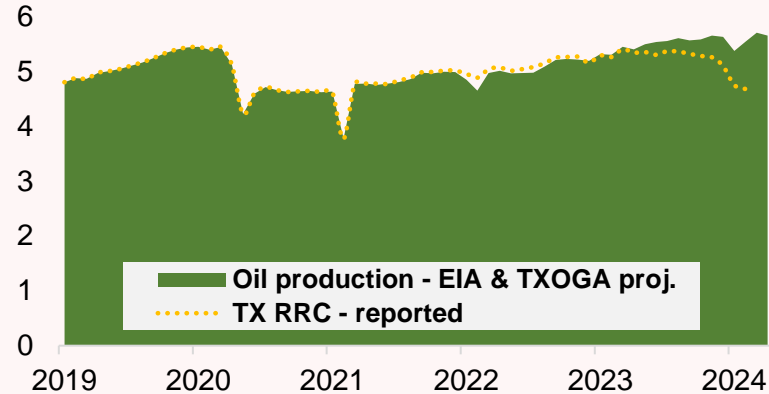


Consumption decreased. EIA estimates natural gas consumption to run at 80.5 bcf/d in April, compared with 80.7 bcf/d one year ago.

# Texas' oil and natural gas production

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

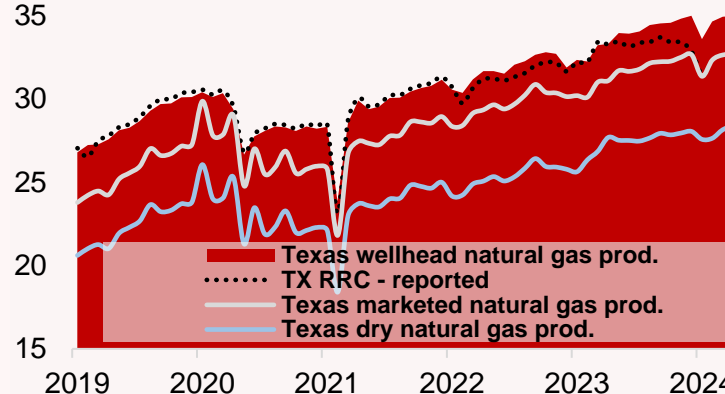
Million barrels per day (mb/d)



**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

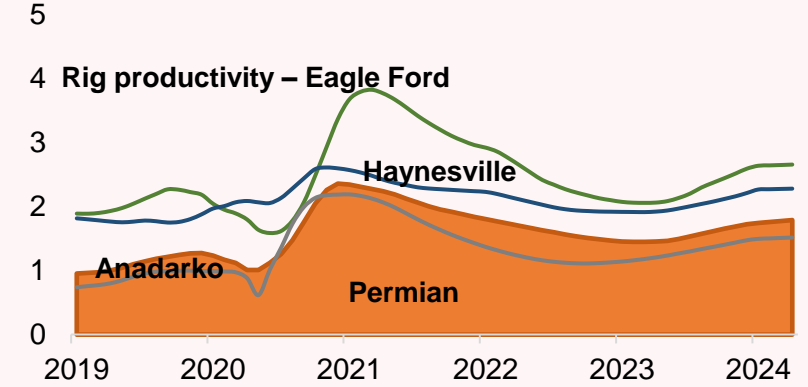
Billion cubic feet per day (bcf/d)



**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

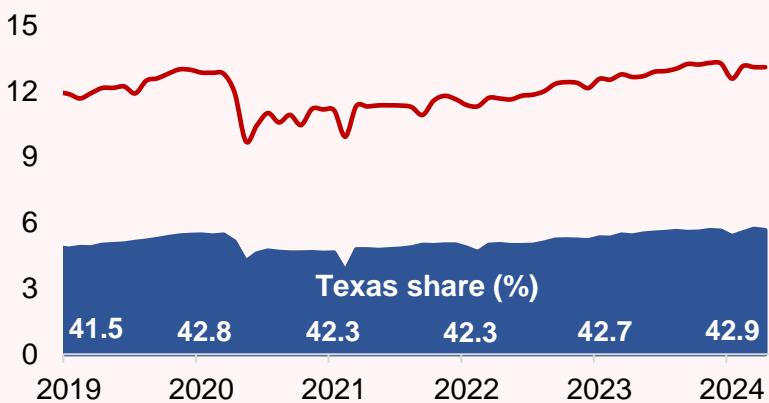
Thousand barrels per day oil-equivalent, kb/dae



**Strong productivity to start the year.** EIA estimates of rig productivity for 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 – Apr. 2024

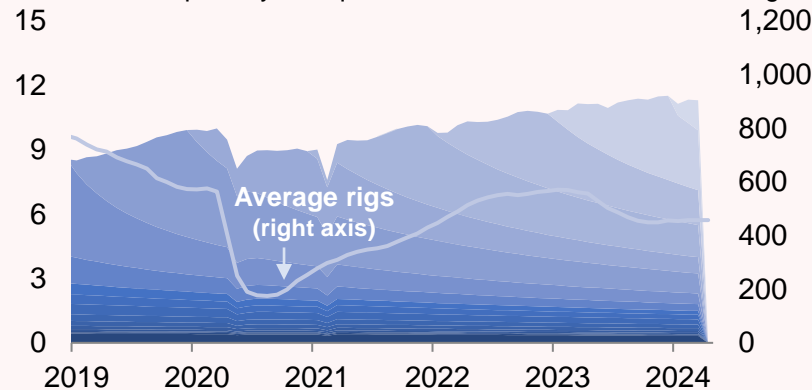
Million barrels per day (mb/d)



**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

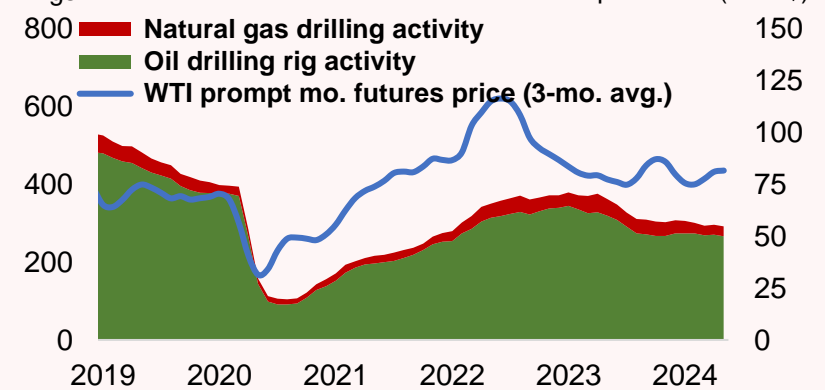
Million barrels per day oil-equivalent



**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 Dollars per barrel (2024\$)



**Texas' drilling rig activity decreased** for the week ended May 3 per Baker Hughes. Texas had 267 oil-directed rigs (down by 5 rigs w/w) and 25 natural gas-directed rigs (down by 1 rig w/w).

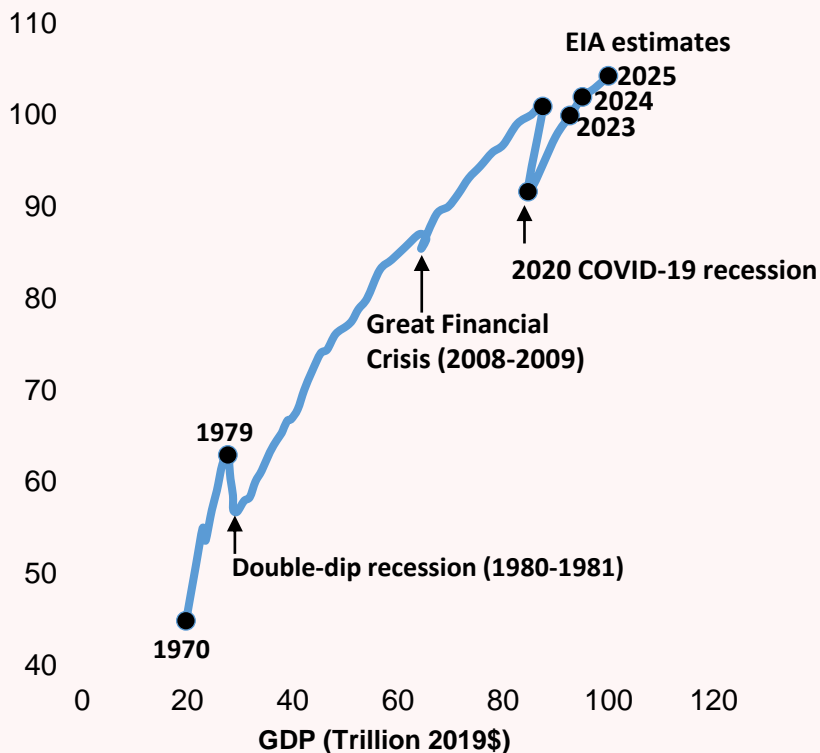
# Global Oil Market Balance Projections to 2025 by EIA



- 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.

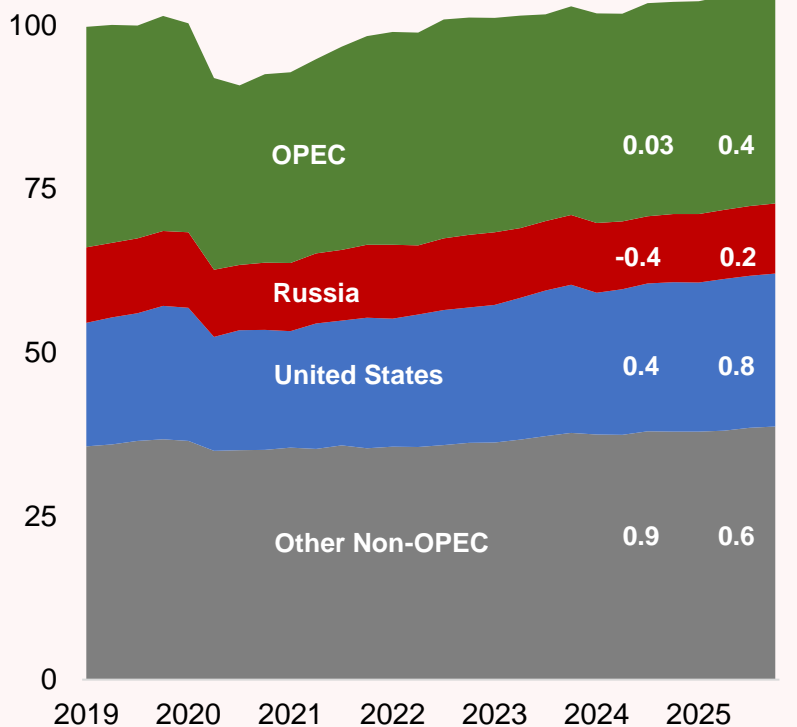
## Global oil demand and GDP

Million barrels per day (mb/d)



## Oil production by country/region

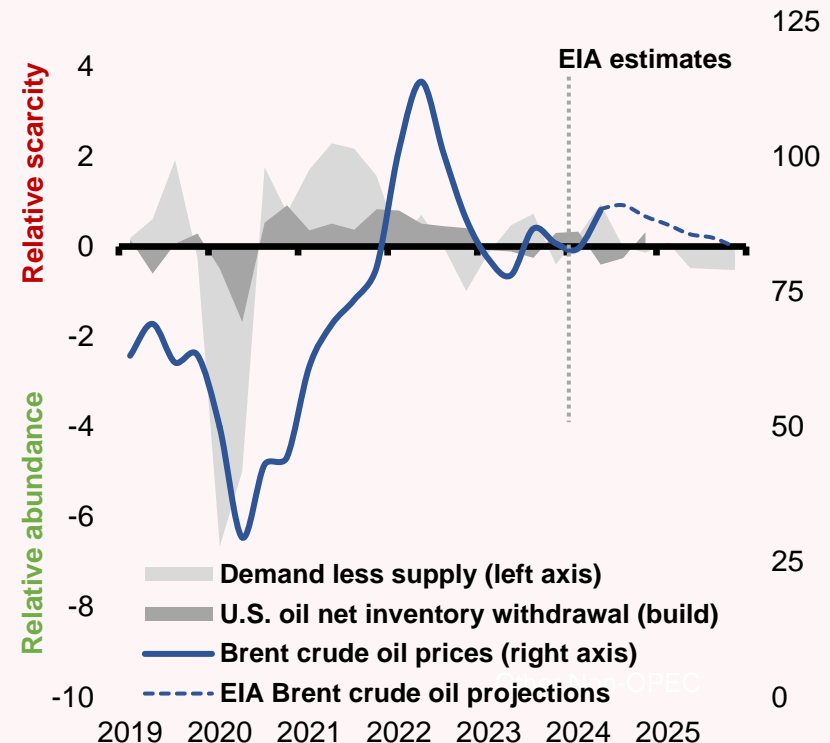
Million barrels per day, mb/d



## Global demand/supply & Brent prices

Million barrels per day (mb/d)

2024\$/Bbl

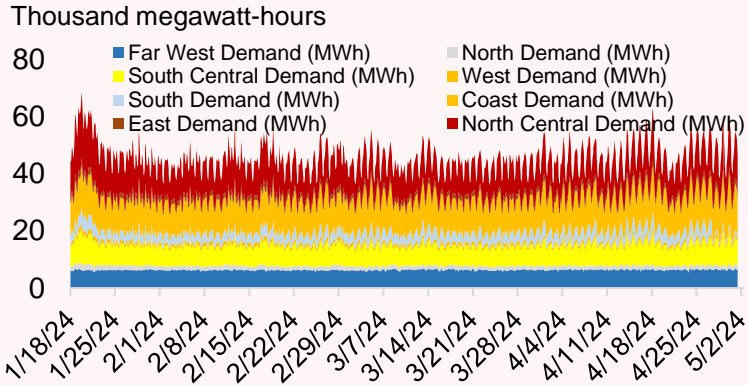




# Texas Electricity Analysis

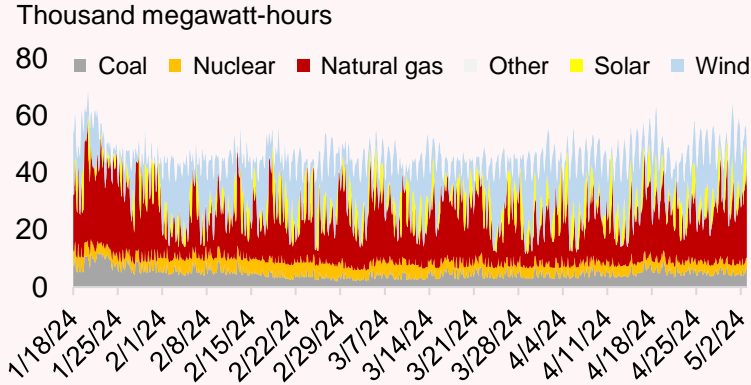


## ERCOT electricity demand by region



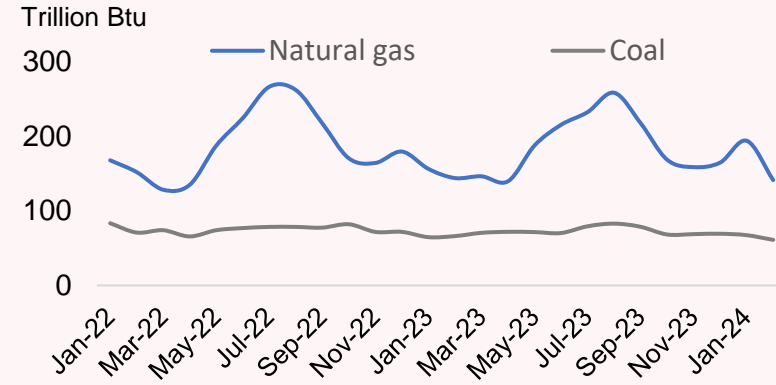
**North and West Texas load increased.** For Apr. 26-May 2, 2024, ERCOT's average hourly electricity load fell by 5.7% w/w, while the maximum hourly load of rose by 12.3% w/w. Variability, as measured by a percentage standard deviation, was the highest in the East and North Central regions.

## ERCOT hourly electricity generation by source



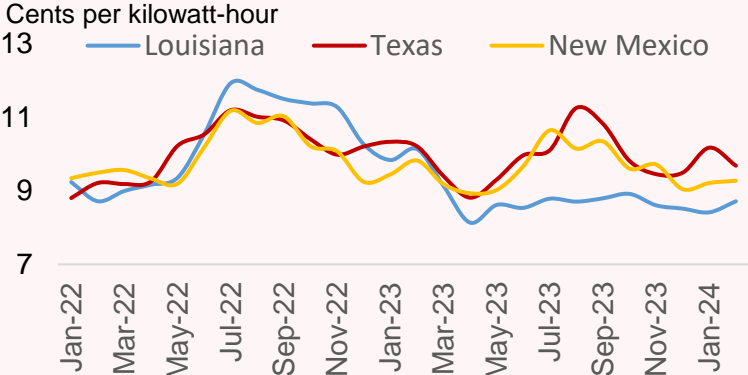
**ERCOT thermal generation rose.** ERCOT's hourly electricity generation for the period Apr. 26-May 2 ranged between 41 and 64 kMWh with a percentage standard deviation of 11.1. Thermal sources contributed as much as 89% of the region's power (up by 5% w/w), and natural gas drove as much as 73% over the period (up by 9% w/w).

## Electricity plant receipts of natural gas and coal



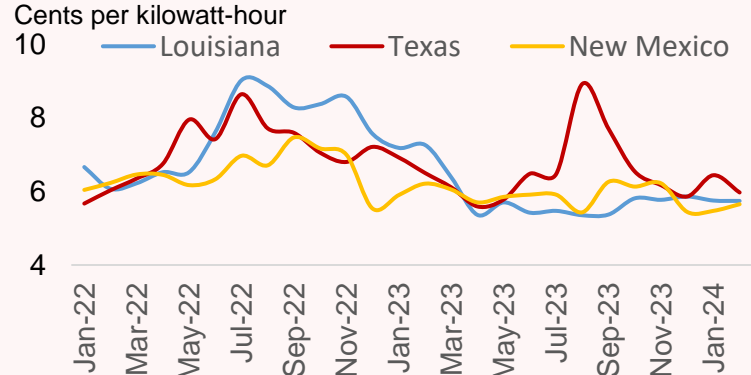
**Texas' lower natural gas receipts enabled by higher inventories.** Although Texas' thermal and dispatchable energy needs have continued to grow, the maximum monthly quantities of natural gas and coal that generators received have fallen over the past two years, thanks at least in part to greater inventories.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



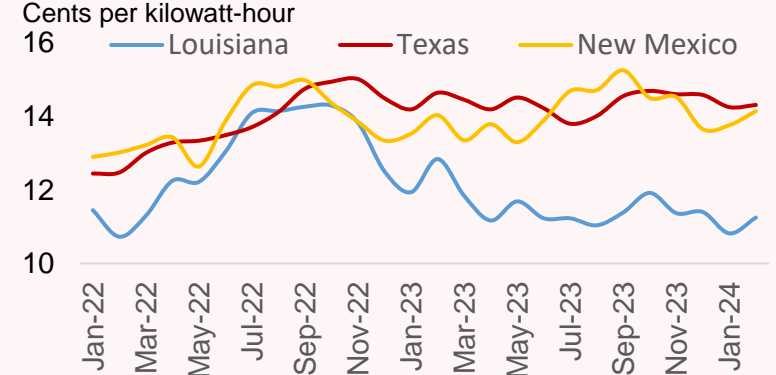
**Texas' electricity prices fell in February.** The average price of electricity in Texas decreased by 4.8% m/m in February. However, Texas' average price remained 4.4% and 11.1% higher than those in Louisiana and New Mexico, respectively.

## 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.

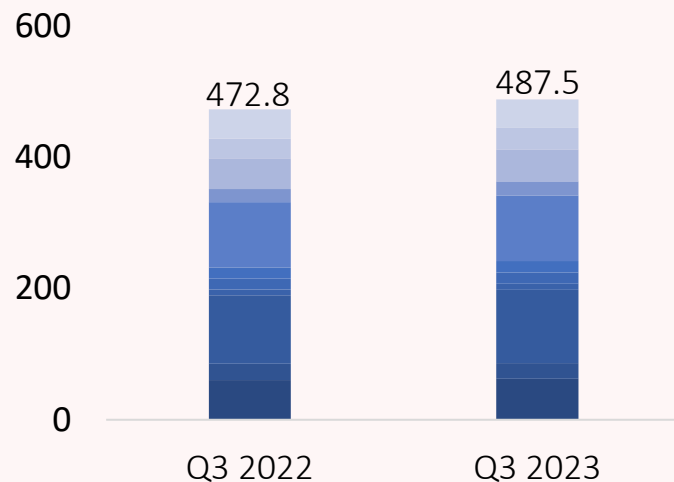
# Texas' oil and natural gas industry's jobs and wages have continued to grow



- ▶ 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

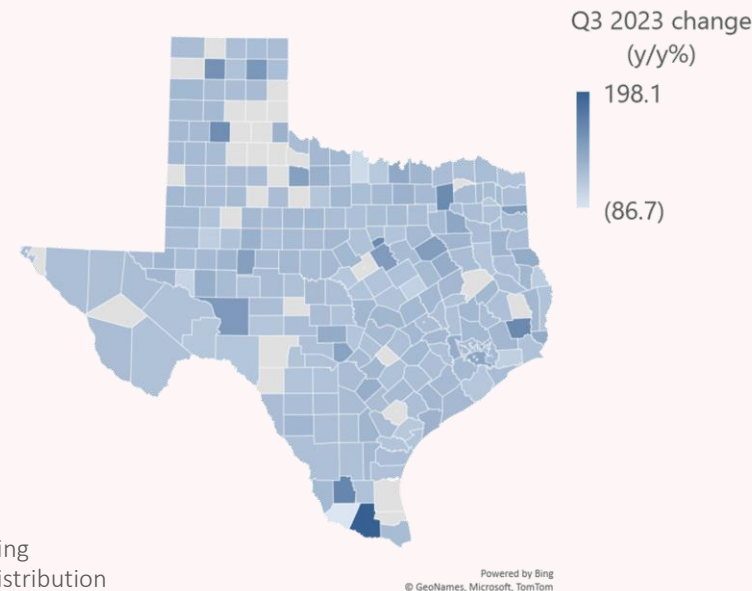
## Texas oil and natural gas industry direct employment rose by +3.1% y/y in Q3 2023

Thousand Jobs



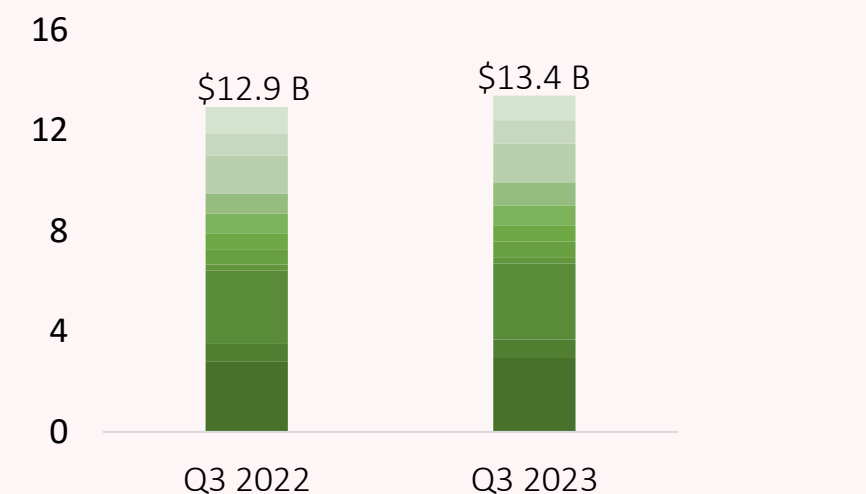
- Oil & gas extraction
- Support activities for o&g ops.
- Petroleum refineries
- Gas stations & fuel dealers
- All other\*
- Pipeline construction
- Oil & gas drilling
- Natural gas distribution
- Petrochemical mfg.
- Pipeline transportation
- Oil & gas field mach. and eq. mfg.

\* 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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