



**May 27, 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 27, 2024

- ▶ **U.S. economic indicators remained steady.** Despite interest rate hikes having smaller effects than in the past, Federal Funds futures suggest no changes in June. Business conditions have remained conducive to GDP growth in Q2 2024, based on the Philadelphia Federal Reserve's ADS Index. However, consumer sentiment, as measured by the Univ. of Michigan's survey, reflects broad-based concerns about inflation, unemployment, and interest rates.
- ▶ **Oil market fundamentals remained solid, but prices slipped as U.S. inventories rose and Middle East geopolitical uncertainties eased.** As highlighted in the [Chart of the Week](#), Texas' energy exports have nearly quadrupled since 2015 and increased in diversity by product and region. U.S. weekly data show crude production steady above 13 million barrels per day (mb/d), with petroleum demand and net exports at the top of their five-year ranges, resulting in an inventory increase of 1.8 million barrels as of May 17, according to the Energy Information Administration (EIA). West Texas Intermediate (WTI) oil prices fell to around \$77 per barrel due to perceptions of well-supplied global markets and easing Middle East geopolitical risks following the deaths of Iran's president and foreign minister.
- ▶ **Natural gas prices continued to rise despite historically strong inventories.** Prices at Henry Hub rose above \$2.50 per million Btu for the week ended May 24, with inventory levels nearly 30% above the maximum of the five-year range. The benchmark price at Henry Hub increased more than 40% in the past month, with futures prices for December delivery currently 40% above the level for June delivery.

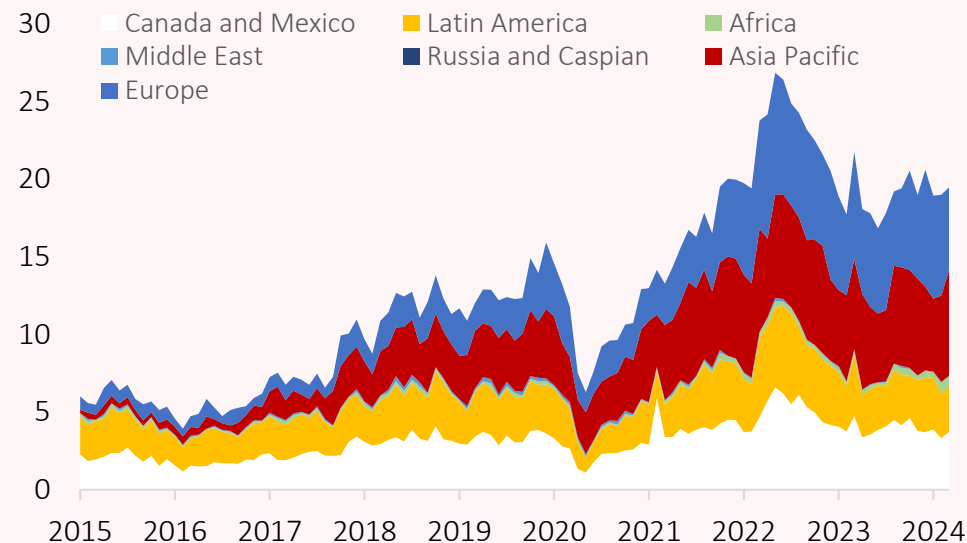
## TXOGA Chart of the Week: Texas supplies the world

### » Texas' energy exports nearly quadrupled since 2015

- In March 2024, Texas exported \$19.3 billion of energy goods—that is, oil, natural gas, hydrocarbon gas liquids (HGLs) and refined petroleum products.
- Although recent exports remain below the record high of \$25 billion following the escalation of the Russia-Ukraine war in Q2 2022, Texas' energy exports have experienced resounding growth and increased regional and product diversity:
  - ✓ **Nearly 4X growth.** In March 2024, Texas' energy exports' value was 370% higher than it was in March 2015.
  - ✓ **Asia Pacific and Europe take over 60% of Texas' energy exports.** Historically, over 80% of Texas' energy exports supplied consumers in the Americas, while only 18% went to Asia Pacific and Europe combined. In March 2024, 35% went to Asia Pacific and 27% to Europe – despite the fact that consumers across the Americas buy twice as much from Texas as they did in 2015.
  - ✓ **Since 2015, crude oil exports have increased by over \$9 billion per month**, compared with an increase of about \$6 billion for all other energy commodities combined.

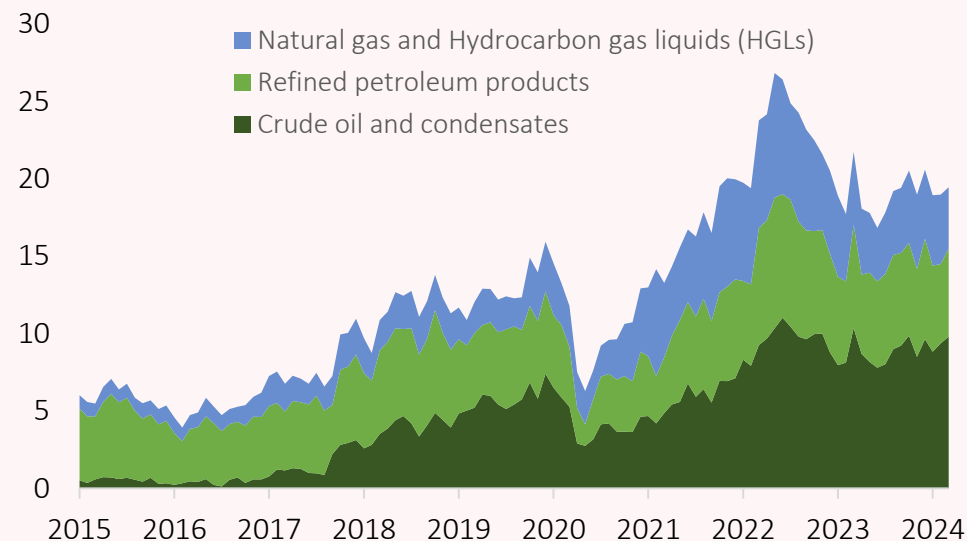
### Texas' monthly energy exports by region

Billion dollars (2024\$)



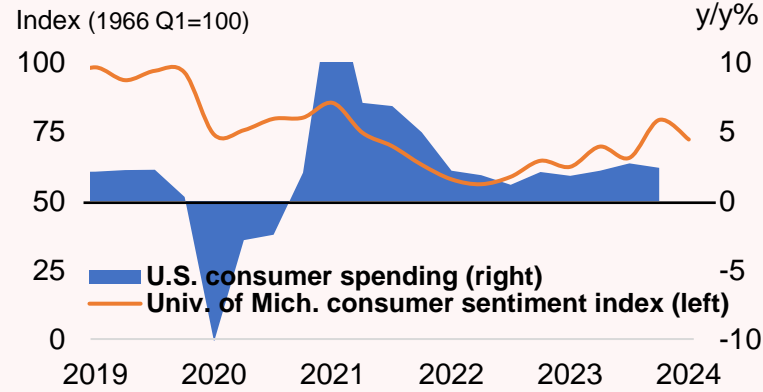
### Texas' monthly energy exports by product

Billion dollars (2024\$)



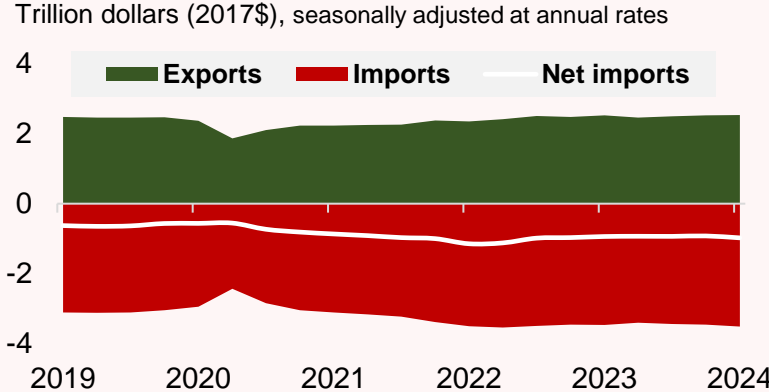
# U.S. economic indicators

## Consumer sentiment vs. spending



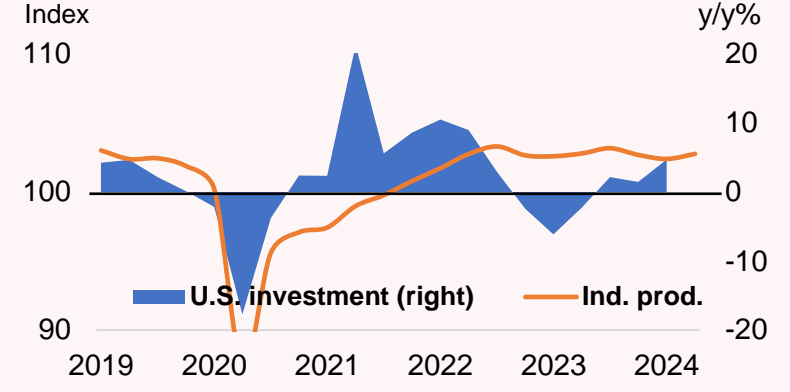
**Consumer sentiment weakened so far in May**, according to the University of Michigan's survey, but remains consistent with continued consumer spending growth in Q2 2024. The index fell to 67.4 in May's initial reading from 77.2 in April due to broad-based concerns for inflation, unemployment, and interest rates.

## Real net exports of goods and services



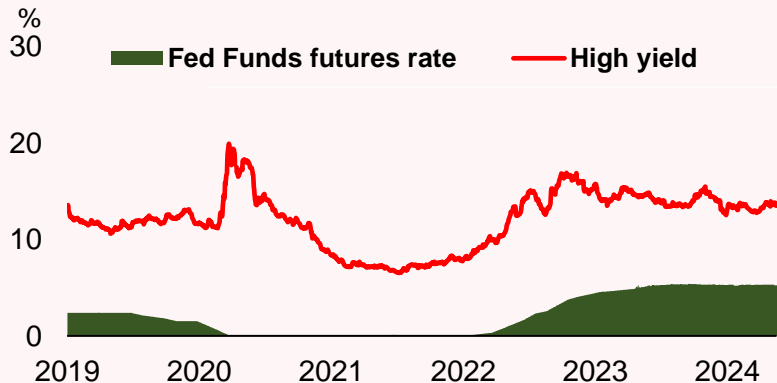
**U.S. trade deficit revised to be larger.** The U.S. real trade deficit ran at an annualized rate of \$973 billion in Q1 2023 per BEA initial estimates. On a nominal basis, the trade surplus for petroleum and products ran at annualized rate of \$52 billion in Q1 2024, up from \$36.7 billion a year ago,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

## Industrial production and investment growth



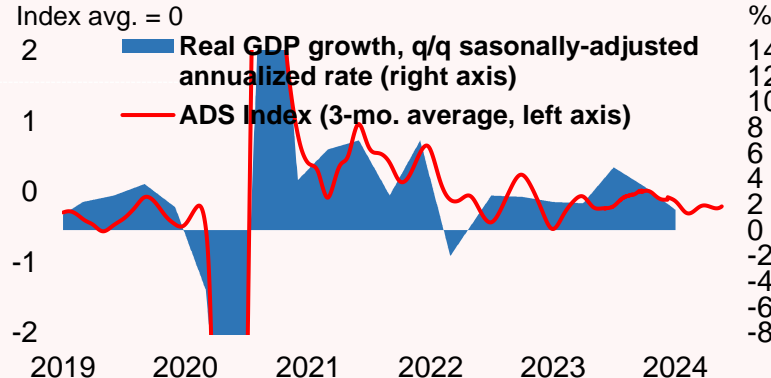
**Industrial production remained steady in April** and consistent with economy-side investment growth, which rose by 4.7% y/y in Q1 2024.

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



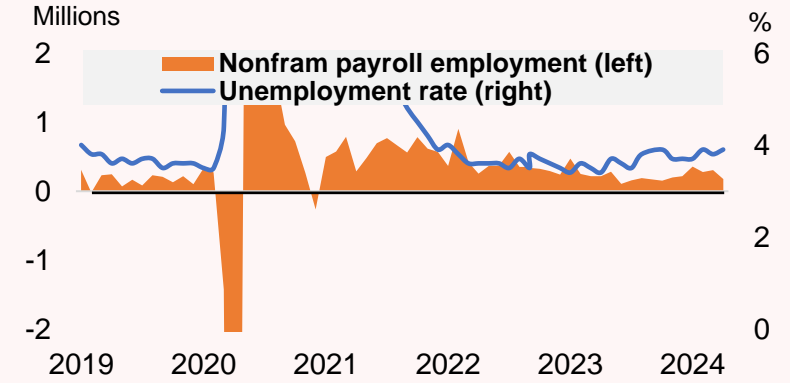
**Bond premium for low credit held steady.** High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended May 24, HY rates remained near 13.5%, and Fed Funds futures was steady at 5.3%, resulting in no weekly change in the premium for low credit quality of 8.3%.

## 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



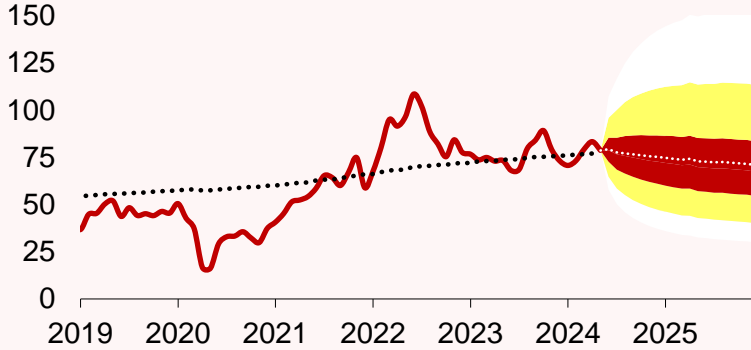
**Lukewarm labor market growth.** The employment situation is a lagging indicator of GDP growth. The U.S. unemployment rate rose by 0.1% m/m to 3.9% in April per BLS, while non-farm payrolls increased by 175,000.



# U.S. oil market indicators

## WTI crude oil price mean reversion analysis

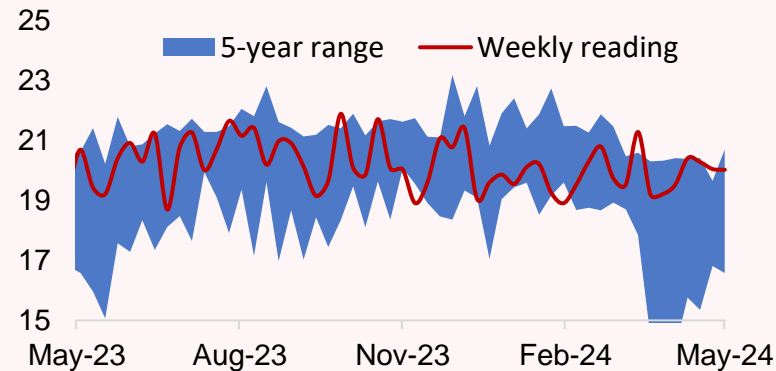
Dollars per barrel (2024\$)



**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

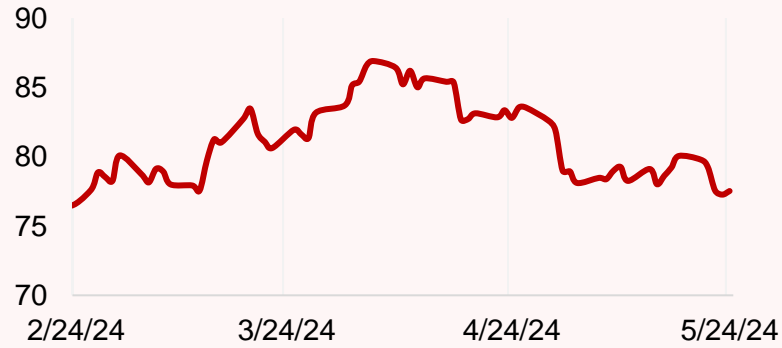
Million barrels per day (mb/d)



**Petroleum demand remained historically strong.** U.S. petroleum demand, as measured by deliveries, decreased by 0.1 mb/d w/w to 20.0 mb/d for the week ended May 17 and remained at the top of the five-year range.

## WTI crude prompt month futures prices

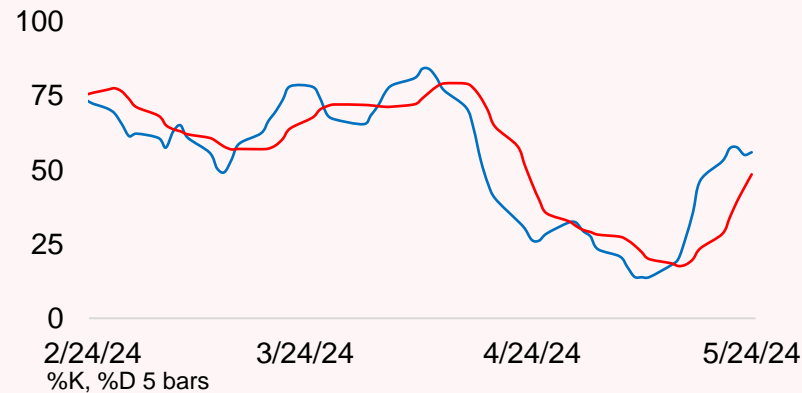
Dollars per barrel



WTI crude oil prices remained fell to \$77 per barrel for the week ended May 24, reflecting historically solid production and inventories despite strong demand, exports, and Middle East geopolitical uncertainties.

## WTI crude prompt month futures slow stochastic

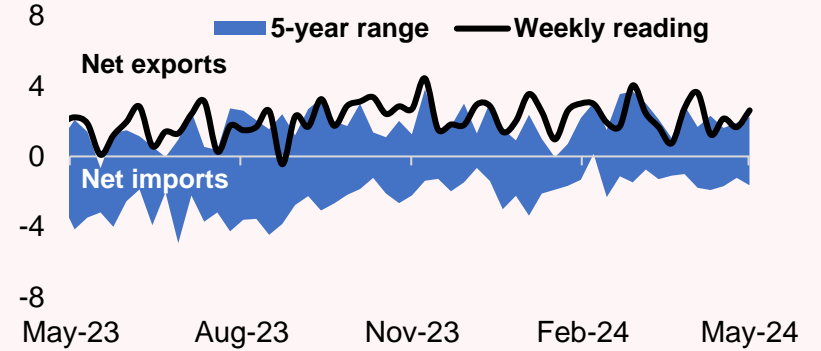
Index level



Price momentum rose during the week ended May 24.

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

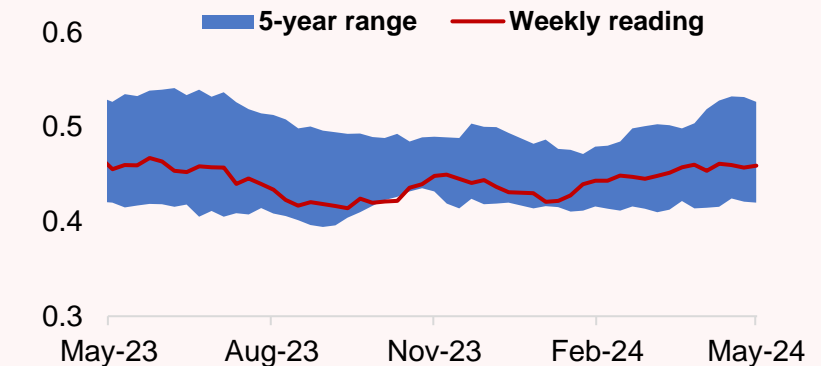
Million barrels per day, mb/d



**Petroleum net exports rose.** The U.S. was a petroleum net exporter of 2.6 mb/d for the week ended May 17, up by 0.9 mb/d from the prior week.

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

Billion barrels

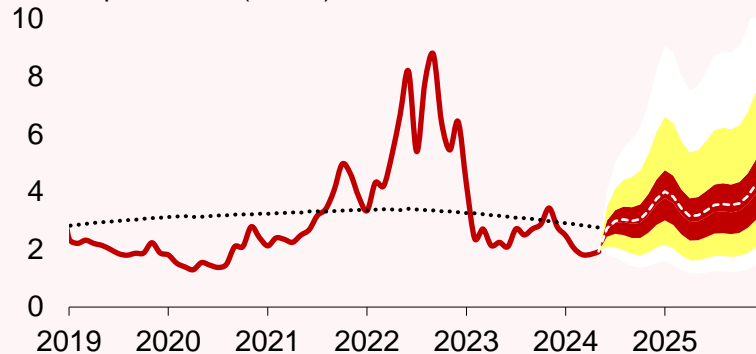


**Inventories increased.** U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) increased by 1.8 million barrels (mb) for the week ended May 17.

# U.S. natural gas market indicators

## Natural gas price mean reversion analysis

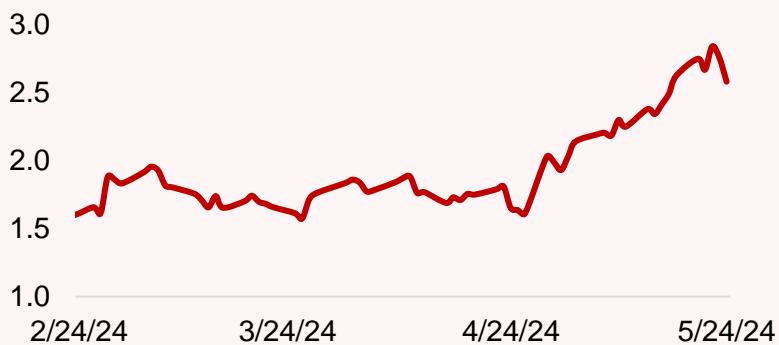
Dollars per mmbtu (2024\$)



Near-term natural gas futures have risen to align with the historical mean reversion target but rise by 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

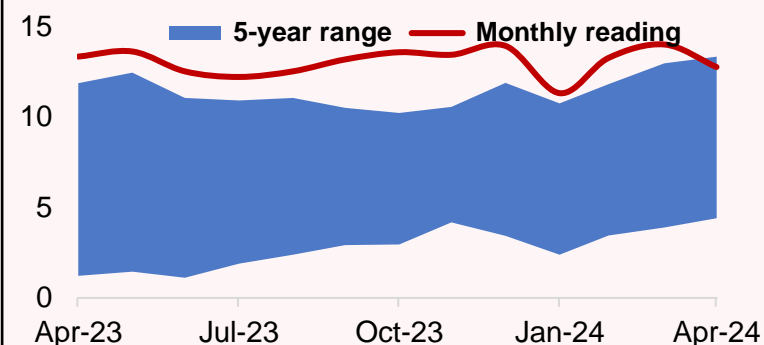
Dollars per million Btu



Natural gas prices at Henry Hub continued to rise above \$2.50 per million Btu for the week ended May 24 despite historically strong inventory levels.

## U.S. natural gas net exports

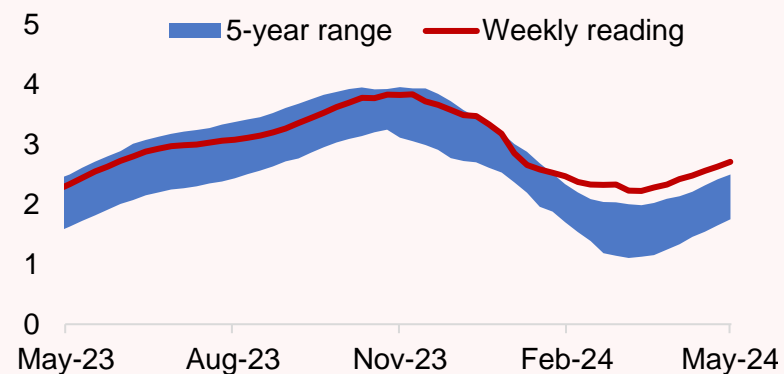
Billion cubic feet per day, bcf/d



Natural gas exports slipped. U.S. natural gas net exports in April 12.8 bcf/d, down from an upward-revised record-high of 14.0 bcf/d in March per EIA.

## U.S. weekly working gas storage

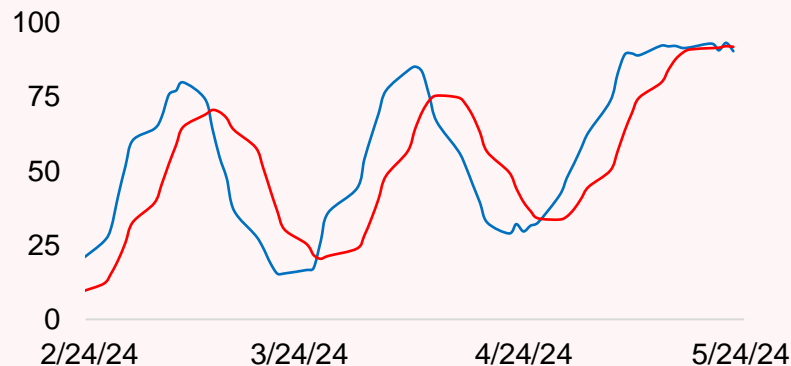
Trillion cubic feet (tcf)



Working gas in underground storage rose by 3.0% w/w to 2.71 tcf as of May 17 and remained above the 5-year range.

## Natural gas futures slow stochastic

Index level

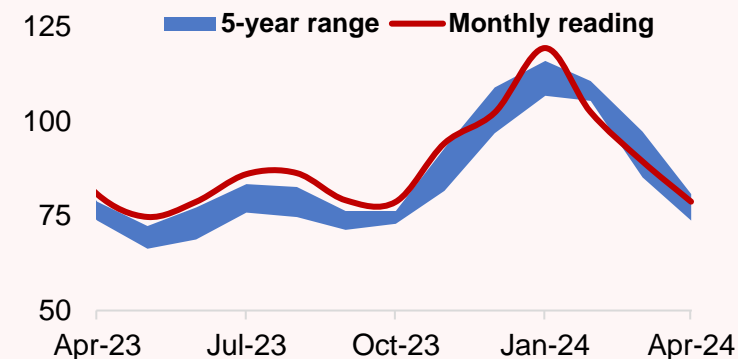


%K, %D 5 bars

Natural gas price momentum increased but slowed during the week ended May 24.

## U.S. natural gas consumption

Billion cubic feet per day, bcf/d

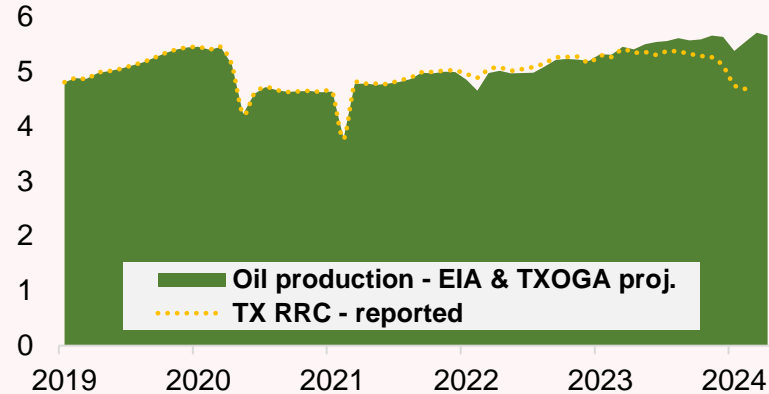


Consumption decreased. U.S. natural gas consumption of 79.0 bcf/d in April came in below EIA's projection and was down from 80.7 bcf/d a year ago.

# Texas' oil and natural gas production

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

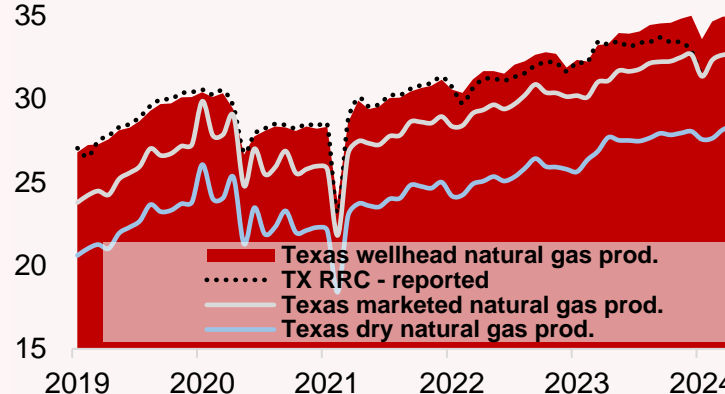
Million barrels per day (mb/d)



**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**

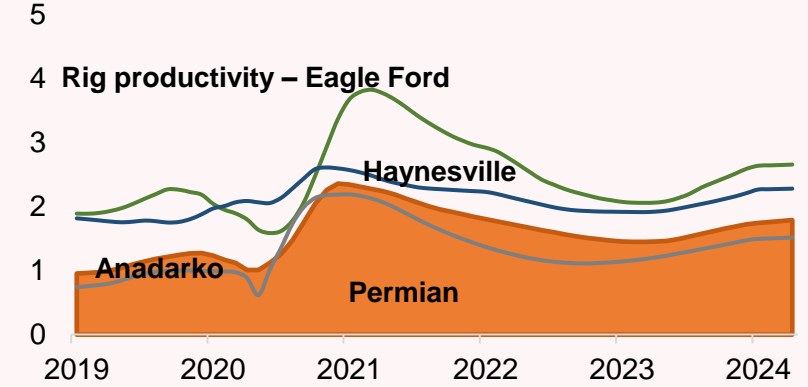
Billion cubic feet per day (bcf/d)



**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**

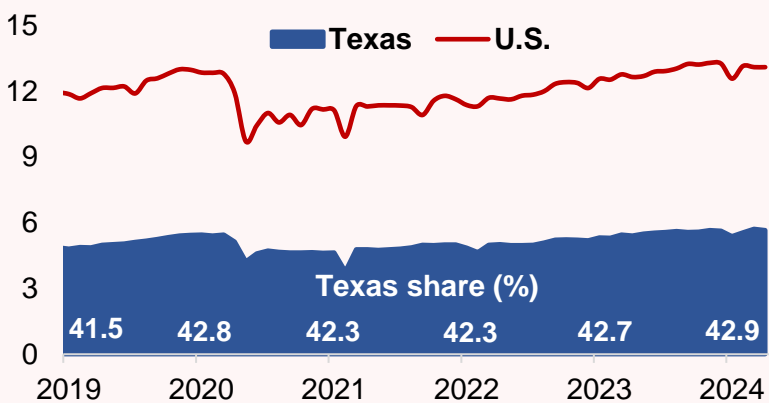
Thousand barrels per day oil-equivalent, kb/dae



**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**

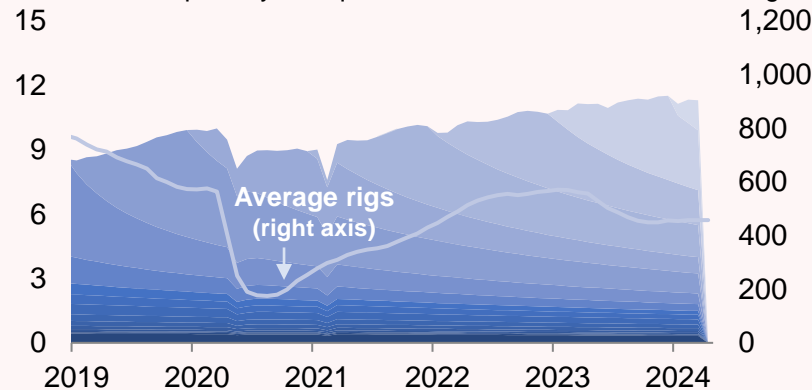
Million barrels per day (mb/d)



**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**

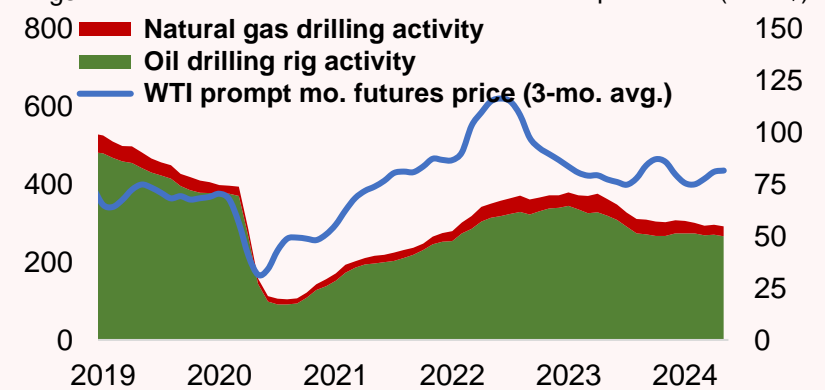
Million barrels per day oil-equivalent



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



**Texas' drilling rig activity increased** for the week ended May 17 per Baker Hughes. Texas had 263 oil-directed rigs (down by 1 rig w/w) and 27 natural gas-directed rigs (up by 2 rigs w/w).

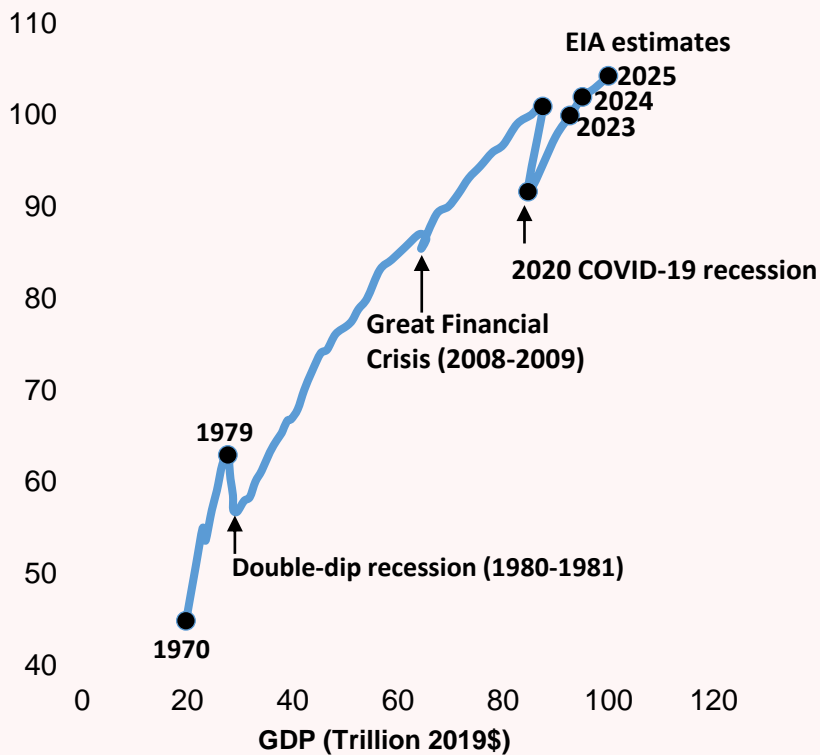
# Global Oil Market Balance Projections to 2025



- 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.

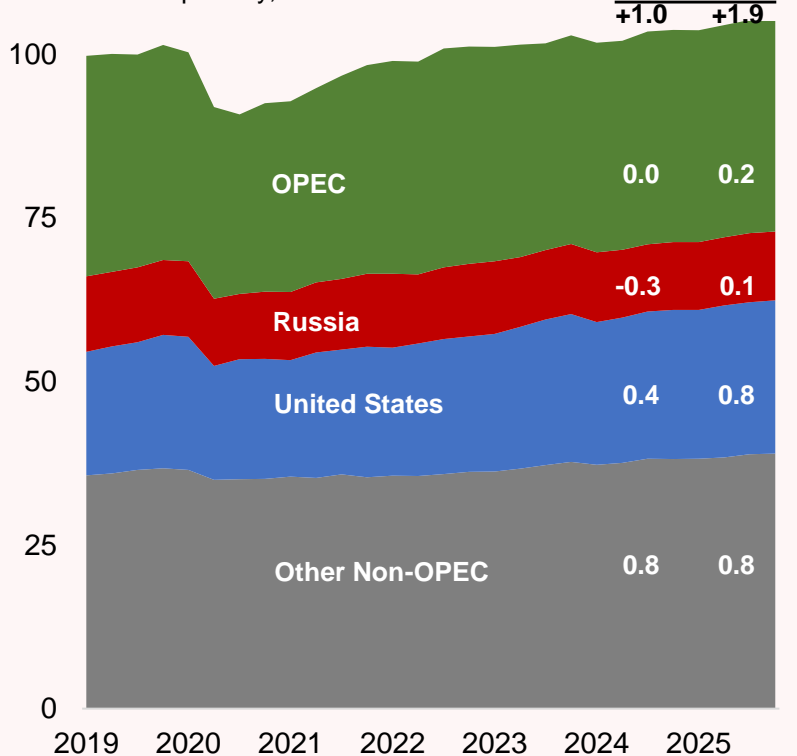
## Global oil demand and GDP

Million barrels per day (mb/d)



## Oil production by country/region

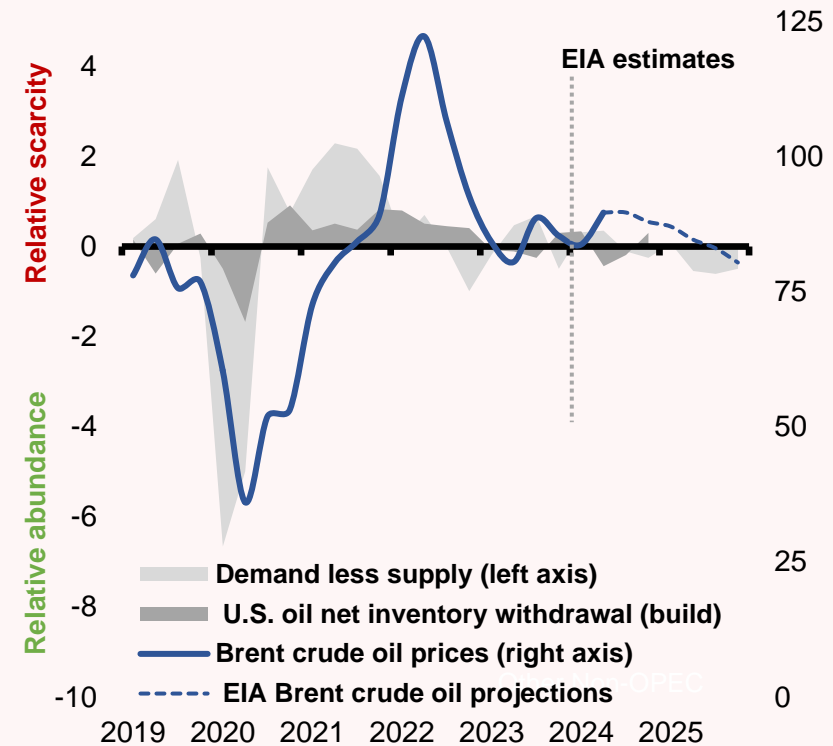
Million barrels per day, mb/d



## Global demand/supply & Brent prices

Million barrels per day (mb/d)

2024\$/Bbl

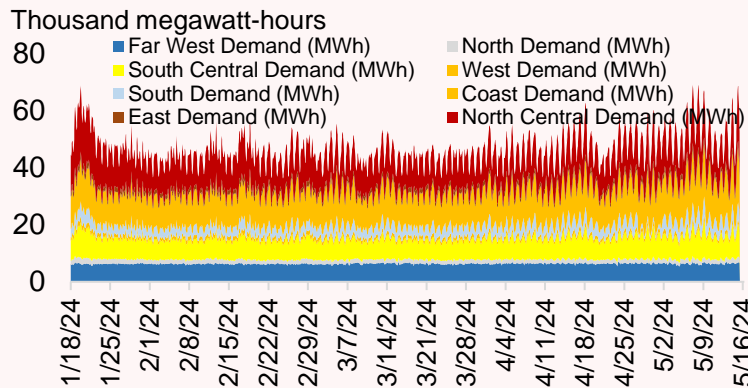




# Texas Electricity Analysis

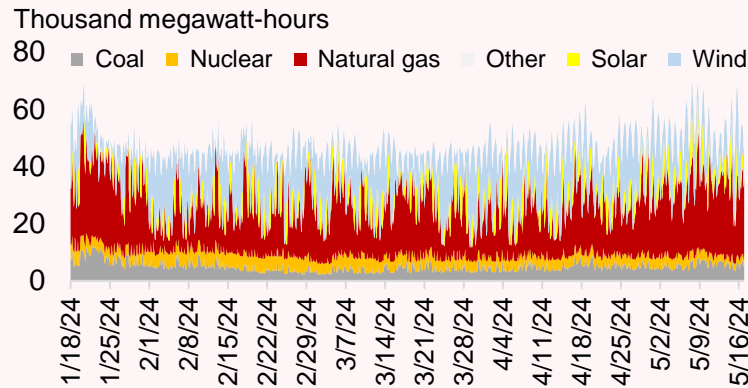


## ERCOT electricity load by region



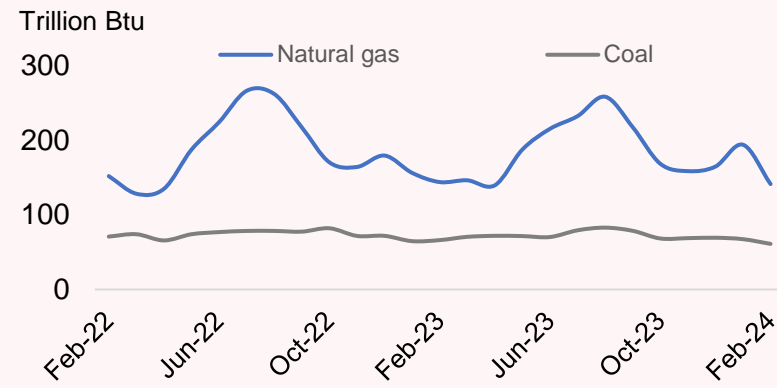
**North and West Texas load increased.** For May 10-17, 2024, ERCOT's average hourly electricity load fell by 1.8% w/w, while the maximum hourly load of slipped by 0.6 w/w. Variability rose to an average percentage standard deviation of 20% in the East, North Central, and South Central regions.

## ERCOT hourly electricity generation by source



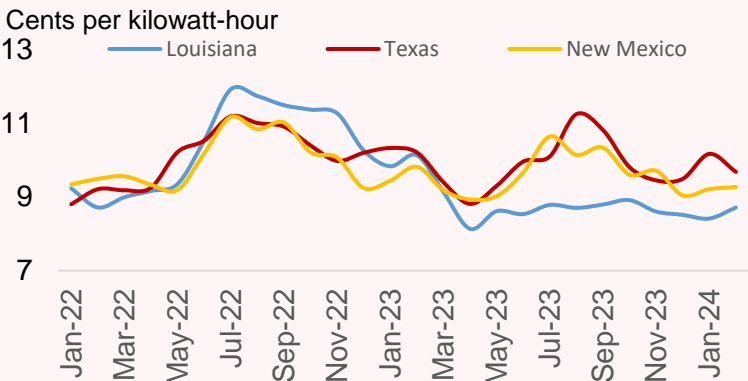
**ERCOT thermal generation fell.** ERCOT's hourly electricity generation for the period May 10-17 ranged between 39 and 69 kMWh with a percentage standard deviation of 13.7, steady from the prior week. Thermal sources contributed as much as 91% of the region's power (up by 2% w/w), and natural gas drove as much as 70% over the period (up by 5% w/w).

## Electricity plant receipts of natural gas and coal



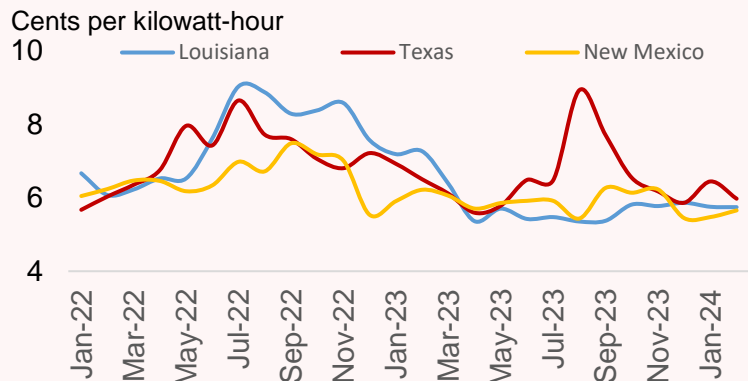
**Texas' lower natural gas receipts enabled by higher inventories.** Although Texas' thermal and dispatchable energy needs have continued to grow, the maximum monthly quantities of natural gas and coal that generators received have fallen over the past two years, thanks at least in part to greater inventories.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



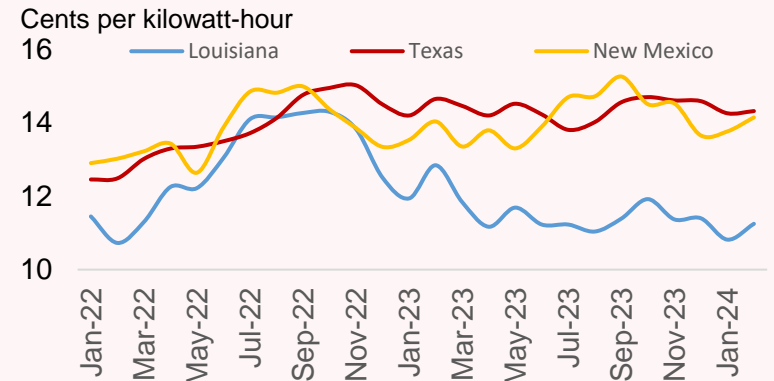
**Texas' electricity prices fell in February.** The average price of electricity in Texas decreased by 4.8% m/m in February. However, Texas' average price remained 4.4% and 11.1% higher than those in Louisiana and New Mexico, respectively.

## 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.

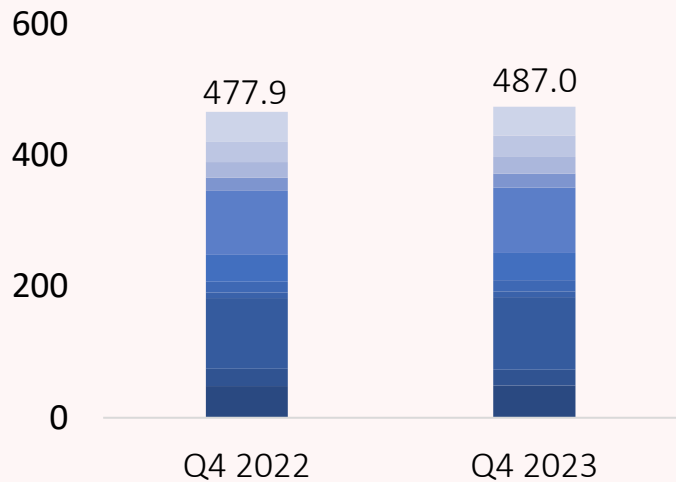
# Texas' oil and natural gas industry wages reached \$14.6 billion in Q4 2023



- ▶ 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.

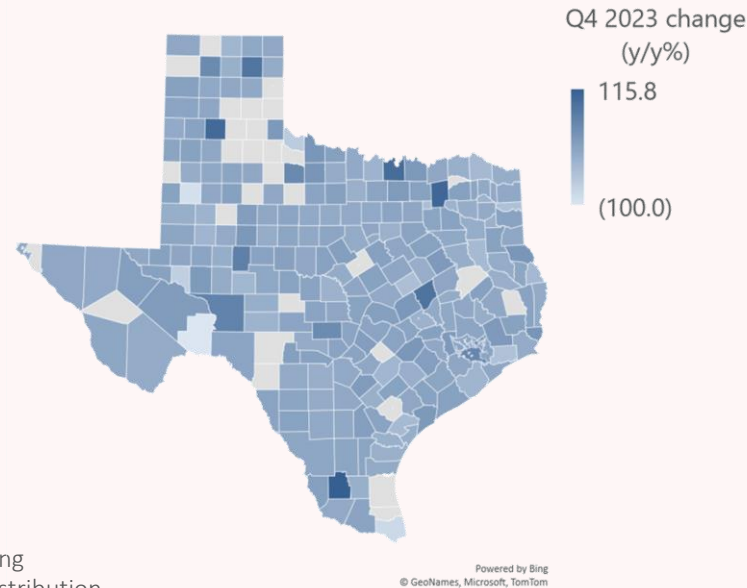
## Texas oil and natural gas industry direct employment rose by +1.9% y/y in Q4 2023

Thousand Jobs



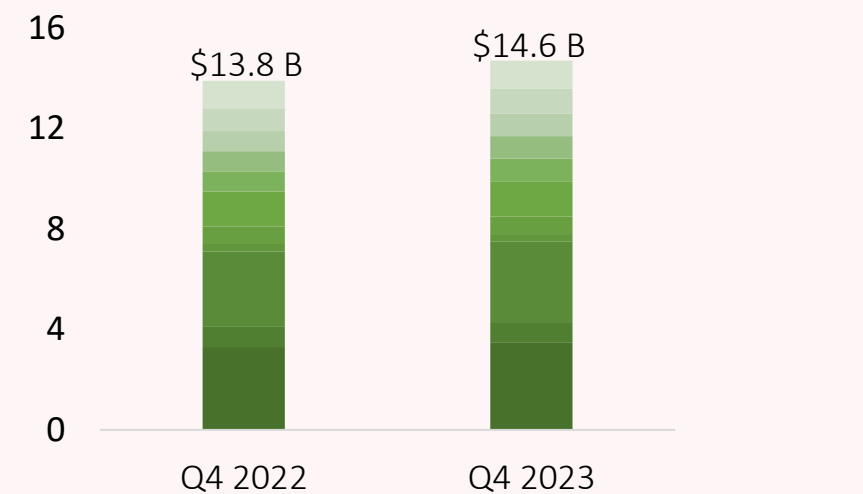
- Oil & gas extraction
- Support activities for o&g ops.
- Petroleum refineries
- Gas stations & fuel dealers
- All other\*
- Pipeline construction
- Oil & gas drilling
- Natural gas distribution
- Petrochemical mfg.
- Pipeline transportation
- Oil & gas field mach. and eq. mfg.

\* 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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