

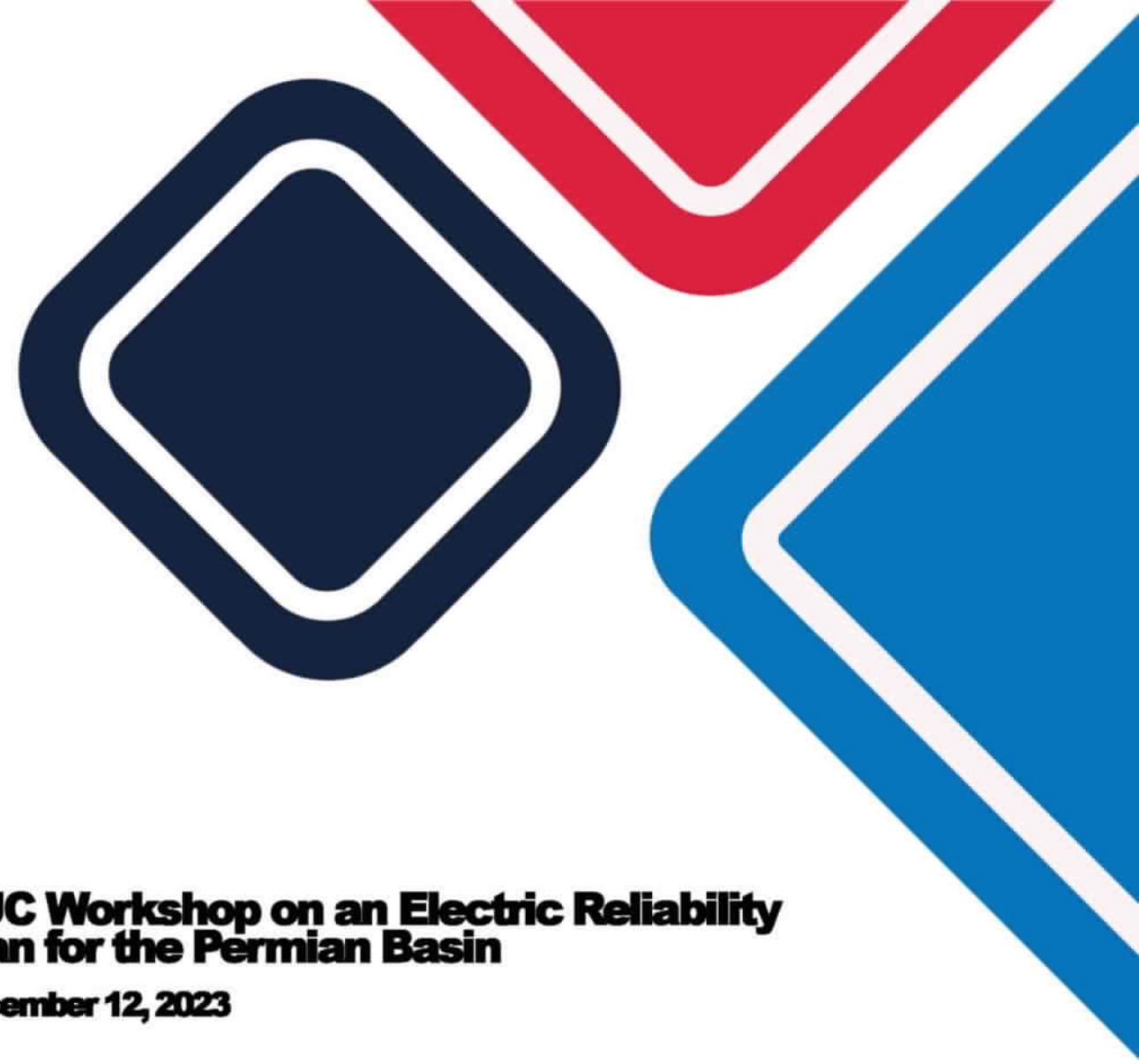
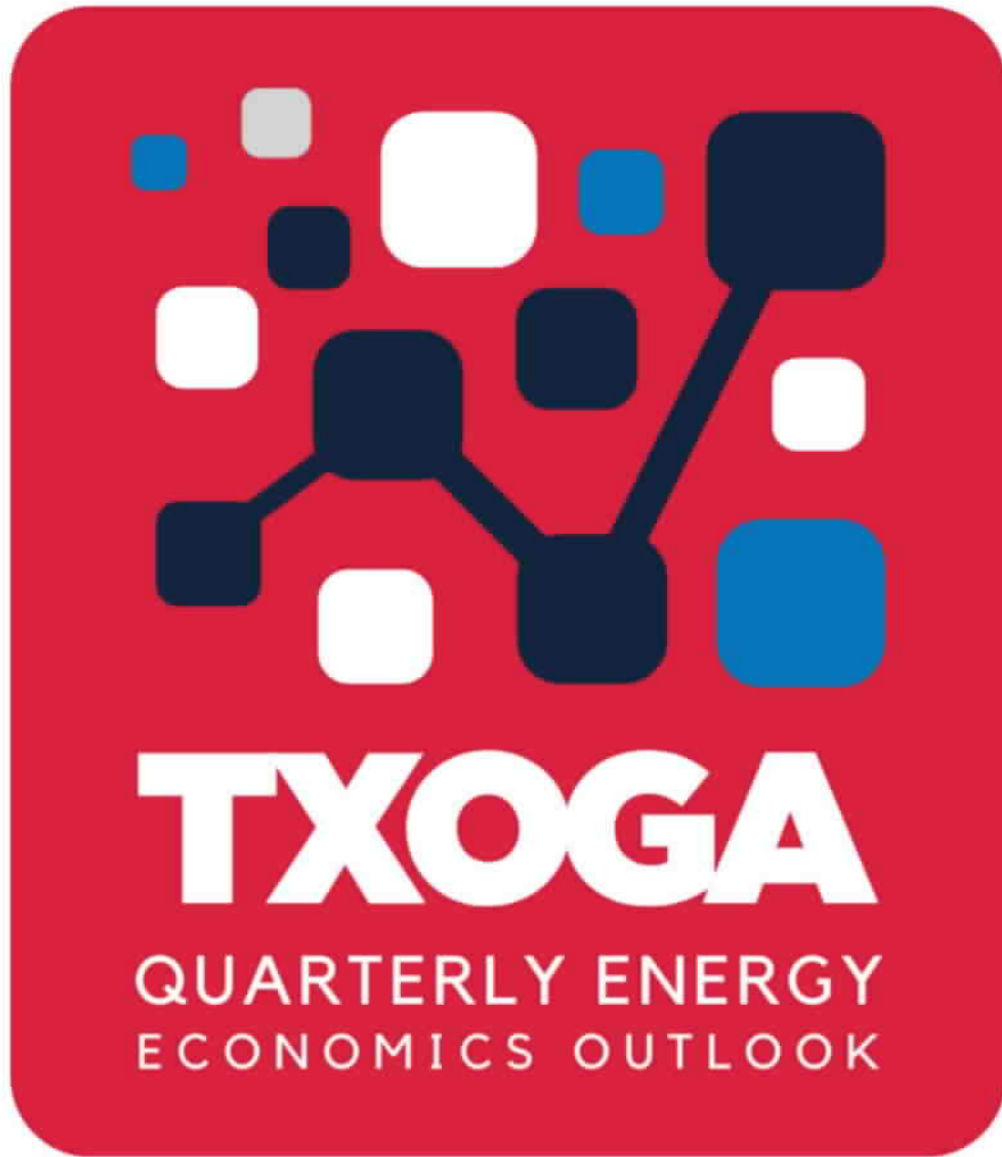


## **Filing Receipt**

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**PUC Workshop on an Electric Reliability  
Plan for the Permian Basin**

**December 12, 2023**



# Key Points

## Global, U.S. and Texas Economies

- GDP growth – at the global, U.S. and Texas levels – broadly improved and shifted the outlook to a “soft landing” scenario with steady 2024 growth that historically has supported oil and natural gas demand growth

## Oil Markets

- Consistent with our past reports, the data have continued to show: 1) record-high global demand in 2023 and 2024, 2) global supply growth led by U.S. and Texas, and 3) historically low U.S. crude oil ending stocks (currently at their lowest since 1985)
- Permian Basin productivity and production are key to the U.S. production outlook – and have continued to set records despite modest drilling activity

## Natural Gas Markets

- Also consistent with our past reports, domestic natural gas prices have remained historically low, thanks to strong production that has been ample to meet demand above the top of the five-year range as well as record-high exports so far in Q4 2023. Strong production has supported working gas storage levels near the top of its five-year range
- Permian associated natural gas production has also keyed record U.S. exports of natural gas via pipeline and via liquefied natural gas (LNG), hydrocarbon gas liquids (HGLs)
- Under-served: ERCOT’s projected load in the Permian Basin could quadruple with more electrification of upstream operations, but faces constraints that could impact production

# Global, U.S. and Texas Economies



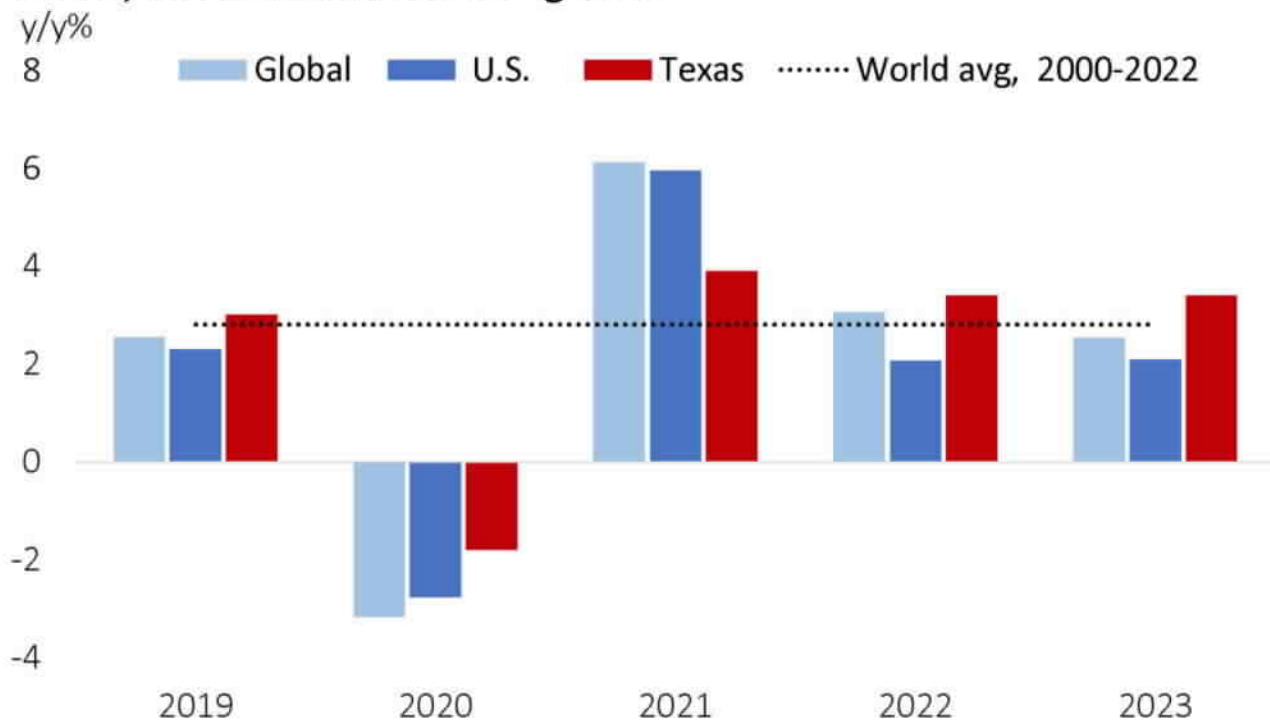


# A “soft landing” in 2023 followed by solid growth in 2024 and 2025

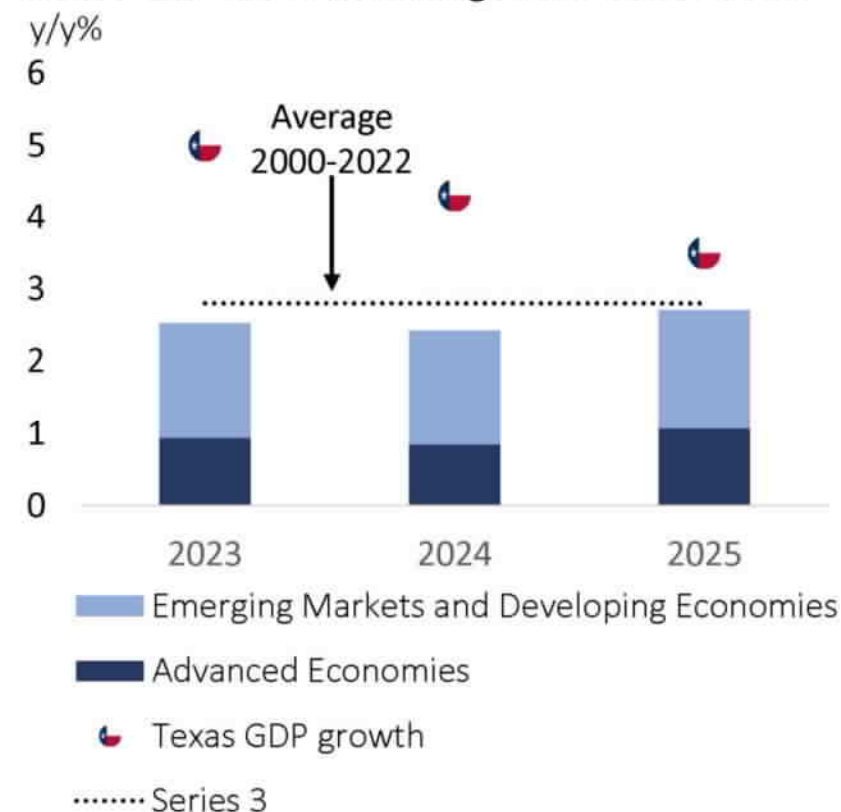


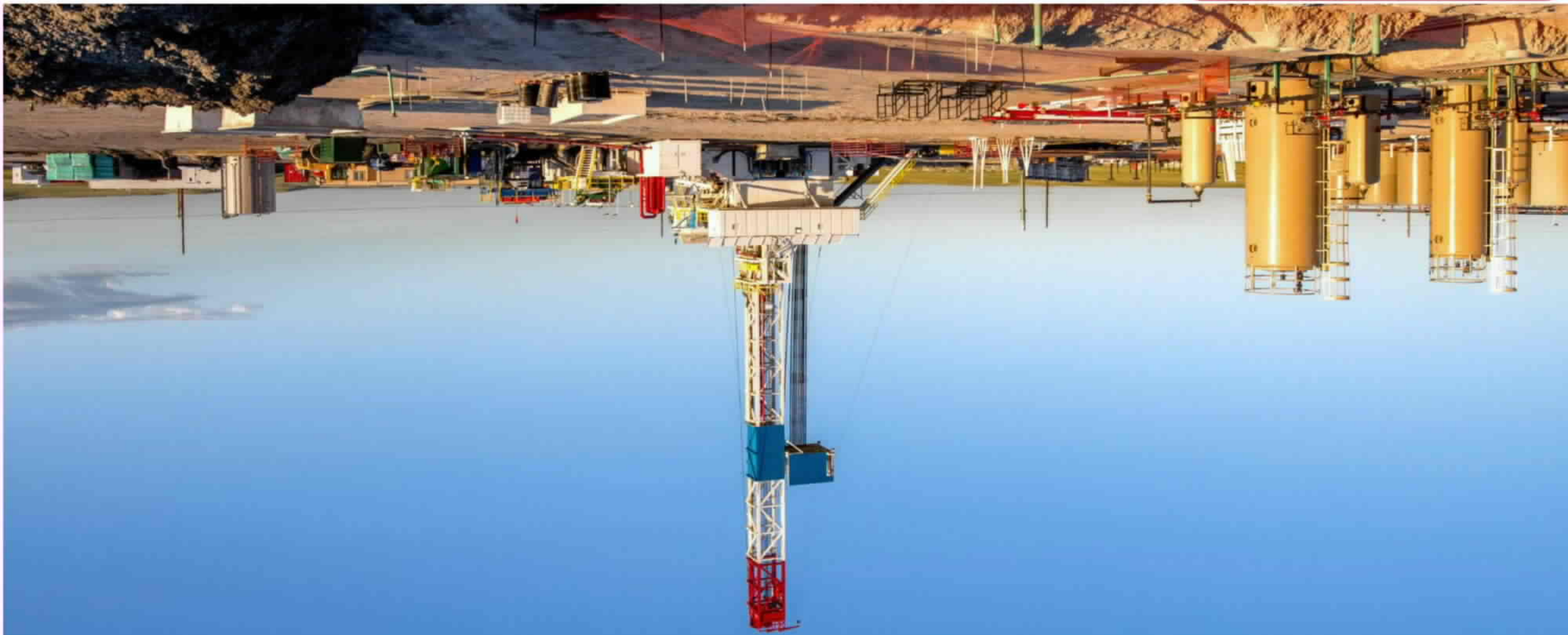
- The GDP growth outlook for the global, U.S. and Texas economies has broadly improved for this year – including large upward forecast revisions by the International Monetary Fund (IMF) – and fueled optimism for solid growth in 2024
- Texas GDP outperformed analysts’ [forecasts](#) in 2023, and TXOGA estimates Texas’ GDP growth at 5.0% y/y in 2023, 4.3% y/y in 2024, and 3.5% y/y in 2025 – converging with global growth

## Global, U.S. and Texas real GDP growth\*



## Global GDP outlook and regional contributions





# Global oil demand is expected to set record high levels in 2023 and again in 2024

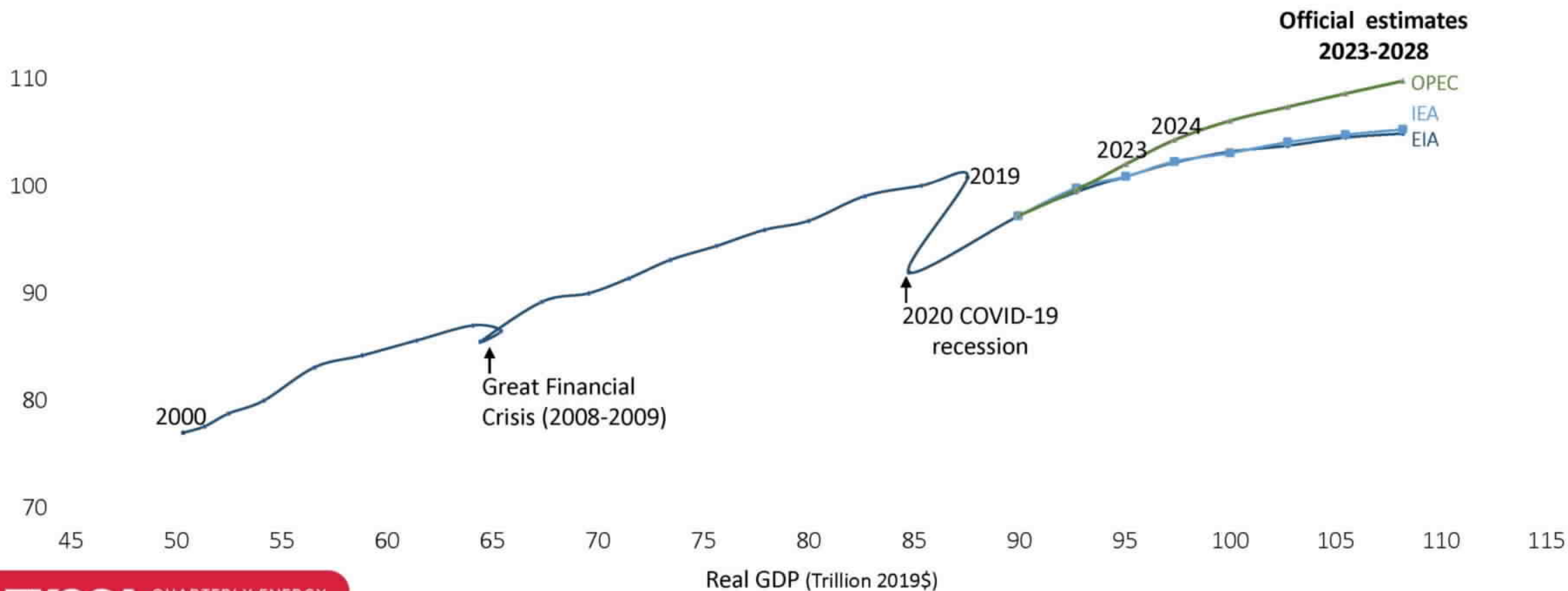


- Global oil demand and economic growth have historically corresponded closely with one another. Yet, official agency views for the next five years differ markedly

## Global oil demand and GDP\*

Million barrels per day (mb/d)

120



# Productivity has remained a key driver and differentiator for Texas' key oil and natural gas basins



- ▶ Permian rig productivity has increased by an estimated 17.8% y/y as of December 2023 per the U.S. Energy Information Administration (EIA)

American Oil—Good to the Last Drop?

The Wall Street Journal, Nov. 27, 2023

How The U.S. Is Pumping More Oil With Fewer Rigs

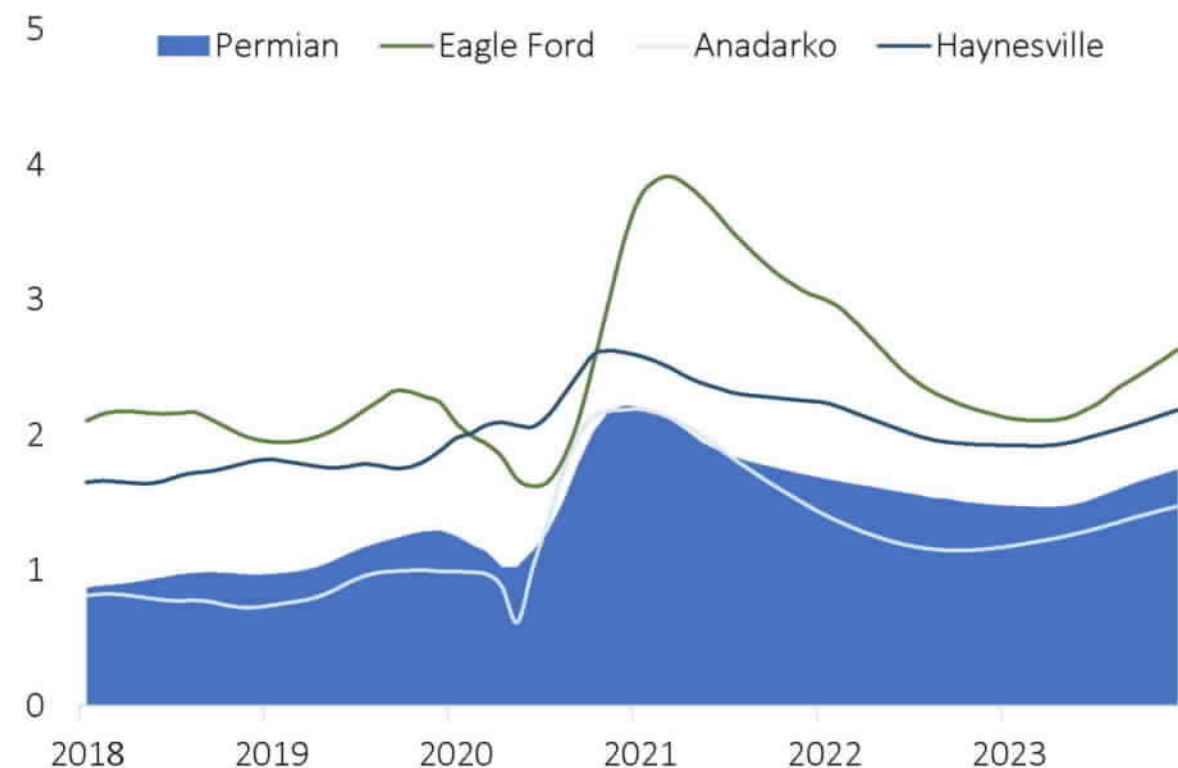
OilPrice.com, Nov. 4, 2023

Rumors of Permian Well Declines May Be Exaggerated

RBN Energy Apr. 12, 2023

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

Thousand barrels per day oil-equivalent, kb/doe





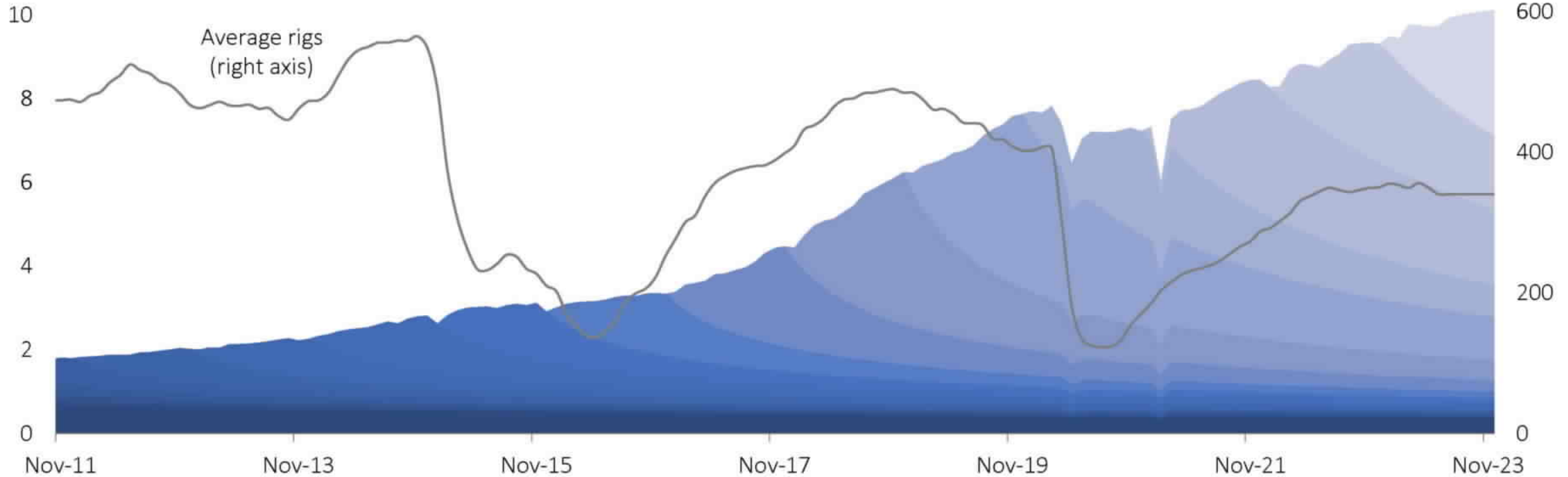
# The Permian Basin continued to set new production record and surpassed 10 mb/doe for the first time in Q3 2023



- The Permian Basin now provides more than 27% of total U.S. oil and natural gas production
- Compared with country-level production, Texas' combined oil and natural gas production of over 10 million barrels per day (oil-equivalent energy) ranks #3 in the world; only the rest of the United States and Russia are higher

## Permian Basin wellhead oil and natural gas production

Million barrels per day oil-equivalent (mb/doe)



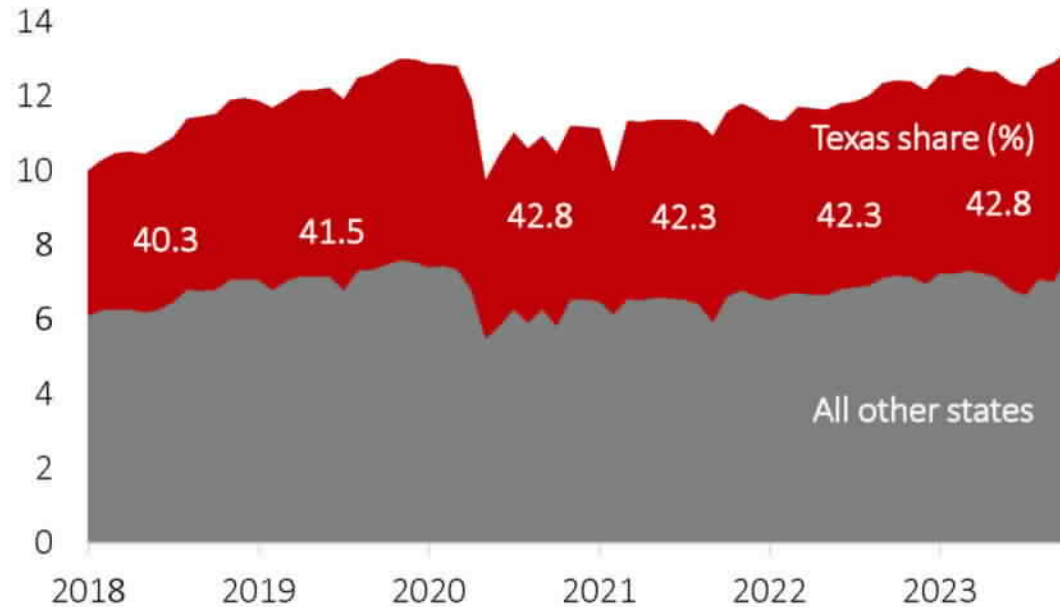
# Texas is estimated to have set new production records for crude oil and natural gas marketed production in Q4 2023



- New Texas production records. TXOGA estimates that Texas produced
  - 5.7 mb/d of crude oil in October and November 2023
  - 33.6 bcf/d of natural gas marketed production in October 2023
- Market share gains. Year-to-date through November, Texas' shares of U.S. production rose to 42.8% of oil and 28.2% of natural gas marketed production

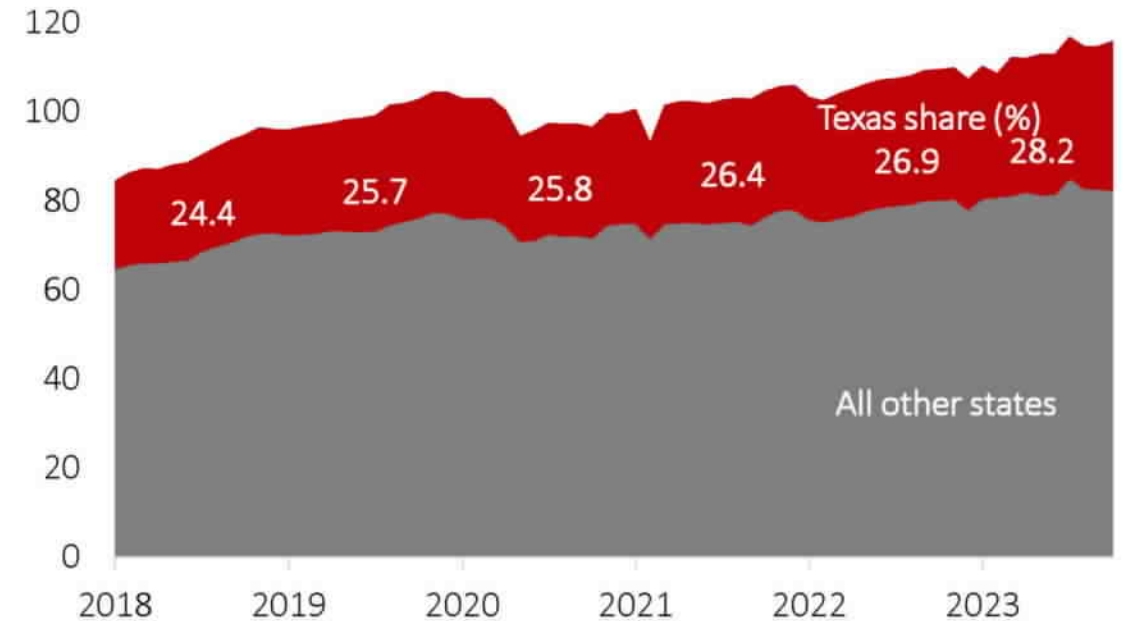
## U.S. and Texas crude oil production

Million barrels per day (mb/d)



## U.S. and Texas natural gas marketed production

Billion cubic feet per day (bcf/d)



# Natural Gas Markets

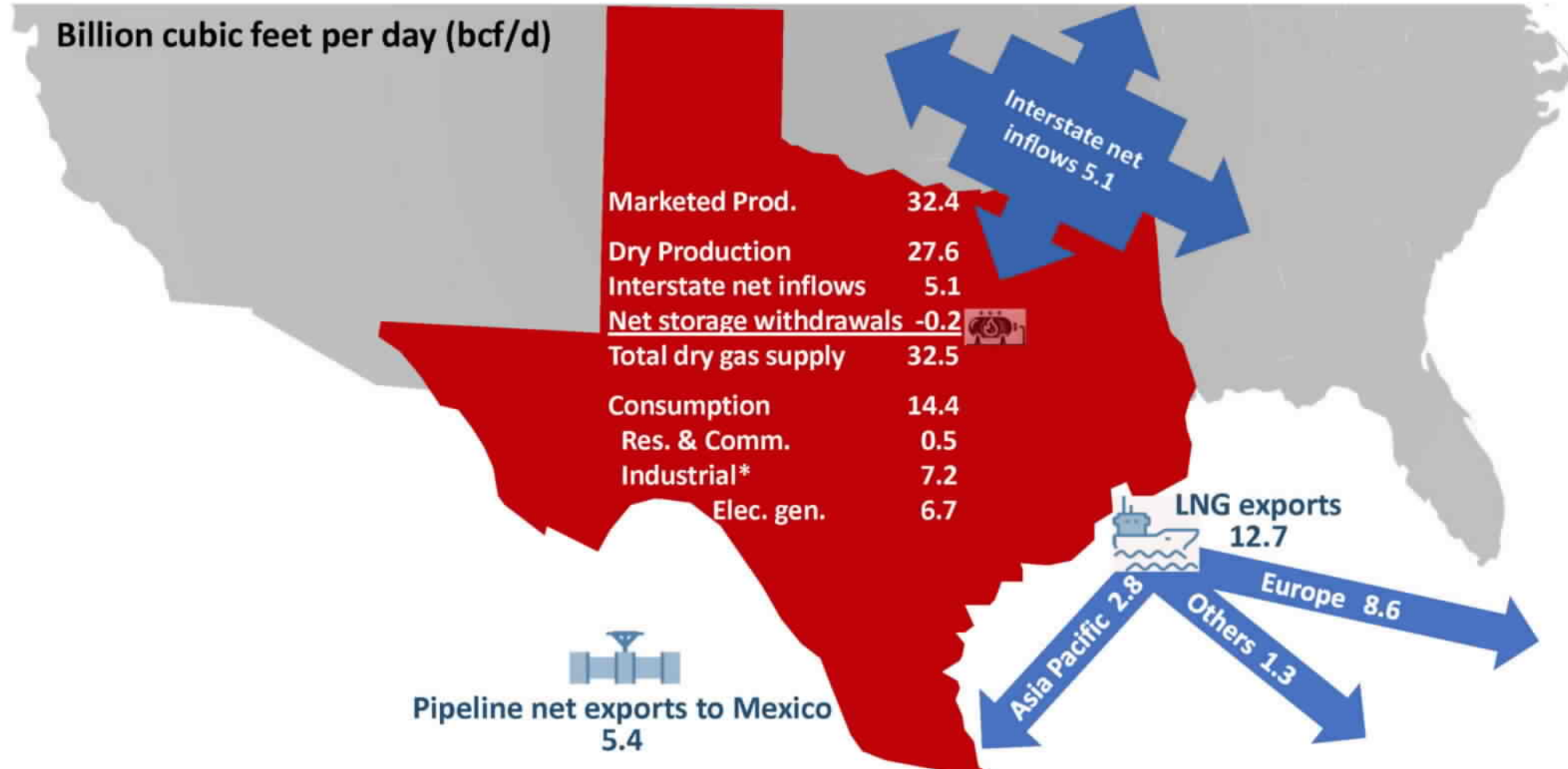




# Texas' natural gas flows in September 2023: Production supported historically strong consumption and exports



- ▶ Texas produced 27.6 billion cubic feet per day (bcf/d) of dry natural gas in September, supplemented by 5.1 bcf/d of interstate net inflows, per TXOGA's estimates
- ▶ Texas consumers required 14.4 bcf/d, mainly for electricity generation and industry, and 18.1 bcf/d was exported (LNG of 12.7 bcf/d and pipeline gas of 5.4 bcf/d)



\*Includes industrial end-use consumption plus lease, plant, pipeline and distribution fuel  
sources: U.S. Energy Info. Admin.; U.S. International Trade Commission; TXOGA analysis



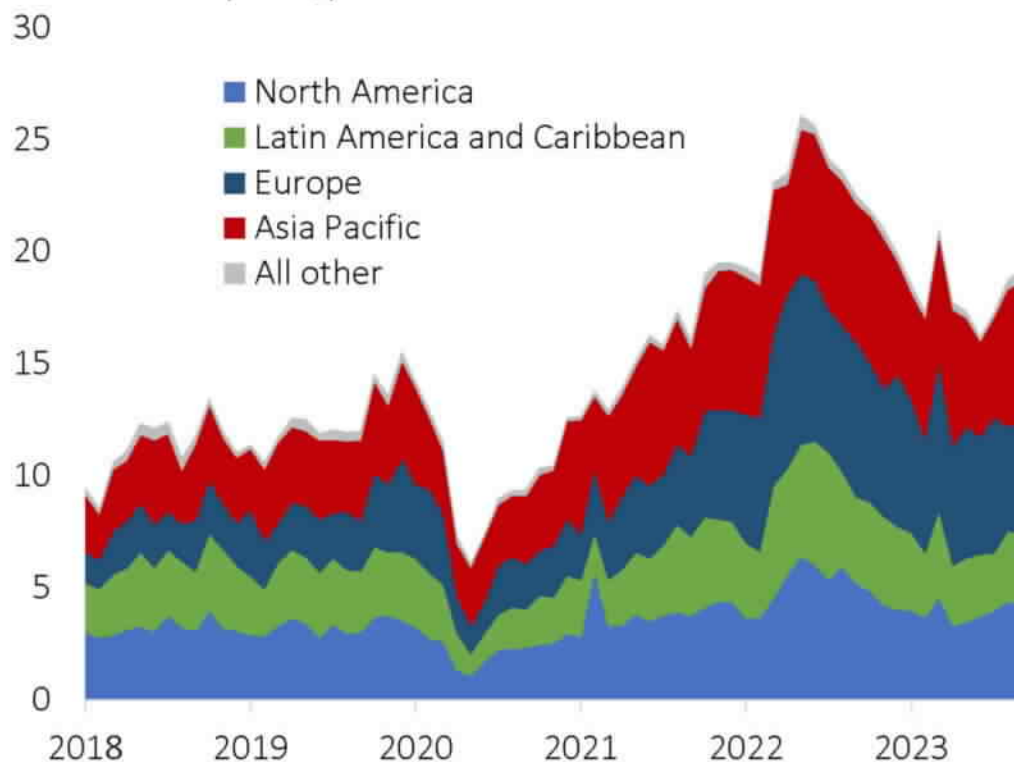
# Texas exported over \$162 billion of energy products in the first three quarters of 2023



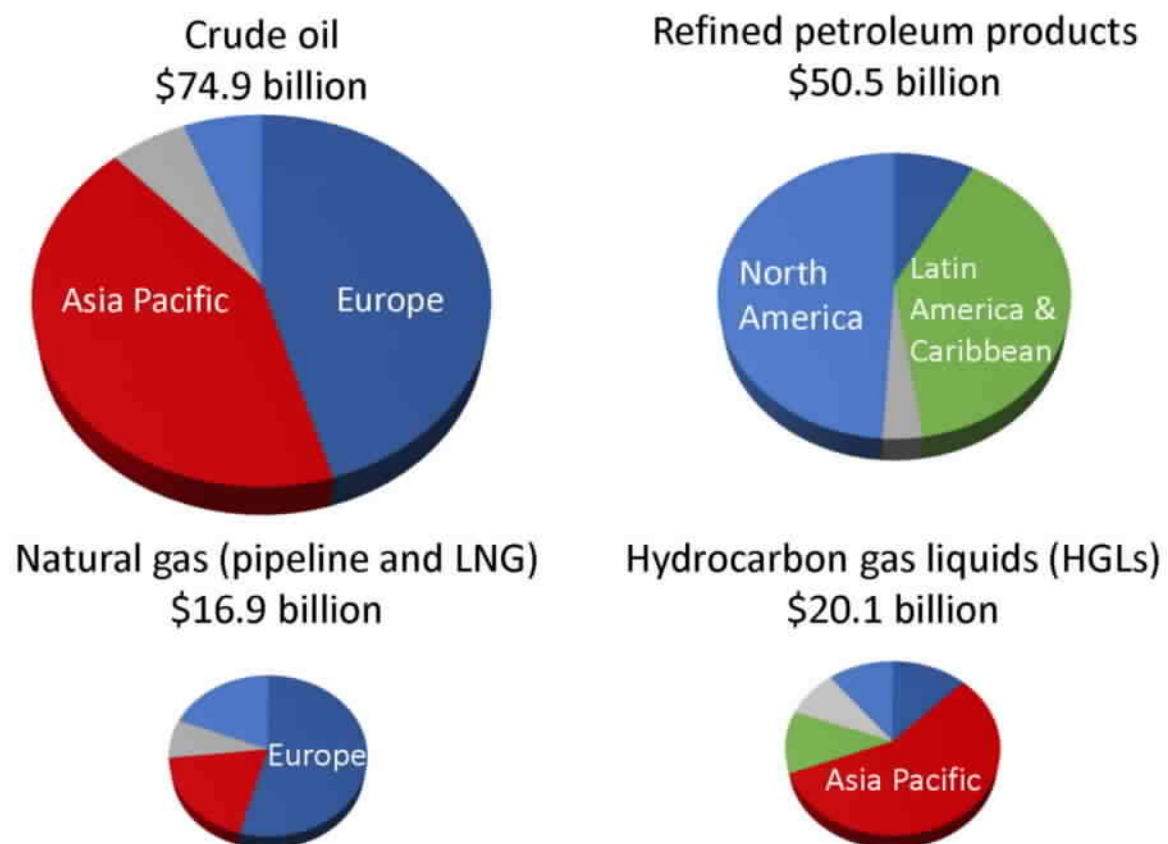
- ▶ Texas' overall energy exports appear evenly distributed among major regions, but regional product markets differ

Texas' exports oil, natural gas, HGLs and refined petroleum products, by region and month

Billion dollars (2023\$)



Texas' exports by product and region  
August 2023 year-to-date total: **\$162.4 billion**



# ERCOT's projected load in the Permian Basin is poised to grow and increasingly represents integration with electricity self-supply, which raises costs and reduces efficiency



- Many Permian producers have installed their own generation capacity, including diesel generators and renewables, but raises costs and generally is less efficient than utility-scale provision
- If firms are unable to dedicate capital to electricity generation, the regional limitations on generation and transmission could impede investment and production, which most energy modeling assumes will occur without friction in the long-run



**R. Dean Foreman, Ph.D.**

**[dforeman@txoga.org](mailto:dforeman@txoga.org)**