



TEXAS OIL & GAS ASSOCIATION | SINCE 1919

The State of Natural Gas in Texas

Our Economy
Our Environment
Our Future } **TEXAS OIL &
NATURAL GAS**

Overview

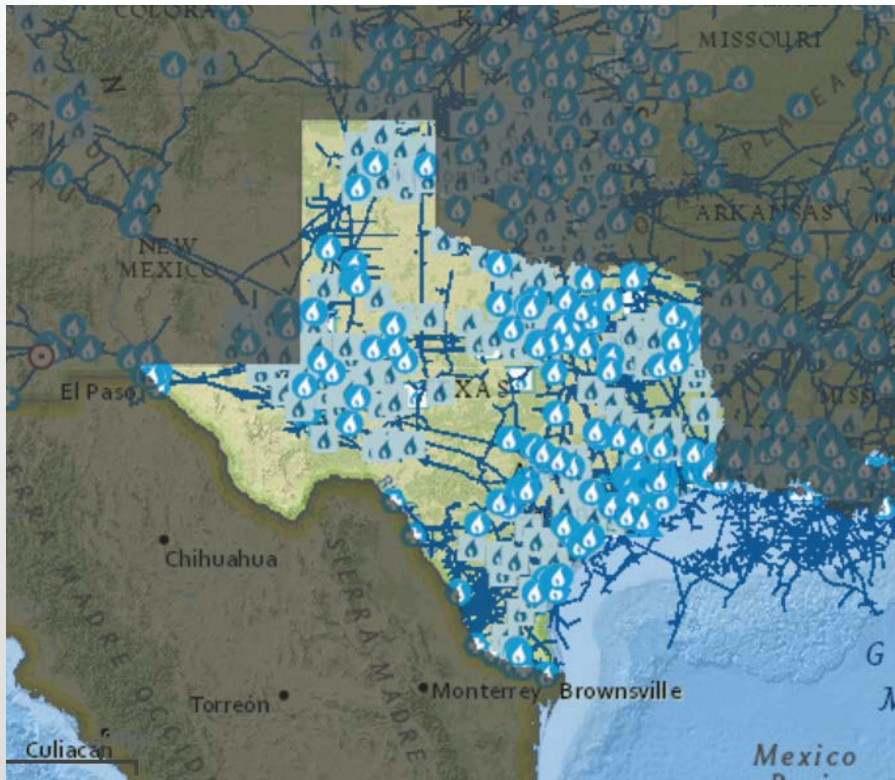
- Supply
- Renewables
- LNG Exports
- Challenges

Supply

- The U.S. has become the largest producer of natural gas in the world.
- Since 2010, production has grown almost 30 percent.
- Consumer natural gas demand has grown steadily since 2009 for a variety of reasons: it is abundant, domestic, burns clean and is affordable.
- Access to abundant, domestic natural gas has given U.S. industrial companies a competitive advantage over their global competition, leading to the **resurgence of gas-intensive manufacturing in the U.S.**

Supply

- Texas accounted for over 27% of U.S. marketed natural gas production in 2015, making it the leading natural gas producer among the states.
- Texas has 90 Tcf of proven natural gas reserves (**a doubling since 2003**), 26% of the national total.



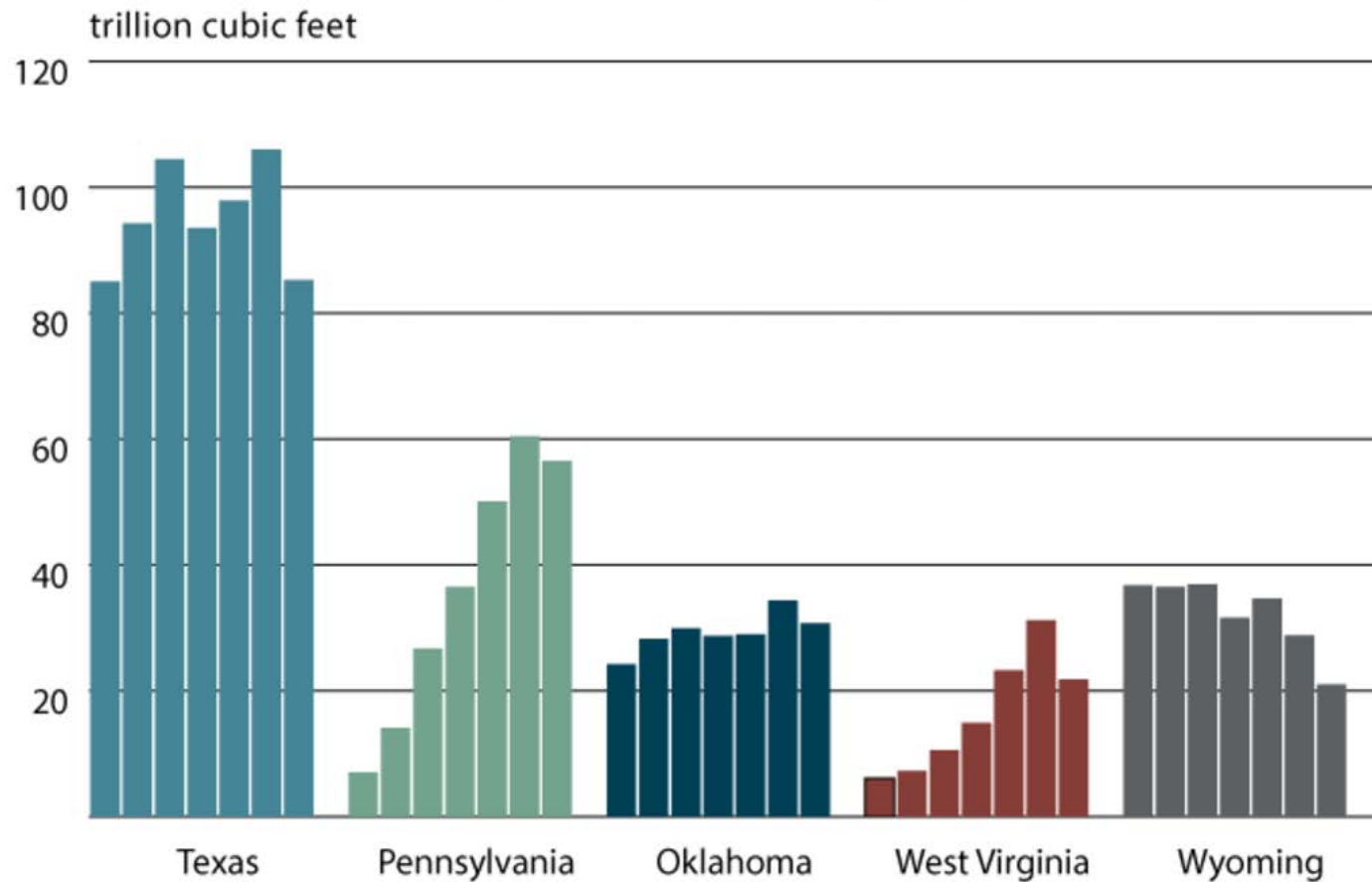
Map depicts Natural Gas Power Plants, processing plants, market hubs, storage facilities, pipelines and LNG facilities

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Proved Natural Gas Reserves of Top Five States

From 2009 to 2015



Source: EIA Proved Oil & Gas Reserves (Dec. 2016)

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Supply – Eagle Ford Example

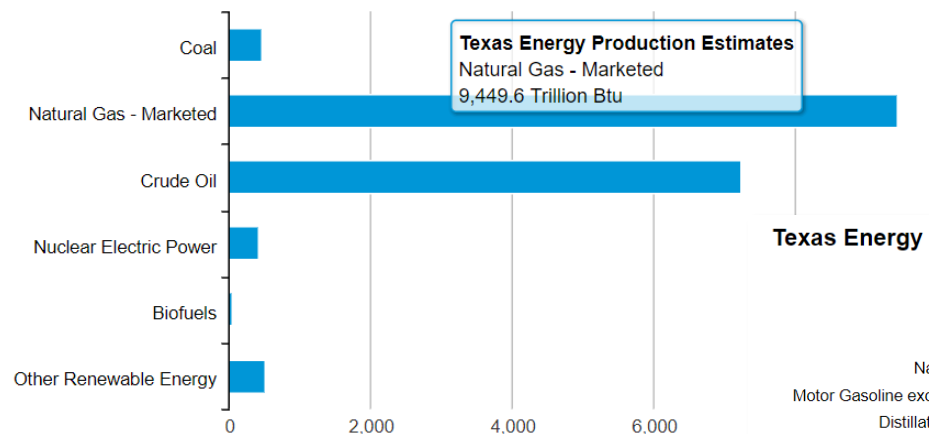
- Aside from the Permian, the Eagle Ford shale in South Texas is the state's second most productive shale play.
- The Eagle Ford also remains one of the top producing shale plays in terms of natural gas in the United States.
- The region produced over 6.2 billion cubic feet of gas per day in June, with production projection to increase another 140 million cubic feet per day in July.
- Putting this in perspective, the average U.S. household uses about 168 cubic feet of natural gas per day, meaning one day of production in the Eagle Ford could meet the natural gas need of over 230,000 U.S. homes for one month.

Total Energy Consumption and Production

Texas Energy Consumption and Production is diverse. In 2015 Texas was the leading producer of oil, natural gas and wind energy.

Texas Energy Production Estimates, 2015

DOWNLOAD



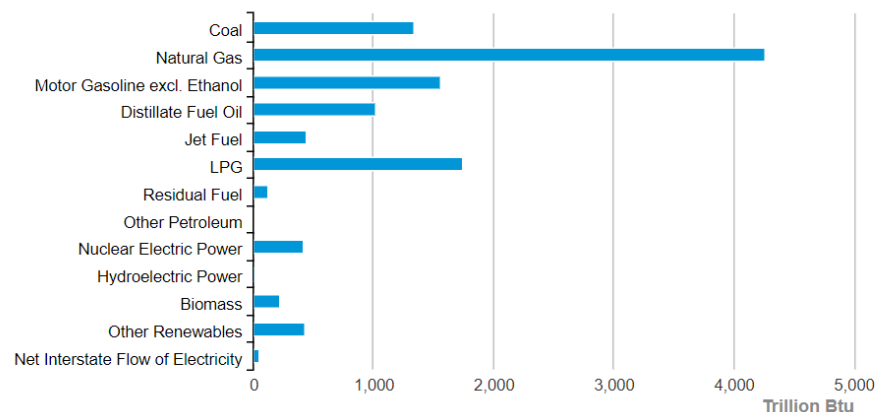
Production of Nat. Gas =
9.4 Quadrillion BTU

eia Source: Energy Information Administration, State Energy Data System

Consumption of Nat. Gas =
4.2 Quadrillion BTU

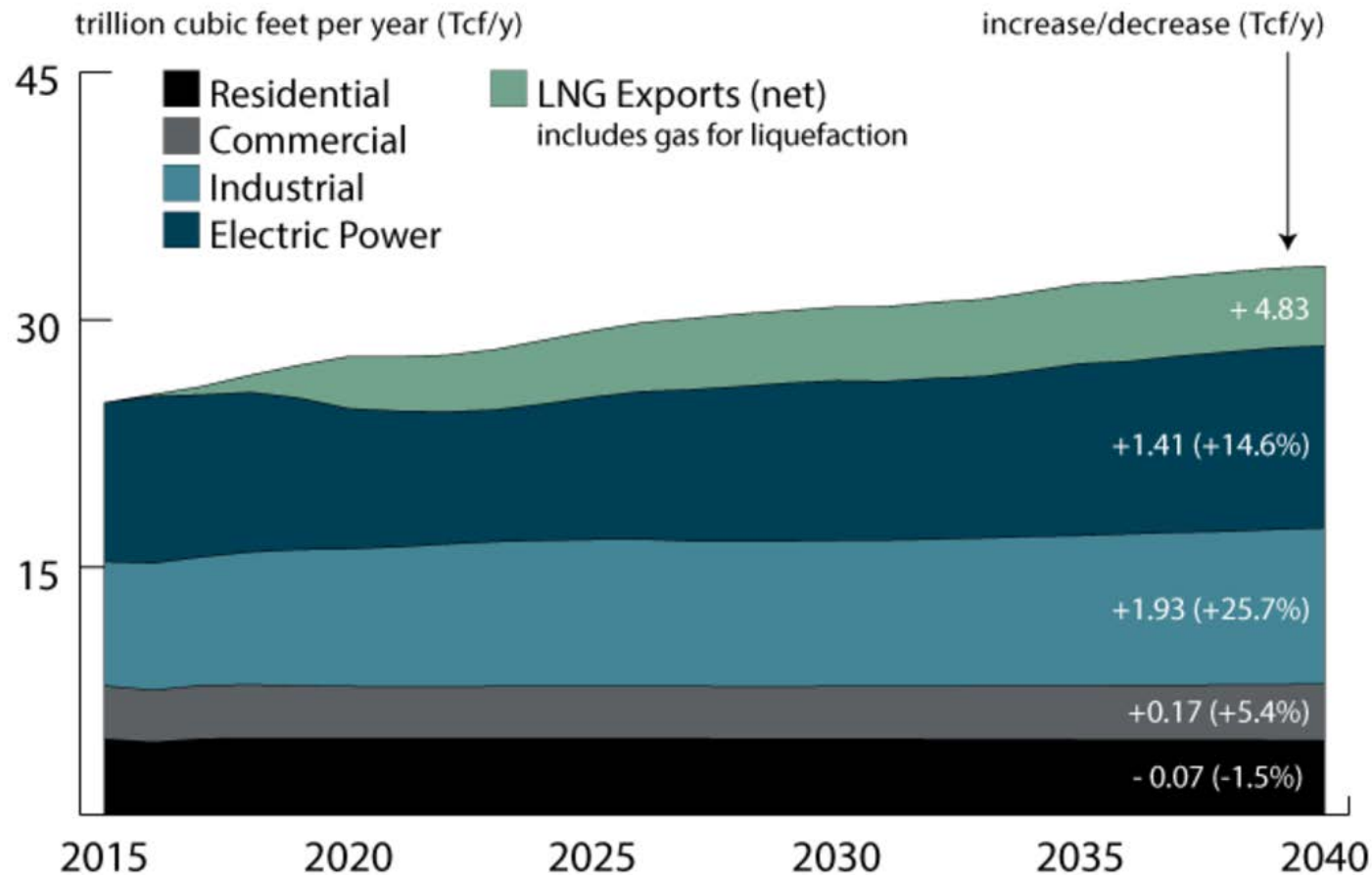
Texas Energy Consumption Estimates, 2015

DOWNLOAD



eia Source: Energy Information Administration, State Energy Data System

U.S. Natural Gas Consumption AEO-17 Reference Case



Source: EIA Annual Energy Outlook 2017

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Natural Gas & Renewables

- The oil and natural gas industry in Texas is a proponent of fair, competitive markets.
- ERCOT understands that you need all sources to meet the growing demand.
- Natural gas is affordable because of the plentiful supply.
- According to the latest EIA data, on an equal playing field, natural gas is comparable or lower cost than wind and solar, at \$53.8/MWh for natural gas vs \$55.8/MWh for wind and \$73.7/MWh for onshore wind.
 - However, with tax credits, onshore wind projects have a lower levelized cost of electricity (LCOE) than natural gas, while solar PV is still higher than natural gas even with the tax credit.

LNG Exports

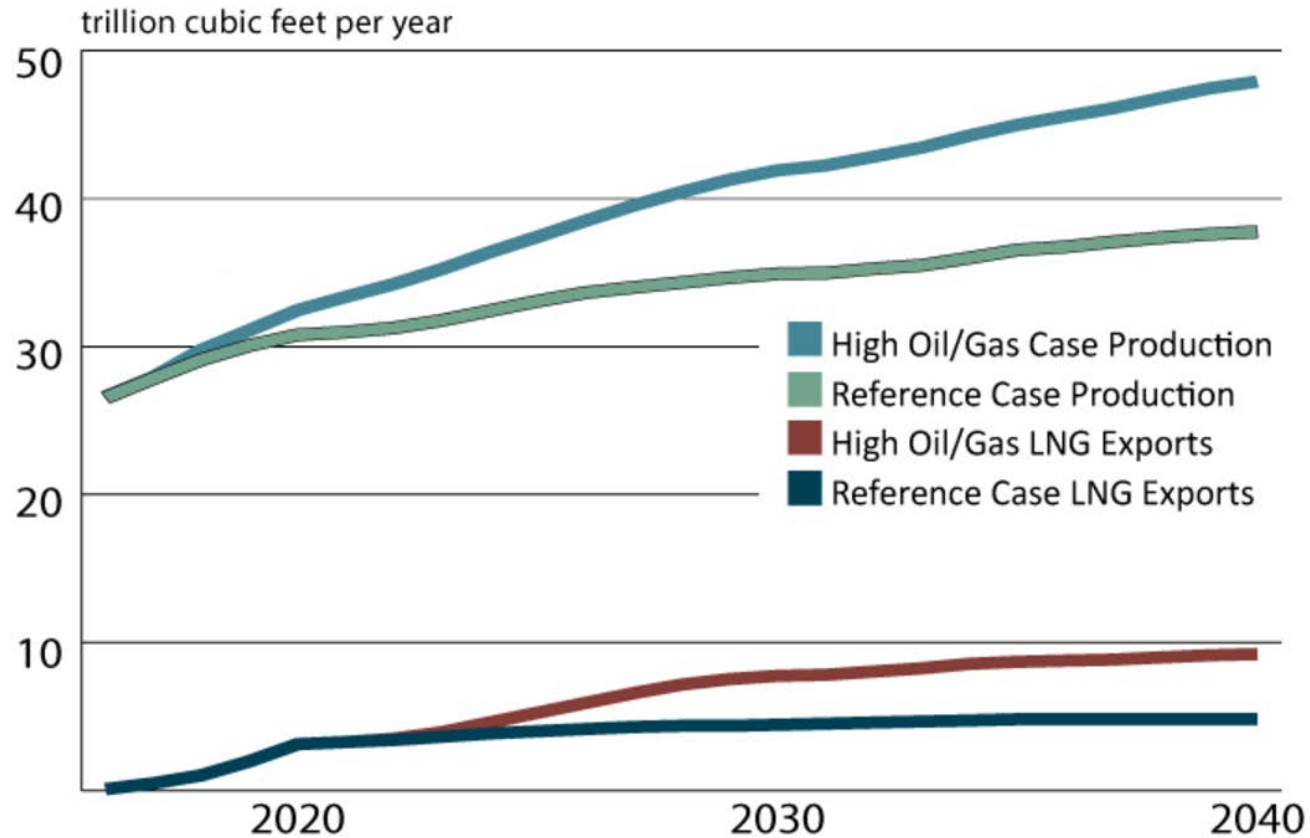
- LNG exports are expected to generate as much as \$86 billion in net benefits to the U.S. economy, according to a study released by NERA Economic Consulting.
- Natural gas development supports more than 1 million American jobs today, and will support more than 2.4 million jobs by 2035, according to IHS Consulting.
- Expanded LNG exports will create up to 450,000 jobs and help reduce the U.S. trade deficit by as much as \$27 billion, according to leading consultants.
- Independent studies from Deloitte and others confirm that exports will have little impact on domestic prices owing to vast natural gas supplies now recoverable at low cost through modern technologies.



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LNG Exports & Production

U.S. LNG Exports (Net) vs. Production



Source: EIA Annual Energy Outlook - 2017

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LNG Exports & Supply

- U.S. LNG exports are expected to absorb only around 10-12% of the total U.S. natural gas production over the next decade or so.
- In fact, in over 20 scenarios investigated by the 2015 DOE study, the price differential between the US Henry Hub price and the natural gas prices elsewhere ranges from \$3/mcf to \$15/mcf.
- As a result, U.S. industrial consumers of natural gas will continue to have a cost advantage over European and Asian competitors even under scenarios with much higher export levels than those assumed in the DOE base case.
- As a result, the aggregate impact of LNG export on the manufacturing sector is small and positive.

Challenges

- **Pipeline Infrastructure**

- To ensure we continue to reap the benefits of low cost natural gas, we must continue to support and encourage pipeline infrastructure
- Look to the Northeast to see how the lack of pipeline infrastructure affects consumers:
 - *“Across the board, Northeast natural gas and electricity prices are significantly higher than the rest of the country across all sectors. While several factors play into this trend, the availability of natural gas supply into the region is one of the primary drivers.” – US Chamber of Commerce*

- **Continue to push for fair, competitive markets**

- Other states are picking winners and losers through programs like bailouts.
- Consumers win when government operates on a “fuel neutral” policy with no subsidies for one specific type of generation source.

Questions?

Item 4.5.1
ERCOT Public



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