



TEXAS TECH

U N I V E R S I T Y .

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Current and Future Economic Impacts of the Texas Oil and Gas Pipeline Industry

EXECUTIVE SUMMARY



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Executive Summary

This study provides estimates of the 2013 economic impact of the Texas oil and gas pipeline industry and projections for the year 2024. In addition to the current and future impact studies, a petroleum engineering-based analysis provides further information regarding the pipeline industry, the backbone for economic activity in the oil and gas sector. The focus of this study is on the value creation and the economic sustainability that lies in the economic contributions of Texas pipelines. For purposes of this study, economic output refers to the value of all industrial production in a region (i.e., gross revenues), following the convention used by the U.S. Bureau of Labor Statistics (BLS) and Bureau of Economic Analysis (BEA); jobs are defined as the average annual number of jobs in a sector, industry, or region, while labor income consists of all forms of employment income, including employee compensation (wages and benefits) and proprietor income; and value added indicates the addition to gross state product.

The oil and gas pipeline industry expenditures related to ongoing operations and construction, are an important driver of economic activities in the state of Texas and beyond. The industry's activities generate and sustain jobs, income and output, and contribute to state and local government revenues. The industry also provides substantially to the gross state product of Texas.

In the year 2013, the total economic impact from Texas pipeline operations and construction include:

- Over \$33 billion in economic output
- More than 165,000 jobs
- Over \$18.7 billion in additional gross state product
- Over \$1.6 billion in state and local government revenues

By the year 2024, depending on economic conditions, projections demonstrate that the total economic impact from Texas pipeline operations and construction will generate between:

- \$30-41.4 billion in economic output (in today's dollars)
- 150,000-206,000 jobs
- \$17-23.4 billion in additional gross state product (in today's dollars)
- \$1.5-2.0 billion in state and local government revenues (in today's dollars)

Between the current year and 2024, the Texas pipeline industry will generate cumulative economic impacts (in today's dollars) of around \$374 billion in economic output, \$212 billion in additional gross state product, and contribute \$19.5 billion in state and local government revenues. Additionally, the industry will sustain an average of around 171,000 jobs per year in the state of Texas.

The activities of the Texas pipeline industry, which include the transportation of hydrocarbons from sources of exploration and production to refineries and end-users, are one component of the substantial job creation, investment, and overall economic growth.

Texas plays and reservoirs will help sustain economic activity and growth in the coming years:

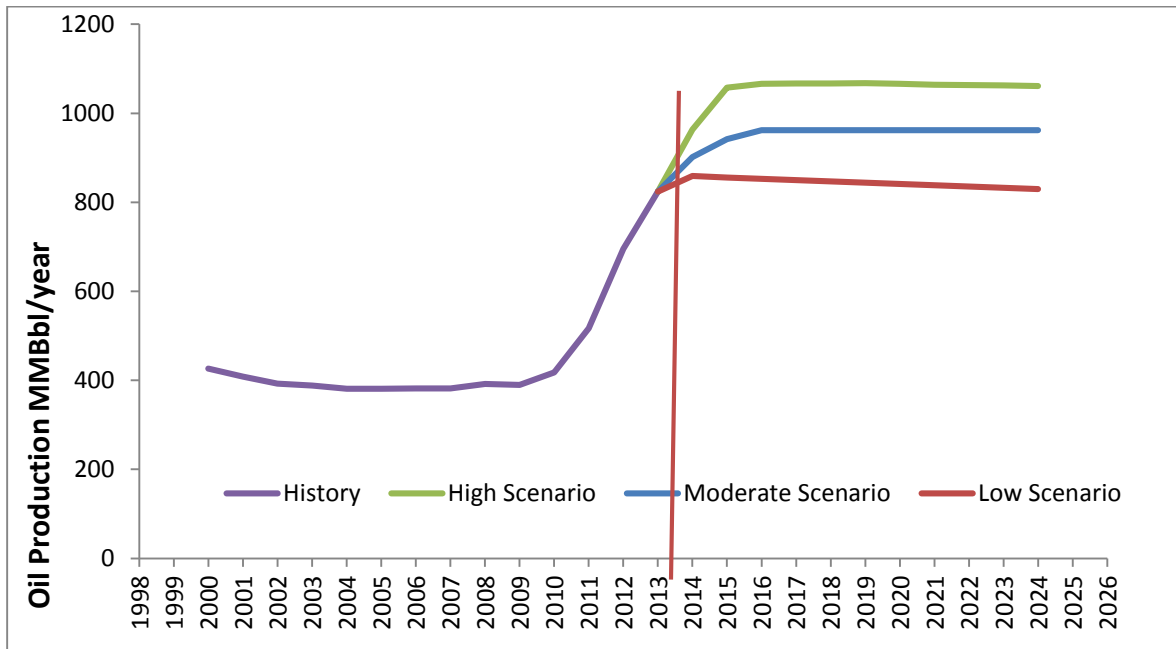
- Several potential and confirmed Resource Plays (media terms "shale gas/oil"), which have been identified throughout Texas, cover very large areas (multiple counties) as opposed to conventional, non-Resource Plays, which cover, at best, a few thousand acres
- Wells in a confirmed Resource Play exhibit a repeatable statistical distribution, thus offering predictable performance in a given geological subset
- The above two points result in long-term (i.e., decades of) drilling activity, thus sustaining or increasing production

Drilling activity and production is an important factor in providing current and future economic benefits:

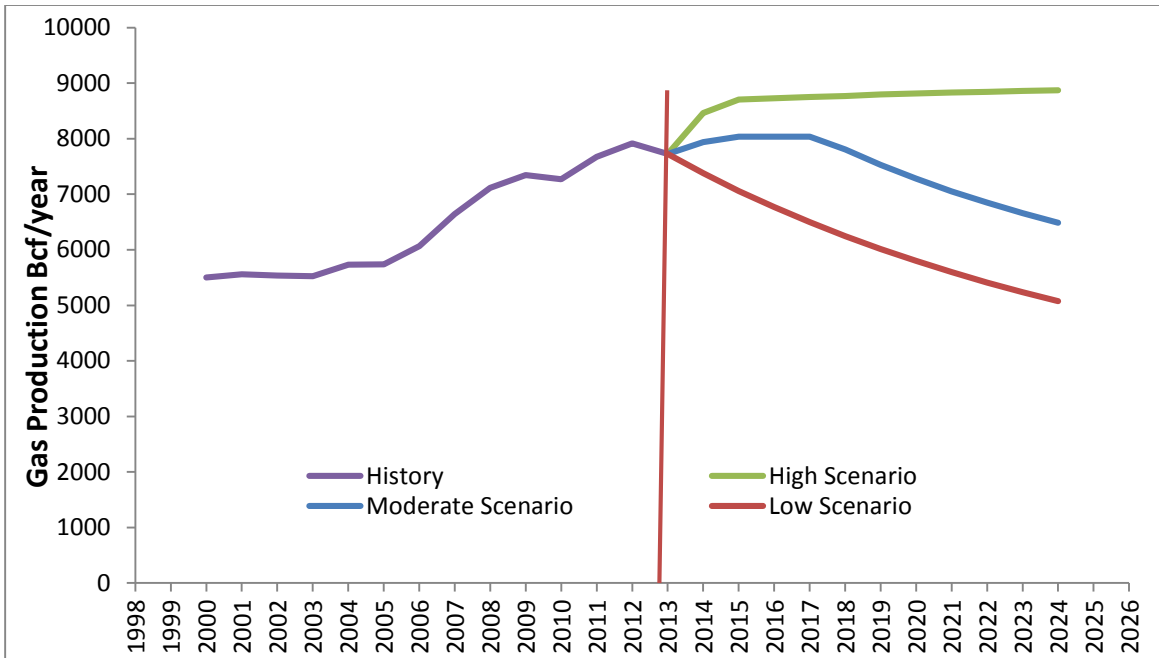
- The State of Texas has the greatest rig count of any U.S. state or world region (48 percent of the total rigs running in the U.S. and 25 percent of the total world rig count)
- A rapidly increasing number of wells in target plays and reservoirs being drilled are horizontal
- Texas' individual well productivity has improved dramatically since 2011 due to improved technology in horizontal drilling and hydraulic fracturing
- Drilling efficiencies are being realized in all U.S. Resource Plays

Texas Projected Production

- Three drilling and production scenarios were assessed for major producing areas/basins in Texas as shown below



Texas Total Oil Production Forecast



Texas Total Gas Production Forecast

Summary of current production and takeaway capacities

Basin	Oil		Gas	
	Current Production (Mbbbls/d)	Pipeline takeaway capacity (Mbbbls/d)	Current Production (Bcf/d)	Pipeline takeaway capacity (Bcf/d)
Anadarko	110	Not available	2.1	2.5 ⁴
East Texas	65	Not available	4.0	3.6 ¹
Texas Gulf Coast	1200	1600 ²	3.7	4.8 ³
Fort Worth	65	24 ⁴	5.3	5.8 ⁴
Permian	1580	1680 ²	3.3	2.8 ⁴
Total	3020	3300	18.4	19.5

¹ Energy Transfer Partners (ETP) and Survey Results

² RBN Energy Data

³ ETP

⁴ Survey Results, less than 100% responding but considered representative of most of the capacity

Other

- Total gas flared in Texas is currently approximately 160 MMcf/d as compared to less than 30 MMcf/d prior to 2010
- This report did not include the effect of an 8-10\$/MMbtu gas price, which would greatly influence substantial increases in drilling and production in the dry gas area of the Eagle Ford, Haynesville and Barnett shale plays.

An Economic Interpretation

The state of Texas competes to attract and retain companies engaged in the exploration, production, processing and refining of oil and natural gas. As shown in this study, Texas has confirmed Resource Plays and Reservoirs that can result in long-term drilling activity and increased production. The pipeline transportation system is a key component in the realization of value and the associated economic benefits that will come from the continued growth and expansion of the oil and gas industry. A pipeline system capable of effectively handling increased levels of oil and gas activity is necessary for companies to economically operate in Texas. From this standpoint, the ability to retain and attract oil and gas investments requires a pipeline system that can manage the flow of hydrocarbons in a timely and cost-effective manner. Accordingly, as shown in this study, the economic benefits attributable to the pipeline system in Texas are substantial. Moreover, the upstream and downstream segments of the energy industry (i.e., exploration, production and refining activities) will generate additional economic benefits for Texas, provided that these companies have an efficient and effective means of transporting their product.