Fueling the Future

The Importance of the Permian Basin to the US, Texas, and New Mexico Economies

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THE PERRYMAN GROUP

The Permian Basin

Overview

- The Permian Basin is among the most important oil-producing regions in the world. The region is crucial to simultaneously meeting future energy needs as well as climate goals through cleaner burning conventional fuels as well as renewables and other initiatives, knowledge, and technologies to support emissions reductions.
- Drilling and production and the necessary supporting industries such as service companies, pipelines, related manufacturing, headquarters operations, downstream products, and other aspects of the energy sector generate billions of dollars in business activity not only in the region, but across Texas, New Mexico, and the nation.
- This business activity brings substantial tax and royalty revenue to Federal, State and local governments. Additional benefits include enhanced energy security for the United States and other nations in addition to improvements in the trade balance fostered by energy exports.

2024 Highlights

- Permian Basin production continues to set production records. Drilling activity has remained relatively stable over the past year, with a solid level of activity. The industry supports substantial business activity, opportunities, and revenues to government entities.
- Overall tax revenue associated with Permian Basin activity to the States of Texas and New Mexico and local government entities rose during 2024, providing additional resources to be used for state and local priorities.
- The energy sector is currently facing challenges due to uncertainty associated with tariffs and the potential effects on the global economy. In addition, key input materials such as steel and transportation equipment are subject to tariffs. Nonetheless, a major, protracted downturn in the industry appears unlikely at this time and long-term energy demand forecasts are encouraging.

Regional Healthcare Challenges

- For any region to function optimally, access to quality healthcare is essential. From managing chronic conditions like diabetes and high blood pressure to acute, urgent medical issues, community members need adequate healthcare infrastructure.
- The Permian Basin Region faces challenges in healthcare, and efforts to improve the situation are worthy of significant support. The growth in the metropolitan areas of the Permian Basin has outpaced the supply of healthcare professionals in many categories. Additionally, the area is largely rural, and patients often must travel long distances to access care, contributing to delays in emergency situations and avoidance of routine care due to the cost and time required to travel to their healthcare providers.
- Most of West Texas is recognized as a Health Professional Shortage Area, and the Texas Physician Supply and Demand Projections from the Texas Department of State Health Services shows a primary care shortage in West Texas of 562 physicians in 2022, with a projected 572 physician shortage in 2036. The uninsured rate among the population on the region is 16.5%
- The Perryman Group's analysis indicates that more than 5,240 healthcare practitioners and technical staff will be needed in the Permian Basin Region by 2040 due to growth and replacement needs. Occupations with particularly high needs include registered nurses (1,560), licensed practical/vocational nurses (460), and nursing assistants (1,060). Additional physicians will be needed across specialties, as well as hundreds of technicians, technologists, therapists, and support staff.

Regional Education Challenges

- Quality education is essential to individuals, businesses, the economy, and society. Educational attainment is linked to higher earnings and a lower probability of unemployment, as well as greater job opportunities and potential satisfaction.
- Schools across the Permian Basin Region face challenges due to factors such as rapid growth in some areas and competition for workers with high-paying jobs in the energy sector. Region 18 (based in Midland and including many of the Texas counties in the Permian Basin) tends to fall short of statewide averages on performance measures such as mathematics and reading STAAR tests, with some backsliding between the 2023 and 2024 school years. Actions to improve school performance such as teacher recruitment, facilities improvements, and other support are important to ensuring future prosperity.
- The Perryman Group estimates that by 2040, an additional 2,109 preschool, elementary, middle, secondary, and special education teachers as well as 1,018 postsecondary teachers will be needed in the Permian Basin Region due to growth and replacement needs. Other types of personnel will also be required across all levels of education.
- Attracting and retaining teachers will require not only offering sufficient pay and benefits packages but also considering other actions to help reduce challenges such as a lack of affordable housing. A number of schools across the Region are seeking voter approval for bond issuances to modernize and expand facilities, enhance security, and provide for other needs.

Economic Benefits

Measuring Economic Benefits

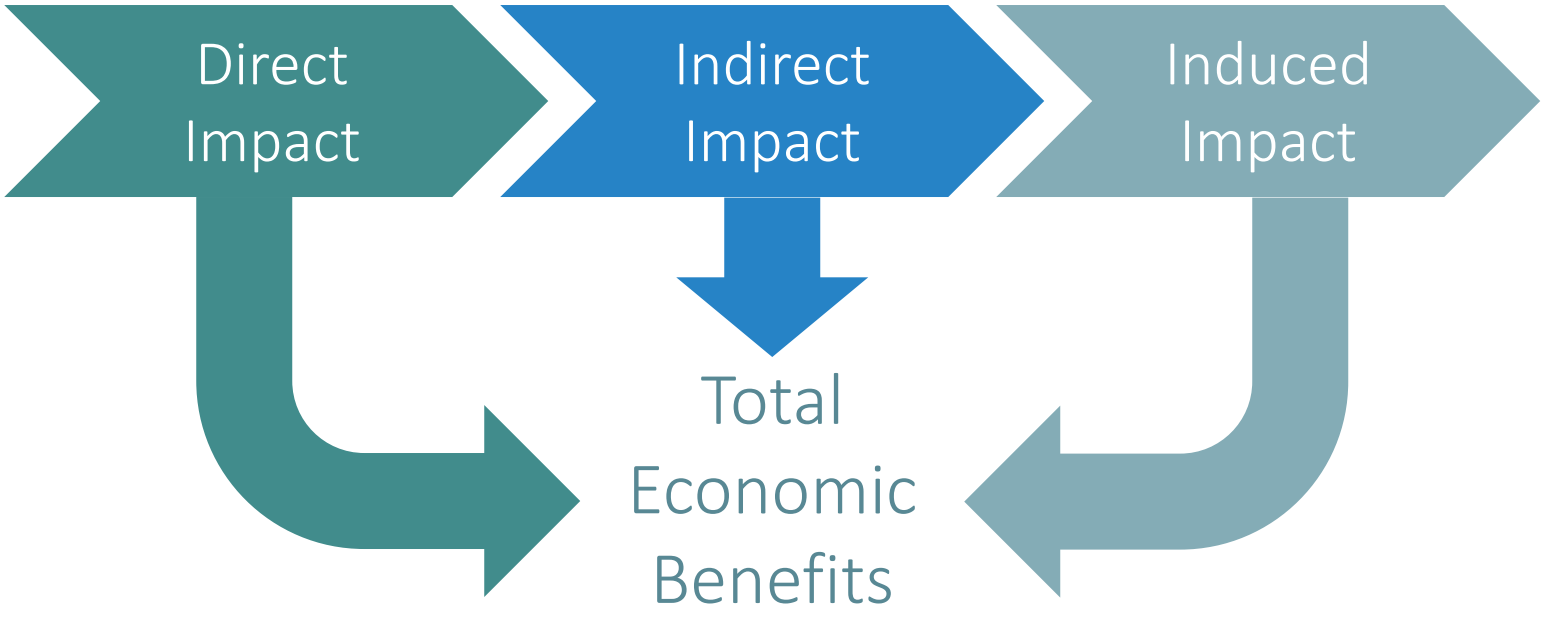
- Any economic stimulus leads to dynamic responses across the economy.
  - In this instance, direct activity in major categories of the industry and related multiplier effects were analyzed using The Perryman Group's US Multi-Regional Impact Assessment System, which was developed by the firm more than 40 years ago and has been consistently maintained and updated since that time.
  - The model has been used in hundreds of analyses for clients ranging from major corporations to government agencies and has been peer reviewed on multiple occasions.
- The models used reflect the specific industrial composition and characteristics of Texas, New Mexico, and the United States.
- The Permian Basin Region is defined for the purposes of this study to be the 22-county area comprised of Midland, Ector, Reeves, Pecos, Loving, Ward, Winkler, Culberson, Andrews, Martin, Gaines, Howard, Glasscock, Reagan, Upton, Crane, Terrell, Crockett, and Yoakum counties of Texas as well as Eddy, Lea, and Chaves counties of New Mexico.

Dynamic Economic Effects

Spending for drilling, production, pipelines, oilfield services and other aspects of the energy sector in the Permian Basin provides direct stimulus.

Spending by firms supplying goods and services throughout the supply chain provides additional stimulus.

Spending by employees in the industry and other workers throughout the supply chain provides further economic gains.



Measures of Economic Benefits

- Total economic effects are quantified for key measures of business activity. Note that these are different ways of looking at the same effects; they are not additive.
  - **Total expenditures** (or total spending) measure the dollars changing hands as a result of the economic stimulus.
  - **Gross product** (or output) is production of goods and services that will come about in the area as a result of the activity. This measure is parallel to the gross domestic product numbers commonly reported by various media outlets and is a subset of total expenditures.
  - **Personal income** is dollars that end up in the hands of people in the area; the vast majority of this aggregate derives from the earnings of employees, but payments such as interest and rents are also included.
  - **Jobs** gained are expressed as job-years of employment for temporary stimuli such as construction and jobs for ongoing effects.
- Monetary values were quantified on a constant (2024) basis to eliminate the effects of inflation. Additional methodology is located at https://www.perrymangroup.com/pb-impact/appendix.pdf.

Annual Economic Benefits of the Permian Basin: Texas

$181.2 billion Gross Product/Year 645,050 Jobs

	TOTAL EXPENDITURES (Billions of 2024 Dollars)	GROSS PRODUCT (Billions of 2024 Dollars)	PERSONAL INCOME (Billions of 2024 Dollars)	EMPLOYMENT (Jobs)
Upstream	$361.773	$110.689	$27.171	346,282
Midstream and Downstream	$299.165	$70.498	$25.357	298,766
TOTAL	**$660.938**	**$181.187**	**$52.527**	**645,048**

Note: Based on 2024 activity in major sectors of the energy industry and The Perryman Group's estimates of related multiplier effects. Upstream Includes drilling, exploration, production, and all associated oilfield service activities. Midstream and Downstream include pipelines and other transportation, refining, liquefied natural gas (LNG), petrochemicals and derivative products, and export activity. Results for Texas reflect spillover effects from New Mexico. Components may not sum to totals due to independent rounding. Additional definitions of terms and explanation of methods and assumptions may be found at https://www.perrymangroup.com/pb-impact/appendix.pdf.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

The Perryman Group estimates that when multiplier effects are considered, the total economic benefits to Texas associated with oil and gas activity in the Permian Basin include approximately **$181.2 billion** in gross product each year and almost **645,050** jobs.

Annual Economic Benefits of the Permian Basin: New Mexico

$26.3 billion Gross Product/Year 147,500 Jobs

	TOTAL EXPENDITURES (Billions of 2024 Dollars)	GROSS PRODUCT (Billions of 2024 Dollars)	PERSONAL INCOME (Billions of 2024 Dollars)	EMPLOYMENT (Jobs)
Upstream	$67.608	$23.032	$10.231	126,383
Midstream and Downstream	$11.991	$3.284	$1.643	21,079
TOTAL	**$79.598**	**$26.315**	**$11.874**	**147,463**

Note: Based on 2024 activity in major sectors of the energy industry and The Perryman Group's estimates of related multiplier effects. Upstream Includes drilling, exploration, production, and all associated oilfield service activities. Midstream and Downstream include pipelines and other transportation, refining, liquefied natural gas (LNG), petrochemicals and derivative products, and export activity. Components may not sum to totals due to independent rounding. Additional definitions of terms and explanation of methods and assumptions may be found at https://www.perrymangroup.com/pb-impact/appendix.pdf.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

For New Mexico, The Perryman Group estimates the total economic benefits associated with oil and gas activity in the Permian Basin to be more than **$26.3 billion** in gross product each year and almost **147,500** jobs (including multiplier effects).

Annual Economic Benefits of the Permian Basin: United States

$ 217.2 billion Gross Product/Year 862,250 Jobs

	TOTAL EXPENDITURES (Billions of 2024 Dollars)	GROSS PRODUCT (Billions of 2024 Dollars)	PERSONAL INCOME (Billions of 2024 Dollars)	EMPLOYMENT (Jobs)
Upstream	$446.872	$139.188	$40.545	512,243
Midstream and Downstream	$330.256	$78.035	$29.590	350,002
TOTAL	$777.127	$217.223	$70.136	862,245

Note: Based on 2024 activity in major sectors of the energy industry and The Perryman Group's estimates of related multiplier effects. Upstream Includes drilling, exploration, production, and all associated oilfield service activities. Midstream and Downstream include pipelines and other transportation, refining, liquefied natural gas (LNG), petrochemicals and derivative products, and export activity. Includes effects within Texas and New Mexico as well as spillover to other US states. Components may not sum to totals due to independent rounding. Additional definitions of terms and explanation of methods and assumptions may be found at https://www.perrymangroup.com/pb-impact/appendix.pdf.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

The Perryman Group estimates that US economic benefits associated with oil and gas activity in the Permian Basin total approximately **$217.2 billion** in gross product each year and almost **862,250** jobs (including multiplier effects).

Permian Basin Benefits in Perspective

Activity in the Permian Basin and related multiplier effects comprise a significant percentage of Texas and New Mexico business activity as well as thousands of dollars in economic activity and income per resident.

	Texas	New Mexico
Percent of the Private-Sector Gross Product	7.3%	24.8%
Amount of Spending per Resident	$21,122	$37,366
Amount of Private-Sector Gross Product per Resident	$5,790	$12,353
Amount of Income per Resident	$1,679	$5,574

Note: Based on 2024 activity in major sectors of the energy industry and The Perryman Group's estimates of related multiplier effects, total 2024 private-sector economic activity in Texas and New Mexico, and 2024 population. Additional definitions of terms and explanation of methods and assumptions may be found at https://www.perrymangroup.com/pb-impact/appendix.pdf.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

Annual Economic Benefits of Permian Basin Agriculture

In addition to providing a crucial source of fuel, agriculture in the Permian Basin also provides food and fiber. A notable proportion of Texas sheep and cotton production occurs in the region, with wheat and cattle also having a presence in the area. Production also takes place in the New Mexico counties of the Permian Basin.

The Perryman Group estimates that when multiplier effects are considered, the annual economic benefits of the region's agriculture industry include **$2.8 billion** in annual gross product and over **23,900** jobs in Texas and almost **$1.2 billion** in annual gross product and over **10,300** jobs in New Mexico.

	TOTAL EXPENDITURES (Billions of 2024 Dollars)	GROSS PRODUCT (Billions of 2024 Dollars)	PERSONAL INCOME (Billions of 2024 Dollars)	EMPLOYMENT (Jobs)
Texas	$7.832	$2.803	$1.735	23,904
New Mexico	$3.325	$1.199	$0.750	10,302
United States	$14.162	$4.702	$2.871	39,127

Note: Based on 2024 activity in the agriculture sector and The Perryman Group's estimates of related multiplier effects. Results for the United States include effects within Texas and New Mexico. Additional definitions of terms and explanation of methods and assumptions may be found at https://www.perrymangroup.com/pb-impact/appendix.pdf.

2050 Projections: Scenarios

- Future trends in Permian Basin activity and production depend on a variety of factors. The Perryman Group projected oil and gas activity in the region using analysis from the US Energy Information Administration's 2023 International Energy Outlook (the most recent currently available).
  - The baseline case assumes current energy trends and relationships, existing laws and regulations, and select economic and technological changes.
  - The High Economic Growth and Low Economic Growth cases reflect alternative assumptions about global economic expansion rates.
  - The Low Oil Price case assumes crude oil resources are extracted with more cost-efficient methods due to technology or policy drivers, thereby lowering the price, while High Oil Prices presumes higher extraction costs.
  - High Zero-Carbon Technology Cost assumes no cost reduction over time for zero-carbon electric power generating technologies (solar, wind, battery storage, and nuclear), while the Low Zero-Carbon Technology Cost case assumes a more rapid capital cost decline than assumed in the baseline, leading to 40% lower capital costs for these zero-carbon technologies by 2050.
  - Another possibility is the introduction of incentives for the development of low-carbon oil, and crude from the Permian Basin has a significantly lower carbon profile.

2050 Projections: Overview

- The Perryman Group projects that 2050 total Texas economic benefits associated with oil and gas activity in the Permian Basin will range from **$104.1 billion-$428.2 billion** in gross product each year and approximately **697,500-1,014,900** jobs (including multiplier effects) depending on assumptions related to global economic growth, extraction costs, zero-emissions electric power generation costs, and the potential for incentives for low-carbon oil resource development.
- For New Mexico, The Perryman Group estimates that 2050 total economic benefits associated with oil and gas activity in the Permian Basin will likely range from **$15.1 billion-$62.2 billion** in gross product each year and approximately **159,450-232,000** jobs (including multiplier effects) depending on assumptions related to global economic growth, extraction costs, zero-emissions electric power generation costs, and the potential for incentives for low-carbon oil resource development.
- United States 2050 total economic benefits from oil and gas activity in the Permian Basin include an estimated **$124.8 billion-$513.4 billion** in gross product each year and approximately **932,400-1,356,600 jobs** (including multiplier effects) depending on assumptions related to global economic growth, extraction costs, zero-emissions electric power generation costs, and the potential for incentives for low-carbon oil resource development.

2050 Annual Economic Benefits of the Permian Basin: Texas

	TOTAL EXPENDITURES (Billions of 2024 Dollars)	GROSS PRODUCT (Billions of 2024 Dollars)	PERSONAL INCOME (Billions of 2024 Dollars)	EMPLOYMENT (Jobs)
Baseline	$1,007.072	$276.075	$80.036	805,019
Baseline with Incentives	$1,066.340	$292.322	$84.746	852,396
High Growth	$1,199.102	$328.717	$95.297	958,522
High Growth with Incentives	$1,269.600	$348.043	$100.900	1,014,876
Low Growth	$872.566	$239.202	$69.346	697,500
Low Growth with Incentives	$923.707	$253.222	$73.410	738,380
High Oil Price	$1,479.407	$405.559	$117.574	788,444
High Oil Price with Incentives	$1,562.149	$428.242	$124.150	832,541
Low Oil Price	$379.741	$104.101	$30.179	818,344
Low Oil Price with Incentives	$403.026	$110.484	$32.030	868,522
High Zero-Carbon Electricity Costs	$1,019.232	$279.408	$81.002	814,740
High Zero-Carbon Electricity Costs with Incentives	$1,077.262	$295.317	$85.614	861,127
Low Zero-Carbon Electricity Costs	$983.244	$269.543	$78.142	785,973
Low Zero-Carbon Electricity Costs with Incentives	$1,039.225	$284.889	$82.591	830,722

Note: Based on projected 2050 activity under various assumptions related to global economic growth, incentives for development of low-carbon oil, extraction costs and oil prices, and the cost of electricity generation using zero-carbon methods (such as wind, solar, and batteries) and The Perryman Group's estimates of related multiplier effects. Additional information related to methods and assumptions may be found at https://www.perrymangroup.com/pb-impact/appendix.pdf.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

2050 Annual Economic Benefits of the Permian Basin: New Mexico

	TOTAL EXPENDITURES (Billions of 2024 Dollars)	GROSS PRODUCT (Billions of 2024 Dollars)	PERSONAL INCOME (Billions of 2024 Dollars)	EMPLOYMENT (Jobs)
Baseline	$121.284	$40.097	$18.093	184,033
Baseline with Incentives	$128.422	$42.456	$19.157	194,864
High Growth	$144.411	$47.742	$21.542	219,125
High Growth with Incentives	$152.901	$50.549	$22.809	232,008
Low Growth	$105.085	$34.741	$15.676	159,454
Low Growth with Incentives	$111.244	$36.777	$16.595	168,799
High Oil Price	$178.169	$58.903	$26.578	180,244
High Oil Price with Incentives	$188.134	$62.197	$28.065	190,325
Low Oil Price	$45.733	$15.119	$6.822	187,079
Low Oil Price with Incentives	$48.537	$16.046	$7.241	198,551
High Zero-Carbon Electricity Costs	$122.749	$40.581	$18.311	186,256
High Zero-Carbon Electricity Costs with Incentives	$129.737	$42.891	$19.354	196,860
Low Zero-Carbon Electricity Costs	$118.415	$39.148	$17.664	179,679
Low Zero-Carbon Electricity Costs with Incentives	$125.157	$41.377	$18.670	189,909

Note: Based on projected 2050 activity under various assumptions related to global economic growth, incentives for development of low-carbon oil, extraction costs and oil prices, and the cost of electricity generation using zero-carbon methods (such as wind, solar, and batteries) and The Perryman Group's estimates of related multiplier effects. Additional information related to methods and assumptions may be found at https://www.perrymangroup.com/pb-impact/appendix.pdf.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

2050 Annual Economic Benefits of the Permian Basin: United States

	TOTAL EXPENDITURES (Billions of 2022 Dollars)	GROSS PRODUCT (Billions of 2022 Dollars)	PERSONAL INCOME (Billions of 2022 Dollars)	EMPLOYMENT (Jobs)
Baseline	$1,184.110	$330.982	$106.866	1,076,080
Baseline with Incentives	$1,253.797	$350.461	$113.155	1,139,410
High Growth	$1,409.898	$394.094	$127.243	1,281,269
High Growth with Incentives	$1,492.790	$417.264	$134.724	1,356,599
Low Growth	$1,025.959	$286.776	$92.593	932,358
Low Growth with Incentives	$1,086.090	$303.584	$98.020	987,003
High Oil Price	$1,739.479	$486.219	$156.988	1,053,924
High Oil Price with Incentives	$1,836.767	$513.413	$165.768	1,112,868
Low Oil Price	$446.497	$124.805	$40.296	1,093,891
Low Oil Price with Incentives	$473.875	$132.458	$42.767	1,160,966
High Zero-Carbon Electricity Costs	$1,198.408	$334.979	$108.156	1,089,074
High Zero-Carbon Electricity Costs with Incentives	$1,266.639	$354.051	$114.314	1,151,080
Low Zero-Carbon Electricity Costs	$1,156.094	$323.151	$104.337	1,050,620
Low Zero-Carbon Electricity Costs with Incentives	$1,221.916	$341.550	$110.278	1,110,437

Note: Based on projected 2050 activity under various assumptions related to global economic growth, incentives for development of low-carbon oil, extraction costs and oil prices, and the cost of electricity generation using zero-carbon methods (such as wind, solar, and batteries) and The Perryman Group's estimates of related multiplier effects. Additional information related to methods and assumptions may be found at https://www.perrymangroup.com/pb-impact/appendix.pdf.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

Fiscal Benefits

Resources for US, State, and Local Governments

Direct taxes paid by energy companies include severance taxes, property taxes, sales taxes, and other taxes.

Economic benefits measured in this study generate taxes through channels such as higher retail sales and property values associated with rising demand and incomes.

Royalties are paid to the states, higher education institutions, public schools, and other entities.

2024 Tax Collections: Direct

- Oil and gas producers in the Permian Basin in both Texas and New Mexico generate major contributions to Federal, State, and local revenue through taxes on oil and gas production (severance taxes) as well as property, sales, and other taxes.
- Production taxes for Texas were estimated based on an allocation of production to the Permian Basin using data from the Railroad Commission of Texas; other sources of date include the Texas Comptroller of Public Accounts and the Texas Oil and Gas Association. Data used in calculating New Mexico taxes were from the New Mexico Taxation and Revenue Department and the New Mexico Oil and Gas Association.
- For Texas, 2024 direct taxes on oil production were an estimated **$4.8 billion**, with another almost **$1.1 billion** on natural gas. The total oil and natural gas production taxes of over **$5.8 billion** were down somewhat from $6.0 billion in 2023. Property taxes increased significantly in 2024, reaching **$4.3 billion**, while sales taxes totaled approximately **$2.8 billion**. Summing these direct taxes yield a total for Texas related to Permian Basin activity in 2024 of **$12.9 billion**.
- New Mexico oil and gas-related production taxes in 2024 were **$4.2 billion**, down slightly from the 2023 level of $4.3 billion. Of that amount, **$1.6 billion** was school taxes, **$1.9 billion** was severance tax, **$120.1 million** was conservation tax, and **$582.9 million** was production tax, with another **$2.1 billion** in other direct taxes. Total New Mexico direct taxes associated with Permian Basin activity were therefore **$6.3 billion**.

2024 Tax Collections: Indirect/Induced

Business activity generates tax revenue. The economic stimulus associated with activity in the Permian Basin leads to increases in tax receipts to States and local government entities including counties, cities, schools, and special districts. These indirect and induced taxes are generated based on the increase in economic activity quantified in this study. Federal taxes associated with the Permian Basin amounted to an estimated **$40.6 billion**, and other states and local government entities beyond Texas and New Mexico also see benefits.

Indirect and Induced Tax Revenues Associated with the Permian Basin (in millions of 2024 dollars)	
Total Federal Tax Revenue	$40,620.611
Indirect/Induced Texas State	$6,081.814
Indirect/Induced Texas Local	$3,909.012
Indirect/Induced New Mexico State	$1,127.023
Indirect/Induced New Mexico Local	$838.844
State Revenue for Other States	$226.898
Local Revenue for Other States	$338.543

Note: Incremental taxes based on the additional business activity associated with the Permian Basin. Total Federal Tax Revenue includes direct as well as indirect and induced receipts. Estimated direct taxes paid by the industry are not included for states and local areas.
Source: The Perryman Group

2024 Tax Collections: Total

Total direct and indirect/induced tax collections to State and local governments associated with various aspects of Permian Basin oil and gas activity totaled about **$22.9 billion** for 2024 in Texas, while for New Mexico the total was about **$8.3 billion**. These totals are up significantly over 2023's approximately $21.3 billion for Texas and $8.2 billion for New Mexico.

Total Direct and Indirect Taxes Associated with the Permian Basin Oil and Gas Industry

(in billions of 2024 dollars)

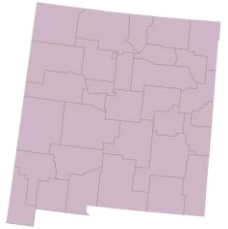
	Texas	New Mexico
Production Taxes	$5.848	$4.210
Other Direct Taxes	$7.081	$2.133
Indirect/Induced State	$6.082	$1.127
Indirect/Induced Local	$3.909	$0.839
TOTAL	**$22.919**	**$8.308**

Note: Estimated Permian Basin portion of fiscal 2024 tax collections. Other direct taxes for Texas include property and sales taxes. Texas estimates based on data from the Texas Comptroller of Public Accounts, Railroad Commission of Texas, the Texas Oil and Gas Association, and The Perryman Group's allocation to the Permian Basin. New Mexico direct taxes are based on data from the New Mexico Taxation and Revenue Department and The Perryman Group's allocation to the Permian Basin. Indirect and Induced taxes based on the increase in business activity associated with oil and gas activity in the Permian Basin as described more fully above.
Source: The Perryman Group

Royalty Income

Another source of State revenue from oil and gas production is royalty income that the states receive.

The Permian Basin contributed almost **$1.9 billion** in royalties to the state through the Texas Permanent University Fund (including lease bonus and rental and with a very small amount from other state lands) in fiscal 2024.



New Mexico received just over **$2.34 billion** in royalty income from oil and gas in fiscal 2024, with almost **$2.26 billion** derived from the Permian Basin. Much of New Mexico production occurs on public lands.

Future Taxes: Overview

- The scenarios describing potential future growth in the Permian Basin would also drive potential severance tax collections and tax receipts associated with business activity.
- The Perryman Group estimates that taxes to the federal government will range from **$23.3 billion** to **$96.0 billion** in 2050. Direct production taxes are projected to be between **$3.4 billion** and **$13.8 billion** for Texas and **$2.4 billion-$9.9 billion** for New Mexico.
- Indirect/induced taxes associated with business activity supported by the Permian Basin are projected to be **$3.5 billion-$14.4 billion** to the State of Texas and **$0.6 billion-$2.7 billion** to the State of New Mexico in 2050. Other states will also see gains.
- Additional detail is included on the following pages.

2050 Projected Fiscal Benefits of the Permian Basin: Texas

	DIRECT TAXES			INDIRECT AND INDUCED TAXES	
	Production Taxes (Billions of 2024 Dollars)	**Property Tax** (Billions of 2024 Dollars)	**Sales Tax** (Billions of 2024 Dollars)	**State** (Billions of 2024 Dollars)	**Local** (Billions of 2024 Dollars)
Baseline	$8.910	$6.538	$4.251	$9.267	$5.956
Baseline with Incentives	$9.435	$6.922	$4.501	$9.812	$6.307
High Growth	$10.610	$7.784	$5.062	$11.034	$7.092
High Growth with Incentives	$11.233	$8.242	$5.359	$11.683	$7.509
Low Growth	$7.720	$5.664	$3.683	$8.029	$5.161
Low Growth with Incentives	$8.173	$5.996	$3.899	$8.500	$5.463
High Oil Price	$13.090	$9.604	$6.245	$13.613	$8.750
High Oil Price with Incentives	$13.822	$10.141	$6.594	$14.375	$9.239
Low Oil Price	$3.360	$2.465	$1.603	$3.494	$2.246
Low Oil Price with Incentives	$3.566	$2.616	$1.701	$3.709	$2.384
High Zero-Carbon Electricity Costs	$9.018	$6.616	$4.303	$9.379	$6.028
High Zero-Carbon Electricity Costs with Incentives	$9.531	$6.993	$4.547	$9.913	$6.371
Low Zero-Carbon Electricity Costs	$8.700	$6.383	$4.151	$9.048	$5.815
Low Zero-Carbon Electricity Costs with Incentives	$9.195	$6.746	$4.387	$9.563	$6.146

Note: Projections by The Perryman Group based on the scenarios described above. Production tax is for oil and natural gas production. Direct taxes based on data from the Texas Comptroller of Public Accounts, Railroad Commission of Texas, the Texas Oil and Gas Association, and The Perryman Group's allocation to the Permian Basin and estimate of future taxes. Indirect/Induced taxes based on the increase in business activity associated with the Permian Basin and The Perryman Group's estimates of future patterns under different scenarios.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

2050 Projected Fiscal Benefits of the Permian Basin: New Mexico

	DIRECT TAXES		INDIRECT AND INDUCED TAXES	
	Production Taxes (Billions of 2024 Dollars)	**Other Taxes** (Billions of 2024 Dollars)	**State** (Billions of 2024 Dollars)	**Local** (Billions of 2024 Dollars)
Baseline	$6.414	$3.250	$1.717	$1.278
Baseline with Incentives	$6.792	$3.441	$1.818	$1.353
High Growth	$7.637	$3.869	$2.045	$1.522
High Growth with Incentives	$8.086	$4.097	$2.165	$1.611
Low Growth	$5.557	$2.816	$1.488	$1.107
Low Growth with Incentives	$5.883	$2.981	$1.575	$1.172
High Oil Price	$9.422	$4.774	$2.523	$1.878
High Oil Price with Incentives	$9.949	$5.041	$2.664	$1.983
Low Oil Price	$2.419	$1.225	$0.648	$0.482
Low Oil Price with Incentives	$2.567	$1.300	$0.687	$0.512
High Zero-Carbon Electricity Costs	$6.492	$3.289	$1.738	$1.294
High Zero-Carbon Electricity Costs with Incentives	$6.861	$3.476	$1.837	$1.367
Low Zero-Carbon Electricity Costs	$6.262	$3.173	$1.677	$1.248
Low Zero-Carbon Electricity Costs with Incentives	$6.619	$3.353	$1.772	$1.319

Note: Projections by The Perryman Group based on the scenarios described above. Production taxes are for oil and natural gas production and include the school tax, severance tax, conservation tax, and production tax. Direct taxes based on data from the New Mexico Taxation and Revenue Department and The Perryman Group's allocation to the Permian Basin and estimate of future taxes. Indirect/Induced taxes based on the increase in business activity associated with the Permian Basin and The Perryman Group's estimates of future patterns under different scenarios.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

2050 Projected Fiscal Benefits of the Permian Basin: United States

	DIRECT, INDIRECT, AND INDUCED TAXES	INDIRECT AND INDUCED TAXES	
	Federal Taxes (Billions of 2024 Dollars)	**States Other than Texas and New Mexico** (Billions of 2024 Dollars)	**Local Entities in States Other than Texas and New Mexico** (Billions of 2024 Dollars)
Baseline	$61.894	$0.346	$0.516
Baseline with Incentives	$65.536	$0.366	$0.546
High Growth	$73.696	$0.412	$0.614
High Growth with Incentives	$78.028	$0.436	$0.650
Low Growth	$53.627	$0.300	$0.447
Low Growth with Incentives	$56.770	$0.317	$0.473
High Oil Price	$90.923	$0.508	$0.758
High Oil Price with Incentives	$96.008	$0.536	$0.800
Low Oil Price	$23.339	$0.130	$0.195
Low Oil Price with Incentives	$24.770	$0.138	$0.206
High Zero-Carbon Electricity Costs	$62.641	$0.350	$0.522
High Zero-Carbon Electricity Costs with Incentives	$66.208	$0.370	$0.552
Low Zero-Carbon Electricity Costs	$60.429	$0.338	$0.504
Low Zero-Carbon Electricity Costs with Incentives	$63.870	$0.357	$0.532

Note: Based on projected 2050 activity under various assumptions related to global economic growth, incentives for development of low-carbon oil, extraction costs and oil prices, the cost of electricity generation using zero-carbon methods (such as wind, solar, and batteries) and The Perryman Group's estimates of related multiplier effects and the associated taxes.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

Future Workforce Needs

2040 Workforce Needs: Overview

- An adequate workforce with the necessary training is essential to sustaining Permian Basin activity as well as quality of life for the people in the area.
- In addition to the need for workers generated by growth in industries, additional workers are also required to replace those who retire, relocate, or otherwise leave their occupations. The Perryman Group's model fully accounts for these factors as well as productivity and production patterns in the Permian Basin. (See https://www.perrymangroup.com/pb-impact/appendix.pdf for additional detail.)
- The total increase in the demand for workers in the Permian Basin through 2040 is estimated to be almost **185,600** (including growth and replacement needs), which is higher than projected last year even though the timeframe analyzed is one year shorter. The highest demand occupations are expected to be truck drivers, fast food workers, managers, and retail salespersons.
- Of the total increase, over **58,600** (a significant increase from last year) will be needed in occupations requiring Level 3 literacy. Level 3 represents the capability to read and understand dense or lengthy text and is necessary for higher skilled jobs that require some level of specialized training. The highest demand occupations requiring Level 3 literacy include truck drivers, managers, bookkeepers and accountants, nurses, and software developers.
- Through 2040, the total need for workers in key occupations for the oil and gas industry include almost **7,900** truck drivers, **10,700** extraction workers, almost **2,700** engineers, and nearly **1,300** electricians.
- A detailed workbook with complete results is available at https://www.perrymangroup.com/pb-impact/occupations.xlsx.

Projected Demand for Workers through 2040 in the Permian Basin by Major Occupational Category

MAJOR OCCUPATIONAL CATEGORY	Demand due to Growth and Replacement Needs
Management, Business, and Finance	22,659
Computer, Engineering, and Science	9,959
Education, Legal, Community Service, Arts, and Media	10,001
Healthcare Practitioners and Technical	5,726
Service	39,747
Sales and Related	14,503
Office and Administrative Support	16,209
Farming, Fishing, and Forestry	781
Construction and Extraction	24,877
Installation, Maintenance, and Repair	10,860
Production	6,666
Transportation and Material Moving	23,582
Total, All Occupations	**185,570**

Note: Projections of detailed workforce needs over the 2024-2040 period. Assumes a baseline oil price scenario.
Source: US Multi-Regional Industry-Occupation System, US Multi-Regional Econometric Model, The Perryman Group

Projected Highest Demand Occupations through 2040 in the Permian Basin

Occupation	Demand due to Growth and Replacement Needs
Heavy and Tractor-Trailer Truck Drivers	7,861
Fast Food and Counter Workers	5,914
General and Operations Managers	5,171
Retail Salespersons	3,924
Roustabouts, Oil and Gas	3,688
Home Health and Personal Care Aides	3,672
First-Line Supervisors of Construction Trades and Extraction Workers	3,502
Laborers and Freight, Stock, and Material Movers, Hand	3,477
Waiters and Waitresses	3,324
Stockers and Order Fillers	3,294

Note: Projections of detailed workforce needs over the 2024-2040 period. Assumes a baseline oil price scenario.
Source: US Multi-Regional Industry-Occupation System, US Multi-Regional Econometric Model, The Perryman Group

Projected Demand for Workers with Level 3 Literacy Skills through 2040 in the Permian Basin by Major Occupational Category

MAJOR OCCUPATIONAL CATEGORY	Demand for Workers with Level 3 Literacy Skills due to Growth and Replacement Needs
Management, Business, and Finance	21,212
Computer, Engineering, and Science	9,209
Education, Legal, Community Service, Arts, and Media	7,945
Healthcare Practitioners and Technical	5,241
Service	3,688
Sales and Related	839
Office and Administrative Support	81
Farming, Fishing, and Forestry	13
Construction and Extraction	0
Installation, Maintenance, and Repair	2,339
Production	66
Transportation and Material Moving	8,002
Total, All Occupations	**58,635**

Note: Projections of detailed workforce needs over the 2024-2040 period. Assumes a baseline oil price scenario.
Source: US Multi-Regional Industry-Occupation System, US Multi-Regional Econometric Model, The Perryman Group

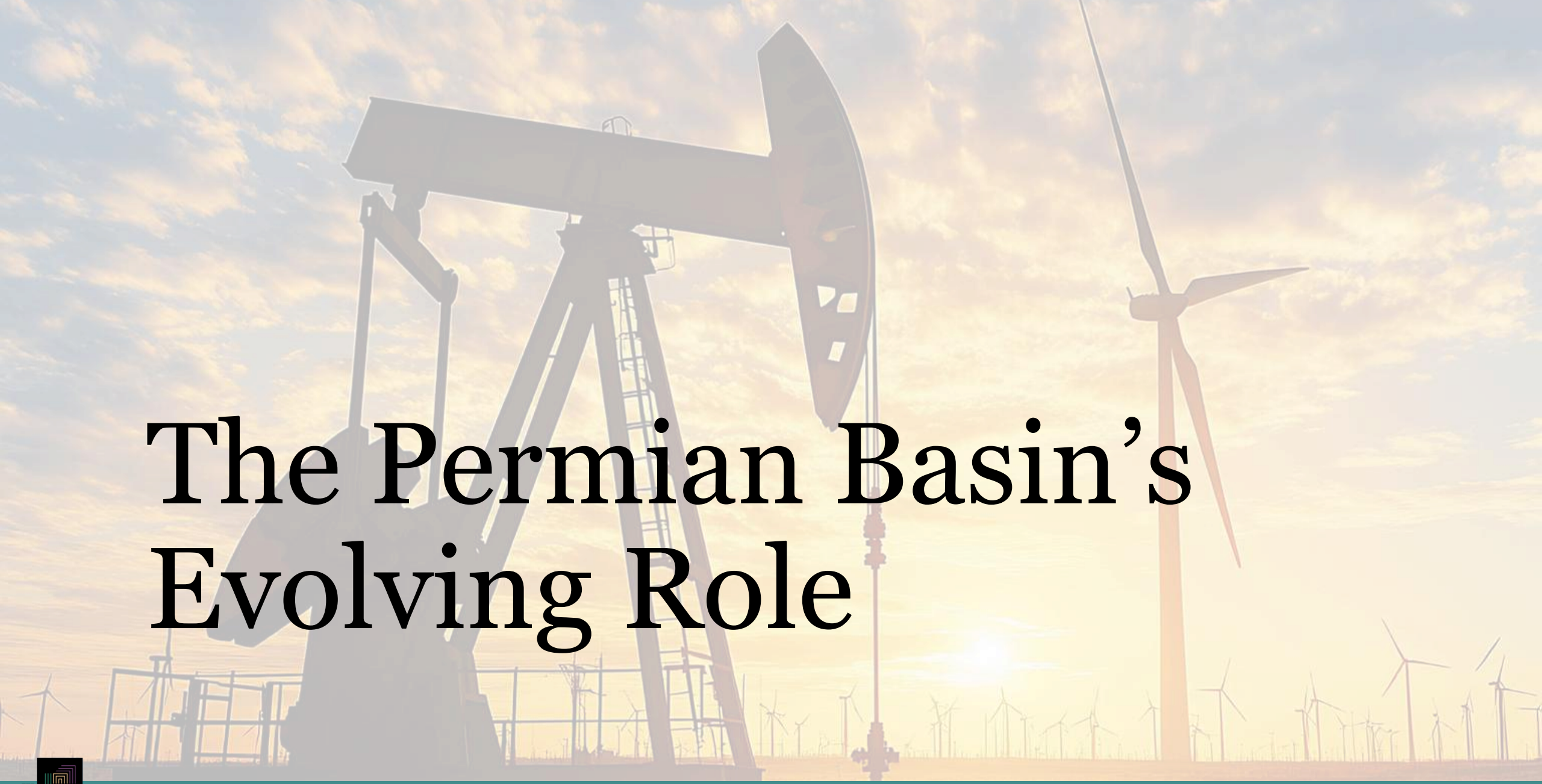
Projected Highest Demand Occupations Requiring Level 3 Literacy Skills through 2040 in the Permian Basin

Occupation	Demand for Workers with Level 3 Literacy Skills due to Growth and Replacement Needs
Heavy and Tractor-Trailer Truck Drivers	7,861
General and Operations Managers	5,171
Accountants and Auditors	1,770
Registered Nurses	1,561
Software Developers	1,294
Financial Managers	1,086
Nursing Assistants	1,059
Business Operations Specialists, All Other	1,056
Automotive Service Technicians and Mechanics	1,035
Project Management Specialists	856

Note: Projections of detailed workforce needs over the 2024-2040 period. Assumes a baseline oil price scenario.
Source: US Multi-Regional Industry-Occupation System, US Multi-Regional Econometric Model, The Perryman Group

Potential for Enhancing the Workforce

- Based on recent patterns, current demographic characteristics indicate that it will be difficult to supply the needed workforce. As noted, almost **185,600** additional workers are projected to be needed by 2040 (due to growth and replacement needs). However, the available workforce based on projected demographic patterns and participation rates is only projected to increase by about 96,300.
- Of the total demand for workers, over **58,600** individuals with Level 3 literacy skills will be required in addition to a current gap of approximately **9,000**. If recent patterns remain in place, the region will produce only about **29,900** additional workers with these skills, thus leaving a gap of about 18,700 positions.
- Clearly, there will be a need for external recruitment of workers not only in energy-related occupations, but also in many others such as in education and healthcare.
- One path toward enhancing the workforce is to increase literacy rates for people in the area so that they can move into more highly skilled jobs. Another avenue is to improve childcare options which can allow more residents to join or remain in the workforce. Over a longer-term horizon, supporting education at all levels, as well as assuring excellent healthcare, amenities, and other qualities necessary to encourage more vibrant population and workforce expansion are essential to securing the long-term growth potential fostered by regional energy resources.



The Permian Basin's Evolving Role

Enhancing Global Energy Security

- Global energy consumption is anticipated to increase by 34% according to the US Energy Information Administration's 2024 International Energy Outlook (Baseline case).[1] Scenarios involving different assumptions related to economic growth, oil prices, and the price of zero-carbon electricity generation methods were included in the latest projections. In every scenario, more oil and gas are consumed in 2050 than are used today.[2] Clearly, increased production is needed.
- Natural gas is expected to be the fastest-growing fossil fuel globally, with consumption up between 11% and 57% depending on the scenario. The Permian Basin supplies a significant component of the natural gas input for LNG which can be shipped around the world. Based on analysis of export patterns and prices, pipeline capacity, production facilities, and other relevant information, The Perryman Group estimates that Permian Basin resources provided more than 2.75 trillion cubic feet of natural gas to LNG export operations in 2024.
- As noted, demand for energy is rising significantly with population and economic growth. The need for power is increasing particularly rapidly in developing economies.
- Responsible development of oil and gas resources in the Permian Basin helps ensure the adequacy of future supplies and the availability of essential natural gas supplies to Europe, Asia, and other countries around the world.

[1] US Energy Information Administration; International Energy Outlook 2023; October 11, 2023; https://www.eia.gov/outlooks/ieo/.
[2] US Energy Information Administration; International Energy Outlook 2023; October 11, 2023; https://www.eia.gov/outlooks/ieo/narrative/index.php.

Reducing Emissions

- The Permian Basin is an important and growing center for renewable energy. The region has a climate conducive to wind and solar power projects, available land for large-scale solar projects, a deep supply chain for energy technology, and a rich reservoir of talent and knowledge in this sector that is conducive to innovation
- In addition, oil produced in the region has significantly lower carbon content than many sources.[1]
- Facilities to reduce carbon through sequestration are also being developed in the region.
- The Permian Basin will be a crucial aspect of increasing energy production while addressing climate concerns.

[1] See, for example, Thunder Said Energy, Oil Industry CO2 per Barrel?, April 15, 2021, https://thundersaidenergy.com/downloads/oil-industry-co2-per-barrel/.

Improving the US Balance of Trade

- Oil and natural gas (LNG) from the Permian Basin provided more than $119 billion in contributions to the US Balance of Trade in 2024, including **$27.3 million** from natural gas/LNG and **$91.9 billion** from oil.
- Natural gas from the region is likely to play an expanded role in the future as (1) geopolitical factors and economic growth will lead to additional demand in various global markets and (2) delivery capacity increases.
- Exports of oil and gas from the Permian Basin enhance the overall prosperity of the United States while providing the energy resources needed by countries around the globe.

Reducing Extreme Poverty

- In 2015, the United Nations (UN) set forth ambitious goals related to poverty, hunger, climate, and a number of other factors to be achieved by 2030. Although half of the allotted time has passed and extensive efforts have been undertaken, little progress has been made.
- According to the UN, if current trends continue, 575 million people will still be living in extreme poverty in 2030. Extreme poverty is defined as surviving on less than $2.15 per person per day.
- An approach focused on more pragmatic considerations and reliable data and projections would offer a much more viable path toward the desired results than some of the initiatives originally outlined.
- The only avenue available to address this compelling issue is systemic and sustainable economic growth on a broad scale, which in turn mandates an ongoing and predictable supply of the requisite energy resources.
- Responsible development of the vast, low-carbon resources of the Permian Basin is essential not only to confronting the climate crisis, but also for critical economic, social, and humanitarian objectives.

Conclusion

Conclusion

- The Permian Basin's vast resources of oil and natural gas will be essential to meeting the world's future need for energy. This energy is crucial to human health and quality of life, opportunity, and relief from poverty.
- In addition, activity in the region generates substantial economic opportunities and resources for federal, state, and local governments.
- Climate change must be dealt with, and the Permian Basin is an important part of the solution, with lower carbon oil, a large and growing base of renewables, and the capacity for carbon capture and other innovations.

About The Perryman Group

The Perryman Group is an economic and financial analysis firm that provides clients with thoroughly researched, well-documented, carefully considered answers to complex questions.

Led by Dr. M. Ray Perryman, The Perryman Group covers numerous practice areas including litigation & regulatory services, impact assessment, economic modeling & forecasting, valuation, economic development & strategic planning, and public policy. In addition, our in-house professionals also provide market & industry analysis, statistical modeling & analysis, survey & demographic studies, economic statistics, and other services in a comprehensive manner. The firm has served the needs of more than 3,000 clients ranging from major corporations to small startups and local communities to national governments.

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