



RystadEnergy



**AMERICAN
EXPLORATION
& PRODUCTION
COUNCIL**

Economic Impact of US Independent Operators

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Table of Contents

List of Figures	5
List of Tables	6
Project context.....	7
1. Executive Summary.....	8
2. Introduction	13
2.1 Background	13
2.2 Commodity prices	18
2.3 Economic contribution assessment methodology.....	19
3. Production.....	20
3.1 Crude oil and condensate production	20
3.2 Dry natural gas production	22
3.3 NGL production.....	25
4. Capital and operating expenditures.....	28
4.1 Onshore upstream capital expenditure	28
4.2 Offshore upstream capital expenditure.....	30
4.3 Onshore operational expenditures.....	31
4.4 Offshore operational expenditures.....	33
5. Domestic upstream market trends	34
5.1 M&A activity	34
5.2 The role of associated vs. non-associated gas	36
5.3 Onshore production by basin.....	39
6. Economic contribution assessment	42
6.1 National onshore.....	42
6.2 Onshore state level economic impact	46
6.3 National offshore economic impact	47
7. Conclusion.....	49
8. Glossary.....	50
9. Appendix	51
A. Economic impact analysis methodology.....	51
B. Operator grouping.....	54
C. Price strips.....	55

D. Crude oil and condensate production state totals and contribution percentages.....	56
E. Dry gas production state totals and contribution percentages.....	58
F. NGL production state totals and contribution percentages.....	60
G. Select notable M&A deals.....	62
H. Economic contributions by state	63
I. Taxes by state.....	78
J. Economic contributions from offshore US.....	82

List of Figures

Figure 1: Crude and condensate production share by operator segment.....	21
Figure 2: Crude and condensate production by top five states and offshore US.....	22
Figure 3: Dry gas production share by operator segment.....	23
Figure 4: Dry gas production by top five states and US offshore.....	24
Figure 5: NGL production share by operator segment.....	26
Figure 6: NGL production by top five states and US offshore.....	27
Figure 7: 2022-2024 total onshore capex and newly spudded wells by operator segment.....	29
Figure 8: Capex by top five states and US offshore.....	30
Figure 9: Average onshore opex per year and average age of existing wells per year by operator segment.....	32
Figure 10: Opex by top five states and US offshore	33
Figure 11: Small to mid-size and large public operator counts.....	35
Figure 12: Top US E&P acquisitions by deal year and announced deal value.....	36
Figure 13: US dry gas production by well type.....	37
Figure 14: Associated gas production by shale play.....	38
Figure 15: Percent of dry gas production from associated gas by operator segment.....	38
Figure 16: Onshore crude and condensate production by shale play.....	39
Figure 17: Onshore dry gas production by shale play.....	40
Figure 18: Onshore NGL production by products and region.....	41

List of Tables

Table 1: Economic contributions from onshore independent operators.....	10
Table 2: Daily onshore production by operator segment.....	14
Table 3: Daily offshore production by operator segment.....	15
Table 4: Capex and opex by operator segment, onshore operations.....	16
Table 5: Capex and opex by operator segment, offshore operations.....	17
Table 6: Annual average price strips.....	18
Table 7 US crude oil and condensate, dry gas and NGL production.....	20
Table 8: Crude oil and condensate production by operator segment.....	20
Table 9: Dry natural gas production by operator segment.....	23
Table 10: NGL production by operator segment.....	25
Table 11: Onshore well count and capital expenditure.....	28
Table 12: Existing well count and operational expenditure.....	31
Table 13: Active operator count by operator segment.....	34
Table 14: Onshore economic contributions, independent vs non-independent operators.....	43
Table 15: Onshore economic contributions by contribution type.....	45
Table 16: Offshore economic contributions, independent vs. non-independent operators.....	47
Table 17: Economic contributions from onshore independent operators.....	49

Project context

The American Exploration and Production Council (AXPC) is a national trade association representing the leading independent oil and natural gas exploration and production companies in the United States. AXPC companies are committed to safety, stewardship, and innovation to deliver reliable, affordable energy to American consumers.

Rystad Energy is a specialized strategy consulting and research firm focusing on global energy markets. The company was established in 2004, by founding Partner and chief executive officer (CEO), Mr. Jarand Rystad. The company is headquartered in Oslo, Norway, but is a global company with offices across the America, Europe, Middle East and Asia Pacific. The company has expanded into additional market segments over the years and now continuously monitors upstream, midstream/downstream and renewable activity through a highly trained organization of analysts and consultants.

AXPC has engaged Rystad Energy to assess the economic impact of upstream US oil and gas operations, for different operator segments, on national and state-level from 2022 to 2024.

Rystad Energy has partnered with Impact Economics Consulting LLC to perform the economic impact analysis utilizing IMPLAN software, an economic modelling and analytics platform designed to analyze the effects of investments on national, state and local economies. Rystad Energy's approach leverages Rystad's proprietary databases, including UCube and ShaleWellCube, to generate inputs for IMPLAN modelling software.

1. Executive Summary

Onshore upstream oil and gas operations contributed \$563 billion to the US' gross domestic product (GDP) in 2024, or roughly 2% of the entire US GDP, including direct, indirect, and induced effects. Additionally, onshore operations accounted for 3.6 million jobs in 2024 with a nationwide labor income of \$316 billion. Within the onshore sector, independent operators accounted for roughly 87% of these economic impacts, while globally integrated companies, which have vertical integration across production and refining, accounted for the remaining percentage.

Offshore upstream oil and gas operations contributed a further \$63 billion to the US GDP and supported an additional 330,000 jobs and a labor income of \$30.5 billion. Independent operators in offshore account for 39% of the GDP contribution and 45% of employment and labor income, with the remaining portion coming from globally integrated companies.

In this study, Rystad Energy has subdivided US operators into six segments including globally integrated firms and private and public independents. Private and public independents are further segmented based on production thresholds.

- **Globally Integrated (6 companies):** A vertically integrated oil and gas (O&G) company involved in every stage of the value chain from wellhead production to refining.
- **Large Public Independents (29 companies):** A non-integrated publicly listed O&G operator with greater than 200,000 barrels of oil equivalent per day (boepd) average daily production in 2024.
- **Large Private Independents (6 companies):** A non-integrated privately listed O&G operator with greater than 200,000 boepd average daily production in 2024.
- **Small-mid size Public Independents (28 companies):** A non-integrated publicly listed O&G operator with between 20,000-200,000 boepd average daily production in 2024.
- **Small-mid size Private Independents (87 companies):** A non-integrated privately listed O&G operator with between 20,000-200,000 boepd average daily production in 2024.
- **Other Producers (8700+ companies):** Operators with less than 20,000 boepd of average daily production in 2024.

Contributions of independent companies overall and of large public independents

Rystad Energy has analyzed onshore oil and condensate, natural gas, and natural gas liquids (NGL) production for each operator segment from 2022 to 2024. Over this period, independents accounted for over 85% of crude and condensate production, over 85% of NGL production, and over 90% of gas production. Independents were also the main driver of production growth in natural gas and NGLs, representing 61% of production growth in both categories over the period. Within independent operators, large public independents contributed over 45% of crude and condensate production, over 45% of dry gas production and over 50% of NGL production.

In addition to this, Rystad Energy has analyzed the capital expenditure (capex) and operational expenditure (opex) for onshore upstream activities from 2022 to 2024. Over this period, independents

were responsible for 90% of both total capex and opex. Independents spudded 90% of new wells from 2022-2024 and operated roughly 95% of all producing onshore wells. Within independent operators, large public companies contributed 45% of capex and 50% of new wells. However, this correlation breaks when examining opex and the maintenance of existing wells for large public companies. These companies contributed over 40% of total opex but only controlled an average of 15% of all existing wells each year, demonstrating that large public companies tend to spend more on operating expenses per well. Independent operators' overall share of well capex and opex underscores their central role in sustaining domestic production by actively managing decline rates as well as driving growth through the drilling of new wells.

Economic impacts of onshore independent operators at a national level

Rystad Energy has analyzed the economic contributions from onshore production, capital expenditures and operating expenditure at the national and state level. Rystad Energy and Impact Economics Consulting integrated our proprietary oil and gas production and economics (e.g., capex, opex, royalties) with IMPLAN economic modelling software to estimate economic impacts across the following metrics:

Employment:

In 2024, independent oil and gas operators supported nearly 1.1 million direct jobs, including state and local government positions funded by severance taxes and federal revenue sharing. Each of these jobs generated about 1.9 more jobs through supply chain activity and consumer spending, totaling 3.1 million jobs. Within these independents, large public companies stand out as the primary driver of employment opportunities, providing 42%, or 1.3 million jobs across direct and secondary opportunities.

Labor income:

Independents generated \$277 billion—87% of all U.S. onshore oil and gas labor income. This included \$121 billion from direct jobs and \$156 billion from supply chain activity and consumer spending driven by higher incomes. Each dollar in direct wages and benefits supported an additional \$1.29 in income through these secondary effects. Large public independent operators stand out as the primary driver of labor income, providing 46%, or \$126 billion, across direct and secondary opportunities.

Contribution to GDP:

Independent operators supported 87% of total GDP output from the US onshore upstream oil and gas sector, which translated to \$488 billion. Direct contributions to GDP totaled \$216 billion, which is equivalent to almost 1% of US GDP in 2024. Direct contributions led to an additional \$273 billion in secondary contributions such that every direct dollar of contributions generated led to \$1.26 worth of secondary contributions. Among the categories of independents, large public companies stand out as the primary driver of GDP contribution, providing 50%, or \$242 billion.

Taxes:

Independents accounted for 87% of the total taxes collected from the US onshore upstream oil and gas sector in 2024, which translates to \$129 billion of government revenue. Over half of these taxes, or \$77 billion, were directly generated from production activity. This share makes production revenue and related spending the greatest contributor to state and local revenues, both on a percentage and a USD basis. Another \$25 billion came from well capex, \$11 billion from state and local government, and \$16

billion from royalties. Among the categories of independents, large public companies again stand out as the primary driver of taxes, providing 48%, or \$62 billion, of all taxes collected in 2024.

Sensitivity to commodity prices:

In 2022, the annual average Brent oil price was \$94.90 per barrel, however two years later oil prices had dropped to just \$76.60 per barrel. While prices dropped, domestic crude and condensate grew 10%, NGL production grew by 12%, while gas production grew by 4%. The influence of lower commodity prices vastly outweighed benefits from production growth during this period as annual GDP contributions dropped by 34% from \$735 billion in 2022 to just \$488 billion in 2024. In addition, tax revenue shrunk by \$44 billion, or 25%. Higher oil prices in 2022 supported elevated profits, revenue and the taxable base and had greater effects on overall economic contributions than effects provided by production growth.

Table 1: Economic contributions from onshore independent operators ¹			
	2022	2023	2024
Production ² (million boepd)	32.2	34.2	35.0
Employment (Employees)	3,859,000	3,475,000	3,172,000
Labor Income (USD billion)	\$372	\$307	\$277
Contribution to GDP (USD billion)	\$735	\$530	\$488
Taxes (USD billion)	\$173	\$140	\$129

Source: Rystad Energy research and analysis

Economic impacts of independents at a state level

Onshore state-level economic impact figures from onshore production do not include the ripple effects of royalty payments, because royalties may be received and/or spent outside the state where the oil or gas is produced. Since the location of where royalty income is ultimately received/spent is unknown, those effects are counted only in the national totals—not in state results.

Employment:

In 2024, total activity across direct, indirect, and induced contributions from independents created 2.6 million jobs, not including jobs created as a result of royalty income. The top 10 states were responsible for 87% of these jobs. As expected in line with production, Texas leads in total job creation, at 41% of all jobs created by independents, which translates into 1.1 million jobs. New Mexico and North Dakota represent the second and third largest hubs of job creation, at 322,000 and 170,000 jobs, respectively.

Labor Income:

In 2024, total activity across direct, indirect, and induced contributions from independents created \$240 billion in labor income, excluding income from royalties. The top 10 states were responsible for 92% of these wages. Texas again leads in labor income creation, at 45% of all wages paid by independents, which translates into \$107 billion. New Mexico and Pennsylvania represent the second and third largest contributors to labor income, at \$27 billion and \$16 billion, respectively.

¹ Includes direct, indirect, and induced contributions

² Production includes onshore crude and condensate, NGL, and dry gas volumes

Contribution to GDP:

In 2024, total activity across direct, indirect, and induced contributions from independents created \$419 billion in US GDP, excluding GDP generated by royalties. The top 10 states were responsible for 92% of this GDP generation. Texas drives GDP generation, representing 45% of GDP generated by all independents, which translates into \$190 billion. New Mexico and North Dakota represent the second and third largest contributors to GDP generation, at \$53 billion and \$30 billion, respectively.

Taxes:

In 2024, \$129 billion was collected in taxes at the federal, state and local levels from onshore activity. Over half (51%) of total taxes were collected at the federal level while 49% was generated by the state and local levels. 87% of these taxes were generated by independent producers representing \$113 billion.

National upstream trends**M&A and consolidation trends:**

Rystad utilized historic data to capture the temporal evolution of operator segments from 2022 to 2024. The total number of companies remained relatively consistent for all operator segments except small to mid-size public operators, which observed a 30% drop in represented companies between 2023 and 2024. This drop in total number of companies was a result of a wave of mergers and acquisitions (M&A) activity in US shale that occurred over this period. The most notable deal was Exxon-Pioneer acquisition in 2023 that was valued at approximately \$65 billion.

Other notable deals include Occidental Petroleum's acquisition of CrownRock for approximately \$12 billion, Diamondback's merger with Endeavor Energy for approximately \$26 billion, and ConocoPhillips's acquisition of Marathon Oil for \$22.5 billion. This wave of deals marked a definite shift from the capital-disciplined Shale 3.0 era to Shale 4.0, defined by aggressive consolidation and where public companies both inside and outside of the Permian became primary acquisition targets.

Natural gas production trends:

Associated gas from liquids-rich basins such as the Permian and Bakken account for a growing share of US natural gas production. Between 2022 and 2024, associated gas, defined as natural gas produced from oil wells, increased from 24% to 29% of total US dry gas production. The rise in associated gas production is largely driven by associated gas production in the Permian Basin.

Oil wells today are only slightly gassier than wells completed in the past but still offer early evidence into the rise of associated gas from maturing oil plays. Key forces that are affecting the Permian Basin's increasing gas to oil ratio are the maturity of wells, the steeper decline rates observed for oil production in young wells, and to a lesser extent, the varying degrees of thermal maturity within the basin.

Recent increases in associated gas output from liquids-rich regions have created a growing need for additional gathering, processing, and takeaway capacity, particularly in areas experiencing a rapid increase in drilling activity such as the Permian Basin. The buildout of gas-handling infrastructure will continue to provide market access to previously stranded resources as well as improve the reliability of supply to key liquified natural gas (LNG) export hubs.

Production by basin trends:

Strong growth in the top four liquids-rich shale plays led oil and condensate production gains across the US from 2022 to 2024. The Permian saw the largest growth in both volume and percentage, adding 908,000 bpd, a 15% increase, followed by the Bakken with an increase of 12%, while the (Denver-Julesburg) DJ Basin and Eagle Ford grew by 7% and 4%, respectively.

Production growth for dry gas was more modest than for oil over the past three years. The Permian led in both absolute and relative terms, with dry gas output rising from 15.8 million bpd in 2022 to 20.6 million bpd in 2024, a 30% increase driven by higher associated gas production. Other plays posted moderate gains, with output rising 8% in the DJ Basin, 5% in the Marcellus, and 3% in the Eagle Ford. In contrast, the Haynesville and Utica plays saw declines of 4% each.

NGL production in the US has grown 17% over the past three years. The surge in NGL production is primarily driven by oil-focused wells in the Permian Basin in Texas, which made up 45% of NGL production in 2024. A significant increase in the gas-to-oil ratio and rising recovery in gallons of NGLs per thousand cubic feet of natural gas contributed to the strong gains within the Permian. The gas-focused Marcellus region ranked second at 700,000 bpd, but the basin remains constrained due to tight takeaway capacity and dwindling regional demand. The Eagle Ford and Bakken are also growing in line with crude and condensate production.

2. Introduction

2.1 Background

Company grouping methodology

Since the advent of the shale revolution, independent operators have driven growth in US production. These companies represent those that are upstream oriented and do not have vertical integration across midstream and downstream sectors. To accurately assess the production contributions from different operator segments, Rystad Energy has grouped all US operators into six segments which include globally integrated companies, independents, and other producers. Independents are further segmented depending on 1) whether they are publicly listed or private and 2) on their size, which is a function of their 2024 average daily barrel of oil equivalent production (boe). The six operator segments are defined as follows:

- **Globally Integrated (6 companies):** A vertically integrated oil and gas company involved in every stage of the value chain from wellhead production to refining.
- **Large Public Independents (29 companies):** A non-integrated publicly listed O&G operator with greater than 200,000 boepd average daily production in 2024.
- **Large Private Independents (6 companies):** A non-integrated privately listed O&G operator with greater than 200,000 boepd average daily production in 2024.
- **Small-mid size Public Independents (28 companies):** A non-integrated publicly listed O&G operator with between 20,000-200,000 boepd average daily production in 2024.
- **Small-mid size Private Independents (87 companies):** A non-integrated privately listed O&G operator with between 20,000-200,000 boepd average daily production in 2024.
- **Other Producers (8,700+ companies):** Operators with less than 20,000 boepd of average daily production in 2024.

Specific company names encompassed in the globally integrated, large public independents, large private independents, and small-mid size public independents are listed in Appendix B.

National onshore production volumes

Onshore oil and condensate, natural gas and NGL production data from 2022 to 2024 came from Rystad Energy's proprietary bottom-up UCube database. Data was organized and presented at the national and state level by operator segment. Daily production figures from each category and operator segment from 2022 to 2024 are shown in Table 2.

Table 2: Daily onshore production by operator segment			
	2022	2023	2024
Globally Integrated			
Crude + condensate production (kbpd)	953	976	1,609
Dry gas production (MMcfd)	6,541	6,458	8,232
NGL production (kbpd)	600	600	976
Large Public			
Crude + condensate production (kbpd)	4,221	4,570	5,053
Dry gas production (MMcfd)	42,992	44,226	46,290
NGL production (kbpd)	2,489	2,797	3,198
Large Private			
Crude + condensate production (kbpd)	747	823	861
Dry gas production (MMcfd)	8,771	9,244	8,927
NGL production (kbpd)	331	355	373
Small – Mid size Public			
Crude + condensate production (kbpd)	537	594	607
Dry gas production (MMcfd)	3,902	4,311	4,452
NGL production (kbpd)	216	243	300
Small – Mid size Private			
Crude + condensate production (kbpd)	1,028	1,321	1,326
Dry gas production (MMcfd)	13,858	16,091	15,600
NGL production (kbpd)	613	797	893
Other Producers			
Crude + condensate production (kbpd)	2,802	2,804	1,949
Dry gas production (MMcfd)	20,365	20,522	17,301
NGL production (kbpd)	1,547	1,505	1,027
Totals			
Total crude + condensate production (kbpd)	10,288	11,089	11,405
Total dry gas production (MMcfd)	96,429	100,853	100,801
Total NGL production (kbpd)	5,796	6,296	6,766

Source: Rystad Energy research and analysis

National offshore production volumes

Offshore oil and condensate, natural gas and NGL production data from 2022 to 2024 came from Rystad Energy's proprietary bottom-up UCube database. Data was organized and presented at the national and state level by operator segment. Daily production figures from each category and operator segment from 2022 to 2024 are shown in Table 3.

Table 3: Daily offshore production by operator segment			
	2022	2023	2024
Globally Integrated			
Crude + condensate production (kbpd)	1,017	1,101	1,125
Dry gas production (MMcfd)	741	746	736
NGL production (kbpd)	63	56	54
Large Public			
Crude + condensate production (kbpd)	237	249	218
Dry gas production (MMcfd)	234	239	186
NGL production (kbpd)	20	20	17
Large Private			
Crude + condensate production (kbpd)	0	0	0
Dry gas production (MMcfd)	0	0	0
NGL production (kbpd)	0	0	0
Small – Mid size Public			
Crude + condensate production (kbpd)	230	296	301
Dry gas production (MMcfd)	380	445	495
NGL production (kbpd)	23	31	37
Small – Mid size Private			
Crude + condensate production (kbpd)	106	120	113
Dry gas production (MMcfd)	190	159	155
NGL production (kbpd)	15	15	13
Other Producers			
Crude + condensate production (kbpd)	142	101	43
Dry gas production (MMcfd)	317	187	71
NGL production (kbpd)	24	16	6
Totals			
Total crude + condensate production (kbpd)	1,731	1,866	1,801
Total dry gas production (MMcfd)	1,861	1,777	1,642
Total NGL production (kbpd)	145	139	127

Source: Rystad Energy research and analysis

National onshore capital and operating expenditures

Onshore upstream capital and operational expenditure figures from 2022-2024 also came from Rystad Energy's proprietary bottom-up UCube database. Data was organized and presented at the national and state level by operator segment. Annual capex and opex figures from each category and operator segment from 2022 to 2024 are shown in Table 4.

Table 4: Capex and opex by operator segment, onshore operations (USD million)			
	2022	2023	2024
Globally Integrated			
Capex	8,021	11,060	17,483
Opex	12,903	12,326	18,464
Large Public			
Capex	45,656	56,403	54,786
Opex	56,129	56,626	61,548
Large Private			
Capex	8,953	10,788	10,723
Opex	10,943	11,331	11,778
Small – Mid size Public			
Capex	7,332	5,838	5,435
Opex	7,601	8,045	8,419
Small – Mid size Private			
Capex	19,359	20,542	16,637
Opex	16,715	20,065	20,329
Other Producers			
Capex	35,887	32,706	21,472
Opex	33,034	32,126	24,046
Totals			
Capex	125,207	137,336	126,535
Opex	137,325	140,518	144,584

Source: Rystad Energy research and analysis

National offshore capital and operating expenditures

Offshore upstream capital and operational expenditure figures from 2022-2024 also came from Rystad Energy's proprietary bottom-up UCube database. Data was organized and presented at the national and state level by operator segment. Annual capex and opex figures from each category and operator segment from 2022 to 2024 are shown in Table 5.

Table 5: Capex and opex by operator segment, offshore operations (USD million)			
	2022	2023	2024
Globally Integrated			
Capex	9,055	12,792	11,035
Opex	5,780	7,159	7,465
Large Public			
Capex	1,367	1,452	1,845
Opex	1,761	2,079	2,012
Large Private			
Capex	6	10	20
Opex	-	-	-
Small – Mid size Public			
Capex	2,328	2,370	1,728
Opex	2,522	3,087	3,622
Small – Mid size Private			
Capex	1,993	2,626	2,756
Opex	1,018	996	1,235
Other Producers			
Capex	1,419	805	1,134
Opex	1,637	1,314	1,116
Totals			
Capex	16,168	20,055	18,518
Opex	12,718	14,634	15,449

Source: Rystad Energy research and analysis

2.2 Commodity prices

Commodity prices varied between 2022-2024. Geopolitically-induced supply shocks in 2022, in particular the onset of the Russia-Ukraine war, pushed oil and gas prices to highs not seen since before the 2014 price crash, with West Texas Intermediate (WTI) oil prices reaching a high of \$94.90 per barrel, and Henry Hub reaching up to \$6.70 per thousand cubic feet (Mcf). However, oil prices dropped nearly 20% to a range of \$76-77 per barrel between 2023 and 2024 as the world adjusted to the new supply conditions and as demand growth remained sluggish. During the same time period, gas also dropped by over 60% down to \$2.6 per Mcf in 2023 and further to \$2.3 per Mcf by 2024. This period of volatile commodity prices had varying degrees of impact on different economic factors with some factors more impacted by price shifts than others.

Table 6: Annual average price strips

	2022	2023	2024
WTI Cushing oil price (USD/barrel)	\$94.9	\$77.6	\$76.6
Henry Hub gas price (USD/Mcf)	\$6.7	\$2.6	\$2.3

Source: Rystad Energy research and analysis

2.3 Economic contribution assessment methodology

Rystad Energy provided historical data for all operator segment's production, opex and capital expenditures at the national and state level for the years 2022 to 2024. The annual value of operators' oil, natural gas and NGL production plus annual economic data were used as core inputs to Impact Economic Consulting LLC for IMPLAN modelling that estimated economic contributions from each operator group.

In this report, Rystad Energy evaluated three levels of economic contribution that are generated from streams of economic activity initiated by domestic oil and gas operators. The first level, direct contributions, represent the immediate economic impact stemming from production revenues and direct spending on operational and capital expenditures with suppliers and service providers. The second level, indirect contributions, capture the ripple effects of economic activity as spending flows through additional tiers of the supply chain and the broader procurement system. The third tier, induced contributions, reflect the economic activity generated by the spending of direct and indirect employees as a result of their increased incomes.

The direct, indirect and induced contributions are reported for the following economic indicators:

Employment: The number of people employed as a result of economic contributions from domestic oil and gas production activities

Contribution to GDP: The creation of value derived from the revenue generated from economic activities, minus the input and service costs. In this report, GDP is the sum of value added across the US economy while Gross State Product (GSP) is the sum of value for a given state. GDP and GSP are used to gauge the overall size of the economy.

Labor income: A subcomponent of contributions to GDP that assesses the level of compensation and wages and benefits paid to workers.

Federal, state, and local taxes: The taxes and fees paid to governmental authorities

Further detail on economic impact analysis methodology can be found in Appendix A.

3. Production

Onshore and offshore production of crude oil and condensate, natural gas, and NGLs grew steadily from 2022 to 2024, with each segment contributing differently to overall gains. NGLs saw the highest relative growth, rising 16% from 5.9 million bpd in 2022 to 6.9 million bpd in 2024. Crude oil and condensate rose by 10% and dry natural gas production increased by 4%. Table 5 provides daily production figures for each category over the period.

Table 7: US crude oil and condensate, dry gas, and NGL production			
	2022	2023	2024
Crude oil + condensate (kbpd)	12,019	12,955	13,206
Dry natural gas (MMcfd)	98,290	102,629	102,443
NGL (kbpd)	5,941	6,436	6,892

Source: Rystad Energy research and analysis

3.1 Crude oil and condensate production

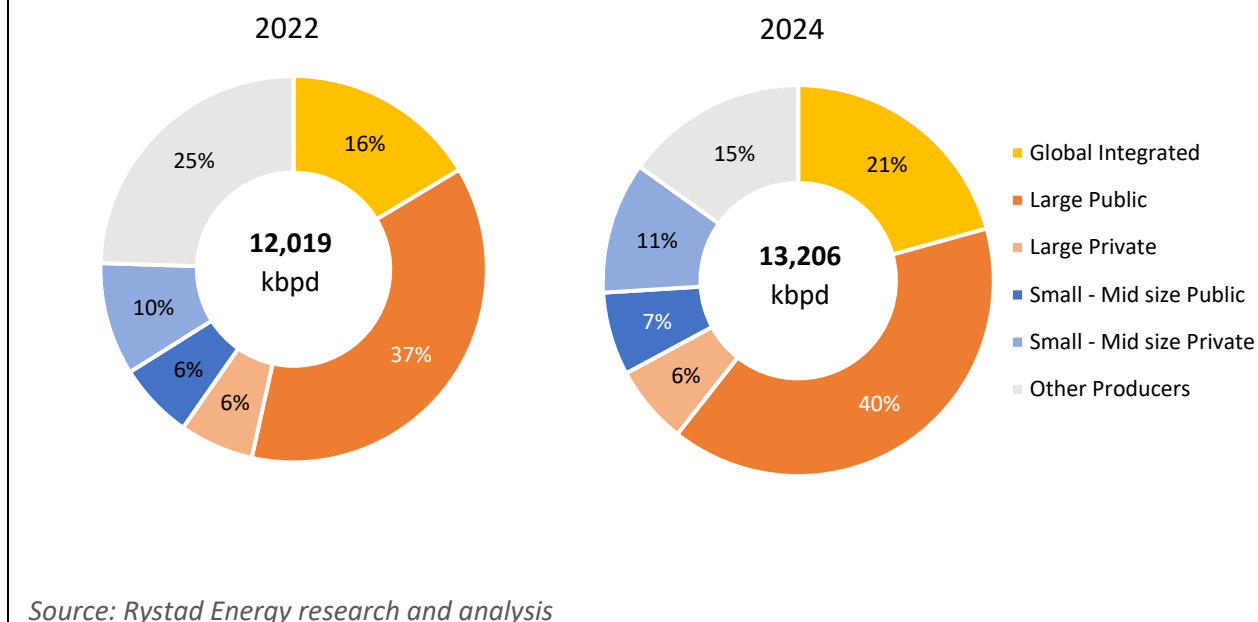
Topline US crude and condensate production, inclusive of onshore and offshore production, rose from 12.0 million barrels a day in 2022 to 13.2 million by 2024. Globally integrated and small to mid-size private operators saw the largest relative growth in this period, growing by 39% and 27%, respectively. Other producers were the only operator segment that observed a decline in crude production, shrinking by 32% from 2022 to 2024. Daily crude and condensate production from each operator segment from 2022 to 2024 is shown in Table 6.

Table 8: Crude oil and condensate production by operator segment (thousand barrels per day)			
	2022	2023	2024
Globally Integrated	1,970	2,077	2,735
Large Public	4,458	4,818	5,271
Large Private	747	823	861
Small – Mid size Public	766	891	908
Small – Mid size Private	1,134	1,441	1,439
Other Producers	2,944	2,905	1,992
Grand Total	12,019	12,955	13,206

Source: Rystad Energy research and analysis

Globally integrated companies accounted for 16% of crude and condensate production in 2022, rising to 21% in 2024 with output reaching 2.7 million bpd. Among independent operators, large public operators led the segment, growing from 37% to 40% over the same period, with production reaching 5.3 million bpd in 2024. Small and mid-sized operators also expanded their share, increasing from 16% to 18%. The only category to lose production share was other producers, which declined from 25% to 15% between 2022 and 2024, due to declining oil prices which rendered small-scale production financially unsustainable.

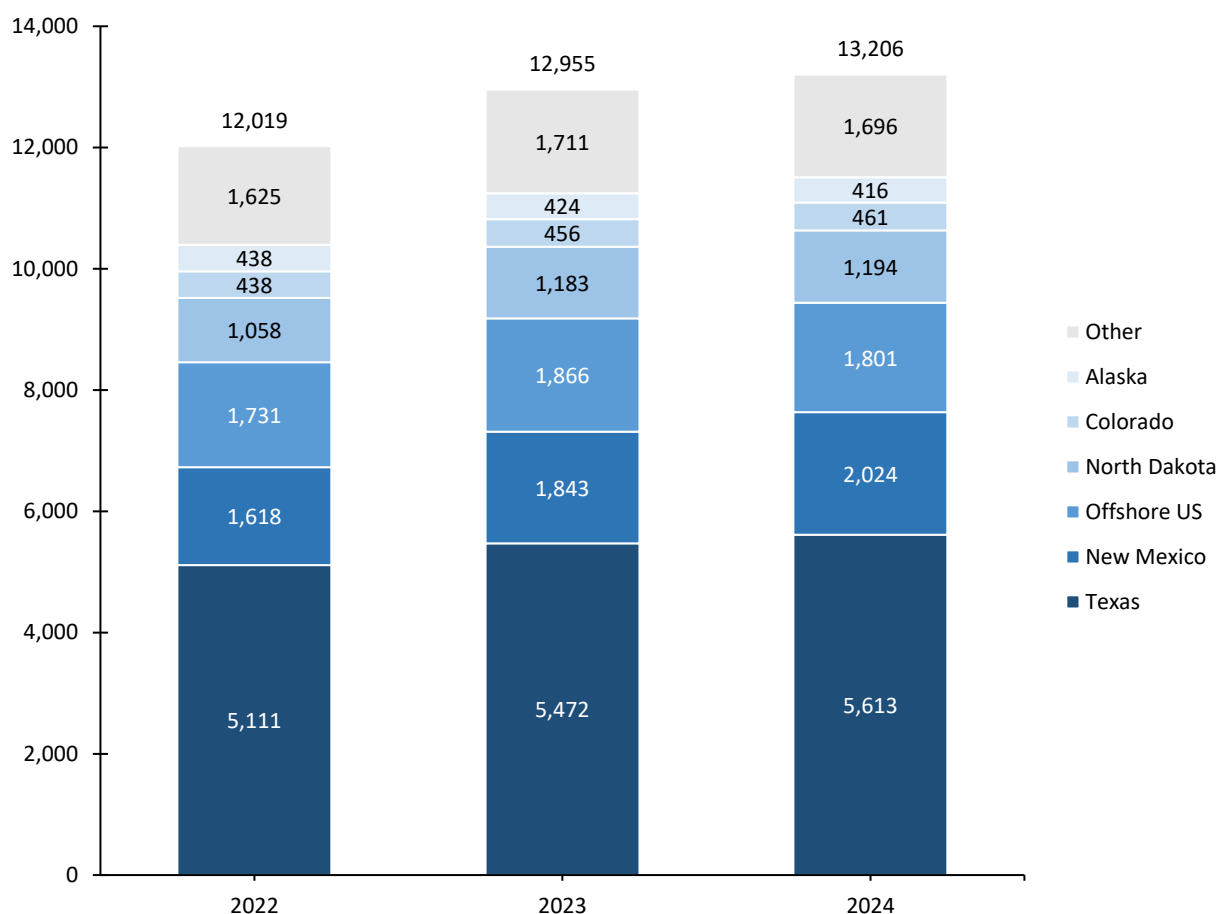
Figure 1: Crude and condensate production share by operator segment, US onshore and offshore



The top 10 states and US offshore areas accounted for 97% of crude and condensate production, rising from 11.7 million bpd in 2022 to 12.8 million bpd in 2024. Texas has led the country's output, contributing 42% of national production over the past three years, with volumes increasing from 5.1 million bpd to 5.6 million bpd. New Mexico ranks second overall followed by US offshore, which both contributed 14% of crude and condensate volumes from 2022-2024. Growth in Texas and New Mexico is largely driven by the Permian, which added 467,000 bpd and 356,000 bpd in each state, respectively, between 2022 and 2024. While most leading states have increased crude and condensate production in recent years, Alaska's output declined by 21,500 bpd from 2022 to 2024, with its share of national production falling from 4% to 3%.

See Appendix D for specific state totals and contribution percentages.

Figure 2: Crude and condensate production by top five states and the US offshore (thousand bpd)



Source: Rystad Energy research and analysis

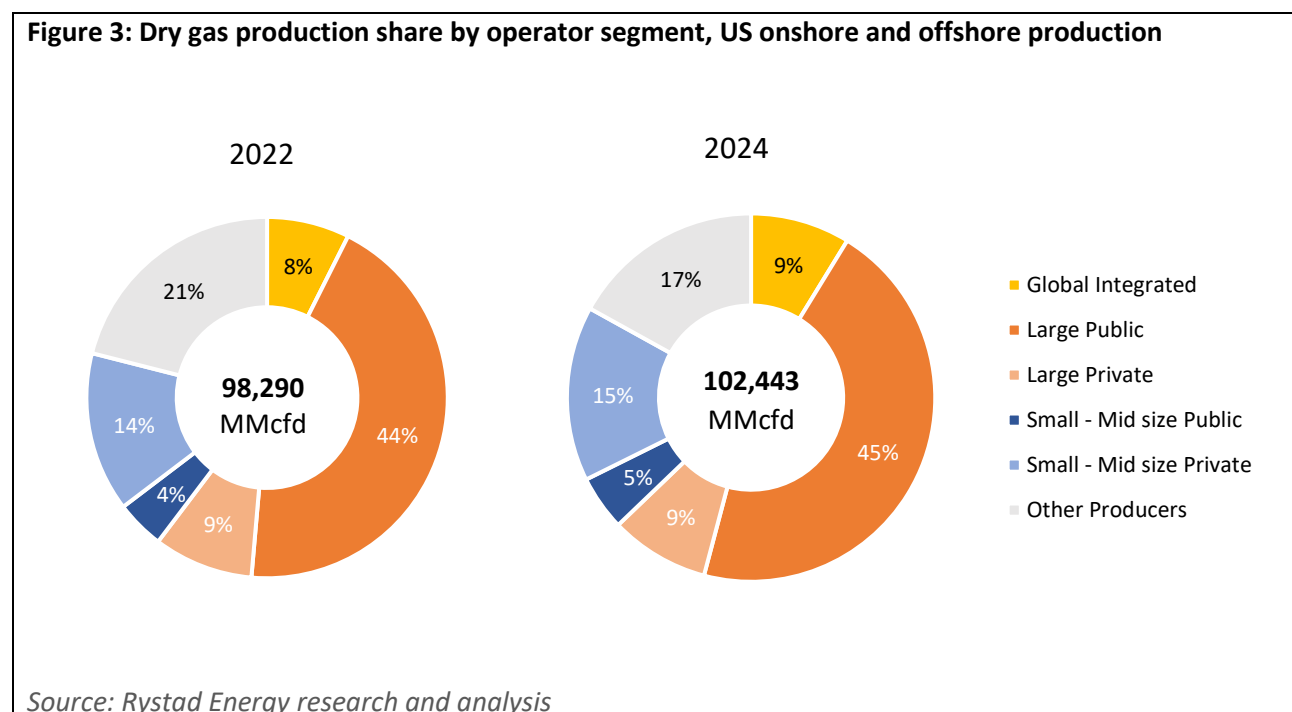
3.2 Dry natural gas production

Dry natural gas, as defined in this report, refers to methane sold as dry gas and excludes NGLs, flared gas, injected volumes, and gas used as fuel. Total dry gas production rose by 4% between 2022 and 2024, increasing from 98 billion cubic feet per day (Bcfd) to 103 million Bcfd. Large public independent operators accounted for the largest absolute increase, adding 3.2 Bcfd. Globally integrated companies saw the highest relative growth at 22%. Public and private small to mid-sized companies also recorded significant growth of 16% and 13%, respectively. Other producers were the only segment to see a decline, with dry gas production falling 16% over the period. Daily dry gas production from each operator segment from 2022 to 2024 is shown in Table 7.

Globally integrated operators accounted for just 7% of US dry gas production in 2022, but their share rose to 9% by 2024, with output increasing 23% over the period. Large public independents dominated production, accounting for 44% in 2024. Small to mid-sized operators grew their share from 19% to 20%, while large private operators held steady at 9%. The share of other producers declined by 4 percentage points over the period.

Table 9: Dry natural gas production by operator segment (million cubic feet per day)			
	2022	2023	2024
Globally Integrated	7,282	7,204	8,968
Large Public	43,225	44,465	46,475
Large Private	8,772	9,244	8,927
Small – Mid size Public	4,282	4,757	4,947
Small – Mid size Private	14,048	16,250	15,754
Other Producers	20,682	20,710	17,371
Grand Total	98,290	102,629	102,443

Source: Rystad Energy research and analysis



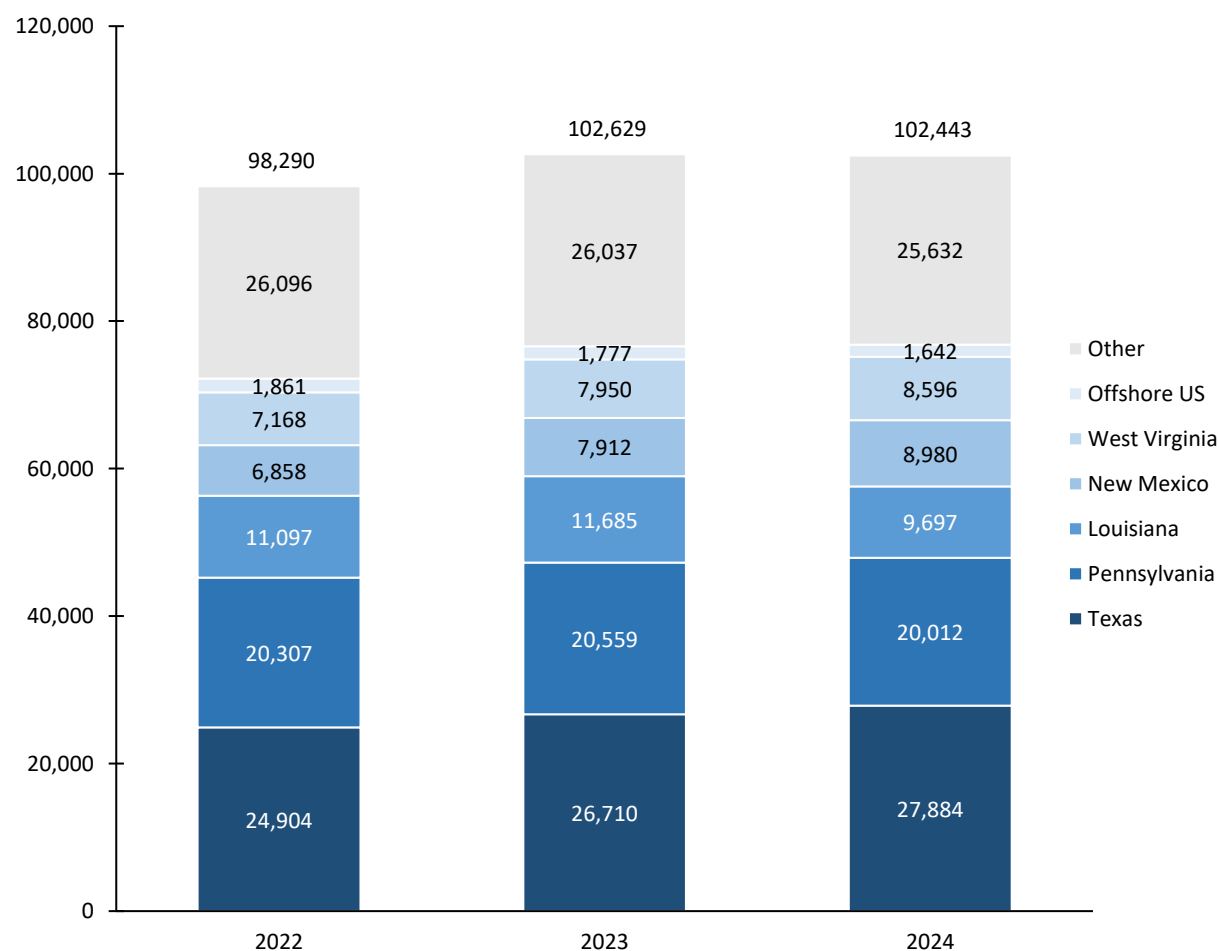
The top 10 states accounted for 94% of US dry gas production. Texas led production over the past three years, increasing its share from 25% in 2022 to 27% in 2024, largely due to rising associated gas output from the Permian Basin. Between 2022 and 2024, Permian dry gas production grew by 2.6 MMcfd in Texas and 2.1 MMcfd in New Mexico, representing increases of 24% and 29%, respectively.

Pennsylvania and Louisiana rank as the second and third largest dry gas producing states, anchored by the Marcellus and Haynesville, respectively. However, their shares of total US production have declined from 21% to 20% in Pennsylvania and 11% to 9% in Louisiana between 2022 and 2024. New Mexico ranks fourth among US dry gas producing states and is steadily gaining share, driven by growth in associated gas from the Permian. Its share of total production rose from 7% to 9% over the past three years.

West Virginia, Oklahoma, and Ohio make up 8%, 7%, and 6% of dry gas production, respectively. West Virginia has seen significant growth in production, increasing 1.4 MMcf/d between 2022 and 2024 while Oklahoma and Ohio have seen declines in production of 183 thousand cubic feet per day and 193 thousand cubic feet per day within the same period.

See Appendix E for specific state totals and contribution percentages.

Figure 4: Dry gas production by top five states and US offshore (million cubic feet per day)



Source: Rystad Energy research and analysis

3.3 NGL production

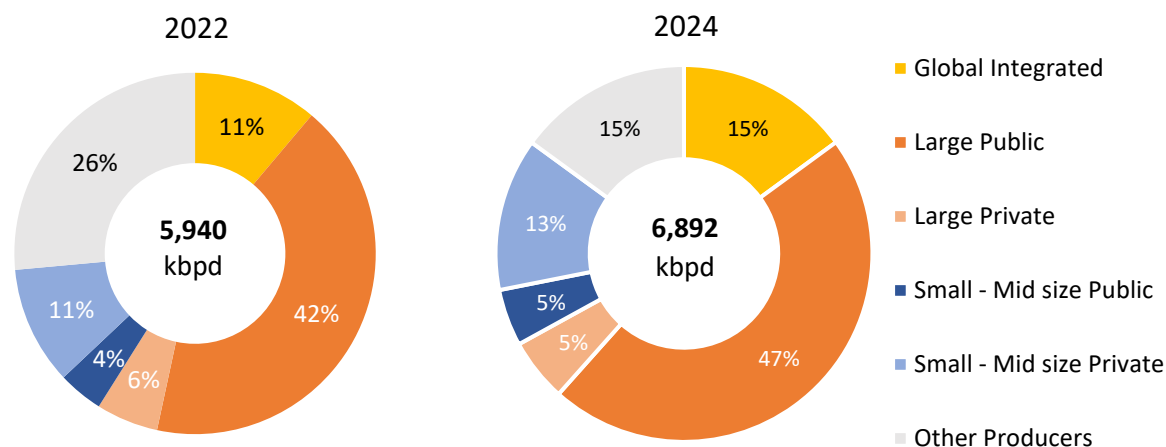
NGLs are primarily recovered during natural gas processing, making its output closely tied to natural gas production levels. However, production varies by basin, with some plays yielding more liquids-rich gas. This is especially true for associated gas from oil wells, which tends to have a higher NGL content. As a result, much of the recent and expected growth in NGL production is linked to increases in oil production. Table 8 outlines daily NGL production (in barrels per day) for selected years.

Table 10: NGL production by operator segment (thousand barrels per day)			
	2022	2023	2024
Globally Integrated	663	656	1,030
Large Public	2,508	2,817	3,215
Large Private	331	355	373
Small – Mid size Public	239	274	337
Small – Mid size Private	629	812	906
Other Producers	1,571	1,521	1,032
Grand Total	5,941	6,436	6,892

Source: Rystad Energy research and analysis

Globally integrated players accounted for 15% of US NGL production in 2024, up from 11% in 2022, driven by a 55% increase in absolute output. Like dry natural gas, large public independent operators dominate production, making up 42% of NGL production in 2024, increasing absolute production by 28% and 706,000 bpd over that period. Large private operators saw their share decline from 6% to 5%, despite an absolute production increase of 42,000 bpd. Small to mid-sized players gained market share, rising from 15% to 18%, supported by production growth of 98,000 bpd from private companies and 277,000 bpd from public ones. Other producers experienced a 34% drop in output between 2022 and 2024, causing their share to fall sharply from 26% to 15%.

Figure 5: NGL production share by operator segment, US onshore and offshore production



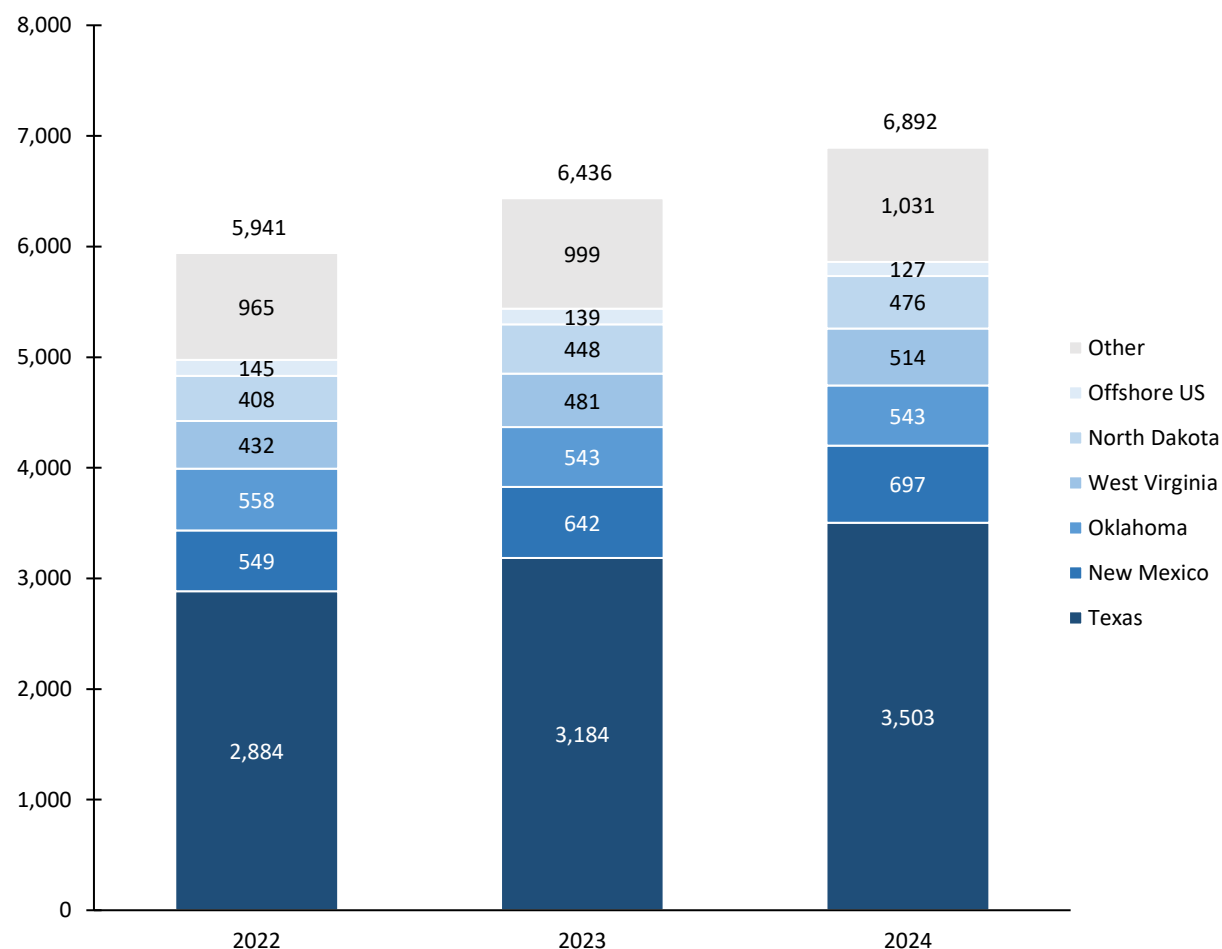
Source: Rystad Energy research and analysis

The top 10 states and US offshore accounted for 97% of total US NGL production in 2024. Texas led by a wide margin, contributing 51%, up from 49% in 2022, driven by a 619,000 bpd increase in absolute output. New Mexico ranked second with 10% of production in 2024, compared to 9% in 2022. Like dry gas, the increase in NGL production was driven by rising associated gas output from the Permian. Between 2022 and 2024, NGL output from the Permian grew by 353,000 bpd in Texas and 146,000 bpd in New Mexico.

Oklahoma, West Virginia, and North Dakota contributed 8%, 7%, and 7% respectively in 2024. Oklahoma has seen recent declines in NGL production, falling by 14,000 bpd between 2022 and 2024 while West Virginia and North Dakota have increased their production by 83,000 bpd and 67,000 bpd in the same period.

See Appendix F for specific state totals and contribution percentages.

Figure 6: NGL production by top five states and US offshore (thousand barrels per day)



Source: Rystad Energy research and analysis

4. Capital and operating expenditures

4.1 Onshore upstream capital expenditure

The US saw a divergence between new wells spudded and onshore upstream capex between 2022-2024. The number of new wells spudded per year fell from nearly 18,000 to about 16,000 in 2023, and then further to 15,000 in 2024, representing a 19% drop over two years. This reduction in new spudded wells was largely driven by the drop in oil prices from 2022 to 2024. However, US onshore upstream capex spiked from \$125 billion to \$137 billion between 2022 and 2023, before falling to \$127 billion in 2024.

The largest contributor to the \$12 billion in capex growth between 2022 and 2023 was well-related capex, at over \$10 billion, or 85%, of capex growth. Within well-related capex, the biggest individual drivers were well stimulation, oil country tubular goods (OCTG), and proppant costs, at 28%, 11%, and 10% of total capex growth, respectively. While the number of wells drilled per year declined, the average cost per well rose from around \$7 million to over \$8.8 million.

The next year, US oil and gas operators trimmed capital spending nearly across the board by \$11 billion, with most of the spending reductions coming from well-related activity. The \$11 billion reduction in capex between 2023-2024 was driven by spending cuts on well stimulation, OCTG, and rig costs, at 28%, 18%, and 16% of total capex reduction, respectively. These spending cuts helped bring the average cost per well down to \$8.7 million.

Assuming this average cost per well, Rystad Energy estimates that \$130 billion worth of maintenance capex for 2025 is required to sustain 2024 production levels through the current year.

Table 11: Onshore well count and capital expenditure

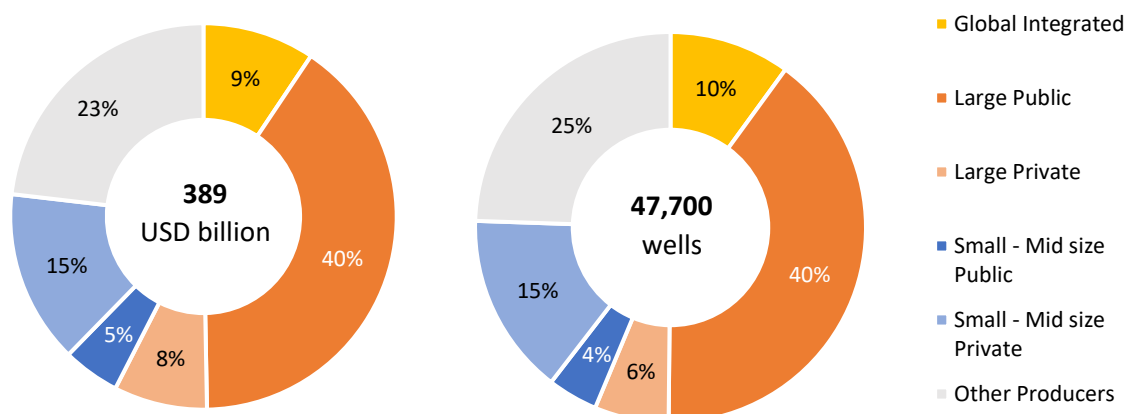
	2022	2023	2024
New spudded wells (count)	17,794	15,571	14,532
Capex (USD billion)	\$125	\$137	\$127
Avg. cost/well (USD million)	~\$7	~\$9	~\$9

Source: Rystad Energy research and analysis

Independent companies outspent globally integrated producers over the 2022-2024 period, which is correlated to their contribution to new wells. Out of the \$389 billion of capex, independent companies represented over 90%, which translated into \$352 billion. These companies also contributed 90% of the new well count. In contrast, globally integrated companies made up the remaining 10% of onshore capex at \$37 billion, while only contributing 10% of new wells.

Large public companies made up 19,000, or 40%, of the 47,700 new wells spudded by independents between 2022-2024. This outsize share of capex translates into 40%, or \$157 billion, of total operator capex. The number of newly spudded wells for other categories of independents also largely correlates with their share of new wells.

Figure 7: 2022 – 2024 total onshore capex (LHS) and new spudded wells (RHS) by operator segment

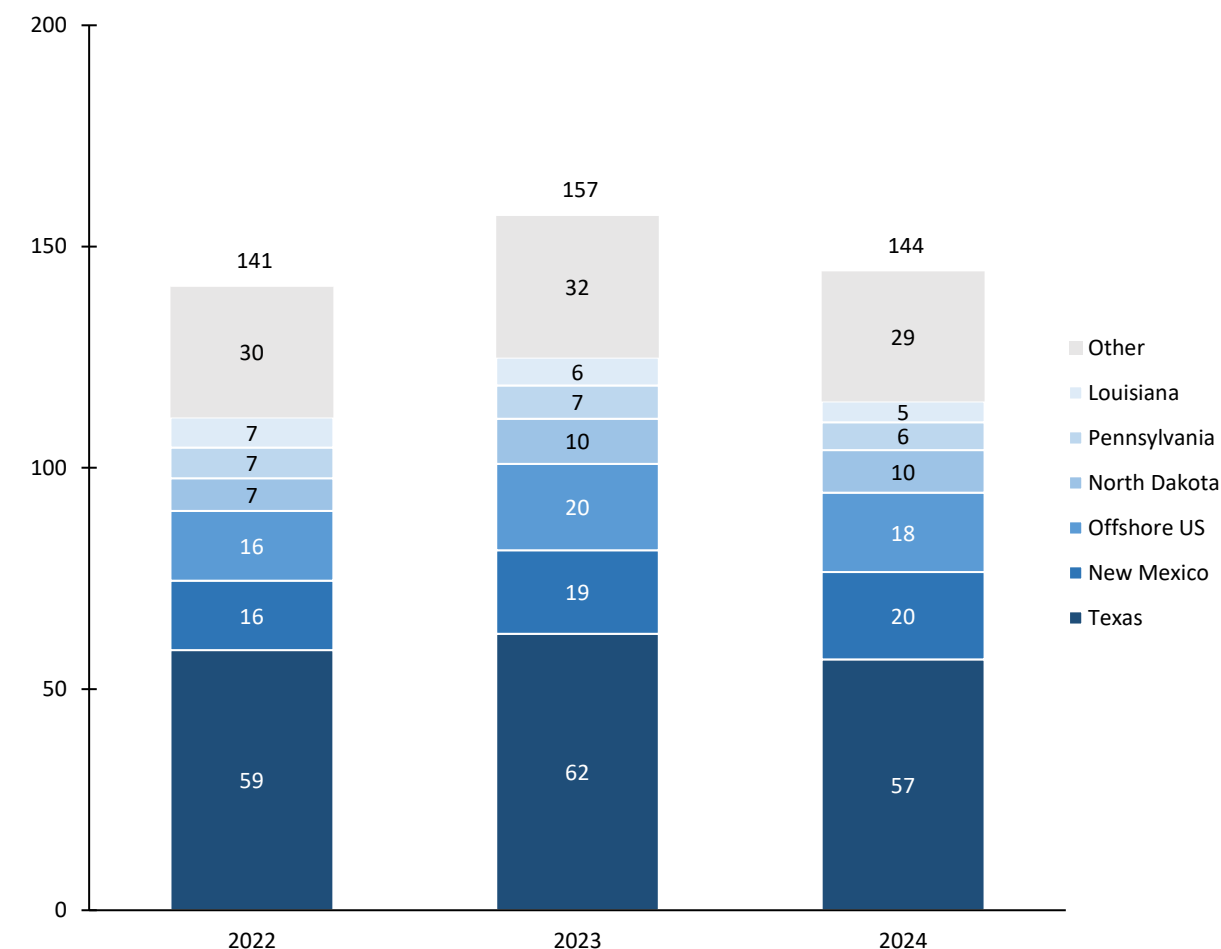


Source: Rystad Energy research and analysis

At the state level, 10 states made up 93% of total capex and 93% of spudded wells. Texas represented the single largest state across both categories. Over the 2022-2024 period, capex in Texas totaled \$178 billion representing 46% of all US onshore upstream capex. Texas also boasted the highest number of newly spudded wells, at 23,000. The number of spudded wells within the state declined by 15% from 8,400 wells in 2022 to 7,100 wells in 2024. This fall in annual spudded wells follows a nationwide trend, reflecting the fall in commodity prices during this time.

New Mexico represents an anomaly with regard to changes in spudded wells and capex growth. From 2022-2024, the number of spudded wells grew by 19% from 1,900 to 2,200, while capex grew by 25% from \$16 billion to \$20 billion. This growth amid a falling commodity price environment demonstrates the continued attractiveness of New Mexico's portion of the Delaware Basin in the Permian, thanks to its low breakevens, ample undeveloped acreage on federal land, and proximity to Texas takeaway capacity to the Gulf Coast.

Figure 8: 2022-2024 capex by top five states and US offshore (USD billion)



Source: Rystad Energy research and analysis

4.2 Offshore upstream capital expenditure

US offshore capital expenditure rose from \$16 to \$20 billion between 2022 and 2023 before declining to \$18 billion by 2024. From 2022 to 2024, offshore capital expenditures represented on average 12% of total upstream capex. Over the 2022-2023 window, US onshore spud an average of 13,000 wells per year whereas US offshore averaged just 54 new spuds per year. The Gulf of America is a particular capex intensive region, with production well costs reaching upwards of \$60 million per well.

4.3 Onshore operational expenditures

Onshore upstream operational expenses also saw divergence between rising upstream spending and falling producing well count between 2022-2024. Overall, opex steadily increased from \$137 billion to \$145 billion per year. The \$7 billion growth between 2022 and 2024 was driven by increased spending on production opex, which saw a 26% rise from \$44 billion to \$55 billion, and on selling, general, and administrative (SG&A) opex, which saw a 22% increase from \$16 billion to \$19 billion. However, total opex growth was tempered by decreased spending on taxes by \$11 billion between 2022 and 2024, which represents a 26% fall over the time period. This drop in taxes reflects the fall in oil prices during this period, which resulted in a lower revenue base to calculate tax payments.

Despite rising opex, the existing base of wells fell from 783,000 to 757,000 between 2022-2024. As oil and gas prices dropped, less productive wells were abandoned to concentrate resources on the most profitable wells. Thus, the rising opex and the falling well count suggests that in a lower oil and gas price environment, more money was spent on maintaining production from the most profitable wells.

Table 12: Existing well count and onshore operational expenditure

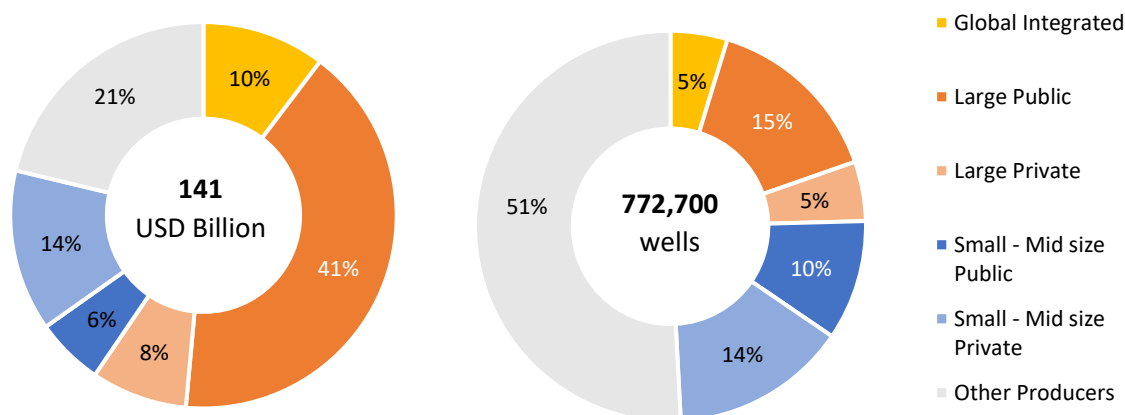
	2022	2023	2024
Existing wells (count)	783,695	777,163	757,357
Opex (USD billion)	\$137	\$141	\$145

Source: Rystad Energy research and analysis

Independent operators drove the majority of opex over the 2022-2024 period. Out of the total \$424 billion in onshore opex over those three years, independents represented 90%, or \$379 billion. In terms of producing wells, independents' share of total wells stayed relatively stable, averaging at around 95% each year. Globally integrated operators made up the remaining 10% of total opex at \$44 billion between 2022-2024 but only represented around 5% of existing wells each year. This suggests that the wells operated by globally integrated companies require more opex per well relative to other operator groupings.

Within independent operators, large public companies represented nearly half of the total US onshore opex. These companies spent \$174 billion, or 41% of total opex, over the 2022-2024 period. However, large public companies only represented an average of 15% of existing wells per year over the same period. This annual opex to existing well ratio translates into about \$0.5 million per well. In contrast, operators classified as other producers were the most efficient in their opex to well count ratio, with an average of \$30 billion in opex per year, but representing an average of 51% of existing wells. This ratio translates into less than \$0.1 million per well. This efficiency likely derives from how these smaller producers have much less spending power and thus employ cost-saving strategies in order to remain competitive. Such strategies would include, but are not limited to, reliance on smaller, cheaper contractors, lower overhead costs, smaller rigs and simpler well and completion designs.

Figure 9: 2022 – 2024 average onshore opex per year (LHS) and average existing well count (RHS) by operator segment

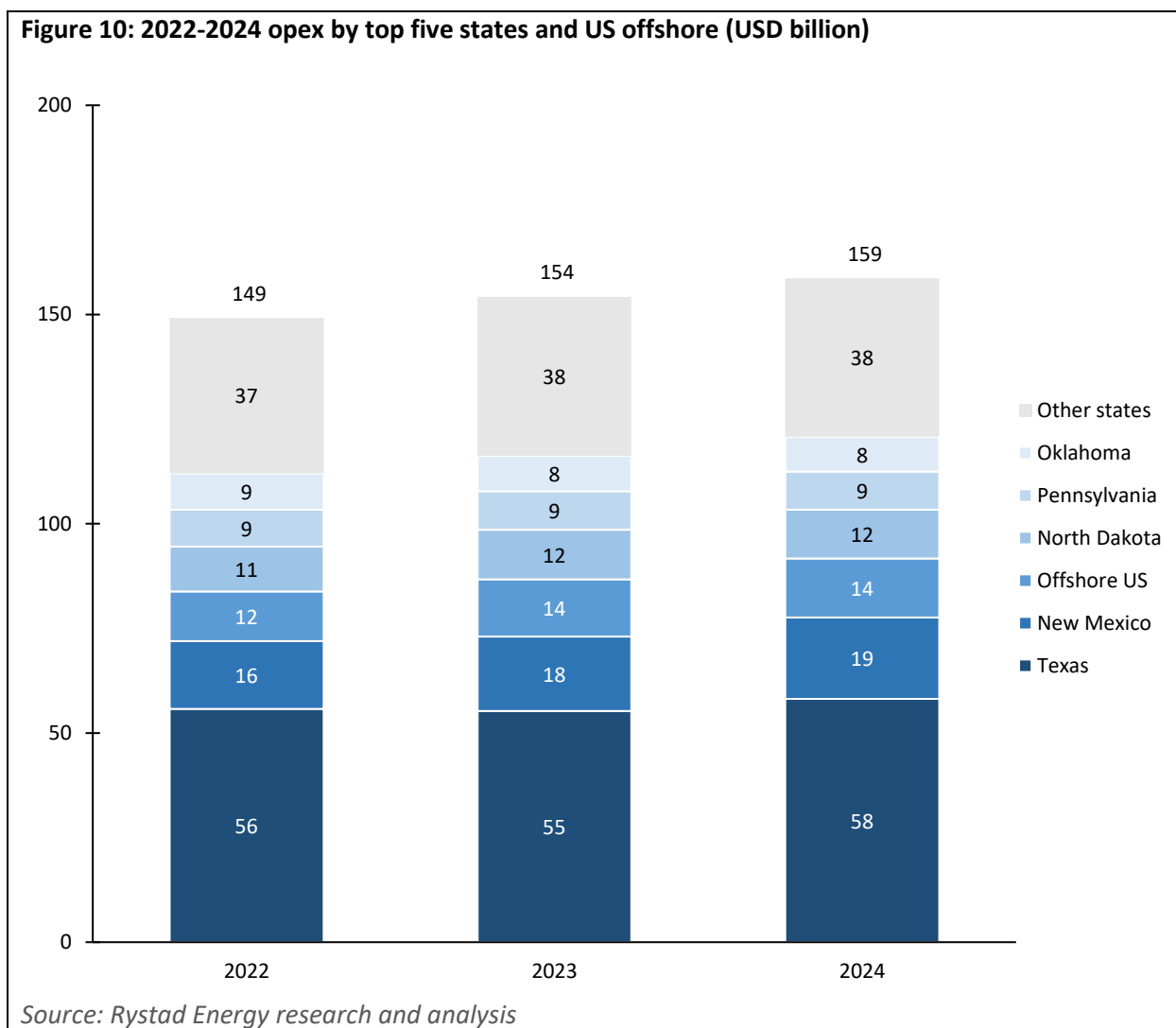


Source: Rystad Energy research and analysis

At the state level, the top 10 states represent 92% of opex and 87% of the average number of existing wells between 2022-2024. As with capex, Texas also represents the leader in opex over this time period, at \$170 billion, or 40% of all US opex in this sector. In addition, Texas also boasts of the most existing wells. Despite its well count falling from 279,000 in 2022 to 264,000 in 2024, Texas still represented 35% of all existing wells at the end of 2024. New Mexico and North Dakota come second and third in terms of opex at \$54 billion and \$34 billion, or 13% and 8% of US opex over the 2022-2024 period, respectively.

In terms of existing wells at the end of 2024, Pennsylvania ranked second, with 76,000 wells, while New Mexico ranked third, at around 50,000 wells, which translate to 10% and 6% of all US wells. However, New Mexico is one of only a handful of states that saw growth in its existing well count, growing by 3% from 48,000 to little less than 50,000 between 2022-2024, reflecting continued operator interest in further maintaining their presences in a state with rising production. Other growth states include North Dakota and Oklahoma, at 2,000 and 1,000 additional wells, or 11% and 5% growth, respectively.

On the other hand, West Virginia, Pennsylvania, and Louisiana lost the greatest number of wells aside from Texas over the 2022-2024 period. West Virginia lost around 14,000 wells, or 28% of its 2022 well count. Pennsylvania and Louisiana's losses were less drastic, at around 3,000 and 2,000 wells lost, or 4% and 6%, respectively. These well losses in the Northeast reflect a shift in operator interest away from gas rich plays in the Marcellus to liquids rich plays.



4.4 Offshore operational expenditures

Offshore operating expenditures increased from \$12 billion in 2022 to roughly \$14 billion in 2023. On average from 2022 to 2024, offshore has represented 9% of total US operating expenditures. Despite opex increasing during this period, the existing offshore well base has declined from over 2,100 producing wells in 2022 to roughly 1,800 wells in 2024. The increase in average opex per well from roughly \$6 to \$8 million per well between 2022-2024 is reflective of operators' focus on workovers and secondary recovery efforts (e.g. waterflooding) to mitigate declines and improve recovery factors.

5. Domestic upstream market trends

5.1 M&A activity

The total number of active operators in the US declined 7% from ~9,500 to ~8,800 in recent years, driven largely by M&A activity. The sharpest drop occurred among small to mid-sized public operators, which fell 35% from 43 to 28 companies between 2022 and 2024 (Figure 11). This decline was driven by M&A activity, reducing the number of distinct entities, as well as by production growth pushing some companies into the large public segment. In contrast, the number of small to mid-sized private and large public operators increased slightly, each adding two and six operators, respectively. Table 11 summarizes the active operator count by segment across the selected years.

Table 13: Active operator ³ count by operator segment			
	2022	2023	2024
Globally Integrated	6	6	6
Large Public	23	26	29
Large Private	6	6	6
Small – Mid size Public	43	40	28
Small – Mid size Private	85	92	87
Other Producers	9,300+	9,000+	8,700+
Grand Total	~9,500	~9,200	~8,800

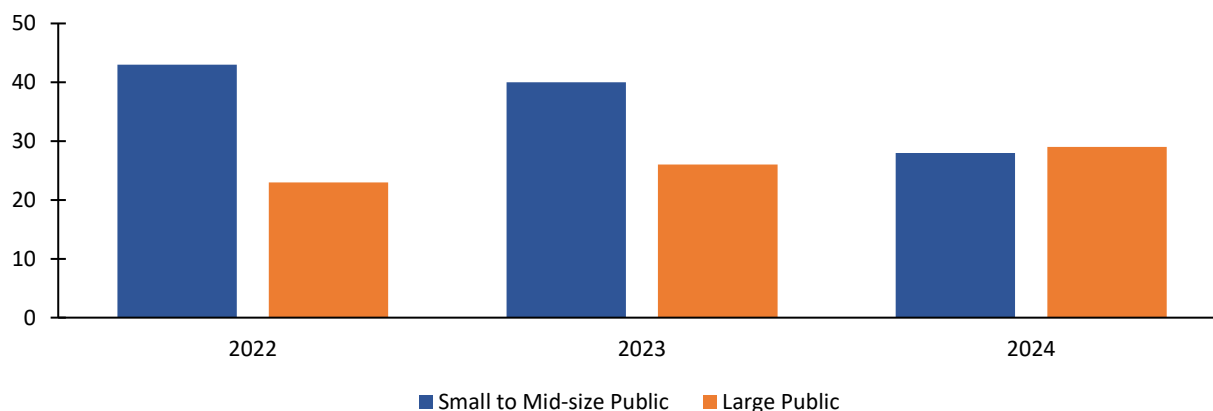
Source: Rystad Energy research and analysis

From 2022 to 2024, the number of small to mid-sized public operators declined from 43 to 28, while the number of large public operators increased from 23 to 29 (Figure 11). This shift was driven by a combination of notable acquisitions and significant production growth that enabled several companies to scale up into the large operator segment.

Production growth and asset acquisitions by operators like Vital Energy, National Fuel Gas, and Matador Resources pushed these companies into the large public operator segment between 2023 and 2024. Crescent Energy also joined the ranks of large public operators following its \$2.1 billion acquisition of SilverBow Resources, becoming the second-largest Eagle Ford operator behind EOG.

While some mid-sized operators have grown through increased production and acquisition of smaller players, many other mid-sized players were acquired by larger operators, as shown in the selected US exploration and production (E&P) company transactions in Appendix G.

³The active operator classification is used solely for the M&A section of this report. An active operator is defined as one with >0 boe/d of production in a given year, with adjustments made to account for mergers and acquisitions. In other sections of the report, each operator is assigned to its 2024 segment across all years in the production and economic contribution analysis.

Figure 11: Small to mid-size and large public operator counts

Source: Rystad Energy research and analysis

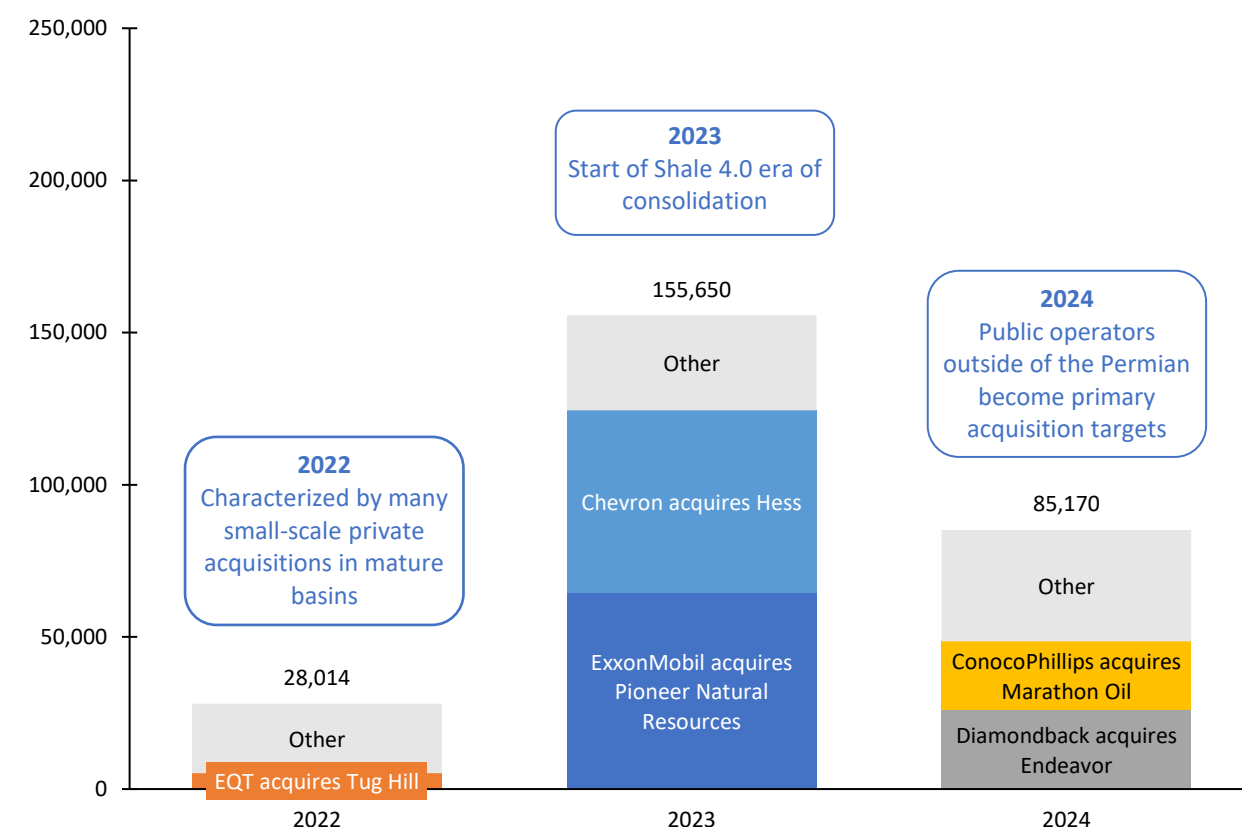
In 2022, operators focused on acquiring smaller private players and consolidating assets in mature basins outside of the Permian. By 2023, M&A activity surged, signaling a shift from the capital-disciplined Shale 3.0 era to Shale 4.0, defined by aggressive consolidation. Roughly \$105 billion was spent on Permian deals alone in 2023, up from just over \$13 billion in 2022. The ExxonMobil-Pioneer Natural Resources deal accounted for more than half of that spend at approximately \$65 billion.

In addition to ExxonMobil's landmark acquisition, 2023 saw several large public operators acquire small-to-mid-sized players. Notably, Occidental Petroleum acquired CrownRock for approximately \$12 billion, adding 94,000 net acres in the core of the Midland Basin.

In 2024, the consolidation overdrive continued. The largest deal of 2024 was Diamondback's merger with private Midland Basin-focused Endeavor Energy for approximately \$26 billion. The deal positioned Diamondback Energy as the third-largest Permian producer and the largest pure-play Permian producer.

Soon after, ConocoPhillips acquired US independent Marathon Oil for \$22.5 billion. The deal placed ConocoPhillips as the third-largest producer in the US, behind ExxonMobil and Chevron, and the second-largest inventory holder in the Lower 48 core tight oil plays, following ExxonMobil. The deal also diversified ConocoPhillips' US portfolio by increasing the share of non-Permian production (primarily in the Eagle Ford, Bakken and SCOOP/STACK plays) from 33% to around 44%. The deal marked another significant shift in the Shale 4.0 era in which public companies and operators outside of the Permian become primary acquisition targets.

Figure 12: Top US E&P acquisitions by deal year and announced deal value (USD million)



Source: Rystad Energy research and analysis

5.2 The role of associated vs. non-associated gas

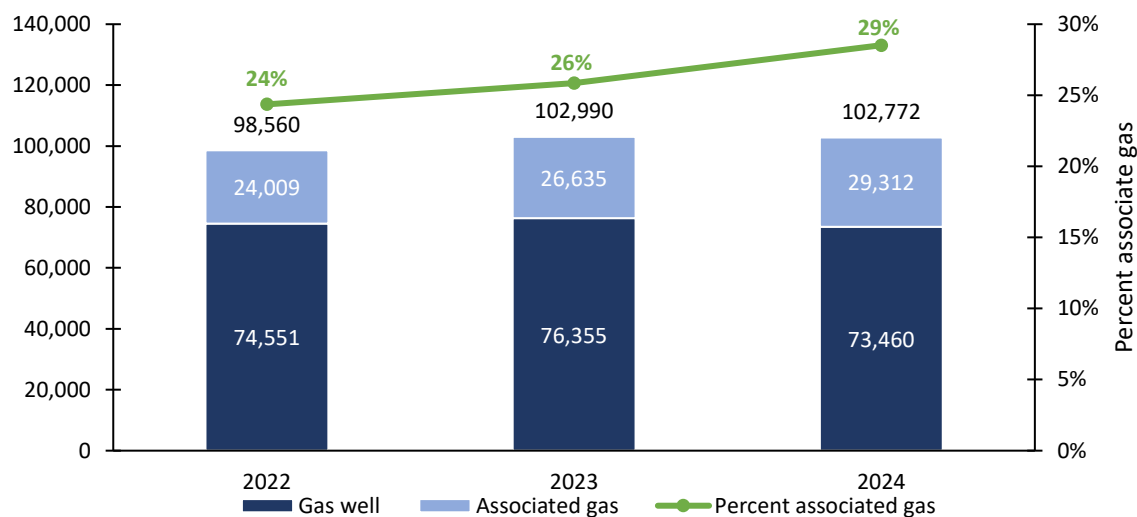
Dry natural gas production in the US has historically been led by shale gas plays like the Marcellus, Haynesville, and Utica. However, associated gas from liquids-rich plays such as the Permian and Bakken now accounts for a growing share. Between 2022 and 2024, associated gas, defined as natural gas produced from oil wells, increased from 24% to 29% of total US dry gas production.

The rise in associated gas is largely driven by operators shifting toward liquids-rich basins like the Permian in response to persistently low gas prices. As activity concentrates in these fields, liquid-dominant basins like the Permian have also become increasingly gas-weighted, with the gas-to-oil ratio rising consistently over the past decade.

A closer look at the data reveals that Permian wells completed today are only slightly gassier than wells completed in the past. While this relatively slight shift is not enough to change the course of the basin-wide gas-to-oil ratios (GOR) or basin supply trends, it may offer early evidence into the rise of associated gas with the continued depletion of oil-rich inventory. Other key forces that are affecting the basin-wide

GORs are the maturity of the base production in the basin, the steep decline in oil production for young wells versus the relatively shallow decline on the gas stream, and to a lesser extent, the varying degrees of thermal maturity and the shift in drilling across different areas of the basin.

Figure 13: US dry gas production by well type (million cubic feet per day)



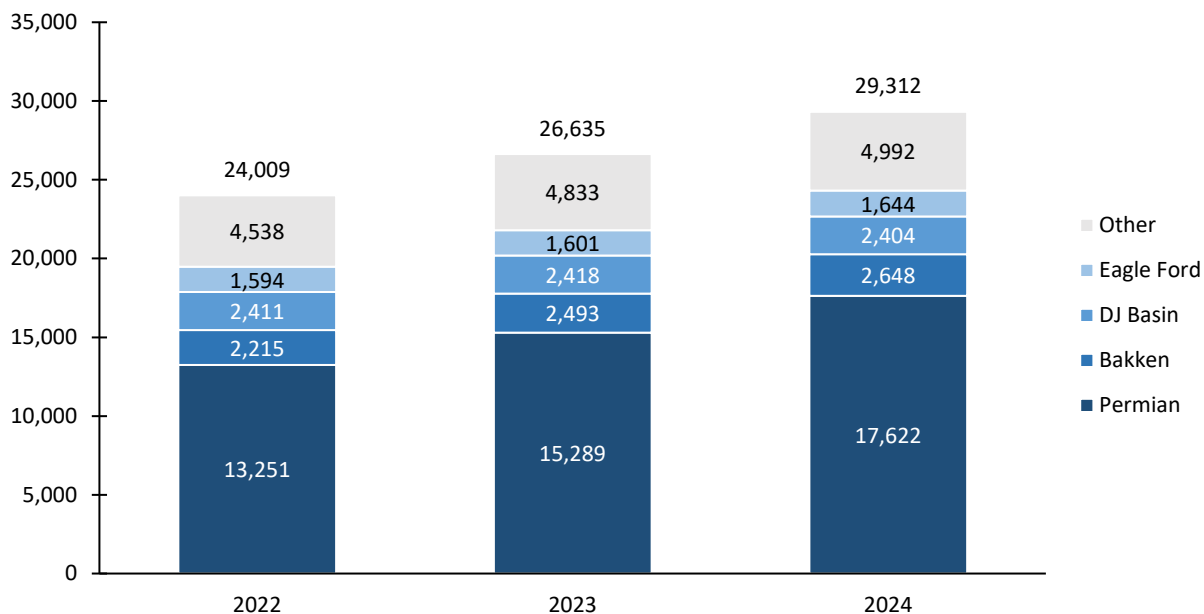
Source: Rystad Energy research and analysis

The sharp rise in associated gas output from liquids-rich regions has created a growing need for additional gathering, processing, and takeaway capacity—particularly in basins such as the Permian. This infrastructure buildout also supports reliable feedstock for liquefaction plants along the US Gulf Coast.

In addition to supporting exports, these developments are expected to benefit gas-focused oilfield service segments, particularly contract compression providers. Rising associated gas production, especially in compression-intensive basins like the Permian, is driving demand. In these areas, high-pressure gas lift is increasingly replacing electric submersible pumps (ESPs) to boost oil production.

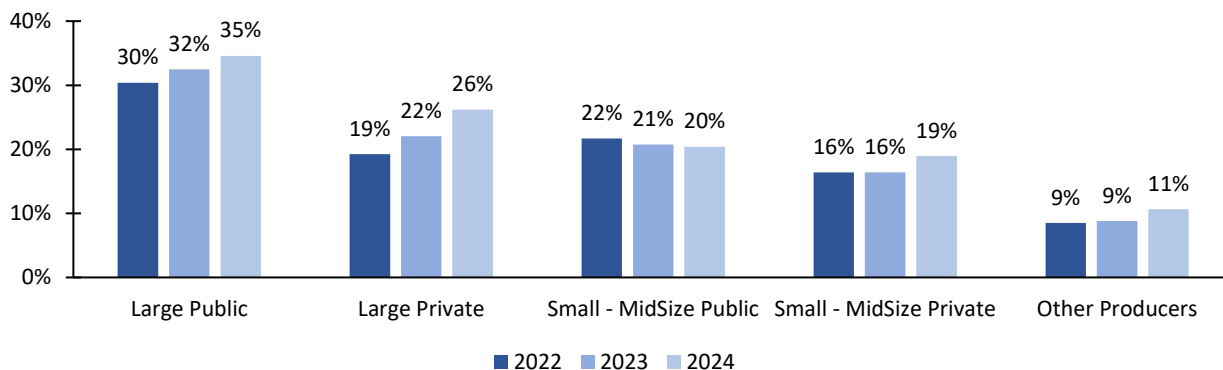
Among independents, large private operators saw the most significant increase in associated gas share, growing by 36% from 2022 to 2024. Large public operators also saw strong growth, increasing associated gas output by 2.9 MMcfd over the same period, increasing the share to 35% of total gas output. Small to mid-sized players were the only group to see a decline in associated gas share; however, their associated gas volumes still increased by 80 Mcfd over the period.

Figure 14: Associated gas production by shale play (million cubic feet per day)



Source: Rystad Energy research and analysis

Figure 15: Percent of dry gas production from associated gas by operator segment

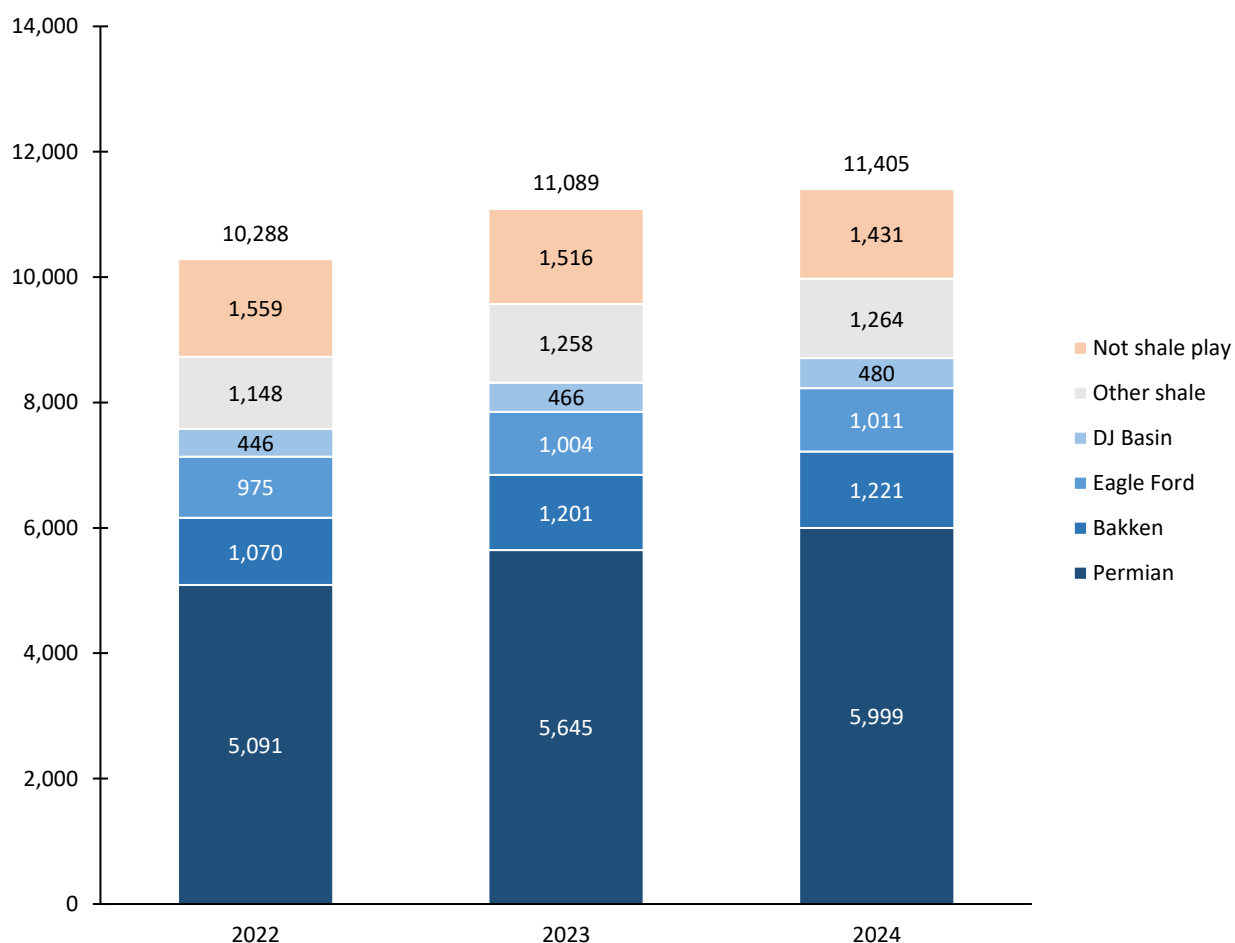


Source: Rystad Energy research and analysis

5.3 Onshore production by basin

Oil and condensate production increased across the US from 2022 to 2024, led by strong gains in the top four liquids-rich plays. The Permian saw the largest growth in both volume and percentage, adding 908,000 bpd, a 15% increase. The Bakken followed with an increase of 151,000 bpd or 17%, while the DJ Basin and Eagle Ford followed growing by 7% and 4% percent, respectively.

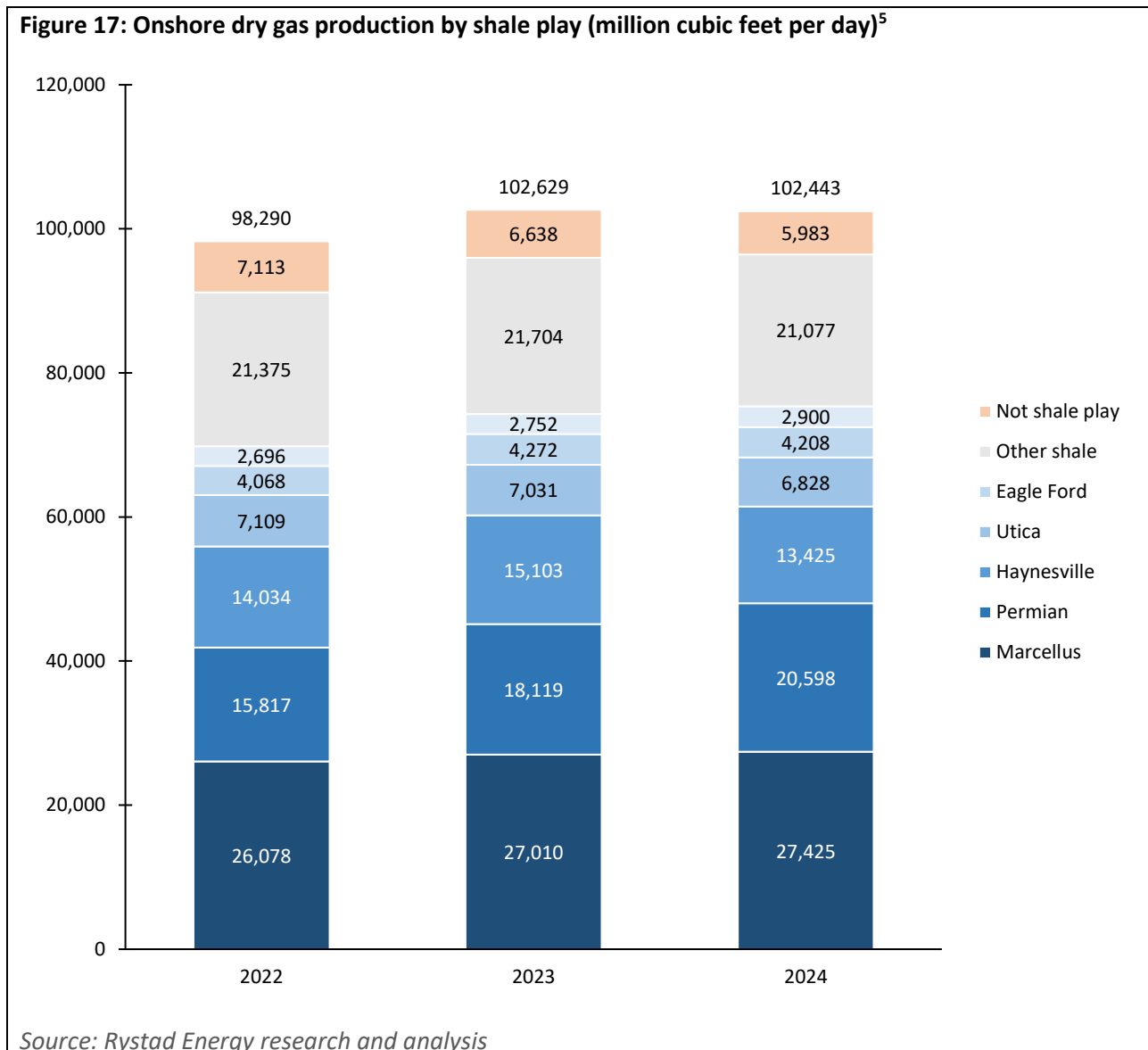
Figure 16: Onshore crude and condensate production by shale play (thousand barrels per day)⁴



Source: Rystad Energy research and analysis

Production growth for dry gas was more modest than for oil over the past three years. The Permian led in both absolute and relative terms, with dry gas output rising from 15.8 million bpd in 2022 to 20.6 million bpd in 2024, a 30% increase driven by higher associated gas production. Other plays posted moderate gains, with output rising 8% in the DJ Basin, 5% in the Marcellus, and 3% in the Eagle Ford. In contrast, the Haynesville and Utica saw declines of 4% each.

⁴ Other shale refers to all other shale plays with <400,000 bpd of oil production

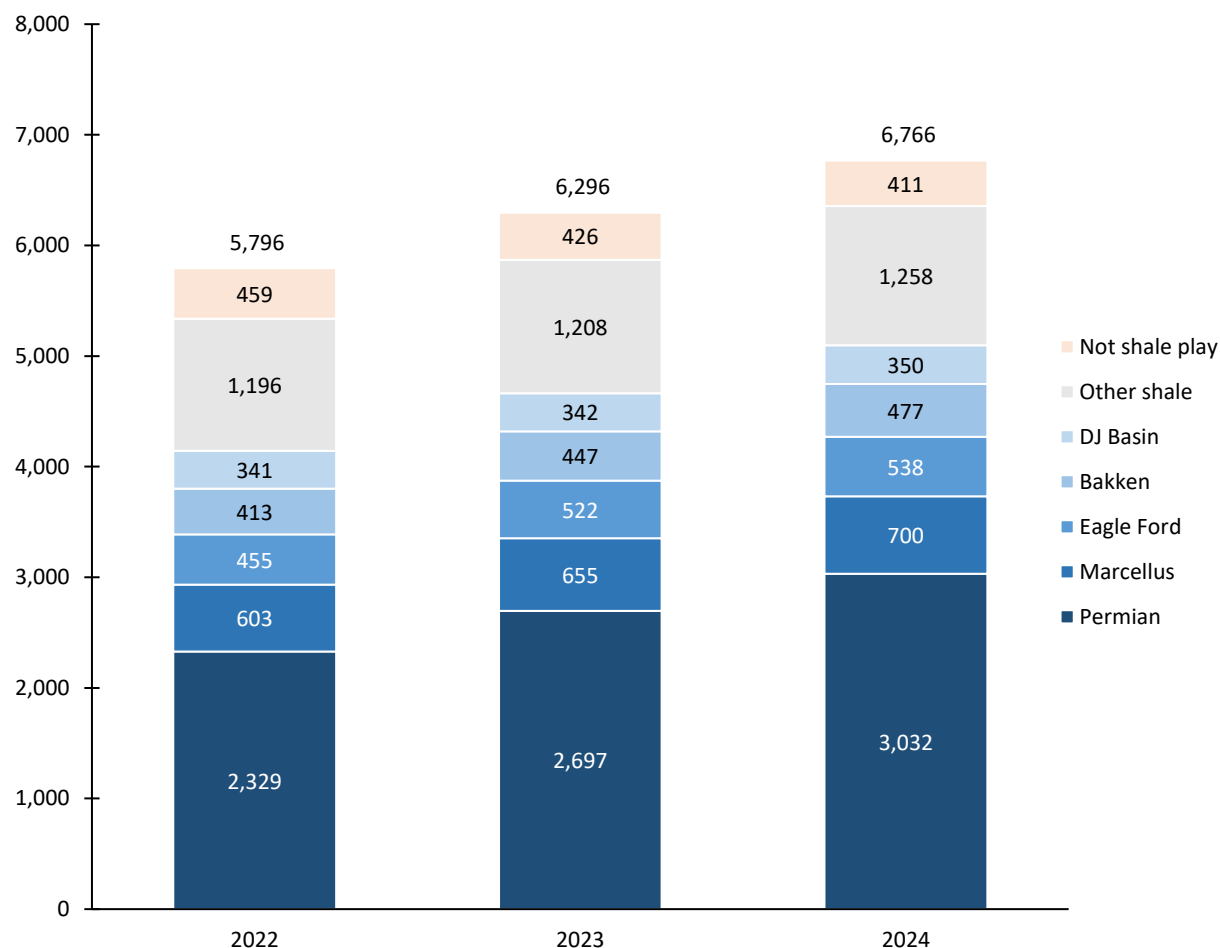


NGL production in the US grew 17% over the past three years. The surge in NGL production is primarily driven by oil-focused wells in the Permian Basin in Texas, which made up 45% of NGL production in 2024. The significant increase in the gas-to-oil ratio (GOR) and rising recovery in gallons of NGLs per Mcf of natural gas (GPMs) also contributed to the strong gains in the Permian where NGL output increased by 31% between 2022 and 2024 to over 3.0 million bpd. The gas-focused Marcellus region ranked second at 700,000 bpd, but the basin remains constrained due to tight takeaway capacity and dwindling regional demand. The Eagle Ford and Bakken are also growing in line with crude and condensate production, with the Eagle Ford reporting 534,000 bpd in 2024, an 18% increase from 2022 and the Bakken increasing 16% over the same period.

⁵ Other shale refers to all other shale plays with <2.8 million cubic feet per day of dry gas production.

Ethane remains the largest NGL by volume at 2.7 million bpd in 2024. Pentanes, however, recorded the fastest growth, up 26% between 2022 and 2024 to 815,000 bpd. When it comes to liquefied petroleum gas (LPG), propane and butane also saw strong gains, with production increasing 16% and 15%, respectively. A combination of factors has supported the fundamental supply expansion. They include adequate expansion, both in domestic cracker capacity and exports for ethane and material improvements in LPG fundamentals in the US, which incentivized producers to prioritize capital allocation to the NGL-rich parts of their upstream portfolio.

Figure 18: Onshore NGL production by products and region (thousand barrels per day)



Source: Rystad Energy research and analysis

6. Economic contribution assessment

6.1 National onshore

In this study, Rystad Energy classifies economic contribution in three distinct categories: direct, indirect, and induced. Direct economic contribution refers to the impacts from production revenue and spending as well as spending on oil and gas equipment or service supply chains that are directly connected to operational or capital projects. Indirect contributions represent the spending on equipment or services that serve as intermediate inputs to the supply chain that services direct economic activities, such as the steel purchased by OCTG manufacturers or increasing employment when drilling demand rises. Finally, induced contributions reflect the impact of the ensuing consumer activity from the employees of these projects and those within the overall supply chain, such as an employee using his/her wages to purchase new electronics, which in turn induces effects in the technology sector.

These economic contributions are further classified into four categories:

Employment: The number of people employed as a result of these economic contributions

Labor income: The level of wages and benefits received from all economic contributions

Contribution to GDP: The creation of value derived from the revenue generated from economic activities, minus the input and service costs.

Federal, state, and local taxes: The taxes and fees paid to governmental authorities

In terms of overall trends, direct and induced economic contributions were the largest drivers of economic activity between 2022-2024 for the US onshore upstream sector. Across labor income, contribution to GDP, and taxes, independents made up 87% of total economic contributions in 2024. Independents also contribute to 88% of employment within the upstream oil and gas sector. Within these independent companies, large public companies stood out across all economic contribution categories as the primary driver, responsible for 50% of GDP, 48% of taxes, 47% of labor income, and 42% of employment.

The specific breakdowns for each category are as follows:

Employment:

In 2024, the US onshore oil and gas sector supported over 3.6 million jobs across the value chain. Independent operators contributed 88%, or 3.1 million jobs. 550,000 of these jobs were direct employment opportunities resulting from activity in oil and gas production, with 172,000 from salaried employees, and another 378,000 from those involved in facilitating oil transactions as proprietors or through partnerships.⁶ Coupled with another 246,000 direct jobs from well-related capital expenditure, the field activity of independents was responsible for nearly 800,000 employment opportunities in 2024.

⁶ E.g. Someone who is not a salaried employee but earns labor income in the form of business profits. This data is drawn from IRS filings, specifically Schedule C for sole proprietorships and Schedule E for direct partnerships engaged in active business operations. It excludes passive income sources such as royalties or corporate stock ownership.

This production activity and capex investment helped further create 288,000 direct employment opportunities in state and local governments, leading to independents creating a total of nearly 1.1 million jobs from oil and gas production and investment.

Table 14: Economic contributions from onshore operations, independent vs non-independent operators			
	2022	2023	2024
Employment (Employees)	4,158,000	3,733,000	3,601,000
Globally Integrated	299,000	258,000	429,000
Independents	3,859,000	3,475,000	3,172,000
Labor Income (USD billion)	\$399	\$333	\$316
Globally Integrated	\$27	\$26	\$40
Independents	\$372	\$307	\$277
Contribution to GDP (USD billion)	\$795	\$573	\$563
Globally Integrated	\$60	\$43	\$75
Independents	\$735	\$530	\$488
Taxes (USD billion)	\$188	\$152	\$149
Globally Integrated	\$14	\$12	\$19
Independents	\$173	\$140	\$129

Source: Rystad Energy research and analysis

These 1.1 million jobs spurred further employment opportunities in both the supporting supply chain and in the ensuing consumer activity. While independents helped create 500,000 indirect jobs, their biggest contribution to employment was through income induced opportunities, at nearly 1.6 million jobs.⁷ In other words, every job created by direct employment through independents supported another 1.9 jobs in indirect and induced opportunities in 2024.

Among the categories of independents, large public companies stand out as the primary driver of employment opportunities, providing 42%, or 1.3 million jobs across direct, indirect, and induced opportunities. Their job-creation leverage is even higher than that of all independents, as each direct employment opportunity with large public companies created another 2.8 jobs in indirect and induced opportunities, thus underscoring the importance of large public independent companies to overall employment in their operating areas. Large private, small-mid size public, and small-mid size public companies provided another 26% in total employment opportunities, while other operators were responsible for the remaining 32% of jobs generated by independent operators.

Labor income:

The US onshore oil and gas sector created \$316 billion in labor income in 2024, of which \$277 billion, or 87%, came from independent operators. Over \$80 billion of these wages came from direct opportunities from both production activity at oilfields and capex investment. Coupled with another \$15 billion for proprietors and around \$26 billion for state and local government wages, respectively, the total direct labor income from independents reached \$121 billion. This figure represents nearly half of all wages paid by independents across the oil and gas value chain.

⁷ Jobs created as a result of income from royalties are included in the induced category

These production and capex investment opportunities helped support another \$156 billion in indirect and induced labor income. Indirect labor income totaled \$48 billion, while induced labor income made up the remaining \$107 billion. For every dollar spent on direct labor income, \$1.27 of indirect and induced labor income would be supported through the knock-on effects of these direct employment opportunities.

Among the categories of independents, large public companies stand out as the primary driver of labor income, providing 46%, or \$126 billion, across direct, indirect, and induced opportunities. For every dollar paid to the direct employment opportunities that these companies created, large independents also supported \$1.39 in wages paid by indirect and induced opportunities. Large private, small-mid size public, and small-mid size public companies provided another 29% in total labor income, while other operators were responsible for the remaining 26% of labor income paid by independent operators.

Contribution to GDP

The onshore oil and gas sector generated \$563 billion worth of GDP in 2024, which is approximately equivalent to 2% of US GDP that same year.⁸ Independent operators contributed 87% of this total figure, which translates to \$488 billion. Over a third of that GDP generation, or \$186 billion, came directly from production activity and well capex. Another \$30 billion came from the economic value generated by jobs at state and local governments, which brought independents' direct contribution to GDP to \$216 billion in 2024. In other words, oil and gas production and capex investment from independents directly helped generate almost 1% of US GDP in 2024.

This production and capex activity led to an additional \$272 billion of GDP generation. While indirect contributions reached \$73 billion, induced GDP generation from direct activities totaled \$198 billion. These figures mean that every dollar of GDP generated by direct activities from independents generated \$1.26 of secondary contributions.

Among the categories of independents, large public companies stand out as the primary driver of GDP contribution, providing 50%, or \$242 billion. Large public companies created \$1.13 worth of secondary contributions for every dollar of direct contributions. Large private, small-mid size public, and small-mid size public companies provided another 29% in GDP generation, while other operators were responsible for the remaining 21% of GDP generated by independent operators.

Taxes

The US collected \$149 billion worth of taxes from the oil and gas sector in 2024, split between \$71 billion to state and local taxes and \$78 billion to the federal government. 87% of these taxes came from independents, which translates into \$129 billion of government revenue. Over half of these taxes, or \$77 billion, were directly generated from production activity. Around 56% of these taxes from production, or \$43 billion, flowed back to state and local governments. This share makes production the greatest contributor to state and local revenues, both on a percentage and a dollar basis. When coupled with the \$24 billion in total revenue from well capex, production and capex investment by independent operators spurred over \$102 billion in total taxes, with \$52 billion collected by state and local

⁸ USD GDP in 2024: 29.8 trillion

governments. The remainder of taxes from independent operators comes from collections from state and local government, as well as royalties, at \$11 billion and \$16 billion, respectively.

Among the categories of independents, large public companies again stand out as the primary driver of taxes, providing 49%, or \$62 billion, of all taxes collected in 2024. These taxes were split almost 50/50 between state and local governments and the federal government. As with the overall independent operator trends, almost 60% of taxes came from production activities alone. Large private, small-mid size public, and small-mid size public companies provided another 30% in tax revenues, while other operators were responsible for the remaining 21% of tax revenues generated by independent operators.

Table 15: Onshore economic contributions, independent vs non-independent operators, by contribution type

	2022	2023	2024
Employment (Employees)	4,158,000	3,733,000	3,601,000
Globally Integrated	299,000	258,000	429,000
Direct	79,000	72,000	109,000
Indirect	44,000	51,000	76,000
Induced	93,000	95,000	143,000
Independent	3,859,000	3,475,000	3,172,000
Direct	1,057,000	1,153,000	1,084,000
Indirect	483,000	535,000	496,000
Induced	2,319,000	1,787,000	1,592,000
Labor Income (USD billion)	\$399	\$333	\$316
Globally Integrated	\$27	\$26	\$40
Direct	\$10	\$10	\$16
Indirect	\$4	\$6	\$8
Induced	\$12	\$10	\$16
Independent	\$372	\$307	\$277
Direct	\$175	\$137	\$121
Indirect	\$45	\$51	\$48
Induced	\$152	\$119	\$107
Contribution to GDP (USD billion)	\$795	\$573	\$563
Globally Integrated	\$60	\$43	\$75
Direct	\$31	\$15	\$33
Indirect	\$7	\$9	\$11
Induced	\$22	\$19	\$30
Independent	\$735	\$530	\$488
Direct	\$387	\$233	\$216
Indirect	\$69	\$78	\$73
Induced	\$279	\$219	\$199
Taxes (USD billion)	\$188	\$152	\$149
Globally Integrated	\$14	\$12	\$19
Federal	\$7	\$6	\$10

State and local	\$7	\$6	\$9
Independent	\$173	\$140	\$129
Federal	\$94	\$74	\$68
State and local	\$80	\$66	\$61

Source: Rystad Energy research and analysis

6.2 Onshore state level economic impact

All 50 states plus DC were considered for the onshore economic impact analysis. High production states see the largest economic impact, but there are potential indirect, induced, and tax effects in states even if there was no oil and gas production. Full detail on 2022-2024 state-level economic contributions can be found in Appendix H and Appendix I.

Onshore state level economic impact does not include any induced effects from royalties as royalty rights may be owned and utilized outside the state. Therefore, royalty effects are only included at the national level and not the state level. More information on IMPLAN economic assessment methodology can be found in Appendix A.

Employment:

In 2024, total activity across direct, indirect, and induced contributions from independents created 2.6 million jobs, not including jobs created as a result of royalty income. The top 10 states were responsible for 87% of these jobs. As expected in line with production, Texas leads in total job creation, at 41% of all jobs created by independents, which translates into 1.1 million jobs. New Mexico and North Dakota represent the second and third largest hubs of job creation, at 322,000 and 170,000 jobs, respectively.

Labor Income:

In 2024, total activity across direct, indirect, and induced contributions from independents created \$240 billion in labor income, excluding income from royalties. The top 10 states were responsible for 92% of these wages. Texas again leads in labor income creation, at 45% of all wages paid by independents, which translates into \$107 billion. New Mexico and Pennsylvania represent the second and third largest contributors to labor income, at \$27 billion and \$16 billion, respectively.

Contribution to GDP:

In 2024, total activity across direct, indirect, and induced contributions from independents created \$419 billion in US GDP, excluding GDP generated by royalties. The top 10 states were responsible for 92% of this GDP generation. Texas drives GDP generation, at 45% of GDP generated by all independents, which translates into \$190 billion. New Mexico and North Dakota represent the second and third largest contributors to GDP generation, at \$53 billion and \$30 billion, respectively.

Taxes:

In 2024, \$130 billion was collected in taxes at the federal, state and local levels from onshore activity. Over half (51%, \$67 billion) total taxes were collected at the federal level while 49%, or \$63 billion, was generated from the state and local levels. 87% of total taxes were generated by independent producers representing \$113 billion.

6.3 National offshore economic impact

Economic contributions from offshore activity are represented in the table below and account for activity across the Gulf of America, offshore California and Alaska. The Gulf of America comprises over 82% of all offshore economic contributions representing over 80% of employment, contributions to GDP, and taxes. Relative to onshore, offshore economic contributions totaled \$106 billion in 2024, representing just 10% of total onshore contributions in the same year. Unlike onshore, the majority of offshore contributions were derived from globally integrated operators who represented 58% of total contributions, or \$62 billion.

Table 16: Offshore economic contributions, independent vs non-independent operators			
	2022	2023	2024
Employment (Employees)	306,500	351,400	330,500
Globally Integrated	160,000	204,700	182,700
Independents	146,500	146,700	147,800
Labor income (USD billion)	\$28	\$32	\$31
Globally Integrated	\$14	\$18	\$17
Independents	\$14	\$14	\$14
Contribution to GDP (USD billion)	\$75	\$66	\$63
Globally Integrated	\$43	\$38	\$38
Independents	\$32	\$28	\$25
Taxes (USD billion)	\$13	\$14	\$13
Globally Integrated	\$7	\$8	\$7
Independents	\$6	\$6	\$6

Source: Rystad Energy research and analysis

Employment:

In 2024, offshore activity generated 330,500 jobs, not including jobs created as a result of royalty income. Independent operators represented 147,800 jobs, or 45% of total jobs generated from offshore activity. Gulf Coast states, defined as Texas, Louisiana, Mississippi and Alabama, benefited most from jobs generated by independents comprising 82%, or 121,500 jobs.

Labor Income:

Total activity in 2024 across direct, indirect and induced contributions from independents generated \$14 billion in labor income, excluding income from royalties. Gulf Coast states were responsible for 84% of these wages, or \$11.6 billion.

Contribution to GDP

In 2024, GDP from US offshore production across direct, indirect, and induced contributions totaled \$63 billion, of which independents made up 39% equaling \$25 billion. Of the \$63 billion GDP impact, \$32 billion was from direct contributions, and \$31 billion from indirect and induced sources. For every dollar contributed to GDP from offshore production an additional \$0.98 was generated from secondary

effects. If the independents are broken out, there is an additional \$1.27 of secondary contributions generated for every dollar of direct GDP contributions. Therefore, independents are more efficient than globally integrated companies at contributing to indirect and induced GDP additions for each dollar of direct contribution. Gulf Coast states were responsible for 87% of all GDP contributions

Taxes

In 2024, \$13 billion was generated in taxes from offshore production, with 86% from Gulf Coast states. Federal taxes accounted for 56%, while 44% were at the state and local level. Independents were responsible for 44% of the tax generation totaling \$6 billion. While taxes on direct production are entirely federal in the Gulf of America, tax revenue values span direct, indirect, and induced contributions from across the value chain, such as engineering or topside construction, and may lead to tax contributions in state and local jurisdictions.

Further details on offshore US economic contributions can be found in Appendix J.

7. Conclusion

Upstream onshore oil and gas operations contributed \$563 billion to the US GDP in 2024, or roughly 2% of the total national GDP, including direct, indirect, and induced effects. Additionally, the sector accounted for 3.6 million jobs in 2024 with a nationwide labor income of \$316 billion. Roughly, 87% of these economic impacts were attributable to independent operators, defined as companies that are upstream-oriented and lack vertical integration with refining. The remaining impacts were accounted for by globally integrated companies, which are vertically integrated across production and refining.

Annual economic contributions from 2022 to 2024 for independent producers is summarized in the table below. Independent operators contributed on average roughly 2% of national GDP and supported over 3 million jobs, annually. Throughout this period, independent operators also contributed over \$125 billion in federal, state and local taxes per year. GDP contributions from upstream oil and gas activities are highly correlated with oil price. Crude oil and condensate production in 2022 was 10% lower than 2024, but GDP value added from upstream production was 50% larger in 2022 than in 2024 as the oil price was 24% higher in 2022.

Table 17: Economic contributions from onshore independent operators			
	2022	2023	2024
Production ⁹ (million boepd)	32.2	34.2	35.0
Employment (Employees)	3,859,000	3,475,000	3,172,000
Labor Income (USD billion)	\$372	\$307	\$277
Contribution to GDP (USD billion)	\$735	\$530	\$488
Taxes (USD billion)	\$173	\$140	\$129

⁹ Production includes onshore crude and condensate, NGL, and dry gas volumes

8. Glossary

Acronym	Description
Bcf	Billion cubic feet
Bcfd	Billion cubic feet per day
boepd	Barrels of oil equivalent per day
bpd	Barrels per day
bbl	Barrels
capex	Capital expenditure
DJ Basin	Denver-Julesburg basin
E&P	Exploration and production
GDP	Gross domestic product
GOR	Gas-to-oil ratio
GPM	Gallons of NGL per thousand cubic feet of natural gas
kbpd	Thousand barrels per day
LNG	Liquefied natural gas
LPG	Liquefied petroleum gas
M&A	Mergers and acquisitions
Mcf	Thousand cubic feet
Mcfd	Thousand cubic feet per day
MMcf	Million cubic feet
MMcfd	Million cubic feet per day
NGLs	Natural gas liquids
OCTG	Oil country tubular goods
opex	Operating expenditure
SG&A opex	Sales, general, and administrative opex
USD	US dollar
WTI	West Texas Intermediate

9. Appendix

Appendix A: Economic impact analysis methodology

As detailed in the main body of this report, Rystad Energy developed comprehensive cost and revenue estimates for total and independent oil and natural gas production—both onshore and offshore—at the national level and by state, for the years 2022, 2023, and 2024. These values served as key inputs for the economic models used by Impact Economics Consulting LLC to quantify the resulting economic contributions and tax revenues using the IMPLAN economic impact analysis software.

IMPLAN modeling is a method used to measure the full economic impact of new revenues, spending, or investments. It relies on detailed data that show how industries, workers, and governments are connected through transactions. When additional money enters a specific sector, IMPLAN traces how that money flows through the broader economy, helping to quantify its total effect.

The model breaks down economic effects into three categories. Direct effects refer to the initial activity being measured, such as new revenues, spending or investment. Indirect effects capture how other industries respond by supplying additional goods and services to support that activity. Induced effects reflect the increased household spending that results when workers earn more income from the new economic activity. All these effects combined represent the total economic impact.

IMPLAN uses regional and national data to calculate how these dollars move through industries, households, and governments. It applies multipliers to estimate how much new economic activity is created beyond the initial amount. This helps decision-makers understand the broader benefits of a project or policy, including gains in jobs, labor income, business output, and tax revenue. A more detailed discussion of the IMPLAN model can be found on the IMPLAN website.¹⁰

Economic impacts were modeled across four categories: production-related revenues and costs, well capital expenditures, state and local government support from severance taxes and federal revenue sharing, and the economic effects of private royalty income.

Rystad's estimated production revenues and costs were allocated to the following IMPLAN sectors:

1. Oil and gas extraction
2. Support activities for oil and gas operations
3. Architectural, engineering, and related services (for seismic-related costs)
4. Pipeline transportation (does not include capital expenditures for pipeline construction)

Rystad's well capital expenditures were mapped to the following IMPLAN sectors:

1. Support activities for oil and gas operations

¹⁰ <https://implan.com/cloud/>

2. Drilling of oil and gas wells
3. Water sewage and other systems
4. Sand and gravel (proppant)
5. Iron, steel pipe and tube manufacturing from purchased steel
6. Refined petroleum products (Diesel fuel for power)
7. Oil and gas field machinery and equipment manufacturing

Oil and natural gas production also contributes to state and local government revenues through severance taxes and the federal government's sharing of royalties from production on federal lands. While severance taxes generate a much larger revenue stream overall, federal revenue sharing plays a key role in certain western states like New Mexico. Under current policy, the federal government returns roughly 50% of royalties and lease sale revenues to the states where the production takes place.

Severance taxes and federal revenue sharing were mapped to the following sectors.

1. Employment and payroll of state govt, hospitals and health services (15%)
2. Employment and payroll of state govt, other services (45%)
3. Employment and payroll of local govt, education (25%) mostly K-12.
4. Employment and payroll of state govt, education (15%) state colleges and universities.

The percentage allocation was based on an examination of average state budgets used to create the American Petroleum Institute report *Economic Benefits of Onshore Federal Oil and Natural Gas Leasing*.¹¹

It is important to note that the direct GDP impacts related to state and local government support are not included in the total GDP figures. This is because the GDP contribution from severance taxes is already captured within the production revenue and cost estimates. To prevent double counting, these amounts were excluded from the overall totals. Since severance taxes do not generate employment or labor income, the potential for double counting applies only to GDP, not to jobs or labor income.

Private royalties are another source of economic benefit from oil and natural gas production, as they increase the income of mineral rights holders. While mineral rights were traditionally owned by surface landowners, they can be sold separately, and many financial entities now aggregate and purchase these rights to generate royalty income for investors. Because of this separation, it is not possible to determine the specific region or state where the income is received. Therefore, in this report, the economic benefits from private royalties are estimated only at the national level.

To estimate the economic impact of increased royalty income, an IMPLAN household income event was created using the following household sector:

¹¹ Report was submitted as part of industry comments to the Bureau of Land Management September 23, 2023. <https://www.api.org/~media/files/news/2023/09/22/trade-comments-on-blm-proposed-leasing-rule>

1. Household income between \$100,000 and \$150,000.

This income range was selected as it represents a typical or median level for royalty recipients or investors.

Total economic benefits were estimated at the national level and by state. The impacts are categorized as direct, indirect (supply chain), and induced (household income-driven) effects. Estimates of total tax revenues—divided into state/local and federal taxes—are derived directly from the IMPLAN model results.

Appendix B: Operator grouping

Operator classifications, based on 2024 production ¹²			
Globally integrated	Large public	Large private	Small-mid size public
BP	Antero Resources	Aethon Energy	Aera
Chevron	APA Corporation	Ascent Resources, LLC	Ameredev
Eni	Chord Energy	Continental Resources	Amplify Energy
ExxonMobil	Civitas Resources	Encino Energy	Apex Energy
Shell	CNX Resources Corporation	Hilcorp Energy	Baytex Energy
TotalEnergies	Comstock Resources	Mewbourne Oil Company	Berry Corporation
	ConocoPhillips		BKV Corporation
	Coterra Energy		California Resources Corporation
	Crescent Energy Company		CrownRock
	Devon Energy		Diversified Energy Company
	Diamondback Energy		Franklin Mountain Energy
	Endeavor Energy Resources		HighPeak Energy
	EOG Resources		Infinity Natural Resources
	EQT Corporation		Kinder Morgan
	Expand Energy		Kosmos Energy
	Gulfport Energy		Mach Natural Resources
	Hess		Magnolia Oil & Gas
	Marathon Oil		Murphy Oil
	Matador Resources		Osaka Gas
	National Fuel Gas		Ridgemar Energy
	Occidental Petroleum		Riley Exploration Permian
	Ovintiv		Ring Energy
	Permian Resources		Sandridge Energy
	Range Resources		SilverBow Resources
	Repsol		Talos Energy
	SM Energy		Tellurian Inc
	Southwestern Energy		W&T Offshore
	Tokyo Gas		Woodside
	Vital Energy		

Source: Rystad Energy research and analysis

¹² Excludes Small-mid size private and other producers

Appendix C: Price strips

Price strips		
Year	Henry Hub gas price (USD/mcf)	WTI Cushing oil price (USD/barrel)
2022	\$6.69	\$94.9
2023	\$2.63	\$77.6
2024	\$2.27	\$76.6

Source: Rystad Energy research and analysis

Appendix D: Crude oil and condensate production state totals and contribution percentages

Crude oil and condensate production by state (thousand barrels per day)			
	2022	2023	2024
Texas	5,111	5,472	5,613
New Mexico	1,618	1,843	2,024
Offshore US	1,731	1,866	1,801
North Dakota	1,058	1,183	1,194
Colorado	438	456	461
Alaska	438	424	416
Oklahoma	430	442	403
California	337	333	311
Wyoming	248	264	290
Utah	151	187	206
Louisiana	97	91	81
Ohio	66	90	110
Kansas	76	75	73
Montana	56	62	73
West Virginia	42	50	40
Mississippi	34	34	33
Illinois	19	19	19
Pennsylvania	14	13	12
Michigan	12	11	10
Alabama	11	10	9
Arkansas	7	7	6
Kentucky	6	5	6
Nebraska	5	5	4
Indiana	5	4	4
Florida	3	3	2
South Dakota	3	3	2
New York	1	1	1
Nevada	1	1	~0
Oregon	1	1	~0
Maryland	1	1	~0
Grand Total	10,827	11,742	11,970

Source: Rystad Energy research and analysis

Crude oil and condensate production contribution by state (percent)			
	2022	2023	2024
Texas	43%	42%	43%
New Mexico	13%	14%	15%
Offshore US	14%	14%	14%
North Dakota	9%	9%	9%
Colorado	4%	4%	3%
Alaska	4%	3%	3%
Oklahoma	4%	3%	3%
California	3%	3%	2%
Wyoming	2%	2%	2%
Utah	1%	1%	2%
Louisiana	1%	1%	1%
Ohio	1%	1%	1%
Kansas	1%	1%	1%
Montana	0%	0%	1%
West Virginia	0%	0%	0%
Mississippi	0%	0%	0%
Illinois	0%	0%	0%
Pennsylvania	0%	0%	0%
Michigan	0%	0%	0%
Alabama	0%	0%	0%
Arkansas	0%	0%	0%
Kentucky	0%	0%	0%
Nebraska	0%	0%	0%
Indiana	0%	0%	0%
Florida	0%	0%	0%
South Dakota	0%	0%	0%
New York	0%	0%	0%
Nevada	0%	0%	0%
Oregon	0%	0%	0%
Maryland	0%	0%	0%
Grand Total	100%	100%	100%

Source: Rystad Energy research and analysis

Appendix E: Dry gas production state totals and contribution percentages

Dry gas production by state (million cubic feet per day)			
	2022	2023	2024
Texas	24,904	26,710	27,884
Pennsylvania	20,307	20,559	20,012
Louisiana	11,097	11,685	9,697
New Mexico	6,858	7,912	8,980
West Virginia	7,168	7,950	8,596
Oklahoma	6,900	6,959	6,717
Ohio	5,857	5,765	5,665
Colorado	4,463	4,429	4,480
Wyoming	2,691	2,517	2,462
North Dakota	2,186	2,455	2,598
Offshore US	1,861	1,777	1,642
Arkansas	1,139	1,066	967
Utah	722	808	850
Kansas	367	342	307
California	349	340	314
Alaska	272	258	273
Alabama	257	231	217
Virginia	242	223	219
Kentucky	220	232	150
Michigan	190	177	170
Montana	105	109	115
Mississippi	76	73	69
New York	26	23	31
Indiana	11	10	12
Idaho	7	7	5
Tennessee	6	6	5
Illinois	5	7	4
Florida	2	1	1
Oregon	1	~0	2
Nebraska	1	1	1
South Dakota	~0	~0	1
Arizona	~0	~0	~0
Maryland	~0	~0	~0
Grand Total	98,290	102,629	102,443

Source: Rystad Energy research and analysis

Dry gas contribution by state (percent)			
	2022	2023	2024
Texas	25%	26%	27%
Pennsylvania	21%	20%	20%
Louisiana	11%	11%	9%
New Mexico	7%	8%	9%
West Virginia	7%	8%	8%
Oklahoma	7%	7%	7%
Ohio	6%	6%	6%
Colorado	5%	4%	4%
Wyoming	3%	2%	2%
North Dakota	2%	2%	3%
Offshore US	2%	2%	2%
Arkansas	1%	1%	1%
Utah	1%	1%	1%
Kansas	0%	0%	0%
California	0%	0%	0%
Alaska	0%	0%	0%
Alabama	0%	0%	0%
Virginia	0%	0%	0%
Kentucky	0%	0%	0%
Michigan	0%	0%	0%
Montana	0%	0%	0%
Mississippi	0%	0%	0%
New York	0%	0%	0%
Indiana	0%	0%	0%
Idaho	0%	0%	0%
Tennessee	0%	0%	0%
Illinois	0%	0%	0%
Florida	0%	0%	0%
Oregon	0%	0%	0%
Nebraska	0%	0%	0%
South Dakota	0%	0%	0%
Arizona	0%	0%	0%
Maryland	0%	0%	0%
Grand Total	100%	100%	100%

Source: Rystad Energy research and analysis

Appendix F: NGL production state totals and contribution percentages

NGL production by state (thousand barrels per day)			
	2022	2023	2024
Texas	2,884	3,184	3,503
New Mexico	549	642	697
Oklahoma	558	543	543
West Virginia	432	481	514
North Dakota	408	448	476
Colorado	397	407	419
Pennsylvania	183	191	205
Offshore US	145	139	127
Ohio	94	115	124
Wyoming	102	103	106
Alaska	53	52	52
Louisiana	49	42	37
Utah	27	30	28
Kansas	27	26	24
California	15	14	14
Kentucky	10	10	11
Alabama	5	4	4
Montana	3	3	3
Michigan	1	1	2
Arkansas	~0	~0	~0
Florida	~0	~0	~0
Idaho	~0	~0	~0
Virginia	~0	~0	~0
Illinois	~0	~0	~0
Mississippi	~0	~0	~0
Tennessee	~0	~0	~0
Grand Total	5,941	6,436	6,892

Source: Rystad Energy research and analysis

NGL contribution by state (percent)			
	2022	2023	2024
Texas	49%	49%	51%
New Mexico	9%	10%	10%
Oklahoma	9%	8%	8%
West Virginia	7%	7%	7%
North Dakota	7%	7%	7%
Colorado	7%	6%	6%
Pennsylvania	3%	3%	3%
Offshore US	2%	2%	2%
Ohio	2%	2%	2%
Wyoming	2%	2%	2%
Alaska	1%	1%	1%
Louisiana	1%	1%	1%
Utah	0%	0%	0%
Kansas	0%	0%	0%
California	0%	0%	0%
Kentucky	0%	0%	0%
Alabama	0%	0%	0%
Montana	0%	0%	0%
Michigan	0%	0%	0%
Arkansas	0%	0%	0%
Florida	0%	0%	0%
Idaho	0%	0%	0%
Virginia	0%	0%	0%
Illinois	0%	0%	0%
Mississippi	0%	0%	0%
Tennessee	0%	0%	0%
Grand Total	100%	100%	100%

Source: Rystad Energy research and analysis

Appendix G: Select notable M&A deals

Select notable E&P acquisitions 2022-2024					
Year	Buyer operator segment	Buyer	Seller operator segment	Seller	Deal value, MUSD
2023	Globally Integrated	ExxonMobil	Large Public	Pioneer Natural Resources	64,500
2023	Globally Integrated	Chevron	Large Public	Hess	60,000
2024	Large Public	Diamondback Energy	Large Public	Endeavor Energy Resources	26,000
2024	Large Public	ConocoPhillips	Large Public	Marathon Oil	22,500
2023	Large Public	Occidental Petroleum	Small – Mid size Private	CrownRock	12,000
2024	Large Public	Expand Energy	Large Public	Southwestern Energy	11,700
2023	Globally Integrated	Chevron	Small – Mid size Private	PDC Energy	7,600
2024	Large Public	APA Corporation	Small – Mid size Public	Callon Petroleum	4,500
2022	Large Public	Permian Resources	Other Producers	Colgate Energy	3,900

Source: Rystad Energy research and analysis

Appendix H: Economic contributions by state

2024 Economic contributions by state, total onshore - royalties not included				
	Direct	Indirect	Induced	Total
Alabama				
Employment (Employees)	4,564	2,515	2,633	9,712
Labor Income (USD million)	199	216	162	577
Contribution to GDP (USD million)	276	363	312	951
Alaska				
Employment (Employees)	28,008	14,291	32,943	75,242
Labor Income (USD million)	4,658	1,308	2,414	8,380
Contribution to GDP (USD million)	9,695	2,352	4,398	16,445
Arizona				
Employment (Employees)	5,029	234	281	5,544
Labor Income (USD million)	19	22	20	61
Contribution to GDP (USD million)	29	39	37	105
Arkansas				
Employment (Employees)	7,662	3,829	3,608	15,099
Labor Income (USD million)	165	335	224	724
Contribution to GDP (USD million)	394	569	430	1,393
California				
Employment (Employees)	24,108	13,040	13,763	50,911
Labor Income (USD million)	1,098	1,791	1,092	3,981
Contribution to GDP (USD million)	2,206	2,431	2,037	6,674
Colorado				
Employment (Employees)	38,087	12,631	47,991	98,709
Labor Income (USD million)	7,048	1,406	3,455	11,909
Contribution to GDP (USD million)	10,473	1,947	6,471	18,891
Connecticut				
Employment (Employees)	984	0	22	1,006
Labor Income (USD million)	4	0	2	6
Contribution to GDP (USD million)	4	0	3	7
Delaware				
Employment (Employees)	181	44	88	313
Labor Income (USD million)	11	4	6	21
Contribution to GDP (USD million)	10	7	11	28
District Of Columbia				
Employment (Employees)	136	0	11	147
Labor Income (USD million)	3	0	1	4
Contribution to GDP (USD million)	3	0	2	5
Florida				
Employment (Employees)	10,295	568	760	11,623
Labor Income (USD million)	63	49	50	162

Contribution to GDP (USD million)	84	78	95	257
Georgia				
Employment (Employees)	2,542	623	693	3,858
Labor Income (USD million)	43	55	45	143
Contribution to GDP (USD million)	94	103	87	284
Hawaii				
Employment (Employees)	302	29	31	362
Labor Income (USD million)	2	3	2	7
Contribution to GDP (USD million)	2	4	4	10
Idaho				
Employment (Employees)	832	40	37	909
Labor Income (USD million)	2	4	2	8
Contribution to GDP (USD million)	3	6	5	14
Illinois				
Employment (Employees)	10,497	3,013	3,841	17,351
Labor Income (USD million)	298	312	280	890
Contribution to GDP (USD million)	416	527	508	1,451
Indiana				
Employment (Employees)	1,715	1,817	1,804	5,336
Labor Income (USD million)	107	175	124	406
Contribution to GDP (USD million)	320	311	225	856
Iowa				
Employment (Employees)	1,309	296	284	1,889
Labor Income (USD million)	15	27	19	61
Contribution to GDP (USD million)	32	49	35	116
Kansas				
Employment (Employees)	33,024	5,164	7,649	45,837
Labor Income (USD million)	787	452	494	1,733
Contribution to GDP (USD million)	1,380	747	918	3,045
Kentucky				
Employment (Employees)	4,743	972	1,012	6,727
Labor Income (USD million)	60	87	68	215
Contribution to GDP (USD million)	87	136	123	346
Louisiana				
Employment (Employees)	40,286	19,260	35,249	94,795
Labor Income (USD million)	3,096	1,551	2,166	6,813
Contribution to GDP (USD million)	3,390	2,569	4,111	10,070
Maine				
Employment (Employees)	136	0	0	136
Labor Income (USD million)	0	0	0	0
Contribution to GDP (USD million)	0	0	0	0
Maryland				
Employment (Employees)	1,178	100	178	1,456

Labor Income (USD million)	22	10	12	44
Contribution to GDP (USD million)	20	17	23	60
Massachusetts				
Employment (Employees)	233	135	446	814
Labor Income (USD million)	63	15	39	117
Contribution to GDP (USD million)	64	25	65	154
Michigan				
Employment (Employees)	6,328	1,802	1,940	10,070
Labor Income (USD million)	133	184	132	449
Contribution to GDP (USD million)	158	277	240	675
Minnesota				
Employment (Employees)	2,152	702	975	3,829
Labor Income (USD million)	76	73	71	220
Contribution to GDP (USD million)	85	122	126	333
Mississippi				
Employment (Employees)	6,260	990	1,319	8,569
Labor Income (USD million)	123	73	76	272
Contribution to GDP (USD million)	164	121	149	434
Missouri				
Employment (Employees)	2,656	359	410	3,425
Labor Income (USD million)	25	34	27	86
Contribution to GDP (USD million)	28	57	50	135
Montana				
Employment (Employees)	5,748	2,228	3,303	11,279
Labor Income (USD million)	312	201	220	733
Contribution to GDP (USD million)	528	288	394	1,210
Nebraska				
Employment (Employees)	1,266	125	142	1,533
Labor Income (USD million)	13	12	9	34
Contribution to GDP (USD million)	34	19	18	71
Nevada				
Employment (Employees)	1,498	62	83	1,643
Labor Income (USD million)	8	5	6	19
Contribution to GDP (USD million)	29	10	11	50
New Hampshire				
Employment (Employees)	231	9	10	250
Labor Income (USD million)	1	1	1	3
Contribution to GDP (USD million)	1	1	1	3
New Jersey				
Employment (Employees)	1,022	208	647	1,877
Labor Income (USD million)	97	22	51	170
Contribution to GDP (USD million)	100	37	91	228
New Mexico				

Employment (Employees)	139,899	58,481	123,697	322,077
Labor Income (USD million)	14,093	4,899	7,822	26,814
Contribution to GDP (USD million)	30,113	8,034	15,058	53,205
New York				
Employment (Employees)	3,415	366	2,622	6,403
Labor Income (USD million)	454	41	227	722
Contribution to GDP (USD million)	459	70	408	937
North Carolina				
Employment (Employees)	1,986	194	242	2,422
Labor Income (USD million)	20	18	16	54
Contribution to GDP (USD million)	26	31	30	87
North Dakota				
Employment (Employees)	69,830	38,289	62,120	170,239
Labor Income (USD million)	6,847	3,724	4,340	14,911
Contribution to GDP (USD million)	17,060	5,591	7,472	30,123
Ohio				
Employment (Employees)	23,616	21,292	25,826	70,734
Labor Income (USD million)	1,731	1,916	1,721	5,368
Contribution to GDP (USD million)	2,980	3,142	3,180	9,302
Oklahoma				
Employment (Employees)	79,447	25,094	64,643	169,184
Labor Income (USD million)	8,759	2,254	3,906	14,919
Contribution to GDP (USD million)	11,783	3,488	7,417	22,688
Oregon				
Employment (Employees)	1,276	43	43	1,362
Labor Income (USD million)	3	4	3	10
Contribution to GDP (USD million)	4	7	6	17
Pennsylvania				
Employment (Employees)	29,985	18,608	68,717	117,310
Labor Income (USD million)	8,844	1,777	4,985	15,606
Contribution to GDP (USD million)	9,891	2,846	8,747	21,484
Rhode Island				
Employment (Employees)	141	10	9	160
Labor Income (USD million)	0	1	1	2
Contribution to GDP (USD million)	1	2	1	4
South Carolina				
Employment (Employees)	1,268	102	88	1,458
Labor Income (USD million)	5	9	5	19
Contribution to GDP (USD million)	5	15	11	31
South Dakota				
Employment (Employees)	1,179	72	72	1,323
Labor Income (USD million)	7	6	5	18
Contribution to GDP (USD million)	4	9	9	22

Tennessee				
Employment (Employees)	2,863	643	599	4,105
Labor Income (USD million)	29	61	43	133
Contribution to GDP (USD million)	50	102	78	230
Texas				
Employment (Employees)	414,237	195,809	462,376	1,072,422
Labor Income (USD million)	55,217	20,770	31,439	107,426
Contribution to GDP (USD million)	102,059	29,924	58,249	190,232
Utah				
Employment (Employees)	13,536	11,753	14,066	39,355
Labor Income (USD million)	1,109	1,059	895	3,063
Contribution to GDP (USD million)	1,748	1,616	1,791	5,155
Vermont				
Employment (Employees)	475	0	2	477
Labor Income (USD million)	0	0	0	0
Contribution to GDP (USD million)	0	0	0	0
Virginia				
Employment (Employees)	3,033	544	733	4,310
Labor Income (USD million)	49	61	51	161
Contribution to GDP (USD million)	74	87	95	256
Washington				
Employment (Employees)	1,801	6	10	1,817
Labor Income (USD million)	2	1	1	4
Contribution to GDP (USD million)	2	1	2	5
West Virginia				
Employment (Employees)	26,447	25,591	34,392	86,430
Labor Income (USD million)	2,576	2,030	2,277	6,883
Contribution to GDP (USD million)	5,024	3,174	4,143	1,2341
Wisconsin				
Employment (Employees)	1,339	581	620	2,540
Labor Income (USD million)	37	55	42	134
Contribution to GDP (USD million)	47	93	78	218
Wyoming				
Employment (Employees)	24,241	12,802	19,855	56,898
Labor Income (USD million)	2,685	1,173	1,154	5,012
Contribution to GDP (USD million)	4,530	1,807	2,293	8,630

Source: Rystad Energy research and analysis

2023 Economic contributions by state, total onshore - royalties not included				
	Direct	Indirect	Induced	Total
Alabama				
Employment (Employees)	5,027	2,889	3,185	11,101
Labor Income (USD million)	263	242	192	697
Contribution to GDP (USD million)	302	414	371	1,087
Alaska				
Employment (Employees)	24,407	11,835	28,395	64,637
Labor Income (USD million)	4,003	1,058	2,047	7,108
Contribution to GDP (USD million)	11,286	1,930	3,724	16,940
Arizona				
Employment (Employees)	5,055	293	370	5,718
Labor Income (USD million)	26	27	26	79
Contribution to GDP (USD million)	38	47	48	133
Arkansas				
Employment (Employees)	8,428	4,162	4,257	16,847
Labor Income (USD million)	234	356	258	848
Contribution to GDP (USD million)	563	618	497	1,678
California				
Employment (Employees)	25,693	14,574	16,156	56,423
Labor Income (USD million)	1,326	1,938	1,261	4,525
Contribution to GDP (USD million)	2,261	2,669	2,351	7,281
Colorado				
Employment (Employees)	40,691	13,154	58,805	112,650
Labor Income (USD million)	8,630	1,439	4,186	14,255
Contribution to GDP (USD million)	12,146	1,998	7,826	21,970
Connecticut				
Employment (Employees)	984	0	35	1,019
Labor Income (USD million)	6	0	3	9
Contribution to GDP (USD million)	6	0	5	11
Delaware				
Employment (Employees)	187	55	127	369
Labor Income (USD million)	16	5	9	30
Contribution to GDP (USD million)	15	9	16	40
District Of Columbia				
Employment (Employees)	136	0	17	153
Labor Income (USD million)	4	0	2	6
Contribution to GDP (USD million)	4	0	3	7
Florida				
Employment (Employees)	10,303	620	923	11,846
Labor Income (USD million)	79	52	60	191
Contribution to GDP (USD million)	121	85	113	319
Georgia				

Employment (Employees)	2,611	779	872	4,262
Labor Income (USD million)	54	68	56	178
Contribution to GDP (USD million)	118	127	108	353
Hawaii				
Employment (Employees)	306	36	39	381
Labor Income (USD million)	3	3	3	9
Contribution to GDP (USD million)	2	5	5	12
Idaho				
Employment (Employees)	837	47	45	929
Labor Income (USD million)	3	4	3	10
Contribution to GDP (USD million)	5	7	6	18
Illinois				
Employment (Employees)	11,253	3,880	5,125	20,258
Labor Income (USD million)	401	393	368	1,162
Contribution to GDP (USD million)	312	667	667	1,646
Indiana				
Employment (Employees)	1,624	2,089	1,968	5,681
Labor Income (USD million)	108	200	133	441
Contribution to GDP (USD million)	368	355	241	964
Iowa				
Employment (Employees)	1,346	370	355	2,071
Labor Income (USD million)	18	34	23	75
Contribution to GDP (USD million)	40	60	43	143
Kansas				
Employment (Employees)	33,198	5,153	8,143	46,494
Labor Income (USD million)	865	440	518	1,823
Contribution to GDP (USD million)	1,756	728	961	3,445
Kentucky				
Employment (Employees)	4,907	1,159	1,260	7,326
Labor Income (USD million)	77	101	83	261
Contribution to GDP (USD million)	77	159	150	386
Louisiana				
Employment (Employees)	45,112	23,961	43,908	112,981
Labor Income (USD million)	3,851	1,883	2,652	8,386
Contribution to GDP (USD million)	4,935	3,141	5,029	13,105
Maine				
Employment (Employees)	136	0	0	136
Labor Income (USD million)	0	0	0	0
Contribution to GDP (USD million)	0	0	0	0
Maryland				
Employment (Employees)	1,190	125	249	1,564
Labor Income (USD million)	31	12	17	60
Contribution to GDP (USD million)	29	20	32	81

Massachusetts				
Employment (Employees)	250	169	667	1,086
Labor Income (USD million)	94	19	57	170
Contribution to GDP (USD million)	96	31	97	224
Michigan				
Employment (Employees)	6,534	1,993	2,304	10,831
Labor Income (USD million)	165	197	154	516
Contribution to GDP (USD million)	165	302	280	747
Minnesota				
Employment (Employees)	2,232	878	1,316	4,426
Labor Income (USD million)	107	90	95	292
Contribution to GDP (USD million)	119	150	168	437
Mississippi				
Employment (Employees)	7,207	2,112	2,431	11,750
Labor Income (USD million)	201	152	139	492
Contribution to GDP (USD million)	2	249	273	524
Missouri				
Employment (Employees)	2,697	449	524	3,670
Labor Income (USD million)	33	41	34	108
Contribution to GDP (USD million)	36	71	63	170
Montana				
Employment (Employees)	6,123	2,914	4,026	13,063
Labor Income (USD million)	356	261	264	881
Contribution to GDP (USD million)	598	366	473	1,437
Nebraska				
Employment (Employees)	1,378	148	210	1,736
Labor Income (USD million)	21	13	13	47
Contribution to GDP (USD million)	26	22	26	74
Nevada				
Employment (Employees)	1,488	61	78	1,627
Labor Income (USD million)	7	5	5	17
Contribution to GDP (USD million)	35	9	10	54
New Hampshire				
Employment (Employees)	232	11	13	256
Labor Income (USD million)	1	1	1	3
Contribution to GDP (USD million)	1	2	2	5
New Jersey				
Employment (Employees)	1,047	261	965	2,273
Labor Income (USD million)	146	27	76	249
Contribution to GDP (USD million)	148	46	135	329
New Mexico				
Employment (Employees)	130,767	55,376	116,406	302,549
Labor Income (USD million)	13,117	4,511	7,229	24,857

Contribution to GDP (USD million)	27,198	7,459	13,895	48,552
New York				
Employment (Employees)	3,459	442	3,980	7,881
Labor Income (USD million)	679	49	343	1,071
Contribution to GDP (USD million)	690	82	618	1,390
North Carolina				
Employment (Employees)	2,007	243	329	2,579
Labor Income (USD million)	28	22	22	72
Contribution to GDP (USD million)	36	38	41	115
North Dakota				
Employment (Employees)	67,828	36,602	60,555	164,985
Labor Income (USD million)	6,660	3,451	4,153	14,264
Contribution to GDP (USD million)	18,209	5,233	7,136	30,578
Ohio				
Employment (Employees)	24,730	21,285	26,905	72,920
Labor Income (USD million)	1,867	1,859	1,763	5,489
Contribution to GDP (USD million)	3,074	3,096	3,255	9,425
Oklahoma				
Employment (Employees)	87,758	26,391	75,470	189,619
Labor Income (USD million)	10,382	2,261	4,488	17,131
Contribution to GDP (USD million)	12,948	3,553	8,506	25,007
Oregon				
Employment (Employees)	1,281	53	54	1,388
Labor Income (USD million)	3	5	4	12
Contribution to GDP (USD million)	5	9	7	21
Pennsylvania				
Employment (Employees)	36,445	29,229	82,076	147,750
Labor Income (USD million)	9,686	3,109	5,852	18,647
Contribution to GDP (USD million)	12,597	4,624	10,270	27,491
Rhode Island				
Employment (Employees)	142	12	11	165
Labor Income (USD million)	1	1	1	3
Contribution to GDP (USD million)	1	2	1	4
South Carolina				
Employment (Employees)	1,279	128	112	1,519
Labor Income (USD million)	6	11	7	24
Contribution to GDP (USD million)	7	18	13	38
South Dakota				
Employment (Employees)	1,171	67	78	1,316
Labor Income (USD million)	8	6	5	19
Contribution to GDP (USD million)	(6)	8	9	11
Tennessee				
Employment (Employees)	2,966	817	763	4,546

Labor Income (USD million)	39	76	54	169
Contribution to GDP (USD million)	68	127	97	292
Texas				
Employment (Employees)	462,575	222,685	556,580	1,241,840
Labor Income (USD million)	66,420	22,825	37,279	126,524
Contribution to GDP (USD million)	112,178	33,342	69,006	214,526
Utah				
Employment (Employees)	12,473	10,273	12,675	35,421
Labor Income (USD million)	1,016	896	795	2,707
Contribution to GDP (USD million)	1,372	1,386	1,587	4,345
Vermont				
Employment (Employees)	475	0	3	478
Labor Income (USD million)	1	0	0	1
Contribution to GDP (USD million)	1	0	0	1
Virginia				
Employment (Employees)	3,212	407	840	4,459
Labor Income (USD million)	79	38	57	174
Contribution to GDP (USD million)	112	61	107	280
Washington				
Employment (Employees)	1,802	7	14	1,823
Labor Income (USD million)	2	1	1	4
Contribution to GDP (USD million)	3	1	2	6
West Virginia				
Employment (Employees)	31,351	23,790	35,444	90,585
Labor Income (USD million)	2,954	1,831	2,296	7,081
Contribution to GDP (USD million)	5,293	2,907	4,176	12,376
Wisconsin				
Employment (Employees)	1,405	727	791	2,923
Labor Income (USD million)	48	67	53	168
Contribution to GDP (USD million)	60	115	98	273
Wyoming				
Employment (Employees)	26,920	12,760	20,709	60,389
Labor Income (USD million)	2,899	1,105	1,177	5,181
Contribution to GDP (USD million)	3,530	1,734	2,337	7,601

Source: Rystad Energy research and analysis

2022 Economic contributions by state, total onshore - royalties not included				
	Direct	Indirect	Induced	Total
Alabama				
Employment (Employees)	3,075	2,674	2,826	8,575
Labor Income (USD million)	208	222	169	599
Contribution to GDP (USD million)	873	378	324	1,575
Alaska				
Employment (Employees)	21,290	8,986	23,566	53,842
Labor Income (USD million)	3,300	806	1,677	5,783
Contribution to GDP (USD million)	12,708	1,477	3,044	17,229
Arizona				
Employment (Employees)	2,960	273	543	3,776
Labor Income (USD million)	49	25	37	111
Contribution to GDP (USD million)	23	44	69	136
Arkansas				
Employment (Employees)	6,275	3,725	4,255	14,255
Labor Income (USD million)	275	313	253	841
Contribution to GDP (USD million)	1,764	549	486	2,799
California				
Employment (Employees)	21,801	14,352	17,829	53,982
Labor Income (USD million)	1,586	1,883	1,377	4,846
Contribution to GDP (USD million)	4,941	2,606	2,559	10,106
Colorado				
Employment (Employees)	36,352	12,619	102,119	151,090
Labor Income (USD million)	14,907	1,337	7,142	23,386
Contribution to GDP (USD million)	15,155	1,879	13,172	30,206
Connecticut				
Employment (Employees)	534	0	19	553
Labor Income (USD million)	3	0	2	5
Contribution to GDP (USD million)	0	0	3	3
Delaware				
Employment (Employees)	121	51	204	376
Labor Income (USD million)	27	4	13	44
Contribution to GDP (USD million)	2	8	25	35
District Of Columbia				
Employment (Employees)	102	0	47	149
Labor Income (USD million)	10	0	4	14
Contribution to GDP (USD million)	0	0	7	7
Florida				
Employment (Employees)	6,750	604	654	8,008
Labor Income (USD million)	43	50	42	135
Contribution to GDP (USD million)	103	81	79	263
Georgia				

Employment (Employees)	1,652	726	773	3,151
Labor Income (USD million)	43	63	49	155
Contribution to GDP (USD million)	103	116	94	313
Hawaii				
Employment (Employees)	198	34	40	272
Labor Income (USD million)	3	3	3	9
Contribution to GDP (USD million)	2	5	5	12
Idaho				
Employment (Employees)	502	44	63	609
Labor Income (USD million)	6	4	4	14
Contribution to GDP (USD million)	16	6	7	29
Illinois				
Employment (Employees)	8,105	3,683	5,960	17,748
Labor Income (USD million)	524	367	422	1,313
Contribution to GDP (USD million)	604	624	759	1,987
Indiana				
Employment (Employees)	3,069	2,105	2,076	7,250
Labor Income (USD million)	119	197	139	455
Contribution to GDP (USD million)	245	350	250	845
Iowa				
Employment (Employees)	719	345	339	1,403
Labor Income (USD million)	18	31	21	70
Contribution to GDP (USD million)	37	55	40	132
Kansas				
Employment (Employees)	25,039	6,787	11,307	43,133
Labor Income (USD million)	1,172	592	709	2,473
Contribution to GDP (USD million)	1,293	956	1,307	3,556
Kentucky				
Employment (Employees)	3,694	1,296	1,656	6,646
Labor Income (USD million)	122	111	107	340
Contribution to GDP (USD million)	479	176	193	848
Louisiana				
Employment (Employees)	43,157	25,258	62,604	131,019
Labor Income (USD million)	6,256	1,949	3,654	11,859
Contribution to GDP (USD million)	17,475	3,263	6,904	27,642
Maine				
Employment (Employees)	83	0	7	90
Labor Income (USD million)	1	0	0	1
Contribution to GDP (USD million)	0	0	1	1
Maryland				
Employment (Employees)	906	117	171	1,194
Labor Income (USD million)	17	11	12	40
Contribution to GDP (USD million)	7	19	22	48

Massachusetts				
Employment (Employees)	665	157	301	1,123
Labor Income (USD million)	31	17	25	73
Contribution to GDP (USD million)	10	28	42	80
Michigan				
Employment (Employees)	4,675	1,919	3,117	9,711
Labor Income (USD million)	277	187	204	668
Contribution to GDP (USD million)	665	287	367	1,319
Minnesota				
Employment (Employees)	1,431	818	1,424	3,673
Labor Income (USD million)	122	83	101	306
Contribution to GDP (USD million)	47	138	177	362
Mississippi				
Employment (Employees)	5,325	1,917	2,949	10,191
Labor Income (USD million)	285	136	161	582
Contribution to GDP (USD million)	821	224	318	1,363
Missouri				
Employment (Employees)	1,580	418	439	2,437
Labor Income (USD million)	23	38	28	89
Contribution to GDP (USD million)	26	65	52	143
Montana				
Employment (Employees)	6,095	2,921	5,429	14,445
Labor Income (USD million)	561	251	346	1,158
Contribution to GDP (USD million)	1,248	359	612	2,219
Nebraska				
Employment (Employees)	932	180	233	1,345
Labor Income (USD million)	22	17	15	54
Contribution to GDP (USD million)	77	27	28	132
Nevada				
Employment (Employees)	905	38	42	985
Labor Income (USD million)	3	3	3	9
Contribution to GDP (USD million)	4	6	5	15
New Hampshire				
Employment (Employees)	199	10	9	218
Labor Income (USD million)	0	1	1	2
Contribution to GDP (USD million)	0	2	1	3
New Jersey				
Employment (Employees)	707	243	5,439	6,389
Labor Income (USD million)	883	25	421	1,329
Contribution to GDP (USD million)	18	42	734	794
New Mexico				
Employment (Employees)	138,549	44,407	112,118	295,074
Labor Income (USD million)	13,521	3,554	6,812	23,887

Contribution to GDP (USD million)	43,556	5,889	13,091	62,536
New York				
Employment (Employees)	2,297	413	8,230	10,940
Labor Income (USD million)	1,352	45	696	2,093
Contribution to GDP (USD million)	43	76	1,233	1,352
North Carolina				
Employment (Employees)	1,486	227	246	1,959
Labor Income (USD million)	16	20	16	52
Contribution to GDP (USD million)	15	35	30	80
North Dakota				
Employment (Employees)	68,033	29,761	55,896	153,690
Labor Income (USD million)	6,476	2,767	3,769	13,012
Contribution to GDP (USD million)	27,264	4,193	6,436	37,893
Ohio				
Employment (Employees)	19,709	19,894	25,406	65,009
Labor Income (USD million)	1,730	1,699	1,640	5,069
Contribution to GDP (USD million)	11,115	2,844	3,021	16,980
Oklahoma				
Employment (Employees)	77,441	26,266	100,243	203,950
Labor Income (USD million)	13,945	2,180	5,824	21,949
Contribution to GDP (USD million)	23,725	3,448	10,944	38,117
Oregon				
Employment (Employees)	784	50	54	888
Labor Income (USD million)	4	5	4	13
Contribution to GDP (USD million)	4	8	7	19
Pennsylvania				
Employment (Employees)	31,495	27,172	80,478	139,145
Labor Income (USD million)	9,443	2,852	5,646	17,941
Contribution to GDP (USD million)	35,536	4,240	9,888	49,664
Rhode Island				
Employment (Employees)	100	11	11	122
Labor Income (USD million)	1	1	1	3
Contribution to GDP (USD million)	1	2	1	4
South Carolina				
Employment (Employees)	1,203	119	98	1,420
Labor Income (USD million)	5	10	6	21
Contribution to GDP (USD million)	5	17	12	34
South Dakota				
Employment (Employees)	621	67	109	797
Labor Income (USD million)	13	5	7	25
Contribution to GDP (USD million)	62	8	12	82
Tennessee				
Employment (Employees)	1,787	753	711	3,251

Labor Income (USD million)	35	69	50	154
Contribution to GDP (USD million)	46	116	89	251
Texas				
Employment (Employees)	431,620	200,509	732,861	1,364,990
Labor Income (USD million)	90,503	19,975	48,212	158,690
Contribution to GDP (USD million)	156,821	29,424	88,456	274,701
Utah				
Employment (Employees)	10,949	8,426	11,265	30,640
Labor Income (USD million)	969	723	700	2,392
Contribution to GDP (USD million)	3,758	1,122	1,394	6,274
Vermont				
Employment (Employees)	97	0	0	97
Labor Income (USD million)	0	0	0	0
Contribution to GDP (USD million)	0	0	0	0
Virginia				
Employment (Employees)	1,865	477	792	3,134
Labor Income (USD million)	63	50	53	166
Contribution to GDP (USD million)	408	74	99	581
Washington				
Employment (Employees)	1,432	6	14	1,452
Labor Income (USD million)	2	1	1	4
Contribution to GDP (USD million)	0	1	2	3
West Virginia				
Employment (Employees)	29,827	20,817	34,750	85,394
Labor Income (USD million)	3,112	1,578	2,204	6,894
Contribution to GDP (USD million)	15,889	2,509	4,000	22,398
Wisconsin				
Employment (Employees)	950	678	889	2,517
Labor Income (USD million)	65	62	59	186
Contribution to GDP (USD million)	45	105	107	257
Wyoming				
Employment (Employees)	27,226	11,335	20,216	58,777
Labor Income (USD million)	2,954	959	1,122	5,035
Contribution to GDP (USD million)	9,489	1,510	2,228	13,227

Source: Rystad Energy research and analysis

Appendix I: Taxes by state

2022-2024 Taxes by state, total onshore			
	2022	2023	2024
Alabama	301	279	236
Federal (USD million)	163	161	135
State and Local (USD million)	138	118	101
Alaska	3,528	3,625	3,624
Federal (USD million)	1,698	1,849	1,869
State and Local (USD million)	1,830	1,776	1,754
Arizona	36	27	21
Federal (USD million)	25	18	14
State and Local (USD million)	12	9	7
Arkansas	520	367	327
Federal (USD million)	266	200	176
State and Local (USD million)	254	167	151
California	2,385	2,246	2,050
Federal (USD million)	1,208	1,170	1,061
State and Local (USD million)	1,177	1,076	989
Colorado	9,332	5,720	4,843
Federal (USD million)	5,584	3,332	2,802
State and Local (USD million)	3,748	2,388	2,041
Connecticut	2	3	2
Federal (USD million)	1	2	1
State and Local (USD million)	1	1	1
Delaware	14	9	6
Federal (USD million)	9	6	4
State and Local (USD million)	5	3	2
District Of Columbia	5	2	1
Federal (USD million)	3	1	1
State and Local (USD million)	2	1	0
Florida	60	74	63
Federal (USD million)	34	46	39
State and Local (USD million)	26	27	24
Georgia	57	67	53
Federal (USD million)	37	43	34
State and Local (USD million)	20	23	18
Hawaii	3	3	2
Federal (USD million)	2	2	1
State and Local (USD million)	1	1	1
Idaho	6	4	3
Federal (USD million)	4	2	2
State and Local (USD million)	2	1	1

Illinois	512	460	347
Federal (USD million)	298	266	200
State and Local (USD million)	214	194	146
Indiana	162	148	154
Federal (USD million)	102	100	97
State and Local (USD million)	60	49	57
Iowa	26	28	23
Federal (USD million)	16	17	14
State and Local (USD million)	10	11	9
Kansas	1,013	624	628
Federal (USD million)	530	377	383
State and Local (USD million)	482	247	246
Kentucky	174	115	112
Federal (USD million)	86	60	58
State and Local (USD million)	87	55	54
Louisiana	5,593	4,144	3,624
Federal (USD million)	3,138	1,965	1,660
State and Local (USD million)	2,455	2,179	1,964
Maine	0	0	0
Federal (USD million)	0	0	0
State and Local (USD million)	0	0	0
Maryland	14	21	15
Federal (USD million)	8	12	9
State and Local (USD million)	6	9	6
Massachusetts	25	57	38
Federal (USD million)	16	37	25
State and Local (USD million)	8	19	12
Michigan	297	213	188
Federal (USD million)	167	121	106
State and Local (USD million)	130	92	82
Minnesota	104	101	74
Federal (USD million)	63	60	45
State and Local (USD million)	41	41	29
Mississippi	310	255	229
Federal (USD million)	152	125	111
State and Local (USD million)	158	130	118
Missouri	30	37	29
Federal (USD million)	19	23	18
State and Local (USD million)	11	14	11
Montana	578	461	476
Federal (USD million)	289	226	236
State and Local (USD million)	289	235	240
Nebraska	25	19	11

Federal (USD million)	14	12	7
State and Local (USD million)	12	7	4
Nevada	3	7	9
Federal (USD million)	2	4	5
State and Local (USD million)	1	3	4
New Hampshire	1	1	1
Federal (USD million)	0	1	1
State and Local (USD million)	0	0	0
New Jersey	439	69	56
Federal (USD million)	288	52	36
State and Local (USD million)	151	17	20
New Mexico	16,564	16,630	16,221
Federal (USD million)	7,117	7,328	7,189
State and Local (USD million)	9,447	9,302	9,032
New York	823	409	266
Federal (USD million)	493	237	160
State and Local (USD million)	330	172	106
North Carolina	18	24	18
Federal (USD million)	11	15	12
State and Local (USD million)	7	9	6
North Dakota	8,703	8,987	8,757
Federal (USD million)	3,834	3,972	3,846
State and Local (USD million)	4,869	5,015	4,911
Ohio	2,362	2,135	2,020
Federal (USD million)	1,493	1,227	1,167
State and Local (USD million)	869	908	853
Oklahoma	9,315	6,435	5,907
Federal (USD million)	4,965	3,572	3,129
State and Local (USD million)	4,350	2,863	2,779
Oregon	5	5	4
Federal (USD million)	3	3	2
State and Local (USD million)	2	2	2
Pennsylvania	7,553	6,334	5,985
Federal (USD million)	4,868	3,945	3,748
State and Local (USD million)	2,685	2,389	2,236
Rhode Island	1	1	1
Federal (USD million)	1	1	0
State and Local (USD million)	0	0	0
South Carolina	7	9	7
Federal (USD million)	5	5	4
State and Local (USD million)	3	3	3
South Dakota	14	11	10
Federal (USD million)	8	6	5

State and Local (USD million)	7	5	5
Tennessee	51	57	45
Federal (USD million)	33	37	29
State and Local (USD million)	18	20	16
Texas	69,110	54,867	49,640
Federal (USD million)	38,233	29,859	26,533
State and Local (USD million)	30,877	25,007	23,108
Utah	1,339	1,373	1,429
Federal (USD million)	663	691	735
State and Local (USD million)	675	682	694
Vermont	0	0	0
Federal (USD million)	0	0	0
State and Local (USD million)	0	0	0
Virginia	90	63	38
Federal (USD million)	52	36	21
State and Local (USD million)	37	27	16
Washington	1	1	1
Federal (USD million)	1	1	1
State and Local (USD million)	0	0	0
West Virginia	4,546	3,464	3,247
Federal (USD million)	2,059	1,546	1,438
State and Local (USD million)	2,487	1,918	1,809
Wisconsin	65	61	48
Federal (USD million)	40	37	30
State and Local (USD million)	25	24	18
Wyoming	2,948	2,515	2,398
Federal (USD million)	1,564	1,367	1,302
State and Local (USD million)	1,384	1,147	1,096

Source: Rystad Energy research and analysis

Appendix J: Economic contributions from offshore US

2022-2024 economic contributions from independents, offshore US			
	2022	2023	2024
Employment (Employees)	146,500	146,700	147,800
Direct	36,700	38,200	39,800
Indirect	55,500	54,300	53,600
Induced	54,300	54,200	54,400
Labor income (USD million)	13,562	13,743	13,898
Direct	5,179	5,433	5,590
Indirect	5,217	5,104	5,044
Induced	3,166	3,207	3,264
GDP (USD million)	32,422	27,899	24,628
Direct	18,650	14,167	10,843
Indirect	7,794	7,666	7,599
Induced	5,978	6,065	6,185
Taxes (USD million)	6,104	6,083	5,942
Federal	3,375	3,306	3,211
State/Local	2,730	2,777	2,731

Source: Rystad Energy research and analysis

2022-2024 economic contributions from globally integrated operators, offshore US			
	2022	2023	2024
Employment (Employees)	160,000	204,700	182,700
Direct	42,000	57,300	49,100
Indirect	60,100	75,400	68,500
Induced	57,900	72,000	65,100
Labor income (USD million)	14,437	18,131	16,627
Direct	5,526	7,026	6,350
Indirect	5,540	6,842	6,360
Induced	3,372	4,262	3,917
GDP (USD million)	42,715	38,470	37,847
Direct	27,977	19,918	20,747
Indirect	8,372	10,492	9,680
Induced	6,366	8,060	7,420
Taxes (USD million)	6,723	7,666	7,472
Federal	3,954	4,453	4,245
State/Local	2,769	3,213	3,227

Source: Rystad Energy research and analysis

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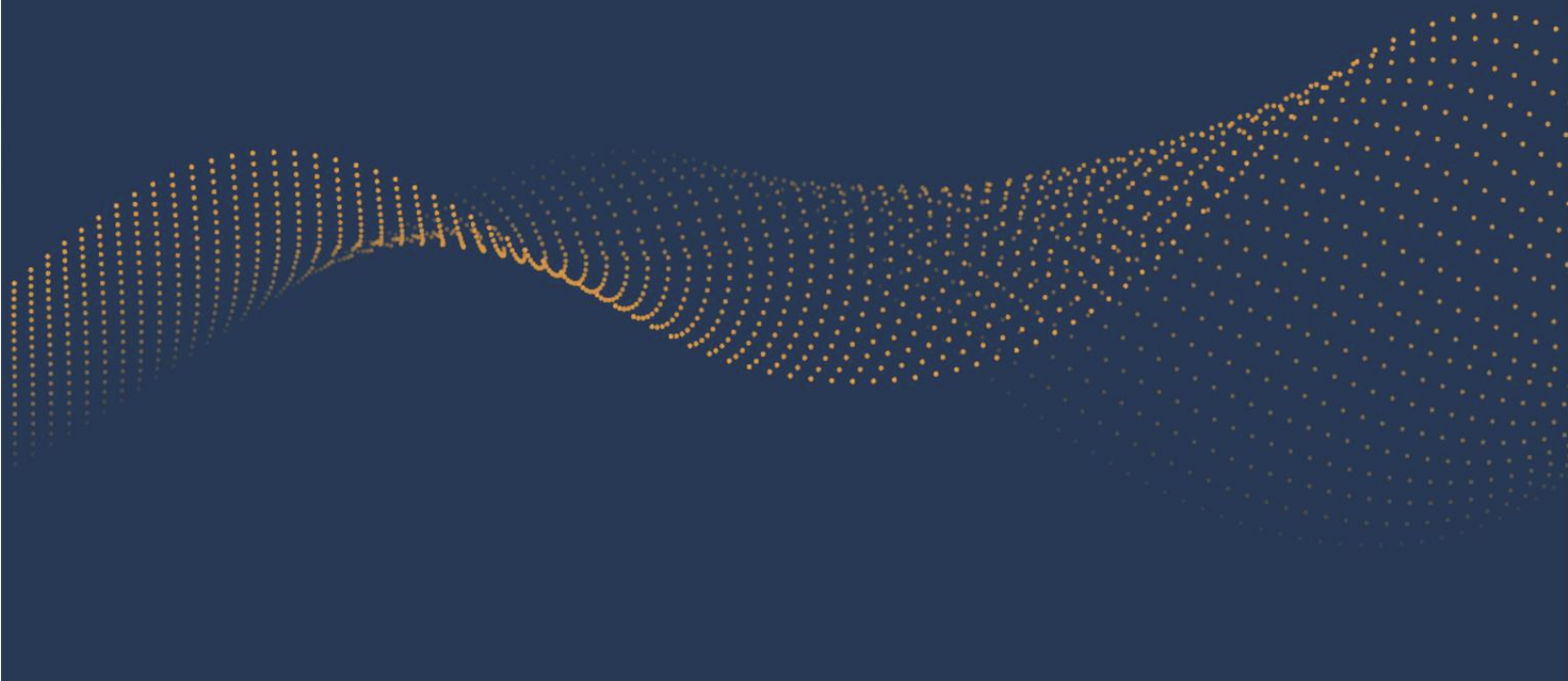
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