

# US oil and gas reserves, production and ESG benchmarking study

2024

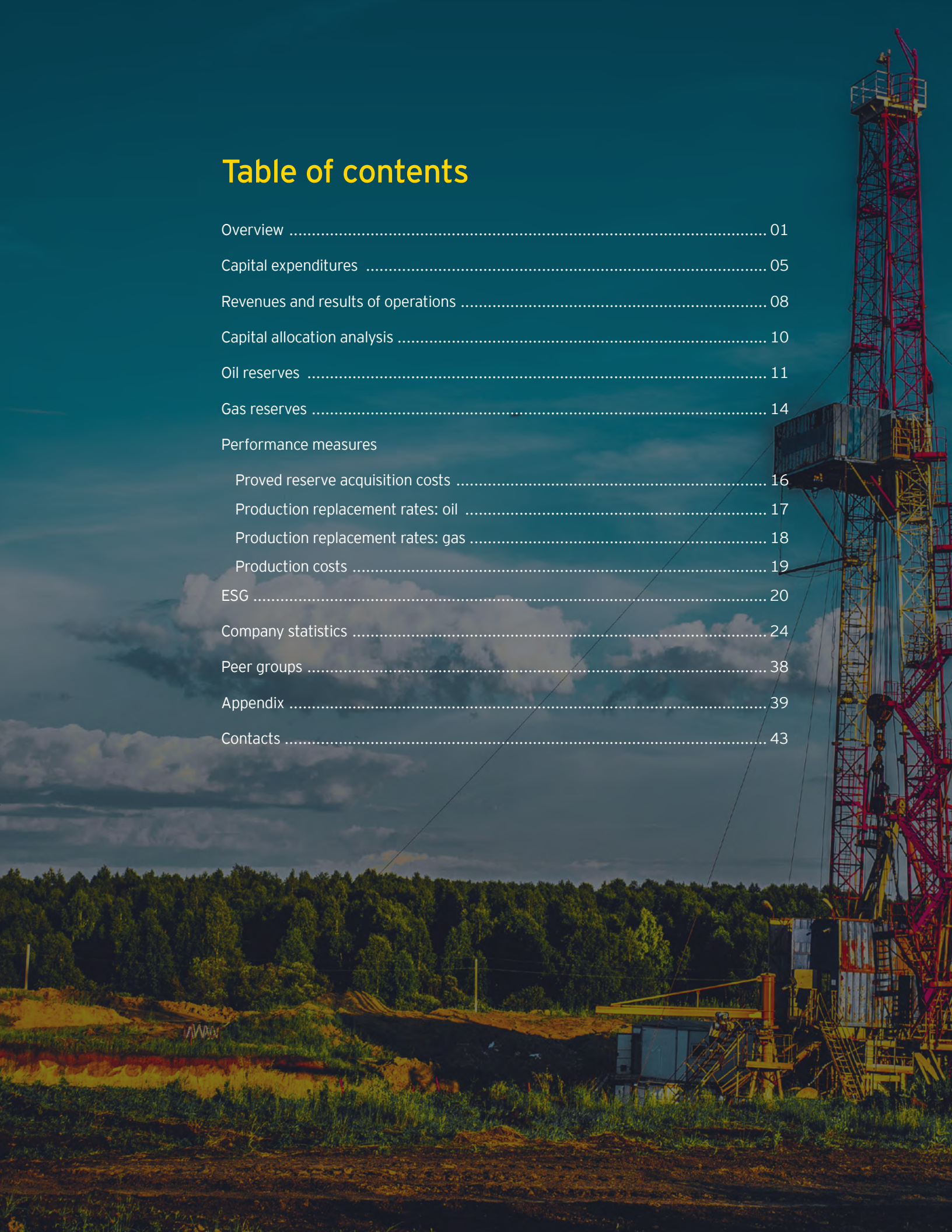


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# Table of contents

Overview .....	01
Capital expenditures .....	05
Revenues and results of operations .....	08
Capital allocation analysis .....	10
Oil reserves .....	11
Gas reserves .....	14
Performance measures	
Proved reserve acquisition costs .....	16
Production replacement rates: oil .....	17
Production replacement rates: gas .....	18
Production costs .....	19
ESG .....	20
Company statistics .....	24
Peer groups .....	38
Appendix .....	39
Contacts .....	43

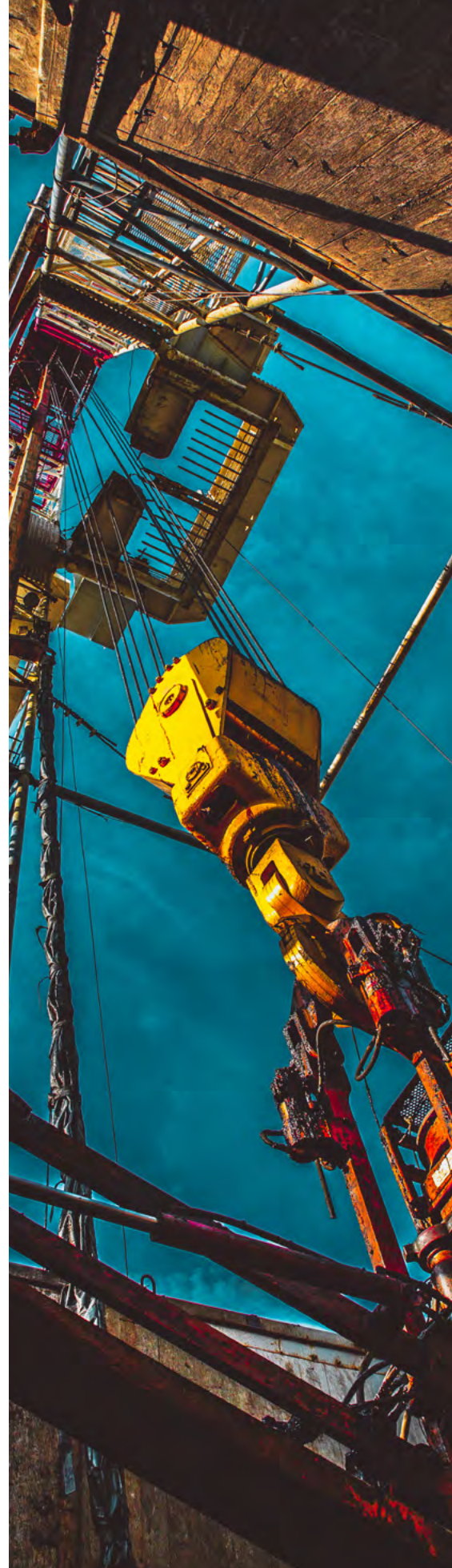
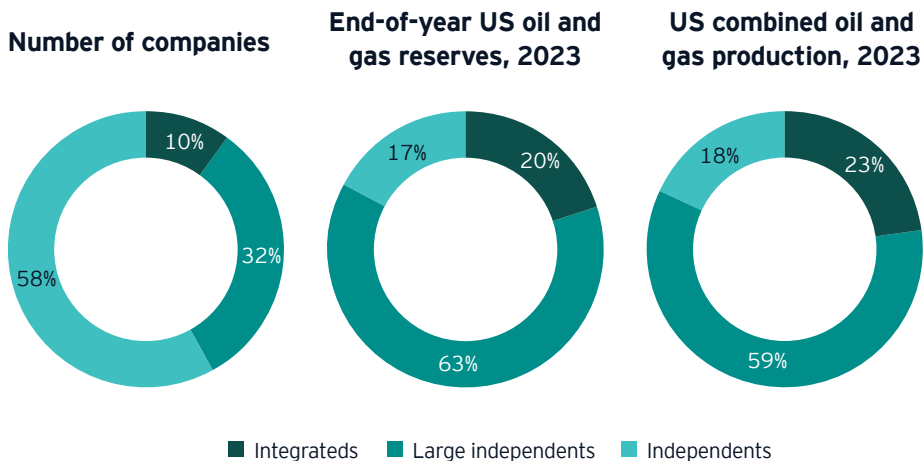


# Overview

This study is a compilation and analysis of US oil and gas reserve and production information reported by publicly traded companies to the United States Securities and Exchange Commission (SEC) and an analysis of certain publicly reported environmental, social and governance (ESG) disclosures, as applicable. It presents results for the five-year period from 2019 to 2023 for the 50 largest companies based on 2023 end-of-year US oil and gas reserve estimates. These companies represent approximately 42% of the US combined oil and gas production for 2023, and we believe that these companies are a good bellwether of industry trends. However, the oil and gas industry in the US is unique, and the conclusions that we draw do not necessarily apply to the rest of the world.

Companies have been classified into three peer groups: integrated companies (integrateds), large independents and independents. Integrateds are companies that have oil-refining and marketing activities in addition to exploration and production (E&P) activities. Independents do not have oil-refining and marketing activities but may have midstream operations. Independents are classified as "large" if their worldwide reserves exceeded 1 billion barrels of oil equivalent (BOE) at the end of 2023.

In this year's study, we looked at the impact of moderating oil prices vis-à-vis 2022 oil prices to operating results, including trends in how the study group allocated capital. We also continue to highlight the industry's focus on sustainability and nonfinancial goals related to ESG matters, especially with the finalization of different standards and rules that will require public companies and certain other entities to make various climate-related disclosures in their annual reports. We focused specifically on the SEC's final climate-related disclosure rules, and looked at how the study group's current voluntary reporting of climate-related information compares to the SEC's future disclosure requirements.



## Study highlights

The results of operations in 2023 were brought back in line with pre-2022 results, as commodity prices retreated from their 2022 highs. Higher cash flows from record profits in 2022 enabled the studied companies to put their cash to use as mergers and acquisitions increased, along with exploration and development activity.

### Capital expenditures, including acquisitions

- ▶ Expenditures totaled US\$142.3 billion, 36% higher than 2022, primarily due to an increase in merger and acquisition activity. Acquisitions of proved and unproved property increased 71% and 14%, respectively, compared to 2022.
- ▶ Exploration and development expenditures increased 28% in 2023, totaling US\$93.1 billion, as the companies capitalized on stable commodity prices and strong historical operating results.
- ▶ The Companies drilled 16% and 17% more development and exploration wells, respectively, compared to 2022.

### Revenues and results of operations

- ▶ Revenues were US\$244.4 billion, down 26% from 2022, but still the second-highest revenue total for the study companies in the five-year study period.
- ▶ Production costs were US\$11.73 per BOE, retreating 6% compared to 2022.
- ▶ Impairments totaled US\$2.7 billion, and have remained under US\$3.0 billion each year since 2020.
- ▶ Pretax profits were US\$83.9 billion, less than half of what the study companies reported in 2022, but in line with 2021 pretax profits.

## Capital allocation

- ▶ Large independents and independents decreased payments of dividends and share repurchases by 51% (US\$26.8 billion) and 38% (US\$2.0 billion), respectively, in 2023 compared to 2022.
- ▶ Large independents and independents spent less on dividends and share repurchases as a percent of netback (revenues less production costs) in 2023 (28% and 11%, respectively) compared to 2022 (36% and 15%, respectively), reflecting the refocus on capital investment to grow production.

## Oil reserves and production

- ▶ Production was 3.4 billion barrels in 2023, a 7% increase from 2022 and the highest production during the study period.
- ▶ Purchases of reserves were 2.2 billion barrels in 2023, a 61% increase from 2022, but still 33% lower than the record 3.4 billion barrels of purchases in 2021.
- ▶ The companies reported combined oil reserves of 33.3 billion barrels in 2023, a 1% decrease compared to 2022.

## Gas reserves and production

- ▶ Production was 16.3 tcf in 2023, a 2% increase from 2022 and the highest production during the study period.
- ▶ Purchases of reserves were 8.4 tcf in 2023, an increase of 31% from 2022; however, this still represents only the third highest purchases in the five-year study period.
- ▶ The companies reported combined gas reserves of 186 tcf in 2023, a decrease of 4% compared to 2022, primarily driven by 12.4 tcf of negative revisions and 5.8 tcf of sales.



Coming off a record year in profits, merger and acquisition activity increased 57% while the studied companies continued to scale up development spending.



# Capital expenditures

## US – Capital expenditures (US\$ millions) (a)

	2019	2020	2021	2022	2023
Proved properties acquired	29,602	7,321	57,874	23,798	40,624
Unproved properties acquired	34,491	4,318	33,101	7,577	8,625
Exploration	11,514	6,194	8,101	10,696	11,118
Development	76,411	42,273	40,707	62,315	81,977
Other	369	96	40	23	4
<b>Total</b>	<b>152,387</b>	<b>60,202</b>	<b>139,823</b>	<b>104,409</b>	<b>142,348</b>

(a) Includes the 50 largest companies based on 2023 end-of-year oil and gas reserve estimates; activity related to acquired companies has also been reflected as described in the Appendix.

Total capital expenditures increased among the study companies in 2023, rising 36% to US\$142.3 billion. This increase places 2023 capital expenditures as the second-highest total in the five-year study period, nearing the US\$152.4 billion of capital expenditures in 2019. The increase in total capital expenditures was primarily driven by increases in acquisitions and drilling activity, both of which were influenced by stabilizing commodity prices and companies benefiting from stronger balance sheets from record profits earned in 2022.

Merger and acquisition expenditures increased 57% in 2023, from US\$31.4 billion in 2022, to US\$49.2 billion in 2023. The integrations were responsible for a substantial majority of the increase in merger and acquisition expenditures as they increased their spend from US\$0.4 billion in 2022 to US\$13.3 billion in 2023. We expect the integrations merger and acquisition expenditures to continue to increase in 2024 and into 2025, with the acquisition of Pioneer Natural Resources Company by Exxon Mobil Corporation in May 2024 and the announced acquisition of Hess Corporation by Chevron Corporation.

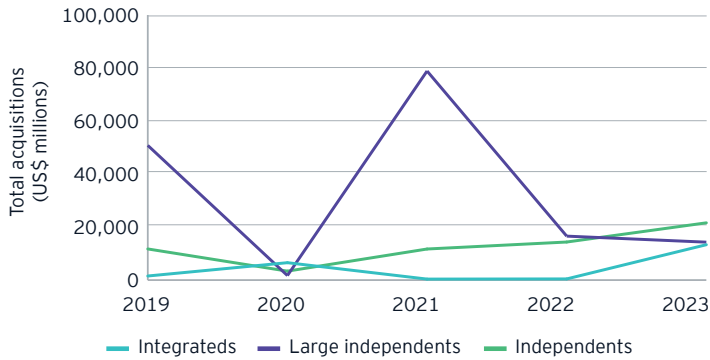
Chevron Corporation was the leading purchaser in 2023 with total property acquisition costs of US\$10.6 billion, largely due to its acquisition of PDC Energy, Inc. Permian Resources Corporation followed with total property acquisition costs of US\$5.7 billion, primarily due to its merger with Earthstone Energy, Inc., which included acquisition costs of US\$4.5 billion and US\$1.0 billion for proved and unproved properties, respectively. Ovintiv Inc.

rounded out the top purchasers in 2023 with total property acquisition costs of US\$4.9 billion, primarily due to its acquisition of several portfolio companies owned by EnCap Investments L.P., which included acquisition costs of US\$3.7 billion and US\$0.9 billion for proved and unproved properties, respectively.

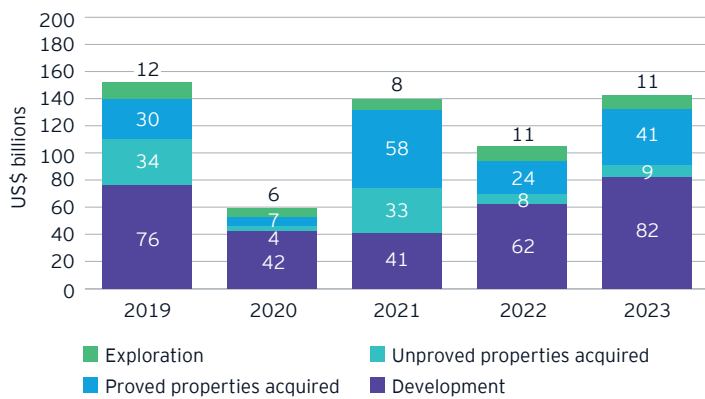
Exploration spending increased 4% and development spending increased 32%. Exploration spending was US\$11.1 billion in 2023 compared to US\$10.7 billion in 2022, while development spending increased from US\$62.3 billion in 2022 to US\$82.0 billion in 2023. With these year over year increases, exploration and development spending in 2023 surged to its highest aggregate total in the study period. Reinvesting in core operations was one of the ways the industry deployed its record profits from a year ago.

Pioneer Natural Resources Company kept its leading position in exploration spend from the prior year and incurred US\$3.8 billion. Shell plc followed with an exploration spend of US\$1.2 billion. The two companies represented 45% of the 2023 total exploration spend in our study. Chevron Corporation and Exxon Mobil Corporation led the way with development spending in 2023 of US\$9.6 billion and US\$9.0 billion, respectively. Following the two US-based integrations were large independents ConocoPhillips and EOG Resources, Inc., which spent US\$8.1 billion and US\$5.2 billion on development expenditures, respectively.

## Total properties acquired by peer group



## Costs incurred



## Highest capital expenditures for 2023 (US\$ millions)

<b>Proved properties acquired</b>	
Chevron Corporation	10,123
Civitas Resources, Inc.	4,625
Permian Resources Corporation*	4,590
EQT Corporation	4,143
Ovintiv Inc.*	3,868
<b>Unproved properties acquired</b>	
Diamondback Energy, Inc.	1,701
Permian Resources Corporation*	1,148
Ovintiv Inc.*	1,063
EQT Corporation	575
Chevron Corporation	504
<b>Exploration</b>	
Pioneer Natural Resources Company	3,817
Shell plc	1,159
Diamondback Energy, Inc.	768
Occidental Petroleum Corporation	743
Devon Energy Corporation	534
<b>Development</b>	
Chevron Corporation	9,645
Exxon Mobil Corporation*	8,988
ConocoPhillips	8,150
EOG Resources, Inc.	5,228
BP p.l.c.	4,690

\*See company endnotes on page 42.





The studied companies saw pretax results of operations decline 55% from 2022 to 2023, as oil prices retreated from their 2022 highs.

# Revenues and results of operations

## US – Revenues and results of operations (US\$ millions) (a)

	2019	2020	2021	2022	2023
Revenues	165,349	111,750	211,101	330,825	244,431
Production costs (b)	55,149	48,601	56,744	72,689	71,551
Exploration expense	4,223	8,264	2,193	2,487	3,038
DD&A (c)	75,855	87,283	59,887	59,527	71,548
Impairments	20,070	68,544	1,540	917	2,660
Other expenses (d)	13,428	7,694	4,170	8,664	11,745
Pretax results of operations	(3,376)	(108,636)	86,567	186,541	83,889
Income tax expense (benefit) (e)	722	(18,455)	14,303	38,830	16,178
<b>Results of operations</b>	<b>(4,098)</b>	<b>(90,181)</b>	<b>72,264</b>	<b>147,711</b>	<b>67,711</b>

## US – Revenues and results of operations (US\$ per BOE) (a)

	2019	2020	2021	2022	2023
Revenues	31.96	21.56	39.72	56.84	40.07
Production costs (b)	10.66	9.37	10.68	12.49	11.73
Exploration expense	0.82	1.59	0.41	0.43	0.50
DD&A (c)	14.66	16.84	11.27	10.23	11.73
Impairments	3.88	13.22	0.29	0.16	0.44
Other expenses (d)	2.60	1.48	0.78	1.49	1.93
Pretax results of operations	(0.66)	(20.94)	16.29	32.04	13.74
Income tax expense (benefit) (e)	0.14	(3.56)	2.69	6.67	2.65
<b>Results of operations</b>	<b>(0.80)</b>	<b>(17.38)</b>	<b>13.60</b>	<b>25.37</b>	<b>11.09</b>

(a) Includes the 50 largest companies based on 2023 end-of-year oil and gas reserves; activity related to acquired companies has also been reflected as described in the Appendix.

(b) Includes production taxes and transportation costs for companies that separately disclose these expenses.

(c) DD&A = depreciation, depletion and amortization.

(d) Includes asset retirement obligation accretion and production-related general and administrative costs, among other items, for companies that separately disclose these expenses.

(e) Income taxes are presented for informational purposes only. The study is focused on pretax results of operations as a more meaningful comparative metric. Facts and circumstances underlying an individual company's tax results might not be representative of the study group as a whole and, as such, are not discussed in further details.

The study companies reported combined pretax results of operations of US\$83.9 billion in 2023, representing a decline of 55% compared to the record pretax profits recorded in 2022. This is primarily a result of West Texas Intermediate (WTI) crude oil spot prices returning to US\$70 to US\$80 per barrel in 2023 after surpassing US\$100 per barrel during a portion of 2022. Revenues, while down year over year, were still the second-highest total for the study companies in the study period, aggregating to US\$244.4 billion. Despite pretax results of operations returning to amounts consistent with 2021, revenues remained higher compared to 2021, primarily due to the continued increase in oil and gas production, which was 15% higher in 2023 compared to 2021.

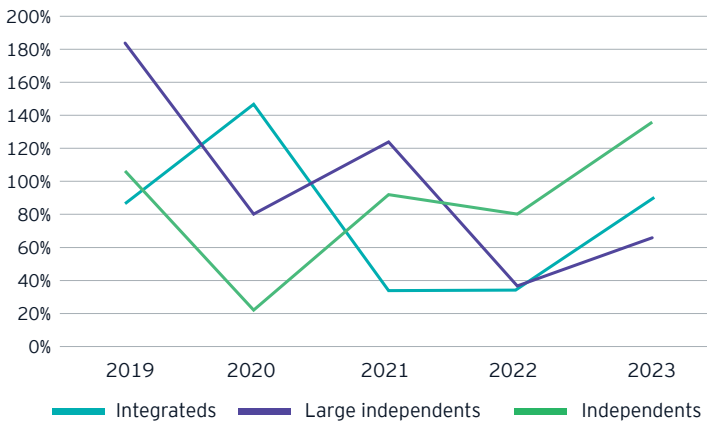
The study companies recognized a decrease of US\$0.76 per BOE, or 6%, in production costs year over year, primarily due to variable cost reductions tied to the

decline in commodity prices. DD&A increased year over year by US\$1.50 per BOE, or 15%, reflecting the higher investments in property and equipment over the last several years, along with the decrease in total oil and gas reserves. Exploration expenses and impairments incurred by the study companies were inconsequential to the composition of the results of operations.

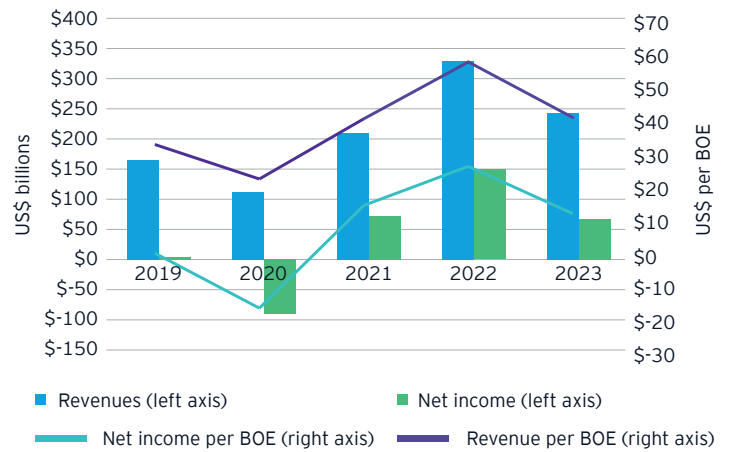
The study companies posted an 82% plowback percentage in 2023 compared to 40% in 2022. The plowback percentage represents total capital expenditures as a percentage of the netback (revenues less production costs). Integrateds posted the largest increase in plowback percentage, growing from 29% in 2022 to 85% in 2023. Large independents and independents also saw substantial increases in the plowback percentage, increasing from 36% to 65% and 79% to 132%, respectively. The increase in the plowback percentage is primarily due to the increase in

capital expenditures by all peer groups in 2023 compared to 2022, coupled with decreases in the netback due to lower revenue year over year. Additionally, as discussed later in the study, companies increased the investments of their record 2022 profits back into their core operations.

### Plowback percentage

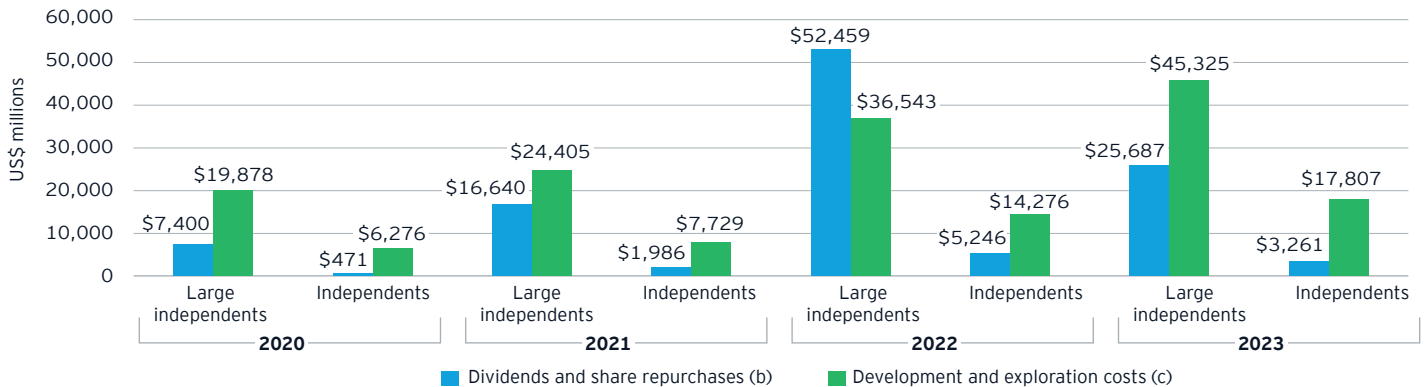


### Revenues and results of operations



# Capital allocation analysis

## US – Dividends paid, shares repurchased, and development and exploration costs (US\$ millions) (a), (b)

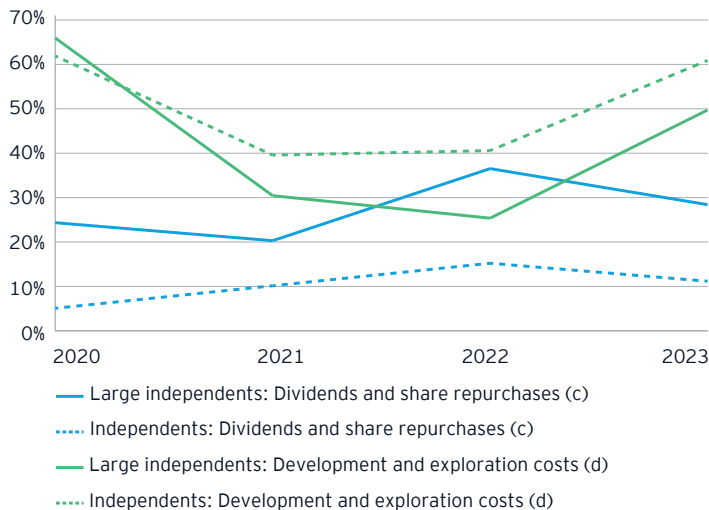


- (a) Integrated are excluded from this analysis as the reported dividends and share repurchases are for the consolidated company, whereas the development and exploration costs are for US exploration and production operations.
- (b) Dividends and share repurchases reflect the amounts recorded as financing activities within the statement of cash flows.
- (c) Includes capital expenditures noted as "other" (see Capital expenditures table on page 24).

Large independents and independents decreased payments of dividends and share repurchases by 51% (US\$26.8 billion) and 38% (US\$2.0 billion), respectively, compared to 2022. This decrease comes a year after large independents and independents spent a record combined US\$57.7 billion on dividends and share repurchases in 2022, which at the time was greater than the combined spend on dividends and share repurchases in 2020 and 2021.

## Capital allocation (a)

### US – Dividends paid, shares repurchased, and development and exploration costs as a percentage of netback (%) (b)



Large independents and independents spent less on dividends and share repurchases as a percent of netback (revenues less production costs) in 2023 (28% and 11%, respectively) compared to 2022 (36% and 15%, respectively). The decreases in the spend on dividends and share repurchases as a percent of netback reveal a calculated shift in the allocation of capital as large independents and independents spent more on development and exploration costs as a percent of netback in 2023 (49% and 60%, respectively) compared to 2022 (25% and 40%, respectively). This shift comes as a result of record profits for the industry in 2022, leaving the study group with discretion to capitalize on stable commodity prices and invest in core operations to increase production while continuing to deliver higher returns to investors in 2023.

- (a) Integrated are excluded from this analysis as the reported dividends and share repurchases are for the consolidated company, whereas the development and exploration costs are for US exploration and production operations.
- (b) Netback is calculated as revenues less production costs.
- (c) Dividends and share repurchases reflect the amounts recorded as financing activities within the statement of cash flows.
- (d) Includes capital expenditures noted as "other" (see Capital expenditures table on page 24).

# Oil reserves

## US – Proved oil reserves (million barrels) (a), (b)

	2019	2020	2021	2022	2023
Beginning of year	31,159	32,046	25,971	31,319	33,587
Additions:					
Extensions and discoveries	4,783	2,273	4,488	3,655	3,542
Improved recovery	460	143	71	97	48
Revisions	(1,930)	(5,066)	1,927	821	(931)
Production	(2,883)	(2,838)	(2,971)	(3,170)	(3,387)
Purchases	2,145	822	3,357	1,393	2,247
Sales	(1,765)	(1,433)	(1,507)	(528)	(1,800)
Other	77	24	(17)	0	(33)
<b>End of year</b>	<b>32,046</b>	<b>25,971</b>	<b>31,319</b>	<b>33,587</b>	<b>33,273</b>

(a) Includes the 50 largest companies based on 2023 end-of-year oil and gas reserve estimates; activity related to acquired companies has also been reflected as described in the Appendix.

(b) Includes condensate and natural gas liquids (NGLs).

Oil reserves for the study companies remained relatively flat in 2023, decreasing 1% from 2022. The slight decline is primarily attributed to decreasing additions through extensions and discoveries compared to the prior year, coupled with negative technical revisions due to pricing and increasing production. These changes were partially offset by an increase in the purchases of reserves.

Despite declining 3% compared to 2022, extensions and discoveries continued to outpace production. At 3.5 billion barrels, the study companies reported the second-lowest extensions and discoveries for the study period, primarily as a result of the study companies continuing to grow their reserves through mergers and acquisitions instead of extensions and discoveries.

Downward revisions for 2023 were 1.8 billion barrels, offset by upward revisions of 0.9 billion barrels, resulting in 0.9 billion barrels net of negative revisions. Net downward revisions are primarily due to price declines. The SEC requires companies

to use the arithmetic average of the first-day-of-the-month price (the SEC price) when determining their proved oil and gas reserves. The SEC price in 2023 for oil (WTI) declined 17% compared to 2022, dropping from US\$94.14 per barrel to US\$78.21 per barrel. This resulted in oil reserves that were no longer economic in 2023 using the 2023 SEC price for oil, and thus they were no longer recognized as proved reserves, contributing to the net downward revision.

The largest negative revisions were reported by Exxon Mobil Corporation (398 million barrels), Chevron Corporation (367 million barrels) and Orintiv Inc. (223 million barrels). Revisions by these three companies accounted for 55% of all downward revisions in 2023. All other contributions to the downward revisions were not significant. Occidental Petroleum Corporation and ConocoPhillips reported the largest upward revisions: 260 million barrels and 187 million barrels, respectively.

Oil production increased moderately compared to 2022, increasing 7% year over year. The largest increases were

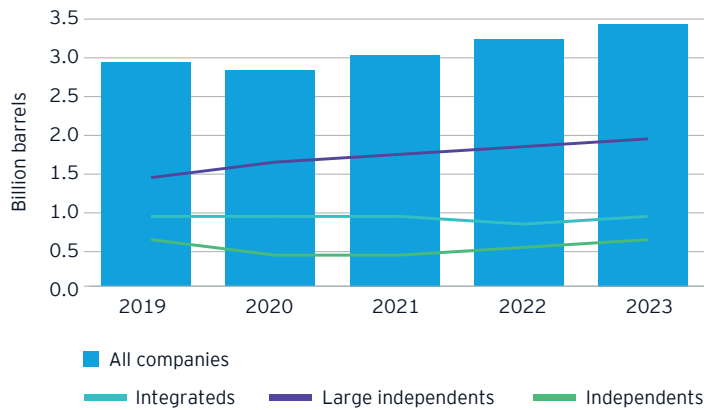
posted by Chevron Corporation (40 million barrels) and Permian Resources Corporation (26 million barrels). The largest decrease was posted by Chesapeake Energy Corporation (14 million barrels) and is likely the result of the sale of its assets in the Eagle Ford Shale to various acquirers.

Overall, oil production increased by 17% from 2019 to 2023, with the large independents' production growing 38%, compared with 3% growth for the integrateds and an 8% decrease in production for the independents.

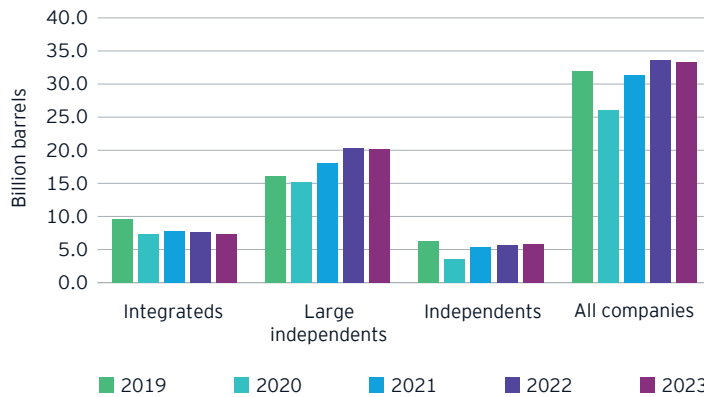
Purchases of oil reserves for 2023 were 2.2 billion barrels, while sales were 1.8 billion barrels, a 61% and 241% increase from 2022, respectively. Chevron Corporation recorded 469 million barrels in purchases (21% of total purchases), largely due to its acquisition of PDC Energy, Inc. Civitas Resources, Inc. recorded 266 million barrels in purchases (12% of total purchases), largely due to its acquisitions of Hibernia Energy III, LLC and Tap Rock Resources. A majority of sales (1.1 billion barrels, or 61%) are represented

by the following companies that were in last year's study and acquired by companies in this year's study: PDC Energy, Inc. (acquired by Chevron Corporation), Denbury Inc. (acquired by Exxon Mobil Corporation) and Earthstone Energy, Inc. (acquired by Permian Resources Corporation). All other contributions to sales were not significant.

### Oil production



### End-of-year oil reserves



### Oil reserves, 2023 – top-ranked companies (million barrels)

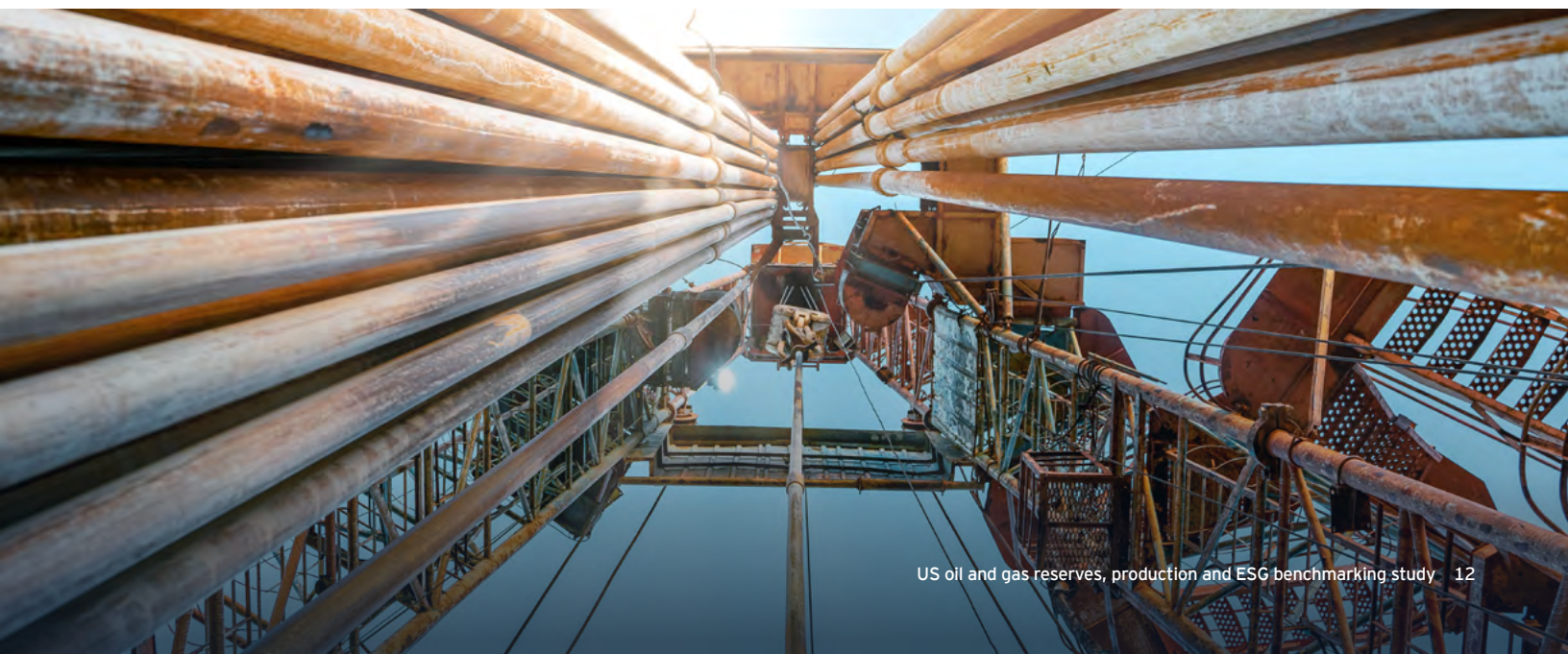
Ending reserves	
ConocoPhillips	3,399
EOG Resources, Inc.	3,008
Chevron Corporation	2,966
Occidental Petroleum Corporation	2,402
Exxon Mobil Corporation*	2,109
Production	
Chevron Corporation	364
ConocoPhillips	361
Occidental Petroleum Corporation	285
EOG Resources, Inc.	256
Exxon Mobil Corporation*	207


\*See company endnotes on page 42.

### Oil reserves, 2022 – top-ranked companies (million barrels)

Ending reserves	
ConocoPhillips	3,290
Chevron Corporation	2,958
EOG Resources, Inc.	2,804
Exxon Mobil Corporation*	2,323
Occidental Petroleum Corporation	2,293
Production	
ConocoPhillips	343
Chevron Corporation	324
Occidental Petroleum Corporation	268
EOG Resources, Inc.	240
Exxon Mobil Corporation*	206

\*See company endnotes on page 42.





In 2023, the companies studied reported a decrease in total US oil and gas reserves compared to 2022, while still maintaining a production replacement ratio in excess of 100%.\*

\*When calculated using changes in reserves from finding and development, excluding revisions. See pages 17 and 18 for more information.

# Gas reserves

## US – Proved gas reserves (billion cubic feet (bcf)) (a)

	2019	2020	2021	2022	2023
Beginning of year	174,258	169,075	148,296	187,252	194,435
Additions:					
Extensions and discoveries	23,321	15,717	23,595	21,218	17,528
Improved recovery	703	730	255	101	257
Revisions	(18,096)	(19,075)	12,286	(1,373)	(12,408)
Production	(13,696)	(13,506)	(14,058)	(15,898)	(16,284)
Purchases	10,230	6,957	21,401	6,401	8,376
Sales	(7,793)	(11,757)	(4,468)	(3,272)	(5,750)
Other	148	155	(55)	6	(83)
<b>End of year</b>	<b>169,075</b>	<b>148,296</b>	<b>187,252</b>	<b>194,435</b>	<b>186,071</b>

(a) Includes the 50 largest companies based on 2023 end-of-year oil and gas reserve estimates; activity related to acquired companies has also been reflected as described in the Appendix.

End-of-year gas reserves for the study companies decreased by 4% in 2023 to 186 tcf, sinking to below the study companies' 2021 end-of-year gas reserves of 187.3 tcf. The decrease is primarily due to decreasing additions through extensions and discoveries compared to the prior year, coupled with negative technical revisions due to pricing and increasing production. These changes were partially offset by an increase in purchases of gas reserves.

EQT Corporation (3.3 tcf), Exxon Mobil Corporation (1.9 tcf) and Southwestern Energy Company (1.8 tcf) posted the largest extensions and discoveries, accounting for 40% of the total extensions and discoveries for the study group.

Downward revisions for 2023 were 14.8 tcf and upward revisions were 2.4 tcf, resulting in 12.4 tcf net negative revisions. Similar to oil, net downward revisions were primarily driven by a decline in the SEC price for gas. The SEC price for gas (Henry Hub) declined 59% from US\$6.25 per MMBtu in 2022 to US\$2.59 per MMBtu in 2023, resulting in significant negative revisions to account for gas reserves that were no longer economic in 2023 using the 2023 SEC price for gas.

The largest upward revisions were reported by Antero Resources Corporation (0.9 tcf), Range Resources Corporation (0.3 tcf) and Occidental Petroleum Corporation (0.3 tcf). Revisions by these three companies accounted for 63% of all upward revisions in 2023. The largest downward revisions were reported by Southwestern Energy Company (2.2 tcf), Exxon Mobil Corporation (2.0 tcf) and Comstock Resources, Inc. (1.8 tcf). Revisions by these three companies accounted for 41% of all downward revisions in 2023 and were largely price related.

Gas production increased 2% in 2023 compared to 2022, rising to its highest level in the study period. The largest increases were posted by Chevron Corporation (130 bcf) and EOG Resources, Inc. (85 bcf), while the largest decreases were posted by Southwestern Energy Company (82 bcf) and Exxon Mobil Corporation (81 bcf).

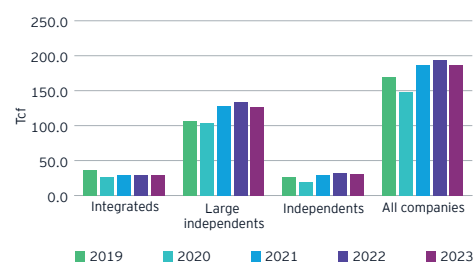
While gas production from 2019 to 2023 has increased significantly (19%), the level of change varied among the peer groups. The large independents increased their gas production from 2019 by 105%, while the integrations and independents' production decreased by 15% and 46%,

respectively, during the same period. The large independents accounted for 66% of the total gas production in 2023.

Purchases of gas reserves were 8.4 tcf in 2023. Chevron Corporation recorded 2.2 tcf in purchases primarily due to its acquisition of PDC Energy, Inc. EQT Corporation recorded 2.0 tcf in purchases primarily due to its acquisition of Tug Hill Operating, LLC. Collectively, this represents 50% of the total purchases.

Sales of gas reserves were 5.8 tcf in 2023. PDC Energy, Inc. and Earthstone Energy, Inc. accounted for sales of 2.9 tcf and 0.7 tcf due to their acquisitions by Chevron Corporation and Permian Resources Corporation, respectively. Chesapeake Energy Corporation posted the third-largest sales in 2023 of 0.6 tcf due to the sale of its Eagle Ford Shale assets.

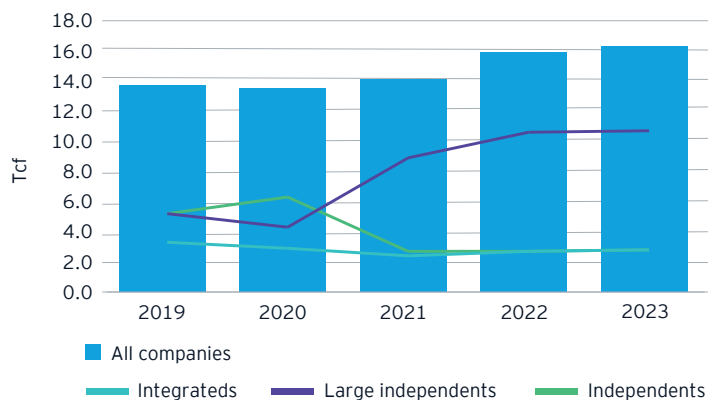
### End-of-year gas reserves







## Gas production



## Gas reserves, 2023 – top-ranked companies (bcf)

Ending reserves	
EQT Corporation	25,795
Southwestern Energy Company	15,191
Exxon Mobil Corporation*	12,320
Range Resources Corporation	11,611
Antero Resources Corporation	10,614
Production	
EQT Corporation	1,907
Southwestern Energy Company	1,438
Chesapeake Energy Corporation	1,266
Coterra Energy Inc.*	1,053
Exxon Mobil Corporation*	965

\*See company endnotes on page 42.

## Gas reserves, 2022 – top-ranked companies (bcf)

Ending reserves	
EQT Corporation	23,825
Southwestern Energy Company	17,362
Exxon Mobil Corporation*	13,772
Range Resources Corporation	11,798
Chesapeake Energy Corporation	11,369
Production	
EQT Corporation	1,842
Southwestern Energy Company	1,520
Chesapeake Energy Corporation	1,308
Exxon Mobil Corporation*	1,046
Coterra Energy Inc.*	1,024

\*See company endnotes on page 42.

# Performance measures

## Proved reserve acquisition costs

### US – Proved reserve acquisition costs (PRACs) (a) US\$ per BOE

	2019	2020	2021	2022	2023	Three year	Five year
PRACs	13.78	3.74	8.37	9.61	11.73	9.50	10.23

(a) Includes the 50 largest companies based on 2023 end-of-year oil and gas reserve estimates and their historical results of operations and production information; as a result, activity related to acquired companies has not been reflected as described in the Appendix.

PRACs were US\$11.73 per BOE in 2023, approximately 22% higher compared to 2022 and up 213% since 2020. Chevron Corporation, Civitas Resources, Inc. and Permian Resources Corporation accounted for 48% of proved property acquisition costs. The larger acquisitions relating to these companies were discussed earlier in the study. The 2023 PRAC results for Chevron Corporation, Civitas Resources, Inc. and Permian Resources Corporation were US\$12.21 per BOE, US\$12.42 per BOE and US\$11.40 per BOE, respectively. We note that this measure is a combination of oil and gas property acquisitions and the amount per BOE measure is impacted by the mix of the commodities in the acquired reserves.

### Lowest three-year (2021-23) PRACs (a)

PRACs	
Ring Energy, Inc.	\$ 3.59
Mach Natural Resources LP	3.85
BP p.l.c.	4.67
Chesapeake Energy Corporation	5.62
EQT Corporation	5.64

(a) Amounts presented represent a combination of oil and gas property and development costs. As such, a company with a large concentration of expenditures related to natural gas will likely have a lower amount per BOE in these measures.

(b) Based on companies with proved acquisition costs of at least US\$50.0 million for the three-year period.



## Production replacement rates: oil

### US – All sources and finding and development (F&D) oil production replacement rates (a)

	2019	2020	2021	2022	2023	Three-year	Five-year
All sources	190%	(89%)	304%	172%	123%	195%	142%
F&D, including revisions	124%	(89%)	218%	144%	79%	143%	98%
F&D, excluding revisions	189%	89%	157%	121%	106%	127%	131%

(a) Includes the 50 largest companies based on 2023 end-of-year oil and gas reserve estimates and their historical results of operations and production information; as a result, activity related to acquired companies has not been reflected as described in the Appendix.

A year-over-year decrease in oil reserves as a result of negative technical revisions and a decline in additions through extensions and discoveries led to a drop in the 2023 oil production replacement rates. Despite the decrease in 2023, F&D, including revisions, was the only oil production replacement rate to drop below 100% – the first time this has happened since 2020. The large independents were the only peer group that maintained oil production replacement rates greater than 100% from all sources; F&D, including revisions; and F&D, excluding revisions.

**All sources.** In 2023, eight companies with significant oil reserves reported negative replacement from all sources, while 30 companies reported more than 100% replacement from all sources.

**F&D, including revisions.** In 2023, 30 companies reported positive replacement from all F&D sources, while 21 companies reported more than 100% replacement from all F&D sources.

**F&D, excluding revisions.** In 2023, 22 companies achieved more than 100% replacement from F&D sources other than revisions.

### Oil production replacement by peer group, 2023

	All sources	F&D, including revisions	F&D, excluding revisions
Integrations	54%	7%	91%
Large independents	124%	125%	114%
Independents	224%	35%	105%

### Oil F&D, excluding revisions, production replacement rates



## Production replacement rates: gas

### US – All sources and F&D gas production replacement rates (a)

	2019	2020	2021	2022	2023	Three-year	Five-year
All sources	93%	(26%)	394%	141%	72%	193%	135%
F&D, including revisions	38%	(15%)	257%	124%	33%	132%	88%
F&D, excluding revisions	178%	126%	172%	136%	109%	137%	143%

(a) Includes the 50 largest companies based on 2023 end-of-year oil and gas reserve estimates and their historical results of operations and production information; as a result, activity related to acquired companies has not been reflected as described in the Appendix.

Similar to the oil replacement rates, a decrease in gas reserves resulted in a decline in replacement rates for gas reserves. Higher negative technical revisions due to price declines in 2023 resulted in significantly lower gas production replacement rates from F&D, including revisions.

**All sources.** In 2023, 32 companies reported positive replacement rates from all sources, while 22 companies reported more than 100% replacement from all sources.

**F&D, including revisions.** In 2023, 28 companies reported positive replacement rates from all F&D sources, while 12 companies reported more than 100% replacement from all F&D sources.

**F&D, excluding revisions.** In 2023, 20 companies achieved more than 100% replacement from F&D sources other than revisions.

### Gas F&D, excluding revisions, production replacement rates



### Gas production replacement by peer group, 2023

	All sources	F&D, including revisions	F&D, excluding revisions
Integrations	78%	10%	121%
Large independents	68%	58%	104%
Independents	81%	(40%)	116%



## Production costs

### US – Production costs (US\$) (a)

	2019	2020	2021	2022	2023
Integrations	17,110	14,958	15,370	17,269	17,068
Large independents	25,795	24,333	31,324	41,439	40,988
Independents	7,982	7,141	8,656	12,274	13,496
<b>All companies</b>	<b>50,887</b>	<b>46,432</b>	<b>55,350</b>	<b>70,982</b>	<b>71,552</b>

(a) Includes the 50 largest companies based on 2023 end-of-year oil and gas reserve estimates and their historical results of operations and production information; as a result, activity related to acquired companies has not been reflected as described in the Appendix.

### US – Production costs (US\$ per BOE) (a)

	2019	2020	2021	2022	2023	Three-year	Five-year
Integrations	12.16	11.07	12.25	13.61	12.66	12.84	12.34
Large independents	9.92	8.97	9.94	11.83	11.09	10.99	10.46
Independents	10.83	9.61	11.21	13.38	12.76	12.53	11.72
<b>All companies</b>	<b>10.73</b>	<b>9.66</b>	<b>10.69</b>	<b>12.48</b>	<b>11.73</b>	<b>11.66</b>	<b>11.13</b>

(a) Includes the 50 largest companies based on 2023 end-of-year oil and gas reserve estimates and their historical results of operations and production information; as a result, activity related to acquired companies has not been reflected as described in the Appendix.

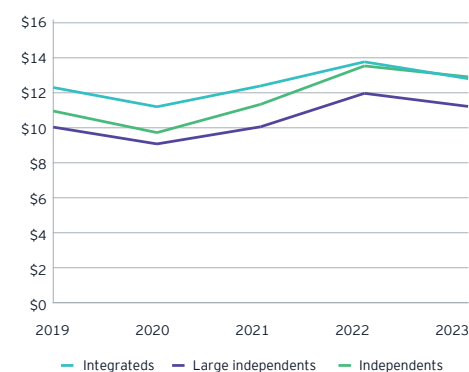
Production costs per BOE decreased 6% from 2022 to 2023, primarily due to an increase in production volumes as total production costs in the aggregate only increased 1% (from US\$71.0 billion to US\$71.6 billion). These factors also indicate a decline in variable costs (i.e., production and severance tax, which are based on commodity prices). Integrations and large independents saw the largest decrease in production costs per BOE (7% and 6%, respectively), while independents only saw a 5% decrease. Large independents continued to realize the lowest production costs per BOE in 2023 compared to the integrations and independents.

### Lowest three-year (2021-23) production costs (US\$ per BOE) (a)

Equinor ASA	4.03
Comstock Resources, Inc.	4.09
CNX Resources Corporation	4.78
National Fuel Gas Company	4.96
Southwestern Energy Company	6.80

(a) Amounts presented represent a combination of oil and gas production costs. As such, a company with a large concentration of expenditures related to natural gas will likely have a lower amount per BOE in this measure.

### Production costs per BOE



# ESG

## US – ESG reporting (a)

	Are Scope 1 and Scope 2 greenhouse gas (GHG) emissions reported?	Does reporting include external assurance obtained over Scope 1 and Scope 2 GHG emissions?	Are Scope 3 emissions reported?	Does reporting include any climate-related targets or goals?	
<b>2023</b>	Integrations	100%	100%	100%	
	Large independents	100%	63%	69%	
	Independents	66%	21%	17%	
	<b>All companies</b>	<b>80%</b>	<b>42%</b>	<b>42%</b>	<b>64%</b>
<b>2022</b>	<b>All companies</b>	<b>72%</b>	<b>38%</b>	<b>30%</b>	<b>64%</b>
<b>2021</b>	<b>All companies</b>	<b>64%</b>	<b>26%</b>	<b>26%</b>	<b>58%</b>

(a) Includes the 50 largest companies based on 2023 end-of-year oil and gas reserve estimates. The data presented here is based on a review of company sustainability and ESG reports, as well as a review of information included on company websites.

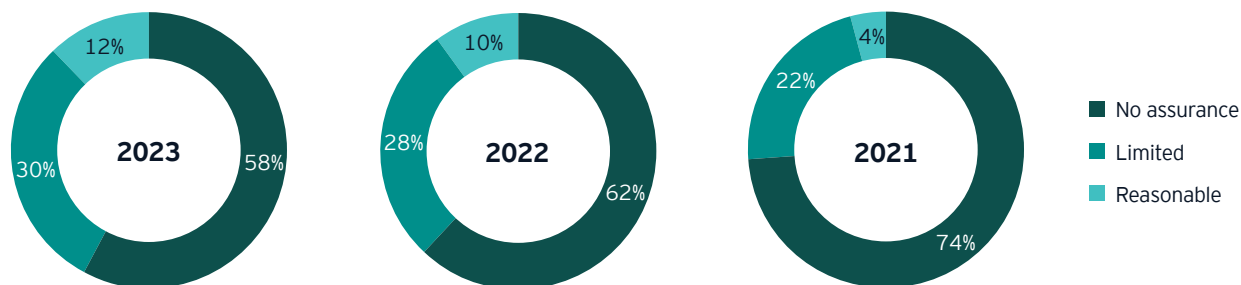
As stakeholder and regulatory demand for ESG information increases, oil and gas companies have continued to respond by increasing their voluntary ESG disclosures through sustainability reports and information on company websites. When looking at the companies studied in this year’s report, we see the progression over the last three years with more companies making voluntary disclosures of certain ESG information.

The integrations and large independents in the study group continue to provide more climate-related information in their sustainability reports relative to the independents. In 2023, 100% of the integrations reported on the four climate-related metrics shown in the table above. Additionally, 100% of the large independents reported their Scope 1 and Scope 2 GHG emissions and a climate-related target or goal. This is compared to only 66% and 38% of independents that disclosed Scope 1 and Scope 2 GHG emissions and reported a climate-related target or goal, respectively.

Peer group aside, all companies have made increases in voluntary climate-related disclosures over the last three years. Across all companies, 80% reported their Scope 1 and Scope 2 GHG emissions in 2023 compared to 72% in 2022 and 64% in 2021. Similarly, the percentage of the companies studied that obtained external assurance over their Scope 1 and Scope 2 GHG emissions has also increased, starting with 26% of all companies in 2021 and climbing up to 42% in 2023. Disclosures of climate-related targets and goals leveled off in 2023 relative to previous years, as 64% of the companies studied disclosed a climate-related target or goal in both 2022 and 2023.



## Type of assurance over Scope 1 and Scope 2 GHG emissions



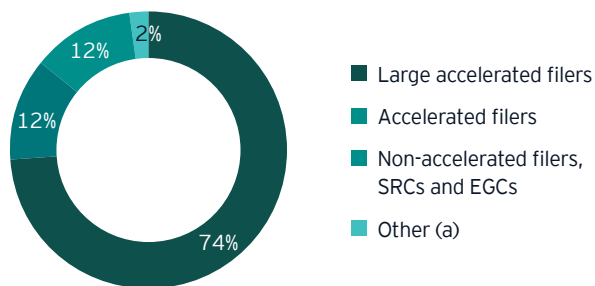
Over the last three years, the companies studied have consistently increased the level of assurance obtained over their Scope 1 and Scope 2 emissions. Beginning in 2021, only 22% and 4% of the studied companies obtained limited and reasonable assurance, respectively, over their Scope 1 and Scope 2 GHG emissions. Those percentages increased to 30% and 12%, respectively, of the studied companies in 2023. With certain regulators and standard setters adopting an assurance requirement as part of their final standards or rules, we expect to continue seeing a growing percentage of the studied companies obtain assurance over their GHG emissions.

Less than half of the companies studied (42%) voluntarily reported at least one category of Scope 3 GHG emissions in 2023. However, more of the studied companies continue to disclose at least one category of their Scope 3 GHG emissions each year as the percentage has grown from 26% in 2021 and 30% in 2022. The SEC's finalized climate-related disclosure rules will not require disclosure of Scope 3 GHG emissions, unlike the first set of European Sustainability Reporting Standards (ESRS) issued by the European Commission and the climate-related disclosure requirements in the standards issued by the International Sustainability Standards Board (ISSB). We acknowledge many of the companies studied also have operations outside of the US and may be subject to additional rules or standards requiring climate-related disclosures.

As referenced above, certain regulators and standard setters have issued standards or rules requiring public companies and certain other entities to make various

climate-related disclosures in their annual reports. The SEC adopted its climate-related disclosure rules in March 2024 to require climate-related disclosures both within and outside the audited financial statements.<sup>1</sup> We included in our analysis select items that entities within the scope of the SEC's rules will be required to disclose.

## Filer status of studied companies

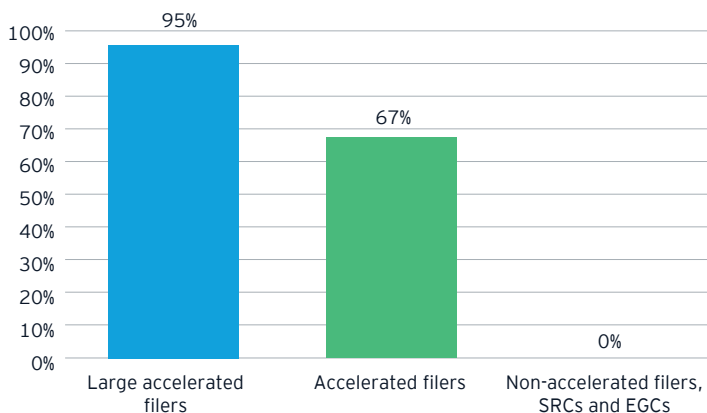


(a) One company in the studied group, Enerplus Corporation, is a 40-F filer. The SEC's climate-related disclosure rules excluded 40-F filers from its scope.

The applicability and compliance dates of the SEC's climate-related disclosure rules depend on a registrant's filer status and the type of disclosure. Accordingly, for the remainder of the ESG portion of the study, we reclassified the studied companies by filer status: large accelerated filers; accelerated filers (other than smaller reporting companies (SRCs) and emerging growth companies (EGCs)); and non-accelerated filers, SRCs and EGCs.

<sup>1</sup> In early April 2024, the SEC voluntarily stayed the rules pending a judicial review of legal challenges to the rules. The SEC said in its order the stay will facilitate the judicial resolution of the challenges, and that it will continue to vigorously defend the rules' validity in court.

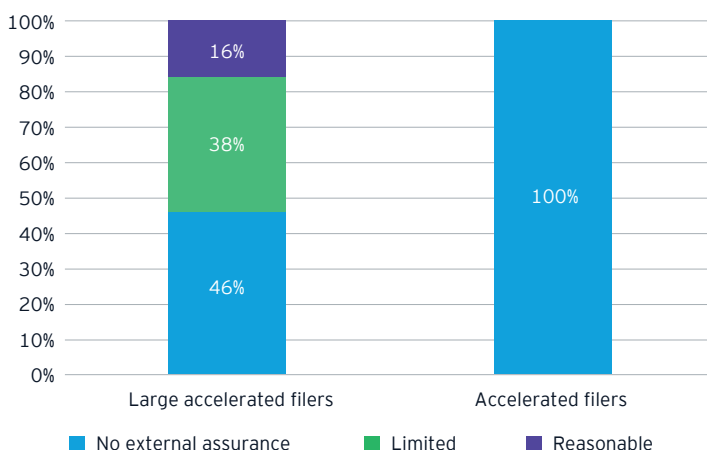
### Filer status reporting Scope 1 and Scope 2 GHG emissions



The SEC rules will require accelerated and large accelerated filers to disclose Scope 1 and Scope 2 GHG emissions, if material. Non-accelerated filers, SRCs and EGCs will be exempt from providing these disclosures.

We found that almost all of the large accelerated filers in the studied group (35 of 37 companies, or 95%) voluntarily reported their Scope 1 and Scope 2 GHG emissions. While accelerated filers would not be required to disclose their Scope 1 and Scope 2 GHG emissions until the fiscal year beginning in 2026 under the SEC rules, two-thirds of the accelerated filers (four of six companies, or 67%) in the studied group voluntarily reported this data in their most recently issued sustainability report. None of the non-accelerated filers, SRCs and EGCs in the group studied reported Scope 1 and Scope 2 GHG emissions.

### Type of assurance over Scope 1 and Scope 2 GHG emissions by filer status (a)

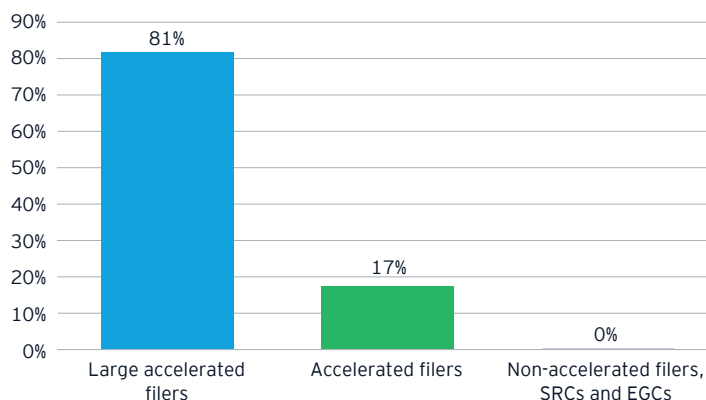


(a) Non-accelerated filers, SRCs and EGCs will not be required to obtain assurance over their Scope 1 and Scope 2 GHG emissions should they choose to voluntarily disclose them. As such, we excluded these companies from this analysis.

The SEC rules will also require accelerated and large accelerated filers to obtain, at a minimum, limited assurance over their reported Scope 1 and/or Scope 2 GHG emissions beginning with the third fiscal year after the compliance date for emissions disclosure. Such disclosures by large accelerated filers will subsequently be subject to reasonable assurance, beginning with the seventh fiscal year after the compliance date for emissions disclosure. Non-accelerated filers, SRCs and EGCs, all of which are exempt from disclosing material Scope 1 and/or Scope 2 emissions, will not be required to obtain assurance over those disclosures if provided voluntarily.

In the studied group, 54% (20 of 37 companies) of the large accelerated filers obtained external assurance over their reported Scope 1 and Scope 2 GHG emissions. Of the 20 large accelerated filers that obtained external assurance, 14 obtained limited assurance while six obtained reasonable assurance over their reported Scope 1 and Scope 2 GHG emissions. None of the accelerated filers that reported Scope 1 and Scope 2 GHG emissions obtained external assurance.

### Filer status reporting climate-related target or goal



Related to goals and targets, the SEC rules will require registrants to provide disclosures of climate-related targets and goals that have materially affected or are reasonably likely to materially affect their business, results of operations or financial condition. We found that 81% of the large accelerated filers in the study group disclosed a climate-related target or goal in their most recently issued sustainability report. This is compared to only 17% of accelerated filers, and none of the non-accelerated filers, SRCs and EGCs in the studied group. Companies will have to determine if the climate-related targets or goals reported in their sustainability reports have materially affected or are reasonably likely to materially affect their business, results of operations or financial condition and, if so, make the required disclosure when required.





# Company statistics

## US – Capital expenditures for the latest fiscal year (a)

US\$ millions

	Proved properties	Unproved properties	Exploration	Development	Other	Total expenditures
Amplify Energy Corp.	0	0	0	35	0	35
Antero Resources Corporation	0	151	8	956	0	1,115
APA Corporation	1	20	31	1,148	0	1,200
Battalion Oil Corporation	0	0	7	33	4	44
Berry Corporation	106	0	0	73	0	179
BP p.l.c.	13	51	356	4,690	0	5,110
California Resources Corporation	0	0	3	198	0	201
Callon Petroleum Company*	503	78	114	873	0	1,568
Chesapeake Energy Corporation	10	52	15	1,721	0	1,798
Chevron Corporation	10,123	504	414	9,645	0	20,686
Chord Energy Corporation*	179	185	6	923	0	1,293
Civitas Resources, Inc.*	4,625	415	2	1,386	0	6,428
CNX Resources Corporation	2	26	4	638	0	670
Comstock Resources, Inc.	0	99	244	1,028	0	1,371
ConocoPhillips	106	157	463	8,150	0	8,876
Coterra Energy Inc.*	0	10	20	1,979	0	2,009
Crescent Energy Company*	836	35	9	578	0	1,458
Devon Energy Corporation	2	63	534	3,160	0	3,759
Diamondback Energy, Inc.	1,314	1,701	768	1,962	0	5,745
Enerplus Corporation	7	0	2	536	0	545
EOG Resources, Inc.	16	207	370	5,228	0	5,821
EQT Corporation	4,143	575	3	1,782	0	6,503
Equinor ASA	0	6	310	1,084	0	1,400
Exxon Mobil Corporation*	2,456	171	54	8,988	0	11,669
Gulfport Energy Corporation*	94	0	0	419	0	513
Hess Corporation	0	8	167	1,424	0	1,599
HighPeak Energy, Inc.	3	12	528	482	0	1,025

	Proved properties	Unproved properties	Exploration	Development	Other	Total expenditures
Mach Natural Resources LP	775	0	0	290	0	1,065
Magnolia Oil & Gas Corporation*	326	68	0	471	0	865
Marathon Oil Corporation	27	-5	143	1,812	0	1,977
Matador Resources Company	1,478	329	231	966	0	3,004
Murphy Oil Corporation	13	0	158	667	0	838
National Fuel Gas Company	33	129	10	553	0	725
Northern Oil and Gas, Inc.	1,288	3	0	639	0	1,930
Occidental Petroleum Corporation	112	143	743	3,957	0	4,955
Ovintiv Inc.*	3,868	1,063	3	2,224	0	7,158
Permian Resources Corporation*	4,590	1,148	18	1,597	0	7,353
Pioneer Natural Resources Company	191	138	3,817	736	0	4,882
Range Resources Corporation	0	40	27	572	0	639
Riley Exploration Permian, Inc.*	228	103	0	152	0	483
Ring Energy, Inc.	83	0	0	153	0	236
Sandridge Energy, Inc.	11	0	0	22	0	33
Shell plc	3	18	1,159	3,265	0	4,445
SilverBow Resources	660	20	0	389	0	1,069
SM Energy Company	65	66	173	932	0	1,236
Southwestern Energy Company	0	184	0	1,939	0	2,123
Talos Energy Inc.	952	250	162	805	0	2,169
TXO Energy Partners, L.P.	9	0	0	30	0	39
Vital Energy, Inc.*	1,329	402	30	633	0	2,394
W&T Offshore, Inc.	44	0	12	54	0	110
<b>All companies</b>	<b>40,624</b>	<b>8,625</b>	<b>11,118</b>	<b>81,977</b>	<b>4</b>	<b>142,348</b>
Integrates	12,595	750	2,293	27,672	0	43,310
Large independents	9,791	4,513	7,085	38,240	0	59,629
Independents	18,238	3,362	1,740	16,065	4	39,409

(a) Amounts are determined from the disclosure of costs incurred and may include amounts that were capitalized and amounts that were charged to expense.

\*See company endnotes on page 42.

## US – Revenues and results of operations for the latest fiscal year (a)

US\$ millions

	Revenues	Production costs (b)	Exploration expense	DD&A	Impairments	Other income (expense) (c)	Income taxes	Results of operations
Amplify Energy Corp.	281	(182)	0	(28)	0	(8)	249	312
Antero Resources Corporation	4,276	(2,920)	(3)	(682)	(51)	0	(135)	485
APA Corporation	3,018	(1,046)	(14)	(709)	0	(40)	(254)	955
Battalion Oil Corporation	209	(128)	0	(57)	0	0	0	24
Berry Corporation	684	(378)	0	(144)	0	(9)	(43)	110
BP p.l.c.	13,370	(2,518)	(348)	(3,532)	0	(2,845)	(889)	3,238
California Resources Corporation	1,879	(935)	(3)	(207)	0	(120)	(171)	443
Callon Petroleum Company*	1,957	(525)	0	(545)	0	0	143	1,030
Chesapeake Energy Corporation	3,547	(1,376)	(27)	(1,478)	0	(16)	(152)	498
Chevron Corporation	22,606	(6,681)	(439)	(7,133)	(71)	(2,849)	(1,195)	4,238
Chord Energy Corporation*	3,132	(1,099)	(18)	(582)	0	0	(336)	1,097
Civitas Resources, Inc.*	3,411	(869)	(2)	(1,171)	(5)	(129)	(215)	1,020
CNX Resources Corporation	1,539	(473)	(10)	(434)	0	(70)	(524)	28
Comstock Resources, Inc.	1,345	(409)	(2)	(608)	0	0	(35)	291
ConocoPhillips	24,426	(7,206)	(225)	(6,640)	(7)	(272)	(2,307)	7,769
Coterra Energy Inc.*	5,887	(1,820)	(20)	(1,641)	0	12	(503)	1,915
Crescent Energy Company*	2,161	(1,038)	(9)	(676)	(153)	0	(23)	262
Devon Energy Corporation	10,791	(2,928)	(20)	(2,464)	0	(62)	(1,044)	4,273
Diamondback Energy, Inc.	8,118	(1,684)	0	(1,746)	0	68	(912)	3,844
Enerplus Corporation	1,720	(671)	0	(377)	0	0	(111)	561
EOG Resources, Inc.	17,239	(3,614)	(167)	(3,244)	(184)	(663)	(2,056)	7,311
EQT Corporation	5,045	(2,412)	(3)	(1,732)	(109)	(17)	(187)	585
Equinor ASA	4,319	(494)	(322)	(1,489)	0	(691)	(358)	965
Exxon Mobil Corporation*	18,741	(6,116)	(44)	(8,537)	0	0	(703)	3,341
Gulfport Energy Corporation*	1,051	(451)	0	(318)	0	0	525	807
Hess Corporation	3,462	(1,107)	(170)	(904)	(82)	(1,458)	0	(259)
HighPeak Energy, Inc.	1,111	(204)	(5)	(424)	0	(1)	(100)	377

	Revenues	Production costs (b)	Exploration expense	DD&A	Impairments	Other income (expense) (c)	Income taxes	Results of operations
Mach Natural Resources LP	647	(199)	0	(131)	0	0	0	317
Magnolia Oil & Gas Corporation*	1,227	(265)	(5)	(325)	(16)	(4)	(107)	505
Marathon Oil Corporation	6,238	(1,785)	(57)	(2,159)	0	(49)	(413)	1,775
Matador Resources Company	2,536	(508)	0	(717)	0	(4)	(186)	1,121
Murphy Oil Corporation	2,928	(829)	(167)	(714)	0	(81)	(233)	904
National Fuel Gas Company	1,039	(271)	0	(236)	0	(6)	(146)	380
Northern Oil and Gas, Inc.	1,956	(507)	0	(486)	0	0	(78)	885
Occidental Petroleum Corporation	17,494	(5,995)	(323)	(5,559)	(209)	(1,058)	(933)	3,417
Ovintiv Inc.*	5,570	(1,617)	0	(1,519)	0	(8)	(528)	1,898
Permian Resources Corporation*	3,220	(704)	(19)	(1,008)	(7)	(125)	(156)	1,201
Pioneer Natural Resources Company	12,915	(2,827)	(80)	(2,862)	0	(123)	(1,353)	5,670
Range Resources Corporation	2,588	(1,234)	(27)	(350)	(46)	(99)	(229)	603
Riley Exploration Permian, Inc.*	373	(84)	(4)	(64)	(10)	0	(44)	167
Ring Energy, Inc.	361	(95)	0	(89)	0	(3)	0	174
Sandridge Energy, Inc.	149	(53)	0	(16)	0	0	(19)	61
Shell plc	8,834	(1,259)	(446)	(4,330)	0	(886)	(330)	1,583
SilverBow Resources	741	(188)	0	(219)	0	(1)	(84)	249
SM Energy Company	2,391	(564)	(59)	(690)	0	0	(96)	982
Southwestern Energy Company	4,109	(1,990)	0	(1,302)	(1,710)	0	200	(693)
Talos Energy Inc.	1,448	(392)	0	(664)	0	(86)	61	367
TXO Energy Partners, L.P.	298	(220)	0	(44)	0	(9)	0	25
Vital Energy, Inc.*	1,529	(397)	0	(447)	0	(4)	(150)	531
W&T Offshore, Inc.	515	(284)	0	(115)	0	(29)	(18)	69
<b>All companies</b>	<b>244,431</b>	<b>(71,551)</b>	<b>(3,038)</b>	<b>(71,548)</b>	<b>(2,660)</b>	<b>(11,745)</b>	<b>(16,178)</b>	<b>67,711</b>
<b>Integrates</b>	<b>67,870</b>	<b>(17,068)</b>	<b>(1,599)</b>	<b>(25,021)</b>	<b>(71)</b>	<b>(7,271)</b>	<b>(3,475)</b>	<b>13,365</b>
<b>Large independents</b>	<b>133,244</b>	<b>(40,988)</b>	<b>(1,132)</b>	<b>(34,716)</b>	<b>(2,398)</b>	<b>(3,815)</b>	<b>(11,076)</b>	<b>39,119</b>
<b>Independents</b>	<b>43,317</b>	<b>(13,495)</b>	<b>(307)</b>	<b>(11,811)</b>	<b>(191)</b>	<b>(659)</b>	<b>(1,627)</b>	<b>15,227</b>

(a) Amounts are determined from the results of the operations table if it is provided; otherwise, amounts are determined from the income statement. Revenues determined from the income statement include oil and gas sales and realized derivatives gains or losses.

(b) This includes production taxes and transportation costs for companies that separately disclose these expenses.

(c) This includes asset retirement obligations accretion and production-related general and administrative expenses, among other items, for those companies that separately disclose these expenses.

\*See company endnotes on page 42.

## US – Oil reserves for the latest fiscal year (a)

Million barrels

	Beginning	Extensions and discoveries	Improved recovery	Revisions	Production	Purchases	Sales	Other	Ending
Amplify Energy Corp.	72	0	0	(8)	(4)	0	0	0	60
Antero Resources Corporation	1,248	20	0	54	(71)	0	0	0	1,251
APA Corporation	378	69	0	(12)	(52)	0	(1)	0	382
Battalion Oil Corporation	68	0	0	(15)	(4)	0	0	0	49
Berry Corporation	101	5	0	(7)	(9)	9	0	0	99
BP p.l.c.	1,623	17	29	(74)	(154)	25	(4)	0	1,462
California Resources Corporation	332	4	1	(11)	(23)	0	(12)	0	291
Callon Petroleum Company*	381	55	0	(28)	(30)	48	(57)	(30)	339
Chesapeake Energy Corporation	272	0	0	0	(12)	0	(261)	0	(1)
Chevron Corporation	2,958	262	9	(367)	(364)	469	(1)	0	2,966
Chord Energy Corporation*	520	68	0	(43)	(49)	15	(4)	0	507
Civitas Resources, Inc.*	271	16	0	(17)	(55)	266	(1)	(3)	477
CNX Resources Corporation	103	17	0	27	(8)	0	(4)	0	135
Comstock Resources, Inc.	1	0	0	0	0	0	0	0	1
ConocoPhillips	3,290	293	0	187	(361)	3	(13)	0	3,399
Coterra Energy Inc.*	537	91	0	9	(68)	0	(1)	0	568
Crescent Energy Company*	322	4	0	(27)	(33)	89	(3)	0	352
Devon Energy Corporation	1,286	234	0	(58)	(176)	0	0	0	1,286
Diamondback Energy, Inc.	1,555	285	0	(47)	(130)	57	(42)	0	1,678
Enerplus Corporation	176	33	0	(14)	(23)	0	(1)	0	171
EOG Resources, Inc.	2,804	388	0	82	(256)	2	(12)	0	3,008
EQT Corporation	196	14	0	10	(18)	98	0	0	300
Equinor ASA	277	63	0	51	(50)	0	0	0	341
Exxon Mobil Corporation*	2,323	355	0	(398)	(207)	156	(120)	0	2,109
Gulfport Energy Corporation*	72	20	0	(5)	(5)	0	0	0	82
Hess Corporation	728	59	0	7	(63)	0	0	0	731
HighPeak Energy, Inc.	113	61	0	(18)	(15)	0	(1)	0	140

	Beginning	Extensions and discoveries	Improved recovery	Revisions	Production	Purchases	Sales	Other	Ending
Mach Natural Resources LP	95	0	0	(14)	(9)	89	0	0	161
Magnolia Oil & Gas Corporation*	105	25	0	(3)	(21)	13	0	0	119
Marathon Oil Corporation	907	150	0	(40)	(98)	4	0	0	923
Matador Resources Company	196	56	0	(31)	(28)	79	0	0	272
Murphy Oil Corporation	301	11	0	(10)	(39)	0	0	0	263
National Fuel Gas Company	0	0	0	0	0	0	0	0	0
Northern Oil and Gas, Inc.	163	28	0	(34)	(22)	35	0	0	170
Occidental Petroleum Corporation	2,293	104	9	260	(285)	23	(2)	0	2,402
Ovintiv Inc.*	993	88	0	(223)	(89)	207	(78)	0	898
Permian Resources Corporation*	410	63	0	(49)	(51)	261	(4)	0	630
Pioneer Natural Resources Company	1,710	357	0	(131)	(202)	5	(1)	0	1,738
Range Resources Corporation	1,047	31	0	47	(40)	0	0	0	1,085
Riley Exploration Permian, Inc.*	63	19	0	(9)	(6)	20	0	0	87
Ring Energy, Inc.	112	4	0	(7)	(6)	8	(5)	0	106
Sandridge Energy, Inc.	34	1	0	(9)	(3)	1	0	0	24
Shell plc	543	69	0	46	(112)	3	(110)	0	439
SilverBow Resources	85	24	0	(21)	(8)	87	0	0	167
SM Energy Company	304	19	0	60	(34)	4	(3)	0	350
Southwestern Energy Company	711	36	0	37	(38)	0	0	0	746
Talos Energy Inc.	104	3	0	(8)	(20)	43	0	0	122
TXO Energy Partners, L.P.	75	0	0	(17)	(4)	1	0	0	55
Vital Energy, Inc.*	210	21	0	(49)	(26)	125	0	0	281
W&T Offshore, Inc.	60	0	0	(4)	(6)	2	0	0	52
PDC Energy, Inc.	618	0	0	0	0	0	(618)	0	0
Denbury Inc.	197	0	0	0	0	0	(197)	0	0
Earthstone Energy, Inc.	244	0	0	0	0	0	(244)	0	0
<b>All companies</b>	<b>33,587</b>	<b>3,542</b>	<b>48</b>	<b>(931)</b>	<b>(3,387)</b>	<b>2,247</b>	<b>(1,800)</b>	<b>(33)</b>	<b>33,273</b>
Integrations	7,181	697	38	(788)	(775)	650	(125)	0	6,878
Large independents	19,577	2,150	9	194	(1,907)	399	(410)	0	20,012
Independents	6,829	695	1	(337)	(705)	1,198	(1,265)	(33)	6,383

(a) See Appendix for activity related to acquired companies.

\*See company endnotes on page 42.

## US – Gas reserves for the latest fiscal year

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	Beginning	Extensions and discoveries	Improved recovery	Revisions	Production	Purchases	Sales	Other	Ending
Amplify Energy Corp.	313	0	0	(66)	(20)	0	0	0	227
Antero Resources Corporation	10,270	296	0	863	(815)	0	0	0	10,614
APA Corporation	1,377	158	0	(267)	(165)	0	0	0	1,103
Battalion Oil Corporation	144	0	0	(23)	(9)	0	0	0	112
Berry Corporation	59	0	0	(29)	(3)	0	0	0	27
BP p.l.c.	5,809	5	254	212	(560)	206	(25)	0	5,901
California Resources Corporation	511	7	0	51	(51)	0	0	0	518
Callon Petroleum Company*	593	76	0	24	(46)	43	(53)	(75)	562
Chesapeake Energy Corporation	11,369	415	0	(325)	(1,266)	58	(563)	0	9,688
Chevron Corporation	6,831	660	2	(1,198)	(771)	2,161	(3)	0	7,682
Chord Energy Corporation*	815	62	0	(33)	(83)	20	(3)	0	778
Civitas Resources, Inc.*	868	31	0	(69)	(134)	636	(4)	(8)	1,320
CNX Resources Corporation	9,187	478	0	(1,081)	(515)	0	(147)	0	7,922
Comstock Resources, Inc.	6,698	571	0	(1,804)	(524)	0	0	0	4,941
ConocoPhillips	7,244	121	0	278	(654)	4	(97)	0	6,896
Coterra Energy Inc.*	11,173	823	0	(414)	(1,053)	0	(4)	0	10,525
Crescent Energy Company*	1,507	16	0	(472)	(131)	272	(15)	0	1,177
Devon Energy Corporation	3,175	525	0	(131)	(385)	0	(2)	0	3,182
Diamondback Energy, Inc.	2,869	425	0	(48)	(198)	80	(130)	0	2,998
Enerplus Corporation	877	40	0	(168)	(83)	0	(1)	0	665
EOG Resources, Inc.	8,273	1,287	0	(327)	(578)	3	(28)	0	8,630
EQT Corporation	23,825	3,327	0	(1,461)	(1,907)	2,012	0	0	25,796
Equinor ASA	2,344	465	0	(185)	(357)	0	0	0	2,267
Exxon Mobil Corporation*	13,772	1,930	0	(1,972)	(965)	7	(452)	0	12,320
Gulfport Energy Corporation*	3,612	875	0	(411)	(350)	0	0	0	3,726
Hess Corporation	1,004	65	0	16	(93)	0	0	0	992
HighPeak Energy, Inc.	59	27	0	9	(7)	0	(1)	0	87



	Beginning	Extensions and discoveries	Improved recovery	Revisions	Production	Purchases	Sales	Other	Ending
Mach Natural Resources LP	630	0	0	(96)	(59)	632	0	0	1,107
Magnolia Oil & Gas Corporation*	313	87	0	(39)	(55)	12	(17)	0	301
Marathon Oil Corporation	1,859	330	0	(242)	(190)	38	(1)	0	1,794
Matador Resources Company	963	193	0	(89)	(123)	183	0	0	1,127
Murphy Oil Corporation	335	12	0	(19)	(35)	0	0	0	293
National Fuel Gas Company	4,171	670	0	32	(372)	34	0	0	4,535
Northern Oil and Gas, Inc.	1,008	68	0	(166)	(84)	190	0	0	1,016
Occidental Petroleum Corporation	4,073	268	1	325	(480)	50	(2)	0	4,235
Ovintiv Inc.*	2,698	146	0	(460)	(189)	201	(137)	0	2,259
Permian Resources Corporation*	1,034	127	0	(121)	(119)	848	(3)	0	1,766
Pioneer Natural Resources Company	3,997	767	0	3	(373)	5	(1)	0	4,398
Range Resources Corporation	11,798	24	0	327	(538)	0	0	0	11,611
Riley Exploration Permian, Inc.*	86	23	0	(18)	(6)	39	0	0	124
Ring Energy, Inc.	158	4	0	(10)	(6)	3	(3)	0	146
Sandridge Energy, Inc.	243	3	0	(36)	(20)	5	0	0	195
Shell plc	521	43	0	64	(114)	2	(31)	0	485
SilverBow Resources	1,726	120	0	(421)	(80)	333	0	0	1,678
SM Energy Company	1,403	69	0	194	(132)	11	(13)	0	1,532
Southwestern Energy Company	17,362	1,813	0	(2,196)	(1,438)	0	(350)	0	15,191
Talos Energy Inc.	220	13	0	(63)	(26)	37	0	0	181
TXO Energy Partners, L.P.	408	7	0	(122)	(29)	1	0	0	265
Vital Energy, Inc.*	552	56	0	(55)	(55)	244	0	0	742
W&T Offshore, Inc.	635	0	0	(169)	(38)	6	0	0	434
PDC Energy, Inc.	2,892	0	0	0	0	0	(2,892)	0	0
Denbury Inc.	30	0	0	0	0	0	(30)	0	0
Earthstone Energy, Inc.	742	0	0	0	0	0	(742)	0	0
<b>All companies</b>	<b>194,435</b>	<b>17,528</b>	<b>257</b>	<b>(12,408)</b>	<b>(16,284)</b>	<b>8,376</b>	<b>(5,750)</b>	<b>(83)</b>	<b>186,071</b>
Integrations	28,756	3,060	256	(3,143)	(2,653)	2,374	(480)	0	28,170
Large independents	120,989	10,632	1	(3,792)	(10,157)	2,451	(1,315)	0	118,809
Independents	44,690	3,836	0	(5,473)	(3,474)	3,551	(3,955)	(83)	39,092

(a) See the Appendix for activity related to acquired companies.

\*See company endnotes on page 42.

## US – Performance measures (three-year averages)

Costs in US\$ per BOE; production replacement rates in %

	Production replacement rates							Production costs
	Oil			Gas				
	PRAC	All sources	F&D including revisions	F&D excluding revisions	All sources	F&D including revisions	F&D excluding revisions	
Amplify Energy Corp.	0.00	37%	37%	8%	30%	30%	6%	22.72
Antero Resources Corporation	0.00	91%	119%	34%	124%	138%	44%	14.47
APA Corporation	15.06	90%	97%	81%	95%	100%	80%	12.59
Battalion Oil Corporation	0.00	93%	94%	217%	221%	221%	164%	23.19
Berry Corporation	8.60	130%	77%	119%	107%	214%	118%	35.32
BP p.l.c.	4.67	27%	25%	33%	150%	175%	51%	11.25
California Resources Corporation	0.00	14%	47%	38%	94%	99%	24%	26.35
Callon Petroleum Company*	10.45	82%	77%	157%	175%	159%	151%	13.18
Chesapeake Energy Corporation	5.62	(201%)	203%	87%	282%	160%	66%	7.16
Chevron Corporation	11.12	162%	118%	124%	269%	170%	180%	13.42
Chord Energy Corporation*	9.28	505%	186%	127%	304%	47%	57%	18.07
Civitas Resources, Inc.*	12.63	500%	31%	34%	537%	(13%)	32%	12.25
CNX Resources Corporation	0.00	345%	362%	200%	31%	40%	147%	4.78
Comstock Resources, Inc.	0.66	(708%)	(19%)	19%	59%	49%	162%	4.09
ConocoPhillips	13.88	253%	180%	104%	252%	152%	79%	15.32
Coterra Energy Inc.*	11.12	494%	226%	166%	(5%)	(62%)	114%	7.01
Crescent Energy Company*	8.08	260%	52%	72%	201%	(22%)	27%	18.92
Devon Energy Corporation	10.76	259%	132%	123%	257%	156%	124%	11.71
Diamondback Energy, Inc.	11.55	280%	209%	272%	356%	309%	282%	9.99
Enerplus Corporation	12.20	307%	219%	204%	207%	187%	207%	18.69
EOG Resources, Inc.	19.34	196%	200%	170%	331%	349%	339%	10.71
EQT Corporation	5.64	371%	187%	145%	226%	111%	156%	7.22
Equinor ASA	0.00	101%	155%	58%	109%	117%	110%	4.03
Exxon Mobil Corporation*	15.26	103%	101%	218%	61%	130%	178%	16.41
Gulfport Energy Corporation*	0.00	276%	276%	241%	244%	244%	187%	7.58
Hess Corporation	0.00	195%	221%	209%	227%	243%	164%	13.27
HighPeak Energy, Inc.	18.40	538%	476%	577%	784%	638%	621%	12.00

	Production replacement rates							Production costs
	Oil			Gas				
	PRAC	All sources	F&D including revisions	F&D excluding revisions	All sources	F&D including revisions	F&D excluding revisions	
Mach Natural Resources LP	3.85	752%	194%	0%	794%	139%	0%	10.95
Magnolia Oil & Gas Corporation*	19.39	173%	145%	128%	162%	158%	145%	9.17
Marathon Oil Corporation	11.44	209%	158%	106%	235%	139%	118%	14.42
Matador Resources Company	13.88	267%	137%	166%	253%	189%	159%	10.46
Murphy Oil Corporation	24.30	88%	86%	45%	74%	73%	43%	16.64
National Fuel Gas Company	6.64	(466%)	71%	35%	218%	219%	213%	4.96
Northern Oil and Gas, Inc.	11.35	247%	93%	126%	534%	32%	78%	14.10
Occidental Petroleum Corporation	11.55	207%	201%	53%	228%	227%	53%	15.31
Ovintiv Inc.*	13.94	50%	9%	169%	98%	82%	148%	13.51
Permian Resources Corporation*	11.68	558%	78%	175%	664%	62%	149%	10.84
Pioneer Natural Resources Company	10.12	238%	138%	180%	355%	252%	214%	10.42
Range Resources Corporation	0.00	163%	163%	143%	129%	129%	152%	9.97
Riley Exploration Permian, Inc.*	8.77	413%	253%	356%	688%	353%	412%	11.79
Ring Energy, Inc.	3.59	424%	19%	73%	756%	(88%)	76%	14.95
Sandridge Energy, Inc.	4.79	140%	163%	15%	245%	229%	10%	8.07
Shell plc	0.90	28%	88%	35%	30%	86%	47%	10.73
SilverBow Resources	5.80	981%	105%	241%	445%	161%	454%	7.65
SM Energy Company	11.66	222%	222%	122%	231%	231%	108%	10.57
Southwestern Energy Company	0.00	348%	349%	292%	251%	116%	163%	6.80
Talos Energy Inc.	19.39	105%	26%	19%	15%	(17%)	52%	14.27
TXO Energy Partners, L.P.	6.32	402%	(4%)	13%	191%	175%	26%	30.02
Vital Energy, Inc.*	8.41	265%	35%	96%	152%	89%	70%	10.04
W&T Offshore, Inc.	14.59	106%	74%	0%	(6%)	(17%)	0%	18.11
<b>All companies</b>	<b>9.50</b>	<b>195%</b>	<b>143%</b>	<b>127%</b>	<b>193%</b>	<b>132%</b>	<b>137%</b>	<b>11.66</b>
Integrates	14.98	102%	96%	114%	133%	142%	143%	12.84
Large independents	8.61	222%	175%	137%	201%	130%	135%	10.99
Independents	11.50	261%	111%	113%	220%	126%	141%	12.53

\*See company endnotes on page 42.

## US – Rankings and accounting method

	Rankings for the latest fiscal year					Accounting method
	All sources	Oil reserves		Gas reserves		
	Total capital expenditures	Beginning	Ending	Beginning	Ending	
Amplify Energy Corp.	49	44	43	43	43	Successful efforts
Antero Resources Corporation	31	10	10	7	5	Successful Efforts
APA Corporation	30	21	21	26	30	Successful efforts
Battalion Oil Corporation	47	45	46	47	48	Full Cost
Berry Corporation	45	39	40	49	50	Successful efforts
BP p.l.c.	10	7	8	13	12	Successful efforts
California Resources Corporation	44	22	27	39	37	Successful efforts
Callon Petroleum Company*	24	20	25	36	36	Full Cost
Chesapeake Energy Corporation	22	27	50	5	7	Successful efforts
Chevron Corporation	1	2	3	11	10	Successful efforts
Chord Energy Corporation*	28	18	18	33	33	Successful Efforts
Civitas Resources, Inc.*	7	28	19	32	26	Successful efforts
CNX Resources Corporation	38	38	36	8	9	Successful efforts
Comstock Resources, Inc.	27	49	48	12	13	Successful efforts
ConocoPhillips	3	1	1	10	11	Successful efforts
Coterra Energy Inc.*	19	17	17	6	6	Successful Efforts
Crescent Energy Company*	25	23	22	24	27	Successful efforts
Devon Energy Corporation	14	9	9	18	18	Successful efforts
Diamondback Energy, Inc.	9	8	7	19	19	Full Cost
Enerplus Corporation	40	32	31	31	35	Successful efforts
EOG Resources, Inc.	8	3	2	9	8	Successful efforts
EQT Corporation	6	31	26	1	1	Successful efforts
Equinor ASA	26	26	24	21	20	Successful efforts
Exxon Mobil Corporation*	2	4	5	3	3	Successful efforts
Gulfport Energy Corporation*	41	43	42	17	17	Full Cost

	Rankings for the latest fiscal year					Accounting method
	All sources	Oil reserves		Gas reserves		
	Total capital expenditures	Beginning	Ending	Beginning	Ending	
Hess Corporation	23	14	15	29	32	Successful efforts
HighPeak Energy, Inc.	34	34	35	50	49	Successful efforts
Mach Natural Resources LP	33	40	34	35	29	Full Cost
Magnolia Oil & Gas Corporation*	35	36	38	42	40	Successful efforts
Marathon Oil Corporation	20	13	12	22	22	Successful efforts
Matador Resources Company	15	30	29	30	28	Successful efforts
Murphy Oil Corporation	36	25	30	41	41	Successful Efforts
National Fuel Gas Company	37	50	49	14	14	Full Cost
Northern Oil and Gas, Inc.	21	33	32	28	31	Full Cost
Occidental Petroleum Corporation	11	5	4	15	16	Successful efforts
Ovintiv Inc.*	5	12	13	20	21	Full Cost
Permian Resources Corporation*	4	19	16	27	23	Successful efforts
Pioneer Natural Resources Company	12	6	6	16	15	Successful efforts
Range Resources Corporation	39	11	11	4	4	Successful efforts
Riley Exploration Permian, Inc.*	42	46	41	48	47	Successful efforts
Ring Energy, Inc.	43	35	39	46	46	Full Cost
Sandridge Energy, Inc.	50	48	47	44	44	Full Cost
Shell plc	13	16	20	38	38	Successful efforts
SilverBow Resources	32	41	33	23	24	Successful Efforts
SM Energy Company	29	24	23	25	25	Successful efforts
Southwestern Energy Company	18	15	14	2	2	Full Cost
Talos Energy Inc.	17	37	37	45	45	Full Cost
TXO Energy Partners, L.P.	48	42	44	40	42	Successful efforts
Vital Energy, Inc.*	16	29	28	37	34	Full Cost
W&T Offshore, Inc.	46	47	45	34	39	Full Cost

\*See company endnotes on page 42.

## US – ESG reporting (a)

	Are Scope 1 and Scope 2 greenhouse gas (GHG) emissions reported?	Does reporting include external assurance obtained over Scope 1 and Scope 2 GHG emissions?	If external assurance over Scope 1 and 2 GHG emissions is provided, what type of assurance?	Does reporting include any climate-related targets or goals?
Amplify Energy Corp.	No	No	-	No
Antero Resources Corporation	Yes	Yes	Limited	Yes
APA Corporation	Yes	No	-	Yes
Battalion Oil Corporation	No	No	-	No
Berry Corporation	Yes	No	-	No
BP p.l.c.	Yes	Yes	Limited	Yes
California Resources Corporation	Yes	Yes	Reasonable	Yes
Callon Petroleum Company*	Yes	No	-	Yes
Chesapeake Energy Corporation	Yes	Yes	Limited	Yes
Chevron Corporation	Yes	Yes	Reasonable	Yes
Chord Energy Corporation*	Yes	No	-	No
Civitas Resources, Inc.*	Yes	No	-	Yes
CNX Resources Corporation	Yes	No	-	Yes
Comstock Resources, Inc.	No	No	-	No
ConocoPhillips	Yes	Yes	Limited	Yes
Coterra Energy Inc.*	Yes	Yes	Limited	Yes
Crescent Energy Company*	Yes	No	-	Yes
Devon Energy Corporation	Yes	Yes	Limited	Yes
Diamondback Energy, Inc.	Yes	Yes	Limited	Yes
Enerplus Corporation	Yes	Yes	Limited	Yes
EOG Resources, Inc.	Yes	Yes	Reasonable	Yes
EQT Corporation	Yes	No	-	Yes
Equinor ASA	Yes	Yes	Reasonable	Yes
Exxon Mobil Corporation*	Yes	Yes	Limited	Yes
Gulfport Energy Corporation*	Yes	No	-	No
Hess Corporation	Yes	Yes	Limited	Yes
HighPeak Energy, Inc.	No	No	-	No

	Are Scope 1 and Scope 2 greenhouse gas (GHG) emissions reported?	Does reporting include external assurance obtained over Scope 1 and Scope 2 GHG emissions?	If external assurance over Scope 1 and 2 GHG emissions is provided, what type of assurance?	Does reporting include any climate-related targets or goals?
Mach Natural Resources LP	No	No	-	No
Magnolia Oil & Gas Corporation*	Yes	No	-	No
Marathon Oil Corporation	Yes	No	-	Yes
Matador Resources Company	No	No	-	No
Murphy Oil Corporation	Yes	Yes	Limited	Yes
National Fuel Gas Company	Yes	Yes	Reasonable	Yes
Northern Oil and Gas, Inc.	Yes	No	-	No
Occidental Petroleum Corporation	Yes	Yes	Limited	Yes
Ovintiv Inc.*	Yes	No	-	Yes
Permian Resources Corporation*	Yes	No	-	No
Pioneer Natural Resources Company	Yes	Yes	Limited	Yes
Range Resources Corporation	Yes	No	-	Yes
Riley Exploration Permian, Inc.*	No	No	-	No
Ring Energy, Inc.	Yes	No	-	No
Sandridge Energy, Inc.	No	No	-	No
Shell plc	Yes	Yes	Reasonable	Yes
SilverBow Resources	No	No	-	No
SM Energy Company	Yes	Yes	Limited	Yes
Southwestern Energy Company	Yes	No	-	Yes
Talos Energy Inc.	Yes	No	-	Yes
TXO Energy Partners, L.P.	No	No	-	No
Vital Energy, Inc.*	Yes	Yes	Limited	Yes
W&T Offshore, Inc.	Yes	No	-	No
<b>% of all companies</b>	<b>80%</b>	<b>42%</b>		<b>64%</b>
<b>Large accelerated filers</b>	<b>95%</b>	<b>54%</b>		<b>81%</b>
<b>Accelerated filers</b>	<b>67%</b>	<b>0%</b>		<b>17%</b>
<b>Non-accelerated filers, SRCs and EGCs</b>	<b>0%</b>	<b>0%</b>		<b>0%</b>

(a) The 50 largest companies are based on 2023 end-of-year oil and gas reserve estimates. The data presented here is based on a review of company sustainability and ESG reports, as well as a review of information included on company websites.

\*See company endnotes on page 42.



## Peer groups

### Integrations

BP p.l.c.  
Chevron Corporation  
Equinor ASA  
Exxon Mobil Corporation  
Shell plc

### Large independents

Antero Resources Corporation  
Chesapeake Energy Corporation  
CNX Resources Corporation  
ConocoPhillips  
Coterra Energy Inc.  
Devon Energy Corporation  
Diamondback Energy, Inc.  
EOG Resources, Inc.  
EQT Corporation  
Hess Corporation  
Marathon Oil Corporation  
Occidental Petroleum Corporation  
Ovintiv Inc.  
Pioneer Natural Resources Company  
Range Resources Corporation  
Southwestern Energy Company

### Independents

Amplify Energy Corp.  
APA Corporation  
Battalion Oil Corporation  
Berry Corporation  
California Resources Corporation  
Callon Petroleum Company  
Chord Energy Corporation  
Civitas Resources, Inc.  
Comstock Resources, Inc.  
Crescent Energy Company  
Enerplus Corporation  
Gulfport Energy Corporation  
HighPeak Energy, Inc.  
Mach Natural Resources LP  
Magnolia Oil & Gas Corporation  
Matador Resources Company  
Murphy Oil Corporation  
National Fuel Gas Company  
Northern Oil and Gas, Inc.  
Permian Resources Corporation  
Riley Exploration Permian, Inc.  
Ring Energy, Inc.  
Sandridge Energy, Inc.  
SilverBow Resources  
SM Energy Company  
Talos Energy Inc.  
TXO Energy Partners, L.P.  
Vital Energy, Inc.  
W&T Offshore, Inc.



# Appendix

## Acquired companies

Due to the significance of the operations of companies that were acquired during the study period, capital expenditures, revenues and results of operations, oil reserves and gas reserves schedules for the 2019 through 2023 period were updated to include activities prior to acquisition, as described below. This provides a more meaningful comparison throughout the study period.

In August 2023, PDC Energy, Inc. was acquired by Chevron Corporation. PDC Energy, Inc.'s 2019 through 2022 results have been included in the abovementioned schedules, as applicable. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Chevron Corporation for 2023 include activity related to the operations acquired from PDC Energy, Inc. PDC Energy, Inc.'s end-of-year 2022 oil reserves (618 million barrels) and gas reserves (2,892 bcf) have been included in the 2023 beginning-of-year reserves with an equal volume included as sales in 2023 to reflect the Chevron Corporation transaction.

In October 2023, Earthstone Energy, Inc. was acquired by Permian Resources Corporation (formerly Centennial Resource Development, Inc.). Earthstone Energy, Inc.'s 2019 through 2022 results have been included in the abovementioned schedules, as applicable. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Permian Resources Corporation for 2023 include activity related to the operations acquired from Earthstone Energy, Inc. Earthstone Energy, Inc.'s end-of-year 2022 oil reserves (244 million barrels) and gas reserves (742 bcf) have been included in the 2023 beginning-of-year reserves with an equal volume included as sales in 2023 to reflect the Permian Resources Corporation transaction.

In November 2023, Denbury Inc. was acquired by Exxon Mobil Corporation. Denbury Inc.'s 2019 through 2022 results have been included in the abovementioned schedules, as applicable. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Exxon Mobil Corporation for 2023 include activity related to the operations acquired from Denbury Inc. Denbury Inc.'s end-of-year 2022 oil reserves (197 million barrels) and gas reserves (2,892 bcf) have been included in the 2023 beginning-of-year reserves with an equal volume included as sales in 2023 to reflect the Exxon Mobil Corporation transaction.

In September 2022, Permian Resources Corporation merged with Colgate Energy Partners III, LLC, with Permian Resources Corporation remaining as the accounting acquirer. The capital expenditures, revenues and results of operations, oil reserves and gas reserves for Colgate Energy Partners III, LLC for 2019 through 2021 are not publicly available and have been excluded from the abovementioned schedules. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Permian Resources Corporation for 2022 include activity related to the operations acquired from Colgate Energy Partners III, LLC.

In July 2022, Chord Energy Corporation (formerly Oasis Petroleum Inc.) and Whiting Petroleum Corporation merged, with Chord Energy Corporation remaining as the accounting acquirer. Whiting Petroleum Corporation's 2019 through 2021 results have been included in the abovementioned schedules, as applicable. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Chord Energy Corporation for 2022 include activity related to the operations acquired from Whiting Petroleum Corporation. Whiting Petroleum Corporation's end-of-year 2021 oil reserves (255 million barrels) and gas reserves (426 bcf) have been included in the 2022 beginning-of-year reserves with an equal volume included as sales in 2022 to reflect the Chord Energy Corporation transaction.

In December 2021, Crescent Energy Company was formed through the merger of Contango Oil and Gas Company and Independence Energy LLC. The annual report filed by Crescent Energy Company for 2021 included the 2019 and 2020 capital expenditures, revenues and results of operations, oil reserves and gas reserves for Contango Oil and Gas Company and Independence Energy LLC. These results have been included in the abovementioned schedules.

In November 2021, Civitas Resources, Inc. (formerly Bonanza Creek Energy, Inc.) and Extraction Oil & Gas, Inc. merged, with Civitas Resources, Inc. remaining as the accounting acquirer. Extraction Oil & Gas, Inc.'s 2019 and 2020 results have been included in the abovementioned schedules, as applicable. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Civitas Resources, Inc. for 2021 include activity related to the operations acquired from Extraction Oil & Gas, Inc. Extraction Oil & Gas, Inc.'s end-of-year 2020 oil reserves (84 million barrels) and gas reserves (370 bcf)

have been included in the 2021 beginning-of-year reserves with an equal volume included as sales in 2021 to reflect the Civitas Resources, Inc. transaction.

In October 2021, Coterra Energy Inc. (formerly Cabot Oil & Gas Corporation) and Cimarex Energy Co. merged, with Coterra Energy Inc. remaining as the accounting acquirer. Cimarex Energy Co.'s 2019 and 2020 results have been included in the abovementioned schedules, as applicable. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Coterra Energy Inc. for 2021 include activity related to the operations acquired from Cimarex Energy Co. Cimarex Energy Co.'s end-of-year 2020 oil reserves (304 million barrels) and gas reserves (1,363 bcf) have been included in the 2021 beginning-of-year reserves with an equal volume included as sales in 2021 to reflect the Coterra Energy Inc. transaction.

In March 2021, Diamondback Energy, Inc. and QEP Resources, Inc. merged, with Diamondback Energy, Inc. remaining as the accounting acquirer. QEP Resources, Inc.'s 2019 and 2020 results have been included in the abovementioned schedules, as applicable. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Diamondback Energy, Inc. for 2021 include activity related to the operations acquired from QEP Resources, Inc. QEP Resources, Inc.'s end-of-year 2020 oil reserves (302 million barrels) and gas reserves (368 bcf) have been included in the 2021 beginning-of-year reserves with an equal volume included as sales in 2021 to reflect the Diamondback Energy, Inc. transaction.

In January 2021, Concho Resources Inc. was acquired by ConocoPhillips, Parsley Energy, Inc. was acquired by Pioneer Natural Resources Company, and WPX Energy, Inc. and Devon Energy Corporation merged, with Devon Energy Corporation remaining as the accounting acquirer. As Concho Resources Inc, Parsley Energy, Inc. and WPX Energy, Inc. did not file annual reports for 2020, the activity related to these companies has been excluded from the abovementioned schedules to provide a more meaningful comparison throughout the study period.

In October 2020, Noble Energy, Inc. was acquired by Chevron Corporation. Noble Energy, Inc.'s 2019 results have been included in the abovementioned schedules, as applicable. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Chevron Corporation for 2020 include activity related to the operations acquired from Noble Energy, Inc. Noble Energy, Inc.'s end-of-year 2019 oil reserves (640 million barrels) and gas reserves (2,019 bcf) have been included

in the 2020 beginning-of-year reserves with an equal volume included as sales in 2020 to reflect the Chevron Corporation transaction.

In November 2020, Montage Resources Corporation merged into Southwestern Energy Company. Montage Resource Corporation's 2019 results have been included in the abovementioned schedules, as applicable. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Southwestern Energy Company for 2020 include activity related to the operations merged from Montage Resources Corporation. Montage Resources Corporation's end-of-year 2019 oil reserves (99 million barrels) and gas reserves (2,138 bcf) have been included in the 2020 beginning-of-year reserves with an equal volume included as sales in 2020 to reflect the Southwestern Energy Company transaction.

Brazos Valley Longhorn, L.L.C. is the successor company to WildHorse Resources Development Company, which was acquired by Chesapeake Energy Corporation in February 2019. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Chesapeake Energy Corporation for 2019 include activity related to the operations acquired from WildHorse Resources Development Company and succeeded by Brazos Valley Longhorn, L.L.C. Brazos Valley Longhorn, L.L.C.'s end-of-year 2018 oil reserves (343 million barrels) and gas reserves (378 bcf) have been included in the 2019 beginning-of-year reserves with an equal volume included as sales in 2019 to reflect the Chesapeake Energy Corporation transaction.

In August 2019, Anadarko Petroleum Corporation was acquired by Occidental Petroleum Corporation. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Occidental Petroleum Corporation for 2019 include activity related to the operations acquired from Anadarko Petroleum Corporation. Anadarko Petroleum Corporation's end-of-year 2018 oil reserves (787 million barrels) and gas reserves (3,198 bcf) have been included in the 2019 beginning-of-year reserves with an equal volume included as sales in 2019 to reflect the Occidental Petroleum Corporation transaction.

In December 2019, Carrizo Oil & Gas, Inc. was acquired by Callon Petroleum Company. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Callon Petroleum Company for 2019 include activity related to the operations acquired from Carrizo Oil & Gas, Inc. Carrizo Oil & Gas, Inc.'s end-of-year 2018 oil reserves (249 million barrels) and gas reserves (483 bcf) have been included in the 2019 beginning-of-year

reserves with an equal volume included as sales in 2019 to reflect the Callon Petroleum Company transaction.

For purposes of the peer group analysis, PDC Energy, Inc., Denbury Inc. and Earthstone Energy, Inc. are independents.

## Performance measures

The performance measures presented herein were calculated based on the companies' oil and gas reserve disclosure information. The EY methodology for calculating the performance measures is defined below:

- ▶ **Plowback percentage** represents total capital expenditures as a percentage of netback (revenues less production costs).
- ▶ **PRACs** are calculated as proved property acquisition costs divided by proved reserves purchased.
- ▶ **Production replacement rate (all sources)** is calculated as the sum of extensions and discoveries, improved recovery, revisions, purchases and sales of proved reserves divided by production.
- ▶ **Production replacement rate (F&D including revisions)** is calculated as the sum of extensions and discoveries, improved recovery and revisions of proved reserves divided by production.
- ▶ **Production replacement rate (F&D excluding revisions)** is calculated as the sum of extensions and discoveries and improved recovery of proved reserves divided by production.
- ▶ **Production costs** are calculated as production costs, including production taxes, and transportation costs divided by production.

Many individual companies calculate and report their own performance measures, and companies may use different methods that produce results different from those shown in this study.

## Data limitations

Users of this study should keep in mind the following limitations of the data presented:

- ▶ This study excludes government- and privately owned companies and smaller public companies.
- ▶ This study excludes companies whose primary business is to own and acquire mineral and royalty interests in oil and gas properties.
- ▶ Individual companies did not prepare or review the compiled data presented in this report.

- ▶ Oil and gas companies that follow US generally accepted accounting principles (GAAP) are allowed to select either successful efforts accounting or full cost accounting for their oil and gas activities. Some companies included in this study follow US GAAP, while others follow International Financial Reporting Standards (IFRS) as adopted by their applicable country. These variations in standards can result in different results for some companies
- ▶ Data for all companies may not be comparable because of differing interpretations or applications of reporting requirements.
- ▶ Oil and gas reserve estimates are imprecise and are revised as additional information about reserves becomes known.

## Other

The data included herein for the 2019-23 study period is obtained from the individual companies' published annual reports. The study companies generally were determined based on data available as of April 1, 2024. Restatements and other adjustments made to capital expenditures or revenues and results of operations data in subsequent years generally have not been incorporated herein. Unless otherwise indicated, restatements and other adjustments made to oil and gas reserve data are included in the "Other" component of the reserve tables, but these amounts are not included in the performance measure calculations

Totals presented may not add due to rounding. All amounts are reported in US dollars.

Natural gas prices are quoted on an MMBtu basis, while gas reserves in this study are presented in bcf and tcf.

Certain amounts in this study are presented on a per BOE basis. Natural gas volumes are converted to barrels at a ratio of 6,000 cubic feet (mcf) to one barrel of oil. This ratio is generally viewed as reflecting an approximate thermal equivalence between the two commodities; however, some individual companies may use a different ratio for their internal performance metrics.

## Company endnotes

Gulfport Energy Corporation filings include only acquisition costs without further breakdown between proved and unproved properties. For our study purposes, Gulfport Energy Corporation acquisitions were included in the proved properties acquired category.

Amounts presented for Exxon Mobil Corporation include investments accounted for by the equity method. Oil rollforwards and computations based on oil volumes exclude NGLs, which are only reported on a worldwide basis.

Magnolia Oil & Gas Corporation's filings include exploration and development capital expenditures without further breakdown between exploration and development. For our study purposes, Magnolia Oil & Gas Corporation's exploration and development capital expenditures were reflected as development costs.

Ovintiv Inc. is the successor to Encana Corporation as a result of Encana Corporation's corporate reorganization in January 2020. Ovintiv Inc. filed an annual report for 2019 that included the operations previously owned by Encana Corporation. For consistency, results for prior periods include the results of Encana Corporation.

Bonanza Creek Energy, Inc. changed its name to Civitas Resources, Inc. following the merger of Bonanza Creek Energy, Inc. and Extraction Oil & Gas, Inc. Civitas Resources, Inc. filed an annual report for 2021 that included the operations owned by Bonanza Creek Energy, Inc. For consistency, results for prior periods include the results of Bonanza Creek Energy, Inc. See the discussion above for the treatment of the merger with Extraction Oil & Gas, Inc.

Cabot Oil & Gas Corporation changed its name to Coterra Energy Inc. following the merger of Cabot Oil & Gas Corporation and Cimarex Energy Co. Coterra Energy Inc. filed an annual report for 2021 that included the operations owned by Cabot Oil & Gas Corporation. For consistency, results for prior periods include the results of Cabot Oil & Gas Corporation. See the discussion above for treatment of the merger with Cimarex Energy Co.

Crescent Energy Company was formed through the merger of Contango Oil and Gas Company and Independence Energy LLC in December 2021. See the discussion above about how the results for prior periods are used in the study.

Centennial Resource Development, Inc. changed its name to Permian Resources Corporation following the merger of Centennial Resource Development, Inc. and Colgate Energy Partners III, LLC. Permian Resources Corporation filed an

annual report for 2022 that included the operations owned by Centennial Resource Development, Inc. For consistency, results for prior periods include the results of Centennial Resource Development, Inc. See the discussion above for the treatment of the merger with Colgate Energy Partners III, LLC.

Oasis Petroleum Inc. changed its name to Chord Energy Corporation following the merger of Oasis Petroleum Inc. and Whiting Petroleum Corporation. Chord Energy Corporation filed an annual report for 2022 that included the operations owned by Oasis Petroleum Inc. For consistency, results for prior periods include the results of Oasis Petroleum Inc. See the discussion above for the treatment of the merger with Whiting Petroleum Corporation.

Riley Exploration Permian, Inc. changed the company's fiscal year period from October 1 through September 30 each year to January 1 through December 31 each year commencing with the 2022 calendar year. As a result, the company's 2022 fiscal year was the period from January 1, 2022 to December 31, 2022. For our study purposes, we did not include activity reported by the company during the period from October 1, 2021 to December 31, 2021, except for changes in reserves. We presented the net changes in oil and gas reserves reported by the company from October 1, 2021 to December 31, 2021, in "Other" within the oil reserves and gas reserves schedules.

Laredo Petroleum changed its name to Vital Energy, Inc. in January 2023. For consistency, we refer to the company as Vital Energy, Inc. in this study.

Callon Petroleum Company voluntarily changed its method of accounting for its oil and gas exploration and development activities from the full cost method to the successful efforts method of accounting in the first quarter of 2023. The company reported its oil and gas exploration and development activities under both methods in its 2023 Form 10-K. For study purposes, we presented the company's 2023 oil and gas exploration and development activities under the full cost method to remain consistent with the method used to report the company's 2019 through 2022 oil and gas exploration and development activities in our study.

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