

US oil and gas reserves study

2014



Building a better working world

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Study overview

The *US oil and gas reserves study* is a compilation and analysis of certain oil and gas reserve disclosure information as reported by publicly traded companies in their annual reports filed with the United States Securities and Exchange Commission (SEC). This report presents the US exploration and production (E&P) results for the five-year period from 2009 through 2013 for the largest 50 companies based on 2013 end-of-year oil and gas reserve estimates. Activity related to acquired companies has also been reflected in this report as described below.

The companies

Due to the significant portion of total US oil and gas reserves held by these companies, the results of these companies are generally representative of the US E&P industry as a whole. However, it should be noted that results for these companies and for the E&P industry as a whole may be significantly different in other regions of the world.

The companies have been classified into three peer groups: integrated companies (integrateds), large independents and independents. Integrated companies are those that have oil refining and marketing activities in addition to exploration and production. Independents do not have oil refining and marketing activities, but may have midstream operations in addition to their exploration and production activities. The independents were classified as "large" if their 2013 worldwide ending reserves exceeded one billion barrels of oil equivalent.



Acquired companies

Due to the significance of the operations of three companies that were acquired during the five-year study period, their capital expenditures, revenues and results of operations, oil reserves and gas reserves have been included in this report for the years prior to their acquisition. We believe this provides a more meaningful comparison throughout the five-year study period.

In June 2010, XTO Energy, Inc. was acquired by Exxon Mobil Corporation. XTO Energy's 2009 capital expenditures, revenues and results of operations, oil reserves and gas reserves have been included in this report. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by ExxonMobil for 2010 include activity related to the operations acquired from XTO Energy. XTO Energy's end-of-year 2009 oil reserves and gas reserves have been included in 2010 beginning-of-year reserves with an equal volume included as sales in 2010 to reflect the ExxonMobil transaction.

In August 2011, Petrohawk Energy Corporation was acquired by BHP Billiton Group. BHP Billiton has a 30 June fiscal year-end and its fiscal year includes the period from 1 July through 30 June. Thus, the capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by BHP Billiton for 2012 include activity related to the operations acquired from Petrohawk Energy from the date of acquisition. Petrohawk Energy's capital expenditures, revenues and results of operations, oil reserves and gas reserves have been included in this report for 2009 through 2011. Petrohawk Energy's end-of-year 2011 oil reserves and gas reserves have been included in 2012 beginning-of-year reserves with an equal volume included as sales in 2012 to reflect the BHP Billiton transaction.

In June 2013, Plains Exploration & Production Company was acquired by Freeport McMoRan Copper & Gold Inc. Plains Exploration & Production's 2009 through 2012 capital expenditures, revenues and results of operations, oil reserves and gas reserves have been included in this report. The capital expenditures, revenues and results of operations, oil reserves and gas reserves reported by Freeport McMoRan Copper & Gold for 2013 include activity related to the operations acquired from Plains Exploration & Production. Plains Exploration & Production's end-of-year 2012 oil reserves and gas reserves have been included in 2013 beginning-of-year reserves with an equal volume included as sales in 2013 to reflect the Freeport McMoRan Copper & Gold transaction.

For purposes of the peer group analysis, XTO Energy is designated as a large independent while Petrohawk Energy and Plains Exploration & Production are independents.

Performance measures

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

- ▶ **Proved reserve acquisition costs** are calculated as proved property acquisition costs and identified related asset retirement obligation costs, divided by proved reserves purchased.
- ▶ **Finding and development costs** are calculated as unproved property acquisition costs, exploration costs, development costs and identified related asset retirement obligation costs, divided by extensions and discoveries, revisions and improved recovery of proved reserves. The calculation excludes the effect of proved reserves purchased.
- ▶ **Reserve replacement costs** are calculated as total capital expenditures divided by extensions and discoveries, revisions, improved recovery and purchases of proved reserves.
- ▶ **Production replacement rate (all sources)** is calculated as extensions and discoveries, improved recovery, revisions, purchases and sales of proved reserves, divided by production.
- ▶ **Production replacement rate (excluding purchases and sales)** is calculated as extensions and discoveries, improved recovery and revisions of proved reserves, divided by production.
- ▶ **Production costs** are calculated as production costs, including production taxes, transportation costs and production-related general and administrative expenses, 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 report.

Report limitations

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

- ▶ This report excludes government and privately owned companies and smaller public companies.
- ▶ 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 report 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 is based on the individual companies' published annual reports and includes each year's original disclosures made by the companies. Restatements or other adjustments made to capital expenditures or revenues and results of operations data in subsequent years have not been incorporated herein. Restatements or 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.**

The following units of measure are used in this report for gas reserves: Mcf (thousand cubic feet); Bcf (billion cubic feet) and Tcf (trillion cubic feet). Natural gas prices are quoted on a MMBTU (million British Thermal Unit) basis.

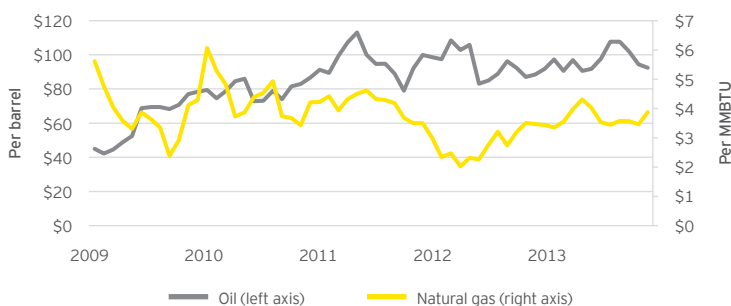
Certain amounts in this report are presented on a per barrel of oil equivalent (boe) basis. Natural gas volumes are converted to barrels at a ratio of six Mcf to one barrel of oil. This ratio has historically been viewed as being reflective of an approximate thermal equivalence between the two commodities. Prior to 2005, oil and natural gas prices were typically closely linked to this ratio. Since 2005 however, oil and natural gas price movements have reflected their different supply and demand fundamentals and thus, have not necessarily moved in unison. In recent years, oil prices have risen sharply while natural gas prices have remained fairly weak. At one point in 2013, the observed market ratio of oil-to-natural gas prices was as high as 50-to-1, implying that oil was more than eight times more costly than an equivalent amount of natural gas (in thermal terms). However, the volumetric conversion of six Mcf to one barrel of oil continues to be accepted as industry practice indicative of a long-term outlook on commodity pricing. In spite of this, some individual companies may use a higher ratio for their internal performance metrics to more closely reflect market equivalence.

Industry backdrop and study highlights

As depicted in the chart below, the oil and gas industry saw significant volatility over the 2009 through 2013 study period. The beginning of the period saw the impact of the near-collapse of the global financial system and subsequent recession. Oil prices stabilized in 2010 and were relatively strong throughout 2011, 2012 and 2013. Beginning-of-month West Texas Intermediate spot prices averaged \$94.68 per barrel in 2012 and \$96.90 per barrel in 2013.

Gas prices, however, moved in the opposite direction, declining in the latter part of 2011 and the beginning of 2012. The beginning-of-month Henry Hub spot averaged \$2.76 per MMBTU in 2012. Some production restraints and a cold early winter helped push natural gas prices upward in late 2012 and into 2013, and the Henry Hub spot beginning-of-month spot price increased to \$3.67 per MMBTU in 2013.

Beginning-of-month spot prices



Source: U.S. Energy Information Administration

Highlights for the companies in this report include:

- ▶ Total capital expenditures declined 7% in 2013 to \$173.5 billion, driven by lower unproved property acquisition costs and lower exploration costs.
- ▶ An 11% increase in revenues and significant decrease in property impairments fueled a 53% increase in after-tax profits for the study companies.
- ▶ End-of-year oil reserves increased in each year of the study and reached 25.4 billion barrels in 2013. Extensions and discoveries were 4.1 billion barrels in 2013 and contributed to an oil production replacement rate of 222%, excluding purchases and sales.
- ▶ After decreasing in 2012 due to downward reserve revisions caused by depressed natural gas prices, end-of-year gas reserves increased 9% in 2013. Extensions and discoveries of 29.9 Tcf were reported in 2013, and the gas production replacement rate was 229%, excluding purchases and sales.
- ▶ Proved reserve acquisition costs were \$16.88 per boe in 2013 compared to \$10.76 per boe in 2012. Finding and development costs declined 61% in 2013 to \$16.61 per boe as associated costs decreased and reserve additions increased substantially.

Capital expenditures

US – capital expenditures (millions) (a)

	2009	2010	2011	2012	2013
Proved properties acquired	\$ 3,944.8	\$ 41,959.9	\$ 14,570.0	\$ 22,132.7	\$ 21,522.7
Unproved properties acquired	9,762.1	59,292.6	33,031.1	33,891.2	22,800.2
Exploration	14,298.6	15,833.7	21,666.1	26,038.0	22,129.3
Development	45,760.0	61,743.6	85,229.3	103,467.7	106,658.6
Other	219.9	123.3	250.6	495.3	356.3
Total	\$ 73,985.5	\$ 178,953.2	\$ 154,747.0	\$ 186,024.9	\$ 173,467.2

(a) Includes the 50 largest companies based on 2013 end-of-year oil and gas reserve estimates. Activity related to acquired companies has also been reflected as described on page 1.

Total capital expenditures declined 7% from \$186.0 billion in 2012 to \$173.5 billion in 2013. This decrease was primarily driven by lower unproved property acquisition costs and lower exploration costs in 2013.

Proved property acquisition costs were \$21.5 billion in 2013, representing a 3% decrease from \$22.1 billion in 2012. Unproved property acquisition costs saw a more significant 33% decline, from \$33.9 billion in 2012 to \$22.8 billion in 2013.

Freeport-McMoRan Copper & Gold was the dominant spender for property acquisitions in 2013 (\$12.2 billion for proved and \$11.3 billion for unproved). The company completed acquisitions of Plains Exploration & Production and McMoRan Exploration Co. during the second quarter of 2013.

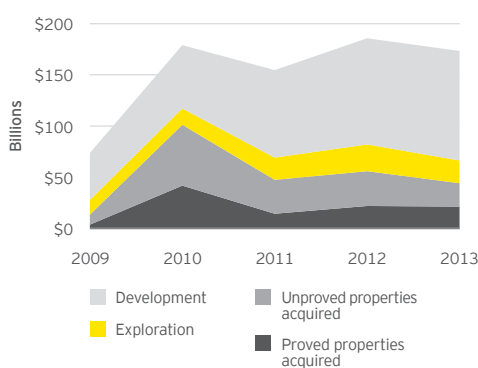
LINN Energy's property acquisition costs of \$3.7 billion (proved) and \$1.6 billion (unproved) were primarily related to its acquisition of Berry Petroleum Company in December 2013.

Exploration costs were \$22.1 billion in 2013, compared to \$26.0 billion in 2012 (a 15% decrease). Despite this decline, the 2013 level of spending represented the second-highest amount of the five-year study period.

All peer groups saw a decline in exploration spending in 2013, and the largest individual company decline was posted by Chesapeake Energy (\$1.7 billion decrease). Royal Dutch Shell followed with a \$1.4 billion decrease in exploration spending in 2013 but was still the leading spender in this category.

Development spending increased each year of the five-year period and reached \$106.7 billion in 2013. All peer groups reported an increase in development spending in 2013, and Royal Dutch Shell, BHP Billiton, BP and Noble Energy all posted increases in development spending greater than \$1.0 billion.

Capital expenditures



2013 capital expenditures – top-ranked companies (millions)

Proved properties acquired	
Freeport-McMoRan Copper & Gold Inc.	\$12,205.0
Linn Energy, LLC	3,740.4
BreitBurn Energy Partners L.P.	972.0
Denbury Resources Inc.	803.8
EXCO Resources, Inc.	754.4
Unproved properties acquired	
Freeport-McMoRan Copper & Gold Inc.	\$11,259.0
Linn Energy, LLC	1,638.3
Chesapeake Energy Corporation	997.0
Oasis Petroleum Inc.	837.4
Rosetta Resources Inc.	672.6
Exploration	
Royal Dutch Shell plc	\$ 3,496.0
ConocoPhillips	1,315.0
BP p.l.c.	1,291.0
Pioneer Natural Resources Company	1,290.5
Anadarko Petroleum Corporation	1,031.0
Development	
Exxon Mobil Corporation ⁽¹⁾	\$ 7,639.0
Chevron Corporation	7,457.0
BHP Billiton Group	5,698.0
EOG Resources, Inc.	5,489.3
Apache Corporation	5,435.0

⁽¹⁾ See company footnotes on page 24.

Revenues and results of operations

US – revenues and results of operations (millions) (a)

	2009	2010	2011	2012	2013
Revenues	\$ 124,595.0	\$ 150,690.5	\$ 184,601.0	\$ 180,083.1	\$ 198,999.9
Production costs (b)	36,531.4	40,642.1	51,648.1	56,859.6	60,096.0
Exploration expense	4,933.1	4,718.1	5,511.8	6,696.1	7,477.2
DD&A	40,952.7	40,989.2	46,762.7	59,143.1	66,328.6
Impairments	31,704.4	1,083.1	4,250.7	23,313.5	8,148.6
Other expenses (c)	3,245.0	5,094.3	4,973.7	171.6	5,904.6
Pre-tax results of operations	\$ 7,228.5	\$ 58,163.8	\$ 71,454.0	\$ 33,899.2	\$ 51,045.0
Income taxes	2,149.9	19,914.6	24,418.8	12,082.5	17,612.3
Results of operations	\$ 5,078.5	\$ 38,249.2	\$ 47,035.2	\$ 21,816.7	\$ 33,432.6

(a) Includes the 50 largest companies based on 2013 end-of-year oil and gas reserves. Activity related to acquired companies has also been reflected as described on page 1.

(b) Includes production taxes, transportation costs and production-related general and administrative expenses for companies that separately disclose these expenses.

(c) Includes asset retirement obligation accretion for companies that separately disclose this expense.

After-tax profits for the study companies rose 53% in 2013 to \$33.4 billion, driven by increased revenues and lower property impairments.

Revenues increased 11% to \$199.0 billion in 2013. This increase was partially driven by an increase in oil production but also aided by increased prices as revenues per boe of production rose from \$46.69 in 2012 to \$49.14 in 2013.

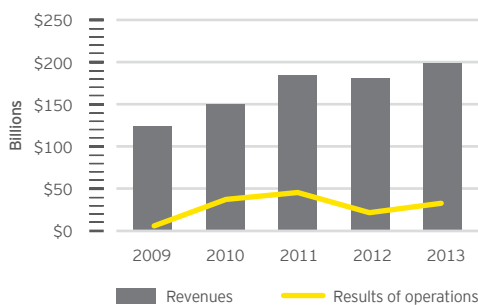
Production costs were \$60.1 billion in 2013, representing a 6% increase from \$56.9 billion in 2012. Higher lease operating expenses were the primary driver of this increase.

Property impairments significantly decreased in 2013, with the study companies recognizing impairments of \$8.1 billion.

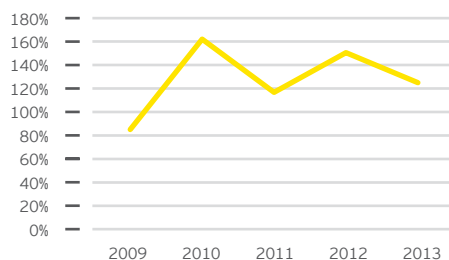
Depressed natural gas prices did still make an impact as several companies (Pioneer Natural Resources, Devon Energy and WPX Energy) recorded impairments greater than \$1 billion in 2013.

The companies made strong investments in their oil and gas operations in 2013 with a plowback percentage of 125%. The five-year (2009 through 2013) average for the plowback percentage was 129%. The plowback percentage represents total capital expenditures as a percentage of netback (revenues less production costs).

Revenues and results of operations



Plowback percentage



2013 revenues and results of operations – top-ranked companies (millions)

Revenues	
Exxon Mobil Corporation ⁽¹⁾	\$ 17,230.0
Chevron Corporation	16,774.0
ConocoPhillips	15,439.0
BP p.l.c.	14,981.0
Occidental Petroleum Corporation	11,152.0
Results of operations	
Chevron Corporation	\$4,345.0
Exxon Mobil Corporation ⁽¹⁾	3,537.0
ConocoPhillips	3,066.0
EOG Resources, Inc.	2,669.5
Occidental Petroleum Corporation	2,276.0

⁽¹⁾ See company footnotes on page 24.

Oil reserves

US – proved oil reserves (a) (million barrels) (b)

	2009	2010 (c)	2011	2012 (d)	2013 (e)
Beginning of year	15,790.3	16,726.4	18,730.8	20,546.5	23,263.0
Additions:					
Extensions and discoveries	893.2	1,668.3	2,517.7	3,835.8	4,069.1
Improved recovery	170.1	395.7	324.3	520.0	408.4
Revisions	1,146.9	957.3	584.6	(76.9)	(448.1)
Production	(1,373.7)	(1,402.2)	(1,429.9)	(1,614.7)	(1,816.9)
Purchases	197.0	1,109.4	313.8	910.6	862.5
Sales	(100.4)	(730.1)	(220.7)	(858.3)	(970.5)
Other (f)	3.1	5.9	(274.1)	0.0	0.3
End of year	16,726.4	18,730.8	20,546.5	23,263.0	25,367.8

(a) Includes condensate and natural gas liquids.

(b) Includes the 50 largest companies based on 2013 end-of-year oil and gas reserves. Activity related to acquired companies has also been reflected as described on page 1.

(c) Beginning-of-year reserves for 2010 include 387.6 million barrels, which represent XTO Energy's end-of-year 2009 oil reserves. Sales for 2010 include 387.6 million barrels, to reflect the sale of XTO Energy's reserves to ExxonMobil.

(d) Beginning-of-year reserves for 2012 include 114.8 million barrels, which represent Petrohawk Energy's end-of-year 2011 oil reserves. Sales for 2012 include 114.8 million barrels, to reflect the sale of Petrohawk Energy's reserves to BHP Billiton.

(e) Beginning-of-year reserves for 2013 include 366.8 million barrels, which represent Plains Exploration & Production's end-of-year 2012 oil reserves. Sales for 2013 include 366.8 million barrels, to reflect the sale of Plains Exploration & Production's reserves to Freeport-McMoRan Copper & Gold.

(f) Includes transfers, reclassifications and other.

The study companies reported a 9% increase in oil reserves in 2013, rising from 23.3 billion barrels in 2012 to 25.4 billion barrels in 2013.

The 2013 increase in oil reserves was primarily driven by extensions and discoveries of 4.1 billion barrels, the highest level of the study period. The largest extensions and discoveries in 2013 were posted by ConocoPhillips (302.0 million barrels).

Oil production was 1.8 billion barrels in 2013, representing a 13% increase from 2012. The large independents led the way with the largest volume increase in production while the independents posted the largest percentage gain.

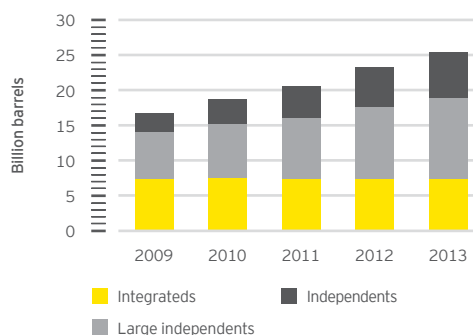
The largest individual production increases in 2013 (excluding Freeport-McMoRan Copper & Gold, which did not have production in 2012) were reported by large independents: EOG Resources (26.1 million barrels), Marathon Oil (16.0 million barrels) and Chesapeake Energy (13.1 million barrels).

Purchases of oil reserves were 862.5 million barrels in 2013. Freeport-McMoRan Copper & Gold (368.0 million barrels) and LINN Energy (208.9 million barrels) were the leading purchasers for their previously discussed acquisitions.

Sales of oil reserves were 970.5 million barrels in 2013. The largest sales (excluding Plains Exploration & Production) were reported by SandRidge Energy (160.8 million barrels) as the company sold properties in the Permian Basin area of West Texas to Sheridan Production Partners II (a company not included in the study).

On a peer-group basis, the large independents accounted for the largest absolute increase in oil reserves in 2013, with the end-of-year reserves increasing 1.3 billion barrels (or 13%). The independents' oil reserves rose 771.6 million barrels (or 14%) in 2013, while the integrations' reserves remained flat.

End-of-year oil reserves



2013 oil reserves – top-ranked companies (million barrels)

Ending reserves	
Exxon Mobil Corporation ⁽¹⁾	2,338.0
ConocoPhillips	2,299.0
BP p.l.c.	2,204.0
Occidental Petroleum Corporation	1,939.0
Chevron Corporation	1,330.0
Production	
Chevron Corporation	164.0
ConocoPhillips	160.0
BP p.l.c.	132.0
Exxon Mobil Corporation ⁽¹⁾	125.0
Occidental Petroleum Corporation	125.0

⁽¹⁾ See company footnotes on page 24.

Gas reserves

US – proved gas reserves (Bcf) (a)

	2009	2010 (b)	2011	2012 (c)	2013 (d)
Beginning of year	144,486.4	151,850.1	171,530.0	181,999.3	163,911.8
Additions:					
Extensions and discoveries	26,973.9	27,827.6	27,391.6	24,407.1	29,898.9
Improved recovery	719.9	1,338.2	846.3	1,382.4	1,064.1
Revisions	(8,310.6)	1,580.0	(3,883.3)	(28,118.0)	(260.0)
Production	(11,581.9)	(11,707.3)	(12,875.6)	(13,451.5)	(13,396.1)
Purchases	1,180.9	17,547.1	6,977.3	6,894.9	2,478.0
Sales	(2,018.2)	(16,972.8)	(7,978.1)	(9,202.2)	(5,041.1)
Other (e)	399.7	67.0	(8.8)	(0.1)	0.0
End of year	151,850.1	171,530.0	181,999.3	163,911.8	178,655.6

(a) Includes the 50 largest companies based on 2013 end-of-year oil and gas reserves. Activity related to acquired companies has also been reflected as described on page 1.

(b) Beginning-of-year reserves for 2010 include 12,501.7 Bcf, which represent XTO Energy's end-of-year 2009 gas reserves. Sales for 2010 include 12,501.7 Bcf, to reflect the sale of XTO Energy's reserves to ExxonMobil.

(c) Beginning-of-year reserves for 2012 include 3,355.1 Bcf, which represent Petrohawk Energy's end-of-year 2011 gas reserves. Sales for 2012 include 3,355.1 Bcf, to reflect the sale of Petrohawk Energy's reserves to BHP Billiton.

(d) Beginning-of-year reserves for 2013 include 510.8 Bcf, which represent Plains Exploration & Production's end-of-year 2012 gas reserves. Sales for 2013 include 510.8 Bcf, to reflect the sale of Plains Exploration & Production's reserves to Freeport-McMoRan Copper & Gold.

(e) Includes transfers, reclassifications and other.

Extensions and discoveries reached 29.9 Tcf in 2013 and fueled a 9% increase in gas reserves for the study companies. End-of-year gas reserves grew from 163.9 Tcf in 2012 to 178.7 Tcf in 2013 but remain below the level seen in 2011.

Downward revisions of 260.0 Bcf were reported in 2013 compared to downward revisions of 28.1 Tcf in 2012. The average beginning-of-month price increased in 2013 and as a result, many of the study companies recorded upward reserve revisions in 2013. However, several companies reported significant downward reserve revisions in 2013 due to changes in developments plans or changes related to field performance or well results.

Gas production was 13.4 Tcf in 2013, just slightly below 2012 and representing the first production decline of the five-year period. Increases in production of over 100.0 Bcf by Cabot Oil & Gas and EQT were offset by similar declines by ExxonMobil and Encana. Cabot Oil & Gas' increase in production was driven by its Dimock field in northeast Pennsylvania, while EQT's was fueled by its drilling program in the Marcellus acreage.

Purchases of gas reserves were 2.5 Tcf in 2013, with Freeport-McMoRan Copper & Gold's (626.0 Bcf) previously discussed acquisitions being the largest.

Sales of gas reserves were 5.0 Tcf in 2013. EP Energy reported the largest sales (1.1 Tcf) as it sold certain non-core assets and its equity interest in Four Star Oil & Gas Company.

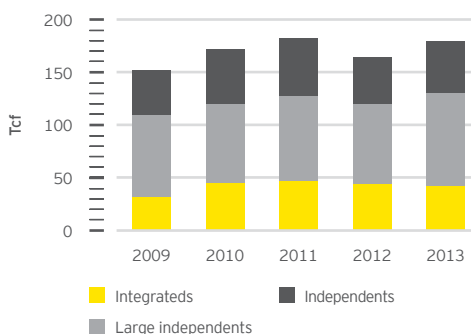
On a peer-group basis, the large independents accounted for the largest increase in gas reserves in 2013, with their end-of-year reserves growing 11.1 Tcf (or 15%). The independents' gas reserves increased 4.9 Tcf (or 11%), while the integrations saw a 1.2 Tcf decline (or negative 3%) in 2013.

2013 gas reserves – top-ranked companies (Bcf)

Ending reserves	
Exxon Mobil Corporation ⁽¹⁾	26,301.0
Chesapeake Energy Corporation	11,734.0
BP p.l.c.	9,947.0
ConocoPhillips	9,576.0
Anadarko Petroleum Corporation	9,205.0
Production	
Exxon Mobil Corporation ⁽¹⁾	1,414.0
Chesapeake Energy Corporation	1,095.0
Anadarko Petroleum Corporation	965.0
Devon Energy Corporation	709.0
ConocoPhillips	678.0

⁽¹⁾ See company footnotes on page 24.

End-of-year gas reserves





Performance measures

Proved reserve acquisition costs, finding and development costs, and reserve replacement costs

US – proved reserve acquisition costs (PRAC), finding and development costs (FDC), and reserve replacement costs (RRC) (a)

\$ per boe

	2009	2010	2011	2012	2013	3-year	5-year
PRAC	\$ 10.02	\$ 10.40	\$ 9.87	\$ 10.76	\$ 16.88	\$ 12.11	\$ 11.28
FDC	12.87	16.82	18.72	42.11	16.61	22.22	19.44
RRC	12.68	14.69	17.27	31.26	16.64	20.30	17.70

(a) Includes the 50 largest companies based on 2013 end-of-year oil and gas reserve estimates. Activity related to acquired companies has also been reflected as described on page 1.

PRAC increased 57% in 2013, rising from \$10.76 per boe in 2012 to \$16.88 per boe in 2013. Freeport-McMoRan Copper & Gold and LINN Energy accounted for approximately 75% of the proved property acquisition costs in 2013 and posted individual PRAC of \$25.84 per boe and \$13.94 per boe, respectively. Both of these companies' 2013 purchases were weighted toward oil with oil reserves, accounting for approximately 80% of the total volumes purchased.

FDC decreased from \$42.11 per boe in 2012 to \$16.61 per boe in 2013, while RRC also declined, dropping from \$31.26 per boe in 2012 to \$16.64 per boe in 2013. Both measures saw decreased associated costs in 2013 along with strong gas reserve additions as extensions and discoveries increased and downward gas reserve revisions decreased substantially in 2013. Downward natural gas reserve revisions of 28.1 Tcf in 2012 had a significant impact on these metrics in 2012.

Over the five-year period, growth through acquisitions has been approximately 40% more economical than finding and development additions. PRAC have averaged \$11.28 per boe compared to \$19.44 per boe for FDC.

Three-year (2011-13) PRAC, FDC and RRC – top-ranked companies (\$ per boe)*

PRAC**	
Exxon Mobil Corporation ⁽¹⁾	\$ 1.61
EQT Corporation	2.53
Noble Energy, Inc.	4.28
PDC Energy, Inc.	5.02
EV Energy Partners, L.P.	6.32
FDC	
Antero Resources Corporation	\$ 3.76
CONSOL Energy Inc.	4.26
Cabot Oil & Gas Corporation	4.56
Range Resources Corporation	4.97
EQT Corporation	5.70
RRC	
Antero Resources Corporation	\$ 3.84
CONSOL Energy Inc.	4.37
Cabot Oil & Gas Corporation	4.56
Range Resources Corporation	4.97
EQT Corporation	5.29

* Based on companies with results for each year of the three-year period.

** Based on companies with proved acquisition costs of at least \$50 million for the three-year period.

⁽¹⁾ See company footnotes on page 24.

Production replacement rates

Oil

US – oil production replacement rates (a)

	2009	2010	2011	2012	2013	3-year	5-year
All sources	168%	243%	246%	268%	216%	242%	229%
Excluding purchases and sales	161%	215%	240%	265%	222%	241%	222%

(a) Includes the 50 largest companies based on 2013 end-of-year oil and gas reserve estimates. Activity related to acquired companies has also been reflected as described on page 1.

Oil production replacement rates decreased slightly in 2013 but remained above 200% for the fourth consecutive year.

Extensions and discoveries of 4.1 billion barrels helped drive a 222% oil production replacement rate excluding purchases and sales. The all-sources rate was 216% in 2013 as the study companies reported net sales for the year.

All three peer groups posted oil production replacement rates above the 100% threshold in 2013. The independents led the way with a rate of 282%, excluding purchases and sales, while the large independents came in at 265% and the independents' rate was 109%.

2013 oil production replacement rates by peer group

	All sources	Excluding purchases and sales
Integrations	106%	109%
Large independents	262%	265%
Independents	267%	282%

Three-year (2011-13) oil production replacement rates – top-ranked companies*

All sources	
PDC Energy, Inc.	1,232%
Bill Barrett Corporation	1,177%
Range Resources Corporation	1,009%
Oasis Petroleum Inc.	823%
EP Energy Corporation ⁽¹⁾	789%
Excluding purchases and sales	
Range Resources Corporation	1,142%
PDC Energy, Inc.	1,113%
Bill Barrett Corporation	1,108%
EP Energy Corporation ⁽¹⁾	866%
Continental Resources, Inc.	689%

* Based on companies with at least 5 million barrels of production for the three-year period and companies that had results for each year of the three-year period.

⁽¹⁾ See company footnotes on page 24.

Production replacement rates

Gas

US – gas production replacement rates (a)

	2009	2010	2011	2012	2013	3-year	5-year
All sources	160%	268%	181%	(34%)	210%	118%	153%
Excluding purchases and sales	167%	263%	189%	(17%)	229%	133%	163%

(a) Includes the 50 largest companies based on 2013 end-of-year oil and gas reserve estimates. Activity related to acquired companies has also been reflected as described on page 1.

The recording of significant downward revisions in 2012 resulted in negative production replacement rates but rates rebounded in 2013. Extensions and discoveries of 29.9 Tcf in 2013 helped fuel a 229% rate excluding purchases and sales. Net sales for the study companies in 2013 resulted in a slightly lower all-sources rate of 210%.

The independents and large independents each posted a production replacement rate of 276%, excluding purchases and sales, in 2013, while the integrated did not fare as well with a rate of 64%.

2013 gas production replacement rates by peer group

	All sources	Excluding purchases and sales
Integrations	60%	64%
Large independents	268%	276%
Independents	226%	276%

Three-year (2011-13) gas production replacement rates – top-ranked companies*

All sources	
Oasis Petroleum Inc.	1,335%
Antero Resources Corporation	1,310%
Continental Resources, Inc.	758%
BHP Billiton Group	698%
Linn Energy, LLC	602%
Excluding purchases and sales	
Antero Resources Corporation	1,752%
Oasis Petroleum Inc.	943%
Continental Resources, Inc.	711%
CONSOL Energy Inc.	602%
Range Resources Corporation	578%

*Based on companies that had results for each year of the three-year period.

Production costs

US – production costs (\$ per boe) (a)

2009	2010	2011	2012	2013	3-year	5-year
\$ 11.06	\$ 12.12	\$ 14.44	\$ 14.74	\$ 14.84	\$ 14.68	\$ 13.55

(a) Includes the 50 largest companies based on 2013 end-of-year oil and gas reserve estimates. Activity related to acquired companies has also been reflected as described on page 1.

Production costs per boe were relatively flat at \$14.84 per boe in 2013 compared to \$14.74 per boe in 2012. Total production costs increased 6% in 2013, while combined oil and gas production rose 5%.

The peer groups posted varying results in 2013. The independents saw a 9% increase in production costs per boe, while the integrations' costs rose 5% and the large independents reduced their costs by 5%.

Three-year (2011-13) production costs – top-ranked companies (\$ per boe)

EQT Corporation	\$ 2.07
Southwestern Energy Company	5.59
Chesapeake Energy Corporation	6.09
Cabot Oil & Gas Corporation	6.44
EXCO Resources, Inc.	6.59

Company statistics

US – capital expenditures for the latest fiscal year

Millions

	Proved properties	Unproved properties	Exploration	Development	Other	Total capital expenditures
Anadarko Petroleum Corporation	\$ 324.0	\$ 282.0	\$ 1,031.0	\$ 4,421.0	\$ –	\$ 6,058.0
Antero Resources Corporation	15.3	440.8	835.4	780.6	–	2,072.1
Apache Corporation	17.0	–	757.0	5,435.0	–	6,209.0
BHP Billiton Group	–	123.0	373.0	5,698.0	–	6,194.0
Bill Barrett Corporation	0.4	13.7	2.5	455.5	3.5	475.6
BP p.l.c.	1.0	158.0	1,291.0	4,877.0	–	6,327.0
BreitBurn Energy Partners L.P.	972.0	88.3	–	294.8	18.8	1,373.8
Cabot Oil & Gas Corporation	–	71.2	44.9	1,070.0	–	1,186.1
Chesapeake Energy Corporation	22.0	997.0	699.0	4,888.0	–	6,606.0
Chevron Corporation	71.0	331.0	894.0	7,457.0	–	8,753.0
Cimarex Energy Co.	0.7	195.1	52.7	1,354.1	4.4	1,607.0
Concho Resources Inc.	11.5	85.5	1,027.1	729.0	12.1	1,865.3
ConocoPhillips	4.0	314.0	1,315.0	4,992.0	–	6,625.0
CONSOL Energy Inc.	–	260.5	95.4	629.1	–	985.0
Continental Resources, Inc.	16.6	546.9	687.8	2,549.2	–	3,800.5
Denbury Resources Inc.	803.8	221.2	2.1	913.1	–	1,940.2
Devon Energy Corporation	19.0	213.0	443.0	3,838.0	–	4,513.0
Encana Corporation	45.0	111.0	412.0	871.0	–	1,439.0
Energen Corporation	4.7	26.8	435.6	655.4	–	1,122.5
EOG Resources, Inc.	120.2	411.6	273.8	5,489.3	84.0	6,378.8
EP Energy Corporation ⁽¹⁾	2.0	20.0	95.0	1,783.0	7.0	1,907.0
EQT Corporation	90.4	95.9	4.3	1,230.3	–	1,420.8
EV Energy Partners, L.P.	59.6	6.0	1.8	108.5	–	175.9
EXCO Resources, Inc.	754.4	246.9	38.6	231.4	0.5	1,271.8
Exxon Mobil Corporation ⁽¹⁾	95.0	533.0	617.0	7,639.0	–	8,884.0
Freeport-McMoRan Copper & Gold Inc.	12,205.0	11,259.0	502.0	854.0	–	24,820.0

	Proved properties	Unproved properties	Exploration	Development	Other	Total capital expenditures
Hess Corporation	\$ -	\$ 55.0	\$ 592.0	\$ 3,259.0	\$ -	\$ 3,906.0
Laredo Petroleum, Inc.	9.7	27.1	48.8	654.5	-	740.0
Linn Energy, LLC	3,740.4	1,638.3	13.1	1,153.8	7.4	6,552.9
Marathon Oil Corporation	51.0	157.0	885.0	2,876.0	-	3,969.0
Murphy Oil Corporation	13.2	32.4	112.4	1,703.1	70.1	1,931.2
National Fuel Gas Company	7.6	9.3	49.5	460.6	37.5	564.4
Newfield Exploration Company	8.0	154.0	966.0	691.0	-	1,819.0
Noble Energy, Inc.	-	209.0	340.0	2,847.0	-	3,396.0
Oasis Petroleum Inc.	752.5	837.4	2.3	890.3	11.9	2,494.3
Occidental Petroleum Corporation	363.0	184.0	425.0	4,203.0	-	5,175.0
PDC Energy, Inc.	28.7	3.4	59.7	332.3	-	424.1
Pioneer Natural Resources Company	12.9	63.2	1,290.5	1,481.3	-	2,847.8
Plains Exploration & Production Company	-	-	-	-	-	-
QEP Resources, Inc.	31.6	9.3	14.6	1,440.8	-	1,496.3
Range Resources Corporation	-	137.5	254.2	985.8	76.4	1,453.8
Rosetta Resources Inc.	290.3	672.6	534.9	338.9	-	1,836.7
Royal Dutch Shell plc	51.0	416.0	3,496.0	5,314.0	-	9,277.0
SandRidge Energy, Inc.	21.1	100.2	82.8	1,131.3	-	1,335.4
SM Energy Company	29.9	172.5	168.6	1,350.1	-	1,721.1
Southwestern Energy Company	0.6	151.3	180.7	1,662.1	-	1,994.7
Swift Energy Company	-	46.6	5.3	487.0	-	538.8
Talisman Energy Inc.	-	17.0	26.0	925.0	(7.0)	961.0
Ultra Petroleum Corp.	224.4	424.5	184.0	186.8	-	1,019.7
Whiting Petroleum Corporation	232.6	174.1	363.2	2,103.0	29.8	2,902.7
WPX Energy, Inc.	-	57.0	104.0	939.0	-	1,100.0
All companies	\$ 21,522.7	\$ 22,800.2	\$ 22,129.3	\$ 106,658.6	\$ 356.3	\$ 173,467.2
Integrations	\$ 218.0	\$ 1,493.0	\$ 6,890.0	\$ 28,546.0	\$ -	\$ 37,147.0
Large independents	4,732.5	5,535.3	7,292.1	47,326.0	167.7	65,053.6
Independents	16,572.3	15,771.9	7,947.2	30,786.6	188.6	71,266.6

(1) See company footnotes on page 24.

US – revenues and results of operations for the latest fiscal year

Millions

	Revenues	Production costs	Exploration expense	DD&A	Impairments	Other (income) expense	Income taxes	Results of operations
Anadarko Petroleum Corporation ⁽²⁾	\$ 10,252.0	\$ 2,773.0	\$ 611.0	\$ 3,222.0	\$ 704.0	\$ –	\$ 1,076.8	\$ 1,865.2
Antero Resources Corporation	821.4	278.3	22.3	219.8	10.9	–	110.8	179.3
Apache Corporation	6,902.0	1,728.0	–	2,227.0	552.0	94.0	817.0	1,484.0
BHP Billiton Group	5,807.0	1,688.0	278.0	2,812.0	–	–	162.0	867.0
Bill Barrett Corporation	542.5	164.7	1.5	279.8	226.6	10.7	(53.6)	(87.1)
BP p.l.c. ⁽³⁾	14,981.0	4,803.0	437.0	3,268.0	(80.0)	3,241.0	1,204.0	2,108.0
BreitBurn Energy Partners L.P.	631.5	262.8	–	210.6	54.4	–	0.9	102.7
Cabot Oil & Gas Corporation	1,696.7	413.4	18.2	651.1	–	–	260.2	353.8
Chesapeake Energy Corporation	7,052.0	1,388.0	–	2,589.0	–	–	1,169.0	1,906.0
Chevron Corporation	16,774.0	5,254.0	555.0	4,168.0	–	(19.0)	2,471.0	4,345.0
Cimarex Energy Co.	1,952.5	493.1	–	584.6	–	8.0	319.1	547.8
Concho Resources Inc.	2,196.3	455.4	109.5	772.6	65.4	6.0	260.6	526.7
ConocoPhillips	15,439.0	6,329.0	676.0	3,628.0	2.0	79.0	1,659.0	3,066.0
CONSOL Energy Inc.	804.1	428.5	–	229.6	–	61.1	32.3	52.7
Continental Resources, Inc.	3,606.8	614.3	34.9	953.8	220.5	2.8	658.8	1,121.7
Denbury Resources Inc.	2,425.2	893.4	–	479.6	–	37.8	385.5	629.0
Devon Energy Corporation	5,964.0	1,762.0	–	1,640.0	1,110.0	47.0	510.0	895.0
Encana Corporation	2,763.0	1,273.0	–	818.0	–	–	243.0	429.0
Energen Corporation	1,206.3	351.5	27.9	449.7	–	7.0	128.8	241.3
EOG Resources, Inc.	9,949.4	2,336.4	155.6	3,122.9	178.7	–	1,486.4	2,669.5
EP Energy Corporation ⁽¹⁾	1,761.0	438.0	45.0	619.0	–	4.0	234.0	421.0
EQT Corporation	1,168.7	108.1	18.5	578.6	–	–	183.1	280.4
EV Energy Partners, L.P.	293.6	115.9	2.4	113.8	85.3	4.9	0.0	(28.8)
EXCO Resources, Inc.	634.0	183.9	–	245.8	108.5	2.5	–	93.3
Exxon Mobil Corporation ⁽¹⁾	17,230.0	6,359.0	413.0	5,133.0	–	–	1,788.0	3,537.0
Freeport-McMoRan Copper & Gold Inc.	2,616.0	682.0	–	1,358.0	–	–	219.0	357.0

	Revenues	Production costs	Exploration expense	DD&A	Impairments	Other (income) expense	Income taxes	Results of operations
Hess Corporation	\$ 4,268.0	\$ 1,245.0	\$ 371.0	\$ 1,393.0	\$ -	\$ -	\$ 483.0	\$ 776.0
Laredo Petroleum, Inc.	664.8	121.5	-	228.0	-	1.5	113.0	200.9
Linn Energy, LLC	2,251.1	640.2	5.3	790.3	828.3	0.3	-	(13.3)
Marathon Oil Corporation	5,053.0	1,503.0	717.0	1,980.0	-	-	323.0	530.0
Murphy Oil Corporation	1,803.8	431.5	75.2	576.3	30.3	13.5	241.6	435.4
National Fuel Gas Company	663.1	136.4	-	238.5	-	3.9	120.4	163.8
Newfield Exploration Company	1,777.0	469.0	-	668.0	-	-	224.0	416.0
Noble Energy, Inc.	3,004.0	653.0	124.0	1,117.0	39.0	-	375.0	696.0
Oasis Petroleum Inc.	1,084.4	221.1	2.3	299.0	1.2	-	196.3	364.6
Occidental Petroleum Corporation	11,152.0	3,189.0	184.0	2,967.0	607.0	827.0	1,102.0	2,276.0
PDC Energy, Inc.	355.9	81.4	7.1	124.2	53.4	4.7	30.7	54.3
Pioneer Natural Resources Company	3,159.7	815.9	98.4	907.1	1,495.2	11.9	(63.6)	(105.2)
Plains Exploration & Production Company	-	-	-	-	-	-	-	-
QEP Resources, Inc.	1,901.2	583.3	11.9	954.2	93.0	-	96.3	162.5
Range Resources Corporation	1,653.8	429.6	64.4	492.4	59.7	-	137.4	470.4
Rosetta Resources Inc.	821.1	155.7	-	218.6	-	-	159.5	287.3
Royal Dutch Shell	10,648.0	3,559.0	1,790.0	7,858.0	-	1,395.0	(1,461.0)	(2,493.0)
SandRidge Energy, Inc.	1,820.3	548.7	-	567.7	-	36.8	(7.5)	674.5
SM Energy Company	2,200.9	597.0	74.1	822.9	218.7	-	188.7	299.5
Southwestern Energy Company	2,404.2	628.8	-	735.2	-	-	416.0	624.1
Swift Energy Company	588.5	166.2	-	252.0	73.9	6.2	23.7	66.5
Talisman Energy Inc.	880.0	307.0	28.0	724.0	-	-	(16.0)	(163.0)
Ultra Petroleum Corp.	933.4	295.4	-	243.4	-	-	2.3	392.3
Whiting Petroleum Corporation	2,656.8	655.6	94.8	891.5	358.5	-	236.3	420.2
WPX Energy, Inc.	1,785.0	1,086.0	424.0	906.0	1,052.0	17.0	(634.4)	(1,065.6)
All companies	\$ 198,999.9	\$ 60,096.0	\$ 7,477.2	\$ 66,328.6	\$ 8,148.6	\$ 5,904.6	\$ 17,612.3	\$ 33,432.6
Integrateds	\$ 63,901.0	\$ 21,220.0	\$ 3,566.0	\$ 21,820.0	\$ (80.0)	\$ 4,617.0	\$ 4,485.0	\$ 8,273.0
Large independents	84,423.4	23,892.7	2,049.9	25,978.1	4,273.1	1,050.1	9,488.2	17,691.3
Independents	50,675.5	14,983.3	1,861.2	18,530.5	3,955.4	237.5	3,639.1	7,468.4

(1)-(3) See company footnotes on page 24.

US – oil reserves for the latest fiscal year

Million barrels

	Beginning	Extensions and discoveries	Improved recovery	Revisions	Production	Purchases	Sales	Other (b)	Ending
Anadarko Petroleum Corporation	904.0	62.0	-	113.0	(91.0)	10.0	(11.0)	-	987.0
Antero Resources Corporation	206.0	83.0	-	(140.0)	(2.0)	-	-	-	147.0
Apache Corporation	893.3	202.5	-	3.3	(73.5)	0.1	(123.8)	-	901.8
BHP Billiton Group	514.1	219.7	13.6	(89.0)	(48.3)	-	(1.9)	0.3	608.5
Bill Barrett Corporation	50.8	55.6	-	18.8	(5.7)	-	(0.2)	-	119.3
BP p.l.c.	2,432.0	4.0	52.0	(141.0)	(132.0)	-	(11.0)	-	2,204.0
BreitBurn Energy Partners L.P.	79.0	1.1	-	(0.6)	(6.3)	55.9	(0.1)	-	128.9
Cabot Oil & Gas Corporation	24.4	10.7	-	(0.4)	(3.2)	-	(4.9)	-	26.5
Chesapeake Energy Corporation	792.8	164.3	-	(94.0)	(62.0)	1.2	(79.5)	-	722.8
Chevron Corporation	1,359.0	55.0	26.0	55.0	(164.0)	2.0	(3.0)	-	1,330.0
Cimarex Energy Co.	167.8	74.4	-	(19.1)	(21.3)	0.0	(1.3)	-	200.6
Concho Resources Inc.	273.5	72.0	-	(17.9)	(21.1)	0.9	-	-	307.4
ConocoPhillips	2,120.0	302.0	20.0	58.0	(160.0)	-	(41.0)	-	2,299.0
CONSOL Energy Inc.	14.7	11.0	-	(0.7)	(0.6)	-	-	-	24.4
Continental Resources, Inc.	561.2	267.0	-	(55.8)	(35.0)	0.4	-	-	737.8
Denbury Resources Inc.	329.1	0.1	34.0	5.4	(24.2)	42.2	-	-	386.7
Devon Energy Corporation	776.0	133.0	-	(59.0)	(69.0)	1.0	(1.0)	-	781.0
Encana Corporation	108.4	27.6	-	(17.3)	(8.6)	0.6	(0.1)	-	110.6
Energen Corporation	211.5	28.3	-	1.5	(13.6)	0.2	(0.1)	-	227.9
EOG Resources, Inc.	989.4	299.2	-	69.8	(100.9)	2.3	(3.8)	-	1,256.1
EP Energy Corporation ⁽¹⁾	298.7	116.8	-	(14.3)	(17.0)	-	(15.1)	-	369.1
EQT Corporation	3.2	33.6	-	94.6	(0.3)	-	-	-	131.1
EV Energy Partners, L.P.	49.2	11.4	-	4.1	(3.2)	0.5	(0.1)	-	62.0
EXCO Resources, Inc.	12.2	6.5	-	(2.8)	(1.4)	18.2	(14.7)	-	18.0
Exxon Mobil Corporation ⁽¹⁾	2,245.0	188.0	-	33.0	(125.0)	15.0	(18.0)	-	2,338.0
Freeport-McMoRan Copper & Gold Inc.	-	20.0	-	11.0	(29.0)	368.0	-	-	370.0

	Beginning	Extensions and discoveries	Improved recovery	Revisions	Production	Purchases	Sales	Other (b)	Ending
Hess Corporation	473.0	211.0	-	(55.0)	(45.0)	-	(2.0)	-	582.0
Laredo Petroleum, Inc.	98.1	37.9	-	(18.0)	(5.5)	0.2	(1.2)	-	111.5
Linn Energy, LLC	370.9	40.2	-	(23.3)	(23.0)	208.9	(8.1)	-	565.6
Marathon Oil Corporation	475.0	137.0	-	46.0	(55.0)	14.0	(1.0)	-	616.0
Murphy Oil Corporation	142.6	61.1	-	28.7	(17.7)	-	-	-	214.7
National Fuel Gas Company	42.9	2.4	-	(0.9)	(2.8)	-	-	-	41.6
Newfield Exploration Company	240.0	47.0	-	33.0	(19.0)	1.0	-	-	302.0
Noble Energy, Inc.	244.0	113.0	-	20.0	(29.0)	3.0	(20.0)	-	331.0
Oasis Petroleum Inc.	128.1	40.8	-	3.4	(11.1)	37.5	-	-	198.6
Occidental Petroleum Corporation	1,783.0	4.0	227.0	22.0	(125.0)	32.0	(4.0)	-	1,939.0
PDC Energy, Inc.	92.1	81.0	-	(27.0)	(4.0)	0.6	(0.3)	-	142.5
Pioneer Natural Resources Company	719.4	117.6	-	(249.3)	(40.5)	0.2	(19.9)	-	527.5
Plains Exploration & Production Company	366.8	-	-	-	-	-	(366.8)	-	-
QEP Resources, Inc.	218.9	54.7	-	(6.7)	(15.0)	2.1	(2.8)	-	251.2
Range Resources Corporation	285.5	146.5	-	10.7	(13.1)	-	(6.8)	-	422.8
Rosetta Resources Inc.	116.0	53.4	-	(9.0)	(11.4)	16.8	-	-	165.8
Royal Dutch Shell ⁽¹⁾	903.0	158.0	1.0	14.0	(86.0)	1.0	-	-	991.0
SandRidge Energy, Inc.	330.0	59.3	-	(10.3)	(16.6)	0.1	(160.8)	-	201.7
SM Energy Company	154.5	74.4	34.8	(6.5)	(23.4)	0.7	(4.0)	-	230.5
Southwestern Energy Company	0.2	0.2	-	0.1	(0.2)	-	-	-	0.4
Swift Energy Company	92.5	11.4	-	(13.8)	(6.2)	-	(0.5)	-	83.4
Talisman Energy Inc.	24.7	23.2	-	(4.2)	(4.9)	-	-	-	38.8
Ultra Petroleum Corp.	18.1	11.3	-	(4.3)	(1.2)	10.1	-	(0.0)	34.1
Whiting Petroleum Corporation	341.4	98.1	-	8.6	(29.9)	15.9	(41.8)	-	392.3
WPX Energy, Inc.	186.9	36.9	-	(21.9)	(13.3)	-	-	-	188.6
All companies	23,263.0	4,069.1	408.4	(448.1)	(1,816.9)	862.5	(970.5)	0.3	25,367.8
Integrations	7,412.0	616.0	79.0	(94.0)	(552.0)	18.0	(34.0)	-	7,445.0
Large independents	10,199.6	1,957.3	260.6	(89.7)	(803.3)	255.9	(280.9)	0.3	11,499.8
Independents	5,651.4	1,495.9	68.8	(264.5)	(461.6)	588.6	(655.6)	(0.0)	6,422.9

(a) Includes transfers, reclassifications and other.

⁽¹⁾ See company footnotes on page 24.

US – gas reserves for the latest fiscal year

Bcf

	Beginning	Extensions and discoveries	Improved recovery	Revisions	Production	Purchases	Sales	Other	Ending
Anadarko Petroleum Corporation	8,329.0	416.0	-	1,276.0	(965.0)	153.0	(4.0)	-	9,205.0
Antero Resources Corporation	3,694.0	3,084.0	-	152.0	(177.0)	-	-	-	6,753.0
Apache Corporation	3,185.9	306.7	-	61.2	(285.2)	0.9	(596.4)	-	2,673.1
BHP Billiton Group	6,028.4	1,675.4	3.4	(1,159.5)	(491.3)	(0.5)	-	-	6,055.9
Bill Barrett Corporation	739.1	120.2	-	(98.8)	(52.7)	-	(241.6)	-	466.3
BP p.l.c.	11,231.0	39.0	630.0	(1,166.0)	(635.0)	-	(152.0)	-	9,947.0
BreitBurn Energy Partners L.P.	422.5	1.5	-	86.0	(28.2)	30.3	-	0.0	512.2
Cabot Oil & Gas Corporation	3,696.0	1,661.0	-	435.0	(394.0)	-	(103.0)	-	5,295.0
Chesapeake Energy Corporation	10,933.0	2,160.0	-	388.0	(1,095.0)	5.0	(657.0)	-	11,734.0
Chevron Corporation	3,722.0	951.0	3.0	(234.0)	(454.0)	12.0	(10.0)	-	3,990.0
Cimarex Energy Co.	1,251.9	280.6	-	(101.2)	(125.2)	0.3	(12.8)	-	1,293.5
Concho Resources Inc.	1,042.1	199.9	-	2.3	(75.1)	4.0	-	-	1,173.2
ConocoPhillips	9,467.0	510.0	6.0	287.0	(678.0)	-	(16.0)	-	9,576.0
CONSOL Energy Inc.	3,905.4	1,567.6	-	280.8	(168.7)	-	-	-	5,585.1
Continental Resources, Inc.	1,341.1	1,065.9	-	(241.6)	(87.7)	0.4	-	-	2,078.0
Denbury Resources Inc.	481.6	-	-	14.2	(8.7)	2.8	-	-	490.0
Devon Energy Corporation	8,762.0	471.0	-	106.0	(709.0)	1.0	(81.0)	-	8,550.0
Encana Corporation	4,242.0	482.0	-	(362.0)	(491.0)	7.0	(1.0)	-	3,877.0
Energen Corporation	809.1	50.6	-	18.5	(70.5)	0.3	(88.2)	-	719.7
EOG Resources, Inc.	4,036.0	504.7	-	264.0	(342.3)	5.7	(69.4)	-	4,398.7
EP Energy Corporation ⁽¹⁾	1,877.0	231.0	-	229.0	(145.0)	-	(1,121.0)	-	1,071.0
EQT Corporation	5,985.8	1,844.8	-	(375.9)	(365.5)	472.8	(0.5)	-	7,561.6
EV Energy Partners, L.P.	609.5	149.5	-	36.2	(42.7)	67.3	(0.2)	-	819.7
EXCO Resources, Inc.	936.1	46.8	-	165.9	(153.3)	290.9	(270.0)	-	1,016.5
Exxon Mobil Corporation ⁽¹⁾	26,370.0	1,084.0	-	214.0	(1,414.0)	153.0	(106.0)	-	26,301.0
Freeport-McMoRan Copper & Gold Inc.	-	20.0	-	(26.0)	(55.0)	626.0	(3.0)	-	562.0

	Beginning	Extensions and discoveries	Improved recovery	Revisions	Production	Purchases	Sales	Other	Ending
Hess Corporation	400.0	131.0	-	(12.0)	(51.0)	-	(4.0)	-	464.0
Laredo Petroleum, Inc.	542.9	192.2	-	15.7	(34.3)	1.5	(165.3)	-	552.7
Linn Energy, LLC	2,571.0	286.0	-	(17.0)	(162.0)	356.0	(24.0)	-	3,010.0
Marathon Oil Corporation	1,043.0	163.0	-	(4.0)	(114.0)	13.0	(76.0)	-	1,025.0
Murphy Oil Corporation	209.7	33.3	-	(38.6)	(19.4)	-	-	-	185.0
National Fuel Gas Company	988.4	361.6	-	53.2	(103.7)	-	-	-	1,299.5
Newfield Exploration Company	1,755.0	187.0	-	(166.0)	(124.0)	1.0	(5.0)	-	1,648.0
Noble Energy, Inc.	1,987.0	587.0	-	262.0	(161.0)	126.0	(145.0)	-	2,656.0
Oasis Petroleum Inc.	91.5	31.9	-	10.4	(7.5)	49.6	-	0.0	176.0
Occidental Petroleum Corporation	2,889.0	14.0	303.0	(94.0)	(289.0)	34.0	(2.0)	-	2,855.0
PDC Energy, Inc.	604.0	365.6	-	(117.1)	(20.9)	2.9	(94.9)	-	739.6
Pioneer Natural Resources Company	2,197.5	205.9	-	(304.5)	(157.7)	0.5	(35.3)	-	1,906.3
Plains Exploration & Production Company	510.8	-	-	-	-	-	(510.8)	-	-
QEP Resources, Inc.	2,622.4	455.6	-	(288.3)	(218.9)	1.0	(16.9)	-	2,554.9
Range Resources Corporation	4,792.7	853.7	-	384.8	(264.5)	-	(101.1)	-	5,665.6
Rosetta Resources Inc.	509.5	180.6	-	(9.6)	(40.3)	36.5	-	-	676.6
Royal Dutch Shell ⁽¹⁾	2,352.0	250.0	-	(4.0)	(407.0)	8.0	-	-	2,199.0
SandRidge Energy, Inc.	1,415.0	359.9	-	(53.4)	(103.2)	0.4	(228.2)	-	1,390.4
SM Energy Company	833.4	399.2	118.7	68.8	(149.3)	3.6	(85.1)	-	1,189.3
Southwestern Energy Company	4,016.8	3,283.5	-	325.4	(655.7)	4.1	-	-	6,974.1
Swift Energy Company	597.6	389.4	-	(137.0)	(33.0)	-	(1.8)	-	815.1
Talisman Energy Inc.	1,325.0	459.8	-	26.3	(159.4)	-	-	-	1,651.7
Ultra Petroleum Corp.	2,966.4	1,409.5	-	(741.3)	(224.9)	-	-	-	3,409.7
Whiting Petroleum Corporation	224.3	63.9	-	20.9	(26.9)	7.8	(12.4)	-	277.5
WPX Energy, Inc.	3,369.1	312.0	-	308.3	(359.4)	-	(0.2)	-	3,629.8
All companies	163,911.8	29,898.9	1,064.1	(260.0)	(13,396.1)	2,478.0	(5,041.1)	0.0	178,655.6
Integrations	44,075.0	2,455.0	633.0	(1,202.0)	(2,961.0)	173.0	(272.0)	-	42,901.0
Large independents	76,031.6	16,475.8	312.4	1,356.4	(6,567.2)	1,032.4	(1,551.3)	-	87,090.0
Independents	43,805.2	10,968.2	118.7	(414.5)	(3,867.9)	1,272.7	(3,217.8)	0.0	48,664.6

⁽¹⁾ See company footnotes on page 24.

US – performance measures (three-year averages) (a)

Costs in \$ per boe; production replacement rates in %

	Production replacement rates							
	PRAC	FDC	RRC	Oil		Gas		Production costs
				All sources	Excluding purchases and sales	All sources	Excluding purchases and sales	
Anadarko Petroleum Corporation	\$ 8.13	\$ 12.93	\$ 12.77	173%	200%	140%	143%	\$ 11.48
Antero Resources Corporation	12.28	3.76	3.84	1,200	4,367	1,310	1,752	9.84
Apache Corporation	17.05	31.88	29.90	177	232	34	81	14.60
BHP Billiton Group	6.82	43.21	19.80	385	324	698	118	12.05
Bill Barrett Corporation	10.28	18.38	17.41	1,177	1,108	(128)	32	10.74
BP p.l.c.	16.85	(110.87)	(284.91)	(64)	(18)	(87)	(21)	19.86
BreitBurn Energy Partners L.P.	14.75	(147.29)	21.45	761	109	162	(148)	23.71
Cabot Oil & Gas Corporation	–	4.56	4.56	341	428	421	463	6.44
Chesapeake Energy Corporation	28.31	22.70	22.76	415	544	(15)	111	6.09
Chevron Corporation	6.59	36.35	30.00	111	110	212	126	19.52
Cimarex Energy Co.	6.46	18.62	18.44	272	289	111	172	11.44
Concho Resources Inc.	14.63	22.90	21.02	278	260	351	299	12.72
ConocoPhillips	10.07	16.96	16.92	181	192	56	57	24.56
CONSOL Energy Inc.	–	4.26	4.37	2,635	2,635	490	602	13.68
Continental Resources, Inc.	9.70	12.60	12.31	770	689	758	711	12.24
Denbury Resources Inc.	12.44	22.43	18.32	168	223	539	27	29.29
Devon Energy Corporation	8.92	24.08	23.94	205	203	77	79	8.72
Encana Corporation	14.30	150.44	129.28	544	571	(87)	(18)	12.16
Energen Corporation	8.97	33.81	27.41	351	267	(7)	19	13.09
EOG Resources, Inc.	15.92	19.07	19.05	429	445	(84)	(17)	13.67
EP Energy Corporation ⁽¹⁾	111.11	12.89	12.90	789	866	(134)	79	9.05
EQT Corporation	2.53	5.70	5.29	17,437	17,430	386	324	2.07
EV Energy Partners, L.P.	6.32	40.24	10.53	370	159	314	(7)	11.67
EXCO Resources, Inc.	11.55	199.63	34.31	413	310	15	0	6.59
Exxon Mobil Corporation ⁽¹⁾	1.61	25.14	20.00	183	145	104	90	17.51
Freeport-McMoRan Copper & Gold Inc.	25.84	420.50	49.41	1,376	107	1,122	(11)	17.87

	Production replacement rates							
	PRAC	FDC	RRC	Oil		Gas		Production costs
				All sources	Excluding purchases and sales	All sources	Excluding purchases and sales	
Hess Corporation	\$ 36.00	\$ 28.62	\$ 28.62	324%	327%	229%	231%	\$ 21.97
Laredo Petroleum, Inc.	7.38	19.37	19.03	589	585	102	249	9.68
Linn Energy, LLC	11.53	48.49	16.44	722	98	602	81	13.28
Marathon Oil Corporation	13.31	27.23	23.28	466	339	177	133	20.96
Murphy Oil Corporation	10.73	18.01	17.78	661	642	268	256	22.03
National Fuel Gas Company	6.63	10.05	9.92	57	74	495	486	7.26
Newfield Exploration Company	8.44	36.12	34.47	387	417	(85)	(49)	12.61
Noble Energy, Inc.	4.28	19.31	16.68	247	306	323	275	11.04
Oasis Petroleum Inc.	16.21	21.11	20.03	823	652	1,335	943	16.98
Occidental Petroleum Corporation	15.71	44.72	31.22	168	122	80	(34)	19.41
PDC Energy, Inc.	5.02	10.11	8.86	1232	1,113	198	175	10.01
Pioneer Natural Resources Company	2.72	163.51	128.19	82	92	(59)	(53)	12.90
Plains Exploration & Production Company	-	-	-	-	-	-	-	-
QEP Resources, Inc.	13.59	17.68	17.00	649	510	92	89	10.09
Range Resources Corporation	-	4.97	4.97	1009	1,142	429	578	7.80
Rosetta Resources Inc.	12.50	11.06	11.19	662	599	462	551	8.05
Royal Dutch Shell plc	12.00	57.14	52.90	160	155	54	60	21.16
SandRidge Energy, Inc.	27.02	20.49	21.87	(9)	410	(40)	148	15.90
SM Energy Company	22.27	11.94	11.98	436	462	249	283	11.31
Southwestern Energy Company	0.86	8.90	8.90	(130)	83	219	229	5.59
Swift Energy Company	-	12.94	13.52	223	257	488	553	14.36
Talisman Energy Inc.	175.00	19.65	20.63	551	543	182	182	8.46
Ultra Petroleum Corp.	22.19	(184.74)	(487.82)	163	(98)	(11)	(11)	6.81
Whiting Petroleum Corporation	14.59	25.62	24.93	281	328	67	101	18.45
WPX Energy, Inc.	-	13.17	13.05	267	270	76	94	14.02
All companies	\$ 12.11	\$ 22.22	\$ 20.30	242%	241%	118%	133%	\$ 14.68
Integrates	\$ 5.83	\$ 41.55	\$ 34.50	104%	107%	73%	69%	\$ 19.24
Large independents	9.91	17.46	16.11	290	287	170	164	13.05
Independents	17.66	21.72	20.89	360	358	74	134	12.70

(a) Performance measures are based on less than three years of results for companies that have been in operation less than three years.

(1) See company footnotes on page 24.

US – rankings for the latest fiscal year

	Total capital expenditures	Results of operations	Oil reserves		Gas reserves	
			Beginning	Ending	Beginning	Ending
Anadarko Petroleum Corporation	12	8	7	8	6	5
Antero Resources Corporation	22	36	28	35	16	9
Apache Corporation	10	9	9	9	18	21
BHP Billiton Group	11	12	14	14	7	10
Bill Barrett Corporation	48	46	40	39	38	46
BP p.l.c.	9	6	1	3	2	3
BreitBurn Energy Partners L.P.	36	39	39	38	45	44
Cabot Oil & Gas Corporation	39	30	44	47	15	13
Chesapeake Energy Corporation	6	7	10	12	3	2
Chevron Corporation	4	1	5	5	14	15
Cimarex Energy Co.	31	18	30	31	31	31
Concho Resources Inc.	27	20	23	24	33	33
ConocoPhillips	5	3	3	2	4	4
CONSOL Energy Inc.	43	43	46	48	13	12
Continental Resources, Inc.	17	10	13	11	29	25
Denbury Resources Inc.	24	16	20	20	44	45
Devon Energy Corporation	14	11	11	10	5	6
Encana Corporation	34	23	35	41	10	16
Energen Corporation	40	34	27	28	37	40
EOG Resources, Inc.	8	4	6	6	11	14
EP Energy Corporation ⁽¹⁾	26	24	21	22	26	34
EQT Corporation	35	33	48	37	8	7
EV Energy Partners, L.P.	50	45	41	43	39	37
EXCO Resources, Inc.	38	40	47	49	35	36
Exxon Mobil Corporation ⁽¹⁾	3	2	2	1	1	1
Freeport-McMoRan Copper & Gold Inc.	1	29	50	21	50	42

	Total capital expenditures	Results of operations	Oil reserves		Gas reserves	
			Beginning	Ending	Beginning	Ending
Hess Corporation	16	13	16	15	46	47
Laredo Petroleum, Inc.	45	35	36	40	42	43
Linn Energy, LLC	7	44	17	16	22	19
Marathon Oil Corporation	15	19	15	13	32	35
Murphy Oil Corporation	25	22	32	29	48	49
National Fuel Gas Company	46	37	42	44	34	30
Newfield Exploration Company	29	26	25	25	27	28
Noble Energy, Inc.	18	14	24	23	25	22
Oasis Petroleum Inc.	21	28	33	32	49	50
Occidental Petroleum Corporation	13	5	4	4	20	20
PDC Energy, Inc.	49	42	38	36	40	39
Pioneer Natural Resources Company	20	47	12	17	24	26
QEP Resources, Inc.	32	38	26	26	21	23
Range Resources Corporation	33	21	22	18	9	11
Rosetta Resources Inc.	28	32	34	34	43	41
Royal Dutch Shell plc	2	50	8	7	23	24
SandRidge Energy, Inc.	37	15	19	30	28	29
SM Energy Company	30	31	31	27	36	32
Southwestern Energy Company	23	17	49	50	12	8
Swift Energy Company	47	41	37	42	41	38
Talisman Energy Inc.	44	48	43	45	30	27
Ultra Petroleum Corp.	42	27	45	46	19	18
Whiting Petroleum Corporation	19	25	18	19	47	48
WPX Energy, Inc.	41	49	29	33	17	17
Whiting Petroleum Corporation	22	13	16	19	49	49
WPX Energy, Inc.	35	39	28	31	13	17

(1) See company footnotes on page 24.

Peer groups

Integrateds

BP p.l.c.
Chevron Corporation
Exxon Mobil Corporation
Hess Corporation
Royal Dutch Shell plc

Large independents

Anadarko Petroleum Corporation
Antero Resources Corporation
Apache Corporation
BHP Billiton Group
Chesapeake Energy Corporation
ConocoPhillips
Continental Resources, Inc.
Devon Energy Corporation
EOG Resources, Inc.
EQT Corporation
Linn Energy, LLC
Occidental Petroleum Corporation
Range Resources Corporation
Southwestern Energy Company

Independents

Bill Barrett Corporation
BreitBurn Energy Partners L.P.
Cabot Oil & Gas Corporation
Cimarex Energy Co.
Concho Resources Inc.
CONSOL Energy Inc.
Denbury Resources Inc.
Encana Corporation
Energen Corporation
EP Energy Corporation
EV Energy Partners, L.P.
EXCO Resources, Inc.
Freeport-McMoRan Copper & Gold Inc.
Laredo Petroleum, Inc.
Marathon Oil Corporation
Murphy Oil Corporation
National Fuel Gas Company
Newfield Exploration Company
Noble Energy, Inc.
Oasis Petroleum Inc.
PDC Energy, Inc.
Pioneer Natural Resources Company
QEP Resources, Inc.
Rosetta Resources Inc.
SandRidge Energy, Inc.
SM Energy Company
Swift Energy Company
Talisman Energy Inc.
Ultra Petroleum Corp.
Whiting Petroleum Corporation
WPX Energy, Inc.

Company footnotes

- (1) Amounts presented for EP Energy and ExxonMobil include investments accounted for by the equity method. Royal Dutch Shell's oil and gas reserves related to equity method investments were reclassified to be included with the company's subsidiaries' reserves in 2013; this had no impact on total reserves.
- (2) Revenues and results of operations amounts presented for Anadarko Petroleum exclude Deepwater Horizon settlement and related costs that were included by the company in its results of operations disclosure.
- (3) Revenues and results of operations amounts presented for BP do not reflect any costs relating to the Gulf of Mexico oil spill.

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