

## Natural Gas

### U.S. Crude Oil, Natural Gas, and NG Liquids Proved Reserves

With Data for 2010 | Release Date: August 1, 2012 | Next Release Date: March 2013 |

#### Previous Issues:

Year:

#### Summary

Proved reserves of U.S. oil and natural gas in 2010 rose by the highest amounts ever recorded since the U.S. Energy Information Administration (EIA) began publishing proved reserves estimates in 1977.

- Net additions to proved reserves of crude oil plus lease condensate in 2010 totaled 2.9 billion barrels, surpassing the previous high of 1.8 billion barrels added in 2009 by 63 percent (Table 1).
- Net additions of wet natural gas in 2010 totaled 33.8 trillion cubic feet (Tcf), nearly 5 Tcf (17 percent) higher than the previous record of 28.8 Tcf, also added in 2009.

**Table 1. Changes to proved reserves, 2010**

|   | Crude oil plus lease<br>condensate<br>billion barrels | Wet natural gas<br>trillion cubic feet |
|---|---|--|
| <b>Reserves at December 31, 2009</b>    | <b>22.3</b>   | <b>283.9</b>                           |
| Total discoveries                       | 2.1   | 48.9                                   |
| Net revisions                           | 1.9   | 4.1                                    |
| Net adjustments, sales,<br>acquisitions | 0.9   | 4.1                                    |
| Production                              | -2.0  | -23.2                                  |
| <b>Net change in proved reserves</b>    | <b>2.9</b>  | <b>33.8</b>                            |
| <b>Reserves at December 31, 2010</b>    | <b>25.2</b>   | <b>317.6</b>                           |
| <b>Percentage change in reserves</b>    | <b>12.8%</b>  | <b>11.9%</b>                           |

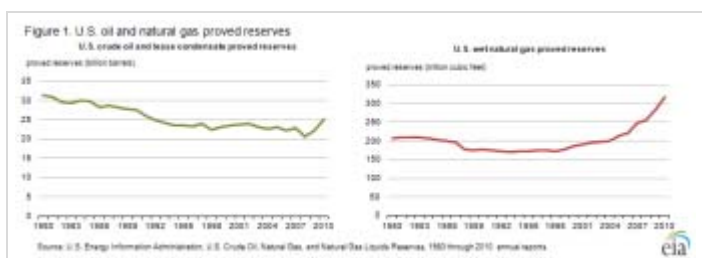
Notes: Wet natural gas includes natural gas plant liquids.

Percent change calculated from unrounded numbers.

Source: U.S. Energy Information Administration, Form EIA-23

An important factor for each fuel was the expanding application of horizontal drilling and hydraulic fracturing in shale and other "tight" (very low permeability) formations, the same technologies that spurred substantial gains in natural gas proved reserves in recent years. Helping to drive proved reserves increases in 2010 were also higher prices used to assess economic viability relative to the prices used for the 2009 reporting year, particularly for oil.

While proved reserves of natural gas began increasing moderately in the late 1990s, it was not until the mid-2000s that volumes grew dramatically, in step with intensifying horizontal drilling programs (Figure 1). More recently, tight oil developments have contributed to the reversal of more than two decades of generally declining U.S. proved oil reserves. For both oil and natural gas, these increases in proved reserves represent a growing role for domestically-produced hydrocarbons in meeting current and projected U.S. energy demands.



#### figure data

Proved reserves of crude oil and lease condensate rose 13 percent to 25.2 billion barrels in 2010, marking the largest annual increase since 1977 and the highest total level since 1991. Proved reserves increased in each of the five largest crude oil and lease condensate areas (Texas, the Gulf of Mexico Federal Offshore, Alaska, California, and North Dakota) between 2009 and 2010. Of these, Texas had the largest increase, 860 million barrels (16 percent), resulting mostly from ongoing development in the Permian and Western Gulf Basins in the western and south-central portions of the state. North Dakota reported the second largest increase, 829 million barrels (78 percent), driven by development activity in the Williston Basin. Collectively,

North Dakota and Texas accounted for nearly 60 percent of the net increase in total U.S. proved reserves in 2010.

Natural gas proved reserves<sup>1</sup> (estimated as "wet" natural gas, including natural gas plant liquids) increased by 12 percent in 2010 to 317.6 Tcf, the twelfth consecutive annual increase and the first year U.S. volumes surpassed 300 Tcf. Four of the five largest natural gas states (Texas, Louisiana, Oklahoma, and Colorado) registered net gains, with Louisiana and Texas adding a combined 17.8 Tcf, over one-half of the overall national increase. Pennsylvania's proved natural gas reserves more than doubled in 2010, contributing about one-fifth of the overall U.S. increase. Expanding shale gas developments in these and other areas, perhaps most notably in Pennsylvania's portion of the Appalachian Basin in the Marcellus play, drove overall increases in 2009 and 2010.

This report summarizes changes to U.S. oil and natural gas proved reserves during 2010. As of this release date (August 2, 2012), EIA is still collecting data for the 2011 reporting year, and anticipates releasing a summary of 2011 developments in the first quarter of 2013.

#### Background

EIA provides annual estimates of U.S. proved reserves of crude oil, natural gas, and natural gas liquids (NGLs) based on filed responses to Form EIA-23, Annual Survey of Domestic Oil and Gas Reserves, an annual survey of about 1,200 domestic operators.

Proved reserves are those volumes of oil and natural gas that geologic and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions. Reserves estimates change from year to year as new discoveries are made, existing fields are more thoroughly appraised, existing reserves are produced, and as prices and technologies change. Discoveries include new fields, identification of new reservoirs in previously discovered fields, and extensions, which are reserve additions that result from additional drilling and exploration in previously discovered reservoirs. Within a given year, extensions typically account for a large percentage of total discoveries. While discoveries of new fields and reservoirs are important indicators of new resources, they generally comprise a small percentage of overall reserve additions on an annual basis. Revisions occur primarily when operators change their estimates of what they will be able to produce from the properties they operate using existing technology and prices.

Several factors influence reserves estimates, but crude oil and natural gas prices are particularly important. Higher prices typically increase estimates (positive revisions) as operators consider a broader portion of the resource base economically producible, or proved. Lower prices generally reduce estimates (negative revisions) as the economically producible base contracts.

Both EIA and the Securities and Exchange Commission (SEC) require oil and gas companies to provide information on their oil and gas reserves. The 2010 reporting period represents the second year companies reporting to the SEC followed updated rules for determining the prices underpinning their proved reserves estimates. The revised rules, which were designed to make estimates less sensitive to price fluctuations during the year, require companies to use an average of the 12 first-day-of-the-month prices. Prior to the 2009 reporting year, companies' estimates were based on the market price on the last trading day of the year. The 12 first-day-of-the-month average crude oil and natural gas spot prices<sup>2</sup> for 2010 were \$79.79 per barrel and \$4.39 per million Btu (MMBtu), representing increases of 31 percent and 15 percent, respectively, from the previous year. Spot market prices are not necessarily the prices used by operators in their reserves estimates, because actual prices received by operators depend on their contractual arrangements, location, quality, etc. They do provide a benchmark or trend indicator.

There are also important differences between these two reporting systems. First, EIA collects information from both publicly traded and privately held companies, while SEC reporting requirements apply only to companies with more than \$10 million in assets and whose securities are held by more than 500 owners. Second, companies reporting to EIA (both public and private) include gross operated reserves (irrespective of their ownership share), while the companies reporting to the SEC include only their "owned" reserves (irrespective of operator).<sup>3</sup>

It is important to note that the average natural gas price used in estimating proved reserves for 2010 does not reflect the more recent and prolonged downward trend in natural gas prices. For the 2011 reporting period, the average natural gas price fell more than 5 percent to \$4.15 per MMBtu, reflecting the dual impact of continued increases in domestic production (due largely to shale gas development) and significantly rising inventories. This held particularly true during the second half of 2011, when the daily Henry Hub spot price dipped below \$4.00 per MMBtu, averaging \$3.17 per MMBtu in December and finishing the year at \$2.98 per MMBtu. It can be expected, therefore, that price-driven negative revisions will affect overall natural gas proved reserves additions in 2011.

Conversely, the 12 first-day-of-the-month average spot price of Cushing, Oklahoma WTI crude oil rose from \$79.79 per barrel in 2010 to \$95.84 per barrel in 2011. EIA therefore anticipates price-driven positive revisions will add to proved reserves of crude oil in 2011.

The aggregated production data for crude oil, natural gas, and NGLs includes volumes that have been reported to EIA by operators on Form EIA-23, and, for non-reported production, volumes that are based on EIA estimates. These production numbers are offered only as an indicator of production trends and may differ from EIA's official production series based on State-reported data and provided elsewhere on the EIA website for [oil](#) and [natural gas](#)

### Oil proved reserves (crude oil plus lease condensate)

#### Overview

The 2009 Reserves Report detailed the major increases in the country's natural gas proved reserves attributable to expanding exploration and development programs in shale formations such as the Barnett in Texas and the Haynesville in Louisiana. Central to the increases was the combination of horizontal drilling and hydraulic fracturing technologies. While that Report acknowledged the increase in 2009 oil proved reserves were also facilitated by the dual application of these technologies in shale and other tight formations, gains were especially pronounced in 2010, taking place primarily onshore in the lower 48 states (Figure 2).

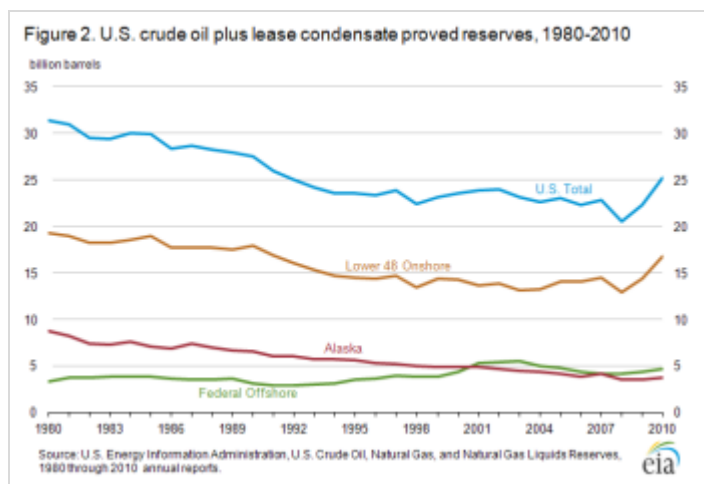
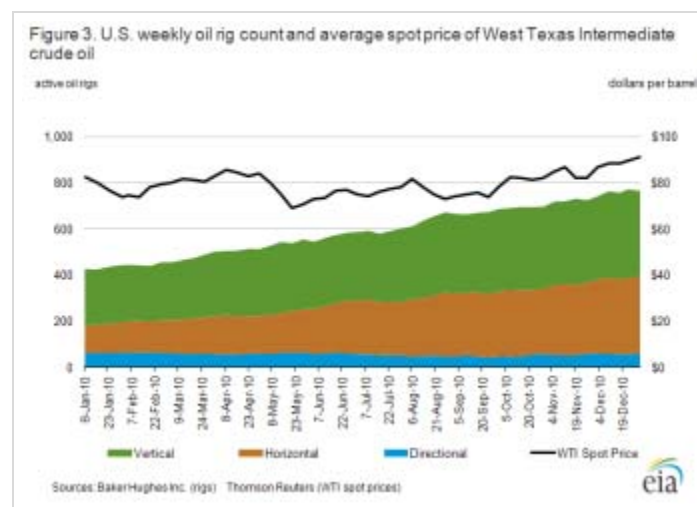


figure data

Overall reported U.S. oil proved reserves rose by nearly 3.0 billion barrels in 2010, driven essentially equally by net revisions and a fourth consecutive increase in total discoveries, which added a combined 4.0 billion barrels (more than double the year's production) (Figure 4). Among individual states, the 860 million barrel addition in Texas represented the year's largest volumetric increase in oil proved reserves, due in large part to expanding horizontal drilling and hydraulic fracturing programs in the [Eagle Ford](#) and other shale formations. Similar programs were essential in adding significantly to proved oil reserves in other states, particularly North Dakota, where drilling in the [Bakken](#) and underlying Three Forks formations in the Williston Basin accounted for the bulk of North Dakota's 829 million barrel net addition in 2010.



Weekly active rotary rig counts can be a useful gauge of exploration and development activity generally, with changes in the horizontal count, in particular, indicating the pace of activity in shale formations and other tight plays. During 2010, the overall number of active oil-directed drilling rigs in the United States rose by 79 percent, an increase driven largely by a near tripling of horizontal rigs usage. Horizontal rigs accounted for 27 percent of active oil rigs at the beginning of 2010; that share had climbed to 44 percent by year's end

(Figure 3).

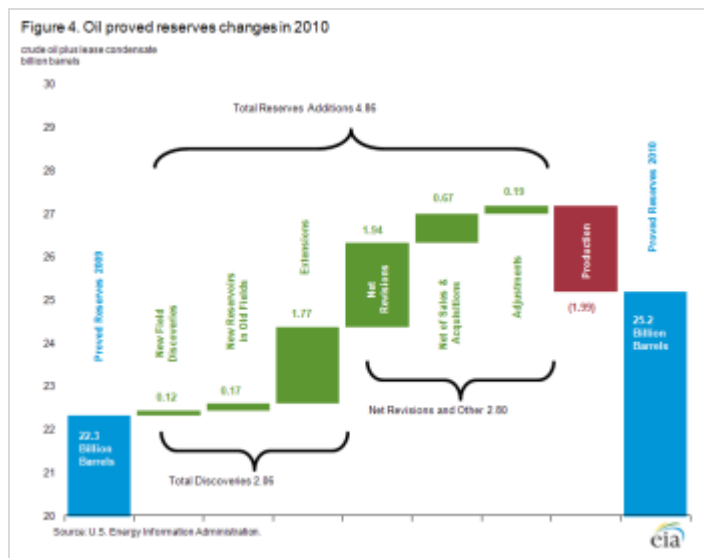


figure data

**Total Discoveries.** Total discoveries consist of discoveries of new fields, identification of new reservoirs in fields discovered in prior years, and extensions (reserve additions that result from the additional drilling and exploration in previously discovered reservoirs). Total discoveries added 2,059 million barrels to U.S. oil reserves in 2010, the highest volume of total discoveries since 2001. As is typical, extensions comprise the bulk of total discoveries (86 percent) (Figure 4).

Geographically, the bulk of total oil discoveries in 2010 came from Texas, North Dakota, and the deepwater Gulf of Mexico. Texas led in 2010, with discoveries of 752 million barrels. North Dakota marked its second consecutive year as a major source of total discoveries, adding 565 million barrels. As in 2009, North Dakota's discoveries (mostly extensions) are associated with rapid growth in reserves of the Bakken and underlying Three Forks formations. Total discoveries in the Gulf of Mexico Federal Offshore added 232 million barrels in 2010, a decline of 29 percent from the 328 million barrels of discoveries in 2009, reflecting the impact of the moratorium on most deepwater Gulf of Mexico drilling activity following the Macondo well explosion in April 2010.

**Net Revisions and Other Changes.** Revisions to proved reserves occur primarily when operators change their estimates of what they will be able to produce from the properties they operate using existing technology and prices. These revisions reflect changing prices, changing cost structures (for example, because of technological advances), and other factors. Other small changes occur when operators buy and sell properties (revaluing the proved reserves in the process), and as various adjustments are made to reconcile estimated volumes.

Net revisions added 1.9 billion barrels to oil proved reserves in 2010, the highest level since 1999 and largely reflective of the significant increase in oil prices relative to 2009. Under

the SEC rules adopted for the 2009 reporting year, the 12 first-day-of-the-month average spot price for West Texas Intermediate (WTI) crude oil in 2010 was \$79.79 per barrel, an increase of 31 percent over the 12 first-day-of-the-month average price in 2009 (\$61.08).

The net change to U.S. proved oil reserves associated with buying and selling properties and adjustments was a modest compared with net revisions in 2010. The net of sales and acquisitions added 667 million barrels to the U.S. totals, significantly more than the prior year (95 million barrels in 2009), but much less than net revisions of 1,943 million barrels in 2010. Adjustments (reserves changes that EIA cannot attribute to any other category) added 188 million barrels in 2010.

**Production.** Operators reported oil production of about 2.0 billion barrels in 2010, an increase of 3 percent from 2009. This represents the country's second consecutive annual increase and its highest level since 2004. Production from the onshore lower 48 states (primarily Texas and North Dakota), which was up nearly 8 percent from the previous year, more than offset declines in Alaska and the Gulf of Mexico Federal Offshore. While production from Alaska has generally declined for several years, the dip in Gulf of Mexico Federal Offshore output followed a major deepwater-driven production increase in 2009 (again reflecting the influence of the drilling moratorium).

Wet natural gas proved reserves (includes natural gas plant liquids)

Overview

Total reported U.S. proved reserves of wet natural gas rose by 33.8 Tcf in 2010, supplanting the 2009 reporting year's 28.8 Tcf as the highest annual volumetric increase on record and boosting the country's proved reserves to over 300 Tcf for the first time (Figure 5). The increase was driven largely by an eighth consecutive annual rise in discoveries, which added nearly 50 Tcf (mostly from extensions) (Table 2). U.S. natural gas proved reserves have increased in every year since 1999, with the pace accelerating in recent years in step with expanding exploration and development activity in several of the nation's shale formations.

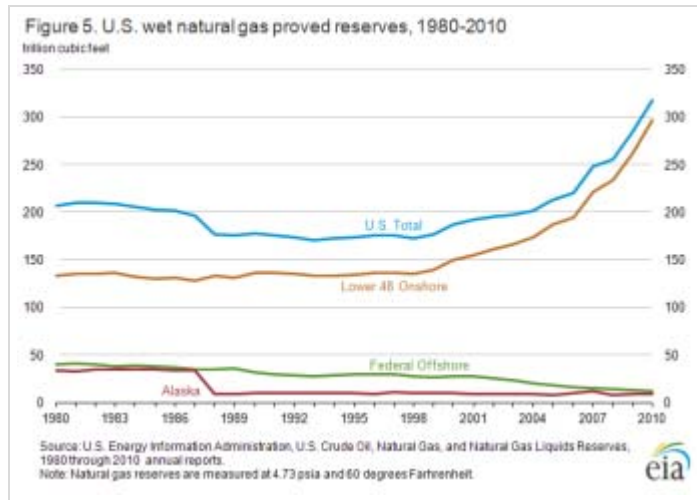


figure data

trillion cubic feet at 14.73 psia and 60 degrees Fahrenheit

Table 2. Changes to proved reserves of wet natural gas by source, 2010

| Source of Gas                           | Proved Reserves Year-End 2009 | Discoveries 2010 | Revisions & Other Changes 2010 | Production 2010 | Proved Reserves Year-End 2010 |
|---|-------------------------------|------------------|--------------------------------|-----------------|-------------------------------|
| Coalbed Methane                         | 18.6                          | 0.5              | 0.3                            | -1.9            | 17.5                          |
| Shale                                   | 60.6                          | 30.8             | 11.4                           | -5.3            | 97.4                          |
| <b>Other (Conventional &amp; Tight)</b> |                               |                  |                                |                 |                               |
| Lower 48 Onshore                        | 182.6                         | 16.9             | -4.4                           | -13.5           | 181.7                         |
| Lower 48 Offshore                       | 12.9                          | 0.6              | 0.8                            | -2.2            | 12.1                          |
| Alaska                                  | 9.2                           | 0.0              | 0.0                            | -0.3            | 8.9                           |
| <b>TOTAL</b>                            | <b>283.9</b>                  | <b>48.9</b>      | <b>8.1</b>                     | <b>-23.2</b>    | <b>317.6</b>                  |

Source: U.S. Energy Information Administration, Form EIA-23

The combination of horizontal drilling and hydraulic fracturing in shale formations continues to be instrumental to the expansion of U.S. natural gas proved reserves over the last few years. This held especially true in 2010, when an increase in shale natural gas reserves of 36.8 Tcf offset a decrease in net reserves from all other sources combined (Figure 6). The significant impact of shale developments can also be seen by examining the share of shale gas relative to total U.S. natural gas proved reserves. That share has increased steadily and significantly, from less than 10 percent in 2007 to over 30 percent in 2010 (Figure 6).

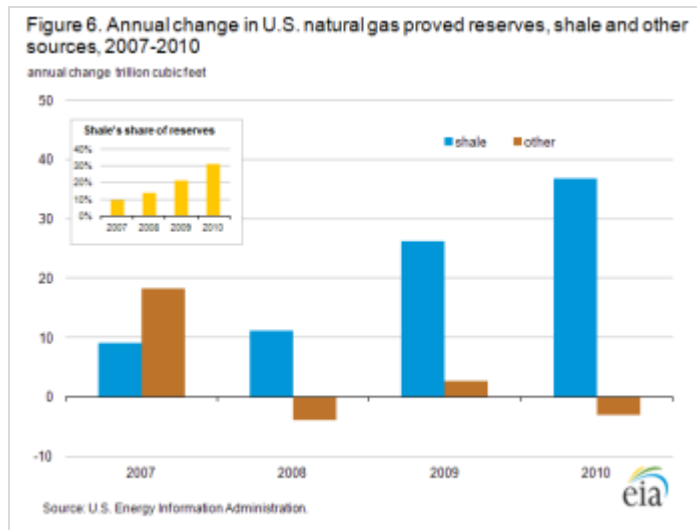


figure data

At the state level, Texas' 9.3 Tcf addition represents the largest volumetric increase in natural gas proved reserves in 2010, driven by continued development of the Barnett and Haynesville/Bossier shale formations. In Louisiana, an increase in total proved natural gas reserves of 8.5 Tcf was largely the result of ongoing drilling programs at the Haynesville shale formation. Shale activity contributed 10.8 Tcf to Louisiana's proved natural gas reserves, offsetting declines from non-shale sources. In Pennsylvania, expanding drilling programs at the Marcellus shale formation drove the state's 7.1 Tcf increase in total proved natural gas reserves, more than doubling year-end 2009 volumes. Figure 7 shows the shale gas proved reserves in the nation's key shale states in 2010, which also included Arkansas (the Fayetteville shale play) and Oklahoma (the Woodford shale play).

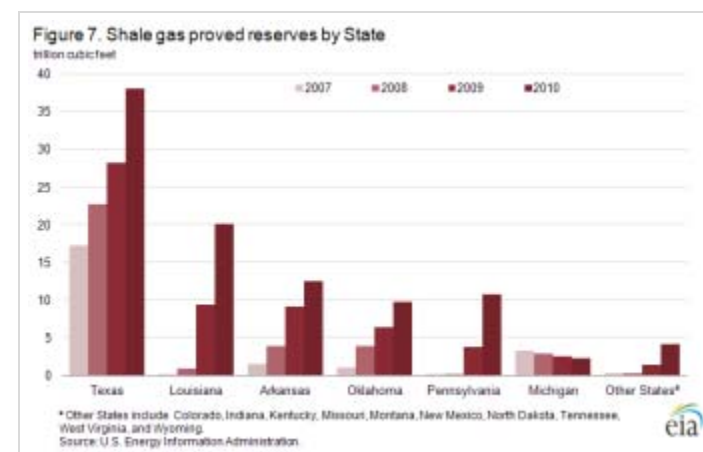


figure data

Nearly all (96 percent) of the country's shale natural gas proved reserves in 2010 came from the six largest shale plays (Table 3). While the Barnett again ranked as the largest shale gas play in the United States, significantly higher increases over 2009 proved reserves were registered by the Haynesville/Bossier (which more than doubled 2009 volumes) and the Marcellus (which nearly tripled). Among these six shale

plays, the only decline from 2009 volumes was in the Antrim of northern Michigan—a mature, shallow biogenic shale gas play discovered in 1986 that is no longer being developed at the same pace as the other leading shales. EIA has a series of maps showcasing the nation's shale gas resources for both shale plays and geologic basins.

Table 3. Principal shale gas plays: natural gas production and proved reserves, 2008-2010

billion cubic feet at 14.73 psia and 60 degrees Fahrenheit

| 2008 | 2009 | 2010 | Change 2010-2009 |
|------|------|------|------------------|
|------|------|------|------------------|

| Shale Play                  | Production   | Reserves      | Production   | Reserves      | Production   | Reserves      | Production   | Reserves      |
|-----------------------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
| Barnett                     | 1,501        | 22,492        | 1,745        | 26,493        | 1,918        | 31,040        | 173          | 4,547         |
| Haynesville/Bossier         | 25           | 1,031         | 321          | 10,468        | 1,415        | 24,451        | 1,130        | 13,983        |
| Fayetteville                | 279          | 3,833         | 527          | 9,070         | 794          | 12,526        | 267          | 3,456         |
| Woodford                    | 168          | 3,845         | 249          | 6,389         | 403          | 9,670         | 154          | 3,281         |
| Marcellus                   | 2            | 102           | 76           | 4,478         | 476          | 13,199        | 400          | 8,721         |
| Antrim                      | 122          | 2,894         | 132          | 2,499         | 120          | 2,306         | -12          | -193          |
| <b>Subtotal</b>             | <b>2,097</b> | <b>34,197</b> | <b>3,050</b> | <b>59,397</b> | <b>5,126</b> | <b>93,192</b> | <b>2,112</b> | <b>33,795</b> |
| Other Shale Plays           | 19           | 231           | 60           | 1,247         | 174          | 4,257         | 114          | 3,010         |
| <b>All U.S. Shale Plays</b> | <b>2,116</b> | <b>34,428</b> | <b>3,110</b> | <b>60,644</b> | <b>5,336</b> | <b>97,449</b> | <b>2,226</b> | <b>36,805</b> |

Note: The above table is based on shale gas proved reserves and production volumes reported and imputed from data on Form EIA-23. For certain reasons (e.g., incorrect or incomplete submissions, misidentification of shale versus non-shale reservoirs) the actual proved reserves and production of natural gas from shale plays may be higher or lower.

The production estimates are offered only as an observed indicator of production trends and may differ from EIA production volumes listed elsewhere on the EIA web site.

Sources: U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 2008 through 2010 annual reports.

The sustained lower price environment for natural gas relative to oil has encouraged operators to shift drilling and development programs toward "liquids-rich" areas within these and other shale gas plays that offer a higher yield of natural gas liquids (NGLs) and crude oil. These areas include southwestern portions of the Marcellus in Pennsylvania and parts of the Eagle Ford Shale covering much of south Texas. Due to their relative price premium over natural gas, the production of crude oil and NGLs along with natural gas improves project economics.

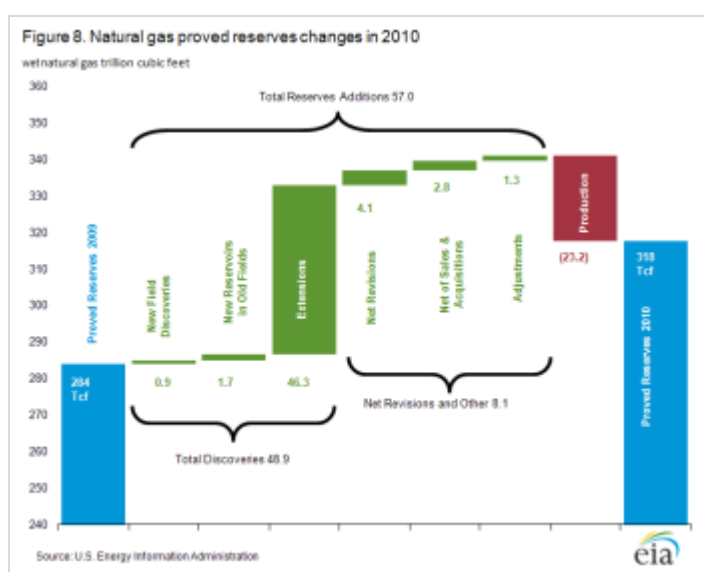


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**Total Discoveries.** Total wet natural gas discoveries of 48.9 Tcf represented the eighth consecutive annual increase and were the highest volume of discoveries since EIA began publishing proved reserves estimates in 1977 (Figure 8). In 2010, 95 percent of total wet natural gas discoveries (and a similar share of shale gas discoveries) came from extensions of existing fields. New field discoveries and new reservoir discoveries in previously discovered fields totaled 0.9 Tcf and 1.7 Tcf, respectively, each representing a decrease from 2009. Texas and Louisiana, with discoveries of 13.0 Tcf and 11.4 Tcf, respectively, were the leading individual states, while Pennsylvania more than doubled its total discoveries, adding 6.8 Tcf. In each of these states, shale gas developments drove volumetric additions. Pennsylvania, in particular, may expect substantial proved reserves increases for the 2011 reporting year, given the significant quickening pace of drilling and development programs in the Marcellus.

**Net Revisions and Other Changes.** For 2010, net revisions of wet natural gas proved reserves added 4.1 Tcf. Positive revisions of 42.4 Tcf were the largest since 1999, reflecting an increase in the price used to estimate reserves and, consequently, an enhanced ability to economically produce natural gas, particularly from relatively costly unconventional sources such as shale. The 12 first-day-of-the-month average spot price

at Henry Hub rose from \$3.83 per MMBtu in 2009 to \$4.39 per MMBtu in 2010.

The net change to wet natural gas proved reserves from the purchase and sale of properties and adjustments (4.1 Tcf) was comparable to net revisions; both were significantly less than 2010 extensions.

**Production.** As reported on the EIA Form-23 survey, production of wet natural gas in 2010 totaled 23.2 Tcf, up 3 percent from 2009, marking the fifth consecutive increase and the highest since EIA began reporting. Three states – Louisiana, Texas, and Pennsylvania – accounted for nearly three-quarters of the overall increase, much of which was tied to expanded drilling programs in shale formations.

### Dry natural gas reserves

Dry natural gas is that volume of gas that remains after all of the liquefiable hydrocarbons and nonhydrocarbon impurities are removed from the natural gas stream; first at lease separation facilities near the producing well (lease condensate), then downstream at a natural gas processing plant (natural gas plant liquids). Proved reserves of U.S. dry natural gas also increased by 12 percent from 2009 to 2010, to 304.6 Tcf.<sup>4</sup>

### Natural gas liquids proved reserves

Natural gas liquids are those hydrocarbons in natural gas that are separated from the gas as liquids through the process of absorption, condensation, adsorption, cooling in gas separators, gas processing, or gas cycling plants. Generally, natural gas liquids include lease condensate and natural gas plant liquids.

EIA continues to provide separate estimates of lease condensate and natural gas plant liquids volumes, and changes to proved reserves of each during 2010 are summarized in this section.

Because NGLs sell at a premium to natural gas, there is often an economic incentive for operators to focus exploration and development activities on areas that have natural gas with high liquids content. This "liquids boost" is especially important in the development of unconventional resources (such as shale gas) because of the relatively high cost of drilling and completing horizontal wells. The high liquids content of certain shale formations helps operators to profitably develop shale gas resources during periods of low natural gas prices.

### Lease Condensate

U.S. lease condensate proved reserves increased from 1,633 million barrels in 2009 to 1,914 million barrels in 2010, a 17 percent increase driven primarily by extensions. By a considerable margin, Texas had the largest increase in lease condensate proved reserves in 2010 (192 million barrels), followed by North Dakota and Oklahoma. In these (and other) states, additions to lease condensate proved reserves can be closely linked to expanding drilling programs in liquids-rich portions of shale and other tight formations, such as the Eagle Ford in Texas and the Bakken in North Dakota. Lease condensate comprised almost eight percent of total oil proved reserves in 2010.

U.S. lease condensate production increased 26 percent, from 178 million barrels in 2009 to 224 million barrels in 2010, the highest production volume registered since EIA began publishing proved reserves estimates.

Lease condensate, which is extracted from the natural gas production stream at the field (lease) level, is often blended into other crude oil to enhance the blend quality for refiners.

### Natural gas plant liquids

U.S. natural gas plant liquids proved reserves rose from 8,557 million barrels in 2009 to 9,809 million barrels in 2010, an increase of 15 percent. Texas had the largest volumetric increase in natural gas plant liquids proved reserves in 2010, followed by Oklahoma and Colorado. As is the case with lease condensate, increasing proved reserves of natural gas plant liquids is associated with escalating drilling activity in shale formations, including the Barnett in Texas and Woodford in Oklahoma.

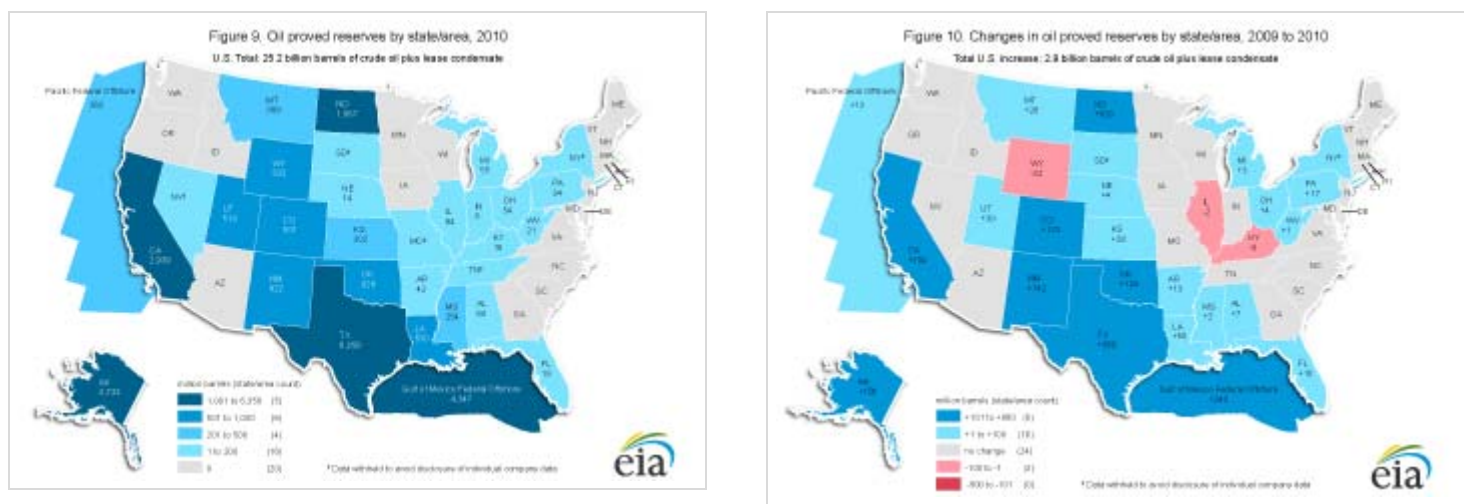
U.S. natural gas plant liquids production in 2010 increased more than 4 percent, from 714 million barrels in 2009 to 745 million barrels in 2010.

Natural gas plant liquids remain in gaseous form at the surface and must be separated at a gas processing plant. Once extracted, these liquids are separated into distinct products, or "fractions," such as propane, butane, and ethane.

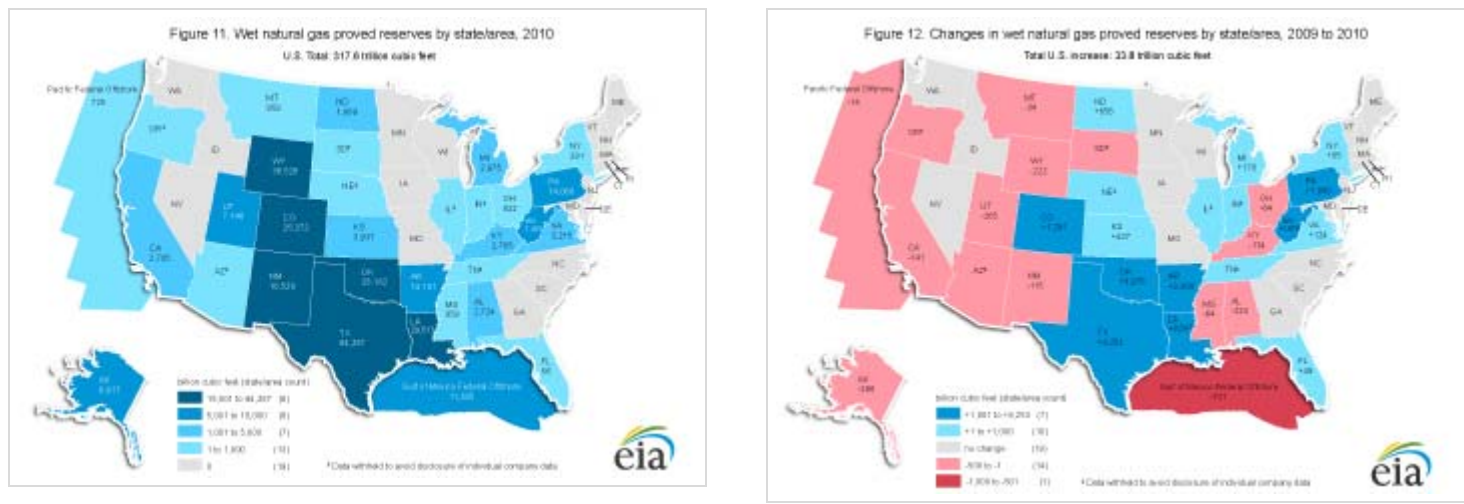
Additional data tables and maps

For more detailed 2010 proved reserves information than discussed in the report see Tables 4-18 and Figures 9-12.

Figure 9 shows a thematic map of the 2010 crude oil proved reserves volumes by State and Federal Offshore areas, and Figure 10 shows the change in crude oil proved reserves by area from 2009 to 2010.



Similarly, Figure 11 shows a thematic map of the 2010 wet natural gas proved reserves volumes by State and Federal Offshore areas, and Figure 12 shows the change in wet natural gas proved reserves by area from 2009 to 2010.



**Footnotes:**

<sup>1</sup>Natural gas, wet after lease separation, is the volume of natural gas remaining after removal of lease condensate in lease and/or field separation facilities, if any, and after exclusion of nonhydrocarbon gases where they occur in sufficient quantity to render the gas unmarketable. Natural gas plant liquids may be recovered from volumes of natural gas, wet after lease separation, at natural gas processing plants

<sup>2</sup>Spot prices used were the Cushing,

OK West Texas Intermediate for crude oil and the Henry Hub Gulf Coast for natural gas.

<sup>3</sup>Additional information concerning EIA and SEC reserves can be found in a [supplemental report](#) to the 2009 reserves summary.

Detail on dry natural gas proved reserves is available in the additional data tables, "Table 9. Dry Natural Gas Proved Reserves, Reserves Changes, and Production, 2010."

Contact: Steven G. Grape or 202-586-1868