

# United States Producing and Nonproducing Crude Oil and Natural Gas Reserves From 1985 Through 2004

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## Abstract

The Form EIA-23 survey of crude oil and natural gas producer reserves permits reserves to be differentiated into producing reserves, i.e., those reserves which are available to the crude oil and natural gas markets, and nonproducing reserves, i.e., those reserves which are unavailable to the crude oil and natural gas markets. The proportion of nonproducing reserves relative to total reserves grew for both crude oil and natural gas from 1985 through 2004, and this growth is apparent in almost every major domestic production region. However, the growth patterns in nonproducing crude oil and natural gas reserves are different for each fuel both regionally and across time.

## Introduction

The Energy Information Administration (EIA) collects<sup>1</sup> and reports<sup>2</sup> total U.S. crude oil and natural gas reserves. Moreover, the Form EIA-23 survey requires participants to report nonproducing reserves, which can be used to infer producing reserves, by subtracting nonproducing reserves from total reserves. Form EIA-23 defines nonproducing reserves as:

“Quantities of proved liquid or gaseous hydrocarbon reserves that have been identified, but which did not produce during the last calendar year regardless of the availability and/or operation of production, gathering or transportation facilities. This includes both proved undeveloped and proved developed non-producing reserves.”<sup>3</sup>

Form EIA-23 instructions also state that the total proved reserves reported by respondents should include both producing and nonproducing reserves.<sup>4</sup>

Financial accounting, as regulated by the Securities and Exchange Commission (SEC), also distinguishes between producing and nonproducing reserves within the conceptual framework of “proved developed” and “proved undeveloped” crude oil and natural gas reserves.<sup>5</sup> While there are many subtleties regarding these SEC definitions and their accounting application, their general intent is to distinguish between 1) those reserves which are currently producible and available to the market and 2) those reserves which are

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<sup>1</sup> Energy Information Administration, *Annual Survey of Domestic Oil and Gas Reserves Form EIA-23*, Washington, DC, 2005. Hereinafter referred to as the “Form EIA-23.”

<sup>2</sup> Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*, DOE/EIA-0216(2004), Washington, DC, and earlier editions. Hereinafter referred to as the “EIA Reserves Report.”

<sup>3</sup> Energy Information Administration, *Annual Survey of Domestic Oil and Gas Reserves Form EIA-23L: Field Survey Instructions 2004*, Washington, DC, page 11. Prior to 1988, Form EIA-23 defined nonproducing crude oil and gas reserves within the context of reserves that were not being produced during the last 3 months of the calendar year. Because the reported nonproducing reserve volumes did not change significantly between 1987 and 1988, it is not clear whether this change in the nonproducing reserve definition materially affected the volumes reported or by how much.

<sup>4</sup> Ibid. page 8.

<sup>5</sup> SEC Regulation S-X, § 210.4-10(a)(3) and § 210.4-10(a)(4).

not currently producible, but which are expected to be available in the future as a result of additional capital investments. The SEC's concept of nonproducing reserves is less inclusive than EIA's, which includes currently producible reserves that are not being produced. Although publicly held corporations report their individual levels of proved developed and proved undeveloped reserves, the SEC does not publicly provide a compilation of these reserve levels.

This report discusses the regional and temporal trends in producing and nonproducing crude oil and natural gas reserves using EIA's categorization of reserves. The report first focuses on EIA's collection and reporting of crude oil and natural gas reserves data, followed by a discussion of the natural gas reserve trends, and then the crude oil reserve trends. The report concludes by discussing the potential reasons for why nonproducing crude oil and natural gas reserves have increased since 1985.

## **EIA Crude Oil and Natural Gas Reserve Data**

EIA's Office of Oil and Gas, Reserves and Production Division provided the crude oil and natural gas reserve data used in this report. These data include all Category I and II well operators, and those Category III well operators who submitted Form EIA-23 surveys.<sup>6</sup> Between 1985 through 2004, Category I and II well operators accounted for an average of 93 percent of the total crude oil and natural gas reserves, when calculated on a Btu basis. Because the Category I and II well operators have consistently accounted for 90 percent or more of total U.S. crude oil and natural gas reserves, the producing and nonproducing reserve trends discussed in this report are fairly representative of the crude oil and natural gas industry as a whole.

The total crude oil and natural gas reserves reported by the Category I, II and III well operator categories are less than the total reserves reported in the EIA Reserves Report, because the Reserves Report includes a reserve estimate for those Category III well operators that did not submit Form EIA-23 data.

Form EIA-23 nonproducing natural gas reserve data are reported on a wet after lease separation basis. "Wet" natural gas volumes include entrained natural gas liquids (e.g., ethane, propane, butane) that remain in a gaseous form at 14.73 pounds per square inch absolute (psia) and 60 degrees Fahrenheit,<sup>7</sup> but do not include water or other inert gases. To ensure consistent analytical comparisons, "wet" nonproducing natural gas reserves are compared to total "wet" producing natural gas reserves.

All crude oil volumes reported in this paper include lease condensate volumes. All references regarding crude oil and natural gas reserves pertain to their year-end (December 31<sup>st</sup>) volumes.

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<sup>6</sup> Category I and II well operators produce at least 400,000 barrels of crude oil per year or 2 billion cubic feet of natural gas, whereas Category III well operators produce less than these volumes. All Category I and II well operators must report both their total and nonproducing reserve volumes. A randomly selected set of Category III well operators are required to report total reserve and production volumes, but not nonproducing reserves volumes.

<sup>7</sup> "...a majority of the natural gas industry in North America have adopted 60°F and 14.73 psia as their standard reference conditions for expressing natural gas volumes and flow rates." Source: Wikipedia at: [http://en.wikipedia.org/wiki/Standard\\_conditions\\_for\\_temperature\\_and\\_pressure](http://en.wikipedia.org/wiki/Standard_conditions_for_temperature_and_pressure)

This report focuses on crude oil and natural gas reserves from 1985 through 2004. The Energy Information Administration changed its crude oil and natural gas reserves collection and reporting practices in the mid-1980s, which precludes certain comparisons with the pre-1985 data.

### Natural Gas Reserve Trends

From 1985 through 2004, total natural gas reserves increased 22.3 trillion cubic feet, from 168.2 trillion cubic feet at year-end 1985 to 190.5 trillion cubic feet at year-end 2004 (Table 1 and Figure 1). However, U.S. nonproducing natural gas reserves increased by 18.3 trillion cubic feet, from 33.1 trillion cubic feet at year-end 1985 to 51.4 trillion cubic feet at year-end 2004. Consequently, from 1985 through 2004, more than 80 percent of the new incremental proved natural gas reserves were nonproducing.

Nearly all of the reported growth in total and nonproducing natural gas reserves occurred between 1997 and 2004. At year-end 1985, U.S. nonproducing natural gas reserves were 20 percent of total natural gas reserves; by year-end 2004, they were 27 percent of total natural gas reserves.

**Table 1: Natural Gas Reserves by Category and Region\*  
At Year-End 1985 and Year-End 2004  
(Wet After Lease Separation)**

Region	Total Natural Gas Reserves (trillion cubic feet)		Nonproducing Natural Gas Reserves (trillion cubic feet)		Producing Natural Gas Reserves (trillion cubic feet)	
	1985	2004	1985	2004	1985	2004
Alaska	15.2	8.5	1.0	0.7	14.1	7.8
Northeast	5.0	12.0	0.4	2.5	4.5	9.6
Midcontinent	30.7	27.0	2.0	5.4	28.7	21.7
Southwest	15.8	20.1	0.8	4.5	15.0	15.7
Onshore Gulf Coast	34.5	40.2	7.5	13.1	27.0	27.1
Rocky Mountain	24.6	59.5	5.0	15.0	19.6	44.5
Pacific (On & Offshore)	5.5	3.1	0.8	0.7	4.6	2.4
Offshore Gulf of Mexico	36.9	20.0	15.4	9.6	21.6	10.4
Onshore Lower-48	114.6	161.5	16.1	41.0	98.5	120.5
Offshore Lower-48	38.4	20.6	15.9	9.7	22.4	10.8
Total Lower-48	153.0	182.1	32.1	50.7	121.0	131.3
<b>United States</b>	<b>168.2</b>	<b>190.5</b>	<b>33.1</b>	<b>51.4</b>	<b>135.1</b>	<b>139.1</b>

Source: Energy Information Administration, Office of Oil and Gas, Reserves and Production Division

\* Pertains only to reserves reported directly by Category I, II and III well operators.

### Offshore and Onshore Natural Gas Reserves

Total lower 48 offshore natural gas reserves declined 17.8 trillion cubic feet, from 38.4 trillion cubic feet at year-end 1985 to 20.6 trillion cubic feet at year-end 2004. This decline in total offshore natural gas reserves reflects a decline in both nonproducing and producing natural gas reserves, albeit at different rates. Offshore lower 48 nonproducing natural gas reserves declined 6.2 trillion cubic feet, from 15.9 trillion cubic feet at year-end 1985 to 9.7 trillion cubic feet at year-end 2004. Offshore lower 48 producing natural gas reserves fell by 11.6 trillion cubic feet, from 22.4 trillion cubic feet at year-end 1985 to 10.8 trillion cubic feet at year-end 2004. The proportion of offshore lower 48

nonproducing natural gas reserves to total offshore natural gas reserves rose from 41 percent at year-end 1985 to 47 percent at year-end 2004.

In contrast to the decline in total offshore natural gas reserves, lower 48 onshore natural gas reserves grew from year-end 1985 through year-end 2004. Total lower 48 onshore natural gas reserves rose by 46.9 trillion cubic feet, from 114.6 trillion cubic feet at year-end 1985 to 161.5 trillion cubic feet at year-end 2004. Lower 48 onshore nonproducing reserves grew by 24.9 trillion cubic feet, from 16.1 trillion cubic feet at year-end 1985 to 41.0 trillion cubic feet at year-end 2004. Lower 48 onshore producing natural gas reserves grew by 22.0 trillion cubic feet, from 98.5 trillion cubic feet at year-end 1985 to 120.5 trillion cubic feet at year-end 2004. Nonproducing natural gas reserve growth accounted for 53 percent of the incremental growth in total lower 48 onshore reserves between year-end 1985 and year-end 2004.

Nonproducing natural gas reserves grew from being 14 percent of total lower 48 onshore reserves at year-end 1985 to 25 percent at year-end 2004. Therefore, the 1985 through 2004 growth in U.S. nonproducing natural gas reserves is primarily an onshore phenomenon, both in terms of volume and as a percentage of total U.S. natural gas reserves.

#### Lower 48 Onshore Regional Natural Gas Reserves

The growing proportion of onshore nonproducing natural gas reserves relative to total natural gas reserves is a phenomenon replicated across all the onshore subregions during the 1985 through 2004 period (Figure 2, with Figure 3 delineating the regional boundaries). For example, even though the Alaska and Pacific regions posted a volumetric decline in nonproducing natural gas reserves, the proportion of nonproducing natural gas reserves relative to total natural gas reserves still increased in these regions. Those onshore regions which posted volumetric increases in total natural gas reserves from year-end 1985 through year-end 2004, namely, the Northeast, Southwest, Onshore Gulf Coast, and Rocky Mountain, had their volumes of nonproducing natural gas reserves increase even faster, so that the relative proportion of nonproducing natural gas reserves to total natural gas reserves increased. The Midcontinent region shows a decline in total natural gas reserve volumes while nonproducing natural gas reserve volumes increased, thereby causing this region's nonproducing natural gas reserves to increase from 7 percent of total natural gas reserves at year-end 1985 to 20 percent at year-end 2004. Regardless of the specifics associated with each region, the proportion of nonproducing natural gas reserves relative to total natural gas reserves increased for all the onshore regions during the 1985 through 2004 time frame.

The volume of producing natural gas reserves either declined or remained relatively constant in most onshore regions. Onshore regions posting a decline in producing natural gas reserves from year-end 1985 to year-end 2004 include: Alaska (- 45 percent), the Midcontinent (- 24 percent), and the Pacific (onshore and offshore: - 48 percent). Onshore regions whose producing natural gas reserves remained relatively constant from 1985 to 2004 include: the Southwest at 15.7 trillion cubic feet at year-end 2004 and the Onshore Gulf Coast at 27.1 trillion cubic feet at year-end 2004.

Only the Northeast and Rocky Mountain regions posted increases in producing natural gas reserves. Northeast producing natural gas reserves increased by 5.1 trillion cubic feet, from 4.5 trillion cubic feet at year-end 1985 to 9.6 trillion cubic feet at year-end 2004. Rocky

Mountain producing natural gas reserves increased 24.9 trillion cubic feet, from 19.6 trillion cubic feet at year-end 1985 to 44.5 trillion cubic feet at year-end 2004.

### Conventional and Unconventional Natural Gas Reserves

There have also been significant differences in the growth of conventional and unconventional natural gas reserves between 1985 and 2004.<sup>8</sup>

Total conventional natural gas reserves declined by 16.1 trillion cubic feet, from 144.4 trillion cubic feet at year-end 1985 to 128.3 trillion cubic feet at year-end 2004 (Table 2). While total conventional natural gas reserves declined, nonproducing conventional natural gas reserves increased 7.9 trillion cubic feet, from 28.1 trillion cubic feet at year-end 1985 to 36.0 trillion cubic feet at year-end 2004. Therefore, nonproducing conventional natural gas reserves increased from 19 percent of total conventional natural gas reserves at year-end 1985 to 28 percent at year-end 2004.

In contrast to the decline in total conventional natural gas reserves, total unconventional natural gas reserves increased by 38.5 trillion cubic feet, from 23.8 trillion cubic feet at year-end 1985 to 62.3 trillion cubic feet at year-end 2004. Nonproducing unconventional natural gas reserves increased by 10.4 trillion cubic feet, from 5.0 trillion cubic feet at year-end 1985 to 15.4 trillion cubic feet at year-end 2004. Therefore, nonproducing unconventional natural gas reserves increased from 21 percent of total unconventional natural gas reserves at year-end 1985 to 25 percent at year-end 2004. At year-end 1985, nonproducing unconventional natural gas reserves constituted 15 percent of total nonproducing natural gas reserves. By year-end 2004, 30 percent of the total nonproducing natural gas reserves were unconventional.

**Table 2: Conventional and Unconventional Natural Gas Reserves\*  
At Year-End 1985 and Year-End 2004  
(Wet After Lease Separation)**

Natural Gas Category	Total Natural Gas Reserves (trillion cubic feet)		Nonproducing Natural Gas Reserves (trillion cubic feet)		Producing Natural Gas Reserves (trillion cubic feet)	
	1985	2004	1985	2004	1985	2004
Conventional Natural Gas	144.4	128.3	28.1	36.0	116.3	92.2
Unconventional Natural Gas	23.8	62.3	5.0	15.4	18.8	46.8
- Tight Sandstones	22.1	44.1	4.8	11.7	17.2	32.4
- Natural Gas Shales	0.5	7.3	0.0	2.1	0.4	5.3
- Coalbed Methane	1.3	10.9	0.2	1.6	1.1	9.2
<b>United States</b>	<b>168.2</b>	<b>190.5</b>	<b>33.1</b>	<b>51.4</b>	<b>135.1</b>	<b>139.1</b>

Source: Energy Information Administration, Office of Oil and Gas, Reserves and Production Division

\* Pertains only to reserves reported directly by Category I, II and III well operators.

### **Crude Oil Reserve Trends**

The overall trends exhibited for producing and nonproducing crude oil reserves are somewhat different than those exhibited for natural gas. Unlike natural gas whose total

<sup>8</sup> Unconventional gas is defined by the characteristics of the geological formation from which that gas is produced. Unconventional gas is produced from three geologic formations: 1) coal seams, 2) shale formations, and 3) sandstone formations with 0.1 millidarcies or less of rock permeability.

reserves increased since 1985, total crude oil reserves have declined in the United States and in most regions (Table 3 and Figure 4). At year-end 1985, total U.S. oil reserves were 27.3 billion barrels. By year-end 2004, total crude oil reserves had declined by 6.0 billion barrels to 21.3 billion barrels.

Another difference is that nonproducing crude oil reserves grew steadily from 1985 through 2004 rather than growing within a relatively limited time frame like natural gas. Total nonproducing crude oil reserves grew from 2.6 billion barrels at year-end 1985 to 5.6 billion barrels at year-end 2004. At year-end 1985, U.S. nonproducing crude oil reserves were 10 percent of total crude oil reserves; by year-end 2004, they were 26 percent of total crude oil reserves.

**Table 3: Crude Oil Reserves by Category and Region\*  
At Year-End 1985 and Year-End 2004  
(Includes Condensates)**

Region	Total Crude Oil Reserves (billion barrels)		Nonproducing Crude Oil Reserves (billion barrels)		Producing Crude Oil Reserves (billion barrels)	
	1985	2004	1985	2004	1985	2004
Alaska	7.1	4.3	0.4	0.7	6.7	3.6
Northeast	0.3	0.1	0.0	0.0	0.3	0.1
Midcontinent	1.0	0.7	0.1	0.2	0.9	0.6
Southwest	5.8	4.4	0.1	0.7	5.7	3.7
Onshore Gulf Coast	2.9	1.3	0.3	0.4	2.6	0.9
Rocky Mountain	2.1	2.0	0.1	0.4	2.0	1.6
Pacific (On & Offshore)	5.7	3.9	0.7	0.3	5.0	3.5
Offshore Gulf of Mexico	2.4	4.5	0.8	2.9	1.5	1.7
Onshore Lower-48	16.3	11.7	0.8	2.0	15.6	9.7
Offshore Lower-48	3.9	5.3	1.4	2.9	2.4	2.3
Total Lower-48	20.2	17.0	2.2	4.9	18.0	12.0
<b>United States</b>	<b>27.3</b>	<b>21.3</b>	<b>2.6</b>	<b>5.6</b>	<b>24.7</b>	<b>15.6</b>

Source: Energy Information Administration, Office of Oil and Gas, Reserves and Production Division

\* Pertains only to reserves reported directly by Category I, II and III well operators.

### Offshore Crude Oil Reserves

The Offshore Gulf of Mexico is the only region to post an increase in total crude oil reserves, although much of this increase was due to the growth in nonproducing crude oil reserves. Offshore Gulf of Mexico nonproducing crude oil reserves grew from 0.8 billion barrels at year-end 1985 to 2.9 billion barrels at year-end 2004. The Offshore Gulf of Mexico's increase in nonproducing reserves largely offset the growth in this region's total crude oil reserves so that Offshore Gulf of Mexico producing crude oil reserves increased only slightly from 1.5 billion barrels at year-end 1985 to 1.7 billion barrels at year-end 2004.

A more detailed examination of Offshore Gulf of Mexico nonproducing crude oil reserves indicates that this region's increase in nonproducing crude oil reserves is largely a Louisiana-Federal Offshore phenomenon (Figure 5).<sup>9</sup> At year-end 2004, the Louisiana-

<sup>9</sup> To protect company confidentiality, the EIA reserve reports aggregate the small volumes of Alabama Federal Offshore crude oil and natural gas reserves with those of offshore Federal Louisiana. Even so, the vast majority of these regional reserves are located in the Louisiana-Federal Offshore portion.

Federal Offshore region accounted for 2.7 billion barrels of out of the 5.6 billion barrels of U.S. nonproducing crude oil reserves, which was 48 percent of the U.S. nonproducing crude oil reserves.

### Onshore Crude Oil Reserves

In contrast to the offshore, all the onshore regions posted a decline in both total and producing crude oil reserves (Table 3 and Figure 6). Lower 48 onshore total crude oil reserves declined by 4.6 billion barrels, from 16.3 billion barrels at year-end 1985 to 11.7 billion barrels at year-end 2004. Lower 48 onshore producing crude oil reserves declined by 5.9 billion barrels, from 15.6 billion barrels at year-end 1985 to 9.7 billion barrels at year-end 2004. During the same period, lower 48 onshore nonproducing crude oil reserves increased by only 1.2 billion barrels.

Nonproducing crude oil reserves increased in most onshore regions. The largest increase in onshore nonproducing crude oil reserves occurred in the Southwest, which increased by 580 million barrels, going from 140 million barrels at year-end 1985 to 720 million barrels at year-end 2004. The Southwest region is also notable for posting the largest volumetric drop in onshore producing crude oil reserves, which declined from 5.7 billion barrels at year-end 1985 to 3.7 billion barrels at year-end 2004. The Rocky Mountain region posted the next largest increase in onshore lower 48 nonproducing crude oil reserves, by increasing 300 million barrels from year-end 1985 through year-end 2004.

The Pacific Onshore and Offshore region is the only region to show a decline in nonproducing crude oil reserves between year-end 1985 through year-end 2004, which declined by 380 million barrels. This decline in the Pacific nonproducing crude oil reserves all occurred in the Offshore California State and Federal regions, which collectively posted a 530 million barrel decline in nonproducing crude oil reserves, presumably due to the moratoria on offshore California crude oil and natural gas leasing.

The largest volume declines in onshore producing crude oil reserves occurred in three regions from year-end 1985 through year-end 2004: 1) Alaska, in which producing crude oil reserves declined by 3.1 billion barrels; 2) the Southwest, in which producing crude oil reserves declined by 2.0 billion barrels; and 3) the Pacific (onshore and offshore), in which producing crude oil reserves declined by 1.3 billion barrels, with the onshore Pacific region contributing 1.2 billion barrels of the decline in Pacific producing crude oil reserves. The four remaining onshore regions, namely the Northeast, Midcontinent, Onshore Gulf Coast, and Rocky Mountains collectively posted a 2.7 billion barrel decline in producing crude oil reserves from year-end 1985 through year-end 2004.

### **Potential Causes for the Growth in Nonproducing Crude Oil and Natural Gas Reserves**

The reasons for the growth in nonproducing crude oil and natural gas reserves are not discernible in the aggregate data currently available. Nor does the available data permit an understanding of the dynamics associated with this phenomenon. For example, there are no data that specify the proportion of nonproducing reserves associated with newly discovered reserves. Nor are there data on how quickly nonproducing reserves transition into producing reserves.

In both the onshore and offshore regions, one potential cause for the growth in nonproducing reserves could be a lengthening of the time required to drill new wells, install production facilities, and construct pipeline infrastructure. Some of this lengthening of time could be due to the recent scarcity of drilling rigs and skilled personnel to operate them.

Onshore, the growth in nonproducing crude oil and natural gas reserves could reflect the development constraints caused by environmental regulations and litigation. Some of this litigation is by parties wishing to stop drilling and production on State and Federal lands. Some of this litigation is by surface owners who do not own the crude oil and natural gas mineral rights, and therefore have no direct financial incentive to permit crude oil and natural gas drilling and infrastructure on their land. Instead, the surface owners have a financial incentive to litigate the drilling and production of crude oil and natural gas in order to extract as large a rent concession from the mineral producer as possible.

Offshore, the growth in nonproducing crude oil and natural gas reserves could reflect an increase in the time required to bring an offshore project into production, as the crude oil and natural gas industry progresses from the shallow-water Gulf of Mexico into the deep-water Gulf. The dramatic rise in Louisiana-Federal Offshore nonproducing crude oil reserves is consistent with this hypothesis; because most of the Gulf's deep-water crude oil and natural gas development is occurring in this region.

Another potential cause for the growing proportion of nonproducing crude oil and natural gas reserves could be that the crude oil and natural gas industry might have increasingly relied on improvements in the collection, processing, and interpretation of seismic data to delineate the dimensions of newly discovered fields as a substitute for drilling field delineation wells.<sup>10</sup> If new crude oil and natural gas reserves were increasingly being determined by seismic data rather than by the existence of producing wells, then this would increase the proportion of nonproducing crude oil and natural gas reserves relative to total reserves. There is, however, no direct evidence to confirm whether this is the case.

## Conclusions

The Form EIA-23 survey's collection of nonproducing reserves data permits an evaluation of those crude oil and natural gas reserves which are available to the crude oil and natural gas markets, and those crude oil and natural gas reserves which are not available to the markets, but which are expected to be available sometime in the future. In this context, the EIA producing and nonproducing reserve concepts are similar to, but not equivalent to the SEC definitions of proved developed reserves and proved undeveloped reserves.

The growth in nonproducing reserves is a phenomenon common to both crude oil and natural gas from year-end 1985 through year-end 2004 and is apparent in all the major domestic crude oil and natural gas basins. There are, however, some significant differences in this phenomenon as it pertains to crude oil and natural gas.

- The increase in nonproducing natural gas reserves occurred over a relatively short 7 year period (i.e., from year-end 1997 through year-end 2004), and accounted for 80 percent of the new incremental growth in total natural gas reserves during this

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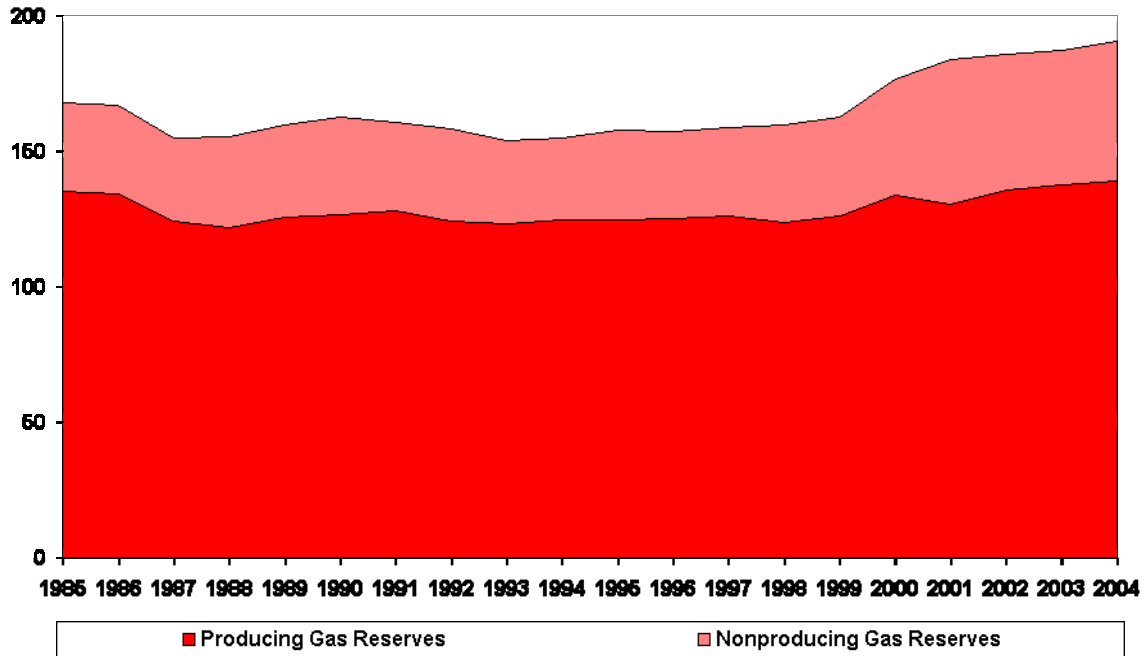
<sup>10</sup> Source: Matthew R. Simmons, "The future costs of energy," *The Leading Edge*, The Society of Exploration Geophysicists, October, 2004, pages 980 to 982.



period. In contrast, the growth in nonproducing crude oil reserves has occurred at a relatively consistent pace over the 1985 through 2004 period.

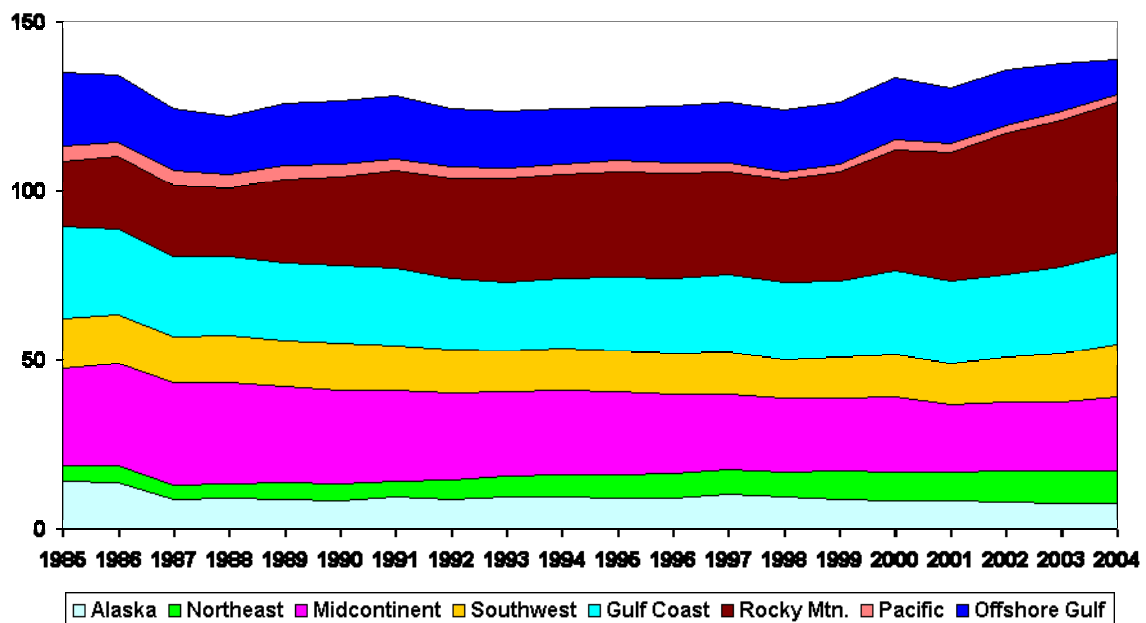
- The rise in nonproducing crude oil reserves is largely a Louisiana-Federal Offshore region phenomenon, while the growth in nonproducing natural gas reserves is largely an onshore lower 48 phenomenon.
- The growing proportion of nonproducing crude oil reserves relative to total crude oil reserves has accelerated the decline in producing crude oil reserves, whereas the growth in nonproducing natural gas reserves has served more to limit the growth in producing natural gas reserves.

**Figure 1: U.S. Natural Gas Reserves 1985 - 2004,  
By Reserve Category, Wet after Lease Separation,  
Trillion Cubic Feet at 14.73 psia and 60 degrees Fahrenheit**



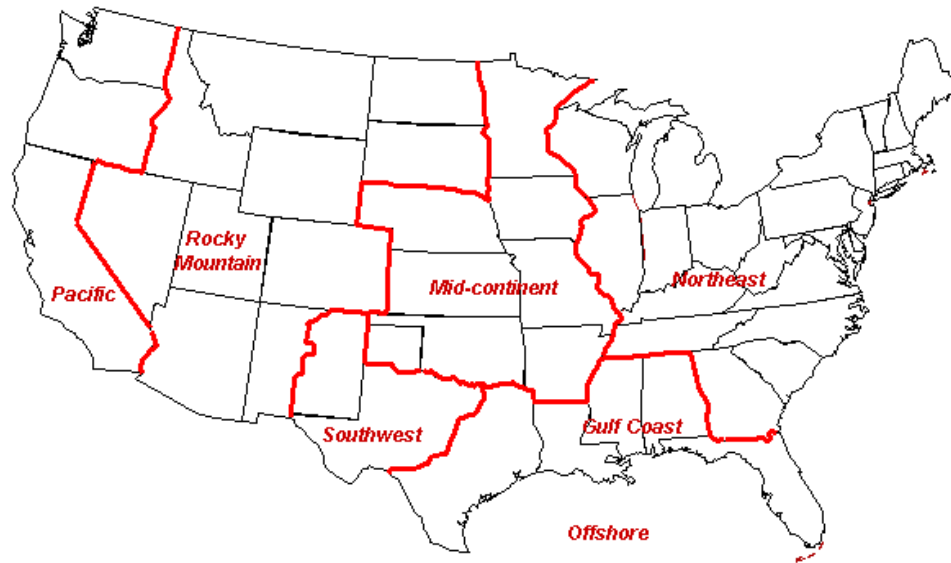
Source: Energy Information Administration, Office of Oil and Gas, Reserves and Production Division.

**Figure 2: U.S. Producing Natural Gas Reserves By Region  
1985 - 2004, Wet after Lease Separation,  
Trillion Cubic Feet at 14.73 psia and 60 degrees Fahrenheit**



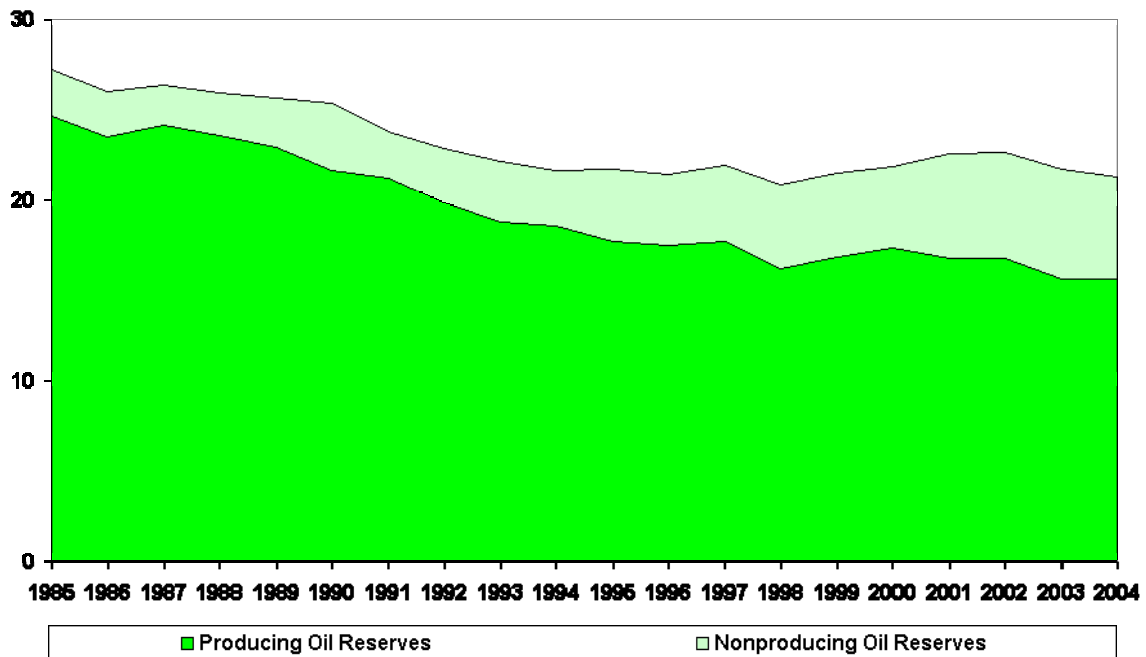
Source: Energy Information Administration, Office of Oil and Gas, Reserves and Production Division.

**Figure 3: U.S. Lower 48 Crude Oil and Natural Gas Reserve Regions**



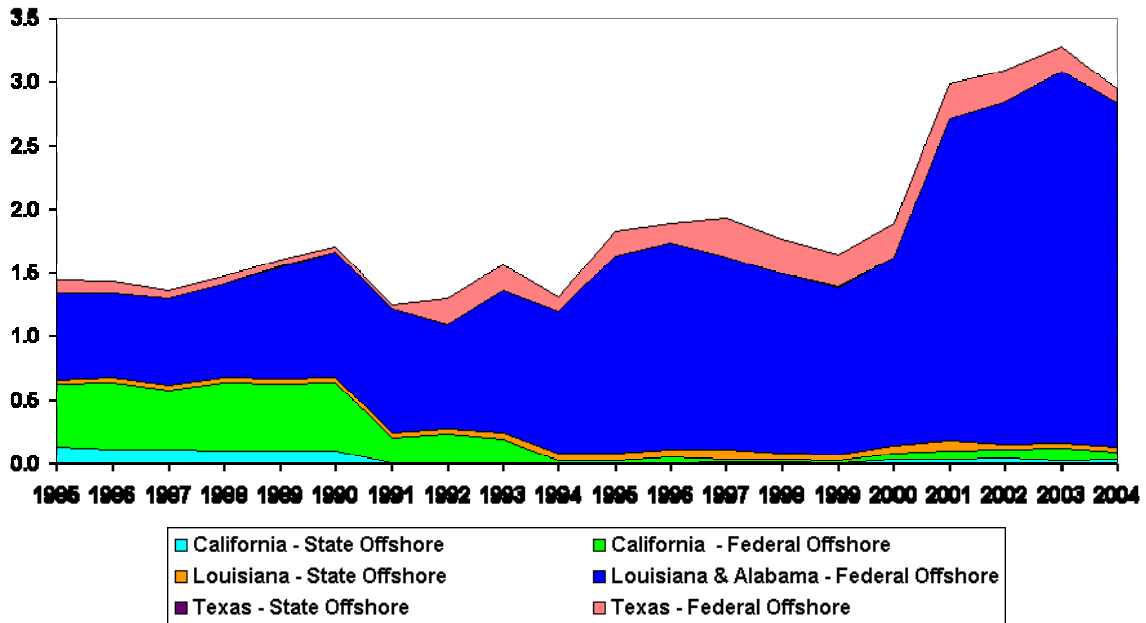
Source: Energy Information Administration, Office of Integrated Analysis and Forecasting, Oil and Gas Division.

**Figure 4: U.S. Crude Oil Reserves 1985 - 2004, By Reserve Category, Billion Barrels of 42 U.S. Gallons (Includes Lease Condensates)**



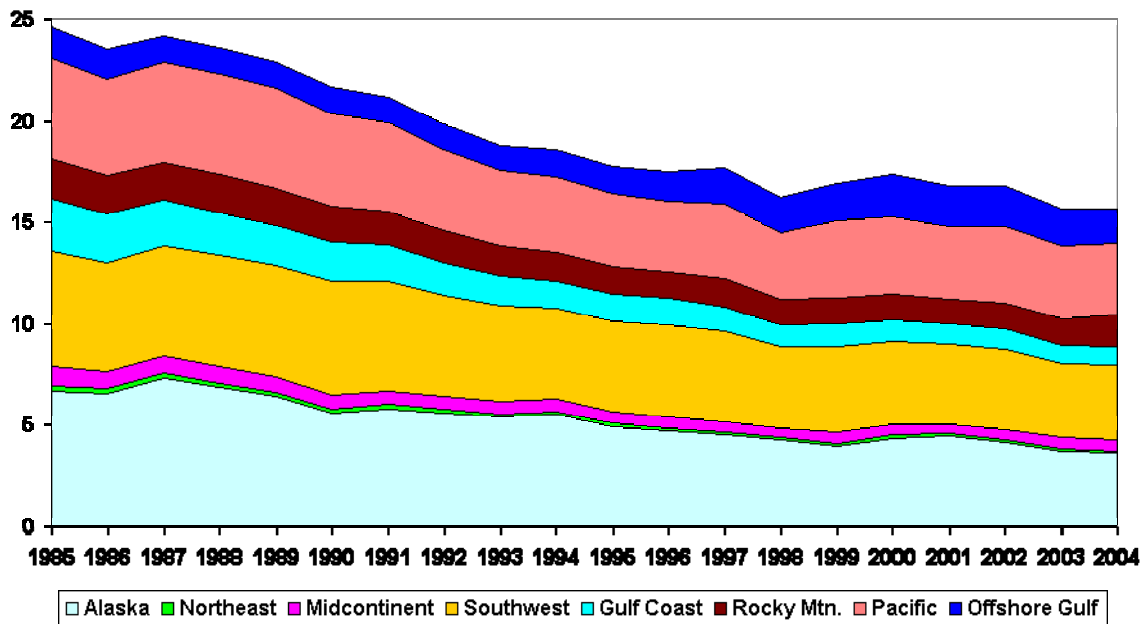
Source: Energy Information Administration, Office of Oil and Gas, Reserves and Production Division.

**Figure 5: U.S. Offshore Nonproducing Crude Oil Reserves  
1985 - 2004, Billion Barrels of 42 U.S. Gallons  
(Includes Lease Condensates)**



Source: Energy Information Administration, Office of Oil and Gas, Reserves and Production Division.

**Figure 6: U.S. Crude Oil Producing Reserves By Region 1985 - 2004,  
Billion Barrels of 42 U.S. Gallons  
(Includes Lease Condensates)**



Source: Energy Information Administration, Office of Oil and Gas, Reserves and Production Division.