

STATE OIL AND GAS: PRODUCTION AND PRICE PROJECTIONS, AND PROVED RESERVES

by
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Louisiana has produced oil and gas for more than a century. This is the production projection of the oil and gas from state regulated land and water bottoms, the price projection of the oil and gas prices for the near future, and the latest figure of oil and gas proved reserves. Oil and gas production is intimately linked with the economy of our state. Presently, Louisiana is the fifth largest producer of crude oil and the fourth largest producer of natural gas in the U.S. Louisiana is also second in per capita energy consumption. More than 228,000 wells have been drilled searching for oil and gas in Louisiana since the first commercial oil well was drilled in 1901 in Jennings. The Louisiana OCS oil and gas production is greater than any other federally regulated offshore areas in the US.

Some other interesting benchmarks in the Louisiana oil and gas production history are that in 1910 the first freestanding above-water platform was used in Caddo Lake, near Shreveport; in 1938 the first well over water was completed in the Gulf of Mexico near Creole, offshore Cameron Parish; in 1947 the first oil well was completed out of the sight of land in Ship Shoal Block 32, south of Morgan City, offshore St. Mary Parish; in 1951 the first concrete-coated pipeline was laid in the Gulf of Mexico; in 1954 the state started to produce more natural gas in terms of barrels of oil equivalents than crude oil; and in 2006 Haynesville Shale gas started producing making the gas domination more predominant.

Production Projections

Louisiana state oil production, excluding federal OCS, declined an average of 4.4% per year over the past ten years. The DNR Technology Assessment Division's short-term model is projecting a 1.4 % decline per year for oil over the next five years. The short model projections for the next five years are listed below:

<u>DNR's Short Term Crude Oil Production Projection</u>					
	<u>Date</u>	<u>Base Case</u>	<u>% Change</u>	<u>Low Case</u>	<u>High Case</u>
		(Barrels)		(Barrels)	(Barrels)
Actual	2007	77,400,591	4.64%	N/A	N/A
Actual	2008	72,620,203	-6.18%	N/A	N/A
Actual	2009	69,219,935	-4.68%	N/A	N/A
Actual	2010	67,526,541	-2.45%	N/A	N/A
Projected	2011	66,571,833	-1.41%	64,574,678	68,568,988
Projected	2012	66,334,253	-0.36%	63,017,541	68,987,624
Projected	2013	65,923,590	-0.62%	62,100,022	70,076,776
Projected	2014	63,963,349	-2.97%	59,741,768	69,144,381
Projected	2015	62,898,205	-1.67%	58,243,738	68,181,654

Louisiana state gas production, excluding federal OCS, from 2000-2005 gas declined an average of 2.0% per year, while from 2006-2010 increased an average 11.0% per year. The difference is attributed

to better weather and the discovery of Haynesville Shale gas in 2006-2010. The DNR Technology Assessment Division short-term model is projecting a 6.3 % increase per year for gas over the next five years, if no major weather disruption occurs. The short model projections for the next five years are listed below:

DNR's Short Term Natural Gas Production Projection

	<u>Date</u>	<u>Base Case</u> (MCF)	<u>% Change</u>	<u>Low Case</u> (MCF)	<u>High Case</u> (MCF)
Actual	2007	1,355,179,480	0.39%	N/A	N/A
Actual	2008	1,359,923,832	0.35%	N/A	N/A
Actual	2009	1,528,082,054	12.37%	N/A	N/A
Actual	2010	2,090,447,458	36.80%	N/A	N/A
Projected	2011	2,325,646,978	11.25%	2,201,224,864	2,453,092,432
Projected	2012	2,792,568,310	20.08%	2,615,240,222	2,987,489,578
Projected	2013	3,150,443,586	12.82%	2,939,363,866	3,381,371,101
Projected	2014	2,876,447,319	-8.70%	2,673,657,783	3,097,358,473
Projected	2015	2,765,223,229	-3.87%	2,560,596,710	2,987,270,654

Factors that contribute to the year-to-year deviations in oil and gas production are:

- Changes in wildcat drilling and development of marginal fields within the state
- Unstable prices of crude oil and natural gas
- Changes in environmental laws, especially those concerning salt water discharge, and the Clean Air Act Amendments of 1990
- World supply and demand, causing an a glut or shortage depending on its growth rate
- The number of active rigs in the region
- Military conflicts or political instability in some producing countries
- Application of advanced technology such as 3-D and 4-D seismic
- State and local tax incentives
- Mild or severe weather patterns
- Foreign imports

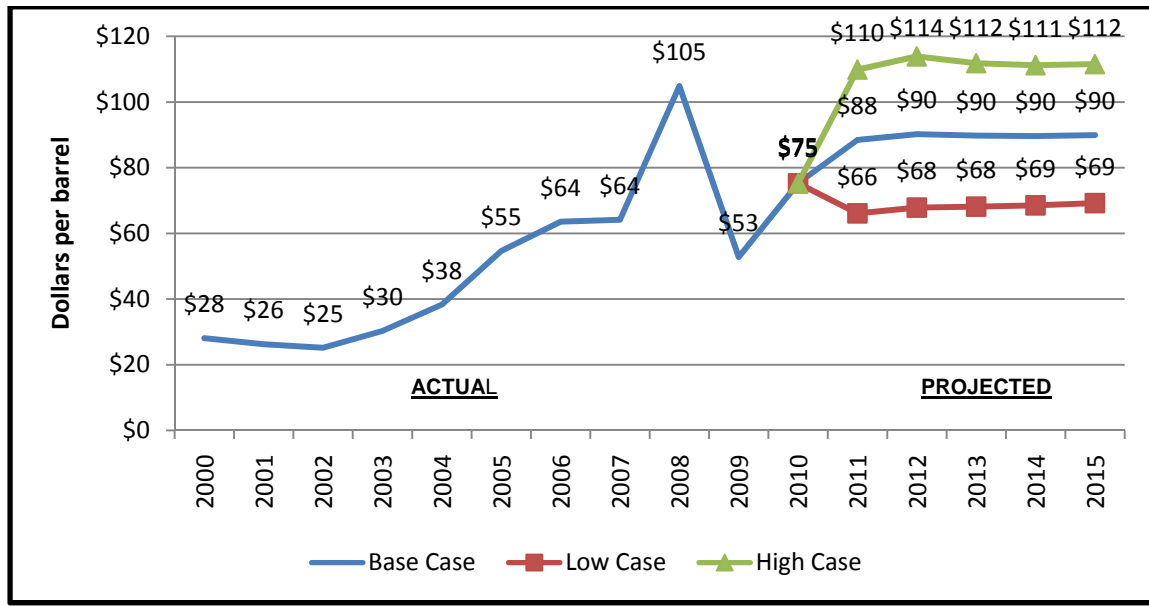
Price Projection

Oil prices are determined in the international markets and are difficult to project. Just as the historical data shows great swings in the price of oil, there is also considerable uncertainty about future prices. The future price of oil is linked to the unpredictability of world oil supplies and world economics. Major factors affecting oil prices are: a) political stability of producing countries, b) world environmental issues, c) industrialized countries' conservation practices, d) weather related demand for petroleum products, e) production restrictions by OPEC countries, f) economic changes in consumer nations, and g) stability in the labor force. If crude oil supply and demand for petroleum products is well balanced and refiners have sufficient downstream capacity to process difficult crudes, the price of crude oil will seek a stable market condition.

Natural gas also is traded in the world market. The most used relationship between crude oil price and natural gas price is the so-called "6-to-1" rule, where the price of one barrel of crude oil should

be approximately six times the price of natural gas per million BTUs (MMBTUs). The reason is that the BTU content of a barrel of oil is around six times the quantity of a million BTU of natural gas.

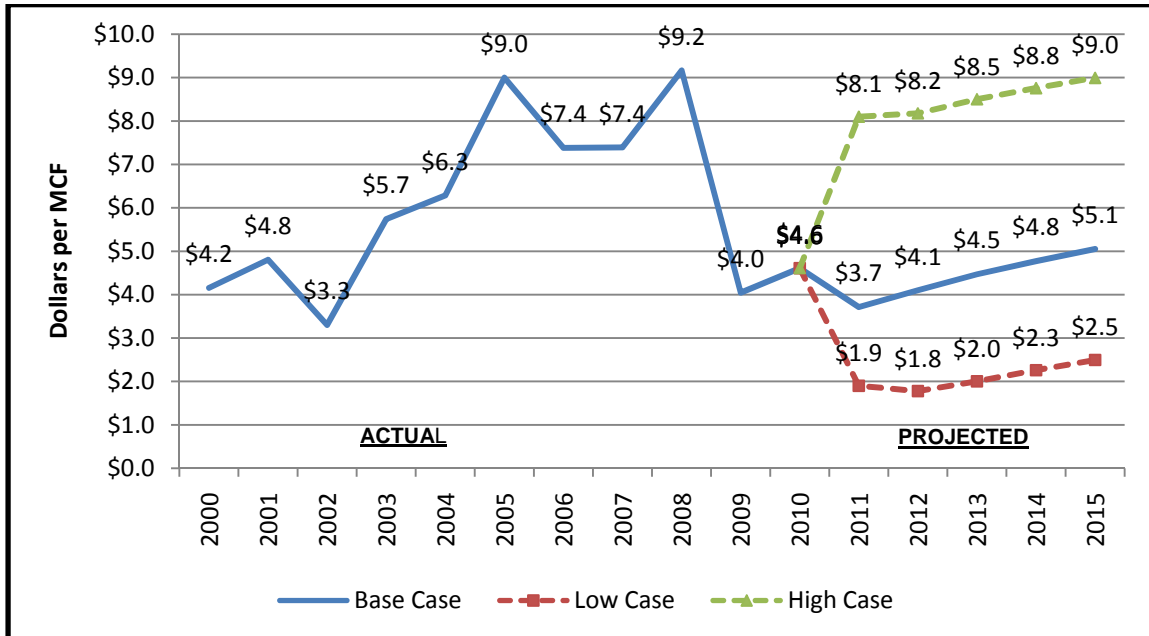
Louisiana Crude Oil Prices Projections



Natural gas prices recently started to diverge from this relationship. Oil prices have risen rapidly while gas prices are slowly falling, because Asian countries are consuming more oil than gas as they recover from recent recession; the political unrest in Northern Africa and Middle Eastern countries are disrupting more heavily oil supply than gas supply; and increasing gas supply with new discoveries of unconventional sources such as shale and coalbed methane in North America. Gas prices usually are driven by factors such as weather, demand for gas not satisfied by the pipeline system, availability of spot supplies, and competing fuel prices. There is less international trade of natural gas than there is of oil. It is harder to find producers with export capabilities, transport vessels, and receiving ports with the necessary infrastructure (pipelines, compression stations, LNG tanks, etc.). Natural gas also has to fight the NIMBY (Not in My Back Yard) resistance from residents to its infrastructure. The major cost components of natural gas prices are cost of infield production, cost of transportation, cost of marketing, and investment rate of return. As the historical data shows, most of the components of natural gas prices are stable with the exception of marketing cost. Marketing cost is the only cost that oscillates widely. Gas prices increased as regulations faded out in the early 80's. With deregulation, natural gas started trading in the spot and commodity markets. Since 1985, this spot market for gas has grown in importance and, today, it is the major factor in the determination of gas prices. In April 1990, natural gas futures contracts started trading in the New York Mercantile Exchange (NYMEX). A NYMEX gas future contract calls for delivery of 10,000 MCF of gas during a specific month, 1 to 12 months in the future. The contract delivery point of the gas is Sabine Pipe Line Company's Henry Hub terminal near Erath, Louisiana.

Others factors that could affect prices are storage levels, curtailments, market changes, new consumption and NAFTA (North America Free Trade Agreement). Gas prices are also affected by psychological factors and often the expectation of soft prices is enough to bring them about. A good dose of cold winter weather will usually erase much of the psychological element of low gas prices.

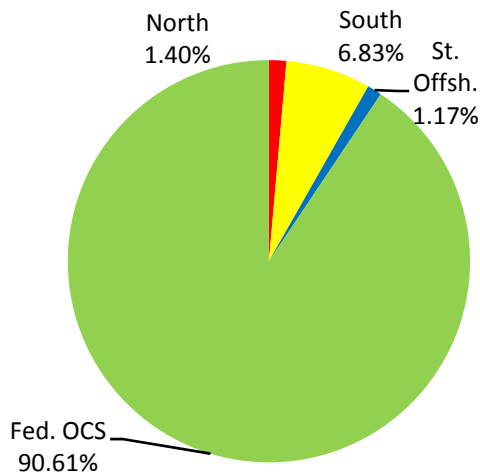
Louisiana Natural Gas Price Projections



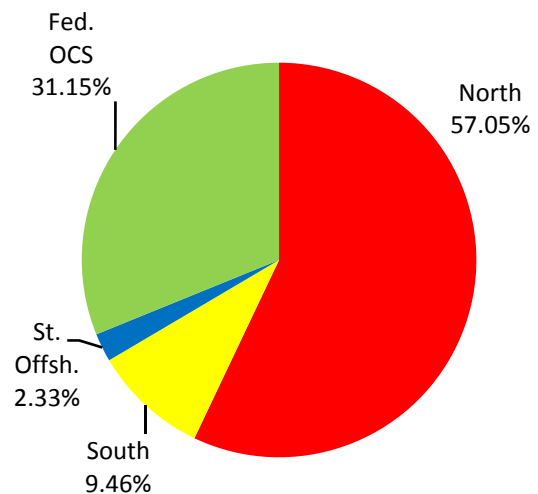
Proved Reserves

Louisiana oil and gas proved reserves as of December 31, 2009 published by the US Department of Energy-Energy Information Administration.

CRUDE OIL
3,940 Million Barrels



NATURAL GAS
30,053 Billion Cubic Feet



The 2010 Louisiana Energy Facts Annual is available in print and online at our website
<http://www.dnr.louisiana.gov/tad>