STATE OIL AND GAS:
PRODUCTION AND PRICE PROJECTIONS

by
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Louisiana has produced oil and gas for more than a century. This reports the historical and projected oil and gas productions from state regulated land and water bottoms; and the historical and projected oil and gas prices for the near future. Oil and gas production are intimately linked with the economy of our state. Presently, Louisiana is the sixth largest producer of crude oil and the third largest producer of natural gas in the U.S., if the federal Outer Continental Shelf (OCS) production is excluded. Louisiana is also second in per capita energy consumption. More than 229,000 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 volumes are greater than in any other federally regulated offshore areas in the U.S.

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 offshore oil well was completed out of sight from land in Ship Shoal Block 32, south of Morgan City, 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 in the state more predominant.

Production Projections

Louisiana Historical and Projected Crude Oil Productions

	Date	Base Case (Barrels)	% Change	Low Case (Barrels)	High Case (Barrels)
Actual	FY2005/06	68,873,016	-17.57%	N/A	N/A
Actual	FY2006/07	76,845,430	11.58%	N/A	N/A
Actual	FY2007/08	77,143,123	0.39%	N/A	N/A
Actual	FY2008/09	69,558,354	-9.83%	N/A	N/A
Actual	FY2009/10	68,795,201	-1.10%	N/A	N/A
Actual	FY2010/11	69,684,073	1.29%	N/A	N/A
Projected	FY2011/12	70,082,527	0.57%	67,427,162	71,304,407
Projected	FY2012/13	67,024,200	-4.36%	64,680,997	70,623,503
Projected	FY2013/14	65,155,899	-2.79%	62,401,037	69,017,574
Projected	FY2014/15	63,916,664	-1.90%	60,461,027	68,236,504
Projected	FY2015/16	62,393,414	-2.38%	58,660,526	67,422,442

Louisiana's state oil production trend, excluding federal OCS, showed an average decline of 3.8% per year over the past ten years, but actual year-to-year change varies widely. As shown in the above table, FY2005/06 shows a 17.57% decline that was caused by Hurricanes Katrina and Rita; FY2006/07 and FY2007/08 showed increases due to recovery from the weather disaster and rising oil prices. A decline of 9.83% in FY2008/09 was caused by Hurricanes Gustav and Ike; in FY2009/10, the decline can be at-

tributed to a plunge in oil prices after the high in 2008 delayed its recovery from the weather disaster; FY2010/11's increase was part of the delayed weather disaster recovery. The DNR Technology Assessment Division short term model base case is projecting a 2.2 % decline per year for oil over the next five years, if crude oil prices stay over $90 per barrel and no major weather disruption occurs. The model projections for the next five years are listed in the above table. If prices go over $110 for an extended period, the projections will be closer to the high case, and will exceed it if significant oil volume is found in the Tuscaloosa Marine shale in South Louisiana or the Brown Dense shale in North Louisiana.

Louisiana Historical and Projected Natural Gas Productions

	Date	Base Case (MCF)	% Change	Low Case (MCF)	High Case (MCF)
Actual	FY2005/06	1,282,110,642	-5.40%	N/A	N/A
Actual	FY2006/07	1,353,183,804	5.54%	N/A	N/A
Actual	FY2007/08	1,373,628,194	1.51%	N/A	N/A
Actual	FY2008/09	1,430,424,981	4.13%	N/A	N/A
Actual	FY2009/10	1,887,413,135	31.95%	N/A	N/A
Actual	FY2010/11	2,680,042,422	42.00%	N/A	N/A
Projected	FY2011/12	3,071,618,383	14.61%	2,881,790,027	3,113,366,578
Projected	FY2012/13	2,957,419,816	-3.72%	2,776,868,742	3,183,299,069
Projected	FY2013/14	3,007,383,465	1.69%	2,788,786,095	3,219,472,264
Projected	FY2014/15	3,019,475,013	0.40%	2,802,599,862	3,258,191,279
Projected	FY2015/16	3,036,077,749	0.55%	2,804,022,952	3,282,765,108

Louisiana state gas production, excluding federal OCS, from FY2001/02 thru FY2006/07 declined an average of 1.57% per year. Similar to oil, gas production varies from year-to-year, reflecting the severity of weather patterns. In FY2006/07, the Haynesville Shale dry gas field came into the picture and changed the pattern. For example, the high decline in oil production in FY2008/09 was due to Hurricanes Gustav and Ike, while gas production showed a 4.13% increase. If there were no hurricanes that year, the percentage of increase in production would have been higher. From FY2008/09 to the present, Louisiana state gas production has shown percent increases in the double digits. The DNR Technology Assessment Division short-term model projections for the next five years are shown in the above table. The projections assume that no major weather disruptions occur and average gas prices are above $3 per MCF. Recent gas prices dropping below the $3 per MCF have caused a slowdown in drilling activities in the Haynesville Shale areas. On March 23, 2012, there were 50 active rigs in Haynesville areas, a 59% decline compared to the previous year. The drop in drilling activities and cutback in production due to low prices will curtail the gas production growth in Louisiana.

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

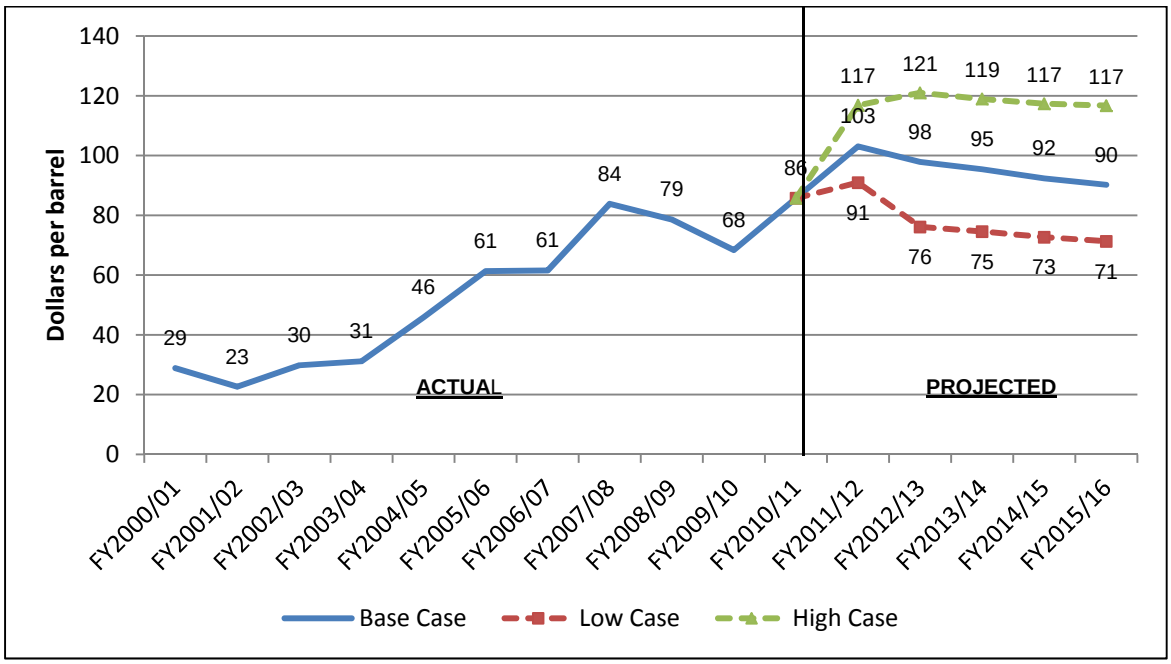
- Changes in wildcat drilling and development of marginal fields within the state
- Adding new producing areas
- Unstable crude oil and natural gas prices
- Changes in environmental laws, especially those concerning salt water discharge and the Clean Air Act Amendments of 1990
- World supply and demand causing a glut or shortage, depending on its growth rate
- The number of active drilling rigs in the region
- Application of advanced technology such as 3-D and 4-D seismic

- State and local tax incentives
- Weather patterns
- Foreign imports or exports

Price Projections

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 are well balanced and refiners have sufficient downstream capacity to process difficult crudes, the price of crude oil will seek a stable market condition.

Louisiana Crude Oil Historical and Projected Prices

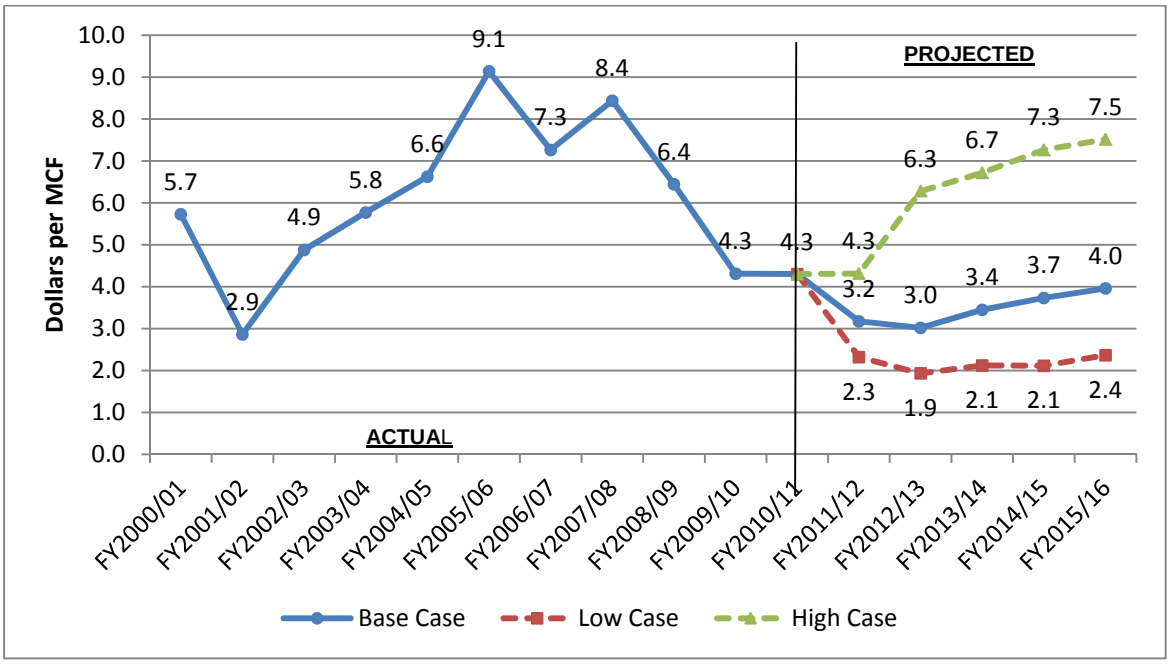


The most used relationship between crude oil price and natural gas price is the so-called “6-to-1” rule, where the price of one barrel of crude oil should be approximately six times the price of natural gas per million BTUs (MMBTUs). The reason is that the BTU content of a barrel of oil is around six times the quantity of a million BTUs of natural gas. Natural gas prices recently started to diverge from this relationship, with the current ratio being 58:1. Oil prices have risen rapidly while gas prices are falling, because Asian countries are consuming more oil than gas as they recover from recent recession and the earthquake in Japan; the political unrest in African and Islamic countries are disrupting oil supply more heavily than gas supply. Gas has less mobility than oil in international trade because it requires special vessels and infrastructure (pipelines, compression stations, LNG terminals, etc.).

Gas prices are cyclical, regional, controlled by supply and demand, and lack infrastructure for international trade. They are driven by factors such as weather, demand for gas not satisfied by pipeline systems, availability of spot supplies, and competing fuel prices. Others factors that could affect prices are storage levels, curtailments, market changes, new consumption, and NAFTA (North American Free Trade Agreement). Gas prices are also affected by psychological factors. Often the expectation of soft prices is enough to bring them about and a good dose of cold winter weather will usually erase much of the psychological element of low gas prices and prices move higher.

The lack of mobility of natural gas between producing areas and consuming areas caused by insufficient infrastructure is best shown by market prices in consuming nations. In March 2012, gas prices were $15.25 per MMBTU in Japan and Korea, $13.65 per MMBTU in India, $9.65 per MMBTU in Spain, $8.87 per MMBTU in Belgium, and $2.22 per MMBTU in the U.S. (Lake Charles). In the U.S., the lack of gas mobility is causing the sky over the Bakken oil shale producing areas in North Dakota to be lighted at night by the flaring of casinghead gas.

Louisiana Natural Gas Historical and Projected Prices



The 2011 Louisiana Energy Facts Annual is available online now at
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