LOUISIANA ENERGY FACTS

ANNUAL 2004

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General Questions and Comments

The **Louisiana Energy Facts Annual - 2004** was published by the Technology Assessment Division of the Louisiana Department of Natural Resources under the direction of Manuel Lam. The Director of the Division is T. Michael French, and the Assistant Director is William J. Delmar, Jr.

General questions and comments regarding the **Annual** may be referred to Technology Assessment Division staff at (225) 342-1270. Questions concerning specific areas of the **Annual** may be directed to the Technology Assessment Division staff members listed below.

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INTRODUCTION

ABOUT THIS PUBLICATION

The **Louisiana Energy Facts Annual** is published to provide a comprehensive compendium of Louisiana related energy production and use statistics on a yearly basis. The data tables are supplemented with numerous graphs and charts to aid in the interpretation of the data and the discernment of trends. The **Annual** is published as soon as sufficient data for the previous calendar year is available. Due to time lags in the availability of some of the data, there is approximately a nine month lag before the current **Annual** can be published. Some changes have been introduced in order to incorporate the latest available data.

If you receive our monthly **Louisiana Energy Facts**, you may find that some of the previously published data has been revised in the **Annual**. This data, by its nature, continues to be revised, sometimes years after its initial publication. We try to bring attention to these changes by marking them as revisions.

The most recent **Louisiana Energy Facts** monthly may contain even more updates. Please refer to the recent monthlies for the very latest data. The **Louisiana Energy Facts** monthly is available in print and online at our website:

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Energy Facts and Figures

Note: the data in these tables will be updated throughout the year. The data files are not audited and will change as more reliable data becomes available.

The state oil and gas production data has been modified. Starting with the 2002 Annual, current production data and all future reports will reflect changes due to modifications in the reporting system by the DNR Office of Conservation, Production Audit Section. The new data for oil does not include crude oil, condensate, or raw make recovered from gas plants. In the past, these products were added to the state production as crude oil or condensate. A separate report on gas plant liquids production is not available at present. The gas data system was adjusted to reflect production from the well on the date produced. It was previously reported on the date first purchased.

This new reporting system aims to produce more accurate and timely data. The Technology Assessment Division is not the source of the data, but merely reports data provided to us by the responsible agency. We understand that users of our time series data need consistency and, for that reason, our time series have been adjusted backward to reflect these new modifications.

We hope you find this document useful, and we welcome any comments or suggestions.

Any comments or suggestions about this publication should be directed to the Technology Assessment Division staff members listed on the General Questions and Comments page.

2004 HIGHLIGHTS

The data in the 2004 **Louisiana Energy Facts Annual** contains some recent trends.

Crude oil and natural gas prices increased

Gas spot price average was $5.63 per MCF in December 2003, and $7.03 per MCF in December 2004. The Louisiana natural gas spot market average hit bottom at $1.85 per MCF in October 2001, the lowest price in five years, and peaked in March 2003 at $7.65 per MCF. The 2005 average price for gas is expected to be around $5.60 per MCF.

South Louisiana spot crude oil was priced at $32.59 per barrel in December 2003 and in December 2004 it was $42.97 per barrel, a 32% increase compared to 2003. The 2005 average is expected to be around $42.00 per barrel.

Oil and gas production decreased

Louisiana state crude oil and condensate production, excluding federal Outer Continental Shelf (OCS), dropped to 82 million barrels in 2004, a 9% decrease from 2003. An additional 2% decrease in production is expected in 2005. Louisiana state natural gas and casinghead, excluding federal OCS, dropped to 1.32 TCF in 2004, a 2% decrease from 2003. It is expected to decrease only slightly in 2005. The decline in oil and gas production in 2004 was related to low drilling, mature reservoirs, and hurricanes.

Drilling activity was low in some parts of the state and high in others

The overall rig count in Louisiana, including the federal offshore area, increased 6% from an average of 157 rigs operating each month in 2003 to 167 in 2004. Looking at where the activity was, though, shows drilling activity was down 6.2% in federal waters, down 25% in state offshore waters, up 28.6% in state inland waters, up 3.4% in South Louisiana on land, and up 34.5% in North Louisiana.

Other significant items

Louisiana's proved oil and gas reserves were lower in 2003 than in 2002. This was due to low drilling and high cost in mature producing fields. Non-agricultural employment was higher in 2004, as opposed to 2003, due to some recovery in the retail sector of the U.S. economy.

SUBDIVISIONS OF LOUISIANA

Table 1

LOUISIANA STATE CRUDE OIL PRODUCTION

Excluding OCS
(Barrels)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1983	29,831,731	93,737,027	22,806,268	146,375,026
1984	29,590,376	96,690,421	25,117,916	151,398,713
1985	29,436,551	97,622,513	24,292,173	151,351,237
1986	26,795,748	97,853,602	24,619,169	149,268,519
1987	25,036,758	95,476,492	23,372,480	143,885,730
1988	23,966,252	88,701,776	22,800,047	135,468,075
1989	22,249,645	78,352,396	20,890,198	121,492,239
1990	22,681,173	72,770,216	21,356,618	116,808,007
1991	22,693,470	69,567,532	22,498,111	114,759,114
1992	21,914,801	68,285,536	21,820,087	112,020,424
1993	20,088,542	65,698,407	21,593,063	107,380,012
1994	17,236,407	59,754,375	21,163,672	98,154,453
1995	16,643,923	59,472,528	20,140,864	96,257,315
1996	16,900,516	58,970,676	19,117,088	94,988,280
1997	17,099,931	60,458,696	17,213,800	94,772,427
1998	15,607,719	60,784,952	15,120,246	91,512,918
1999	12,904,010	56,035,888	12,098,536	81,038,434
2000	11,740,980 r	53,090,500 r	11,131,564 r	75,963,044 r
2001	10,642,232 r	50,306,152 r	10,089,509 r	71,037,893 r
2002	8,862,262 r	43,575,159 r	8,072,999 r	60,510,420 r
January	731,477 r	3,650,619 r	671,723 r	5,053,819 r
February	684,238 r	3,329,232 r	631,747 r	4,645,217 r
March	758,072 r	3,692,616 r	698,672 r	5,149,361 r
April	751,116 r	3,561,217 r	691,073 r	5,003,406 r
May	773,301 r	3,674,266 r	710,321 r	5,157,888 r
June	739,873 r	3,518,141 r	678,574 r	4,936,588 r
July	756,615 r	3,600,293 r	692,959 r	5,049,866 r
August	748,899 r	3,566,868 r	684,716 r	5,000,482 r
September	727,213 r	3,466,624 r	663,759 r	4,857,595 r
October	736,248 r	3,512,670 r	670,873 r	4,919,791 r
November	713,526 r	3,407,179 r	649,077 r	4,769,783 r
December	728,791 r	3,483,062 r	661,844 r	4,873,697 r
2003 Total	**8,849,369 r**	**42,462,786 r**	**8,105,338 r**	**59,417,493 r**
January	722,021	3,550,603	651,991	4,924,615
February	674,231	3,319,475	608,056	4,601,762
March	739,578	3,645,616	666,175	5,051,369
April	687,307	3,464,054	609,559	4,760,920
May	732,942	3,539,845	658,724	4,931,511
June	690,350	3,338,555	619,831	4,648,736
July	678,283	3,284,830	608,459	4,571,572
August	648,585	3,196,000	581,149	4,425,734
September	637,032 e	3,057,741 e	619,008 e	4,313,781 e
October	662,940 e	3,290,169 e	682,083 e	4,635,191 e
November	678,531 e	3,403,872 e	677,393 e	4,759,796 e
December	675,404 e	3,477,516 e	672,693 e	4,825,612 e
2004 Total	**8,227,205 e**	**40,568,276 e**	**7,655,120 e**	**56,450,600 e**

e Estimated r Revised p Preliminary

Table 2

LOUISIANA STATE CONDENSATE PRODUCTION

Excluding OCS
(Barrels)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1983	3,598,850	27,638,588	1,996,504	33,233,942
1984	3,140,006	30,785,661	1,918,564	35,844,231
1985	2,668,233	29,260,762	1,721,098	33,650,093
1986	2,755,749	26,709,496	2,176,970	31,642,215
1987	2,512,024	25,594,838	1,811,598	29,918,460
1988	2,780,394	27,008,968	1,739,471	31,528,833
1989	2,979,706	26,767,411	1,856,899	31,604,016
1990	3,341,804	26,878,867	1,686,289	31,906,959
1991	4,009,441	26,227,271	1,685,555	31,922,267
1992	3,787,973	25,395,894	1,601,573	30,785,440
1993	3,647,665	25,236,291	1,629,298	30,513,254
1994	3,726,903	23,751,352	1,497,320	28,975,575
1995	3,927,927	22,866,531	2,177,611	28,972,069
1996	5,162,593	26,495,266	2,313,383	33,971,242
1997	4,397,384	24,247,395	2,737,982	31,382,760
1998	3,962,756	24,405,878	2,400,173	30,768,807
1999	3,555,355	24,032,940	2,233,271	29,821,566
2000	3,670,053 r	25,212,928 r	2,339,594 r	31,222,575 r
2001	3,915,644 r	27,380,913 r	2,571,735 r	33,868,292 r
2002	3,830,883 r	26,872,200 r	2,483,858 r	33,186,941 r
January	293,167 r	2,197,763 r	201,993 r	2,692,923 r
February	275,816 r	2,022,725 r	199,287 r	2,497,828 r
March	308,800 r	2,270,767 r	223,671 r	2,803,239 r
April	302,792 r	2,232,719 r	219,870 r	2,755,381 r
May	298,843 r	2,209,767 r	217,554 r	2,726,164 r
June	283,360 r	2,101,244 r	206,815 r	2,591,418 r
July	273,817 r	2,036,366 r	200,373 r	2,510,556 r
August	279,834 r	2,086,999 r	205,303 r	2,572,135 r
September	270,013 r	2,019,506 r	198,612 r	2,488,131 r
October	271,704 r	2,038,007 r	200,379 r	2,510,090 r
November	257,934 r	1,940,331 r	190,725 r	2,388,990 r
December	265,864 r	2,005,818 r	197,109 r	2,468,792 r
2003 Total	**3,381,944 r**	**25,162,013 r**	**2,461,691 r**	**31,005,647 r**
January	243,293	1,905,794	174,289	2,323,376
February	236,580	1,860,253	170,056	2,266,889
March	250,926	1,980,595	180,984	2,412,505
April	240,008	1,901,681	173,704	2,315,393
May	244,466	1,944,464	177,544	2,366,474
June	230,517	1,840,582	167,995	2,239,094
July	230,100	1,844,344	168,277	2,242,722
August	218,723	1,760,024	160,520	2,139,267
September	182,488 e	1,474,237 e	134,403 e	1,791,128 e
October	195,758 e	1,587,704 e	144,692 e	1,928,153 e
November	195,753 e	1,615,851 e	144,467 e	1,956,071 e
December	199,751 e	1,654,003 e	144,243 e	1,997,997 e
2004 Total	**2,668,363 e**	**21,369,533 e**	**1,941,173 e**	**25,979,069 e**

e Estimated r Revised p Preliminary

Table 3

LOUISIANA STATE CRUDE OIL and CONDENSATE PRODUCTION

Excluding OCS
(Barrels)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1983	33,430,581	121,375,615	24,802,772	179,608,968
1984	32,730,382	127,476,082	27,036,480	187,242,944
1985	32,104,784	126,883,275	26,013,271	185,001,330
1986	29,551,497	124,563,098	26,796,139	180,910,734
1987	27,548,782	121,071,330	25,184,078	173,804,190
1988	26,746,646	115,710,745	24,539,518	166,996,908
1989	25,229,350	105,119,808	22,747,097	153,096,255
1990	26,022,976	99,649,083	23,042,907	148,714,966
1991	26,702,911	95,794,803	24,183,667	146,681,381
1992	25,702,774	93,681,430	23,421,660	142,805,864
1993	23,736,207	90,934,698	23,222,361	137,893,266
1994	20,963,310	83,505,726	22,660,992	127,130,028
1995	20,571,849	82,339,060	22,318,475	125,229,384
1996	22,063,110	85,465,942	21,430,471	128,959,522
1997	21,497,315	84,706,090	19,951,782	126,155,187
1998	19,570,475	85,190,830	17,520,419	122,281,725
1999	16,459,365	80,068,828	14,331,807	110,860,000
2000	15,411,033 r	78,303,428 r	13,471,159 r	107,185,619 r
2001	14,557,876 r	77,687,065 r	12,661,245 r	104,906,185 r
2002	12,693,145 r	70,447,360 r	10,556,856 r	93,697,361 r
January	1,024,644 r	5,848,382 r	873,715 r	7,746,742 r
February	960,054 r	5,351,957 r	831,034 r	7,143,045 r
March	1,066,873 r	5,963,383 r	922,344 r	7,952,600 r
April	1,053,908 r	5,793,936 r	910,943 r	7,758,787 r
May	1,072,144 r	5,884,033 r	927,875 r	7,884,052 r
June	1,023,232 r	5,619,385 r	885,389 r	7,528,006 r
July	1,030,432 r	5,636,659 r	893,332 r	7,560,422 r
August	1,028,732 r	5,653,866 r	890,018 r	7,572,617 r
September	997,225 r	5,486,130 r	862,371 r	7,345,726 r
October	1,007,952 r	5,550,676 r	871,253 r	7,429,881 r
November	971,461 r	5,347,510 r	839,803 r	7,158,773 r
December	994,655 r	5,488,881 r	858,953 r	7,342,489 r
2003 Total	**12,231,313 r**	**67,624,799 r**	**10,567,028 r**	**90,423,140 r**
January	965,314	5,456,397	826,280	7,247,991
February	910,811	5,179,728	778,112	6,868,651
March	990,504	5,626,211	847,159	7,463,874
April	927,315	5,365,736	783,263	7,076,313
May	977,408	5,484,309	836,267	7,297,985
June	920,867	5,179,137	787,826	6,887,830
July	908,384	5,129,174	776,736	6,814,294
August	867,308	4,956,024	741,669	6,565,001
September	819,520 e	4,531,978 e	753,411 e	6,104,909 e
October	858,698 e	4,877,872 e	826,775 e	6,563,345 e
November	874,284 e	5,019,723 e	821,860 e	6,715,867 e
December	875,154 e	5,131,519 e	816,936 e	6,823,609 e
2004 Total	**10,895,568 e**	**61,937,809 e**	**9,596,293 e**	**82,429,669 e**

e Estimated r Revised p Preliminary

LA DNR Technology Assessment Division

Figure 1

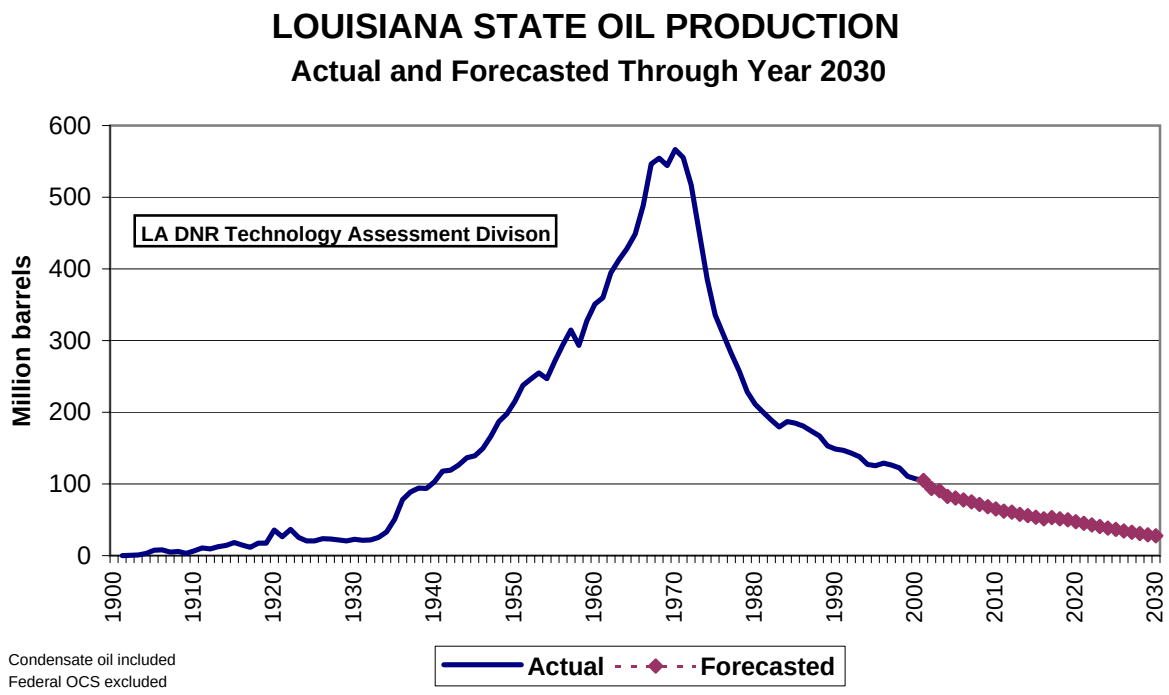
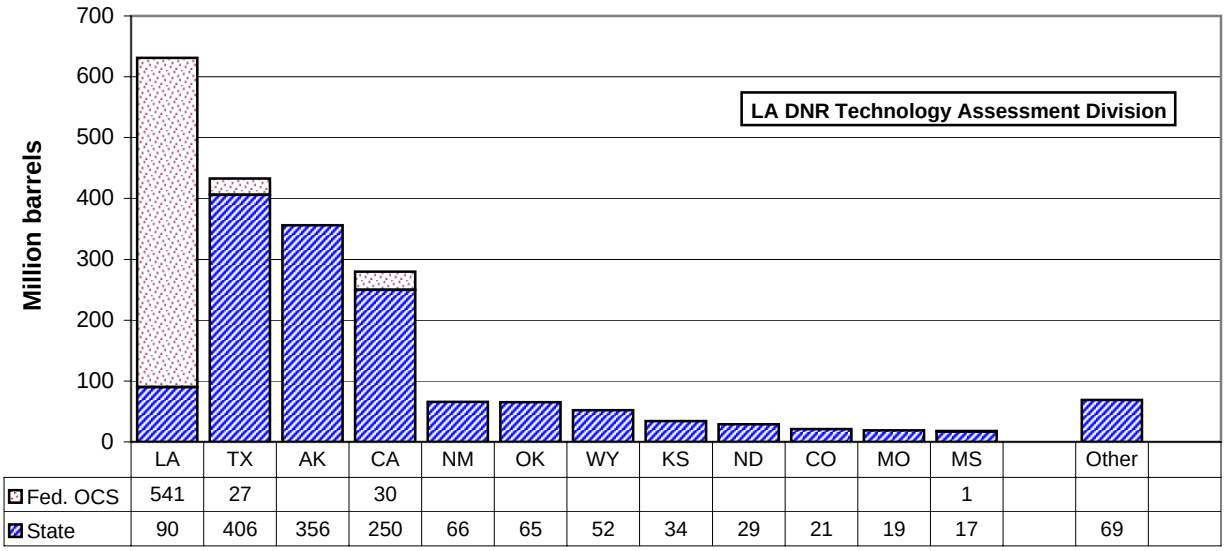


Figure 2



	LA	TX	AK	CA	NM	OK	WY	KS	ND	CO	MO	MS		Other	
Fed. OCS	541	27		30								1			
State	90	406	356	250	66	65	52	34	29	21	19	17		69	

Table 4

LOUISIANA TOTAL CRUDE OIL and CONDENSATE PRODUCTION

(Barrels)

DATE	ONSHORE	OFFSHORE		TOTAL
		State	Federal OCS	
1983	154,806,196	24,802,772	298,093,559	477,702,527
1984	160,206,464	27,036,480	318,024,622	505,267,566
1985	158,988,059	26,013,271	338,901,863	523,903,193
1986	154,114,595	26,796,139	340,152,276	521,063,010
1987	148,620,112	25,184,078	307,950,881	481,755,071
1988	142,457,390	24,539,518	261,936,530	428,933,438
1989	130,349,158	22,747,097	246,207,653	399,303,908
1990	125,672,059	23,042,907	264,670,535	413,385,501
1991	122,497,714	24,183,667	262,647,733	409,329,114
1992	119,384,204	23,421,660	288,918,208	431,724,072
1993	114,670,905	23,222,361	293,443,881	431,337,147
1994	104,469,036	22,660,992	293,077,191	420,207,219
1995	102,910,909	22,318,475	320,255,087	445,484,471
1996	107,529,051	21,430,471	349,101,048	478,060,570
1997	106,203,405	19,951,782	399,536,004	525,691,191
1998	104,761,306	17,520,419	425,865,901	548,147,626
1999	96,528,193	14,331,807	451,391,454	562,251,454
2000	93,714,460 r	13,471,159 r	514,137,284	621,322,903 r
2001	92,244,940 r	12,661,245 r	502,623,073	607,529,258 r
2002	83,140,505 r	10,556,856 r	528,281,567	621,978,928 r
January	6,873,027 r	873,715 r	47,223,634	53,179,983 r
February	6,312,011 r	831,034 r	43,976,644	48,887,154 r
March	7,030,256 r	922,344 r	47,843,845	53,801,438 r
April	6,847,844 r	910,943 r	46,088,099	51,943,769 r
May	6,956,177 r	927,875 r	46,652,674	54,721,155 r
June	6,642,617 r	885,389 r	44,326,881	52,345,076 r
July	6,667,090 r	893,332 r	45,392,186	53,246,383 r
August	6,682,599 r	890,018 r	44,503,824	54,211,671 r
September	6,483,355 r	862,371 r	43,122,941 r	41,775,528 r
October	6,558,628 r	871,253 r	44,305,903 r	49,047,354 r
November	6,318,970 r	839,803 r	43,122,941 r	53,438,473 r
December	6,483,536 r	858,953 r	44,419,001 r	55,465,161 r
2003 Total	**79,856,112 r**	**10,567,028 r**	**540,978,574 r**	**622,063,146 r**
January	6,421,711	826,280	44,390,726	51,638,717
February	6,090,539	778,112	40,431,406	47,300,057
March	6,616,715	847,159	43,220,533	50,684,407
April	6,293,050	783,263	41,371,756	48,448,069
May	6,461,718	836,267	44,297,695	51,595,680
June	6,100,004	787,826	38,307,181	45,195,011
July	6,037,558	776,736	43,220,533	50,034,827
August	5,823,332	741,669	N/A	6,565,001
September	5,351,498 e	753,411 e	N/A	6,104,909 e
October	5,736,570 e	826,775 e	N/A	6,563,345 e
November	5,894,008 e	821,860 e	N/A	6,715,867 e
December	6,006,673 e	816,936 e	N/A	6,823,609 e
2004 Total	**72,833,376 e**	**9,596,293 e**	**295,239,830**	**377,669,500 e**

e Estimated r Revised p Preliminary

TABLE 5

LOUISIANA STATE OIL PRODUCTION* BY TAX RATES

AS PUBLISHED IN SEVERANCE TAX REPORTS[8]

(Barrels)

DATE	FULL RATE	INCAPABLE WELLS RATE	STRIPPER WELLS RATE	TAXED VOLUME
1983	172,094,095	2,884,691	9,731,435	184,710,221
1984	171,425,402	3,099,053	9,830,262	184,354,717
1985	173,545,432	3,110,740	10,513,745	187,169,920
1986	180,108,437	3,208,451	10,059,344	193,376,232
1987	155,987,737	3,201,095	8,809,543	168,015,044
1988	142,605,746	3,288,994	8,242,330	154,150,151
1989	139,442,253	3,265,429	7,429,510	150,165,554
1990	131,140,448	3,274,774	7,154,125	141,577,610
1991	136,212,521	3,888,128	8,112,117	148,212,765
1992	133,399,849	3,665,298	7,718,696	144,783,843
1993	128,699,431	3,448,387	7,240,065	139,387,883
1994	118,109,958	3,691,802	6,347,047	128,148,807
1995	108,373,913	4,239,717	6,230,454 e	118,844,084 e
1996	103,524,192	3,786,147	6,240,956 e	113,551,295 e
1997	101,772,533	3,466,389	6,101,247 e	111,340,169 e
1998	89,083,365	2,878,225	5,892,007 e	97,853,597 e
1999	85,207,438	2,786,515	5,690,984 e	93,684,937 e
2000	88,411,207	2,783,268	5,322,515 e	96,516,990 e
2001	83,994,058	2,576,683	5,175,142 e	91,745,883 e
2002	79,038,703 e	2,571,901 e	4,681,607 e	86,292,211 e
January	5,417,960	117,267	337,315	5,872,543
February	5,641,872	334,186	523,867	6,499,925
March	6,264,910	217,000	412,522	6,894,433
April	6,257,223	170,007	378,036	6,805,265
May	6,591,733	221,320	417,894	7,230,948
June	6,772,527	236,151	392,884	7,401,562
July	6,800,943	189,158	372,807	7,362,909
August	6,397,575	242,967	485,583	7,126,125
September	5,424,185	160,326	380,538	5,965,049
October	6,296,254	145,380	341,536	6,783,170
November	6,359,287	311,924	468,800	7,140,011
December	6,846,314	219,330	401,108	7,466,752
2003 Total	**75,070,785**	**2,565,017**	**4,912,890**	**82,548,691**
January	991,021	30,843	404,796	1,426,660
February	8,981,653	268,069	397,738	9,647,459
March	9,302,534	357,565	396,334	10,056,433
April	5,462,679	157,485	393,177	6,013,341
May	5,832,447	259,581	411,016	6,503,043
June	5,678,413	272,992	412,910	6,364,315
July	9,470,363	295,326	416,805	10,182,495
August	5,191,301	238,283	407,793	5,837,376
September	4,549,866	152,422	380,434	5,082,723
October	7,061,559	230,627	441,041	7,733,227
November	6,985,772	389,554	457,629	7,832,955
December	3,626,214	200,105	331,028	4,157,347
2004 Total	**69,507,607**	**2,652,746**	**4,519,674**	**76,680,026**

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* Due to reporting time lag and well exemptions the above figures are different from actual production.

See footnote in Appendix B.

Figure 3

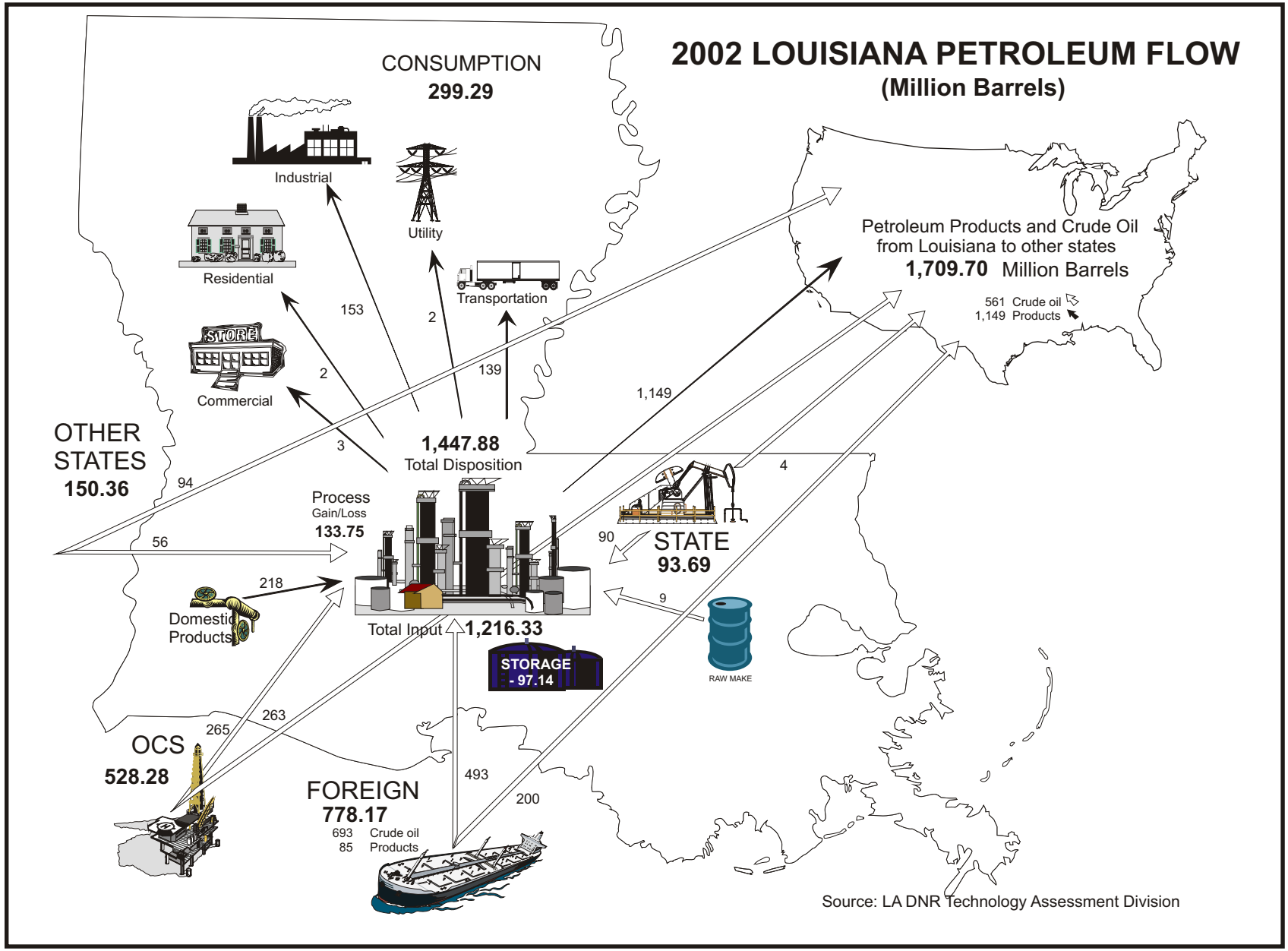
2002 LOUISIANA PETROLEUM FLOW
(Million Barrels)
CONSUMPTION
299.29
Industrial
Utility
Residential
Transportation
Commercial
153
2
2
139
3
1,447.88
Total Disposition
OTHER STATES
150.36
94
56
Process Gain/Loss
133.75
218
Domestic Products
Total Input
1,216.33
STORAGE
- 97.14
RAW MAKE
90
9
STATE
93.69
4
1,149
Petroleum Products and Crude Oil from Louisiana to other states
1,709.70 Million Barrels
561 Crude oil
1,149 Products
OCS
528.28
265
263
FOREIGN
778.17
693 Crude oil
85 Products
493
200
Source: LA DNR Technology Assessment Division

Table 6

UNITED STATES OCS CRUDE OIL AND CONDENSATE PRODUCTION[12]

(Barrels)

YEAR	LOUISIANA	TEXAS	CALIFORNIA	TOTAL
1957	16,064,395	5,792	0	16,070,187
1958	24,769,037	0	0	24,769,037
1959	35,697,264	257	0	35,697,521
1960	49,665,891	98	0	49,665,989
1961	64,330,078	0	0	64,330,078
1962	89,733,099	3,483	0	89,736,582
1963	104,526,436	52,804	0	104,579,240
1964	122,495,173	4,953	0	122,500,126
1965	144,964,868	3,747	0	144,968,615
1966	187,831,472	882,598	0	188,714,070
1967	218,995,828	2,865,786	0	221,861,614
1968	263,825,359	3,110,642	2,059,889	268,995,890
1969	300,159,292	2,759,851	9,940,844	312,859,987
1970	333,411,492	2,247,048	24,987,628	360,646,168
1971	385,760,351	1,685,047	31,103,548	418,548,946
1972	387,590,662	1,733,018	22,562,213	411,885,893
1973	374,196,856	1,617,829	18,915,314	394,729,999
1974	342,435,496	1,381,825	16,776,744	360,594,065
1975	313,592,559	1,340,136	15,304,757	330,237,452
1976	301,887,002	1,054,554	13,978,553	316,920,109
1977	290,771,605	909,037	12,267,598	303,948,240
1978	278,071,535	2,107,599	12,085,908	292,265,042
1979	271,008,916	3,595,546	10,961,076	285,565,538
1980	256,688,082	10,502,007	10,198,886	277,388,975
1981	255,875,717	14,284,661	19,605,027	289,765,405
1982	275,513,489	17,263,766	28,434,202	321,211,457
1983	298,093,559	19,710,197	30,527,487	348,331,243
1984	318,024,622	21,960,086	30,254,306	370,239,014
1985	338,901,863	20,640,957	29,781,465	389,324,285
1986	340,152,276	19,835,882	29,227,846	389,216,004
1987	307,950,881	24,634,142	33,556,686	366,141,709
1988	261,936,530	26,115,776	32,615,118	320,667,424
1989	246,207,653	25,887,841	33,072,161	305,167,655
1990	264,670,535	26,439,927	33,312,719	324,423,181
1991	262,647,733	23,899,428	29,146,090	315,693,251
1992	288,918,208	23,582,162	41,222,801	353,726,380
1993	293,443,881	19,151,111	50,078,144	362,675,766
1994	293,077,191	19,121,540	57,229,464	369,474,307
1995	320,255,087	17,347,391	71,254,440	408,875,006
1996	349,101,048	21,078,663	67,804,200	438,003,670
1997	399,536,004	20,927,592	58,279,489	478,775,008
1998	425,865,901	20,128,157	40,636,231	476,655,336
1999	451,391,454	19,832,067	42,071,101	513,317,586
2000	514,137,284	16,432,588	34,373,524	565,770,347
2001	502,623,073	16,447,355	34,763,192	570,971,674
2002	528,281,567 e	25,463,216 e	29,783,000 e	608,991,000 e
2003	540,978,574 e	26,962,633 e	29,238,000 e	622,367,000 e

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See footnote in Appendix B.

Table 7

UNITED STATES CRUDE OIL AND CONDENSATE PRODUCTION AND IMPORTS

(Thousand barrels)

DATE	ALL OCS[12]	DOMESTIC PRODUCTION[7]	IMPORTS OTHER[7]	IMPORTS SPR[7]
1983	348,331	3,171,120	1,130,040	85,410
1984	370,239	3,249,714	1,181,814	72,102
1985	389,324	3,274,415	1,125,295	43,070
1986	389,216	3,168,200	1,507,450	17,520
1987	366,142	3,047,385	1,679,365	26,645
1988	320,667	2,979,240	1,850,130	18,666
1989	305,168	2,778,745	2,112,255	20,440
1990	324,423	2,684,575	2,141,455	9,855
1991	315,693	2,707,039	2,110,332	0
1992	353,726	2,618,125	2,212,344	3,594
1993	362,676	2,495,933	2,451,415	5,367
1994	369,474	2,418,981	2,560,220	4,485
1995	408,875	2,383,404	2,642,689	0
1996	438,004	2,368,535	2,738,387	0
1997	478,775	2,339,981	2,918,425	0
1998	476,655	2,293,763	3,120,791	0
1999	513,318	2,162,752	3,132,376	2,065
2000	565,770	2,135,062	3,271,257	3,006
2001	553,860	2,136,179	3,334,438	3,914
2002	608,991	2,123,183	3,296,245	5,767
January	54,158	181,094	264,969	0
February	50,423	165,615	232,495	0
March	54,732	182,604	280,710	0
April	52,941	174,395	294,212	0
May	53,696	179,267	312,422	0
June	51,113	172,380	298,520	0
July	52,343	175,536	311,839	0
August	51,324	174,904	314,239	0
September	49,689	169,695	312,351	0
October	51,092	174,889	314,926	0
November	49,744	169,103	284,360	638
December	51,112	174,496	299,686	109
2003 Total	**622,367**	**2,093,978**	**3,520,729**	**747**
January	51,010	174,964	288,981	0
February	46,569	161,932	268,483	0
March	49,625	174,287	312,266	0
April	47,660	167,027	301,847	0
May	50,882	173,977	320,053	0
June	44,271	162,096	315,152	0
July	49,687	167,523	319,365	0
August	N/A	163,682	323,870	0
September	N/A	152,737	290,062	0
October	N/A	N/A	N/A	N/A
November	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A
2004 Total	**339,704**	**1,498,225**	**2,740,079**	**0**

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Table 8

LOUISIANA STATE ROYALTY OIL, GAS AND PLANT PRODUCTS
CALCULATED VOLUMES, Excluding OCS

DATE	OIL (Barrels)	GAS (MCF)	PLANT LIQUIDS (Barrels)
1983	8,956,936	88,029,268	694,641
1984	8,786,732	86,315,477	944,965
1985	8,404,223	76,612,605	845,349
1986	8,859,310	81,463,285	1,751,664
1987	8,040,773	78,166,315	511,790
1988	7,544,770	69,991,244	456,976
1989	7,184,774	69,936,929	461,237
1990	6,781,765	66,417,089	348,776
1991	6,923,565	61,809,109	1,063,909
1992	6,837,552	57,911,258	1,689,942
1993	6,721,350	67,052,274	698,857
1994	6,288,843	54,798,617	600,660
1995	6,301,254	57,032,170	938,660
1996	6,489,394	60,326,587	477,640
1997	6,534,913	60,778,002	1,440,435
1998	6,604,124	56,691,269	331,767
1999	6,030,138	51,051,870	204,124
2000	5,757,909	53,780,835	355,112
2001	6,149,144 r	62,021,883 r	983,641 r
2002	4,693,387 r	52,820,219 r	800,697 r
January	413,819 r	4,416,131 r	86,198 r
February	352,538 r	4,542,094 r	73,885 r
March	437,249 r	4,947,138 r	92,929 r
April	415,063 r	4,752,779 r	91,183 r
May	406,704 r	4,677,476 r	63,438 r
June	402,762 r	4,551,738 r	80,679 r
July	416,210 r	4,391,750 r	94,317 r
August	423,317 r	4,423,399 r	117,701 r
September	360,380 r	4,025,464 r	149,943 r
October	392,822	4,330,181	274,099
November	384,837	4,057,333	169,415
December	408,014	4,020,485	165,222
2003 Total	**4,813,716**	**53,135,969**	**1,459,006**
January	437,472	3,962,078	200,183
February	347,515	3,744,019	208,376
March	386,362	3,682,280	115,982
April	371,447	3,987,071	184,725
May	368,172	3,896,112	192,423
June	354,220	3,942,405	194,484
July	361,907	4,081,650	160,875
August	358,594	3,755,960	178,684
September	N/A	N/A	N/A
October	N/A	N/A	N/A
November	N/A	N/A	N/A
December	N/A	N/A	N/A
2004 Total	**2,985,689**	**31,051,576**	**1,435,733**

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Table 9
LOUISIANA STATE NATURAL GAS PRODUCTION
WET AFTER LEASE SEPARATION
Excluding OCS and Casinghead Gas
(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1983	305,360,107	1,180,261,867	291,012,508	1,776,634,482
1984	326,338,092	1,248,036,005	284,926,166	1,859,300,263
1985	295,244,077	1,137,225,154	220,415,274	1,652,884,505
1986	308,388,203	1,106,084,855	212,591,069	1,627,064,127
1987	303,050,793	1,041,232,533	199,093,721	1,543,377,047
1988	322,955,920	1,058,079,256	191,498,869	1,572,534,045
1989	335,963,137	1,035,013,840	180,876,988	1,551,853,965
1990	354,696,578	1,040,239,002	160,569,034	1,555,504,613
1991	345,612,948	1,022,125,055	129,387,685	1,497,125,688
1992	343,439,890	994,039,578	123,902,708	1,461,382,176
1993	333,395,251	970,764,461	130,660,784	1,434,820,496
1994	334,564,842	925,335,735	134,106,599	1,394,007,176
1995	344,719,040	908,236,089	140,906,019	1,393,861,148
1996	392,345,447	933,446,378	166,901,010	1,492,692,835
1997	405,754,260	871,963,879	165,420,090	1,443,138,229
1998	394,713,751	846,071,218	158,947,618	1,399,732,587
1999	361,118,420	814,417,104	134,177,750	1,309,713,274
2000	357,334,481 r	837,596,801 r	135,315,202 r	1,330,246,484 r
2001	361,730,350 r	872,190,740 r	137,641,067 r	1,371,562,157 r
2002	327,616,491 r	810,655,199 r	123,037,809 r	1,261,309,499 r
January	26,969,259 r	67,377,849 r	10,103,668 r	104,450,776 r
February	24,798,206 r	62,128,589 r	9,299,505 r	96,226,300 r
March	28,047,103 r	70,465,328 r	10,529,583 r	109,042,015 r
April	27,109,233 r	68,298,177 r	10,190,340 r	105,597,751 r
May	27,542,490 r	70,275,474 r	10,471,809 r	108,289,773 r
June	26,456,339 r	67,685,414 r	10,075,506 r	104,217,259 r
July	26,797,088 r	68,752,917 r	10,218,959 r	105,768,964 r
August	27,092,884 r	69,710,804 r	10,346,364 r	107,150,051 r
September	25,646,796 r	66,179,673 r	9,808,577 r	101,635,047 r
October	26,611,417 r	68,867,613 r	10,192,962 r	105,671,993 r
November	25,605,771 r	66,459,141 r	9,822,838 r	101,887,750 r
December	26,076,459 r	67,882,437 r	10,018,529 r	103,977,425 r
2003 Total	**318,753,046 r**	**814,083,417 r**	**121,078,641 r**	**1,253,915,104 r**
January	25,541,540	66,639,663	9,818,053	101,999,257
February	24,291,525	63,560,097	9,350,218	97,201,840
March	26,359,005	69,167,420	10,159,531	105,685,956
April	25,859,496	68,050,582	9,979,874	103,889,952
May	26,697,727	70,455,982	10,316,142	107,469,851
June	25,799,031	68,275,510	9,980,662	104,055,202
July	26,601,598	70,605,698	10,304,758	107,512,053
August	26,600,209	70,809,684	10,317,775	107,727,668
September	21,298,985 e	60,997,594 e	8,272,361 e	90,568,940 e
October	22,778,861 e	70,997,594 e	8,858,782 e	102,635,238 e
November	22,637,837 e	68,802,145 e	8,815,672 e	100,255,655 e
December	22,495,555 e	68,604,112 e	8,772,220 e	99,871,887 e
2004 Total	**296,961,370 e**	**816,966,080 e**	**114,946,048 e**	**1,228,873,498 e**

e Estimated r Revised p Preliminary

Table 10

LOUISIANA STATE CASINGHEAD GAS PRODUCTION, WET AFTER LEASE SEPARATION, Excluding OCS

(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1983	54,841,710	124,281,782	26,159,080	205,282,572
1984	55,944,990	125,085,805	29,071,888	210,102,684
1985	55,759,287	112,357,808	29,648,675	197,765,770
1986	55,231,487	110,445,487	33,513,264	199,190,237
1987	53,608,927	111,178,438	29,030,143	193,817,508
1988	51,642,390	111,388,728	22,754,523	185,785,641
1989	43,226,234	95,636,544	22,432,765	161,295,543
1990	35,720,964	97,403,093	21,463,782	154,587,839
1991	36,360,803	94,750,220	20,506,337	151,617,360
1992	28,776,676	130,335,922	23,086,767	182,199,364
1993	20,416,003	134,059,073	23,177,673	177,652,749
1994	19,490,914	102,313,166	21,100,651	142,904,730
1995	18,712,027	100,070,988	23,542,867	142,325,882
1996	24,806,243	93,986,744	18,713,358	137,506,345
1997	36,266,759	103,835,554	20,423,408	160,525,721
1998	42,665,167	114,280,211	20,701,170	177,646,548
1999	33,073,036	96,225,193	15,421,052	144,719,281
2000	30,781,101 r	89,856,709 r	14,200,262 r	134,838,072 r
2001	28,863,937 r	81,963,077 r	13,247,431 r	124,074,446 r
2002	24,810,919 r	64,267,579 r	11,486,006 r	100,564,504 r
January	2,183,458 r	5,185,371 r	830,365 r	8,199,194 r
February	2,071,464 r	4,921,164 r	786,803 r	7,779,431 r
March	2,198,039 r	5,223,752 r	833,858 r	8,255,649 r
April	2,065,363 r	4,910,238 r	782,579 r	7,758,180 r
May	2,165,190 r	5,149,477 r	819,426 r	8,134,094 r
June	2,059,953 r	4,901,041 r	778,687 r	7,739,681 r
July	2,137,884 r	5,088,327 r	807,164 r	8,033,375 r
August	1,994,104 r	4,747,875 r	751,966 r	7,493,945 r
September	1,911,845 r	4,553,715 r	720,075 r	7,185,636 r
October	1,983,230 r	4,725,504 r	746,058 r	7,454,792 r
November	1,786,195 r	4,257,614 r	671,121 r	6,714,930 r
December	1,845,347 r	4,400,249 r	692,498 r	6,938,094 r
2003 Total	**24,402,073 r**	**58,064,327 r**	**9,220,602 r**	**91,687,001 r**
January	1,902,482	4,489,675	712,530	7,104,687
February	1,872,701	4,420,908	700,616	6,994,225
March	2,051,245	4,844,024	766,601	7,661,871
April	1,944,490	4,593,427	725,957	7,263,874
May	2,026,484	4,788,648	755,822	7,570,954
June	1,934,769	4,573,332	720,936	7,229,037
July	2,006,146	4,743,603	746,765	7,496,514
August	1,887,451	4,464,395	701,868	7,053,714
September	1,514,265 e	3,882,854 e	652,528 e	6,049,647 e
October	2,490,318 e	4,894,158 e	724,189 e	8,108,665 e
November	2,488,420 e	4,891,563 e	722,555 e	8,102,539 e
December	2,486,511 e	4,888,960 e	770,907 e	8,146,378 e
2004 Total	**24,605,281 e**	**55,475,548 e**	**8,701,275 e**	**88,782,104 e**

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Figure 4

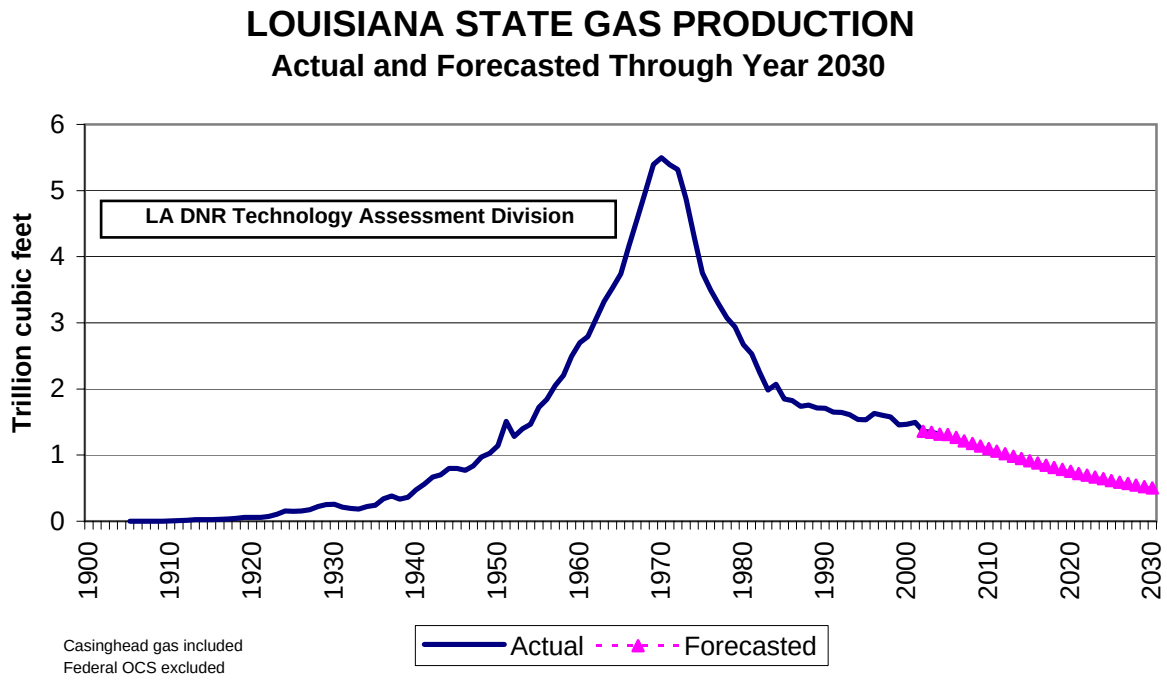
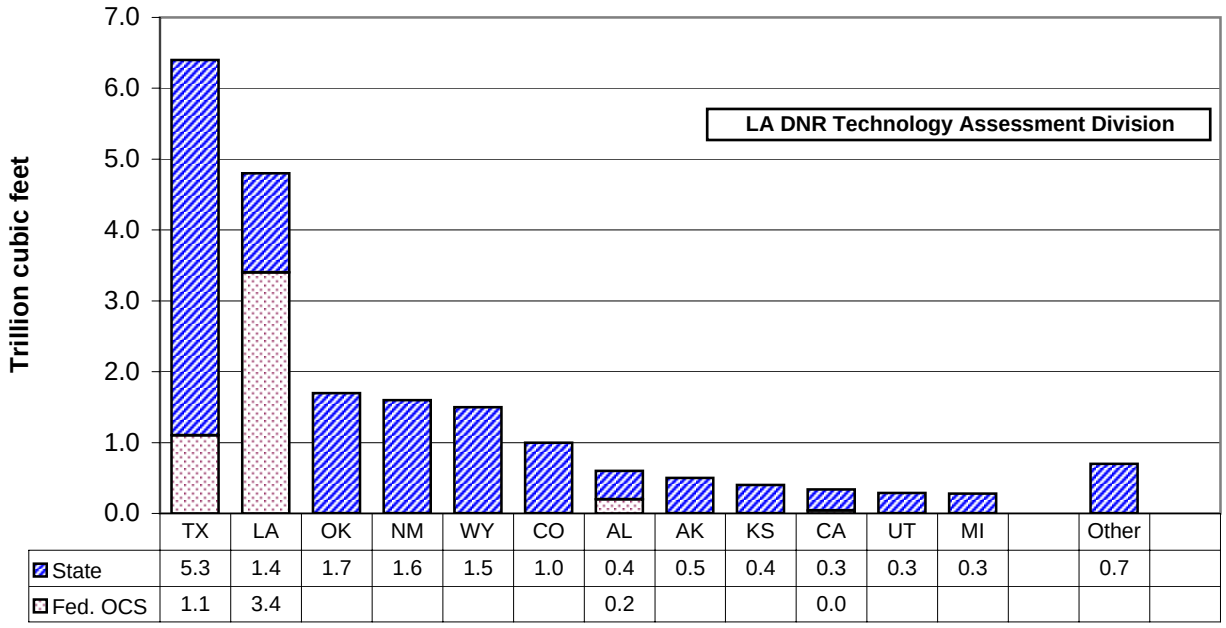


Figure 5



	TX	LA	OK	NM	WY	CO	AL	AK	KS	CA	UT	MI		Other	
State	5.3	1.4	1.7	1.6	1.5	1.0	0.4	0.5	0.4	0.3	0.3	0.3		0.7	
Fed. OCS	1.1	3.4					0.2			0.0					

Table 11

LOUISIANA STATE GAS PRODUCTION, WET AFTER LEASE SEPARATION

Natural Gas and Casinghead Gas, Excluding OCS

(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)*

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1983	360,201,817	1,304,543,649	317,171,588	1,981,917,054
1984	382,283,082	1,373,121,810	313,998,055	2,069,402,947
1985	351,003,364	1,249,582,962	250,063,949	1,850,650,275
1986	363,619,690	1,216,530,342	246,104,333	1,826,254,364
1987	356,659,720	1,152,410,971	228,123,864	1,737,194,555
1988	374,598,311	1,169,467,984	214,253,392	1,758,319,686
1989	379,189,370	1,130,650,385	203,309,753	1,713,149,508
1990	390,417,542	1,137,642,094	182,032,816	1,710,092,452
1991	381,973,751	1,116,875,275	149,894,021	1,648,743,048
1992	372,216,566	1,124,375,499	146,989,475	1,643,581,540
1993	353,811,255	1,104,823,534	153,838,456	1,612,473,245
1994	354,055,756	1,027,648,900	155,207,250	1,536,911,906
1995	363,431,067	1,008,307,077	164,448,886	1,536,187,030
1996	417,151,690	1,027,433,122	185,614,368	1,630,199,180
1997	442,021,019	975,799,433	185,843,498 r	1,603,663,950
1998	437,378,918	960,351,429	179,648,787 r	1,577,379,135
1999	394,191,456	910,642,297	149,598,802 r	1,454,432,555
2000	388,115,582 r	927,453,510 r	149,515,464 r	1,465,084,556 r
2001	390,594,287 r	954,153,818 r	150,888,498 r	1,495,636,603 r
2002	352,427,410 r	874,922,779 r	134,523,815 r	1,361,874,003 r
January	29,152,716 r	72,563,220 r	10,934,033 r	112,649,970 r
February	26,869,670 r	67,049,753 r	10,086,308 r	104,005,731 r
March	30,245,142 r	75,689,080 r	11,363,442 r	117,297,664 r
April	29,174,596 r	73,208,415 r	10,972,920 r	113,355,931 r
May	29,707,680 r	75,424,952 r	11,291,235 r	116,423,867 r
June	28,516,292 r	72,586,455 r	10,854,193 r	111,956,940 r
July	28,934,973 r	73,841,244 r	11,026,123 r	113,802,339 r
August	29,086,987 r	74,458,679 r	11,098,330 r	114,643,996 r
September	27,558,642 r	70,733,389 r	10,528,652 r	108,820,683 r
October	28,594,647 r	73,593,117 r	10,939,020 r	113,126,785 r
November	27,391,966 r	70,716,755 r	10,493,959 r	108,602,680 r
December	27,921,806 r	72,282,686 r	10,711,027 r	110,915,519 r
2003 Total	**343,155,119 r**	**872,147,744 r**	**130,299,242 r**	**1,345,602,105 r**
January	27,444,022	71,129,338	10,530,583	109,103,944
February	26,164,226	67,981,004	10,050,834	104,196,065
March	28,410,251	74,011,444	10,926,132	113,347,827
April	27,803,986	72,644,009	10,705,831	111,153,826
May	28,724,211	75,244,630	11,071,964	115,040,805
June	27,733,799	72,848,842	10,701,598	111,284,239
July	28,607,744	75,349,301	11,051,522	115,008,567
August	28,487,660	75,274,079	11,019,643	114,781,382
September	22,813,250 e	64,880,448 e	8,924,888 e	96,618,587 e
October	25,269,179 e	75,891,752 e	9,582,971 e	110,743,902 e
November	25,126,257 e	73,693,708 e	9,538,228 e	108,358,193 e
December	24,982,066 e	73,493,072 e	9,543,127 e	108,018,265 e
2004 Total	**321,566,652 e**	**872,441,628 e**	**123,647,323 e**	**1,317,655,603 e**

e Estimated r Revised p Preliminary

* See Appendix D-1 for corresponding volumes at 14.73 psia and footnote in Appendix B.

Table 12

LOUISIANA TOTAL GAS PRODUCTION, WET AFTER LEASE SEPARATION

Natural Gas and Casinghead Gas

(Thousand Cubic Feet (MCF) at 15.025 psia and 60 degrees Fahrenheit)*

	ONSHORE	OFFSHORE		TOTAL
DATE		State	Federal OCS[12]	
1983	1,664,745,466	317,171,588	3,111,576,348	5,977,354,058
1984	1,755,404,892	313,998,055	3,508,475,799	5,093,493,402
1985	1,600,586,326	250,063,949	3,055,687,773	5,577,878,746
1986	1,580,150,031	246,104,333	2,870,347,386	4,906,338,048
1987	1,509,070,691	228,123,864	3,117,669,167	4,696,601,750
1988	1,544,066,294	214,253,392	3,036,077,646	4,854,863,722
1989	1,509,839,755	203,309,753	2,947,545,132	4,794,397,332
1990	1,528,059,636	182,032,816	3,633,554,307	4,660,694,640
1991	1,498,849,027	149,894,021	3,225,373,562	5,343,646,759
1992	1,496,592,065	146,989,475	3,272,561,370	4,874,116,610
1993	1,458,634,789	153,838,456	3,320,312,261	4,916,142,910
1994	1,381,704,656	155,207,250	3,423,837,064	4,932,785,506
1995	1,371,738,144	164,448,886	3,564,677,663	4,960,748,970
1996	1,444,584,812	185,614,368	3,821,696,386 r	5,100,864,693
1997	1,417,820,452 r	185,843,498 r	3,837,040,050 r	5,451,895,566 r
1998	1,397,730,348 r	179,648,787 r	3,714,986,973 r	5,440,704,000 r
1999	1,304,833,753 r	149,598,802 r	3,944,019,905 r	5,292,366,108 r
2000	1,315,569,092 r	149,515,464 r	3,591,874,112 r	5,398,452,460 r
2001	1,344,748,105 r	150,888,498 r	3,643,999,774 p	5,056,850,065 r
2002	1,227,350,188 r	134,523,815 r	3,329,786,835 p	5,139,255,612 r
January	101,715,937 r	10,934,033 r	283,757,095 p	384,431,792 p
February	93,919,423 r	10,086,308 r	260,447,139 p	345,471,816 p
March	105,934,222 r	11,363,442 r	292,506,525 p	401,367,891 p
April	102,383,011 r	10,972,920 r	284,991,962 p	390,596,783 p
May	105,132,632 r	11,291,235 r	288,937,494 p	397,831,181 p
June	101,102,747 r	10,854,193 r	272,649,924 p	412,386,605 p
July	102,776,216 r	11,026,123 r	280,035,548 p	419,857,962 p
August	103,545,666 r	11,098,330 r	277,678,543 p	434,537,111 p
September	98,292,031 r	10,528,652 r	263,298,533 p	357,265,157 p
October	102,187,765 r	10,939,020 r	272,806,861 p	344,273,457 p
November	98,108,721 r	10,493,959 r	255,576,194 p	416,040,646 p
December	100,204,492 r	10,711,027 r	265,245,880 p	405,426,395 p
2003 Total	1,215,302,863 **r**	130,299,242 **r**	**3,297,931,696 p**	**4,709,486,795 p**
January	98,573,361	10,530,583	271,392,953 p	397,184,106 p
February	94,145,231	10,050,834	258,899,872 p	350,056,701 p
March	102,421,695	10,926,132	264,859,799 p	400,958,800 p
April	100,447,995	10,705,831	244,006,316 p	390,692,165 p
May	103,968,841	11,071,964	256,790,430 p	397,678,030 p
June	100,582,641	10,701,598	242,052,338 p	377,855,643 p
July	103,957,045	11,051,522	256,178,154 p	112,115,260 p
August	103,761,739	11,019,643	N/A	107,938,999
September	87,693,699 e	8,924,888 e	N/A	107,454,900 e
October	101,160,931 e	9,582,971 e	N/A	106,971,877 e
November	98,819,965 e	9,538,228 e	N/A	106,488,798 e
December	98,475,138 e	9,543,127 e	N/A	106,003,914 e
2004 Total	1,194,008,280 **e**	123,647,323 **e**	**1,794,179,862 p**	**2,961,399,195 e**

e Estimated r Revised p Preliminary

* See Appendix D-2 for corresponding volumes at 14.73 psia and footnote in Appendix B.

NOTE: The 2003 Federal OCS production is estimated from the marketed production

Table 13

LOUISIANA MARKETED AND DRY GAS PRODUCTION

(Billion Cubic Feet (BCF) at 15.025 psia and 60 degrees Fahrenheit)*

DATE	MARKETED			EXTRACTION LOSS[3]	DRY[3]
	State	OCS	Total[3]		
1960	2,642 e	265 12	2,907 e	N/A	N/A
1961	2,731 e	309 12	3,039 e	N/A	N/A
1962	2,995 e	439 12	3,434 e	N/A	N/A
1963	3,252 e	548 12	3,800 e	N/A	N/A
1964	3,451 e	603 12	4,054 e	N/A	N/A
1965	3,658 e	627 12	4,285 e	N/A	N/A
1966	4,063 e	937 12	5,000 e	N/A	N/A
1967	4,549 e	1,055 12	5,605	113	5,492
1968	4,918 e	1,372 12	6,290	138	6,153
1969	5,317 e	1,769 12	7,086	176	6,910
1970	5,429 e	2,206 12	7,635	189	7,446
1971	5,367 e	2,556 12	7,923	191	7,732
1972	5,020 e	2,797 12	7,816	194	7,622
1973	5,115 e	2,966 12	8,081	203	7,878
1974	4,351 e	3,251 12	7,601	191	7,411
1975	3,717 e	3,234 12	6,951	186	6,766
1976	3,472 e	3,397 12	6,869	169	6,700
1977	3,533 e	3,540 12	7,073	163	6,910
1978	3,302 e	4,028 12	7,330	158	7,171
1979	3,087 e	4,036 12	7,124	162	6,961
1980	2,908 e	3,896 12	6,804	139	6,664
1981	2,661 e	3,986 12	6,647	140	6,507
1982	2,359 e	3,692 12	6,050	126	5,924
1983	2,147 e	3,080 12	5,227	122	5,106
1984	2,237 e	3,473 12	5,711	130	5,581
1985	1,890 e	3,025 12	4,915	115	4,800
1986	1,958 e	2,842 12	4,799	113	4,686
1987	1,935 e	3,086 12	5,022	122	4,899
1988	2,073 e	3,006 12	5,079	118	4,961
1989	2,060 e	2,918 12	4,978	119	4,859
1990	1,542 e	3,597 12	5,139	117	5,022
1991	1,742 e	3,193 12	4,936	127	4,809
1992	1,617 e	3,201	4,818	130	4,688
1993	1,642 e	3,252	4,893	128	4,765
1994	1,658 e	3,410	5,068	126	4,942
1995	1,650 e	3,358	5,008	143	4,865
1996	1,596 e	3,590	5,186	137	5,049
1997	1,446	3,580	5,026	144	4,882
1998	1,492	3,580	5,072	139	4,933
1999	1,506	3,565	5,071	158	4,912
2000	1,426	3,497	4,923	158	4,737
2001	1,473	3,601	5,073	147	4,898
2002	1,335	3,663	4,998	168	4,973 p
2003	1,345 p	3,235 e	4,580 e	168	4,420 e

e Estimated r Revised p Preliminary

* See Appendix D-3 for corresponding volumes at 14.73 psia and footnote in Appendix B.

Figure 6

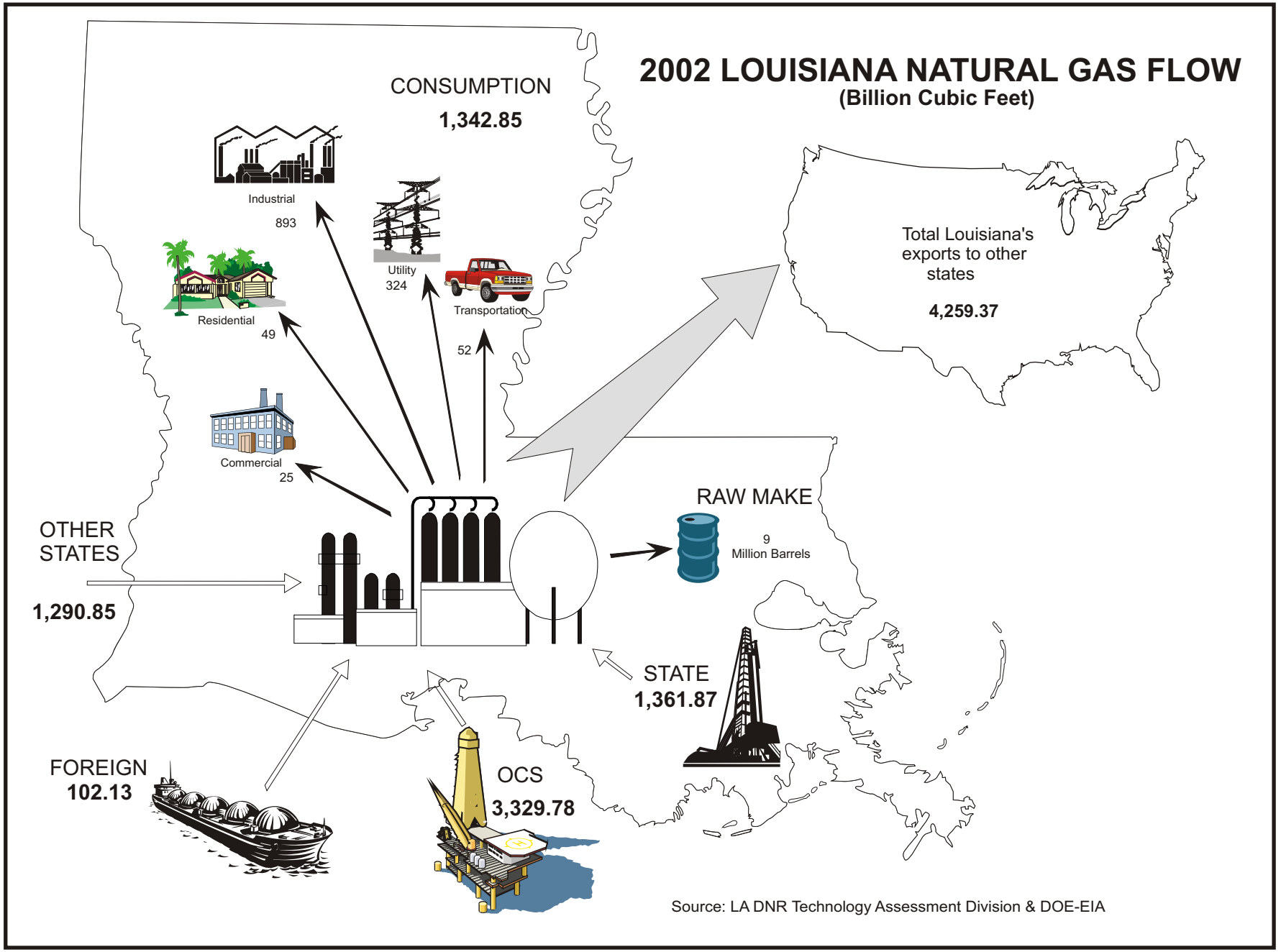

2002 LOUISIANA NATURAL GAS FLOW
(Billion Cubic Feet)
CONSUMPTION
1,342.85
Industrial
893
Utility
324
Residential
49
Transportation
52
Commercial
25
Total Louisiana's exports to other states
4,259.37
RAW MAKE
9
Million Barrels
OTHER STATES
1,290.85
STATE
1,361.87
FOREIGN
102.13
OCS
3,329.78
Source: LA DNR Technology Assessment Division & DOE-EIA

Table 14

LOUISIANA STATE GAS PRODUCTION BY TAX RATES

AS PUBLISHED IN SEVERANCE TAX REPORTS[8]

(MCF at 15.025psia and 60 degrees Fahrenheit)

DATE	FULL RATE	INCAPABLE GAS WELLS RATE	OTHER RATES	TAXED VOLUME
1983	2,040,417,849	67,415,215	23,885,266	2,131,718,329
1984	1,830,549,223	66,037,859	20,750,463	1,917,337,545
1985	1,849,689,870	61,394,328	22,460,870	1,933,548,068
1986	1,710,600,175	56,471,054	22,020,986	1,789,092,195
1987	1,748,310,878	56,729,077	22,829,692	1,827,869,647
1988	1,577,841,418	56,316,278	20,374,445	1,654,532,141
1989	1,487,438,834	54,709,819	22,370,768	1,564,519,421
1990	1,529,057,929	54,419,642	31,800,386	1,615,277,957
1991	1,525,451,737	53,547,797	19,438,902	1,598,438,436
1992	1,492,986,396	52,500,178	35,820,609	1,581,307,183
1993	1,499,489,622	55,146,661	25,466,874	1,580,103,157
1994	1,463,723,027	46,017,071	13,839,450	1,523,579,548
1995	1,410,035,722	52,417,334	13,688,870	1,476,141,926
1996	1,334,980,887	53,491,942	13,759,192	1,402,232,021
1997	1,354,105,430	52,368,159	11,191,715	1,417,665,304
1998	1,343,182,922	57,663,413	9,951,387	1,410,797,722
1999	1,191,471,607	60,242,544	11,733,098	1,263,447,249
2000	1,151,493,116	57,308,865	10,617,631	1,219,419,612
2001	1,217,171,149	53,797,867	8,198,104	1,279,167,120
2002	1,068,512,639	75,724,074	7,748,258	1,151,984,971
January	86,855,195	7,235,387	806,219	94,896,801
February	82,498,023	6,190,906	818,256	89,507,185
March	85,174,857	3,296,866	462,285	88,934,008
April	89,497,012	6,225,810	763,931	96,486,753
May	92,091,456	6,540,083	399,060	99,030,599
June	99,628,689	6,798,894	604,974	107,032,557
July	95,655,981	7,415,330	845,475	103,916,786
August	92,409,588	7,772,319	545,952	100,727,859
September	91,382,610	7,015,917	636,077	99,034,604
October	92,524,601	8,243,886	612,743	101,381,230
November	93,334,724	6,566,391	671,518	100,572,633
December	90,430,688	7,358,125	797,063	98,585,876
2003 Total	**1,091,483,424**	**80,659,914**	**7,963,553**	**1,180,106,891**
January	23,727,235	2,622,094	286,534	26,635,863
February	119,613,921	9,647,791	584,740	129,846,452
March	119,681,323	8,551,633	641,307	128,874,263
April	76,900,773	517,876	68,694	77,487,343
May	117,407,100	8,540,169	570,493	126,517,762
June	99,896,390	8,011,122	545,356	108,452,868
July	119,426,527	9,855,054	587,110	129,868,691
August	80,116,517	5,276,324	668,418	86,061,259
September	66,402,063	5,648,595	309,892	72,360,550
October	126,933,103	11,692,332	627,435	139,252,870
November	122,823,666	7,723,130	475,402	131,022,198
December	N/A	N/A	N/A	N/A
2004 Total	**1,072,928,618**	**78,086,120**	**5,365,381**	**1,156,380,119**

e Estimated r Revised p Preliminary

See footnote in Appendix B.

Table 15

UNITED STATES OCS GAS PRODUCTION[12]

Natural Gas and Casinghead Gas
(MCF at 15.025 psia and 60 degrees Fahrenheit)*

YEAR	LOUISIANA	TEXAS	CALIFORNIA	TOTAL
1956	81,265,031	0	0	81,265,031
1957	80,947,656	4,703	0	80,952,359
1958	125,185,735	0	0	125,185,735
1959	203,089,002	0	0	203,089,002
1960	267,673,709	0	0	267,673,709
1961	312,031,003	0	0	312,031,003
1962	443,079,048	0	0	443,079,048
1963	553,272,142	0	0	553,272,142
1964	609,524,401	0	0	609,524,401
1965	632,914,005	0	0	632,914,005
1966	946,433,484	41,233,595	0	987,667,078
1967	1,065,915,553	97,990,476	0	1,163,906,029
1968	1,385,715,670	107,752,805	783,984	1,494,252,460
1969	1,786,760,423	124,601,568	4,750,708	1,916,112,699
1970	2,228,516,212	130,683,192	11,989,041	2,371,188,444
1971	2,582,297,962	124,857,371	15,363,786	2,722,519,119
1972	2,824,792,196	144,267,198	9,836,582	2,978,895,976
1973	2,995,634,220	145,754,588	7,143,485	3,148,532,293
1974	3,283,413,450	156,838,375	5,464,209	3,445,716,035
1975	3,266,745,456	120,166,178	3,874,047	3,390,785,681
1976	3,431,149,749	90,764,667	3,406,969	3,525,321,386
1977	3,575,898,616	85,236,246	3,225,368	3,664,360,230
1978	4,068,255,571	227,305,175	3,404,117	4,298,964,864
1979	4,076,873,552	501,546,069	2,810,535	4,581,230,155
1980	3,934,902,550	612,378,333	3,046,020	4,550,326,904
1981	4,025,867,929	715,937,640	12,515,654	4,754,321,224
1982	3,729,057,653	841,173,981	17,402,403	4,587,634,037
1983	3,111,576,348	834,112,318	15,709,672	3,961,398,338
1984	3,508,475,799	913,008,621	27,260,940	4,448,745,360
1985	3,055,687,773	818,533,627	48,198,926	3,922,420,326
1986	2,870,347,386	959,161,285	41,850,867	3,871,359,539
1987	3,117,669,167	1,180,839,487	40,181,438	4,338,690,093
1988	3,036,077,646	1,155,285,485	33,891,880	4,225,255,011
1989	2,947,545,132	1,142,237,197	28,013,874	4,117,796,204
1990	3,633,554,307	1,321,607,333	37,775,234	4,992,936,873
1991	3,225,373,562	1,161,671,524	39,828,917	4,426,874,003
1992	3,272,561,370	1,215,055,449	40,071,149	4,593,647,066
1993	3,320,312,261	1,007,755,289	41,255,853	4,444,381,437
1994	3,423,837,064	994,291,314	40,860,740	4,565,582,229
1995	3,564,677,663	890,682,224	35,710,325	4,600,143,070
1996	3,821,696,407	953,772,416	37,080,328	4,925,771,640
1997	3,837,040,050	946,381,458	39,922,549	4,977,314,878
1998	3,714,986,973	850,572,237	25,912,242	4,740,449,969
1999	3,908,741,837	798,140,396	36,529,861	4,894,344,157
2000	3,589,466,891	848,553,880	35,991,391	4,581,371,190
2001	3,781,696,656 p	797,357,901 p	40,456,343 p	4,619,510,899 p
2002	3,329,786,835 p	977,388,126 p	39,599,265 p	4,346,774,226 p
2003	3,297,931,696 p	N/A	N/A	4,070,904,000 p

e Estimated r Revised p Preliminary

* See Appendix D-4 for corresponding volumes at 14.73 psia and footnote in Appendix B.

Figure 7

LOUISIANA OIL PRODUCTION AND PRICE

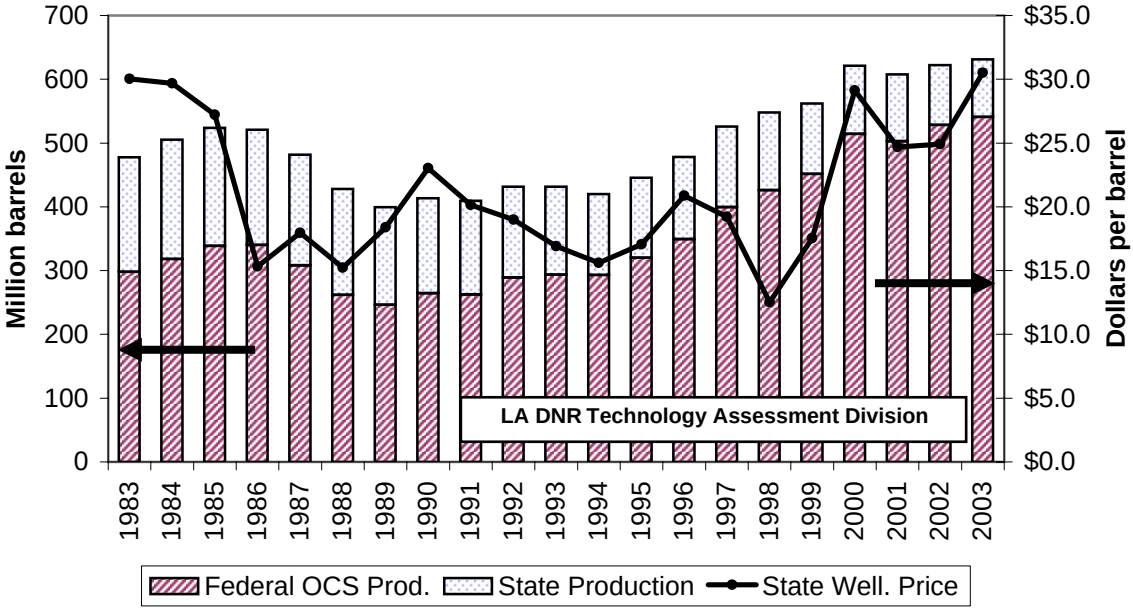


Figure 8

LOUISIANA GAS PRODUCTION AND PRICE

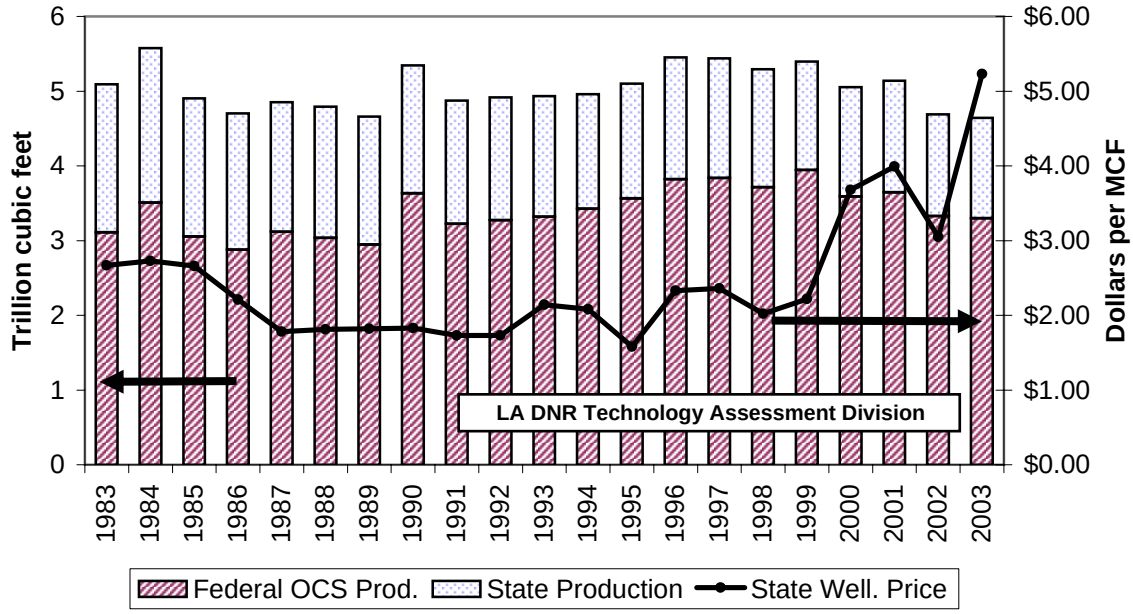


Table 16

UNITED STATES NATURAL GAS AND CASINGHEAD GAS PRODUCTION[3]

(Billion Cubic Feet (BCF) at 15.025 psia and 60 degrees Fahrenheit)*

DATE	GROSS	WET AFTER LEASE SEPARATION	MARKETED	DRY	GROSS IMPORTS
1983	18,293	16,646	16,553	15,778	900
1984	19,869	18,051	17,945	17,124	827
1985	19,222	17,024	16,931	16,131	931
1986	18,755	16,623	16,528	15,744	736
1987	19,745	17,212	17,091	16,294	973
1988	20,587	17,706	17,567	16,767	1,268
1989	20,661	17,879	17,740	16,971	1,354
1990	21,100	18,376	18,229	17,460	1,502
1991	21,322	18,336	18,169	17,351	1,738
1992	21,698	18,509	18,344	17,490	2,096
1993	22,279	18,832	18,609	17,740	2,304
1994	23,118	19,547	19,323	18,451	2,572
1995	23,277	19,402	19,123	18,233	2,785
1996	23,640	19,690	19,423	18,484	2,880
1997	23,737	19,727	19,475	18,531	2,935
1998	23,635	19,670	19,569	18,650	3,090
1999	23,355	19,524	19,416	18,462	3,515
2000	23,699	19,890	19,801	18,805	3,710
2001	24,020 r	20,261 r	20,166 r	19,231 r	3,899
2002	23,506 r	19,627 r	19,530 r	18,591 r	3,937 r
January	2,054 r	1,695 r	1,687 r	1,606 r	358 r
February	1,868 r	1,535 r	1,527 r	1,454 r	308 r
March	2,073 r	1,718 r	1,709 r	1,627 r	323 r
April	1,960 r	1,629 r	1,621 r	1,543 r	311 r
May	2,002 r	1,676 r	1,668 r	1,588 r	321 r
June	1,934 r	1,612 r	1,604 r	1,527 r	304 r
July	1,974 r	1,661 r	1,654 r	1,574 r	339 r
August	1,987	1,659	1,651	1,572	330
September	1,942	1,622	1,614	1,537	319
October	2,004	1,661	1,653	1,574	330
November	1,938	1,598	1,591	1,514	316
December	2,031	1,664	1,657	1,577	360
2003 Total	**23,767**	**19,730**	**19,637**	**18,694**	**3,918**
January	2,054	1,684	1,676	1,595	365
February	1,911	1,564	1,557	1,482	339
March	2,049	1,673	1,665	1,585	341
April	1,960	1,609	1,602	1,525	312
May	1,988	1,632	1,624	1,546	314
June	1,855	1,548	1,540	1,466	318
July	N/A	N/A	N/A	N/A	330
August	N/A	N/A	N/A	N/A	330
September	N/A	N/A	N/A	N/A	N/A
October	N/A	N/A	N/A	N/A	N/A
November	N/A	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A
2004 Total	**11,817**	**9,709**	**9,663**	**9,199**	**1,989**

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* See Appendix D-5 for corresponding volumes at 14.73 psia and footnote in Appendix B.

TABLE 17

LOUISIANA AVERAGE CRUDE OIL PRICES

(Dollars per Barrel)

	SOUTH LOUISIANA SWEET		ALL GRADES AT WELLHEAD			
	Spot	Refinery		OCS	Severance	State
DATE	Market[10]	Posted	State[6]	Gulf[6]	Tax[8]	Royalty
1983	30.63	30.63	30.02	29.77	30.38	28.64
1984	29.64	30.04	29.67	29.36	29.98	29.44
1985	28.42	27.86	27.22	27.33	27.18	27.40
1986	14.72	15.71	15.32	15.27	17.23	15.78
1987	19.38	18.52	17.97	17.54	17.55	17.85
1988	16.13	15.75	15.22	14.71	16.38	14.67
1989	19.75	18.97	18.39	17.83	17.87	17.92
1990	25.11	23.35	23.04	22.40	22.54	22.76
1991	21.70	20.60	20.15	19.40	21.13	19.90
1992	20.77	19.72	19.01	18.38	19.31	19.10
1993	18.56	17.27	16.72	16.17	17.39	16.84
1994	17.25	15.84	15.61	14.72	15.46	15.52
1995	18.60	17.16	17.06	16.16	16.98	17.06
1996	22.32	20.77	20.87	20.00	20.56	21.24
1997	20.69	18.90	19.23	18.63	19.80	19.22
1998	14.21	12.17	12.52	12.03	13.47	12.31
1999	19.00	16.73	17.55	16.46	16.09	17.22
2000	30.29	27.89	29.14	27.57	28.10	28.70
2001	25.84	23.23	24.70	23.36	26.23	23.22 r
2002	26.18	23.14	24.92	23.36	25.17	24.44 r
January	33.57	29.59	31.58	28.32	30.24	33.33 r
February	35.81	32.49 r	35.41	32.46	32.77	36.99 r
March	33.46	30.02 r	32.49	31.72	33.28	32.56 r
April	27.92	24.94 r	29.43	28.00	33.82	28.89 r
May	28.23	25.34 r	27.84	26.28	29.98	28.21 r
June	30.26	27.23 r	29.54	27.45	27.20	28.78 r
July	30.44	27.35 r	30.32	28.45	28.45	28.52 r
August	31.57	28.27 r	30.60	29.00	30.24	28.39 r
September	28.55	25.03 r	27.49	26.80	30.25	29.70 r
October	30.88	27.33 r	29.41	27.40	29.81	29.19 r
November	31.13	27.91 r	30.28	28.97	27.86	29.99 r
December	32.59	29.04 r	31.60	29.46	29.45	27.45 r
2003 Total	**31.20**	**27.88 r**	**30.50**	**28.69**	**30.28**	**30.17 r**
January	35.09	30.72	33.29	31.44	30.16	28.50
February	34.46	31.27	34.30	32.56	30.00	31.42
March	36.94	33.26	36.25	33.01	32.12	34.26
April	36.22	33.21	36.27	34.20	34.06	35.23
May	40.03	36.52	39.10	35.02	35.94	36.93
June	37.81	34.55	37.03	35.75	35.36	35.95
July	40.95	37.15	39.17	36.43	37.09	37.97
August	45.03	41.44	43.38	39.39	39.51	41.77
September	46.34	42.02	44.93	40.81	41.24	43.64
October	53.67	49.54	51.77	45.06	46.06	51.95
November	48.14	45.36	N/A	N/A	50.25	46.75
December	42.97	41.43	N/A	N/A	N/A	N/A
2004 Total	**41.47**	**38.04**	**39.55**	**36.37**	**37.43**	**38.58**

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See footnote in Appendix B.

Figure 9

CRUDE OIL AVERAGE PRICES

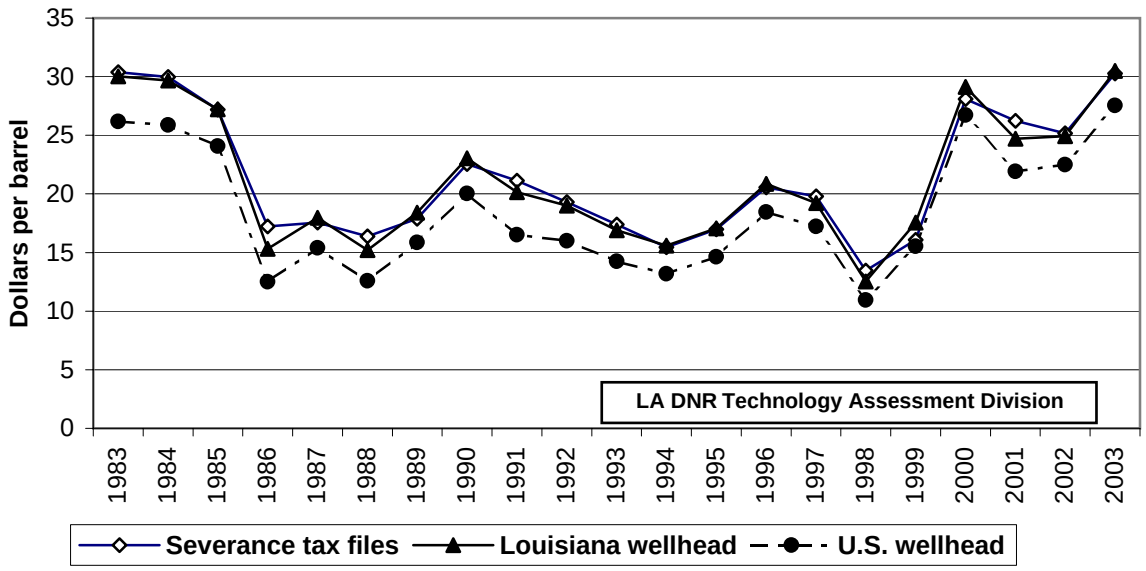

Figure 10

NATURAL GAS AVERAGE PRICES

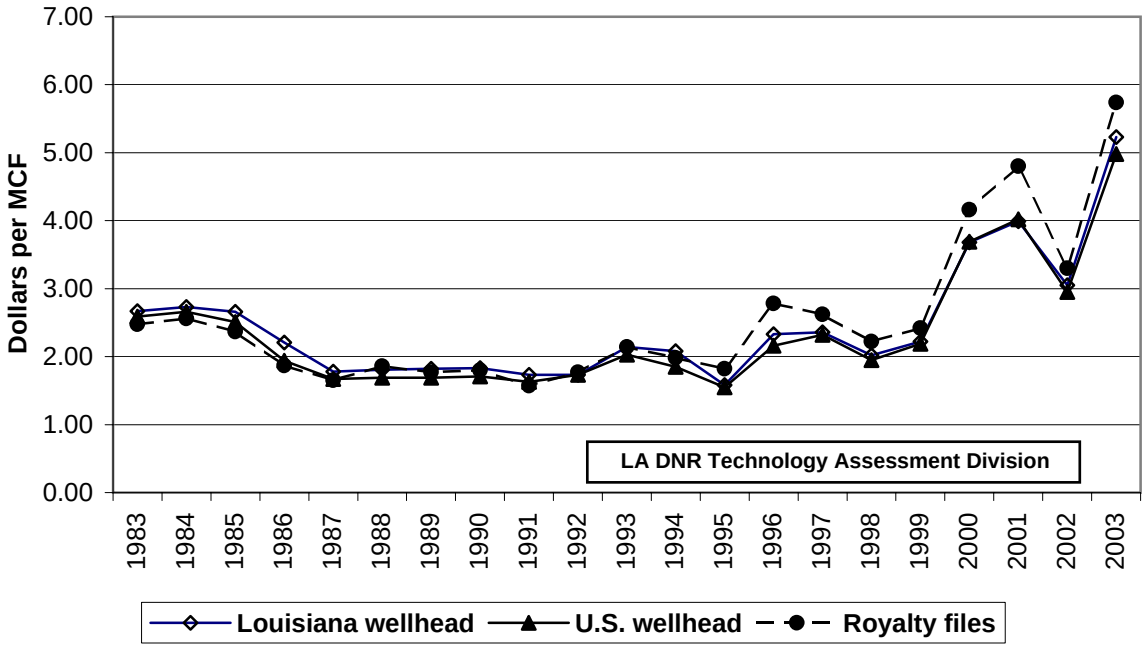

TABLE 18

UNITED STATES AVERAGE CRUDE OIL PRICES [2]

(Dollars per Barrel)

DATE	REFINERY ACQUISITION		DOMESTIC WELLHEAD	IMPORTS LANDED	IMPORTS FOB	IMPORTS OPEC FOB
	Domestic Costs	Imports Costs				
1983	28.87	29.30	26.19	28.93	27.81	28.46
1984	28.53	28.88	25.88	28.54	27.60	27.79
1985	26.66	26.99	24.09	26.67	25.84	25.67
1986	14.82	14.00	12.51	13.49	12.52	12.21
1987	17.76	18.13	15.40	17.65	16.69	16.43
1988	14.74	14.56	12.58	14.08	13.25	13.43
1989	17.87	18.08	15.86	17.68	16.89	17.06
1990	22.59	21.76	20.03	21.13	20.37	20.40
1991	19.35	18.74	16.53	18.02	16.91	17.01
1992	18.62	18.12	16.00	17.65	16.66	16.76
1993	16.66	16.17	14.24	15.75	14.72	14.72
1994	15.64	15.41	13.19	15.07	14.13	13.94
1995	17.32	17.15	14.62	16.77	15.69	15.35
1996	20.81	20.60	18.46	20.27	19.24	18.87
1997	19.65	18.55	17.23	18.14	16.98	16.33
1998	13.15	12.35	10.94	11.86	10.75	10.17
1999	17.64	17.27	15.53	17.38	16.48	16.01
2000	29.08	27.68	26.72	27.54	26.26	25.55
2001	24.34	21.99	21.90	21.77	20.45	19.56
2002	24.56	23.63	22.50	23.82	22.57	22.19
January	30.47	30.32	28.35	30.34	29.16	29.08
February	33.98	32.42	31.85	31.33	29.78	28.65
March	32.68	29.31	30.09	28.86	26.32	25.39
April	28.54	24.52	25.46	25.21	22.75	21.84
May	26.75	25.15	24.96	25.39 r	23.49	22.80
June	29.07	27.22	26.83	27.36	25.35	24.90
July	29.54	27.95	27.53	27.73	26.11	25.63
August	30.28	28.50	27.94	28.01	26.87	26.33
September	27.75	25.66	25.23	25.91 r	24.10 r	23.79 r
October	28.43	27.32	26.52 r	27.37 r	26.06 r	25.84 r
November	29.55 r	27.47 r	27.21 r	27.68 r	26.03 r	26.09 r
December	30.27 r	28.63 r	28.54 r	28.79 r	26.75 r	27.02 r
2003 Total	**29.78 r**	**27.87 r**	**27.54 r**	**27.83 r**	**26.06 r**	**25.61 r**
January	32.01	30.24	30.35	30.76	28.16	27.88
February	33.19	30.77	31.21	31.14	28.50	28.70
March	34.53	32.25	32.86	32.30	30.02	30.08
April	35.25	32.42	33.23	32.88	30.98	31.54
May	37.23	35.82	36.07	35.09	33.81	34.50
June	36.57	33.58	34.53	34.37	32.20	32.46
July	37.90	35.98	36.54	36.82	34.92	35.28
August	41.54	39.57	40.10	39.58	37.33	37.57
September	42.76	40.51	40.63	41.10	38.86	40.69
October	47.24	45.45	46.26	44.62	45.52	41.86
November	46.73	42.30	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A	N/A
2004 Total	**38.63**	**36.26**	**36.18**	**35.87**	**34.03**	**34.06**

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See footnote in Appendix B.

Table 19

LOUISIANA NATURAL GAS WELLHEAD PRICES

(Dollars/Thousand Cubic Feet)

DATE	MMS OCS[12]	DOE State Wells[3]	DNR State Royalty	Henry Hub Settled NYMEX	SPOT MARKET[5] Low	SPOT MARKET[5] High	SPOT MARKET[5] Average
1983	2.72	2.67	2.48	N/A	N/A	N/A	N/A
1984	2.70	2.73	2.56	N/A	N/A	N/A	N/A
1985	2.72	2.66	2.37	N/A	2.13	3.07	2.61
1986	2.26	2.21	1.87	N/A	1.46	2.34	1.76
1987	1.82	1.78	1.65	N/A	1.40	1.82	1.55
1988	1.84	1.81	1.86	N/A	1.40	2.29	1.79
1989	1.86	1.82	1.77	N/A	1.40	2.29	1.76
1990	1.87	1.83	1.80	N/A	1.35	2.60	1.77
1991	1.77	1.73	1.57	N/A	1.43	1.56	1.50
1992	1.77	1.73	1.77	N/A	1.74	1.85	1.80
1993	2.18	2.14	2.14	2.19	2.08	2.21	2.15
1994	2.10	2.08	1.98	1.97	1.86	1.95	1.91
1995	1.61	1.58	1.82	1.70	1.62	1.68	1.65
1996	2.37	2.33	2.78	2.69	2.47	2.69	2.60
1997	2.63	2.36	2.62	2.69	2.54	2.67	2.60
1998	2.36	2.02	2.22	2.19	2.08	2.18	2.14
1999	2.18	2.22	2.42	2.36	2.25	2.36	2.31
2000	3.59	3.68	4.16	4.04	3.92	4.03	3.98
2001	4.05	3.99	4.80	4.44	4.27	4.47	4.38
2002	2.98	3.05	3.30 r	3.39	3.29	3.43	3.37
January	N/A	N/A	5.23	5.19	5.36	5.65	5.54
February	N/A	N/A	6.06	5.89	6.16	7.91	7.16
March	N/A	N/A	7.95	9.50	6.85	8.64	7.65
April	N/A	N/A	5.30	5.35	5.27	5.49	5.40
May	N/A	N/A	5.66	5.33	4.82	6.27	5.97
June	N/A	N/A	6.50	6.18	5.86	6.07	5.96
July	N/A	N/A	6.99	5.50	5.11	5.35	5.22
August	N/A	N/A	4.93	4.88	5.08	5.21	5.15
September	N/A	N/A	5.21	5.12	4.69	4.93	4.78
October	N/A	N/A	4.65	4.72	4.74	4.84	4.80
November	N/A	N/A	4.66	4.64	4.54	4.66	4.62
December	N/A	N/A	5.73	5.05	5.36	5.97	5.63
2003 Total	**5.12**	**5.23**	**5.74**	**5.61**	**5.32**	**5.92**	**5.66**
January	N/A	N/A	6.37	6.40	6.22	6.46	6.31
February	N/A	N/A	6.22	6.01	5.51	5.74	5.59
March	N/A	N/A	5.92	5.36	5.45	5.60	5.53
April	N/A	N/A	5.66	5.58	5.73	6.00	5.89
May	N/A	N/A	6.29	6.17	6.17	6.42	6.34
June	N/A	N/A	6.70	6.95	6.53	6.68	6.58
July	N/A	N/A	6.31	6.39	6.12	6.27	6.18
August	N/A	N/A	5.95	6.29	5.69	5.87	5.77
September	N/A	N/A	5.12	5.40	5.03	5.19	5.10
October	N/A	N/A	6.33	5.95	5.89	6.16	6.03
November	N/A	N/A	N/A	7.93	6.42	6.72	6.58
December	N/A	N/A	N/A	8.30	6.94	7.12	7.03
2004 Total	**N/A**	**N/A**	**6.09**	**6.39**	**5.98**	**6.18**	**6.08**

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See footnote in Appendix B.

Table 20

LOUISIANA AVERAGE NATURAL GAS PRICES DELIVERED TO CONSUMER[3]

(Dollars/Thousand Cubic Feet)

DATE	CITY GATES	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	UTILITY
1983	3.59 e	6.12	5.71	3.13	3.30
1984	3.78	5.96	5.54	3.18	3.18
1985	3.55	5.67	5.28	3.03	2.86
1986	2.95	5.77	5.25	1.91	1.94
1987	2.38	5.56	4.97	1.80	1.67
1988	2.93	5.74	5.14	1.99	1.70
1989	3.01	5.97	5.19	1.97	1.78
1990	2.97	6.09	5.26	2.00	1.73
1991	2.56	6.24	4.91	1.74	1.63
1992	2.48	6.19	4.85	2.00	1.93
1993	2.75	6.68	5.41	2.31	2.49
1994	2.52	6.78	5.39	2.18	2.24
1995	2.17	6.59	5.15	1.82	1.92
1996	3.03	7.55	6.18	2.83	3.07
1997	2.94	7.60	6.12	2.87	2.88
1998	2.32	7.51	5.72	2.43	2.40
1999	2.73	7.55	5.83	2.51	2.55
2000	4.50	9.20	7.52	4.01	4.56
2001	5.11	9.99	7.85	5.22	4.56
2002	4.07 r	9.06 r	6.82 r	3.68 r	3.71
January	5.51	8.41 r	8.08 r	5.17 r	5.90
February	N/A	8.79 r	8.30 r	6.00 r	7.53
March	N/A	10.40 r	9.82 r	8.03 r	9.04
April	4.49	10.98 r	8.44 r	5.38 r	5.90
May	5.68	12.39 r	8.72 r	5.36 r	6.07
June	6.25	13.84 r	9.22 r	6.10 r	6.55
July	5.69	12.98 r	8.94 r	5.54 r	5.85
August	5.11	13.29 r	8.54 r	4.88 r	5.44
September	5.29 r	13.30 r	8.63 r	5.11 r	5.44
October	5.11 r	12.83 r	8.82 r	5.01 r	5.29
November	5.36 r	13.08 r	9.56 r	4.95 r	4.98
December	5.84 r	10.02 r	9.38 r	5.50 r	w
2003 Total	**5.43** r	**11.69** r	**8.87** r	**5.59** r	**6.18** r
January	7.07	9.62	9.31	6.58	w
February	6.03	9.36	9.15	5.96	6.24
March	5.77	9.31	8.79	5.58	5.99
April	5.87	10.59	8.50	5.79	w
May	6.39	12.79	9.27	6.29	6.89
June	6.92	14.15	9.96	6.86	6.97
July	6.32	14.27	9.98	6.31	6.55
August	6.19	14.91	10.41	6.40	6.18
September	5.21	13.61	9.29	5.57	N/A
October	6.16	14.35	9.61	6.42	N/A
November	N/A	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A
2004 Total	**6.19** e	**12.30** e	**9.43** e	**6.18** e	**6.47** e

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See footnote in Appendix B.

Table 21

UNITED STATES AVERAGE NATURAL GAS PRICES

(Dollars/Thousand Cubic Feet)

DATE	WELLHEAD[3]	SPOT MARKET[5]	FOREIGN IMPORTS[3]	CITY GATES[3]	DELIVERED TO RESIDENTIAL[3]
1983	2.59	N/A	4.51	4.04	6.06
1984	2.66	N/A	4.08	3.89	6.12
1985	2.51	2.49	3.19	3.75	6.12
1986	1.94	1.68	2.53	3.22	5.83
1987	1.67	1.48	2.17	2.87	5.54
1988	1.69	1.69	2.00	2.92	5.47
1989	1.69	1.64	2.04	3.01	5.64
1990	1.71	1.67	1.94	3.03	5.80
1991	1.63	1.45	1.82	2.90	6.22
1992	1.73	1.75	1.85	3.01	6.28
1993	2.03	2.10	2.03	3.21	6.67
1994	1.85	1.84	1.87	3.07	6.89
1995	1.55	1.56	1.49	2.78	6.58
1996	2.16	2.39	1.96	3.27	6.97
1997	2.32	2.54	2.15	3.66	6.94
1998	1.95	2.11	1.97	3.07	7.45
1999	2.19	2.28	2.23	3.10	7.34
2000	3.69	3.94	3.88	4.62	8.51
2001	4.02	4.34	4.36	5.24	9.91
2002	2.95	3.26	3.14	4.10	8.60
January	4.47	5.30	4.89 r	5.31 r	8.07
February	5.45	6.99	5.71 r	5.86 r	8.44 r
March	6.69	7.34	7.61 r	7.60 r	9.61 r
April	4.71	5.14	5.00 r	5.61	10.05 r
May	4.97	5.64	5.03 r	5.67 r	10.63 r
June	5.35 r	5.82	5.53 r	6.40	11.91 r
July	4.91 r	5.10	5.11 r	5.82 r	12.53 r
August	4.72 r	5.10	4.54 r	5.50 r	12.74 r
September	4.58 r	4.68	4.67 r	5.58 r	12.18 r
October	4.43 r	4.71	4.48 r	5.30 r	10.54 r
November	4.34 r	4.57	4.51 r	5.55 r	9.68 r
December	5.08 r	5.44	5.08 r	5.90 r	9.35 r
2003 Total	**4.98 r**	**5.48**	**5.18 r**	**5.84 r**	**10.48 r**
January	4.47	5.30	4.87	5.26	8.07
February	5.45	6.99	5.69	5.88	8.42
March	6.69	7.34	7.55	7.59	9.71
April	4.71	5.14	4.99	5.61	10.04
May	4.97	5.64	5.01	5.66	10.56
June	5.35	5.82	5.42	6.40	11.78
July	4.91	5.10	N/A	5.81	12.54
August	4.72	5.10	N/A	5.42	12.76
September	N/A	4.68	N/A	N/A	N/A
October	N/A	4.71	N/A	N/A	N/A
November	N/A	4.57	N/A	N/A	N/A
December	N/A	5.44	N/A	N/A	N/A
2004 Total	**5.16**	**5.48**	**5.59**	**5.95**	**10.49**

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See footnote in Appendix B.

Table 22

LOUISIANA STATE OIL AND GAS DRILLING PERMITS ISSUED BY TYPE

Excluding OCS

DATE	DEVELOPMENTAL	+	WILDCATS	=	TOTAL	=	OFFSHORE	+	ONSHORE
1983	4,852		642		5,494		201		5,293
1984	6,929		702		7,631		231		7,400
1985	4,811		599		5,410		165		5,245
1986	1,984		298		2,282		84		2,198
1987	2,148		284		2,432		73		2,359
1988	1,601		249		1,850		94		1,756
1989	1,486		204		1,690		75		1,615
1990	1,526		181		1,707		85		1,622
1991	1,209		100		1,309		77		1,232
1992	1,044		92		1,136		59		1,077
1993	1,040		109		1,149		76		1,073
1994	1,015		98		1,113		74		1,039
1995	979		86		1,065		68		997
1996	1,248		133		1,381		121		1,260
1997	1,424		138		1,562		85		1,477
1998	1,171		115		1,286		96		1,190
1999	908		109		1,017		79		938
2000	1,363		90		1,453		151		1,302
2001	1,277		88		1,365		96		1,269
2002	902		123		1,025		90		935
January	92		11		103		6		97
February	84		5		89		14		75
March	80		7		87		8		79
April	125		5		130		4		126
May	94		10		104		7		97
June	95		7		102		4		98
July	107		6		113		9		104
August	104		20		124		7		117
September	100		6		106		5		101
October	101		11		112		8		104
November	80		9		89		5		84
December	90		15		105		6		99
2003 Total	**1,152**		**112**		**1,264**		**83**		**1,181**
January	98		11		109		4		105
February	131		7		138		4		134
March	133		8		141		9		132
April	131		14		145		4		141
May	123		8		131		2		129
June	155		6		161		12		149
July	115		3		118		4		114
August	148		4		152		1		151
September	116		8		124		2		122
October	134		20		154		5		149
November	121		5		126		5		121
December	130		4		134		5		129
2004 Total	**1,535**		**98**		**1,633**		**57**		**1,576**

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Figure 11

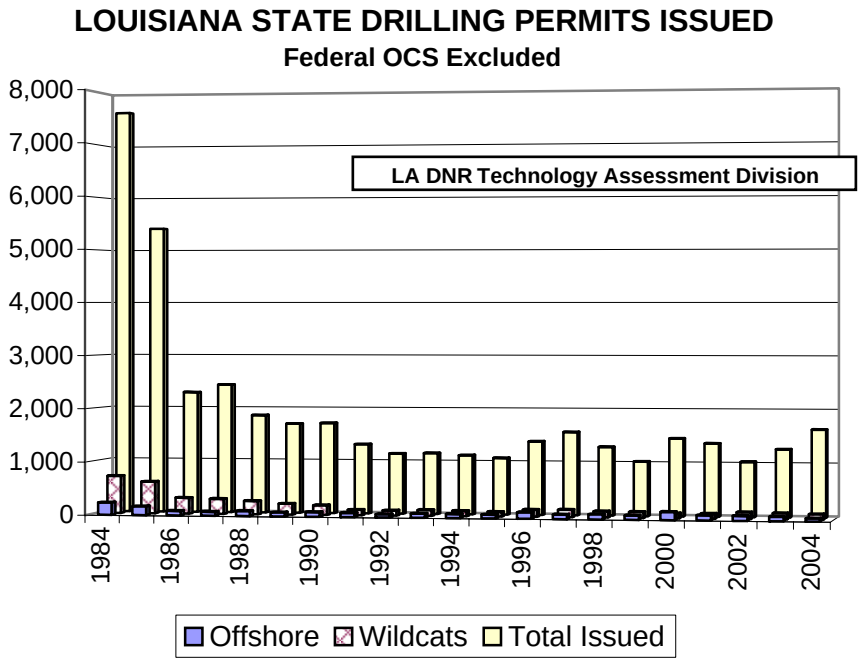

Figure 12

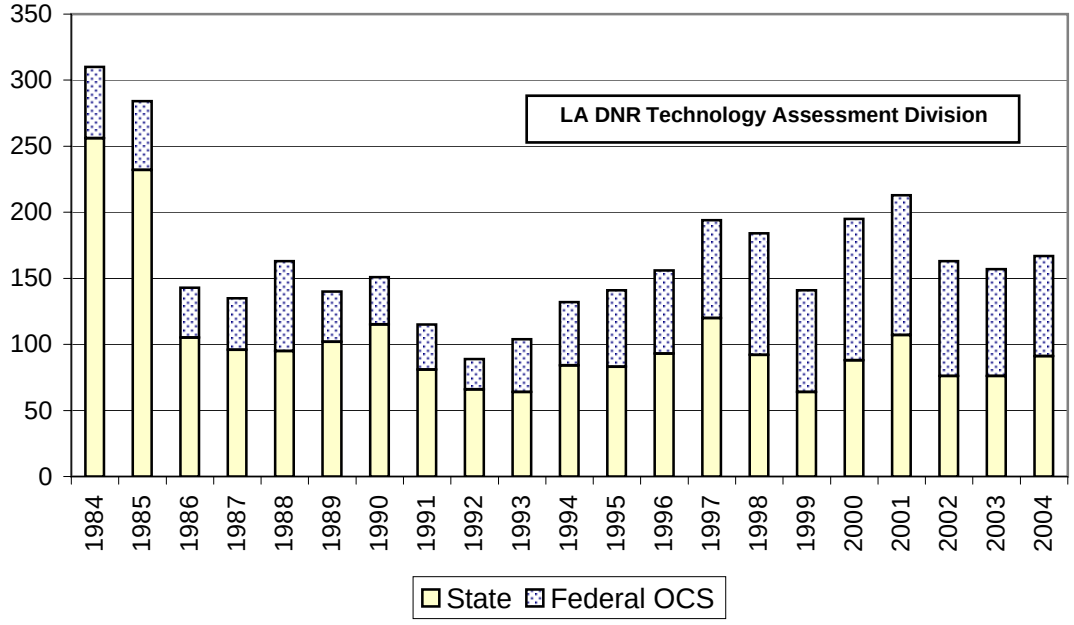

Table 23

LOUISIANA AVERAGE RIGS RUNNING

DATE	State North[4]	State South Inland Water[4]	State South Inland Land[4]	State Offshore	Total State	Federal Offshore	Total Offshore[4] (State+OCS)	LA[4] TOTAL
1983	29	47	82	51	210	73	124	283
1984	30	51	96	78	256	54	132	310
1985	25	44	86	78	232	52	130	283
1986	12	20	42	31	105	38	69	143
1987	11	23	36	26	96	39	65	135
1988	14	27	35	20	95	68	88	163
1989	16	17	35	34	102	38	72	140
1990	19	20	36	40	115	36	76	151
1991	11	16	31	23	81	34	57	115
1992	9	13	27	16	66	23	39	88
1993	11	12	22	19	64	40	59	104
1994	14	16	25	29	84	48	78	132
1995	16	15	28	23	82	59	81	141
1996	19	19	31	25	93	63	88	156
1997	21	23	48	28	120	74	102	194
1998	19	21	38	14	93	92	106	184
1999	16	16	21	12	65	76	88	141
2000	24	16	37	11	87	107	118	195
2001	30	20	44	13	107	106	119	213
2002	23	16	32	5	76	87	92	163
January	22	19	31	5	77	85	90	162
February	21	17	25	5	68	86	91	153
March	23	17	30	5	75	79	84	154
April	25	15	33	4	77	78	82	155
May	26	12	31	6	75	82	88	157
June	29	12	30	5	76	79	84	155
July	33	13	30	4	80	78	82	158
August	30	11	29	2	72	81	83	153
September	29	14	29	2	74	81	83	155
October	37	14	29	2	82	81	83	162
November	34	12	31	2	79	81	83	160
December	35	17	26	2	80	81	83	161
2003 Total	**29**	**14**	**29**	**4**	**76**	**81**	**85**	**157**
January	35	17	24	3	79	78	81	157
February	38	17	28	5	86	79	84	167
March	36	16	34	4	90	77	81	167
April	40	18	31	2	91	78	80	169
May	36	20	28	2	86	80	82	166
June	38	19	28	3	88	80	83	168
July	36	17	32	3	88	79	82	167
August	40	18	33	2	93	74	76	167
September	41	17	34	3	95	68	71	163
October	46	18	33	3	100	70	73	170
November	45	22	30	4	101	72	76	173
December	40	20	28	4	92	77	81	169
2004 Total	**39**	**18**	**30**	**3**	**91**	**76**	**79**	**167**

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Table 24

LOUISIANA STATE PRODUCING CRUDE OIL WELLS

Excluding OCS

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1958	10,950	9,541	N/A	20,491
1959	11,380	10,454	N/A	21,834
1960	11,501	11,173	N/A	22,674
1961	11,790	12,202	N/A	23,993
1962	12,192	13,344	N/A	25,536
1963	12,833	14,144	N/A	26,977
1964	13,901	13,661	1,265	28,826
1965	14,505	11,558	3,938	30,001
1966	14,419	12,165	4,330	30,915
1967	14,191	12,183	4,677	31,051
1968	13,856	11,698	4,767	30,321
1969	13,670	11,131	4,954	29,756
1970	13,166	10,363	1,179	24,707
1971	12,889	9,626	1,107	23,623
1972	12,475	8,912	1,048	22,436
1973	11,698	8,249	1,025	20,972
1974	11,984	8,262	985	21,230
1975	12,259	8,094	936	21,288
1976	12,393	7,730	1,073	21,196
1977	12,915	7,444	1,067	21,425
1978	13,019	7,219	1,086	21,324
1979	12,961	6,859	1,078	20,898
1980	13,981	6,832	1,073	21,885
1981	15,084	6,777	1,105	22,966
1982	15,540	6,608	1,112	23,259
1983	16,299	6,374	1,037	23,710
1984	17,544	6,300	1,038	24,882
1985	18,794	6,223	1,014	26,031
1986	19,346	6,061	1,001	26,408
1987	18,630	5,768	945	25,343
1988	17,953	5,698	964	24,615
1989	16,849	5,474	927	23,250
1990	17,369	5,215	906	23,490
1991	17,731	5,143	868	23,742
1992	17,449	5,155	842	23,446
1993	16,810	5,015	814	22,640
1994	15,904	4,682	805	21,392
1995	15,260	4,451	769	20,479
1996	15,148	4,295	719	20,163
1997	14,573	4,165	619	20,358
1998	13,975	3,962	546	18,484
1999	13,747	3,971	546	18,264
2000	14,450 [e]	4,187 [e]	575 [e]	19,211
2001	14,368 [e]	4,168 [e]	703 [e]	19,239
2002	14,242 [e]	4,208 [e]	687 [e]	19,137
2003	15,062 [e]	4,305 [e]	640 [e]	20,006
2004	14,880 [e]	4,244 [e]	600 [e]	19,724

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Figure 13

LOUISIANA WELL COMPLETIONS BY TYPE

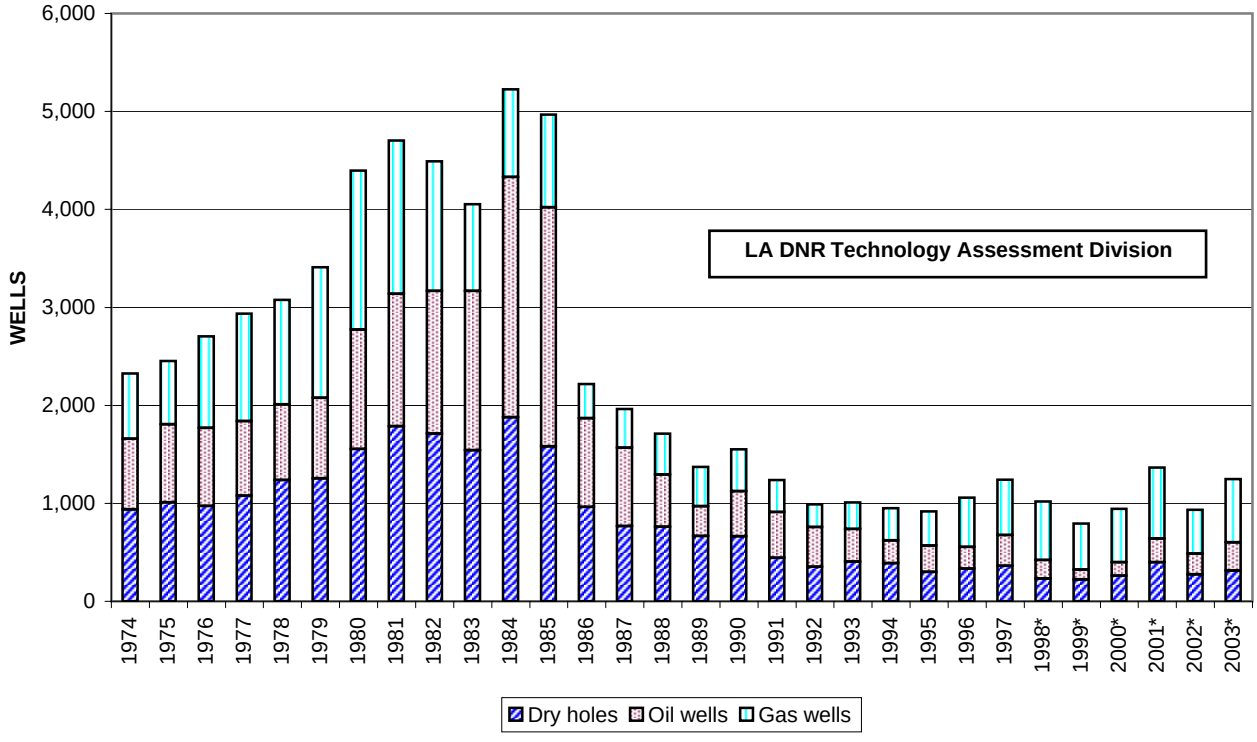

Table 25

LOUISIANA STATE PRODUCING NATURAL GAS WELLS

Excluding OCS

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1958	3,269	1,935	0	5,204
1959	3,398	2,306	0	5,704
1960	3,449	2,714	0	6,163
1961	3,611	2,996	0	6,607
1962	3,843	3,304	0	7,148
1963	4,103	3,545	0	7,648
1964	4,336	3,502	187	8,025
1965	4,477	3,227	618	8,321
1966	4,566	3,381	748	8,694
1967	4,548	3,448	882	8,878
1968	4,563	3,582	1,048	9,194
1969	4,558	3,451	1,297	9,306
1970	4,511	3,438	311	8,260
1971	4,449	3,389	327	8,164
1972	4,664	3,397	316	8,378
1973	4,927	3,449	332	8,707
1974	5,159	3,458	313	8,929
1975	5,373	3,331	308	9,012
1976	5,851	3,289	362	9,502
1977	6,343	3,331	449	10,123
1978	6,915	3,253	472	10,640
1979	7,372	3,214	514	11,100
1980	8,360	3,277	551	12,188
1981	9,479	3,226	557	13,262
1982	10,154	3,136	564	13,855
1983	10,502	3,065	549	14,115
1984	10,812	2,955	532	14,299
1985	11,026	2,887	511	14,424
1986	11,049	2,730	436	14,216
1987	10,726	2,635	413	13,774
1988	10,813	2,539	445	13,796
1989	10,861	2,474	501	13,836
1990	10,802	2,407	512	13,721
1991	10,702	2,261	496	13,459
1992	10,498	2,149	496	13,143
1993	10,506	2,192	490	13,189
1994	10,596	2,260	473	13,329
1995	10,452	2,200	335	12,987
1996	10,376	2,148	274	12,799
1997	10,446	2,149	296	12,891
1998	10,579	1,995	259	12,833
1999	10,581	2,010	262	12,853
2000	11,111 [e]	2,134 [e]	299 [e]	13,545
2001	10,569 [e]	2,194 [e]	322 [e]	13,085
2002	10,972 [e]	2,132 [e]	292 [e]	13,397
2003	11,450 [e r]	2,444 [e r]	462 [e r]	14,356 [r]
2004	10,932 [e]	2,338 [e]	400 [e]	13,670

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Table 26

LOUISIANA STATE WELL COMPLETION BY TYPE AND BY REGION
Excluding OCS

	YEAR	OFFSHORE	SOUTH	NORTH	TOTAL
	1988	11	211	312	534
	1989	7	126	170	303
	1990	9	164	288	461
	1991	22	178	266	466
C	1992	19	163	222	404
R O	1993	24	136	173	333
U I	1994	13	103	117	233
D L	1995	31	100	137	268
E	1996	34	67	122	223
	1997	39	168	106	313
	1998	24 e	100 e	64 e	188
	1999	4 e	35 e	60 e	99
	2000	10 e	51 e	77 e	138
	2001	11 e	92 e	137 e	240
	2002	10 e	86 e	117 e	213
	2003	38 e	87 e	163 e	288
	1988	11	149	258	418
	1989	17	132	254	403
	1990	11	157	258	426
	1991	9	126	192	327
N	1992	8	111	113	232
A	1993	6	89	176	271
T G	1994	9	141	180	330
U A	1995	8	126	216	350
R S	1996	22	154	325	501
A	1997	22	160	383	565
L	1998	23 e	170 e	407 e	600
	1999	17 e	169 e	287 e	473
	2000	21 e	166 e	359 e	546
	2001	20 e	279 e	426 e	725
	2002	15 e	215 e	219 e	449
	2003	21 e	198 e	427 e	646
	1988	17	325	418	760
	1989	13	281	373	667
	1990	15	283	366	664
	1991	11	205	228	444
	1992	5	158	190	353
D H	1993	4	168	234	406
R O	1994	12	141	236	389
Y L	1995	8	138	155	301
E	1996	12	151	170	333
	1997	9	165	188	362
	1998	7 e	104 e	121 e	232 e
	1999	8 e	80 e	135 e	223 e
	2000	9 e	98 e	154 e	261 e
	2001	10 e	184 e	205 e	399 e
	2002	4 e	122 e	147 e	273 e
	2003	12 e	125 e	177 e	314 e

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Table 27

LOUISIANA STATE MINERAL BONUS, RENTAL AND ROYALTY OVERRIDE REVENUES, Excluding OCS

(Million Dollars)

DATE	BONUSES	OVERRIDE ROYALTY	RENTALS	TOTAL
1983	53.03	0.67	27.73	81.43
1984	67.98	0.80	21.21	89.99
1985	32.08	0.90	20.86	53.84
1986	15.89	0.50	12.25	28.64
1987	26.82	0.39	6.70	33.90
1988	17.65	0.29	9.28	27.22
1989	11.59	0.29	8.34	20.21
1990	19.02	0.32	6.76	26.10
1991	9.82	0.32	8.71	18.85
1992	4.26	0.32	6.97	11.55
1993	13.29	0.20	4.20	17.68
1994	15.31	0.19	6.15	21.65
1995	31.96	0.69	9.47	42.12
1996	39.63	-0.27	18.40	57.76
1997	38.27	0.84	25.00	64.11
1998	42.27	0.69	25.86	68.82
1999	14.17	0.45	20.27	34.89
2000	21.12	1.13	14.16	36.41
2001	29.70	1.89	13.75	45.34
2002	24.74	2.29	14.26	41.28
January	1.55	0.17	1.32	3.04
February	0.44	0.09	1.61	2.13
March	2.22	0.03	1.62	3.88
April	2.07	0.11	1.80	3.97
May	0.62	0.24	0.41	1.27
June	2.18	0.25	1.12	3.55
July	1.46	0.43	0.74	2.63
August	0.78	-0.98	0.99	0.79
September	1.61	1.74	0.59	3.94
October	1.96	0.41	1.07	3.44
November	3.45	0.44	0.42	4.31
December	1.22	0.41	1.25	2.87
2003 Total	**19.54**	**3.36**	**12.93**	**35.83**
January	1.17	0.43	1.29	2.89
February	4.10	0.25	0.54	4.89
March	2.65	0.27	0.65	3.57
April	0.34	0.14	0.62	1.10
May	3.19	0.23	0.30	3.72
June	1.93	0.27	1.20	3.40
July	1.72	2.84	0.79	5.35
August	1.93	-0.07	0.81	2.67
September	2.99	0.18	0.40	3.58
October	6.91	0.17	1.09	8.16
November	1.85	0.21	0.98	3.04
December	1.02	0.13	0.79	1.94
2004 Total	**29.79**	**5.05**	**9.47**	**44.31**

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Table 28

LOUISIANA STATE MINERAL ROYALTY REVENUE

Excluding OCS
(Million Dollars)

DATE	OIL	GAS	PLANT LIQUIDS	OTHER	TOTAL
1983	224.62	211.84	13.00	1.83	451.29
1984	226.64	210.99	13.06	2.29	452.98
1985	201.14	174.45	9.55	2.62	387.76
1986	122.22	154.83	6.34	1.96	285.34
1987	125.72	120.54	4.90	1.60	252.76
1988	98.55	124.06	4.39	1.35	228.35
1989	112.30	116.18	3.92	1.42	233.82
1990	135.44	113.14	3.80	0.90	253.28
1991	120.49	91.43	4.51	0.34	216.76
1992	113.29	97.07	4.69	0.00	215.04
1993	99.20	125.01	4.53	0.00	228.74
1994	85.72	102.95	4.05	0.00	192.72
1995	95.82	146.60	4.60	0.00	247.02
1996	123.51	211.31	6.72	0.00	341.54
1997	112.76	154.62	5.93	0.00	273.31
1998	68.85	121.17	2.58	0.00	192.60
1999	91.52	115.10	2.05	0.00	208.66
2000	143.96	212.71	3.46	0.00	360.14
2001	123.56 r	252.68 r	6.33 r	0.00	382.57 r
2002	99.96 r	163.47 r	8.03 r	0.00	271.46 r
January	11.45 r	22.51 r	0.95 r	0.00	34.91 r
February	11.80 r	26.68 r	0.91 r	0.00	39.38 r
March	12.66 r	39.02 r	0.70 r	0.00	52.38 r
April	10.63 r	24.65 r	0.68 r	0.00	35.96 r
May	10.15 r	25.76 r	0.72 r	0.00	36.63 r
June	10.09 r	26.62 r	0.63 r	0.00	37.34 r
July	10.17 r	22.85 r	0.65 r	0.00	33.67 r
August	10.60 r	21.00 r	0.70 r	0.00	32.30 r
September	9.39 r	20.08 r	0.69 r	0.00	30.16 r
October	10.07 r	19.92 r	0.89 r	0.00	30.88 r
November	10.17 r	18.32 r	0.90 r	0.00	29.39 r
December	9.88 r	21.50 r	0.89 r	0.00	32.27 r
2003 Total	**127.05 r**	**288.91 r**	**9.31 r**	**0.00**	**425.27 r**
January	11.03	24.64	1.25	0.00	36.93
February	10.25	21.29	1.17	0.00	32.71
March	11.79	21.14	1.13	0.00	34.06
April	11.48	21.94	1.12	0.00	34.54
May	12.24	23.88	1.27	0.00	37.39
June	11.19	25.66	1.24	0.00	38.09
July	12.06	24.95	1.33	0.00	38.34
August	13.21	21.78	1.12	0.00	36.11
September	N/A	N/A	N/A	0.00	N/A
October	N/A	N/A	N/A	0.00	N/A
November	N/A	N/A	N/A	0.00	N/A
December	N/A	N/A	N/A	0.00	N/A
2004 Total	**93.27**	**185.28**	**9.62**	**0.00**	**288.17**

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Table 29

LOUISIANA STATE MINERAL SEVERANCE TAX REVENUE[8]

Excluding OCS
(Million Dollars)

DATE	OIL	GAS	OTHER MINERALS	SEVERANCE TOTAL
1983	662.00	131.52	2.45	795.98
1984	652.39	130.99	3.62	787.00
1985	598.67	120.96	3.73	723.37
1986	389.87	125.14	3.42	518.42
1987	345.18	111.84	2.99	460.01
1988	296.45	106.29	2.65	405.39
1989	312.99	108.84	2.43	424.26
1990	373.21	124.61	2.75	500.58
1991	367.13	146.83	1.97	515.93
1992	326.07	126.24	1.63	453.94
1993	283.68	107.32	1.76	392.76
1994	229.40	114.58	2.02	346.00
1995	233.37	114.58	1.85	349.80
1996	270.36	98.60	1.88	370.84
1997	257.13	118.27	1.85	377.25
1998	148.96	120.98	1.40	271.34
1999	171.29	102.48	1.82	275.60
2000	337.51	104.33	1.50	443.34
2001	281.95	165.77	1.65	449.38
2002	235.84	173.51	1.33	410.67
January	46.62	10.41	0.13	57.16
February	24.39	9.89	0.14	34.42
March	26.75	9.43	0.15	36.33
April	27.07	9.91	0.14	37.12
May	25.41	10.88	0.11	36.40
June	23.59	12.07	0.15	35.80
July	24.62	11.55	0.20	36.37
August	24.95	14.47	0.10	39.52
September	20.99	15.60	0.17	36.75
October	23.86	15.85	0.15	39.85
November	22.76	16.56	0.13	39.46
December	25.68	15.51	0.14	41.34
2003 Total	**316.70**	**152.13**	**1.70**	**470.53**
January	3.82	3.77	0.03	7.63
February	34.39	19.78	0.23	54.40
March	38.36	20.94	0.15	59.45
April	23.74	13.18	0.15	37.06
May	26.97	20.22	0.11	47.31
June	25.97	17.16	0.15	43.28
July	44.77	20.58	0.19	65.54
August	26.77	16.33	0.20	43.30
September	24.45	14.01	0.13	38.58
October	41.83	30.05	0.19	72.07
November	45.67	26.14	0.12	71.92
December	40.66 [e]	24.35 [e]	0.11 [e]	65.12 [e]
2004 Total	**377.40 [e]**	**226.51 [e]**	**1.74 [e]**	**605.66 [e]**

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Table 30

STATE SECTION 8(g) REVENUE FROM LOUISIANA'S OCS[13]

(Dollars)

YEAR	RENTALS	BONUSES	ROYALTIES	8G ESCROW	SETTLE-MENT	TOTAL
1986	610,567	1,912,734	66,176,203			68,699,504
1987	148,578	3,150,519	11,043,115	572,000,000	2,520,000	588,862,212
1988	153,561	5,528,006	8,708,079		2,520,000	16,909,646
1989	175,817	2,890,298	7,163,105		2,520,000	12,749,220
1990	430,198	5,570,375	6,239,368		2,520,000	14,759,941
1991	303,824	2,220,094	8,461,261		2,520,000	13,505,179
1992	258,787	1,189,989	6,405,279		5,880,000	13,734,055
1993	235,250	965,504	7,373,550		5,880,000	14,454,304
1994	1,016,932	1,913,682	11,780,932		5,880,000	20,591,546
1995	255,213	890,002	8,012,718		5,880,000	15,037,933
1996	292,445	4,666,400	12,283,395		5,880,000	23,122,240
1997	686,051	5,689,689	11,855,454		8,400,000	26,631,194
1998	412,229	1,744,928	9,621,860		8,400,000	20,179,017
1999	357,379	241,659	6,284,879		8,400,000	15,283,917
2000	321,695	1,268,244	12,690,937	0	8,400,000	22,680,876
2001	303,675	2,148,111	29,789,999	0	8,400,000	40,641,785
2002	N/A	N/A	11,863,317	0	0	11,863,317
2003	317,787	2,773,594	26,472,863	0	0	29,564,244

See footnotes on Appendix B

Royalty revenues from Federal offshore leases on the Outer Continental Shelf (OCS) are distributed to the Land and Water Conservation Fund, the Historic Preservation Fund, and the General Fund of the U.S. Treasury. Transfers are made in each fiscal year from OCS royalties, rentals and bonuses in order to maintain the Land and Water Conservation Fund's annual authorization of $900 million. Annually, $150 million is put into the Historic Preservation Fund. The balance of offshore revenue receipts is directed to the General Fund of the U.S. Treasury.

Section 8(g) of the Outer Continental Shelf Lands Act Amendments of 1978 provided that the states were to receive a "fair and equitable" division of revenues generated from the leasing of lands within 3 miles of the seaward boundary of a coastal state that contains one or more oil and gas pools or fields underlying both the OCS and lands subject to the jurisdiction of the state. The states and the federal government, however, were unable to reach agreement concerning the meaning of the term "fair and equitable". Revenues generated in the 3-mile boundary zone were subsequently placed into an escrow fund in August 1979.

Congress resolved the dispute over the meaning of "fair and equitable" in the Outer Continental Shelf Lands Act Amendments of 1985, Public Law 99-272. The law provided for the following distribution of revenues to the states under section 8(g):

Before 1986: Louisiana did not receive any shared revenue from OCS production prior to 1986.

1986: Louisiana received a payment of $68.7 million from royalties, rentals and bonuses collected in 1986 and prior years.

1998-2000: In 1987 Louisiana received an initial settlement payment of $572 million from the escrow funds. A series of annual settlement payments have been disbursed to the states over a 15-year period along with an annual disbursement of 27 percent of royalty, rental, and bonus revenues received within each affected state's 8(g) zone. The annual settlement payments are: From 1987 through 1991, Louisiana received an annual settlement payment of $2.52 million per year. From 1992 through 1996, the state received an annual settlement payment of $5.88 million per year. Beginning in 1997 until the last payment in 2001, Louisiana will receive an annual settlement payment of approximately $8.40 million per year.

2002 and After: No further settlement payments; states receive only a recurring annual disbursement of 27 percent of royalty, rental, and bonus revenues received within each affected state's 8(g) zone. Louisiana will receive an annual disbursement of 27 percent of royalty, rental, and bonus revenues received within Louisiana's affected 8(g) zone.

TABLE 31

LOUISIANA STATE TOTAL MINERAL REVENUE

(Dollars)

YEAR	FEDERAL OCS (8g)	FEDERAL ONSHORE	STATE BOUNDARIES	TOTAL
1981	0	612,000	1,653,883,820	1,654,495,820
1982	0	617,000	1,498,482,501	1,499,099,501
1983	0	637,000	1,328,700,057	1,329,337,057
1984	0	905,000	1,329,965,030	1,330,870,030
1985	0	795,000	1,164,969,360	1,165,764,360
1986	68,699,504	555,000	832,406,385	901,660,889
1987	588,862,212	517,000	746,675,897	1,336,055,109
1988	16,909,646	545,000	660,959,699	678,414,345
1989	12,749,220	452,000	678,301,987	691,503,207
1990	14,759,941	542,000	779,963,703	795,265,644
1991	13,505,179	328,000	751,117,246	764,950,425
1992	13,734,055	376,000	680,527,788	694,637,843
1993	14,454,304	782,000	639,182,812	654,412,032 r
1994	20,591,546	532,000	560,371,998	581,495,544
1995	15,037,933	728,000	638,942,698	605,347,517 r
1996	23,122,240	943,209	770,137,601	794,203,050 r
1997	26,631,194	817,329	714,672,685	742,121,208 r
1998	20,179,017	996,000	532,755,940	553,930,957 r
1999	15,283,917	1,276,465	519,144,200	535,704,582 r
2000	22,680,876	1,024,730	839,883,694	863,589,300 r
2001	40,641,785	1,484,476	877,286,806	919,413,067 r
2002	11,863,317	730,156	723,411,114	736,004,587
2003	29,564,244	1,182,451	931,633,625	962,380,320
2004	N/A	N/A	938,140,926	938,140,926

e Estimated r Revised p Preliminary
See footnote in Appendix B.

Federal OCS: See table 30.

Federal Onshore: Revenue distributed to the state under section 35 of the Mineral Leasing Act (MLA). MLA provides to the state 50% of mineral revenue from federal lands located within the state boundaries. Revenues came from royalties, rents and bonuses.

State Boundaries: Revenue from mineral production such as bonuses, override royalties, rents, royalties and severance taxes within state boundaries.

Table 32

REVENUE TO FEDERAL GOVERNMENT COLLECTED FROM OIL AND GAS LEASES IN THE LOUISIANA OCS [12]

(Area beyond the state's 3-mile offshore boundary)
(Dollars)

YEAR	BONUS PAYMENTS	RENTAL PAYMENTS	MINIMUM ROYALTIES	PRODUCTION ROYALTIES	TOTAL[a] COLLECTION
1964	60,340,626	7,040,422	823,439	112,999,967	181,204,454
1965	0	5,909,553	1,021,505	126,121,728	133,052,786
1966	238,958,065	4,736,294	1,327,830	131,253,307	376,275,496
1967	510,079,178	5,500,516	1,888,758	149,096,032	666,564,484
1968	149,868,789	5,275,979	2,140,858	190,907,982	348,193,608
1969	110,945,535	5,584,162	1,922,340	226,504,238	344,956,275
1970	945,064,773	6,243,362	1,692,274	262,709,833	1,215,710,242
1971	96,304,523	5,687,848	1,564,845	324,815,819	428,373,035
1972	2,251,347,556	6,396,291	1,725,573	342,476,302	2,601,945,722
1973	193,031,709	5,272,797	2,005,785	380,509,177	580,819,468
1974	3,528,744,084	8,350,760	1,739,159	535,836,029	4,074,670,032
1975	325,424,688	8,947,571	1,837,253	593,359,397	929,568,909
1976	482,592,035	12,974,770	1,879,704	682,922,971	1,180,369,480
1977	813,991,004	7,740,185	1,248,616	899,016,863	1,721,996,668
1978	1,015,873,944	8,616,027	1,502,963	1,086,517,424	2,112,510,358
1979	2,521,190,635	7,328,999	1,105,865	1,344,995,442	3,874,620,941
1980	2,676,927,673	7,361,904	1,277,987	1,866,737,837	4,552,305,401
1981	3,308,009,881	8,205,515	1,211,959	2,825,271,285	6,142,698,640
1982	1,110,172,751	7,288,316	1,349,850	3,166,294,042	4,285,104,959
1983	3,796,644,766	13,620,158	2,540,294	2,764,348,600	6,577,153,818
1984	1,154,495,009	16,323,567	2,010,462	3,195,995,282	4,368,824,320
1985	830,710,260	33,756,447	2,139,530	2,940,519,737	3,807,125,974
1986	113,731,609	34,110,029	3,199,547	2,006,205,199	2,157,246,384
1987	247,344,486	52,115,828	19,239,027	1,803,208,740	2,121,908,081
1988	388,730,457	35,752,757	8,727,373	1,571,981,500	2,005,192,087
1989	386,710,637	48,498,402	26,261,190	1,618,163,065	2,079,633,294
1990	421,375,632	55,568,777	16,028,740	2,068,487,831	2,561,460,980
1991	276,234,849	59,126,732	15,444,167	1,857,392,914	2,208,198,662
1992	53,716,797	49,087,621	33,533,897	1,848,599,157	1,984,937,472
1993	61,454,861	29,268,366	119,445,091	2,009,644,653	2,219,812,971
1994	256,271,643	30,003,884	141,190,812	1,888,953,102	2,316,419,441
1995	296,254,733	62,526,069	19,803,444	1,764,875,791	2,143,460,037
1996	24,330,068	53,231,380	40,394,227	2,549,759,516	3,154,940,691
1997	1,169,790	55,761,920	65,651,370	2,857,126,443	3,789,383,151
1998	9,207,972	51,518,286	-14,452,431 [b]	2,267,502,514	2,313,776,341
1999	1,169,790	40,463,226	49,219,184	2,228,250,265	2,319,102,465
2000	83,630,219	32,710,256	167,647,231	3,045,847,943	3,329,835,649
2001	160,037,859	30,078,009	177,773,259	5,126,344,201	5,494,233,328
2002	N/A	N/A	N/A	3,681,603,933 [e]	3,932,526,000 [e]
2003	N/A	N/A	N/A	4,403,009,103 [e]	4,703,099,000 [e]

[a] Total collection, including state 8G shares.

[b] Negative due to overpayment's refunds

See footnote in Appendix B.

Table 33

LOUISIANA ESTIMATED CRUDE OIL PROVED RESERVES [9]
EXCLUDING LEASE CONDENSATE
As of December 31st of Each Year
(Million Barrels)

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1983	223	569	1,915	b	2,707	27,735
1984	165	585	1,911	b	2,661	28,446
1985	196	565	122	1,759	2,642	28,416
1986	160	547	119	1,640	2,466	26,889
1987	175	505	127	1,514	2,321	27,256
1988	154	511	135	1,527	2,327	26,825
1989	123	479	143	1,691	2,436	26,501
1990	120	435	150	1,772	2,477	26,254
1991	127	408	144	1,775	2,454	24,682
1992	125	417	126	1,643	2,311	23,745
1993	108	382	149	1,880	2,519	22,957
1994	108	391	150	1,922	2,571	22,457
1995	108	387	142	2,269	2,906	22,351
1996	128	382	148	2,357	3,015	22,017
1997	136	427	151	2,587	3,301	22,546
1998	101	357	97	2,483	3,038	21,034
1999	108	384	108	2,442	3,042	21,765
2000	97	310	122	2,751	3,280	22,045
2001	87	341	136	3,877	4,441	22,446
2002	75	335	91	4,088	4,589	22,677
2003	66	314	72	4,251	4,703	21,891

NOTE: Federal OCS is included in the south offshore figure from 1982 through 1984.
See footnotes on Appendix B N/A Not Available

Figure 14

UNITED STATES CRUDE OIL RESERVES
December 31, 2003
Excluding Lease Condensate
(Million Barrels)

STATE	VOLUME
Texas	4,886
Alaska	4,446
California	4,018
Louisiana	4,703
Oklahoma	588
Other	3,250
TOTAL	**21,891**

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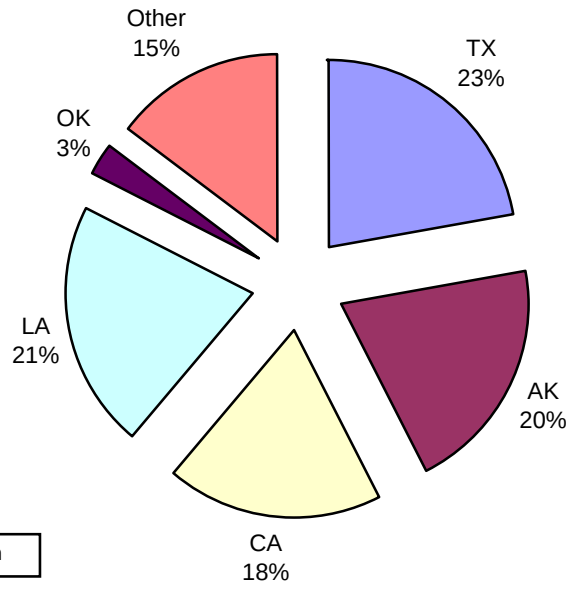

Table 34

LOUISIANA ESTIMATED LEASE CONDENSATE PROVED RESERVES[9]

As of December 31st of Each Year
(Million Barrels)

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1983	24	238	300	b	562	1,613
1984	19	229	269	b	517	1,522
1985	18	220	257	b	495	1,453
1986	18	208	11	230	467	1,436
1987	17	194	13	223	447	1,402
1988	17	193	13	223	446	1,389
1989	20	196	12	278	506	1,389
1990	20	182	12	258	472	1,302
1991	21	175	9	253	458	1,244
1992	19	151	8	226	404	1,226
1993	19	133	9	235	396	1,192
1994	21	123	9	233	386	1,147
1995	24	136	11	305	476	1,197
1996	24	127	11	422	584	1,307
1997	30	134	12	433	609	1,341
1998	23	138	16	435	612	1,336
1999	25	134	15	435	609	1,295
2000	22	130	17	437	606	1,333
2001	27	141	19	325	512	1,398
2002	19	104	11	300	434	1,346
2003	19	82	11	251	363	1,215

NOTE: Federal OCS is included in the south offshore figure from 1982 through 1985.
See footnotes on Appendix B N/A Not Available

Figure 15

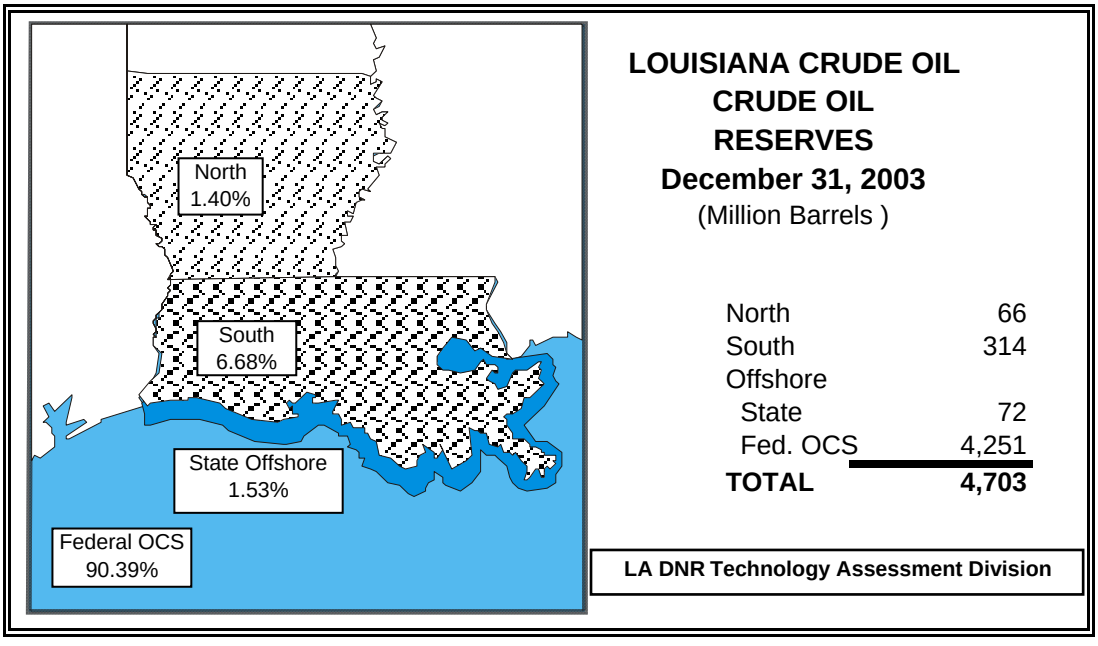

Table 35

LOUISIANA ESTIMATED DRY NATURAL GAS PROVED RESERVES[9]

As of December 31st of Each Year

(Billion Cubic Feet, at 14.73 psia and 60 degrees Fahrenheit)

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1983	2,939	11,142	28,480 c	b	42,561 c	200,247
1984	2,494	10,331	28,574 c	b	41,399 c	197,463
1985	2,587	9,808	1,643	26,113 c	40,151 c	193,369
1986	2,515	9,103	1,312	25,454 c	38,384 c	191,586
1987	2,306	8,693	1,431	23,260 c	35,690 c	187,211
1988	2,398	8,654	1,172	23,471 c	35,695 c	168,024
1989	2,652	8,645	1,219	24,187 c	36,703 c	167,116
1990	2,588	8,171	969	22,679 c	34,407 c	169,346
1991	2,384	7,504	1,024	21,611 c	32,523 c	167,062
1992	2,311	6,693	776	19,653 c	29,433 c	165,015
1993	2,325	5,932	917	19,383 c	28,557 c	162,415
1994	2,537	6,251	960	20,835 c	30,583 c	163,837
1995	2,788	5,648	838	21,392 c	30,666 c	165,146
1996	3,105	5,704	734	21,856 c	31,399 c	166,474
1997	3,093	5,855	725	21,934 c	31,607 c	167,223
1998	2,898	5,698	551	20,774 c	29,921 c	164,041
1999	3,079	5,535	628	19,598 c	28,840 c	167,406
2000	3,298	5,245	696	19,788 c	29,027 c	177,427
2001	3,881	5,185	745	19,721 c	29,532 c	183,460
2002	4,245	4,224	491	18,500 c	27,460 c	186,946
2003	5,074	3,746	506	16,728 c	26,054 c	189,044

NOTE: Federal OCS is included in the south offshore figure from 1982 through 1984.

N/A Not Available [C] Includes Federal Offshore Alabama

Figure 16

UNITED STATES NATURAL GAS RESERVES

December 31, 2003

(Billion Cubic Feet)

STATE	VOLUME
Texas	51,061
Louisiana	26,053
New Mexico	17,020
Wyoming	21,744
Oklahoma	15,401
Other	57,765
TOTAL	**189,044**

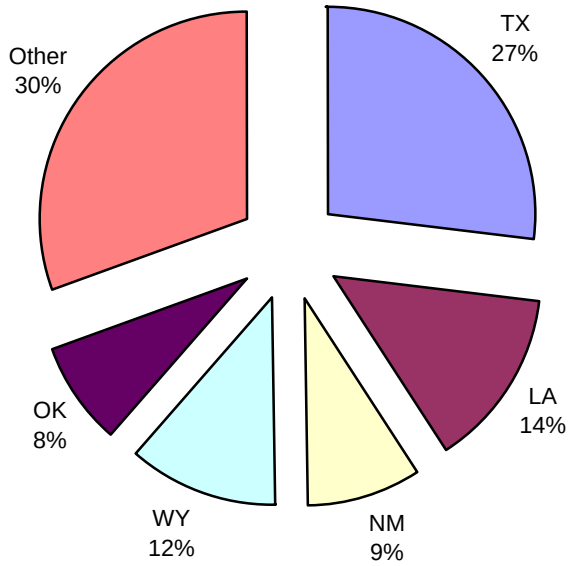

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Table 36

LOUISIANA ESTIMATED NATURAL GAS LIQUIDS PROVED RESERVES[9] EXCLUDING LEASE CONDENSATE

As of December 31st of Each Year
(Million Barrels)

YEAR	North	South Onshore	South Offshore	Federal OCS	Total Louisiana	TOTAL US
1983	61	263	409	b	733	4,675
1984	55	298	462	b	815	4,599
1985	39	234	420	b	693	5,038
1986	39	220	28	336	623	5,293
1987	33	235	33	309	610	5,343
1988	39	228	27	289	583	5,460
1989	40	215	39	297	591	4,991
1990	38	249	37	261	585	4,982
1991	38	242	41	292	613	4,978
1992	41	229	47	246	563	4,999
1993	38	201	21	255	515	4,838
1994	48	214	19	267	548	4,876
1995	55	359	16	191	621	5,005
1996	61	284	36	199	580	5,209
1997	50	199	12	352	613	5,291
1998	34	187	13	341	575	4,852
1999	36	230	19	398	681	5,316
2000	39	207	21	315	582	7,012
2001	35	128	41	273	477	6,595
2002	30	119	37	483	669	6,648
2003	48	100	35	347	530	6,244

NOTE: Federal OCS is included in the south offshore figure from 1982 through 1985.
See footnotes on Appendix B N/A Not Available

Figure 17

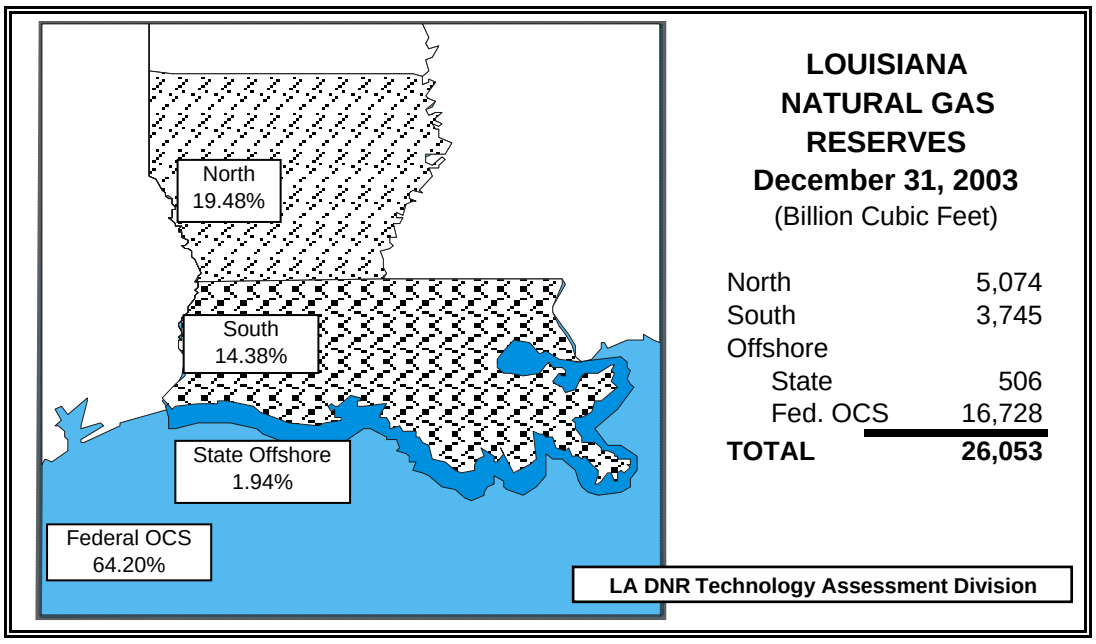


Table 37

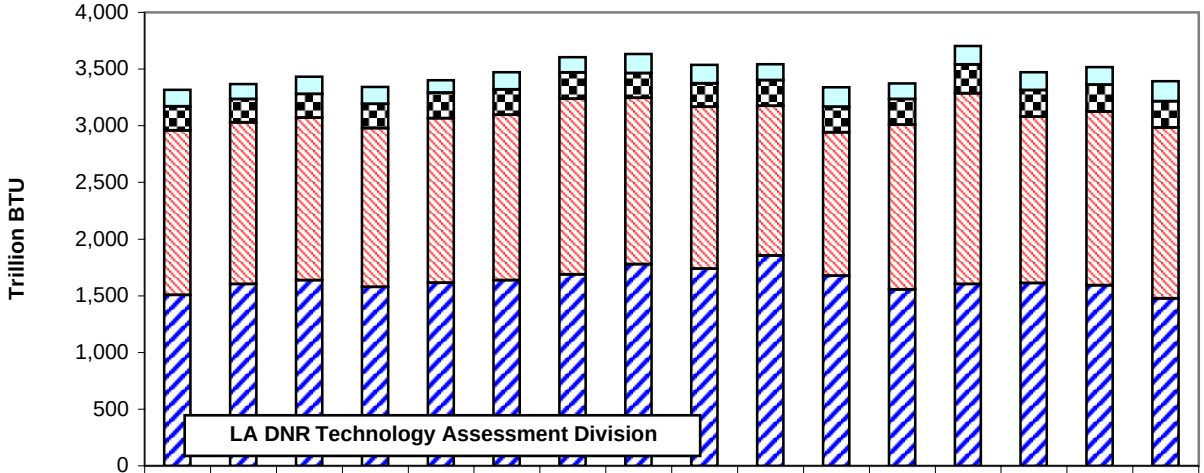
LOUISIANA NONAGRICULTURAL EMPLOYMENT [1]

DATE	OIL & GAS PRODUCTION	CHEMICAL INDUSTRY	PETROLEUM MANUFACTURING	ALL PIPELINE*	TOTAL EMPLOYMENT
1982	92,225	33,984	13,111	1,033	1,571,017
1983	77,283	30,272	13,140	1,282	1,531,480
1984	78,032	29,104	13,053	1,247	1,568,064
1985	77,781	28,093	12,458	1,144	1,550,443
1986	58,888	25,998	12,233	1,168	1,475,318
1987	52,117	25,345	12,225	1,051	1,438,793
1988	54,565	26,957	11,258	1,039	1,468,508
1989	52,509	27,717	11,321	1,016	1,492,051
1990	54,063	29,083	11,535	1,041	1,546,820
1991	54,412	29,412	12,268	1,073	1,566,779
1992	45,869	30,349	12,543	1,095	1,583,423
1993	44,422	30,419	12,728	1,078	1,613,577
1994	44,885	30,014	13,037	1,014	1,671,087
1995	44,279	30,168	11,603	932	1,721,651
1996	46,885	30,096	11,262	789	1,757,619
1997	51,559	29,935	11,038	792	1,797,225
1998	54,875	30,196	10,984	702	1,837,505
1999	44,645	28,898	11,046	693	1,846,026
2000	45,714	28,335	10,345	724	1,872,494
2001	47,009	27,337	10,643	2,417	1,868,902
January	45,312	26,374	10,596	2,269	1,831,650
February	44,935	26,265	10,570	2,273	1,837,948
March	44,631	26,186	10,568	2,260	1,847,797
April	43,398	25,936	10,606	2,265	1,854,508
May	43,674	25,700	10,598	2,286	1,860,271
June	44,064	25,629	10,610	2,284	1,865,707
July	43,816	25,576	10,620	2,337	1,832,083
August	44,151	25,537	10,607	2,341	1,843,454
September	43,940	25,351	10,533	2,333	1,852,839
October	42,801	25,336	10,496	2,354	1,845,435
November	42,676	25,243	10,501	2,342	1,855,310
December	42,670	25,190	10,481	2,331	1,856,865
2002 Average	**43,839**	**25,694**	**10,566**	**2,306**	**1,848,656**
January	42,141	25,085	10,662	2,338	1,827,933
February	42,498	25,020	10,621	2,330	1,833,533
March	42,510	24,958	10,621	2,339	1,839,159
April	42,587	24,780	10,678	2,334	1,854,633
May	42,833	24,659	10,667	2,319	1,864,109
June	43,545	24,455	10,662	2,335	1,867,206
July	42,417	24,542	10,334	2,343	1,832,730
August	42,563	24,435	10,205	2,340	1,843,562
September	42,109	24,256	10,116	2,313	1,853,399
October	42,044	24,203	10,048	2,339	1,863,691
November	41,756	24,306	10,115	2,341	1,867,975
December	41,064	23,996	10,014	2,334	1,870,905
2003 Average	**42,339**	**24,558**	**10,395**	**2,334**	**1,851,570**

* Natural Gas Pipeline employment is included in 2001 forward but excluded in prior years.
See footnote in Appendix B.

Figure 18

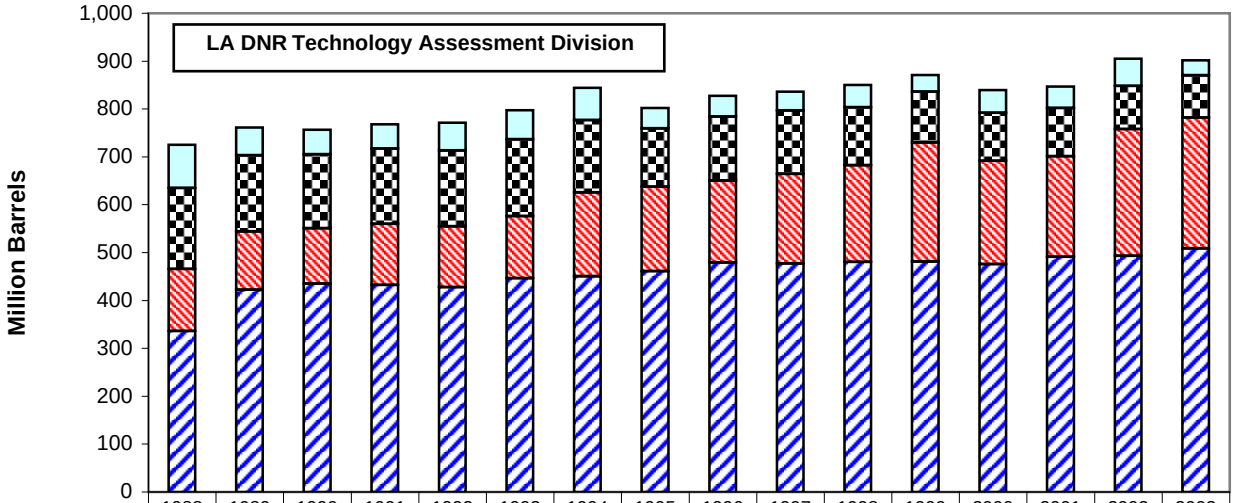
LOUISIANA ENERGY CONSUMPTION BY SOURCE



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Nuclear	148	133	152	150	111	154	136	167	166	142	172	137	165	158	153	177
Coal	212	207	209	214	224	223	231	218	206	225	225	228	253	235	239	231
Petroleum	1,451	1,424	1,436	1,398	1,453	1,460	1,550	1,469	1,430	1,320	1,266	1,452	1,681	1,466	1,533	1,509
Natural Gas	1,506	1,605	1,637	1,579	1,614	1,637	1,689	1,778	1,738	1,855	1,677	1,556	1,605	1,613	1,591	1,476
Total	3,318	3,368	3,433	3,341	3,401	3,473	3,606	3,632	3,538	3,542	3,340	3,373	3,703	3,472	3,516	3,393

Figure 19

LOUISIANA REFINERY CRUDE OIL INPUT BY SOURCE



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Other States	91	58	52	51	58	61	68	43	44	40	47	35	47	45	57	32
Louisiana	169	159	154	157	159	160	151	122	134	132	121	106	100	101	90	88
Federal OCS	130	121	115	128	127	130	176	176	171	187	201	249	216	210	265	273
Foreign	336	423	435	433	428	446	450	461	479	477	481	481	476	491	493	509
Total	726	761	757	768	771	797	844	802	828	836	850	871	839	847	905	902

Table 38

LOUISIANA ENERGY CONSUMPTION ESTIMATES BY SOURCE[11]

Year	Total Energy (TBTU)	Total Natural Gas (BCF)	Total Petroleum (MBBLS)	Total Coal (MST)	Total Nuclear (Million KWH)
1963	1,689.5	1,091	99,427	N/A	0
1964	1,794.1	1,144	106,260	N/A	0
1965	1,766.8	1,110	109,325	N/A	0
1966	1,882.9	1,202	115,895	N/A	0
1967	2,124.1	1,394	123,074	N/A	0
1968	2,295.0	1,521	134,822	N/A	0
1969	2,572.3	1,763	148,052	N/A	0
1970	2,701.4	1,841	150,124	0	0
1971	2,809.3	1,884	163,298	0	0
1972	2,989.3	1,940	186,445	0	0
1973	3,225.9	2,010	212,662	0	0
1974	3,313.3	2,008	222,611	0	0
1975	3,028.8	1,789	214,065	0	0
1976	3,419.1	2,044	237,208	0	0
1977	3,794.6	2,191	270,987	79	0
1978	3,930.1	2,249	279,482	172	0
1979	3,823.5	1,978	307,896	118	0
1980	3,805.3	1,978	304,884	118	0
1981	3,651.3	1,794	293,743	111	0
1982	3,688.6	1,782	295,191	1,363	0
1983	3,441.2	1,556	287,419	3,724	0
1984	3,284.5	1,413	275,058	6,154	0
1985	3,413.5	1,594	248,344 r	6,855	0
1986	3,192.5	1,386	240,776	9,217	2,457
1987	3,353.4	1,439	260,602	10,459	10,637
1988	3,435.5	1,501	257,313	10,391	12,324
1989	3,473.1	1,446	271,773	12,848	13,785
1990	3,592.6	1,538	266,193	12,471	12,391
1991	3,623.8	1,571	259,533	12,547	14,197
1992	3,545.9	1,508	256,789	12,965	13,956
1993	3,636.0	1,546	268,559	13,674	10,356
1994	3,688.6	1,578	273,580	13,676	14,398
1995	3,837.3	1,624	294,700	14,100	12,779
1996	3,837.2	1,718	288,998	13,357	15,686
1997	3,848.5	1,664 r	279,292	12,534	15,765
1998	3,828.0	1,659 r	258,290	13,874	13,511
1999	3,564.0	1,495 r	248,094	13,891	16,428
2000	3,608.6	1,537 r	278,926	13,953	13,112
2001	3,965.2 e	1,219 r	327,692 e	15,734	15,796
2002	3,712.6 e	1,343 r	288,776 e	14,969	17,336
2003	3,762.1 e	1,298 e	299,289 e	14,632 e	17,305 e

e Estimated r Revised p Preliminary

TBTU = Trillion BTU BCF = Billion Cubic Feet KWH = Kilowatt-hours

MBBLS = Thousand Barrels MST = Thousand Short Tons

See footnote in Appendix B.

TABLE 39

LOUISIANA REFINERY STATISTICS

DATE	AVERAGE STOCK ON HAND (Barrels)	DAILY AVERAGE RUNS TO STILL (Barrels)	LICENSED REFINERIES
1983	13,317,761	1,649,283	27
1984	13,182,207	1,720,172	25
1985	13,425,129	1,735,402	24
1986	13,391,258	1,901,450	23
1987	13,967,381	1,947,187	22
1988	14,295,591	1,946,861	21
1989	14,158,306	2,051,304	23
1990	13,783,012	2,045,697	23
1991	14,197,185	2,071,276	23
1992	14,331,412	2,090,248	22
1993	14,521,046	2,159,422	20
1994	15,126,534	2,150,403	19
1995	14,325,305	2,109,245	19
1996	14,462,108	2,252,573	19
1997	14,275,221	2,257,275	19
1998	14,965,117	2,312,239	19
1999	15,467,674	2,414,781	17
2000	14,818,774	2,334,842	16
2001	15,425,670	2,480,357	17
2002	16,335,210	2,470,556	18
January	16,293,211	2,346,768	17
February	17,505,522	2,318,840	17
March	16,298,280	2,556,606	17
April	16,214,958	2,638,406	17
May	14,990,732	2,570,367	17
June	16,928,917	2,423,267	17
July	15,600,779	2,447,997	16
August	15,008,840	2,514,705	16
September	13,997,130	2,550,702	16
October	15,553,728	2,491,036	16
November	11,967,129	2,091,282	16
December	12,592,818	2,687,095	17
2003 Total	**15,246,004**	**2,469,756**	**17**
January	16,311,637	2,431,570	17
February	15,537,500	2,358,760	17
March	15,681,520	2,430,027	17
April	15,526,699	2,638,636	17
May	15,541,987	2,679,970	17
June	15,472,551	2,712,368	17
July	14,852,243	2,687,457	17
August	15,688,436	2,670,417	17
September	15,463,295	2,341,149	17
October	17,528,435 [p]	2,423,031 [p]	17
November	16,928,917 [e]	2,472,001 [e]	17
December	15,008,840 [e]	2,622,579 [e]	17
2004 Total	**15,795,172** [e]	**2,538,997** [e]	**17**

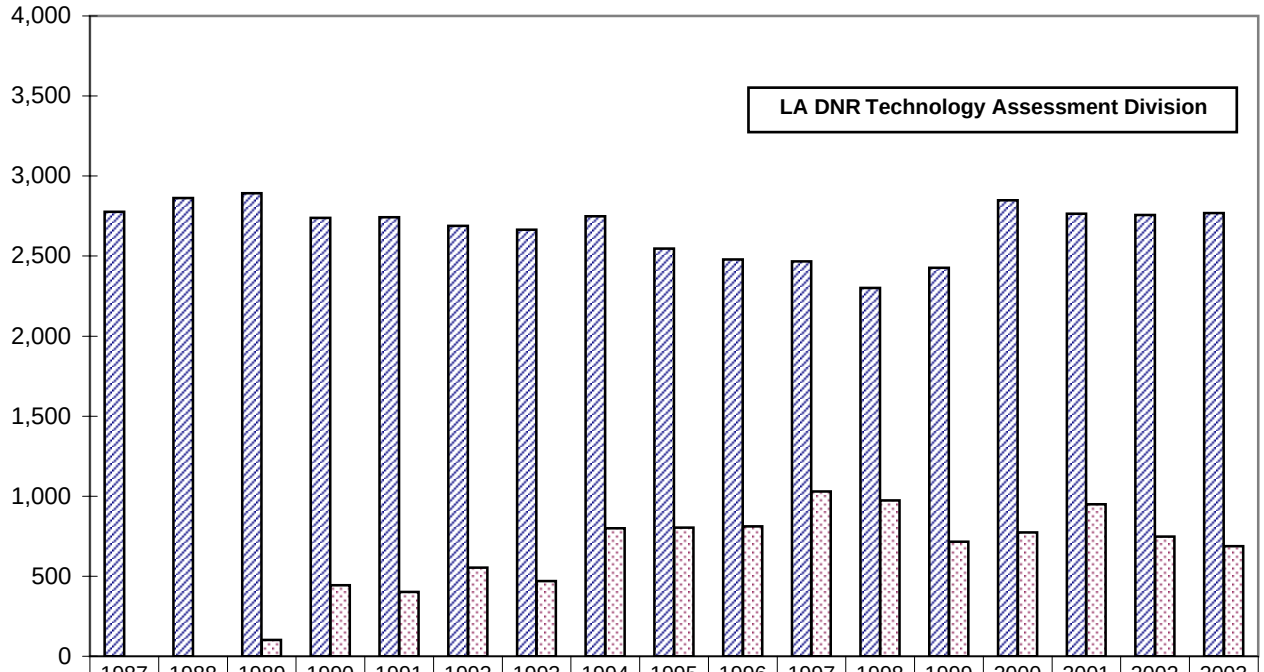
e Estimated r Revised p Preliminary

Exxon-Mobil Refinery - Baton Rouge

Figure 20

LOUISIANA LIGNITE PRODUCTION BY MINE SOURCE

(Thousand Tons Shipped)



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Dolet Hills	2,777	2,862	2,892	2,738	2,742	2,688	2,665	2,750	2,546	2,480	2,466	2,301	2,426	2,850	2,765	2,756	2,768
Oxbow	0	0	103	444	401	554	470	800	804	812	1,029	974	717	773	950	747	687
Total	2,777	2,862	2,995	3,182	3,143	3,242	3,135	3,550	3,350	3,292	3,495	3,275	3,143	3,622	3,715	3,503	3,455

Table 40

LOUISIANA ELECTRIC UTILITIES NET ELECTRICITY GENERATION[14] BY FUEL TYPE

(Million KWH)

YEAR	COAL	LIGNITE	OIL	GAS	NUCLEAR	TOTAL
1962	0	0	34	13,541	0	13,575
1963	0	0	37	14,808	0	14,845
1964	0	0	54	16,007	0	16,061
1965	0	0	26	17,819	0	17,845
1966	0	0	24	21,643	0	21,667
1967	0	0	20	23,132	0	23,152
1968	0	0	32	26,123	0	26,155
1969	0	0	26	32,301	0	32,327
1970	0	0	79	33,623	0	33,702
1971	0	0	N/A	N/A	0	37,118
1972	0	0	N/A	N/A	0	39,348
1973	0	0	14,353	36,351	0	40,704
1974	0	0	5,034	34,472	0	39,506
1975	0	0	3,257	35,967	0	39,224
1976	0	0	7,773	37,343	0	45,116
1977	0	0	13,255	35,196	0	48,451
1978	0	0	14,568	36,935	0	51,503
1979	0	0	8,259	38,396	0	46,655
1980	0	0	4,787	40,952	0	45,739
1981	1,529	0	2,634	39,947	0	44,110
1982	4,998	0	940	35,594	0	41,532
1983	8,377	0	356	28,311	0	37,044
1984	9,830	0	140	29,360	0	39,330
1985	13,968	0	100	27,736	2,457	44,261
1986	12,642	2,884	419	26,202	10,637	52,784
1987	12,176	2,926	60	23,823	12,324	51,309
1988	14,372	4,059	272	24,286	13,785	56,774
1989	14,227	3,854	298	21,900	12,391	52,670
1990	13,890	3,910	130	26,041 r	14,197	58,168
1991	14,786	4,126	45	24,245 r	13,956	57,158
1992	15,613	4,183	483	24,554 r	10,356	55,188
1993	15,794	3,572	1838	23,751 r	14,398	59,353
1994	15,761	4,364	680	26,586 r	12,779	60,170
1995	14,632	4,321	49	30,867 r	15,686	65,555
1996	14,630	4,002	273	23,972 r	15,765	58,643
1997	16,453	4,499	646	26,010 r	13,511	61,120
1998	16,131	4,631	600	28,318 r	16,428	66,107
1999	16,386	4,780	397	30,162 r	13,112	64,837
2000	8,178 *	6,303 *	625	26,696 r	15,796	57,601 *
2001	6,164 *	4,753 *	1722	20,402 r	17,336	50,378 *
2002	7,022 *r	5,237 *r	68	25,086 r	17,305	54,922 *r
2003	7,388 *e	5,165 *e	279 e	22,972 e	16,999 e	52,804 *e

e Estimated r Revised p Preliminary

* Big Cajun 1 & 2 fuels are excluded

See footnotes on Appendix B

APPENDICES

The Sol of New Orleans II
The University of New Orleans's solar powered car

Appendix A

Abbreviations

BCF	Billion Cubic Feet
BTU	British Thermal Unit
DNR	Louisiana Department of Natural Resources
DOE	United States Department of Energy
DOI	United States Department of the Interior
EIA	Energy Information Administration, DOE
FOB	Free on Board
KWH	Kilowatt-hours
MBBLS	Thousand Barrels
MCF	Thousand Cubic Feet
MMS	Minerals Management Service, DOI
MST	Thousand Short Tons
NGC	Natural Gas Clearinghouse
OCS	Outer Continental Shelf
OPEC	Organization of Petroleum Exporting Countries
RAC	Refinery Acquisition Costs
SLS	South Louisiana Sweet Crude Oil
SPR	Strategic Petroleum Reserve
TBTU	Trillion BTU
TCF	Trillion Cubic Feet

State Abbreviations Used in the Louisiana Energy Facts Annual

AL	Alabama	MS	Mississippi
AK	Alaska	ND	North Dakota
CA	California	NM	New Mexico
CO	Colorado	OK	Oklahoma
IL	Illinois	TX	Texas
KS	Kansas	UT	Utah
LA	Louisiana	WY	Wyoming
MI	Michigan		

Appendix B

Data Sources*

1. EMPLOYMENT AND TOTAL WAGES PAID BY EMPLOYERS SUBJECT TO LOUISIANA EMPLOYMENT SECURITY LAW, Baton Rouge, LA: Louisiana Department of Labor, Office of Employment Security, Research and Statistics Unit.

2. MONTHLY ENERGY REVIEW and ANNUAL ENERGY REVIEW, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

3. NATURAL GAS MONTHLY and NATURAL GAS ANNUAL, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

4. Baker Hughes from OIL & GAS JOURNAL, Tulsa, OK: Penn Well Publishing Co.

5. October 2002 to Present, NATURAL GAS WEEK, Washington, D.C.: Energy Intelligence Group. Prior, SURVEY OF DOMESTIC SPOT MARKET PRICES, Houston, TX: Dynegy Inc. (Formerly Natural Gas Clearinghouse).

6. PETROLEUM MARKETING MONTHLY and PETROLEUM MARKETING ANNUAL, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

7. PETROLEUM SUPPLY MONTHLY and PETROLEUM SUPPLY ANNUAL, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

8. SEVERANCE TAX, Baton Rouge, LA: Louisiana Department of Revenue and Taxation, Severance Tax Section.

9. U.S. CRUDE OIL, NATURAL GAS and NATURAL GAS LIQUIDS RESERVES, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

10. THE WALL STREET JOURNAL, Gulf Coast Edition, Beaumont, TX: Dow Jones and Company.

11. STATE ENERGY DATA REPORT, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

12. FEDERAL OFFSHORE STATISTICS, Washington, D.C.: U.S. Department of the Interior, Minerals Management Service.

13. MINERAL REVENUE, Washington, D.C.: U.S. Department of the Interior, Minerals Management Service, Royalty Management Program.

14. ELECTRIC POWER MONTHLY, Washington, D.C.: U.S. Department of Energy, Energy Information Administration.

* Unless otherwise specified, data is from the Louisiana Department of Natural Resources.

Appendix C

Glossary

Bonus. A cash payment by the lessee for the execution of a lease. A lease is a contract that gives a lessee the right: (a) to search for minerals, (b) to develop the surface for extraction, and (c) to produce minerals within the area covered by the contract.

Casinghead Gas. All natural gas released from oil during the production of oil from underground reservoirs.

City-Gate. A point or measuring station at which a gas distribution company receives gas from a pipeline company or transmission system.

Commercial Consumption. Gas used by non-manufacturing organizations such as hotels, restaurants, retail stores, laundries, and other service enterprises. This also includes gas used by local, state, and federal agencies engaged in non-manufacturing activities.

Condensate. (See Lease Condensate).

Crude Oil. A mixture of hydrocarbons that existed in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.

CRUDE OIL PRICES

Domestic Wellhead. The average price at which all domestic crude oil is first purchased.

Imports FOB. The price actually charged at the producing country's port of loading. It is the responsibility of the buyer to arrange for transportation and insurance.

Imports Landed. The dollar per barrel price of crude oil at the port of discharge. It includes crude oil landed in the U.S. and U.S. company-owned refineries in the Caribbean, but excludes crude oil from countries that export only small amounts to the United States. The landed price does not include charges incurred at the port of discharge.

Imports OPEC FOB. The average price actually charged by OPEC at their country's port of loading. This price does not include transportation or insurance.

OCS Gulf. The average price at which all offshore, Outer Continental Shelf, Central Gulf region crude oil is first purchased as reported by the U.S. Department of Energy, Energy Information Administration.

Refinery Acquisition Costs (RAC). The average price paid by refiners in the U.S. for crude oil booked into their refineries in accordance with accounting procedures generally accepted and consistently and historically applied by the refiners.

a) **Domestic**. The average price of crude oil produced in the United States or from the Outer Continental Shelf of the U.S.

b**) Imports**. The average price of any crude oil not reported as domestic.

Refinery Posted. The average price from a survey of selected refiners' postings for South Louisiana Sweet (SLS) crude, which is effective at the middle and at the end of the month.

Severance Tax. The average wellhead price calculated from oil severance taxes paid to the Louisiana Department of Revenue and Taxation.

Spot Market. The spot market crude oil price is the average of daily South Louisiana Sweet (SLS) crude price futures traded in the month and usually includes transportation from the producing field to the St. James, Louisiana terminal.

State. The average price at which all Louisiana crude oil, excluding Louisiana OCS, is first purchased as reported in a survey by the U.S. Department of Energy, Energy Information Administration.

State Royalty. The average wellhead price from its royalty share of oil produced in state lands or water bottoms. The price is calculated by the ratio of received oil royalty gross revenue divided by royalty volume share reported to the Louisiana Department of Natural Resources.

Developmental Well. Wells drilled within the proved area of an oil or gas reservoir to the depth of a stratigraphic horizon known to be productive.

Dry Gas. (See Natural Gas, "Dry").

Dry Hole. An exploratory or developmental well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well.

Electric Utility Consumption. Gas used as fuel in electric utility plants.

Exploratory Well. A well drilled to find and produce oil or gas in an unproved area, to find a new reservoir in an old field, or to extend the limits of a known oil or gas reservoir.

Exports. Crude oil or natural gas delivered out of the Continental United States and Alaska to foreign countries.

Extraction Loss. The reduction in volume of natural gas resulting from the removal of natural gas liquid constituents at natural gas processing plants.

Federal Offshore or Federal OCS. (See Louisiana OCS)

FOB Price (Free on board). The price actually charged at the producing country's port of loading. The reported price includes deductions for any rebates and discounts or additions of premiums where applicable and should be the actual price paid with no adjustment for credit terms.

Gate. (See City-Gate)

Gross Revenue. Amount of money received from a purchaser, including charges for field gathering, transportation from wellhead to purchaser receiving terminal, and state production severance tax.

Gross Withdrawals. (See Natural Gas, Gross Withdrawals)

Imports. Crude oil or natural gas received in the Continental United States, Alaska, and Hawaii from foreign countries.

Industrial Consumption. Natural gas used by manufacturing and mining establishments for heat, power, and chemical feedstock.

Lease Condensate. A mixture consisting primarily of pentane and heavier hydrocarbons that is recovered as a liquid from natural gas in lease or field separation facilities, exclusive of products recovered at natural gas processing plants or facilities.

Lease Separator. A facility installed at the surface for the purpose of: (a) separating gases from produced crude oil and water at the temperature and pressure conditions of the separator, and/or (b) separating gases from that portion of the produced natural gas stream which liquefies at the temperature and pressure conditions of the separator.

Louisiana OCS. Submerged lands under federal regulatory jurisdiction that comprise the Continental Margin or Outer Continental Shelf adjacent to Louisiana and seaward of the Louisiana Offshore region.

Louisiana Offshore. A 3-mile strip of submerged lands under state regulatory jurisdiction located between the State coast line and the OCS region.

Louisiana Onshore. Region defined by the State boundary and the coast line.

Major Pipeline Company. A company whose combined sales for resale, and gas transported interstate or stored for a fee, exceeded 50 million thousand cubic feet in the previous year.

Marketed Production. (See Natural Gas, Marketed Production)

Natural Gas. A mixture of hydrocarbon compounds and small quantities of various non-hydrocarbons existing in the gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions. The principal hydrocarbons usually contained in the mixture are methane, ethane, propane, butanes and pentanes. Typical non-hydrocarbon gases that may be present in reservoir natural gas are carbon dioxide, helium, hydrogen sulfide and nitrogen. Under reservoir conditions, natural gas and the liquefiable portions occur either in a single gaseous phase in the reservoir or in solution with crude oil, and are not distinguishable at the time as separated substances.

Natural Gas, "Dry". The actual or calculated volume of natural gas which remains after: (a) the liquefiable hydrocarbon portion has been removed from the gas stream, and (b) any volumes of non-hydrocarbon gases have been removed where they occur in sufficient quantity to render the gas unmarketable.

Natural Gas, Gross Withdrawals. Full well-stream volume, including all natural gas plant liquids and all non-hydrocarbon gases, but excluding lease condensate.

Natural Gas Liquids. Lease condensate plus natural gas plant liquids.

Natural Gas, Marketed Production. Gross withdrawals less gas used for repressurizing, quantities vented and flared, and non-hydrocarbon gases removed in treating or processing operations. It includes all quantities of gas used in field and processing operations.

Natural Gas, OCS Gas. OCS gas volume is as reported. Most is "dry" gas, though some is "wet" gas.

Natural Gas Plant Liquids. Those hydrocarbons remaining in a natural gas stream after field separation and later separated and recovered at a natural gas processing plant or cycling plant through the processes of absorption, adsorption, condensation, fractionation or other methods. Generally such liquids consist of propane and heavier hydrocarbons and are commonly referred to as condensate, natural gasoline, or liquefied petroleum gases. Where hydrocarbon components lighter than propane (e.g., ethane) are recovered as liquids, these components are included with natural gas liquids.

NATURAL GAS PRICES

Henry Hub Settled NYMEX The last trading day price for the month before delivery posted in the New York Mercantile Exchange for natural gas at Henry Hub.

Spot Market The average price of natural gas paid at the regional spot market receipt points or zones as reported by the Energy Intelligence Group's NATURAL GAS WEEK. The data are a volume weighted average and reflect market activity information gathered during the entire month before the publication date, regardless of delivery date. The data are not an arbitrary weighting by production zone, but a true deal-by-deal volume weighting of prices gathered. Data prior to October 2002 were from Dynegy's survey of the domestic natural gas spot market receipt points or zones located in Louisiana. The new and old points or zones are as follows:

NATURAL GAS PIPELINES AND SALES POINTS FOR PRICES

Dynegy	**Natural Gas Week**
ANR Eunice, LA	ANR Patterson, LA
COLUMBIA GULF Average Louisiana onshore laterals	COLUMBIA GULF TRANSMISSION Co. Average of Erath, Rayne, and Texaco Henry Plant in Louisiana
LOUISIANA INTRASTATES Average of Faustina, LIG, Bridgeline, and Monterrey pipelines	LOUISIANA INTRASTATES Average of LIG, Bridgeline, LRC, and Acadian pipelines
SOUTHERN NATURAL South Louisiana	SONAT Saint Mary Parish, LA
TENNESSEE GAS Vinton, LA	TENNESSEE GAS Average Zone 1 of 500 & 800
TEXAS GAS TRANSMISSION Zone 1 (North Louisiana)	TEXAS GAS TRANSMISSION Zone 1 (North Louisiana)
GULF SOUTH PIPELINE	TRUNKLINE GAS Co.

OCS. The average wellhead price calculated from sales and volumes from Louisiana OCS natural gas as reported by the U.S. Department of Interior, Minerals Management Service.

State Royalty. The average wellhead price calculated from revenue received and volumes reported to the Louisiana Department of Natural Resources.

State Wells. The average price of gas sold at Louisiana wellhead. This price includes: (a) value of natural gas plant liquids subsequently removed from the gas, (b) gathering and compression charges, and (c) State production, severance, and/or similar charges.

Major Pipelines Purchases.

a) **Domestic Producers**. The average price of natural gas produced in the United States or from the Outer Continental Shelf of the U.S.

b**) Foreign Imports**. The average price of any natural gas not reported as domestic.

Wellhead. The wellhead sales price including: (a) value of natural gas plant liquids subsequently removed from the gas, (b) gathering and compression charges, and (c) State production, severance, and/or similar charges.

Natural Gas, Wet After Lease Separation. The volume of natural gas, if any, remaining after: (a) removal of lease condensate in lease and/or field separation facilities, and (b) exclusion of non-hydrocarbon gases where they occur in sufficient quantities to render the gas unmarketable. Also excludes gas returned to formation in pressure maintenance and secondary recovery projects and gas returned to earth from cycling and/or gasoline plants. Natural gas liquids may be recovered from volumes of natural gas, wet after lease separation, at natural gas processing plants.

Organization of Petroleum Exporting Countries (OPEC). Countries that have organized for the purpose of negotiating with oil companies on matters of oil production, prices, and future concession rights. Current members are Algeria, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Outer Continental Shelf (OCS). All submerged lands that comprise the Continental Margin adjacent to the U.S. and seaward of the state offshore lands. Production in the OCS is under federal regulatory jurisdiction and ownership.

Processing Plant. A facility designed to recover natural gas liquids from a stream of natural gas which may or may not have passed through lease separators and/or field separation facilities. Another function of natural gas processing plants is to control the quality of the processed natural gas stream.

Proved Reserves of Crude Oil. As of December 31 of the report year, the estimated quantities of all liquids defined as crude oil which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions. Volumes of crude oil in underground storage are not considered proved reserves.

Proved Reserves of Lease Condensate. The volumes of lease condensate as of December 31 of the report year expected to be recovered in future years in conjunction with the production of proved reserves of natural gas as of December 31 of the report year.

Proved Reserves of Natural Gas. The estimated quantities of natural gas as of December 31 of the report year which analysis of geologic and engineering data demonstrates with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions. Volumes of natural gas in underground storage are not considered proved reserves.

Proved Reserves of Natural Gas Liquids. The volumes of natural gas liquids (including lease condensate) as of December 31 of the report year, which analysis of geologic and engineering data demonstrates with reasonable certainty to be separable in the future from proved natural gas reserves under existing economic and operating conditions.

Rental. Money paid by the lessee to maintain the lease after the first year if it is not producing. A lease is considered expired when rental is not paid on time on an unproductive lease.

Reservoir. A porous and permeable underground formation containing an individual and separate natural accumulation of producible hydrocarbons (oil and/or gas) which is confined by impermeable rock or water barriers and is characterized by a single natural pressure system. Reservoirs are considered proved if economic producibility is supported by actual production or conclusive formation tests (drill stem or wire line), or if economic producibility is supported by core analysis and/or electric or other log interpretations. The area of a gas or oil reservoir considered proved includes: (a) that portion delineated by drilling and defined by gas-oil and/or gas-water contacts, if any; and (b) the immediately adjoining portions not yet drilled, but which can be reasonably judged as economically productive on the basis of available geological and engineering data.

Residential Consumption. Gas used in private dwellings, including apartments, for heating, cooking, water heating, and other household uses.

Royalty (Including Royalty Override) Interest. Those interests which entitle their owner(s) to a share of the mineral production from a property or to a share of the proceeds from there. These interests do not contain the rights and obligations of operating the property and normally do not bear any of the costs of exploration, development, or operation of the property.

Royalty Override (Or Overriding Royalty). An interest in oil and gas produced at the surface free of any cost of production. It is royalty in addition to the usual landowner's royalty reserved to the lessor. The Layman's Guide to Oil & Gas by Brown & Miller defines overriding royalty as a percentage of all revenue earned by a well and carrying no cost obligation.

State Offshore. (See Louisiana Offshore**).**

Wet After Lease Separation. (See Natural Gas, Wet After Lease Separation).

Wildcat Well . (See Developmental Well).

Appendix D

Louisiana Gas Volume at 14.73 psia

Page

Appendix D-1

LOUISIANA STATE GAS PRODUCTION, WET AFTER LEASE SEPARATION

Natural Gas and Casinghead Gas, Excluding OCS

(Thousand Cubic Feet (MCF) at 14.73 psia and 60 degrees Fahrenheit)*

DATE	NORTH	SOUTH	OFFSHORE	TOTAL
1983	367,415,635	1,330,669,947	323,523,633	2,021,609,215
1984	389,939,125	1,400,621,534	320,286,543	2,110,847,202
1985	358,032,963	1,274,608,554	255,072,018	1,887,713,536
1986	370,901,958	1,240,893,984	251,033,103	1,862,829,044
1987	363,802,599	1,175,490,485	232,692,536	1,771,985,620
1988	382,100,449	1,192,889,101	218,544,278	1,793,533,828
1989	386,783,455	1,153,294,096	207,381,469	1,747,459,020
1990	398,236,494	1,160,425,829	185,678,416	1,744,340,739
1991	389,623,599	1,139,243,110	152,895,972	1,681,762,681
1992	379,671,005	1,146,893,542	149,933,256	1,676,497,803
1993	360,897,088	1,126,950,007	156,919,403	1,644,766,497
1994	361,146,486	1,048,229,785	158,315,609	1,567,691,880
1995	370,709,558	1,028,500,599	167,742,330	1,566,952,486
1996	425,506,052	1,048,009,685	189,331,696	1,662,847,432
1997	450,873,442	995,341,920	189,565,415	1,635,780,777
1998	446,138,374	979,584,537	183,246,642	1,608,969,552
1999	402,085,989	928,879,872	152,594,840	1,483,560,702
2000	395,888,433 r	946,027,766 r	152,509,834 r	1,494,426,032 r
2001	398,416,780 r	973,262,804 r	153,910,366 r	1,525,589,950 r
2002	359,485,528 r	892,444,993 r	137,217,944 r	1,389,148,465 r
January	29,736,562 r	74,016,455 r	11,153,011 r	114,906,028 r
February	27,407,793 r	68,392,569 r	10,288,308 r	106,088,670 r
March	30,850,866 r	77,204,917 r	11,591,019 r	119,646,803 r
April	29,758,881 r	74,674,571 r	11,192,676 r	115,626,128 r
May	30,302,640 r	76,935,499 r	11,517,367 r	118,755,506 r
June	29,087,392 r	74,040,155 r	11,071,572 r	114,199,119 r
July	29,514,458 r	75,320,074 r	11,246,945 r	116,081,476 r
August	29,669,517	75,949,874	11,320,598	116,939,989
September	28,110,563	72,149,977	10,739,511	111,000,052
October	29,167,317	75,066,978	11,158,098	115,392,393
November	27,940,549	72,133,011	10,704,123	110,777,683
December	28,481,000	73,730,302	10,925,539	113,136,841
2003 Total	**350,027,540**	**889,614,383**	**132,908,765**	**1,372,550,688**
January	27,993,648	72,553,857	10,741,481	111,288,986
February	26,688,221	69,342,471	10,252,124	106,282,816
March	28,979,227	75,493,683	11,144,951	115,617,862
April	28,360,821	74,098,861	10,920,239	113,379,921
May	29,299,475	76,751,566	11,293,703	117,344,745
June	28,289,228	74,307,797	10,915,921	113,512,946
July	29,180,675	76,858,333	11,272,853	117,311,861
August	29,058,187	76,781,605	11,240,335	117,080,127
September	23,270,135	66,179,819	9,103,628	98,553,583
October	25,775,249	77,411,648	9,774,891	112,961,788
November	25,629,464 e	75,169,584 e	9,729,251 e	110,528,300 e
December	25,482,385 e	74,964,929 e	9,734,249 e	110,181,564 e
2004 Total	**328,006,717 e**	**889,914,153 e**	**126,123,627 e**	**1,344,044,496 e**

e Estimated r Revised p Preliminary

* See Table 11 corresponding volumes at 15.025 psia and footnote in Appendix B.

Appendix D-2

LOUISIANA STATE GAS PRODUCTION, WET AFTER LEASE SEPARATION

Natural Gas and Casinghead Gas

(Thousand Cubic Feet (MCF) at 14.73 psia and 60 degrees Fahrenheit)*

DATE	ONSHORE	OFFSHORE		TOTAL
		State	Federal OCS[12]	
1983	1,698,085,582	323,523,633	3,803,740,050	5,825,349,265
1984	1,790,560,659	320,286,543	3,173,892,354	5,284,739,556
1985	1,632,641,518	255,072,018	3,578,740,570	5,466,454,106
1986	1,611,795,941	251,033,103	3,116,884,490	4,979,713,534
1987	1,539,293,084	232,692,536	2,927,832,264	4,699,817,884
1988	1,574,989,550	218,544,278	3,180,107,195	4,973,641,023
1989	1,540,077,551	207,381,469	3,096,881,628	4,844,340,648
1990	1,558,662,324	185,678,416	3,006,576,061	4,750,916,800
1991	1,528,866,709	152,895,972	3,706,324,044	5,388,086,725
1992	1,526,564,547	149,933,256	3,289,968,602	4,966,466,405
1993	1,487,847,094	156,919,403	3,338,101,447	4,982,867,944
1994	1,409,376,270	158,315,609	3,386,808,653	4,954,500,533
1995	1,399,210,157	167,742,330	3,492,406,762	5,059,359,248
1996	1,473,515,737	189,331,696	3,636,067,997	5,298,915,429
1997	1,446,215,363	189,565,415	3,898,234,094	5,534,014,871
1998	1,425,722,911	183,246,642	3,913,885,048	5,522,854,600
1999	1,330,965,862	152,594,840	3,789,387,595	5,272,948,297
2000	1,341,916,199 r	152,509,834 r	3,987,022,817	5,481,448,849 r
2001	1,371,679,584 r	153,910,366 r	3,663,809,133	5,189,399,083 r
2002	1,251,930,521 r	137,217,944 r	3,414,901,105	4,804,049,570 p r
January	103,753,018 r	11,153,011 r	289,439,942 p r	404,345,971 p r
February	95,800,362 r	10,288,308 r	265,663,155 p r	371,751,825 p r
March	108,055,784 r	11,591,019 r	298,364,598 p r	418,011,401 p r
April	104,433,452 r	11,192,676 r	290,699,540 p r	406,325,668 p r
May	107,238,139 r	11,517,367 r	294,724,090 p r	413,479,596 p r
June	103,127,547 r	11,071,572 r	278,110,326 p r	392,309,445 p r
July	104,834,532 r	11,246,945 r	285,643,863 p r	401,725,339 p r
August	105,619,391	11,320,598	283,239,655 p	400,179,644 p
September	100,260,540	10,739,511	268,571,653 p	379,571,705 p
October	104,234,295	11,158,098	278,270,406 p	393,662,799 p
November	100,073,560	10,704,123	260,694,658 p	371,472,341 p
December	102,211,303	10,925,539	270,558,000 p	383,694,841 p
2003 Total	**1,239,641,922**	**132,908,765**	**3,363,979,887 p**	**4,736,530,574 p**
January	100,547,505	10,741,481	276,828,182 e	388,117,167 e
February	96,030,692	10,252,124	264,084,900 e	370,367,716 e
March	104,472,910	11,144,951	270,164,188 e	385,782,049 e
April	102,459,682	10,920,239	248,893,068 e	362,272,989 e
May	106,051,042	11,293,703	261,933,212 e	379,277,957 e
June	102,597,025	10,915,921	246,899,958 e	360,412,903 e
July	106,039,009	11,272,853	N/A	117,311,861
August	105,839,792	11,240,335	N/A	117,080,127
September	89,449,954	9,103,628	N/A	98,553,583
October	103,186,897	9,774,891	N/A	112,961,788
November	100,799,048 e	9,729,251 e	N/A	110,528,300 e
December	100,447,315 e	9,734,249 e	N/A	110,181,564 e
2004 Total	**1,217,920,869 e**	**126,123,627 e**	**1,568,803,507**	**2,912,848,003 e**

e Estimated r Revised p Preliminary

* See Table 12 corresponding volumes at 15.025 psia and footnote in Appendix B.

NOTE: The 2003 Federal OCS production is estimated from the marketed production

Appendix D-3

LOUISIANA MARKETED AND DRY GAS PRODUCTION

(Billion Cubic Feet (BCF) at 14.73 psia and 60 degrees Fahrenheit)*

	MARKETED			EXTRACTION	
DATE	State	OCS	Total[3]	LOSS[3]	DRY[3]
1961	2,785 e	315 [12]	3,100 e	N/A	N/A
1962	3,055 e	447 [12]	3,502 e	N/A	N/A
1963	3,317 e	559 [12]	3,876 e	N/A	N/A
1964	3,520 e	616 [12]	4,136 e	N/A	N/A
1965	3,731 e	639 [12]	4,370 e	N/A	N/A
1966	4,145 e	956 [12]	5,101 e	N/A	N/A
1967	4,640	1,076 [12]	5,717	115	5,602
1968	5,017	1,399 [12]	6,416	140	6,276
1969	5,424	1,804 [12]	7,228	179	7,049
1970	5,538	2,250 [12]	7,788	193	7,595
1971	5,474	2,608 [12]	8,082	195	7,887
1972	5,120	2,853 [12]	7,973	198	7,775
1973	5,217	3,025 [12]	8,242	207	8,036
1974	4,438	3,316 [12]	7,754	194	7,559
1975	3,792	3,299 [12]	7,091	190	6,901
1976	3,542	3,465 [12]	7,007	173	6,834
1977	3,604	3,611 [12]	7,215	166	7,049
1978	3,368	4,108 [12]	7,476	162	7,315
1979	3,149	4,117 [12]	7,266	166	7,101
1980	2,966	3,974 [12]	6,940	142	6,798
1981	2,715	4,065 [12]	6,780	142	6,638
1982	2,406	3,766 [12]	6,172	129	6,043
1983	2,190	3,142 [12]	5,332	124	5,208
1984	2,282	3,543 [12]	5,825	133	5,693
1985	1,928	3,086 [12]	5,014	118	4,896
1986	1,997	2,899 [12]	4,895	116	4,780
1987	1,974	3,148 [12]	5,123	125	4,998
1988	2,114	3,066 [12]	5,180	120	5,060
1989	2,102	2,977 [12]	5,078	121	4,957
1990	1,573	3,669 [12]	5,242	119	5,123
1991	1,777	3,257 [12]	5,034	129	4,905
1992	1,649	3,265 [3]	4,914	133	4,782
1993	1,674	3,317 [3]	4,991	130	4,861
1994	1,691	3,479 [3]	5,170	129	5,041
1995	1,683	3,425 [3]	5,108	146	4,962
1996	1,628	3,662 [3]	5,290	140	5,150
1997	1,505 [3]	3,725 [3]	5,230	150	5,080
1998	1,552 [3]	3,725 [3]	5,277	145	5,133
1999	1,567 [3]	3,709 [3]	5,276	165	5,111
2000	1,455 [3]	3,567 [3]	5,022	162	4,831
2001	1,502 [3]	3,673 [3]	5,175	150	4,996
2002	1,362 [3]	3,736 [3]	5,098	172	5,072
2003	1,372 p	3,300 e	4,672 e	172	4,509 p

e Estimated r Revised p Preliminary

* See Table 13 corresponding volumes at 15.025 psia and footnote in Appendix B.

Appendix D-4

UNITED STATES OCS GAS PRODUCTION[12]

Natural Gas and Casinghead Gas

(Thousand Cubic Feet (MCF) at 14.73 psia and 60 degrees Fahrenheit)*

YEAR	LOUISIANA	TEXAS	CALIFORNIA	TOTAL
1956	82,892,538	0	0	82,892,538
1957	82,568,807	4,797	0	82,573,604
1958	127,692,849	0	0	127,692,849
1959	207,156,297	0	0	207,156,297
1960	273,034,452	0	0	273,034,452
1961	318,280,097	0	0	318,280,097
1962	451,952,661	0	0	451,952,661
1963	564,352,609	0	0	564,352,609
1964	621,731,441	0	0	621,731,441
1965	645,589,472	0	0	645,589,472
1966	965,387,854	42,059,386	0	1,007,447,240
1967	1,087,262,810	99,952,947	0	1,187,215,756
1968	1,413,467,614	109,910,788	799,685	1,524,178,086
1969	1,822,544,152	127,096,983	4,845,851	1,954,486,985
1970	2,273,147,052	133,300,405	12,229,147	2,418,676,604
1971	2,634,014,045	127,357,909	15,671,479	2,777,043,433
1972	2,881,364,748	147,156,460	10,033,581	3,038,554,789
1973	3,055,628,252	148,673,638	7,286,549	3,211,588,439
1974	3,349,170,882	159,979,402	5,573,642	3,514,723,926
1975	3,332,169,075	122,572,765	3,951,633	3,458,693,473
1976	3,499,865,919	92,582,425	3,475,201	3,595,923,545
1977	3,647,513,694	86,943,285	3,289,963	3,737,746,942
1978	4,149,731,158	231,857,451	3,472,292	4,385,060,901
1979	4,158,521,732	511,590,610	2,866,822	4,672,979,164
1980	4,013,707,456	624,642,529	3,107,023	4,641,457,008
1981	4,106,494,612	730,275,835	12,766,307	4,849,536,754
1982	3,803,740,070	858,020,303	17,750,924	4,679,511,297
1983	3,173,892,371	850,817,216	16,024,292	4,040,733,879
1984	3,578,740,589	931,293,587	27,806,899	4,537,841,075
1985	3,116,884,507	834,926,527	49,164,213	4,000,975,247
1986	2,927,832,280	978,370,557	42,689,021	3,948,891,858
1987	3,180,107,212	1,204,488,343	40,986,158	4,425,581,714
1988	3,096,881,645	1,178,422,567	34,570,638	4,309,874,850
1989	3,006,576,077	1,165,112,959	28,574,912	4,200,263,949
1990	3,706,324,064	1,348,075,368	38,531,764	5,092,931,196
1991	3,289,968,620	1,184,936,500	40,626,577	4,515,531,697
1992	3,338,101,465	1,239,389,554	40,873,660	4,685,644,750
1993	3,386,808,671	1,027,937,761	42,082,090	4,533,389,755
1994	3,492,406,781	1,014,204,140	41,679,064	4,657,017,854
1995	3,636,068,016	908,520,055	36,425,501	4,692,270,850
1996	3,898,234,115	972,873,764	37,822,941	5,024,420,834
1997	3,913,885,048	965,334,787	40,722,084	5,076,996,337
1998	3,789,387,595	867,606,779	26,431,191	4,835,387,697
1999	3,987,022,817	814,124,878	37,261,450	4,992,363,948
2000	3,661,353,702	865,548,000	36,712,196	4,673,123,023
2001	3,857,433,283	813,326,711	41,266,568	4,712,026,562
2002	3,396,472,994	996,962,430	40,392,325	4,433,827,749
2003	3,363,979,887 p	N/A	N/A	4,152,432,627 p

e Estimated r Revised p Preliminary

* See Table 15 corresponding volumes at 15.025 psia and footnote in Appendix B.

Appendix D-5

UNITED STATES NATURAL GAS AND CASINGHEAD GAS PRODUCTION[3]

(Billion Cubic Feet (BCF) at 14.73 psia and 60 degrees Fahrenheit)*

DATE	GROSS	WET AFTER LEASE SEPARATION	MARKETED	DRY	GROSS IMPORTS
1983	18,659	16,979	16,884	16,094	918
1984	20,267	18,412	18,304	17,466	843
1985	19,607	17,365	17,270	16,454	950
1986	19,131	16,956	16,859	16,059	750
1987	20,140	17,557	17,433	16,621	993
1988	20,999	18,061	17,918	17,103	1,294
1989	21,074	18,237	18,095	17,311	1,382
1990	21,523	18,744	18,594	17,810	1,532
1991	21,749	18,703	18,532	17,698	1,773
1992	22,132	18,879	18,712	17,840	2,138
1993	22,725	19,209	18,982	18,095	2,350
1994	23,581	19,938	19,710	18,821	2,624
1995	23,743	19,790	19,506	18,598	2,841
1996	24,114	20,084	19,812	18,854	2,937
1997	24,213	20,122	19,865	18,902	2,994
1998	24,108	20,064	19,961	19,024	3,152
1999	23,823	19,915	19,805	18,832	3,586
2000	24,174	20,289	20,198	19,182	3,784 r
2001	24,501 r	20,667 r	20,570 r	19,616 r	3,977
2002	23,977 r	20,020 r	19,921 r	18,964 r	4,015 r
January	2,095 r	1,729 r	1,721 r	1,638 r	365 r
February	1,905 r	1,566 r	1,558 r	1,483 r	314 r
March	2,115 r	1,752 r	1,743 r	1,660 r	329 r
April	1,999 r	1,662 r	1,654 r	1,574 r	317 r
May	2,042 r	1,710 r	1,701 r	1,620 r	328 r
June	1,973 r	1,644 r	1,637 r	1,558 r	310 r
July	2,014 r	1,694 r	1,687 r	1,606 r	345 r
August	2,027	1,692	1,684	1,604	337
September	1,981	1,654	1,647	1,568	326
October	2,044	1,694	1,686	1,605	336
November	1,977	1,630	1,622	1,544	322
December	2,072	1,697	1,690	1,609	367
2003 Total	**24,243**	**20,125**	**20,030**	**19,068**	**3,996**
January	2,095	1,717	1,709	1,627	372
February	1,950	1,595	1,588	1,512	346
March	2,090	1,706	1,698	1,617	348
April	1,999	1,641	1,634	1,555	319
May	2,027	1,664	1,656	1,577	321
June	1,892	1,579	1,571	1,496	324
July	N/A	N/A	N/A	N/A	N/A
August	N/A	N/A	N/A	N/A	N/A
September	N/A	N/A	N/A	N/A	N/A
October	N/A	N/A	N/A	N/A	N/A
November	N/A	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A
2004 Total	**12,053**	**9,903**	**9,857**	**9,384**	**2,029**

e Estimated r Revised p Preliminary

* See Table 16 corresponding volumes at 15.025 psia and footnote in Appendix B.

Appendix E

Louisiana Energy Topics

AMERICA'S WETLAND ENERGY CORRIDOR TO THE NATION

Parts 1-4 of this series was published in the last report.

Calumet Refinery 1996

Originally Published in January 2004 Louisiana Energy Facts

AMERICA'S WETLANDS: ENERGY CORRIDOR TO THE NATION

Located in Louisiana's Wetlands Resources, the Henry Hub is America's Natural Gas Energy Portal

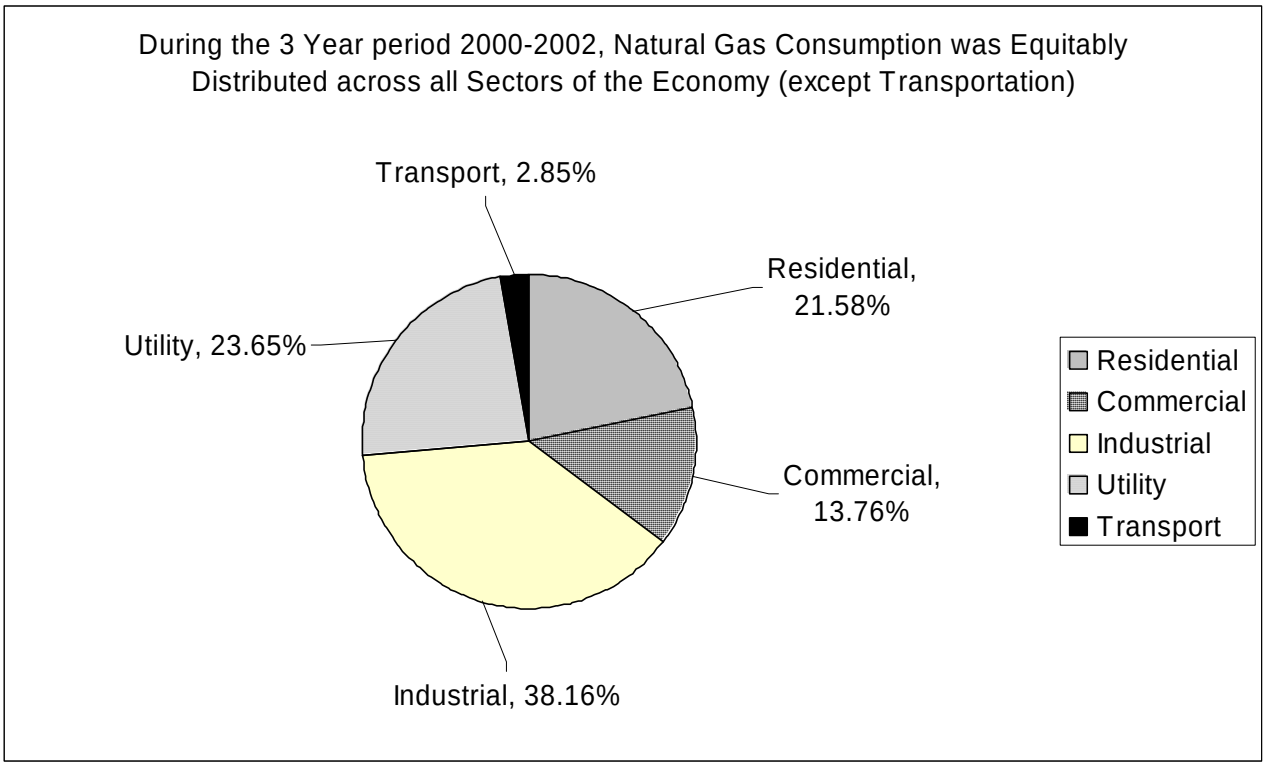
Part 5 of 7

by

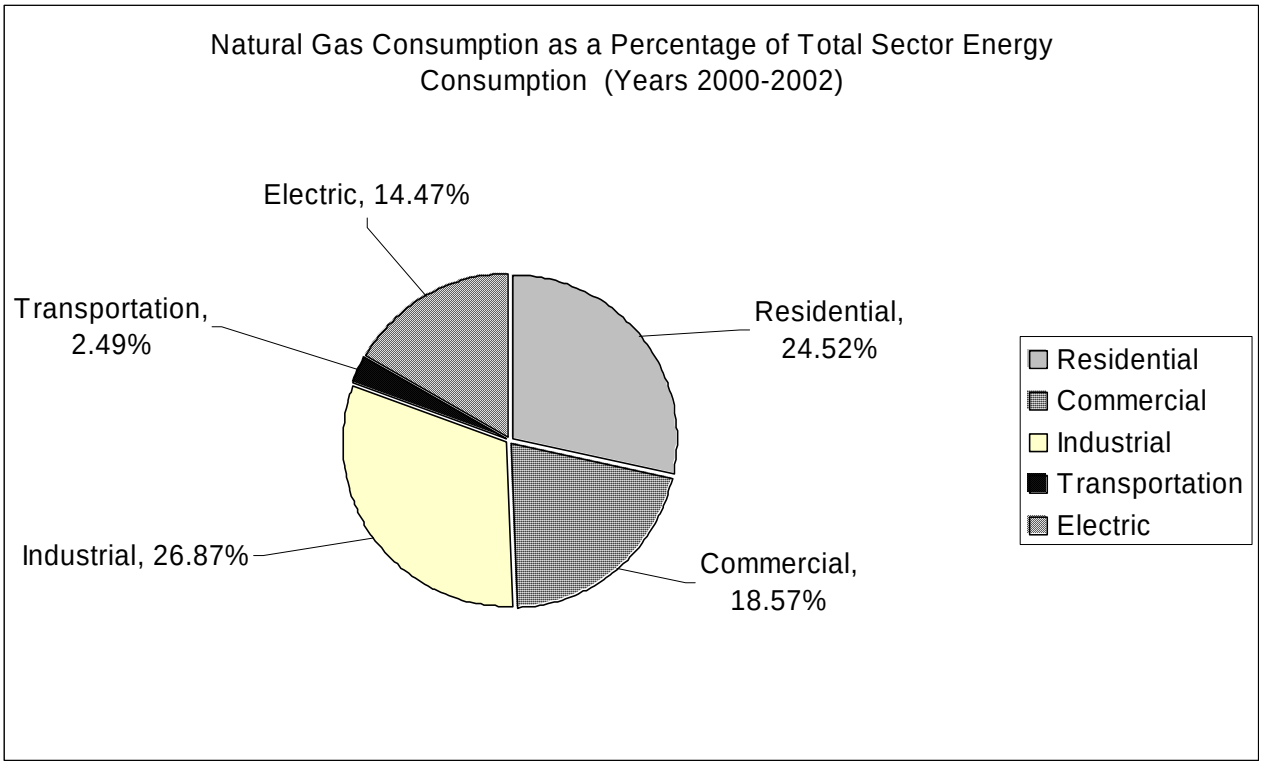
Bob Sprehe, Energy Economist

The Chairman of the Board of Governors of the Federal Reserve System, Dr. Alan Greenspan, recently provided high visibility testimony regarding the critical importance of a dependable supply of natural gas for the nation's economy before the Congress of the United States. Natural Gas provided close to 24% of the nation's energy sources over the 3 year period 2000-2002 (see Part 2 of this 7 part series in Louisiana Energy Facts Annual 2003, Appendix E).

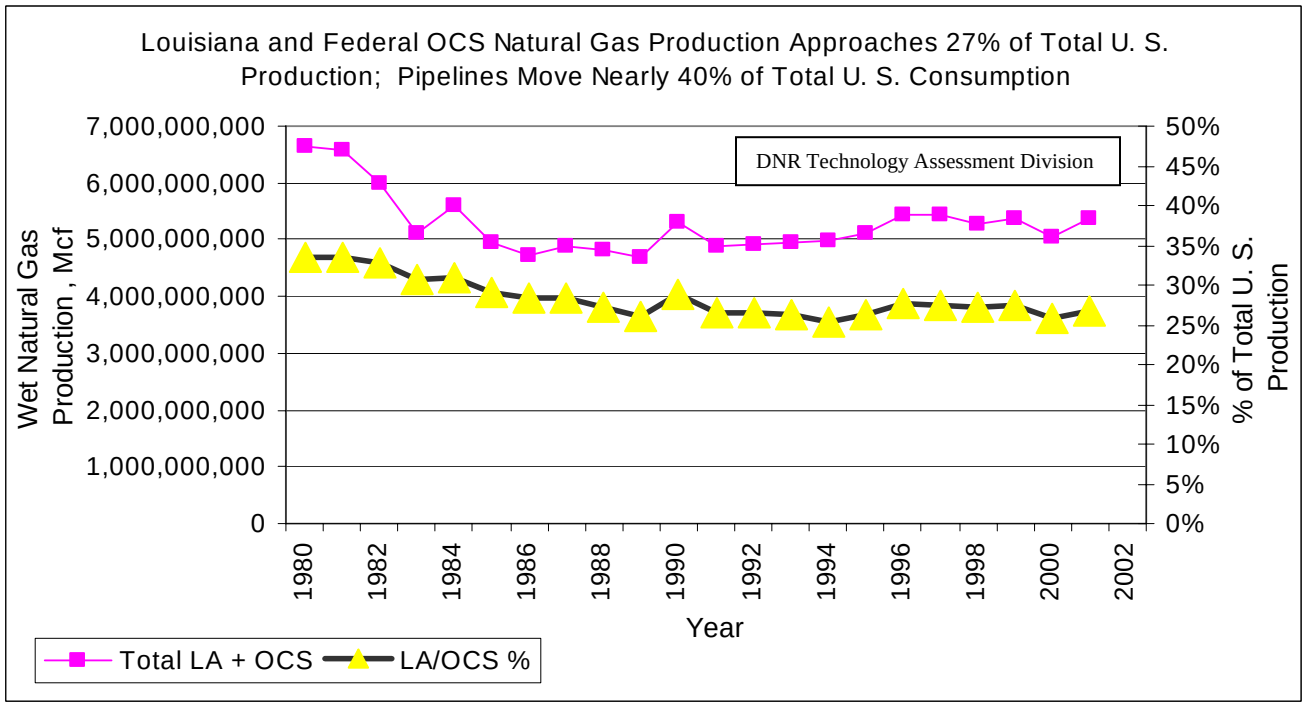
Natural Gas Is Used As A Source Of Energy In All Sectors Of The Economy



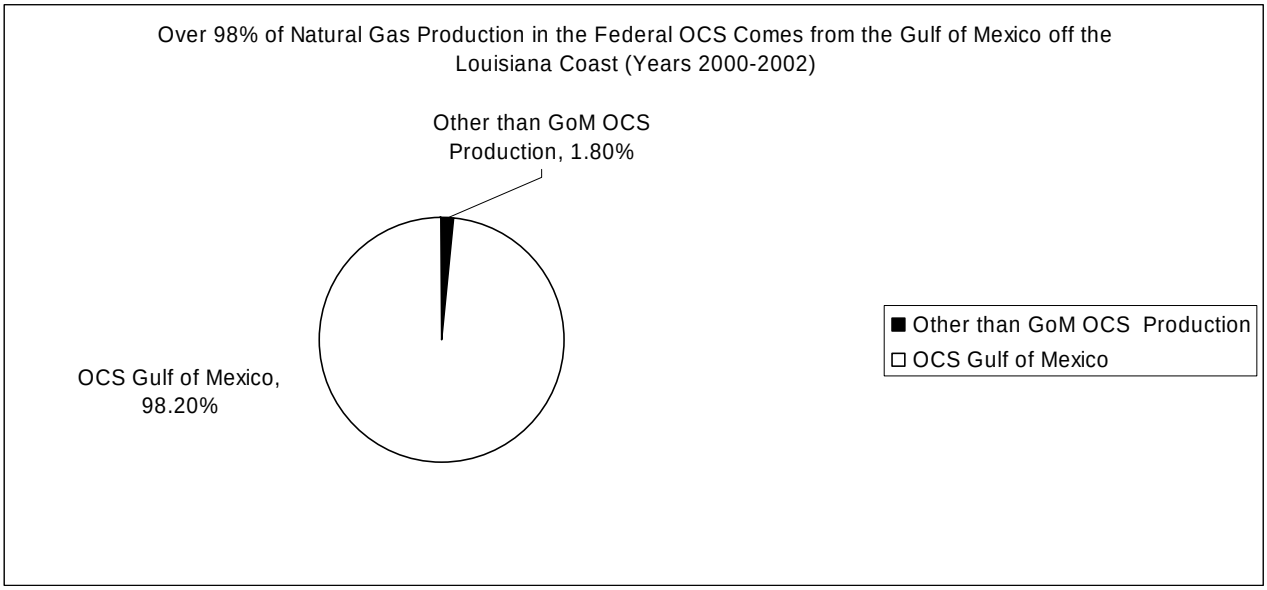
In Each Of These Sectors, Natural Gas Is A Material Source Of Energy (Except For Transportation)



America's Louisiana Wetland Resources Again Provide An Important Energy Portal For Serving The Needs Of The Nation's Citizens And Industry



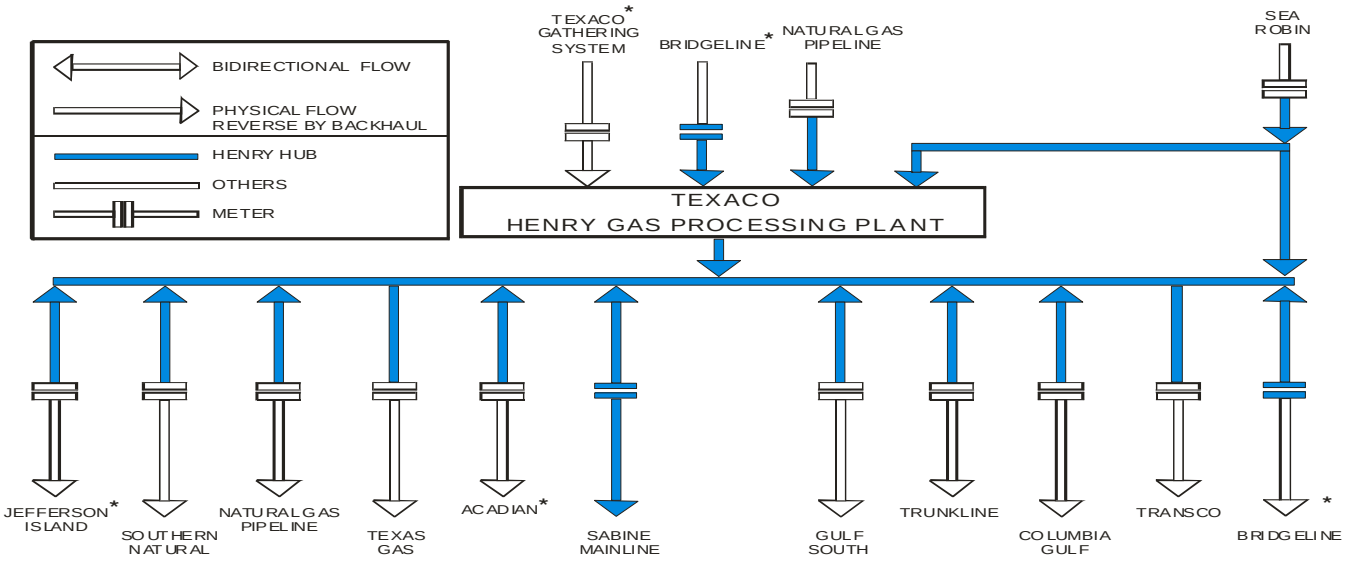
From The Federal Outer Continental Shelf (OCS) In The Gulf Of Mexico Off The Louisiana Coast, Natural Gas Flows Through The State's Wetlands To The Rest Of The United States



America's Wetlands and The Henry Hub

The Henry Hub, owned and operated by Sabine Pipeline LLC, a subsidiary of ChevronTexaco, is located near Erath, Louisiana, in Vermillion Parish. The Henry Hub is the nexus of 13 natural gas pipeline systems that draw supplies from prolific offshore and onshore gas fields in Louisiana and Federal OCS waters. These crucial supplies are then shipped to markets along the East Coast as far North as the New England area, east and west across the Gulf Coast, north into the Midwest, and even up to the Canadian border.

A Schematic Drawing of the Henry Hub



SOURCE: Sabine Pipeline Rev. 4 / 01

* - Intrastate pipeline

These 13 pipeline systems include 9 interstate and 4 intrastate lines. Flow capacity through the Henry Hub is approximately 2 billion cubic feet per day (2,000,000 Mcf/day). Completing this nexus is a natural gas processing plant for stripping liquids from the natural gas stream, and 10 billion cubic feet of salt dome cavern storage capacity operated by Bridgeline Holdings L.P., a wholly owned subsidiary of Chevron-Texaco. This combination of facilities, direction of flow throughout the nation, and pure physical volume make the Henry Hub the most vigorous trading point in the North American natural gas market.

America's Wetlands Resources and the New York Mercantile Exchange (NYMEX)

Following a sustained period of years of gradual deregulation, the wellhead price of natural gas became completely deregulated as of January 1, 1993. Market prices for commodities are volatile over time, and natural gas is no different. Therefore, the NYMEX recognized the need for the service of price discovery for producers and consumers of natural gas, a product that is fungible, i.e., interchangeable for purposes of storage and shipment, has a very large number of suppliers and consumers, and experiences a price volatility as demand and supply fluctuate over time, often hourly in response to variations in weather conditions.

In April 1990 NYMEX began offering a standardized contract for trading natural gas futures. A Futures contract is a firm commitment to make or accept delivery of a specified quantity and quality of natural gas during a specific month in the future, at a price agreed upon at the time of the commitment. Traders generally offset their futures contract before contracts mature. In this way, both buyer and seller can lock in their profit/cost from the transaction (i.e., manage their financial risk exposure in a volatile price market). This is done through an Exchange of Futures in Physicals (EFP).

The futures market allows industry participants flexibility in forward planning. This flexibility was further enhanced by the introduction of a natural gas options market in October 1992. The major appeal of an options contract is that the holder of the option is afforded price protection, but still has the ability to participate in favorable market moves (i.e., upward price movements, if a producer for example, above the contracted price of the commodity). The buyer of an option contract does not have any obligation to deliver the commodity. His only up front financial exposure is the cost of the option. Should the market move against the position the only cost incurred is the cost of the option. However, should the price move in the option holders favor, the option has unlimited upside potential.

Futures vs. Options

	Futures	Options
Risk	Unlimited risk on long and short positions	Defined and limited on purchase of puts and calls; unlimited on sale
Price Protection	Establishes fixed price	Establishes floor or ceiling price protection
Margin	Required on long and short positions	Futures style margins for sellers, margin contained in cost of premium for buyers
Hedging	Long, short, spread	Multiple hedging strategies

Source: http://www.nymex.com/jsp/education/option_info.jsp

Taken together, prolific natural gas production both onshore and offshore in Louisiana, multiple pipeline systems delivering natural gas, the large natural gas processing plant for extraction of liquids, and the salt cavern storage facility connected to the site renders the Henry Hub the most viable of major natural gas

delivery points in North America and, hence, plays an extraordinarily prominent role in the daily life and financial stability of America's consumers, corporations, and the nation's energy security.

NOTE: The Department of Natural Resources wishes to thank the staff at Chevron-Texaco and Sabine Pipeline LLC for their assistance in reviewing, and constructively contributing to, this article on the Henry Hub. Also, the NYMEX web site, http://www.nymex.com provides a more detailed explanation of Futures markets operations.

Originally Published in February 2004 Louisiana Energy Facts

AMERICA'S WETLANDS: ENERGY CORRIDOR TO THE NATION

Port Fourchon: Serving the Nation's Energy Needs in the 21st Century
Part 6 of 7
by
Bob Sprehe, Energy Economist

Thanks to the foresight of the Louisiana Legislature and members of the Greater Lafourche Port Commission, Port Fourchon strives to continue serving America's energy needs into the 21st Century. When combining Port Fourchon's role as a domestic energy support base with its role in supporting Louisiana Offshore Oil Port (LOOP), this key energy hub is a vital component for nearly 16% - 18% of our nation's oil and gas supply coming just from foreign imports, as well as, current deepwater production in the Gulf of Mexico.

Few people recognize that, as expansive as Coastal Louisiana is, there are only two corridors that provide road access to the Gulf of Mexico, the Lafourche Corridor and another in extreme Southwest Louisiana in the Cameron-Holly Beach area. This limited highway connectivity to the Gulf, and proximity to this nation's major offshore oil and gas fields, has resulted in unprecedented development of Port Fourchon into the premiere intermodal base for support of an increasingly significant amount of this nation's hydrocarbon supply.

History of Port Fourchon

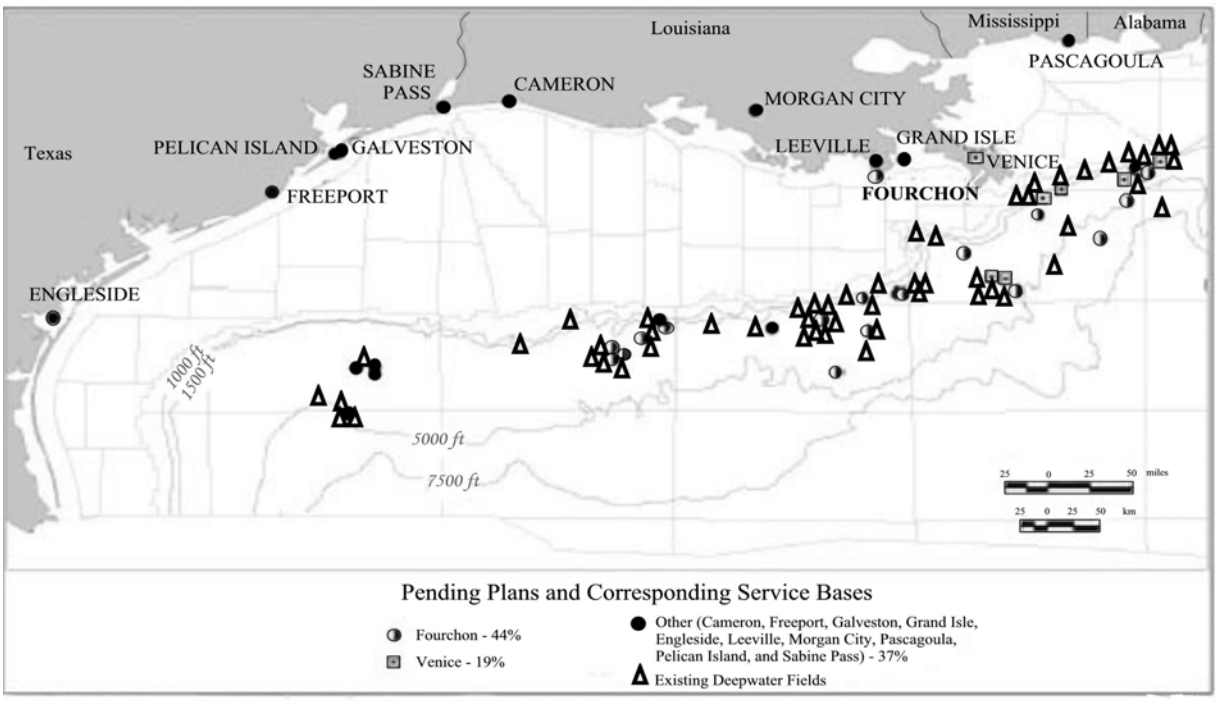
The Greater Lafourche Port Commission was created by Act 222 of the Louisiana Legislature in 1960. The Commission is an elected nine member governing body serving six year terms. Its area of jurisdiction includes the 10th Ward of Lafourche Parish. The Commission has the authority to, (1) regulate commerce and traffic, (2) maintain proper water depths, (3) provide police protection, (4) enact ordinances, (5) levy taxes, (6) issue bonds, and (7) expropriate property.

Through the years, the Commission has pursued an aggressive strategy of expansion to serve the needs of the oil and natural gas exploration, drilling, and production sectors. The expansion of Port Fourchon over

the past 40 years has caused it to run out of elevated land area. The Commission built new land by elevating low lands, even open water, with dredge materials. By using this technique, over 700 acres have been developed, with an additional 1,500 acres remaining to be developed.

Located on the Gulf, Port Fourchon serves as the land base for support of LOOP and serves as the intermodal base for support of 75% of the Gulf's domestic deepwater oil and gas production.

In 1995, technological advances in exploration and production, and the passage of the Deepwater Royalty Relief Act (DWRRA) by Congress, resulted in the unleashing of a new frontier in waters greater than 1000 feet deep in the Gulf. This phenomenon has enabled this nation to identify, and begin producing, what has proven to be the largest domestic oil and gas finds ever with reserves estimated at 71 billion barrels. These huge reserves have sparked an unprecedented surge in Federal leasing and lease holder activity. As the industry geared up to harvest these federal resources, it became evident that there was no better place geographically, economically, or environmentally to support this swell of activity than Port Fourchon, Louisiana's southernmost port.



Adapted from MMS: "Deepwater Gulf: America's Expanding Frontier" 2002

Since the passage of DWRRA, the Port has more than tripled in size and activity. Now, Port Fourchon has over 600 acres in operation and another 700 acres in development. Over 150 companies operate out of the port, and intermodal tonnage now exceeds 15 million tons. Over 1000 trucks bring cargo in and out of this key support facility each day.

In the few years since deepwater production began, it has surpassed the Outer Continental Shelf (OCS) in production. Since 1995, deepwater oil production has experienced a 500% increase, and gas a 550% increase. This surge in activity has initiated the evolution of Port Fourchon into the premiere energy intermodal support facility in the Gulf. State of the art deepwater shore base support capabilities, not present anywhere else in the world, exist at Port Fourchon. These capabilities, which allow industry to

efficiently support deepwater activity, have played a key role in the success of this nation's domestic production which positively impacts the national balance of trade, growth of our Gross Domestic Product (GDP), and helps provide energy security to consumers.

The U.S Minerals Management Service (MMS) projects that there will be 10-to-21 billion barrels of oil and 40-to-60 trillion cubic feet of natural gas discovered on just the federal leases licensed for development over the next 5 years. That is enough energy to fuel every commercial and private vehicle in America for two-to-five years and heat, cool and run appliances in every home in America for two-to-three years. In order to meet these energy milestones, key energy infrastructure will have to be sustained, and even upgraded.

Leeville Bridge the "weakest link" in the supply chain to Port Fourchon.

LA 1 and Leeville after a minimal Tropical Storm

America's Energy Corridor Highway: Louisiana Highway 1

The "weakest link" in Port Fourchon's ability to fulfill the demands placed upon it is Louisiana Highway One (LA Hwy. 1), Fourchon's only connection to land. This 17-mile stretch of LA Hwy. 1 is a barely-above-sea-level, two-lane roadway that runs through the most rapidly deteriorating estuary system in the world. It provides the ***only*** means of land access to Port Fourchon and Grand Isle, Louisiana's only inhabited barrier island. LA Hwy. 1 is the lifeline of support for the backbone of the nation's oil and gas supply. It transports a quarter of Louisiana's seafood production and is the only means of hurricane evacuation for 7,500 oilfield workers and several thousand residents. LA Hwy. 1's vulnerability to destruction is increasing daily as wetlands erode. Studies have proven that a substantial part of LA Hwy. 1 could be below sea level within 8 years. Additionally, LA Hwy. 1 will continue to deteriorate under heavy truck traffic to Port Fourchon unless new construction and upgrades are quickly implemented.

Efforts are underway to build an elevated four-lane highway from Golden Meadow to Port Fourchon. Environmental clearances have been obtained and engineering is underway, but Federal funding has not been committed. This deteriorating highway system has been used as a glaring example of the huge inequity that exists in offshore revenue sharing between the federal government and the states supporting offshore development.

Currently, the Federal Government shares 50% of its onshore mineral revenues with the state within which the production occurs. Revenue from production beyond 3 miles offshore from a state's boundary is not shared with the state. Without a similar mechanism in place to share offshore revenues with the adjacent states, the ability of key coastal energy infrastructure to sustain the level of support activity being

demanded of it is threatened. In 2001, the federal government collected over $5 Billion in oil and gas revenues from offshore Louisiana and shared less than one-half of one-percent with Louisiana. This crucial highway system has been acknowledged as "vital" by the Department of Interior, Minerals Management Service. LA Hwy. 1, now recognized as a critical path in "America's Energy Corridor", has been designated by Congress as one of only 44 High Priority Corridors in the nation.

Port Fourchon: Truly the Nexus of America's Energy Corridor

It took Federal Reserve Board Chairman, Alan Greenspan, to command the attention of our nation's political leadership on the critical importance of an adequate natural gas deliverability capacity for a vibrant economy. Two (2) new sources of natural gas will now command priority consideration: (1) imported Liquefied Natural Gas (LNG); and (2) deep and ultra deep drilling to depths of up to 35,000 feet sub-sea (or below the seabed as contrasted with deepwater drilling) in the shallower waters of the OCS in the Gulf of Mexico.

In late 2002, ChevronTexaco filed an application with the Coast Guard for an offshore LNG (Liquefied Natural Gas) terminal to be known as "Port Pelican." Since this announcement, other firms have come forward with announcements for preliminary engineering studies on the location of LNG terminals in the Gulf of Mexico, namely Shell and Freeport McMoran. Port Fourchon's central location will, again, figure prominently in servicing these LNG terminals and ultra deep drilling on the OCS, and the critical role each will play in meeting the Nation's energy needs in the 21st Century.

Challenges for America's Wetlands Port

It is obvious that Port Fourchon and LA Hwy. 1 play a critical role in supplying this nation with a substantial share of its total energy needs. It is projected that Port Fourchon will continue to play an increasingly significant role in supplying the fuel that runs this country for decades into the future. At the same time, it is very clear that the demands placed upon this coastal port strain the existing highway infrastructure, and Mother Nature further exacerbates the problem with rising waters and disappearing wetlands. **There is much at stake for this entire nation if Coastal Louisiana succumbs to the forces of nature.** If we are to meet the challenges of the 21st Century in providing an adequate level of national energy security, and ensure our ability to fuel this country for generations to come, this nation will have to develop a process by which states adjacent to offshore production can sustain and upgrade critical energy infrastructure.

Note: The Department of Natural Resources wishes to thank the Executive Director of Port Fourchon, Ted Falgout, and his staff, and the Louisiana 1 Coalition (LA 1 Coalition) Executive Director, Roy Martin, and his staff, for their contributions to the preparation of Part 6 of this 7 part series. The Port and the LA 1 Coalition have excellent web sites containing further background for those interested at www.portfourchonla.com, and http://la1coalition.org.

Originally Published in April 2004 Louisiana Energy Facts

Louisiana, an Energy Consuming State
An Update Using 2000 Data

Louisiana consumed 3,965.2 trillion BTUs (TBTUs) of energy in 2000, up almost 10% from 1999. This ranks Louisiana seventh in total energy consumption and second in per capita energy consumption among the states. Two-thirds of the increase is attributable to petroleum with all other sources, except hydro-electric, making up the remaining third of the increase. Louisiana's high energy consumption is mainly attributable to the transportation and industrial sectors. These two sectors constitute 86% (23% for transportation, 63% for industrial) of Louisiana's energy consumption.

Within the transportation sector, the consumption of motor gasoline is about average for the U.S., accounting for 30% of Louisiana's transportation energy budget. The bulk of Louisiana's transportation energy comes from the transportation of oil and gas. Louisiana ranks ninth in the U.S. in transportation energy consumption.

The industrial sector is, by far, the largest energy consumer in the state. Louisiana's abundant natural resources have historically meant low energy prices which have attracted energy intensive industries to Louisiana such as chemical, petrochemical, and refining. Louisiana ranks third in the nation, behind Texas and California, in industrial energy consumption.

Louisiana's energy production for the year 2000 increased by 0.8% to 2,623.1 TBTUs. Oil production, in decline since the early 80s, decreased by 3.3%, but was more than offset by an increase of 0.75% in natural gas production. These figures do not include the energy contained in the oil and gas produced in the federal OCS area attributable to Louisiana. Louisiana has no direct control over, nor does it receive any direct revenue benefit from, the production of oil and gas from the OCS area. Louisiana does, however, provide the necessary infrastructure to facilitate the exploration, production, and transportation of oil and gas from the OCS. With the energy from oil and gas production in Louisiana's OCS area included (almost one-fifth of the nation's oil and gas supply), Louisiana produced 9,621 TBTUs of energy in 2000, second in the nation after Texas.

On balance, not counting OCS oil and gas production, Louisiana is a net energy consuming state with 1,342.1 more TBTUs consumed than produced, ranking Louisiana 20th in the nation in net energy consumed and 7th in total energy consumption. The table on the next page provides an energy balance for the state, both with and without Louisiana federal OCS production.

Originally Published in May 2004 Louisiana Energy Facts

AMERICA'S WETLANDS: ENERGY CORRIDOR TO THE NATION

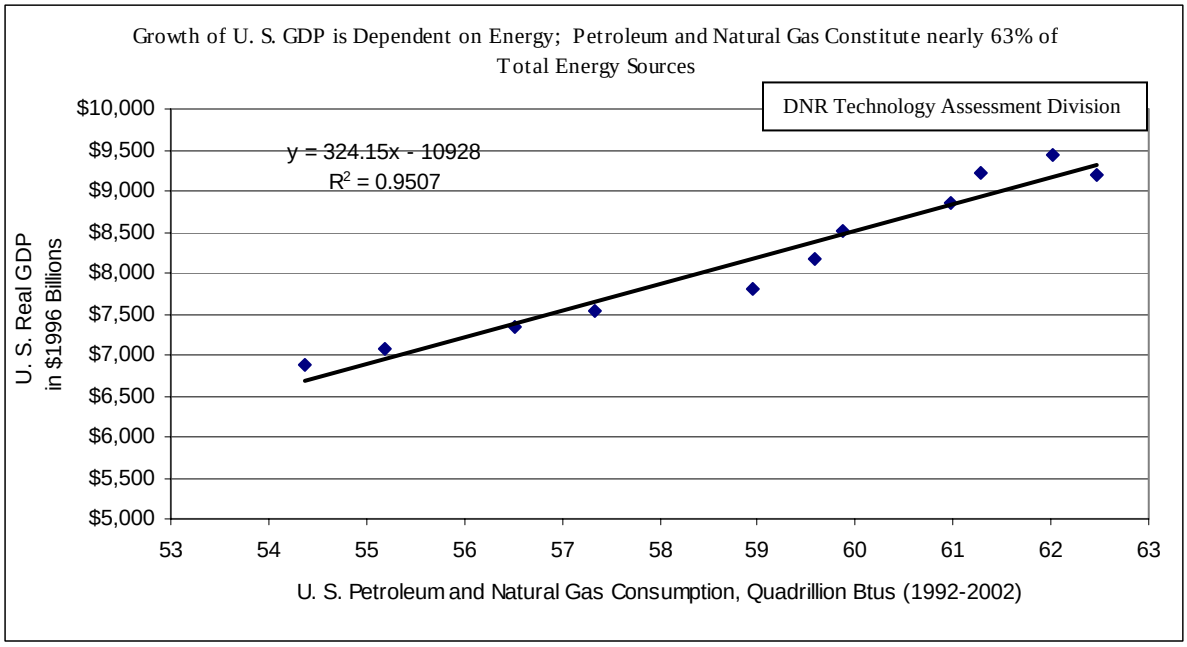
The Financial Well-Being of America's Consumer is Dependent on the Well-Being of America's Wetlands

Part 7 of 7

by

Bob Sprehe, Energy Economist

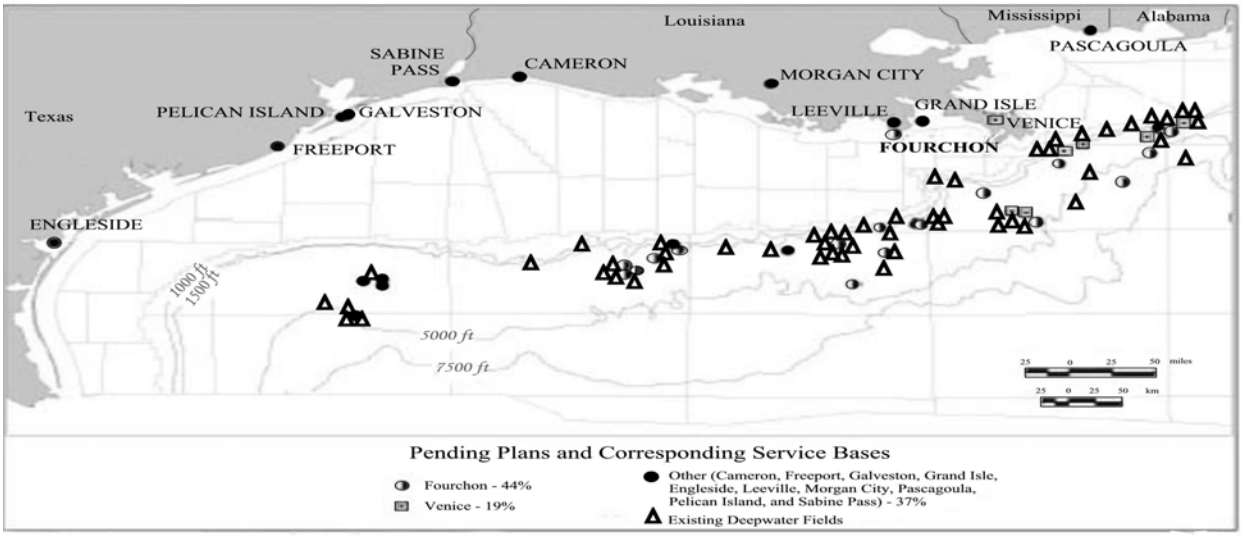
Energy is the lifeblood of the American economy, and America's Wetlands are the main artery. America's economic growth, and, therefore, the economic well-being of America's consumers, depends on access to a stable, secure, and dependable source of energy. America's Wetlands provide such access for nearly 34% of the U. S. natural gas supply and nearly 29% of the U. S. oil supply. Think of the catastrophic economic consequences to the American consumer, and the nation's Gross Domestic Product (GDP), should this volume of energy supply be interrupted!



The Louisiana legislature has worked diligently to ensure the adequacy of the Wetlands oil and natural gas infrastructure. One key element of that infrastructure is Port Fourchon. Port Fourchon services domestic offshore exploration and production on both the Outer Continental Shelf (OCS), in the Deepwater Gulf, and also, the Louisiana Offshore Oil Port (LOOP), the nation's only deepwater oil import terminal.

Louisiana Highway 1 is the only land access to Port Fourchon. LA Hwy. 1, now recognized as a critical path in "America's Energy Corridor," has been designated by Congress as one of only 44 High Priority Corridors in the nation. LA Hwy. 1 is in desperate need of Federal funds for construction of a 17 mile stretch of elevated highway over a vulnerable length of Wetlands to sustain service at America's Energy Port.

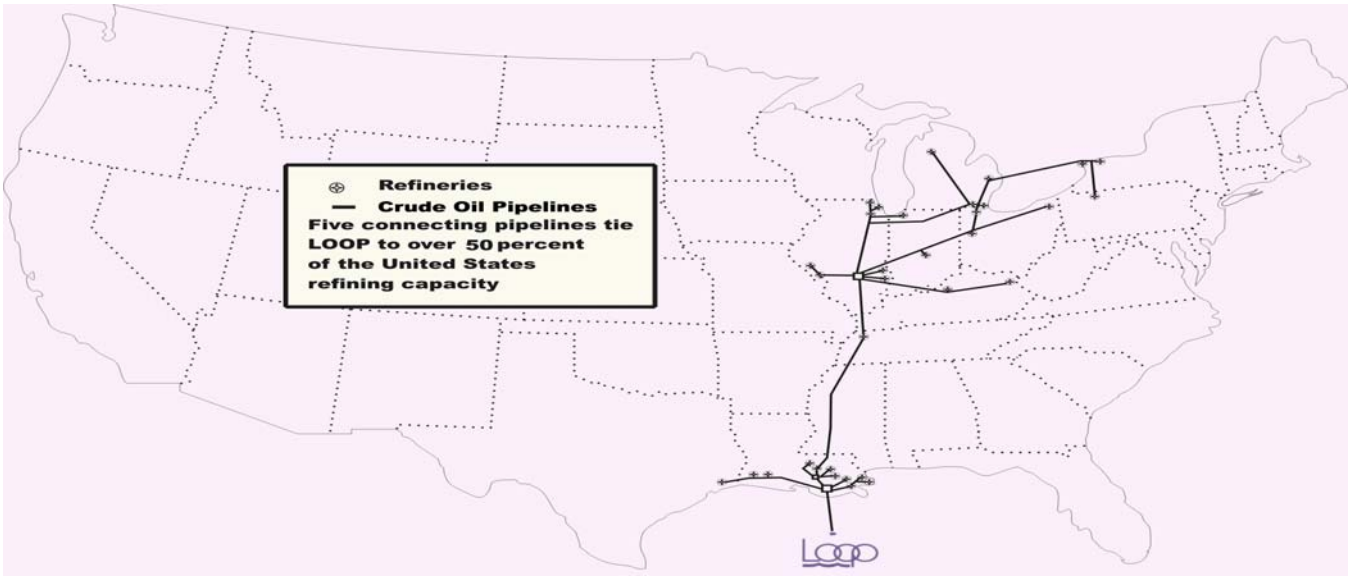
Aerial view of Port Fourchon, America's Energy Port



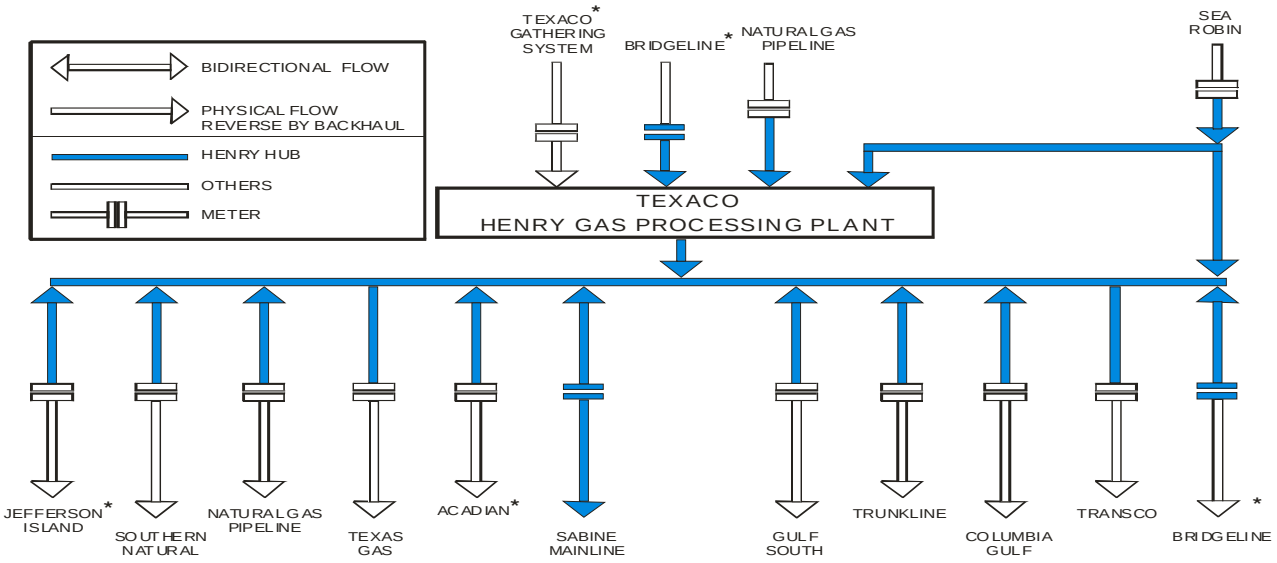
Adapted from MMS: "Deepwater Gulf: America's Expanding Frontier" 2002

The crude oil that flows through the offshore pipelines and LOOP terminal ends up as gasoline in the tanks of consumer automobiles, as home heating oil products, as jet fuel, and as power plant fuel for electric power generation throughout the South, Midwest and Eastern United States.

A large portion of the natural gas that flows from Louisiana fields and the Federal Gulf of Mexico to homes, malls, and power plants around the nation, flows through the vital Henry Hub at Erath, Louisiana. Chevron-Texaco's proposed LNG import terminal in the Gulf of Mexico will flow through the Henry Hub.



America's Wetlands are the Petroleum Corridor to the Nation

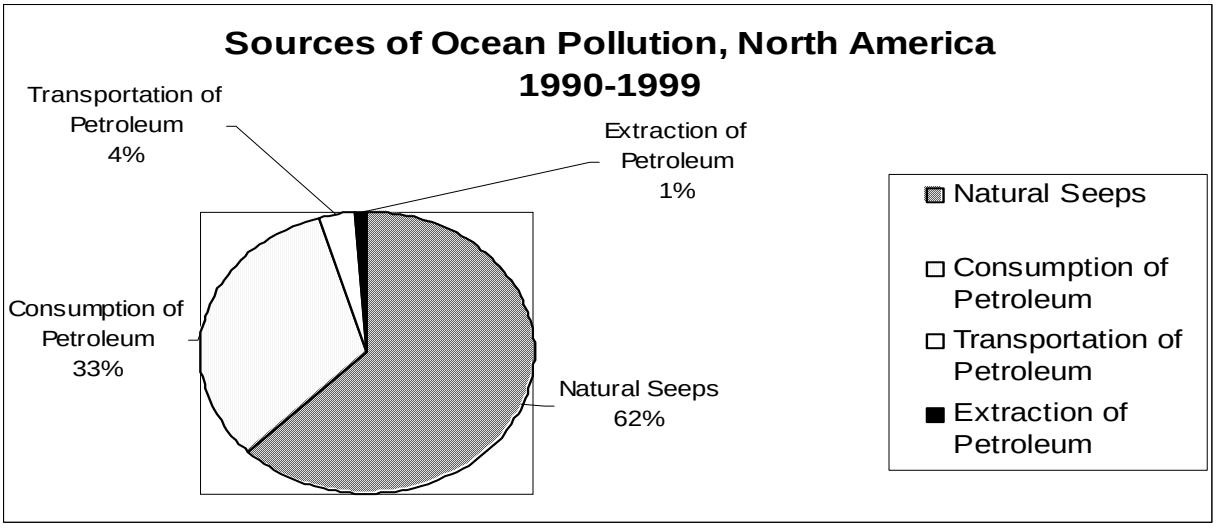


SOURCE: Sabine Pipeline Rev. 4 / 01

* - Intrastate pipeline

Over the years, and at the direction of the legislature, Louisiana regulatory agencies responsible for oil and natural gas exploration and production operations (notably the Department of Natural Resources and the state's universities) have cooperated with, and assisted, the oil and natural gas sectors in the development of techniques and best practices and with the implementation of new technologies to operate responsibly, co-existing safely with the environment. Much of the know-how developed in Louisiana has been transferred around the world, as offshore oil and natural gas exploration has proliferated globally.

The National Academies Ocean Studies Board Report "Oil in the Seas III", Copyright 2002, noted "…improved production technology and safety training of personnel have dramatically reduced both blowouts and daily operational spills. Today, accidental spills from platforms represent about one percent of petroleum inputs in North American waters and about three percent worldwide."



Consumer Well-being

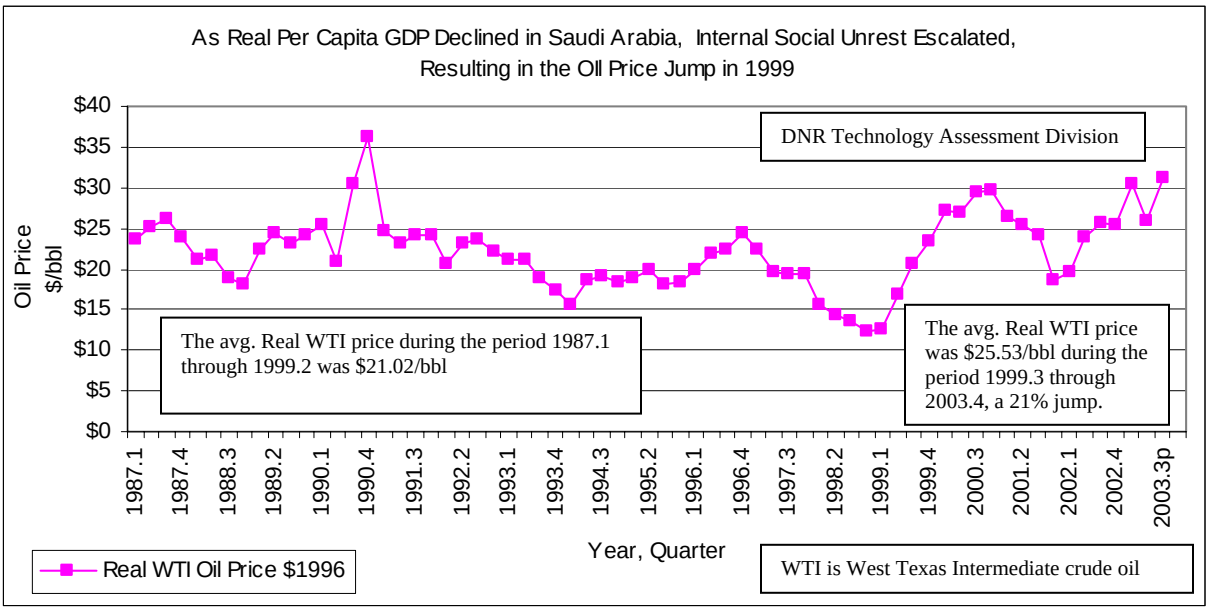
Economists use a general equation to express a nation's total output, i.e., Gross Domestic Product (GDP).

GDP = C + I + G +/- Y Where C = Consumption
I = Investment
G = Government Expenditures
Y = Exports and/or Imports, net

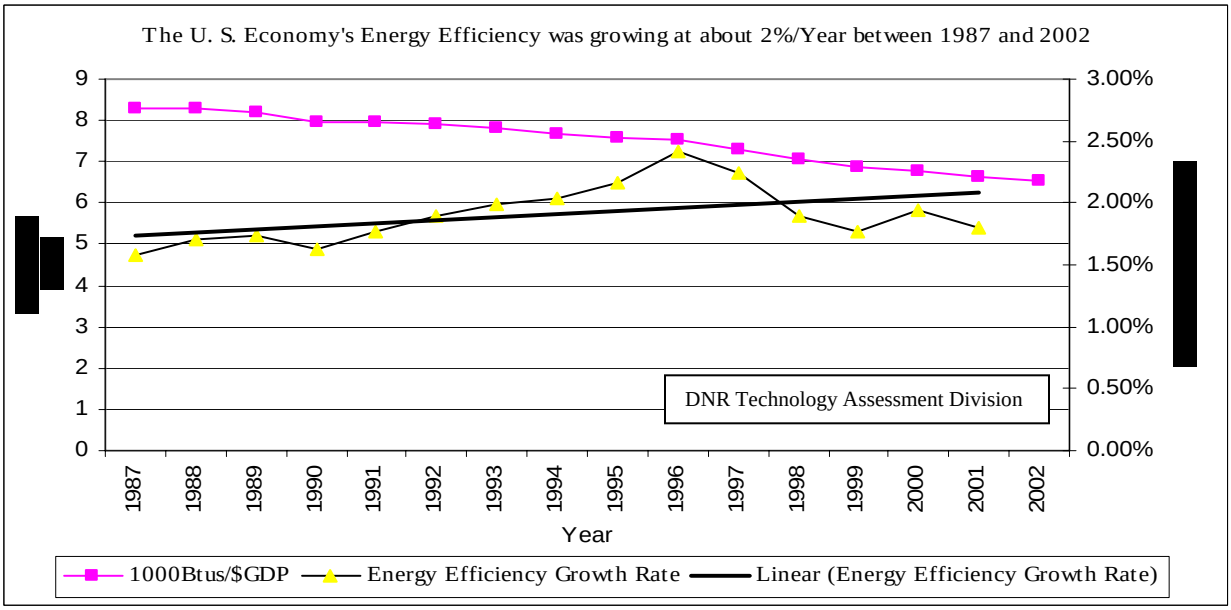
America's Wetlands serve to sustain the stable, secure, and dependable source of crude oil and natural gas supply that enables America's economy, and America's consumers, to leverage their physical and intellectual capabilities. Through this physical and intellectual leverage, America's GDP can grow, and Americans are able to aspire to rising standards of living.

The price of energy in the economy has a direct effect on the rates of growth of the economy and consumer well-being. Without the supply capability from America's Wetlands, the price of energy would be even higher than consumers and the economy currently experience.

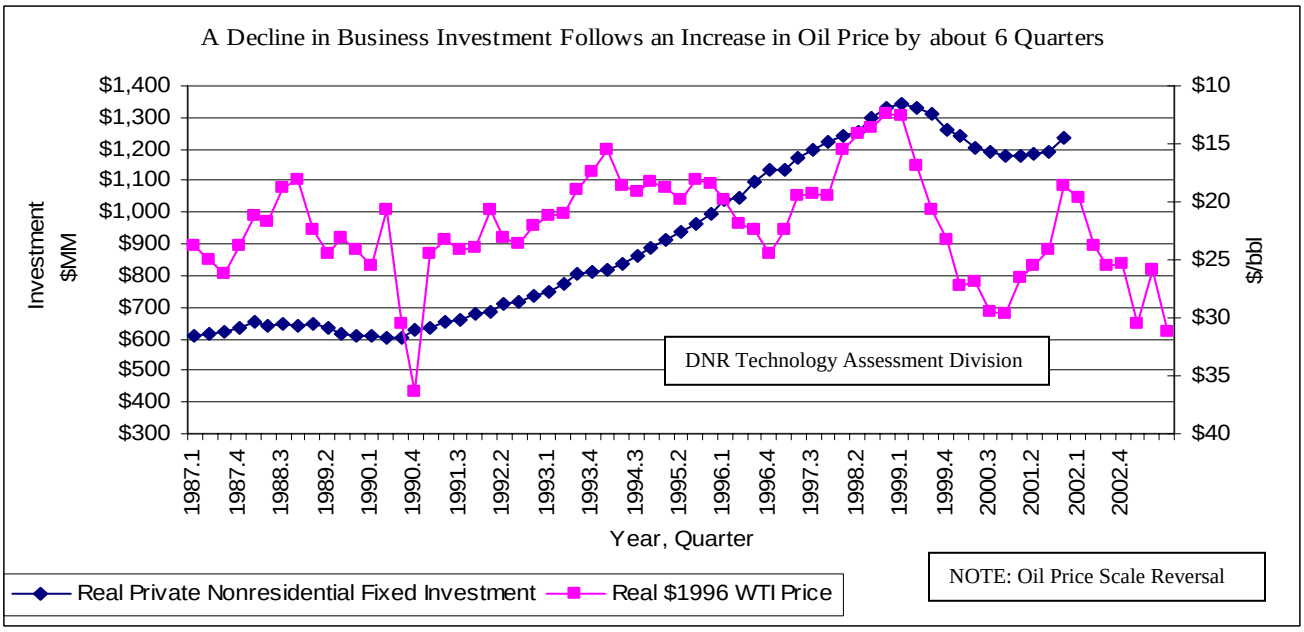
As early as 1999, internal unrest throughout the Middle East, particularly in Saudi Arabia, resulted in OPEC's agreement to manage oil prices within a range, suggested as $22-28/barrel (bbl).



This almost overnight jump of 21% in oil (energy) prices overwhelmed the energy efficiency of existing plant and equipment. The result: higher operating costs and lower operating profits which cannot be immediately offset without the cash flow for new capital spending on more energy efficient plant, equipment, or energy saving components.

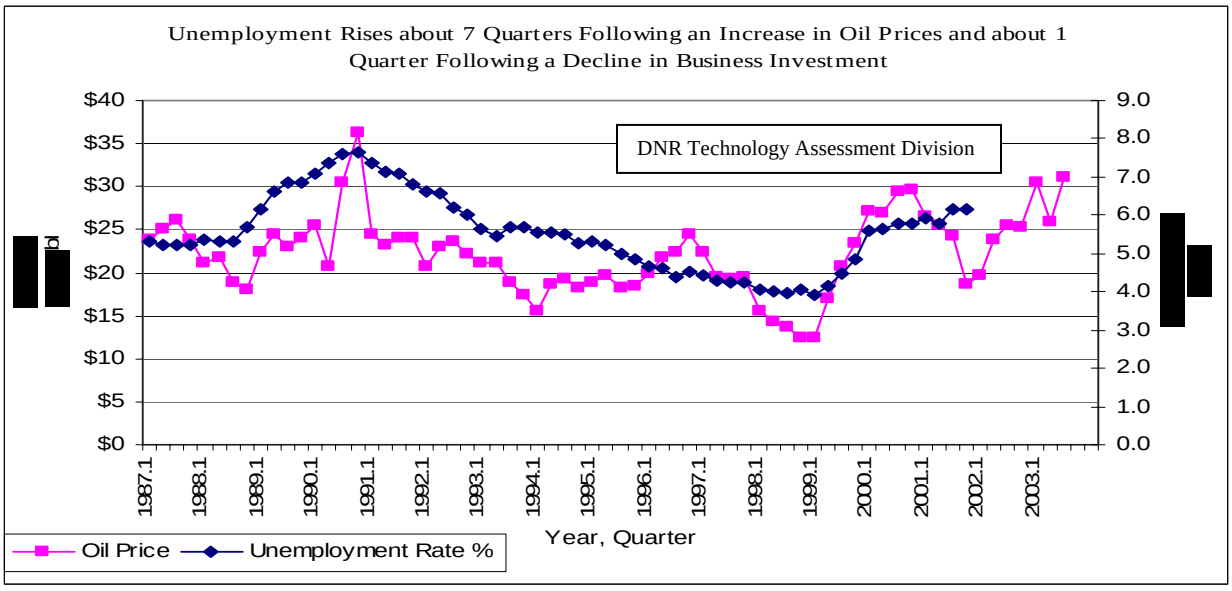


Through America's Wetlands, however, the nation has a supply source flexibility that does not exist elsewhere. Producers, other than OPEC members, have affordable access to the American consumer through America's Wetlands, the Nation's Energy Corridor. The subsequent price jump, as a result of OPEC decisions, would have had an even greater impact on the American economy and America's consumer had not America's Wetlands provided such access for the nation's energy supply. As it was, the sharp jump in oil prices (using oil as a proxy for energy costs) worked its way through the economy, subsequently slowing the rate of growth of business investment.

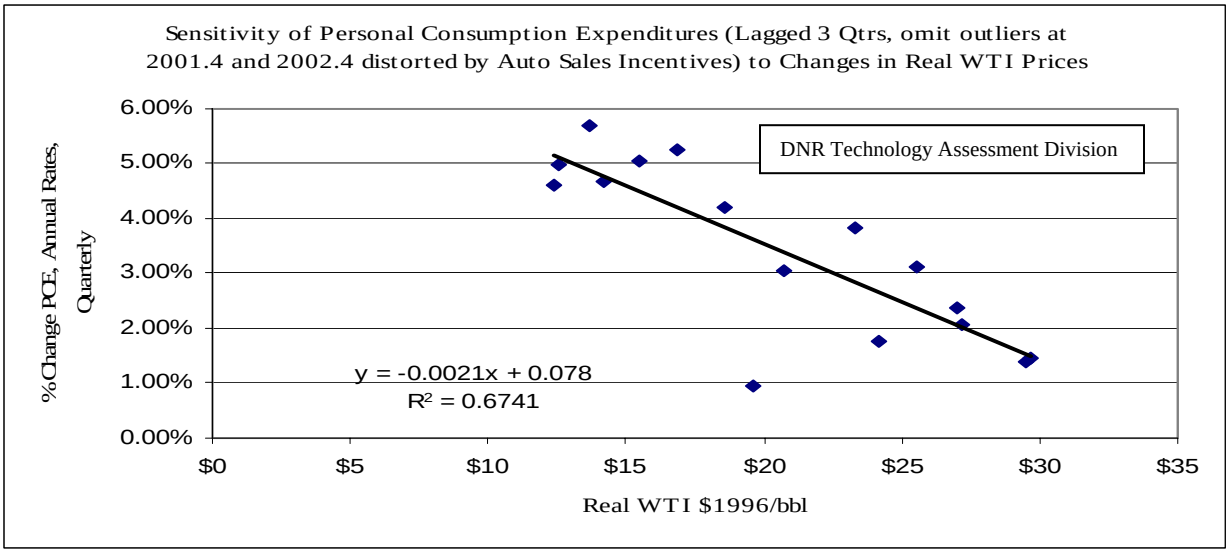


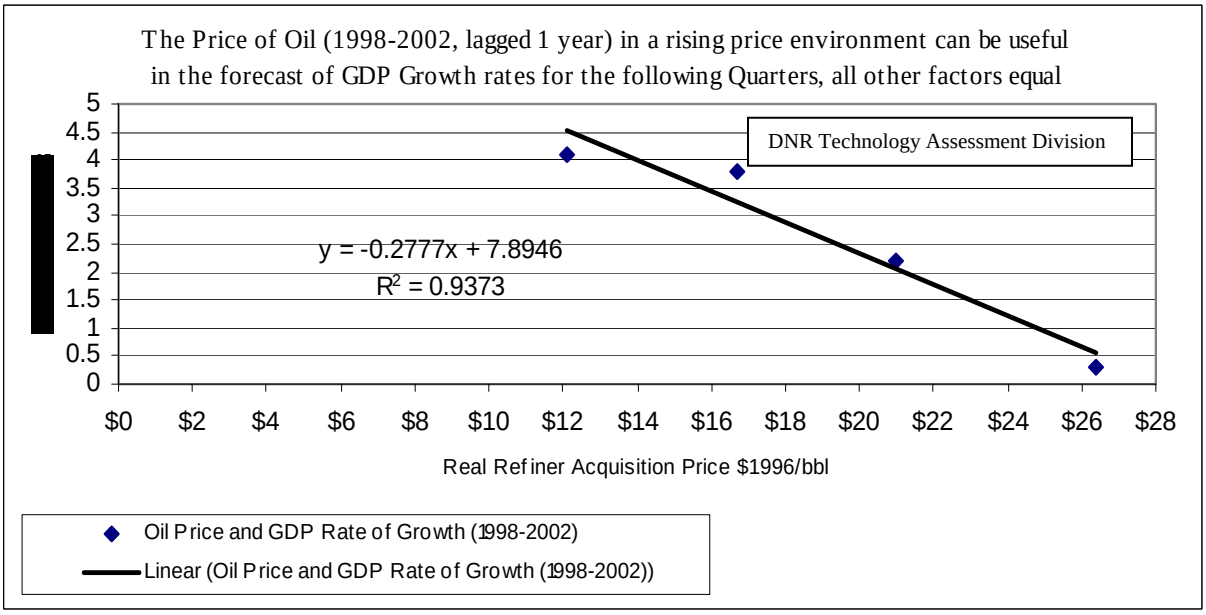
And when business investment fell, the employment levels also declined—resulting in an increase in the unemployment rate.

As the oil price rise affects business conditions, it also impacts the consumer pocketbook. Consumer expenditures begin to decline following an oil price rise.



The result of the oil (energy) price rise, and its impact on the factors in the GDP equation, is a decline in the rate of growth of the nation's GDP, all other things being equal, affecting the economic outlook for America's consumers. To offset this slowdown, federal spending expanded sharply along with deficits. These deficits have stimulated GDP growth rates.

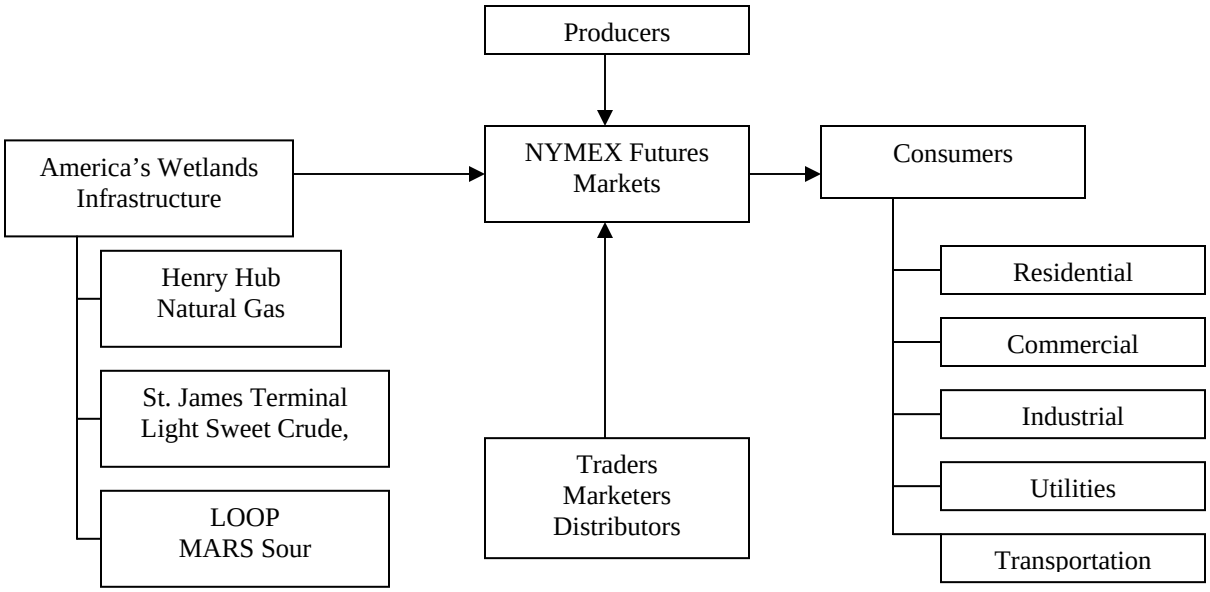




All Americans have a love/hate relationship with Wall Street. We love it when our stock investments rise in value; we hate it when we see evidence of runaway greed at the expense of our pension plan portfolio. However, Wall Street and the New York Mercantile Exchange (NYMEX) love America's Wetlands.

The NYMEX is an integral part of the America's Wetlands infrastructure. Commodity markets base a substantial portion of their futures operations on the Wetlands' oil and natural gas infrastructure creating the price discovery mechanism which ensures the balance between demand and supply, and helps stabilize energy prices for consumers over the longer term.

America's Wetlands Infrastructure to Consumer Flow Chart



Each of the "big name" investment banks on Wall Street has in-house commodities trading platforms. The average daily trading volume of Henry Hub futures approached $3 billion dollars in 2002. The average daily trading volume of Light Sweet crude oil approached $6 billion dollars in 2002. The combined economic value related to the 3 commodities (light sweet, MARS sour, and Henry Hub natural gas) approaches or exceeds an average of $10 billion dollars per day.

America's Consumers have an ownership interest in America's Wetlands. The oil and natural gas infrastructure supported by America's Wetlands sustains the economic wellbeing of American Consumers. A significant part of that infrastructure is the financial and trading markets of Wall Street. That too is at risk if the "ownership interests" should fail to sustain America's Wetlands.

America's Wetlands now need federal financial help to continue their role in securing the economic well-being of the American Consumer. America's Wetlands need Federal Government funding to stabilize the environmental losses of an encroaching Gulf of Mexico—losses which threaten the stability, security, and dependability of the Nation's Energy Corridor.

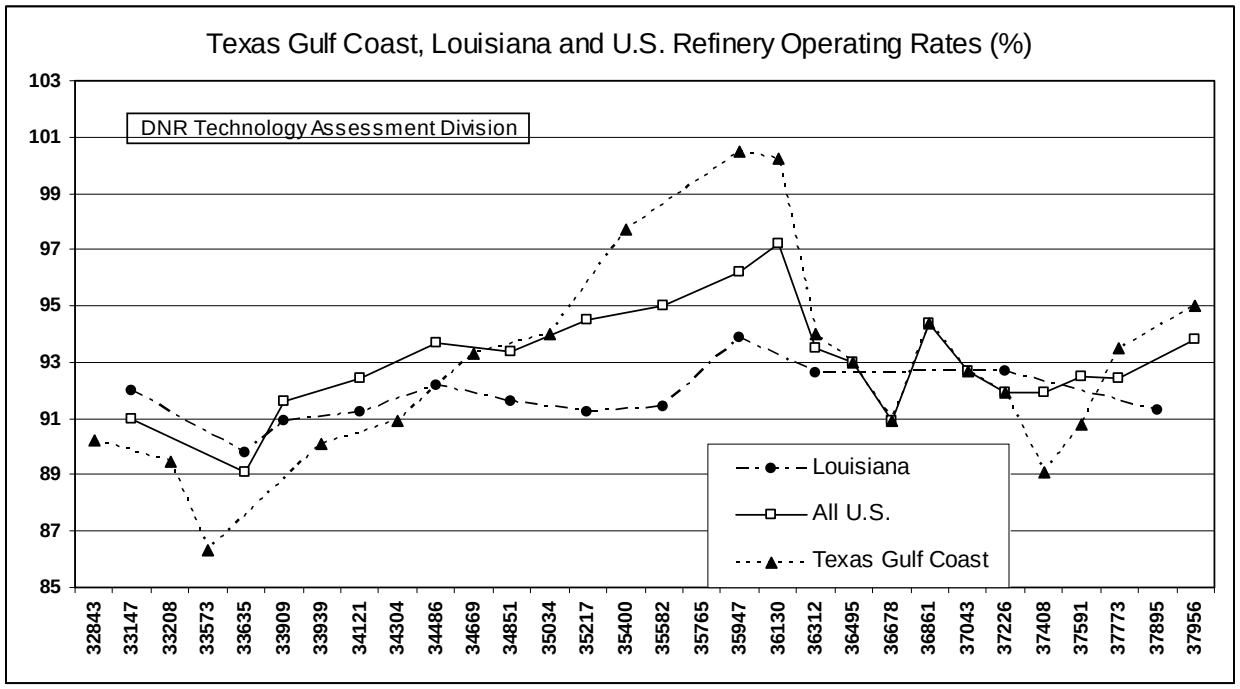
All citizens of Louisiana ask for the help of America's Consumers in the need to secure $14 billion in funding to save America's Wetlands, the Nation's Energy Corridor. Our federal legislators have funded efforts to save Florida's Everglades and the Iraqi Wetlands. It is our fervent hope that America's Consumers will urgently speak out in their best interest and help Louisiana continue to serve the energy needs of the nation, securely, dependably, and stably.

Originally Published in June 2004 Louisiana Energy Facts

2003 Louisiana Crude Oil Refinery Survey Report

Report Highlights

Louisiana refinery capacity shrank slightly from our last survey. Most refineries showed increased capacity, but were overshadowed by the shutdown of American International's refinery in Lake Charles. The current operating capacity is 2,734,070 barrels per calendar day. The Louisiana refinery operating rate was 91.3% for this survey period. The total U.S. refinery operating rate was 92.3% for the same period. The following figure shows the Texas gulf coast, Louisiana, and the total U.S. refinery operating rates since 1989.



Note: Data points generally represent 6-month or 12-month averages
Source: LA Refineries: LA DNR, Technology Assessment Division *Louisiana Crude Oil Refinery Survey Report 2003*
TX & U.S. Refineries: EIA, *Petroleum Supply Annual*, Vol. 1 & 2

Gulf coast refineries experienced a rebound in profit margins in 2003, from $2.02 per barrel in 2002 to $3.23 per barrel in 2003, as reported by Muse, Stancil & Co. in the Dec. 22, 2003 edition of the *Oil & Gas Journal*.
Changes since our last survey include Valero's acquisition of the Orion refinery in Norco, and the merger between Conoco and Phillips Petroleum.

EIA statistics show that, after declining in 2001, overall petroleum product demand increased to slightly over 20 million barrels per day. Finished motor gasoline supply rose 1% in 2003 to 8.94 million barrels per day, and jet fuel continued its two year decline, down 2.5% to 1.57 million barrels per day.

Gasoline remains the largest share of refinery production in Louisiana at about 40% of the total. The following table lists the top ten refinery products based on percent of total refinery production.

Product	Percent of Refinery Products
Regular gasoline	27.0
Diesel	17.8
Jet fuel/Kerosene	10.3
Premium gasoline	8.0
Residual/Coke	6.3
Fuel oil	6.1
Reformed gasoline	4.6
LPG	4.2
Petrochemical feed	4.1

Source: Department of Natural Resources, Technology Assessment Division
Louisiana Crude Oil Refinery Survey Report 2003

Five refineries in Louisiana produced reformulated gasoline (RFG) during this survey period. Approximately 12% of the gasoline produced was RFG. In the U.S., about 33% of gasoline produced is RFG. A chart showing areas of the country that are required to use RFG can be seen on the EPA's website at: http://www.epa.gov/otaq/rfgmap.jpg. Currently, no RFG is used in Louisiana, but that is about to change. The EPA has, recently, downgraded the five parish area surrounding Baton Rouge from "serious" to "severe" for ground-level ozone. The Clean Air Act of 1990 requires the use of RFG in any area classified as "severe". This requirement is set to take effect on June 23, 2004, but lawsuits and/or federal energy legislation may delay or negate the requirement. Even if the requirement is waived, refiners have already geared up to deliver RFG to the five parish area and would need time to revert back. Ozone, or smog, is produced when oxides of nitrogen (NOx) and volatile organic compounds (VOCs) react with sunlight. It has been reported that only16.8% of NOx and 14% of VOCs comes from mobile sources, so requiring the use of RFG in the Baton Rouge area would do little to alleviate the high ozone levels.

Originally Published in July 2004 Louisiana Energy Facts

SELECTED LOUISIANA ENERGY STATISTICS

Among the 50 states, Louisiana's rankings (in 2003 unless otherwise indicated) were:

PRIMARY ENERGY PRODUCTION
(Including Louisiana OCS)

1st in crude oil
2nd in natural gas
2nd in total energy

REFINING AND PETROCHEMICALS

2nd in refining capacity
2nd in primary petrochemical production

PRIMARY ENERGY PRODUCTION
(Excluding Louisiana OCS)

5th in natural gas
4th in crude oil
8th in total energy

ENERGY CONSUMPTION (2002)

3rd in industrial energy
2nd in per capita energy
3rd in natural gas
5th in petroleum
7th in total energy
22nd in residential energy

PRODUCTION

State controlled (i.e., excluding OCS) natural gas production peaked at 5.6 TCF per year in 1970, declined to 1.5 TCF in 1995, and rebounded 4.5% to 1.6 TCF in 1996. The 2001 gas production was, approximately, 1.50 TCF, the 2002 production was around 1.36 TCF, and the 2003 gas production was 1.32 TCF.

State controlled gas production is on a long term decline rate of 4.2% per year, though the current short term (2004-2008) forecast decline is around 5.7% per year.

State controlled crude oil and condensate production peaked at 566 million barrels per year in 1970, declined to 127 million barrels in 1994, recovered to 129 million barrels in 1996, and declined to 90.1 million barrels in 2003.

State controlled crude oil production is on a long term decline rate of 4.3% per year, though the current short term (2004-2008) forecast decline is around 4.4% per year. If oil stays around $27.00 per barrel, the decline will remain as predicted. If the price holds consistently above $27.00 per barrel, the decline rate may be lower.

(Continued on the back)

Louisiana OCS* (federal) territory is the most extensively developed and matured OCS territory in the US.

Louisiana OCS territory has produced 90.1% of the 14.0 billion barrels of crude oil and condensate and 82.5% of the 147 TCF of natural gas extracted from all federal OCS territories from the beginning of time through the end of 2002.

Louisiana OCS gas production peaked at 4.16 TCF per year in 1979, declined to 3.0 TCF in 1989, and increased to 3.85 TCF in 2002.

Louisiana OCS crude oil and condensate production first peaked at 388 million barrels per year in 1972 and declined to 246 million barrels in 1989. In this decade, the production has steadily risen from 264 million barrels in 1990 to 528 million barrels in 2002 due to the development of deep water drilling.

REVENUE

At the peak of Fiscal Year (FY) 1981/82, oil and gas revenues from severance, royalties, and bonuses amounted to $1.6 billion, or 41% of total state taxes, licenses and fees. For FY 2003/04, these revenues are estimated to be in the vicinity of $930 million, or about 11.2% of total estimated taxes, licenses, and fees.

At constant production, the State Treasury gains or loses about $15 million of direct revenue from oil severance taxes and royalty payments for every $1 per barrel change in oil prices. This figure rises to $20 to $25 million per dollar change when indirect revenue impacts are included (e.g., income tax, sales tax, etc.).

DRILLING ACTIVITY

Drilling permits issued on state controlled territory peaked at 7,631 permits in 1984 and declined to a low of 1,017 permits in 1999. In 2002 drilling permits fell to 1,025 permits issued, and in 2003 drilling permits rebounded to 1,264.

The average active rotary rig count for Louisiana, excluding OCS, reached a high of 386 rigs in 1981 and reached a low of 64 rigs in 1993. In 2000 the average was 69 active rigs, in 2001 it recovered to 108 active rigs, and in 2003 the average stayed at 2002 levels of 76 active rotary rigs.

The 2003 average active rotary rig count for Louisiana OCS was 81 active rigs, 6 rigs, or 7.4% lower than 2002 average, and the highest active rotary rig count was 107 rigs recorded in 2000. In 1999, the average active rig count was 76 or 16.6% lower than the 1998 average active rotary rigs.

* Note: Louisiana OCS or Outer Continental Shelf is federal offshore territory adjacent to Louisiana's coast beyond the three mile limit of the state's offshore boundary.

TCF= trillion cubic feet

Originally Published in August 2004 Louisiana Energy Facts

DECONSTRUCTING THE MEANING OF RIG COUNT

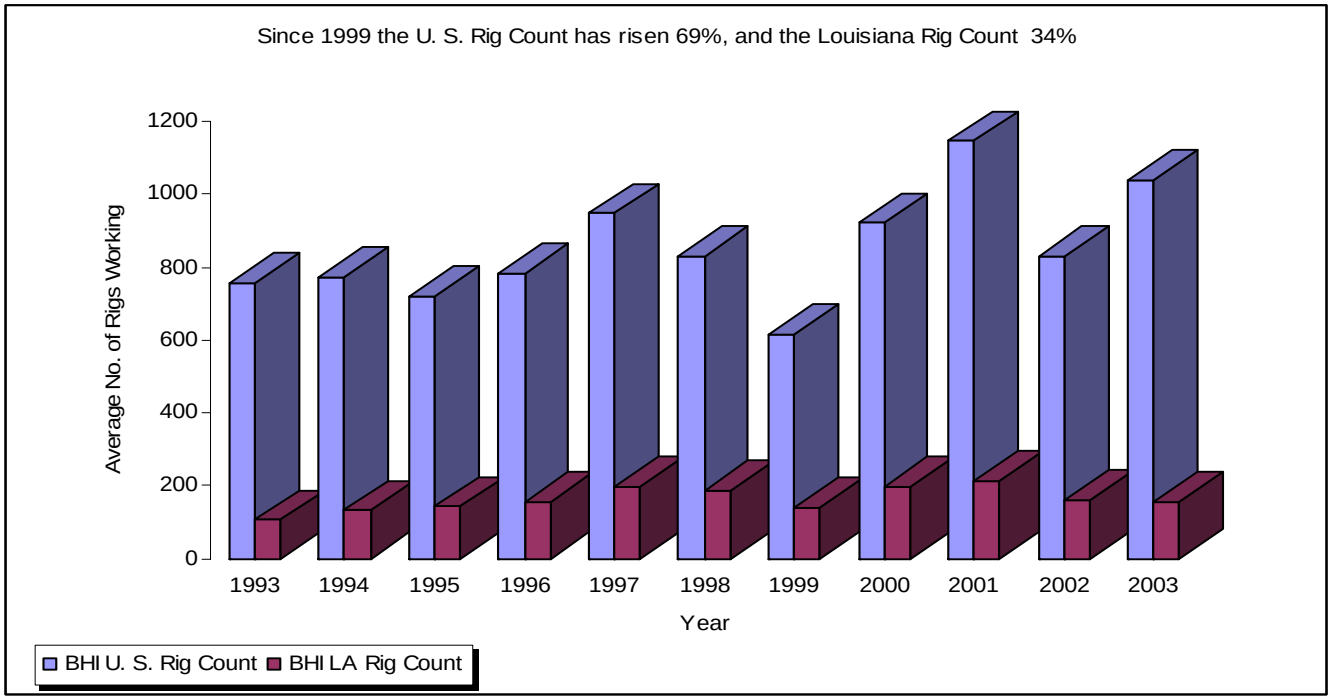
by
Bob Sprehe, Energy Economist

Rig count is the single most visible indicator of economic activity in the oil and natural gas sector. The number by itself is often misinterpreted. The economic implications of such technical factors as well depth, geologic location, subsurface pressure regime, well cost, federal and state tax incentives, and "hot" oil and natural gas plays affect rig count. Deconstruction of the rig count number, along with use of a new metric, barrels oil equivalent (BOE) discovery rate per rig per year should aid in understanding the meaning rig count and the significance of the relative rate of change of rig count by state or region.

Rig Count

Uses of the rig count metric are diverse. For example, Wall Street analysts use this number in their profit projections for oil service companies. State legislators use this number to assess whether their drilling incentive programs remain competitive with other states. So, when the general economy is reported to be in recovery, yet the Louisiana rig count rate of growth lags the national rig count growth rate, the question arises: "Should we be doing more?"

A Perspective on the Level of Drilling Rig Activity 1993-2003 (1999 was the period low point)



Source: Baker Hughes International (BHI) Rig Count, annual average of month end counts, 1993-2003

The Implications of Rig Count

Unfortunately, the single number rig count is subject to "spin." More often than not, in neither of the above cases, i.e., Wall Street analysts or State legislators, is there precision in the meaning inferred.

The meaning of rig count is complicated. Rigs drill wells. Wells are drilled with rigs matched to a depth capacity. The greater the depth, the greater the cost incurred. The greater the cost incurred, the greater

the financial risk exposure for the operator. The greater the financial risk exposure, the less favorable is the market valuation of a public company (at least at this time in the market). The less favorable the market valuation, the less risk will be undertaken by public companies. The less financial risk undertaken, the smaller the oil and natural gas reserve discoveries. The smaller the reserve discoveries, the lower the domestic oil and natural gas production capacity. The lower the domestic production capacity, the greater the reliance on imports of crude oil and natural gas. The greater the reliance on imports, the greater the energy security risk to the economy (just look at the consequences from the supply boat collision at the mouth of the Mississippi River, week of February 21, 2004.)

The greater the energy security risk, the greater the call for energy efficiency. The greater the cry for energy efficiency, the more rapidly the need for capital spending on energy efficient equipment. The higher the capital spending need, the greater the need for profits and cash flow. The greater the need for profits and cash flow, the greater the need for cost cutting. The greater the need becomes for cost cutting, the higher the job losses and "off shoring." And so it goes, like ripples from a pebble dropped in water.

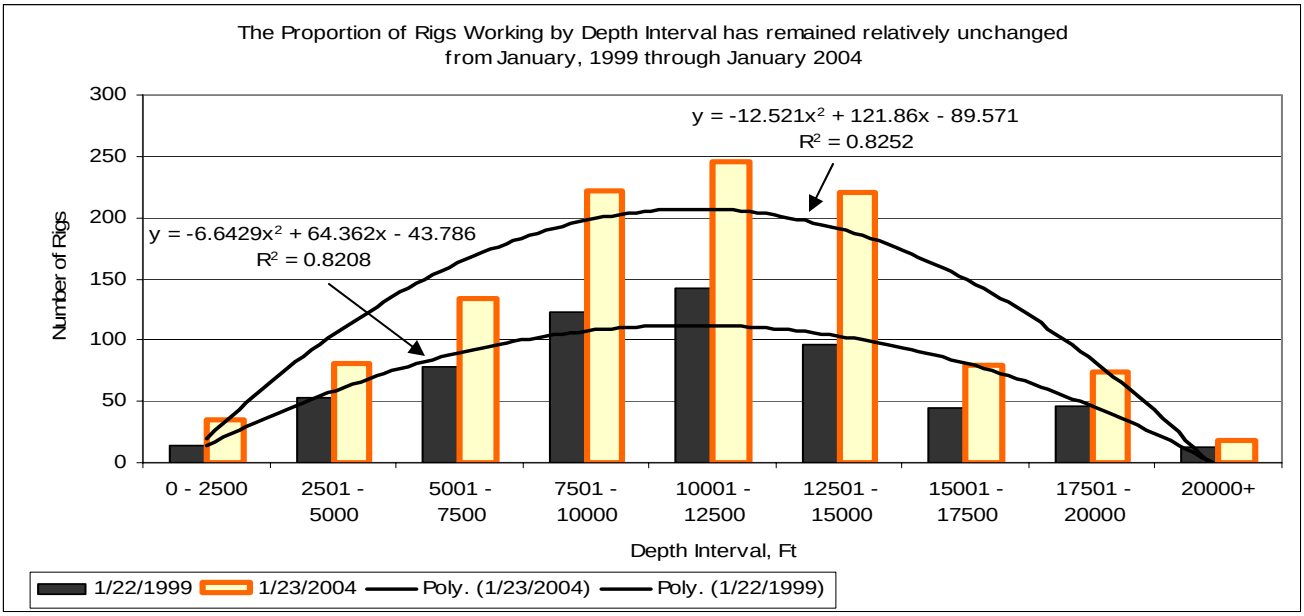
Louisiana has suffered from job losses; particularly those related to energy. Governor Blanco has made job growth her number one priority. Louisiana offers tax incentives to oil and natural gas producers to stimulate investment in drilling and production within the state. From a future production viewpoint, Louisiana is a natural gas state. It has deep (15,000 ft. to 24,999 ft.), and ultra-deep (greater than 25,000 ft.), natural gas reserves. These wells are risky and costly. Is deep and ultra-deep drilling beyond the financial capacity of the remaining oil and gas firms in the state? Are multiple numbers of these deep and ultra-deep wells beyond the financial capacity of even the largest of the major energy firms? Is it proper use of state taxpayer funds to subsidize Wall Street investment banks because of their biases? Is it proper use of state taxpayer funds to subsidize Federal Government tax revenues by granting state subsidies to drilling and production within the state?

If the coalbed methane producers can unite to gain a federal tax incentive, why cannot deep and ultra-deep gas producing states present their case to the Congress for inclusion with the coalbed methane incentive renewal? Is there a political will to undertake this deep and ultra-deep natural gas initiative with the same patience and persistence used by the coalbed methane state political forces? Is this issue of drilling activity more a public relations and public information challenge than a state incentives program challenge?

Deconstructing Rig Count Data

Crude oil and natural gas prices began a sustained rise in 1999. The number of active rigs has increased nearly 69% nationally, and nearly 34% in Louisiana, since that year.

Besides BHI, there is a second source of rig count data. Smith International provides a weekly count of rigs by depth rating. As the rig count has grown, the profile of depth brackets has hardly changed. The largest number of active rigs is in the 7,500 - 15,000 foot depth brackets.



Source: Smith International Rig Count

Between January 1999 and January 2004, the number of rigs working increased by 499 (BHI rig count). Citing only the areas with double digit gains, this gain in rig count occurred as follows:

Geographic Regions Experiencing Significant Rig Count Gain

State/Zone Rig Gain Rank	Rig Gain
Oklahoma	81
Texas RR # 5	42
New Mexico	38
Wyoming	37
Texas RR # 6	37
Texas RR # 8	36
Colorado	35
Texas RR #7C	21
North Louisiana	**19**
Texas RR # 2	15
Utah	13
Texas RR # 9	13
Montana	12
13 States/Zones with double digit gains in rig count	399 (of 499 gain)
by Comparison	
South Louisiana (land)	0
Louisiana Inland Waters	-2
Louisiana Offshore (federal and state)	-6
Total Louisiana	**11**

The state of Louisiana had a rig count gain of 11 between these two periods. Within the state, there were gains and losses; losses included the inland waters and state and federal offshore. North Louisiana land drilling was among the double digit gains. South Louisiana land drilling held steady. **So it would not**

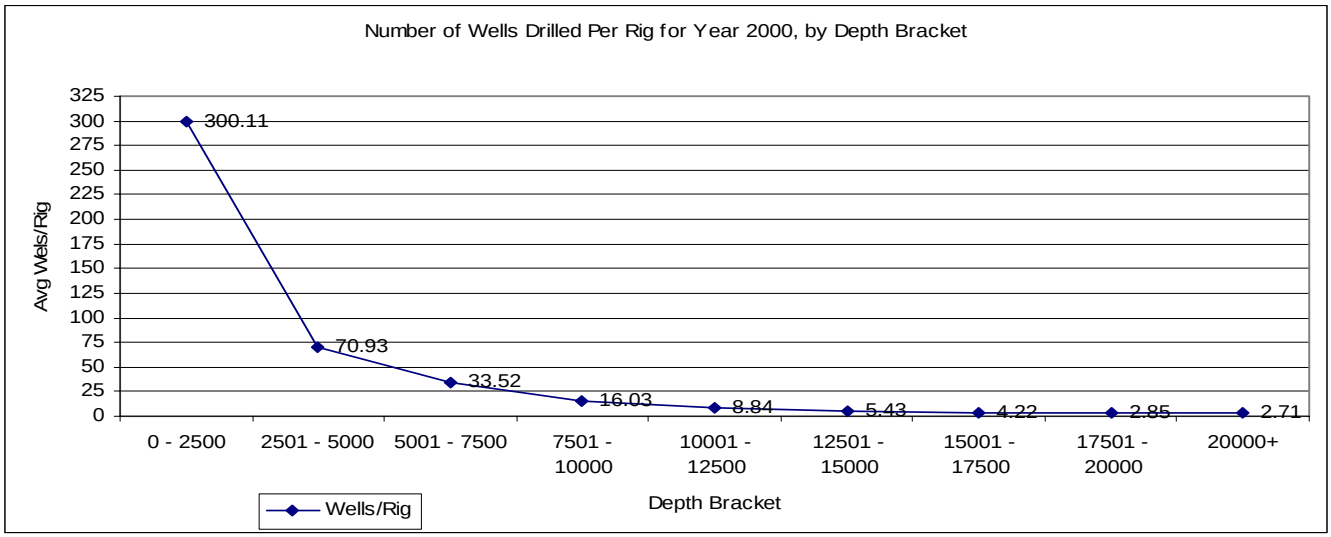
appear that existing Louisiana tax subsidies, or the lack thereof, are the controlling factor in the level of drilling rig activity vis à vis other states.

What might be more controlling are well cost and discovery/cost relationships. Virtually all of the expansion in the active rig count was targeted for natural gas drilling and was on land. (Note: The two sources of rig count data, i.e., Smith and BHI, do not precisely coincide. The data are in closer agreement today than it has been in past years.)

Comparison of Rig Counts,
Smith International and Baker Hughes International

	1/22/1999	1/23/2004	Change
Oil Rigs	122	137	15
Gas Rigs	465	946	481
Offshore	105	99	-6
Source: BHI			
Inland (water)	14	27	13
Land	501	993	492
Offshore	88	89	1
Source: Smith			

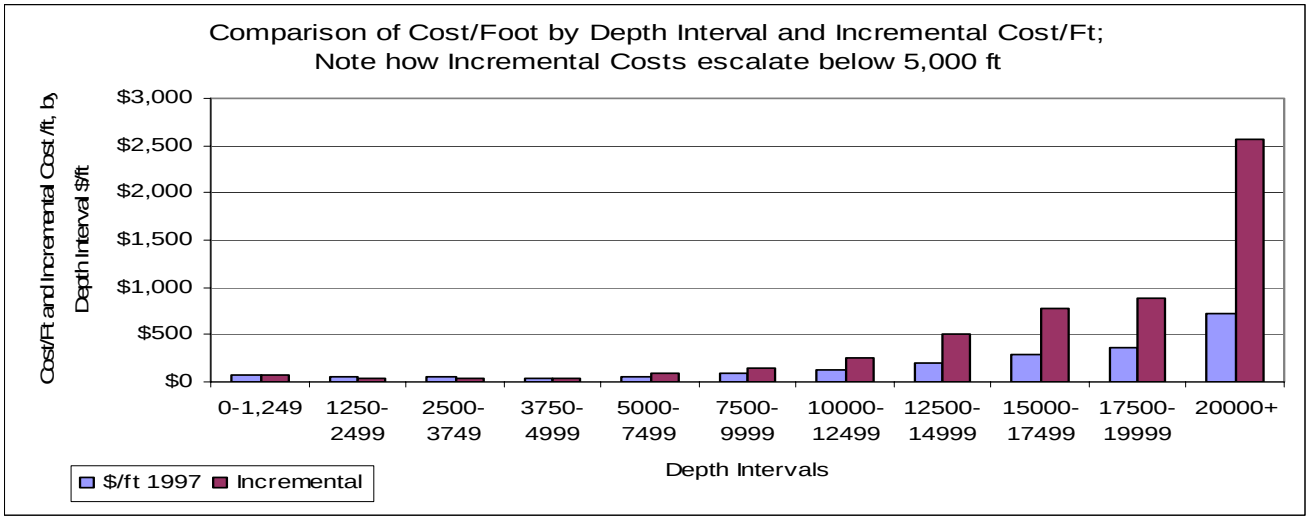
Rates of drilling penetration slow as well depths increase. Thus shallower working rigs can drill a larger number of wells in any given time period.



Source: Joint Association Survey on 2000 Drilling Costs and Smith International Rig Count

Well Cost Metrics

The cost of drilling escalates with depth, both the average cost per foot to a total depth, and the incremental cost per incremental foot of hole drilled. It is logical that companies seek first to exploit those reserves that are less costly which offer lower financial risk exposure, yet afford a return on investment from the size of the reservoir discovered**. A**lso, the larger the firm and the greater the need to replace oil and natural gas production, the greater the need to undertake drilling for larger reservoirs which are associated with increasing depth in a mature drilling province (e.g. the United States, in particular, Louisiana and the Federal Gulf of Mexico).



Looking at the 13 states/zones with double digit gains in rig count between January 1999 and January 2004, the average well costs by depth bracket for the year 2000 are ranked by escalating cost. This data provide some insight into the relative financial risk associated with each area. **In the table below the dollar figure indicates average well cost to that depth bracket in thousands of dollars; the numbers in parentheses refer to wells drilled to that depth bracket during the year 2000.**

A Ranking of the Escalating Cost of Drilling by Province

10,000 - 12,499	Zone	12,500 - 14,999	Zone	15,000 - 17,499	Zone	17,500 - 19,999	Zone	20,000 +	Zone
$677 (1)	CO	$1,099 (1)	CO	$2,254 (23)	OK	$3,381 (1)	E. NM	$5,216 (2)	OK
$752 (127)	TX #8	$1,460 (75)	E. NM	$2,279 (2)	MT	$3,575 (16)	OK	$10,278 (3)	TX #8
$971 (108)	E. NM	$1,530 (18)	MT	$3,500 (4)	E. NM	$5,355 (13)	TX #8	$16,294 (1)	WY
$1,100 (232)	TX #6	$1,627 (160)	OK	$3,643 (28)	TX #8	$5,899 (2)	TX #2		
$1,118 (191)	OK	$1,662 (158)	TX #5	$3,846 (1)	TX #7C	$7,115 (2)	TX #5		
$1,121 (9)	MT	$1,782 (14)	TX #8	$4,029 (10)	WY	$10,094 (4)	WY		
$1,123 (21)	TX #7C	$1,784 (48)	WY	$4,386 (23)	TX #2				
$1,218 (190)	WY	$2,217 (13)	TX #6	$4,470 (7)	TX #5				
$1,234 (77)	**No. LA**	$2,653 (5)	UT	$4,864 (2)	UT				
$1,254 (81)	TX #5	$2,889 (51)	TX #2	**$5,727 (1)**	**No. LA**				
$1,695 (44)	TX #2	$2,905 (6)	TX #7C	$5,906 (2)	TX #6				
$1,978 (18)	UT	**$3,384 (11)**	**No. LA**						
$2,630 (2)	TX #9								
Comparison		**Comparison**		**Comparison**		**Comparison**		**Comparison**	
$2,359 (100)	**So. LA**	**$3,480 (55)**	**So. LA**	**$5,246 (35)**	**So. LA**	**$6,676 (21)**	**So.LA**	**$11,892 (7)**	**So.LA**
$5,724 (118)	**O/SLA**	**$7,159 (82)**	**O/SLA**	**$9,797 (29)**	**O/SLA**	**$13,297 (5)**	**TXO/S**	**$18,853 (2)**	**O/SLA**
$5,966 (20)	TXO/S	$8,225 (17)	TXO/S	$10,974 (4)	TXO/S	$14,015 (11)	O/SLA	$27,105 (14)	FGoM
$8,037 (20)	FGoM	$12,452 (20)	FGoM	$15,125 (30)	FGoM	$17,534 (13)	FGoM		

Source: Joint Association Survey on 2000 Drilling Costs

Average Drilling cost per Well, by depth bracket in $000; numbers in parentheses are wells drilled by depth bracket

Abbreviations used

O/S LA offshore Louisiana (state waters)
TX O/S Texas offshore
FGoM Federal Gulf of Mexico

The Discovery Ratio

It is customary to think in terms of reserves per well. Because rig count is being examined, a new metric is necessary. The new metric compares barrels oil equivalent (BOE) of discoveries per rig per year for the 13 double-digit rig count gaining areas during the period 2000-2002. A comparison with Louisiana is provided.

The rig count used is the total number of active rigs from BHI over a three year period from 2000-2002. The state/zone reserve data is from the Energy Information Administration (EIA) for the same three year period. Only discoveries made through drilling, i.e., of new reserves and extensions to existing fields, excluding acquisitions, were used in the computation. Reserve data for crude oil, natural gas, and natural gas liquids (NGL) were tallied. Natural gas was converted to BOE using the ratio of 1,027,000 btus/Mcf (thousand cubic feet) and 5,800,000 btus per barrel of crude oil (0.177069 BOE/Mcf).

Ranking the Discovery Ride per Year per Active Drilling Rig per Year (2000 – 2002)

State/Zone Rig Gain Rank	Rig Gain	BOE/ Rig/Year	Rank
Oklahoma	81	754,607	11
Texas RR # 5	42	1,023,166	8
New Mexico	38	1,639,102	5
Wyoming	37	4,915,942	1
Texas RR # 6	37	748,691	12
Texas RR # 8	36	785,913	9
Colorado	35	2,966,951	2
Texas RR #7C	21	1,392,855	6
North Louisiana	19	1,284,590	7
Texas RR # 2	15	760,602	10
Utah	13	2,086,944	4
Texas RR # 9	13	2,405,598	3
Montana	12	641,968	13
13 Zone Total	399 (of 499 gain)		
by Comparison			
South Louisiana (land)	0	1,399,774	
Louisiana Inland Waters	-2	712,517	
Louisiana Offshore (federal and state)	-6	2,426,272	
Louisiana Total	11		

Coalbed methane reserves figure prominently in the above calculations. At this time, the leading producers of coalbed methane include: Colorado, New Mexico, Wyoming, Utah, and Alabama. Coalbed methane is categorized as unconventional gas in the Internal Revenue (IRS) Code. The tax incentive that applied to coalbed methane was referred to as the Section 29 gas tax credit (the Section of the IRS code). Shale gas also falls into this category. Substantial drilling initiatives are currently underway in North and Central Texas (the Barnett Shale play) and Eastern Oklahoma (the Arkoma Basin) for new discoveries and production of relatively shallow unconventional and conventional natural gas.

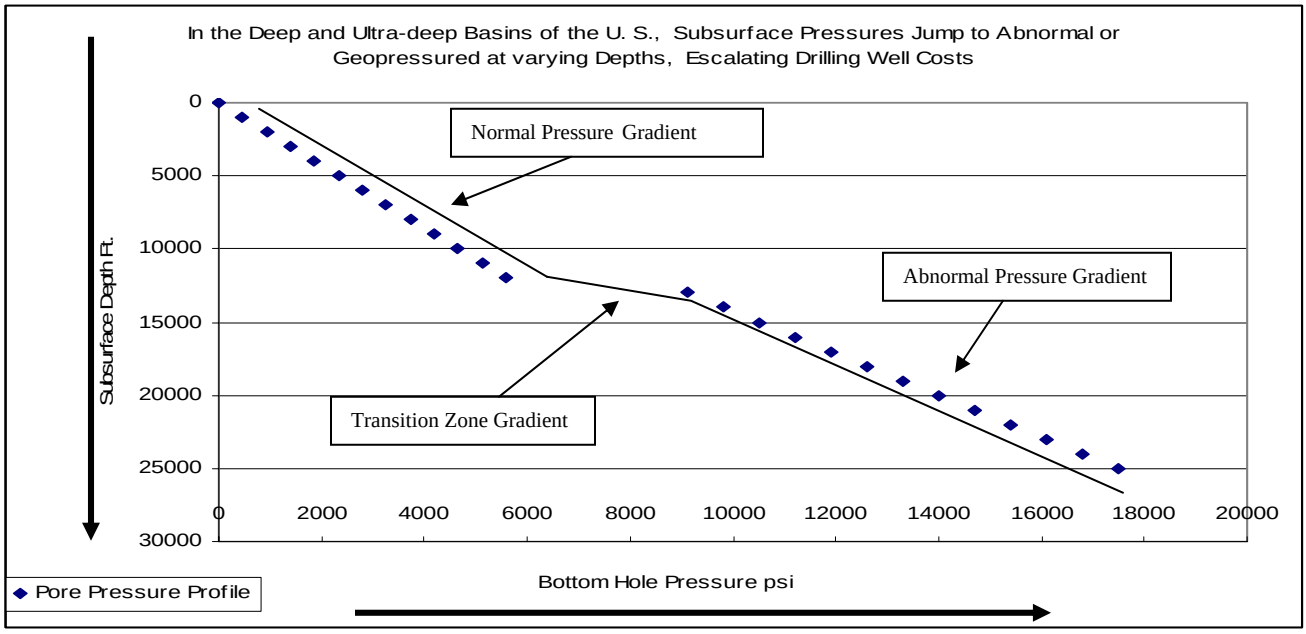
Louisiana's shallow reserves were discovered years ago. Louisiana is a deep drilling province today and its reserve discovery rates compare favorably with the metrics developed for the 13 rig count gaining areas. But another factor is worth considering at this point. In the December 29, 2003 edition of "Gas Daily," an article appeared entitled "In New Logic of Wall Street Losing Gas Supply is a Virtue." The

article quotes Lehman Bros. analyst, Thomas Driscoll, “Investors now reward those companies that curtail (exploration) spending and devote the excess cash flow to debt reduction, acquisitions, share buybacks and dividends. We expect 2004 to bring more of the same.”
The message from Wall Street - avoid risk. It should be clear Wall Street analysts who adopt this position are concerned neither with future energy supply nor with security for the economy or the nation. Deeper drilling areas are disadvantaged by these attitudes. Who is challenging this investment theme?

A Technical Factor Directly Affecting Cost

If there is one factor that drives drilling costs higher more than any other, it would be subsurface pressure. Louisiana is known as a geopressured drilling region, more so than any other producing province in the U. S. --even in the world. (NOTE: Drillers refer to “geopressured,” as a pressure gradient expressed in pounds per square inch per foot of depth [psi/ft]. A normal pressure gradient is a saline water gradient of 0.465 psi/ft.]. This geopressure is both a blessing and detraction. Higher reservoir pressures mean potentially higher quantities of reserves in the reservoirs and deliverability from the reservoirs. Higher drilling pore pressure profiles inevitably lead to higher drilling costs and drilling risk.

A generalized plot is illustrated in the graph below, showing Subsurface Pressure from Surface Level down to Subsurface Horizons.



In North Louisiana and East Texas, the Cotton Valley Pinnacle Reef Play is geopressured; all of South Louisiana and the Federal Gulf of Mexico are geopressured; the Texas Gulf Coast is geopressured; the Anadarko Basin of the Texas Panhandle and Oklahoma encounters geopressured horizons; the Delaware Basin (in the West Texas Permian Basin) has geopressured producing horizons; as does the Wind River Basin of Wyoming.

Normal pressure (typically expressed as 0.465 psi/ft), or in some cases subnormal pressure, extends down to varying depths across each of these deep basins or provinces. And the geopressure ranges of commercially producing horizons generally vary from 0.6 psi/ft to 0.8 psi./ft.

What does it all mean?

Perhaps the summary arbiter of where companies drill is contained in a comparison of how aggregate drilling budgets have been allocated by state/zone. To express this relationship it is again necessary to use the Joint Association Survey of Drilling Costs for the most recent periods for which the data are available (1999-2002), and to use a multi-year period to smooth out annual randomness.

The Top Three Drilling Expenditure Regions (1999-2002)
Dominate Domestic Industry Drilling Budgets

	Wells Drilled	Drilling Expenditures
Political Subdivision	1999-2002 Year Total	1999-2002 Year Total
Texas	26,719	$26,260,881,000
Federal Offshore	2,090	$18,631,296,000
Louisiana	5,009	$17,630,068,000
subtotal	33,818	$62,522,245,000
% of U. S.	34.86%	81.68%
U. S. Total	97,010	$76,549,494,000

From 1999-2002, nearly 82% of U. S. drilling expenditures were directed into the Gulf South (includes the Federal Gulf of Mexico, Louisiana, and Texas), **the deep drilling province** of the United States. This expenditure was incurred on only 35% of the total wells drilled during the period**. Louisiana ranks 3rd from among all 50 states and offshore waters as the geographic location for industry drilling expenditures during this period.** Louisiana has consistently been among the top targets for the industry in terms of expenditures. If the number of wells drilled per rig declines with depth, the cost of drilling increases with depth, and the investment in rig equipment escalates for deeper drilling, it is safe to conclude the rate of growth in number of rigs working will be lower in a deep drilling province.

If the metric of reserves discovered per rig per year are among the highest in a deep drilling province (e.g., the Federal Gulf of Mexico and South Louisiana), it is safe to conclude the greater amount of expenditures will be incurred in those provinces and, therefore, not directly related to large escalations in rig count.

It is also safe to conclude that a federal tax credit is far more powerful than State tax incentives. And if a federal tax credit of nearly $1.00/Mcf can be earned for developing unconventional gas production, and since coalbed methane/shale gas are reached at shallower depths, it is safe to conclude an increased drilling and rig count emphasis will be directed to these areas. The top 5 BOE/Rig/Year areas for 2000-2002, Wyoming, Colorado, Texas RR#9, Utah, and New Mexico, are coalbed methane or shale gas drilling areas, i.e., “hot” plays.

It would be safe to conclude that many factors go into determining rig count, and the rate of growth in rig count. State tax incentives are only one such factor -- and appear to be a very limited consideration at that. Absent significant federal tax incentives which tilt the level playing field, the abundance of reserve opportunities with higher reservoir deliverability are a most compelling incentive for drilling and producing oil and natural gas--in Louisiana, the U. S. (and elsewhere).

For years, the Louisiana legislature, Governor’s office, and state regulatory agencies have assisted industry in developing the technology and best practices for drilling and producing oil and natural gas on land, in the wetlands areas, and in open offshore marine areas. As the industry is faced with a skeptical Wall Street, and the need to explore deeper horizons here in the U. S., it may be that State political leadership with non-tax initiatives will be more meaningful in advancing the economic health of the industry, the State, and the domestic economy.

This would be consistent with Governor Blanco's objectives for economic development by accentuating the state's positives and promoting the advantages of doing business in the state. The economic metric of BOE/rig/year for Louisiana may be a tool in sustaining that political initiative.

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COMMERCIAL ENERGY CONSERVATION CODE UPDATE

by
Darrell Winters., P.E

Background

The 1997 Louisiana Legislature enacted the Commercial Building Energy Conservation Code. The state legislation was mandated by Congress as part of the National Energy Policy Act of 1992 (EPAct) which requires that states incorporate energy efficiency standards into their building codes for commercial buildings.

The intent of Congress was to develop a national energy strategy that protects U.S. national security interests by reducing reliance on imported energy supplies, enhances the competitiveness of U.S. companies in a global economy by reducing energy costs, and protects the environment and quality of life of US citizens.

It is estimated that EPAct mandated building energy codes will prevent 6.5 million metric tons of carbon from being dispersed into the atmosphere, result in energy savings equivalent to almost 1,000 new fossil-fueled power plants, and save building occupants over $1.5 billion per year in energy costs.

Louisiana's legislation was reviewed by a comprehensive commercial building industry advisory committee, representing all facets of the commercial building industry. In Louisiana, commercial buildings are defined as all buildings designed for human occupancy, except residential buildings of three stories or less. For multifamily residential buildings of three stories or less, the applicable code is the Council of American Building Officials Model Energy Code (CABO MEC). For all other commercial buildings, the adopted code was American Society of Heating, Refrigeration, and Air-conditioning Engineers/Illuminating Engineering Society of North America (ASHRAE/IESNA) Code 90.1-1989 (see existing code below).

The code only applies to new commercial buildings and buildings that undergo major renovation. Exempt from the code are buildings of less than 1000 square feet gross floor area; buildings, or portions of buildings, with a peak energy use for space conditioning, water heating and lighting of less than 3.5 Btu/ft^2; and buildings, intended primarily for manufacturing, or commercial or industrial processing. In addition, special allowances are made for historic buildings.

Implementation of the code is via plan review in the State Office of Facility Planning for state buildings, and in the State Fire Marshal's office for all other commercial buildings. It has been incorporated into their existing plan review processes. After evaluation of building plans, the reviewer provides the builder with a letter of apparent compliance or a letter of apparent noncompliance. Builders may appeal the issuance of a letter of apparent noncompliance, if they so desire.

The energy code took effect July 1, 1998, for state buildings; January 1, 1999, all other commercial buildings. However, beginning July 1, 1998, builders could voluntarily submit their energy code documents to the State Fire Marshal for review and determination of compliance.

Existing Code

Effective January 1, 2004, the State of Louisiana adopted the International Building Code (IBC) 2000 as its Uniform Construction Code. Since the IBC 2000 states, “The provisions of the International Energy Conservation Code (IECC) shall apply to all matters governing the design and construction of buildings

for energy efficiency," the state is presently following the IECC 2000. IECC 2000 is based on ASHRAE / IESNA Standard 90.1-1989, except in the area of lighting, which is based on the 1999 Standard. Chapter 8 covers all commercial buildings, including those with multi-zone HVAC systems.

U. S. Department of Energy Determination

Approximately every three years the Department of Energy makes a determination regarding building energy efficiency. On July 15, 2002, the DOE published its determination in the Federal Register that the ASHRAE / IESNA Standard 90.1-1999 would improve commercial building energy efficiency (exclusive of low-rise residential buildings) in comparison to Standard 90.1-1989. This determination applies to all new commercial buildings and all major remodeling and renovation of existing buildings. All states had two years to adopt Standard 90.1-1999 or upgrade their existing commercial building energy codes to meet, or exceed, its requirements. Any states that are in the process of reviewing and updating their building codes, but will not have it completed by July 15, 2004, must submit a Request for Extension of Deadline prior to July 15, 2004. The State of Louisiana submitted the Request for Extension in mid-June 2004 and received an extension to August 4, 2005 to comply.

Adoption of New Code

As required by state law, the Office of the State Fire Marshal, the Department of Natural Resources and the Department of Administration / Office of Facility Planning and Control are working together to review and recommend the adoption of a building energy code which meets or exceeds ASHRAE / IESNA 90.1-1999. It has preliminarily been decided that ASHRAE / IESNA 90.1-2001 is the best choice at this time. The 2001 Standard is essentially the same as the 1999 version, but corrects many typographical errors and includes 34 addenda. The procedure for adopting a new code is detailed by Louisiana legislation in R.S. 40:1730.

Complying with the Energy Code

The accepted method of documenting compliance is COMcheck-EZ. COMcheck-EZ can be downloaded from www.energycodes.gov. After selecting "Louisiana" and "2000 IECC," all design characteristics of the proposed building are entered behind each of the four tabs via pull-down menus. Compliance or non-compliance with the code is shown at the bottom of the form on the screen. After entering all data, the three required compliance forms (Envelope, Lighting and Mechanical) are printed (File / Print Report) and mailed to the Office of the State Fire Marshal.

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RENEWABLES COUNCIL OF LOUISIANA

by
David McGee., P.E.

Renewables resources include: wind power; hydropower; solar (photovoltaics and thermal-electric); geothermal energy; biomass generated energy; waste-to-energy, including landfill gas; biofuels refining and bio-feedstock chemical technologies. Louisiana has no significant wind resource on land, variable solar resources, very limited hydro resources, and little geothermal resources. What Louisiana does have is a significant amount of fertile land that produces abundant agricultural crops having copious quantities of byproducts that can be converted to fuels or organic chemicals.

What is Biomass?

Biomass consists of renewable organic materials including forestry and agricultural crops and residues, wood and food processing wastes, and municipal solid waste. Louisiana generates increasing tonnages of biomass waste annually. Much of these materials are disposed of at significant financial and environmental costs to companies and citizens of the state. One man's waste is another man's raw material.

The Renewables Council of Louisiana (RCL), formerly known as the Louisiana Biomass Council, was established by the Louisiana Department of Natural Resources (DNR) under a contract with the Southern University Center for Energy and Environmental Studies. DNR, Louisiana Economic Development (LED) and the Louisiana Dept. of Agriculture & Forestry (LDAF) encouraged the further development of this group into a public interest group that is now incorporated as a 501(C)(3) non-profit organization.

The council coordinates its activities with various state departments and agencies, local government and businesses, acting as a catalyst for increased biomass utilization in Louisiana. The council desires to provide input for future renewables and waste-to-energy policy.

A primary focus of RCL is to promote renewable energy demand by encouraging statewide planning and coordination of biomass resource and solid waste utilization in Louisiana. Economic development and environmental improvement will be a by-product. To accomplish this, the council networks entrepreneurs, experts and other individuals interested in converting renewable organic resources into energy or commercial products. RCL is currently looking for support to explore the feasibility of a bio-refinery project in the state.

Three meetings, or mini-conferences, are held each year to identify business and economic development opportunities and to provide a networking opportunity for members. Attendance by those who have an interest in biomass/renewable energy from the business community is encouraged.

Louisiana Biomass Resources

Louisiana is rich in biomass resources by virtue of its productive agriculture and forestry industries and has substantial bio-energy and bio-product potential in comparison to other states. Public awareness of the presence of these resources is very limited. Increasing awareness of the value of biomass is one of RCL's primary objectives.

In Louisiana, our large quantity biomass resources consist mainly of sugarcane bagasse, filter press cake, rice hulls, cotton gin trash and sawmill waste. Pulp and paper mills and sawmills are numerous in the state and many utilize their waste for fuel. Wood processing residue is in demand by nurseries,

landscaping businesses, and by industrial plants as fuel. Alternative biomass resources available in smaller quantities include Johnson grass, kenaf, bamboo, giant ragweed, thistles, tree trimmings, sugarcane leaves, rice and wheat straw, pecan pith and shells, construction and forest residues, and "weed trees" such as shade mulberry, tallow, and black willow. Animal wastes, including manure, dairy lagoon solids, poultry litter and race track stable bedding are available in some areas. The federal government and a number of states have ongoing efforts to increase the capture of energy and value-added products from these materials.

Mission Statement

The Renewables Council of Louisiana strives to increase development and utilization of renewable resources for energy industries, chemical industries, sustainable agriculture, and ecological stability by:

1. Promoting research that aids government and business entities use of renewable resources to reduce pollution, improve economic activity, produce energy or produce consumable products;
2. Taking an active role to implement projects related to beneficial use of biomass, solar, wind, municipal solid waste (MSW), and other renewables;
3. Collecting and disseminating data and expertise related to renewables production and management, and implementation of renewables in beneficial use programs;
4. Working with renewables generators, municipalities and communities, and industries to provide economic development opportunities within the state;
5. Creating a business environment that attracts renewables related businesses to Louisiana.

The benefits of the Renewables Council of Louisiana activities will be increased economic activity, enhanced air and water quality, improved environmental stability, increased biomass use in bioremediation and as a soil amendment, increased recycling of organic materials, and improved waste management.

Renewables related topics of interest:

- Hydrogen generation, transport, storage, and use from renewable sources,
- Other technologies and solutions in and related to clean and renewable energy,
- Green pricing and Green power marketing,
- Renewable portfolio standards,
- Federal, state and local incentive programs,
- Interconnection issues,
- Energy storage in support of renewable energy installations.

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The Effect of Hurricane Ivan on Oil and Gas Production in the Gulf of Mexico

by
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Weather often increases demand for heating oil and natural gas during cold winter months and can seriously affect demand for electricity during the summer cooling season. Weather also has distinct short term effects on the energy supply.

In late summer and early fall 2004, the Gulf of Mexico experienced several tropical storms. Seven storms formed in August and five in September. There were three that reached hurricane force, Frances (Category 4), Ivan (Category 5), and Jeanne (Category 2), and arrived in rapid succession, impacting many of the same areas of the Gulf.

Not to downplay the effects of any tropical storm that enters the Gulf, or makes landfall near populated areas, however, Hurricane Ivan was particularly disastrous because it blew through one of the more active oil and gas exploration and producing areas and disrupted the business of supplying energy.

Prior to Hurricane Ivan, repeat alarms from Tropical Storm Bonnie and Hurricanes Charley and Frances, with subsequent storms Hurricane Jeanne and Tropical Storm Matthew only served to worsen the situation.

Damage from Hurricane Ivan is, so far, the most expensive for the Gulf of Mexico oil and gas industry. The U.S. Department of Energy estimated the gas shut-in from Hurricanes Lilly and Isidore, combined, totaled 85 BCF - 90 BCF in 2002, although damage to platforms and pipelines was much less extensive. Some of the reported damage by Hurricane Ivan included the destruction of seven platforms.

Hurricane Ivan has caused 120 BCF (2.7% of the Gulf of Mexico annual production) of gas and 29.9 MMBLS (4.9% of the Gulf of Mexico annual production) of oil shut-in, thus far, and extensive damage to delivery pipelines. The effect of Hurricane Ivan on producers' cash flow is enormous. They were hit by lost production when the price of oil and gas is at its highest.

The U.S. Minerals Management Service (MMS) stated that Ivan, at its high, forced the evacuation of 574 platforms (75% of the Gulf's manned platforms) and 69 rigs (59% of the Gulf's drilling rigs). Daily oil production was shut-in at 83% and gas production shut-in at 53% of operations. As of November 15, 2004, a total of nine platforms and one rig remain evacuated. Thirteen percent of oil daily production and 6% of gas daily production remain shut-in due to delivery and gathering pipelines problems.

Damage to the infrastructure by Hurricane Ivan cannot be adequately measured in terms of how many platforms or rigs were destroyed. The most damage was discovered in the pipeline routes. It was reported that some pipelines in the mouth of the Mississippi River were moved 3,000 feet while others remain buried under 30 feet of mud and cannot be found. It could take as long as 6 months and a significant amount of effort to locate and repair these pipelines.

Hurricanes are highly complex weather systems capable of generating incredible amounts of energy. Damage to lives and property is due to high speed winds, water, and tornados precipitated by the weather system.

Depending on duration and storm intensity as the hurricane approaches land and the water becomes shallower, it begins to push large amounts of water in front of it called storm surge. Storm surge, combined with normal tides, creates a hurricane storm tide which can increase the mean water level 15 feet or more.

This rise in water level can cause severe flooding in coastal areas, particularly when the storm tide coincides with normal high tides. Most of the Louisiana Gulf Coast elevation is equivalent to mean sea level, thus, the danger from storm tides is tremendous. The level of surge in a particular area is also determined by the slope of the continental shelf. A shallow slope off the coast will allow a greater surge to inundate coastal communities.

Storm surges of 20 - 25 feet are not unheard of. In 1969, Hurricane Camille produced a 25-foot storm surge in Mississippi; in 1989, Hurricane Hugo generated a 20-foot storm tide in South Carolina. When the water from these surges strike land it swamps low lying areas and causes severe damage to unprotected coastal areas. Models have predicted that a slow moving category 4 hurricane could produce a surge sufficient to flood the New Orleans Vieux Carre with six feet or more of water.

The wetlands infrastructure is, also, adversely affected. Any storm path with a category 5 intensity coming onshore between Vermilion Bay and Fourchon would place the NE quadrant over the most production intense part of the marsh. The Louisiana Offshore Oil Port's (LOOP) Fourchon pumping station would disappear. Port Fourchon would disappear and the bayou would fill with sediment. It would take months to assess the extent of the recovery job, mobilize to begin dredging, dredge, locate missing pipelines, re-stabilize the foundations (for pumping stations and for underwater pipelines), repair and/or replace the pipelines, and rework wells and restart flow.

Since there are numerous pipelines offshore bringing flow from the many platforms and wells, the marsh is the area of flow consolidation. There are probably three natural gas pipelines and three oil pipelines which are most vulnerable. These include Henry Hub, St. James terminal and LOOP pipeline; Shell pipeline from St. James, LA to the Midwest, Venice gas processing plant and pipeline; Baldwin gas processing plant and pipeline; Garden City gas processing plant and pipeline; and refineries and their associated pipelines along the Mississippi River. Additional crude access would entail transfer of oil from very large crude carriers (VLCC) to lighter vessels and barges.

Anecdotal evidence provides a glimpse into the power of Hurricane Ivan when damage to one offshore rig was done nearly 80 feet above the Gulf's surface. This and other evidence suggests the possibility of a rogue wave also contributing to the storm damage. Hurricane Ivan was not an ordinary hurricane; national weather and industry sources indicated wave damage that would be on the extreme high end for a category 5 hurricane.

MMS reported five Mobile Offshore Drilling Units were set adrift and one mobile unit sustained extensive damage, seven fixed platforms were destroyed, four others were extensively damaged, and 13 pipeline leaks were located, including one that resulted in a fire which burned itself out. Individual companies estimated down time from 10 - 21 days. Potentially, some of the more severely damaged platforms are permanently lost. Some mobile units have been moved to ship yards to undergo inspection and repair; their outage is still to be determined.

Almost all of the information on oil and gas production disruption in the Gulf of Mexico was provided by MMS. That data focuses in the outer continental shelf, but does not account for data pertaining to the state regulated near shore areas. MMS requires damage reports from producers while the state does not.

Production losses for the storm in the Louisiana regulated coastal waters are, at this point, undetermined. It is hoped that it will be less severe than that in the OCS.

Storms such as Ivan damage production facilities leaving the energy production infrastructure more vulnerable to catastrophic loss. This vulnerability to damage increases as Louisiana's protected marshes and barrier islands disappear. Buried oil and natural gas pipelines are subject to irresistible bending forces from hurricanes' movement of sediment. As storms move from deeper water onto the shallower shelf, and as the storm pressure lowers (thus, the greater the storm category), the greater is the damage due to underwater erosion. This could be thought of as the equivalent of an avalanche of snow, except it is an avalanche of sediment on the marsh or shelf bottom.

Loss of platforms near the shore has been a factor in the offshore industry from the beginning. The mouth of the Mississippi River has a very unstable bottom. Pipelines have disappeared in other storms as well. The unstable Gulf bottom areas of the Louisiana shelf run from the mouth of the Mississippi to near Vermilion Bay. The shelf bottom becomes a bit more firm to the west, but the marsh all across the state from the Mississippi River to the Texas state line is unstable.

Damage to oil and gas pipelines in the coastal zone has been unusually high. Even if offshore production was available, moving it onshore to process and market would be more difficult due to pipeline loss.

As a note aside, not all weather related disruption to production is due to hurricanes. Louisiana, in particular the southern portion, is noted for its subtropical climate and moderate winter temperature. Temperatures below 30° F in the southern parishes are uncommon, lasting only a few hours or days of the year. If the temperature drops ten degrees below that, and stays for an extended period, it can create another unusual set of conditions since very little equipment is designed for sustained cold temperatures.

It is not uncommon during winter months (usually November – February) for weather fronts from the north to reduce oil and natural gas production in both north and south Louisiana, including production over marsh lands and open water. The combined effect of temperature and wind lowers the effective temperature which can cause control valves on production equipment and well heads to freeze and blow out burners used to heat water baths for heat exchange. The result is a reduction in available production at the time of highest market (heating) need.

As these winter fronts pass through the state, they drive the water (tides) from the bayous and marsh waterways rendering transportation by boat an unreliable source for access to the downed facilities. Remedial action to unfreeze the equipment and restart production may have to wait added days at this critical time. It is possible that as much as 25% of the nation's oil and natural gas production could be substantially disrupted.

Weather is a variable that needs to be factored into the effects on oil and gas supply. Infrequent, but regular, weather events like Hurricane Ivan will cause serious supply reductions and resultant short term price increases.

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Offshore Louisiana Wind Power

by
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Introduction

The topic of offshore wind generated electricity in Louisiana recently received a lot of attention stemming from several sources. First of all, high fossil fuel prices and steady decreases in the cost of wind power equipment have collaborated to make the economics of wind power feasible in many cases. In fact, in some areas of the U.S., wind power can and does compete with conventional forms of electrical power generation. Second, a recent Stanford University study (Archer and Jacobson, 2003) suggests that the Gulf of Mexico may possess a greater wind resource than previously thought. Finally, a south Louisiana company has proposed placing wind power plants in state and federal waters offshore Louisiana. This article explains the basics of wind generated electricity and how it relates to Louisiana.

Extraction of energy from the wind is not a new idea. Windmills, predecessors to modern wind turbines, have been around since the 6th century when they were used to pump water and grind grain. Wind turbines consist of a blade/hub assembly, gear box, generator, and tower. Wind turbines extract energy from the wind in much the same manner as did ancient windmills, but instead of using the resultant mechanical energy directly, the turbines use it to drive generators that produce electricity.

Utility-scale wind turbines are very large and have blade diameters up to 300 feet and towers that are, roughly, the same height as the blade diameter. A wind turbine with a 260 foot blade diameter would be almost 400 feet tall from ground or sea level to the tip of the blade at the top of its rotation. Larger ones are currently under development. Wind turbine blades are usually made from wood or fiberglass and the towers from steel.

The rated power of current, utility-scale wind turbines ranges from 600 kilowatts (kW) to over 3 megawatts (MW). Units with much higher rated output are being developed. A wind turbine's rated capacity is the amount of power the turbine will produce at a particular wind speed. The actual power output of a particular wind turbine is completely dependant upon how often and how hard the wind blows at a particular location.

The efficiency of a wind turbine is defined as the energy input, i.e., energy contained in the wind, divided by the energy output of the wind turbine. The theoretical maximum efficiency, known as the Betz limit, is 59.3%. The efficiency of a particular wind turbine varies with the wind speed. Current wind turbines have maximum efficiencies of around 50% at a particular wind speed, but are much less efficient at higher or lower wind speeds. Efficiency, however, is not the primary consideration because the wind is free and supply is practically unlimited. By comparison, automobile fuel efficiency would not be a cause of concern if fuel was free and its supply unlimited.

A more meaningful measure of wind turbine performance is the capacity factor. The capacity factor is defined as the ratio of a turbine's actual energy output for the year divided by the energy output if the turbine operated at its rated power output for the entire year. Common capacity factors range from 25% to 40% for wind turbines.

In order to generate significant amounts of electricity, wind turbines are situated in groups called wind farms. The U.S. wind power capacity has increased from 10 MW in 1981 to 6,374 MW (about two-thirds of one percent of the total U.S. electric generating capacity) in 2003. No offshore wind farms exist in the

U.S. due to the higher costs involved with placing turbines over water and running transmission cables back to shore, but several are proposed.

Pros and Cons

The lure of wind generated electricity lies in its status as a renewable and non-polluting resource. Wind gets its renewable nature from the sun. Solar radiation heats some parts of the earth's atmosphere more than others creating temperature differences that cause the air to move. As long as the sun burns, there will be wind, making it renewable. Wind is non-polluting; there is no combustion, or any other chemical or nuclear reaction, consequently, there are no emissions and no waste to be disposed.

The main drawbacks to wind generated electricity are its high capital costs and the intermittency of the wind. The high capital costs result from the fact that, like all solar energy, wind is a diffuse source of energy. This means that a large number of wind turbines are required for a wind farm of significant capacity. For perspective, in order for wind to generate 1% of the electricity in Louisiana, 180 two-megawatt wind turbines would be required, assuming a 30% capacity factor for wind. The intermittency of the wind leads to increased operating costs for grid operators. The grid system must maintain a precise balance between the demand for power and the power generated by all of the power plants on a particular grid. Wind speed, hence power output from wind turbines, fluctuates greatly during the day and is unpredictable, making the balancing act more difficult and costly. In general, these costs are referred to as ancillary service costs. Ancillary service costs associated with wind power are not presently well known, but studies estimate a range from 0.15 – 0.55 cents/kilowatt hour (kWh).

Other purported drawbacks of wind power include both aesthetics and associated bird fatalities. The aesthetic value of a wind turbine is subjective. The Cape Cod Wind project off the New England coast is on hold this month because many residents object to the impact a wind farm will have on wildlife, aesthetics and recreation. Louisianians are accustomed to seeing offshore oil and gas structures; wind turbines should not be a problem. In the past, bird kills have been a problem for older wind turbines that rotate fast making the blades difficult to see. Newer, larger wind turbines rotate much slower making the blades easily visible. Bird kill statistics for these turbines average about one bird per turbine per year.

Economics

Installation costs for utility scale wind farms are in the neighborhood of $1000/kW for onshore systems and $1500/kW or more for offshore systems. By comparison, the capital cost for conventional natural gas turbine capacity is about $350/kW. It should be noted however, that almost no one is currently considering building any natural gas power plants due to high natural gas prices. If natural gas prices remain high, as most analysts predict, most new electrical generation capacity will be built using coal and nuclear fuel. A new coal power plant would cost about $1000/kW and a nuclear plant about $1500 - $2000/kW. Given these prices and, in general, less red tape and permitting problems associated with wind than with coal and, especially, nuclear, and lower operating costs with wind, i.e., no fuel costs and low maintenance costs, wind power starts to become attractive.

The direct cost is ultimately what determines the competitiveness of a particular type of power production. Over the last 15 years, the direct cost (cents/kWh) of wind power has fallen 85%, and, in some cases, is competitive with coal and natural gas power. The reductions in cost have resulted mainly from the development of larger, more efficient turbine designs. Another key factor that makes wind power more competitive is the recent price increases for conventional fuels. Prices for wind energy are usually quoted including a federal production tax credit (PTC). The PTC was enacted in 1992 with the Energy Policy Act and was recently extended through 2005 and raised from 1.5 to 1.8 cents/kWh. The PTC, which is not applicable to existing production facilities, is available to companies for new production of renewable energy including solar, biomass, geothermal, and wind power. Future advances in turbine technology are expected to reduce the cost of wind power even further and to eliminate the

need for the PTC, yet the ability of wind power to be competitive ultimately depends on the wind resource.

Wind Resource

The most fundamental and significant cost factor of wind generated electricity is the wind itself, specifically, how often and how hard it blows. For a given location, values for the speed and frequency of the wind must be known or assumed in order to calculate the cost of wind generated electricity. To a degree, a wind turbine will produce more power with higher wind speeds. More power per turbine equals lower costs. The power available in the wind is proportional to the cube of its velocity, so if the wind velocity doubles, the power available would increase by a factor of 8. This means that a small increase in wind velocity will significantly increase the power output of a wind turbine. Wind resources are classified by the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) (Table 1.). Wind speeds are given at a height of 50 meters. This is because wind speed increases with height above ground or sea level. In general, a class 4 wind resource is required for a commercially viable wind farm.

Wind Power Classification		
Wind Power Classification	Resource Potential	Wind Speed @ 50 meters (mph)
2	Marginal	12.5 - 14.3
3	Fair	14.3 - 15.7
4	Good	15.7 - 16.8
5	Excellent	16.8 - 17.9
6	Outstanding	17.9 - 19.7
7	Superb	19.7 - 24.8

Table 1. Standard Wind Resource Classification

Louisiana's onshore wind resource has virtually no potential for wind power development. The wind speed and frequency is not sufficient enough to make wind power economical. This is fully documented in *Evaluating Wind Energy Potential in Louisiana* (1981). Louisiana's offshore wind resource is, to date, still somewhat unknown. Stanford University (Archer and Jacobson, 2003) suggests offshore Louisiana may have great potential with several areas containing class 7 winds. A recent analysis of the available data completed by NREL (M. Schwartz, unpublished data) for the Louisiana Department of Natural Resources concludes that the offshore Louisiana wind resource is generally class 3 or 4. Wind speed data does not exist in which the measurements have been taken at the hub height of modern wind turbines, about 80 meters. To begin to understand the differences among the conclusions of these studies it is important to note the chosen methodologies used to extrapolate measured wind speeds from the height at which they were taken to the hub height of a wind turbine. Whereas Stanford developed an entirely new method for this calculation, NREL used a pre-established method which Stanford researchers claim underestimates the wind speeds.

What this means to Louisiana

It bears repeating that the ability of wind power to be competitive ultimately depends on the wind resource. If the offshore Louisiana wind resource proves to be extraordinary, as some predict, the potential benefits to Louisiana by tapping into that resource are many.

The proposed project, previously described, involves placing wind turbines and related equipment on abandoned oil and gas structures, as well as, on new purpose-built structures offshore of Louisiana. If built before the Cape Wind Project, this project would be the first offshore wind farm in the U.S. A typical wind farm would consist of, approximately, 25 two-megawatt turbines spread out over about 3 square miles. The project would provide power for onshore uses and, perhaps, for offshore uses including oil and gas exploration and production, as well as for LNG facility operations. To the extent that it is feasible to use abandoned oil and gas structures, such use could save owners the expense of dismantling these structures once oil and/or gas production ceases. It would also keep the structures in place for any future advances in oil and gas extraction technology which would allow previously uneconomically recoverable oil and gas to be recovered.

Many states are implementing a renewable portfolio standard (RPS). A RPS requires affected electricity distributors to acquire a certain percentage or quantity of their electricity from renewable resources. This requirement makes way for a renewable energy trading market in which a renewable energy generator can sell renewable energy credits (REC), or green tags. This would potentially make RECs from Louisiana offshore wind farms exportable to distributors in other states that have to satisfy a RPS but do not have access to an economically viable renewable resource in their own state.

Offshore wind energy offers Louisiana an opportunity to sustain the oil and gas service industry as many of the same service industries and technologies used in the construction of offshore oil and gas structures can be utilized directly, or be easily adapted to construct offshore wind farms. Louisiana has a long history of being a leader in energy production and technology. As oil and gas production in the state continue to decline, offshore wind energy could help Louisiana maintain its leadership role in the energy industry.

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2. Mike French, Evaluating Wind Energy Potential in Louisiana (technical report, Louisiana Department of Natural Resources, Research and Development Division, 1981). http://dnr.louisiana.gov/sec/execdiv/techasmt/data/alternative/windreport1981.html

For more information on wind energy:

- **American Wind Energy Association**
  http://www.awea.org/
- **National Wind Coordinating Committee**
  http://www.nationalwind.org/default.html
- **U. S. Department of Energy/Energy Efficiency and Renewable Energy**
  http://www.eere.energy.gov/RE/wind.html
- **National Renewable Energy Laboratory/National Wind Technology Center**
  http://www.nrel.gov/wind/