Legislative Fiscal Division

Revenue Estimate Profile

Oil and Natural Gas Production Tax

Revenue Description: The oil and natural gas production tax is imposed on the production of petroleum and natural gas in the state. Gross taxable value of oil and natural gas production is based on the type of well and type of production. A portion of the revenue from the tax may be returned to Indian tribes per agreements between the Department of Revenue and the tribes.

Statutory Reference:

Tax Rate (MCA) – 15-36-304. Privilege and license tax – 82-11-131, Administrative Rules 36.72.1242
Tax Distribution (MCA) – 15-36-331(4), 15-36-332(2&3) (to taxing units)
Date Due – within 60 days after the end of the calendar quarter (15-36-311(1))

Applicable Tax Rate(s): The oil and natural gas production tax has numerous tax rates depending on several factors. These factors include whether the oil or gas is produced from a stripper well, a stripper incentive well, from a well initially drilled before 1999 or after, from a well newly drilled within the last year or 18 months, and whether the interest being taxed is the working interest or the royalty interest. The Board of Oil and Gas Conservation imposes an additional privilege and license (P & L) tax on all oil and natural gas tax rates. Starting October 2006 as set by the Board, the P & L tax rate is 0.09%. Based on this rate, HB 758 enacted by the 2005 Legislature allows an additional tax rate of 0.17% to generate revenue for local impacts for local governments. The two taxes may not exceed 0.3%. The following table shows tax rate percentages for each type of pre-1999 oil and post-1999 oil, excluding the P & L tax and the new Local Impact tax. The quarterly tax rates on stripper production and on incremental production are lower than that for regular production unless the price of West Texas Intermediate averages above $30 for the quarter. Similarly, the quarterly tax rate for stripper well exemption production (1-3 barrels a day) is lower than that for regular production unless the price of West Texas Intermediate averages above $38 for the quarter.

Oil Tax Rates			
15-36-304(5), MCA			
Working Interest			
Primary recovery production			
	First 12 months of qualifying production		0.5%
	After 12 months:		
		pre-1999 wells	12.5%
		post-1999 wells	9.0%
Stripper oil production (>3 and < 15 barrels/day if oil<$30)			
	1 through 10 barrels a day production		5.5%
	>10 through 14 barrels a day production		9.0%
Stripper oil production (>3 and < 15 barrels/day if oil>=$30)			*
Stripper wells (3 barrels or less/day)			
	Stripper well exemption production (if oil <$38)		0.5%
	Stripper well bonus production (if oil >=$38)		6.0%
Horizontally completed well production			
	First 18 months of qualifying production		0.5%
	After 18 months		
		pre-1999 wells	12.5%
		post-1999 wells	9.0%
Incremental production (if oil <$30/barrel)			
	New or expanded secondary recovery production		8.5%
	New or expanded tertiary production		5.8%
Incremental production (if oil >=$30/barrel)			
	Pre-1999 wells		12.5%
	Post-1999 wells		9.0%
Horizontally recompleted well			
	First 18 months		5.5%
	After 18 months		
		pre-1999 wells	12.5%
		post-1999 wells	9.0%
Nonworking Interest			14.8%
* No stripper tax rate. Taxed at primary recovery rates. See 15-36-303(22a)			

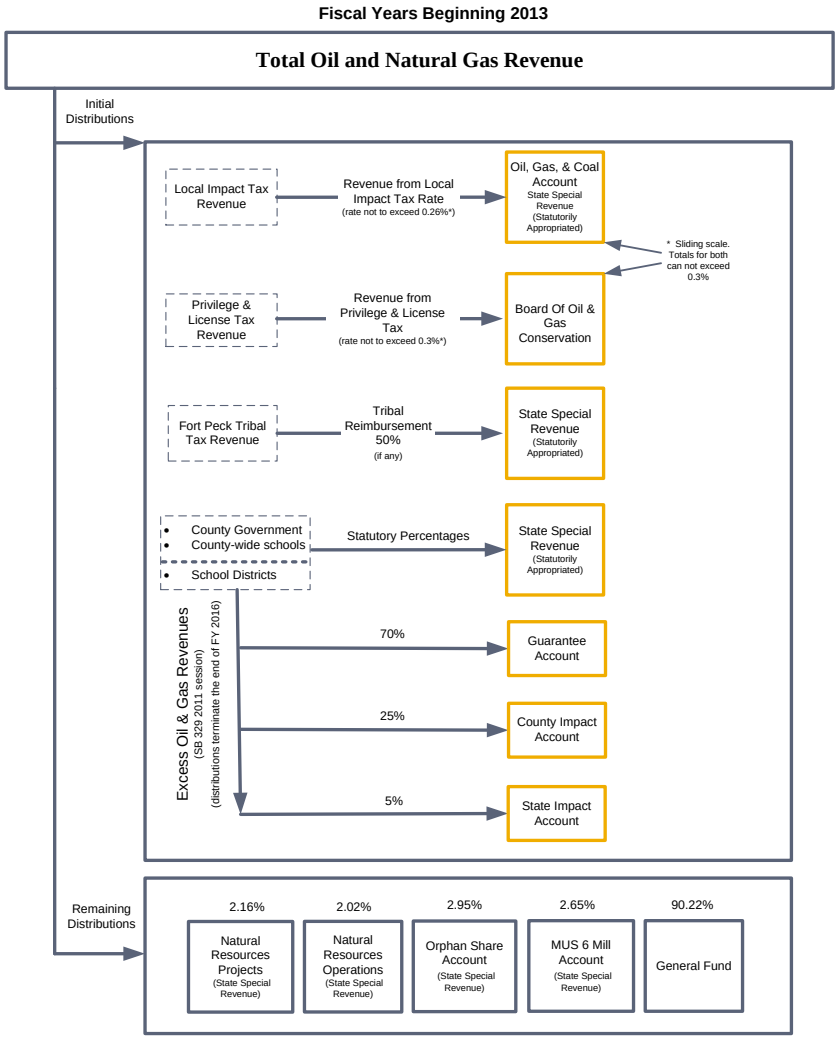
Natural Gas Tax Rates			
15-36-304(2), MCA			
Working Interest			
Qualified production			
	First 12 months		0.5%
	After 12 months		
		pre-1999 wells	14.8%
		post-1999 wells	9.0%
Stripper natural gas pre-1999 wells			11.0%
Horizontally completed well production			
	First 18 months of qualifying production		0.5%
	After 18 months		9.0%
Nonworking Interest			14.8%

Distribution: Once the oil and natural gas production taxes have been collected, the revenue is first distributed based on the amounts collected from the P & L and Local Impact taxes. The amounts from the P & L tax are distributed to the Board of Oil and Gas Conservation. The amounts from the Local Impact tax are distributed to the oil and gas natural resource state special revenue account. The amounts received by the Board and the oil and gas natural resource account vary based on a sliding tax scale based on the P & L tax set by the Board. Counties producing oil and natural gas receive the next share of total revenue with each county having its own statutory distribution percentage of total revenue, including the revenue generated by the P & L and Local Impact taxes. A portion of the revenue may be returned to Indian tribes per agreements between the Department of Revenue and the tribes. The remainder of the revenue is distributed to other state accounts in the following manner:

- Coal bed methane account – 1.23%
- Natural resources projects account – 1.45%
- Natural resources operations account – 1.45%
- Orphan share account – 2.99%
- University system 6 mill levy account – 2.65%
- General fund – the remainder (90.23%)

The distributions of county shares and the amount of oil and natural gas production tax revenue deposited in the oil and gas natural resource account are statutorily appropriated and are based on the statutorily set percentages for each county.

Distribution Chart:



Oil & Natural Gas Production Tax Revenue Allocation Based on FY 2012 Amounts		
General fund	$97,560,324	46.3%
Local	83,611,488	39.7%
Guarantee fund	12,335,596	5.9%
Local Impact	3,754,061	1.8%
Orphan	3,190,013	1.5%
University	2,865,605	1.4%
Nat. Res. Proj.	2,335,738	1.1%
Nat. Res. Ops.	2,184,348	1.0%
Bd. Of Oil & Gas	1,987,666	0.9%
County Impact fund	682,935	0.3%
State Impact fund	136,587	0.1%
Coal Bed Meth.	-	0.0%

Because the exact distribution of oil & natural gas tax revenue varies depending on various factors, the table only reflects FY 2012 actual distributions. Please see the distribution graph for exact distribution percentages.

Legislative Fiscal Division

Revenue Estimate Profile

Oil and Natural Gas Production Tax

Collection Frequency: Quarterly: The oil and natural gas production tax is due 60 days after the end of the production quarter.

% of Total General Fund Revenue:

FY 2004 – 2.99%	FY 2007 – 5.25%	FY 2010 – 5.87%
FY 2005 – 4.09%	FY 2008 – 7.64%	FY 2011 – 5.60%
FY 2006 – 5.42%	FY 2009 – 5.56%	FY 2012 – 5.21%

Revenue Estimate Methodology:

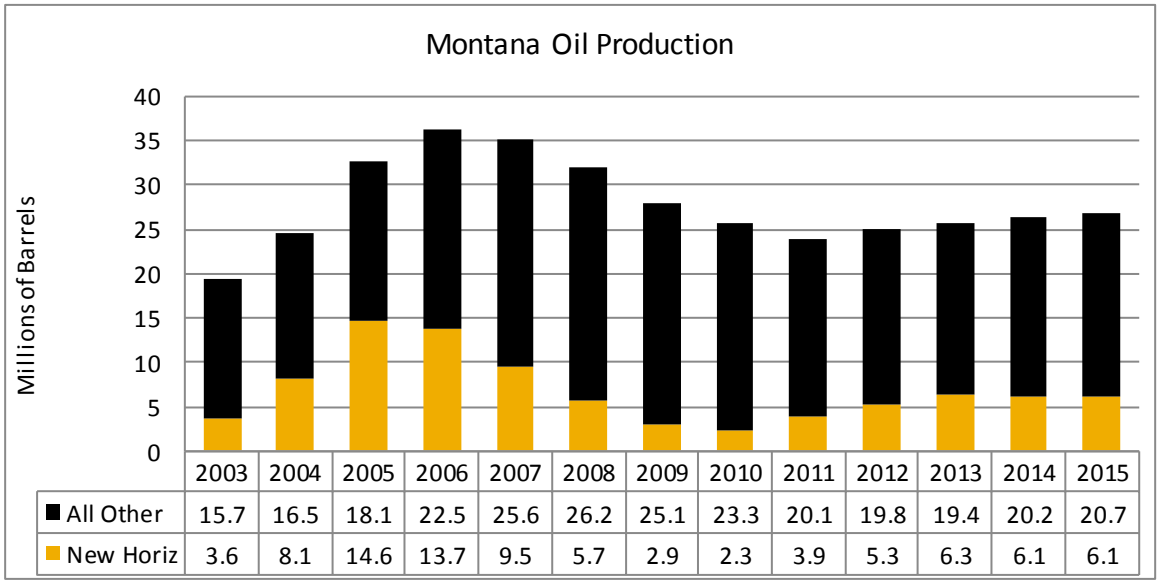
The estimate for oil and natural gas revenue is produced from estimating the price and specific production subject to varying tax rates from which value can be obtained. Specific statutory tax rates are used for the types of oil and natural gas that are taxed differently.

Data

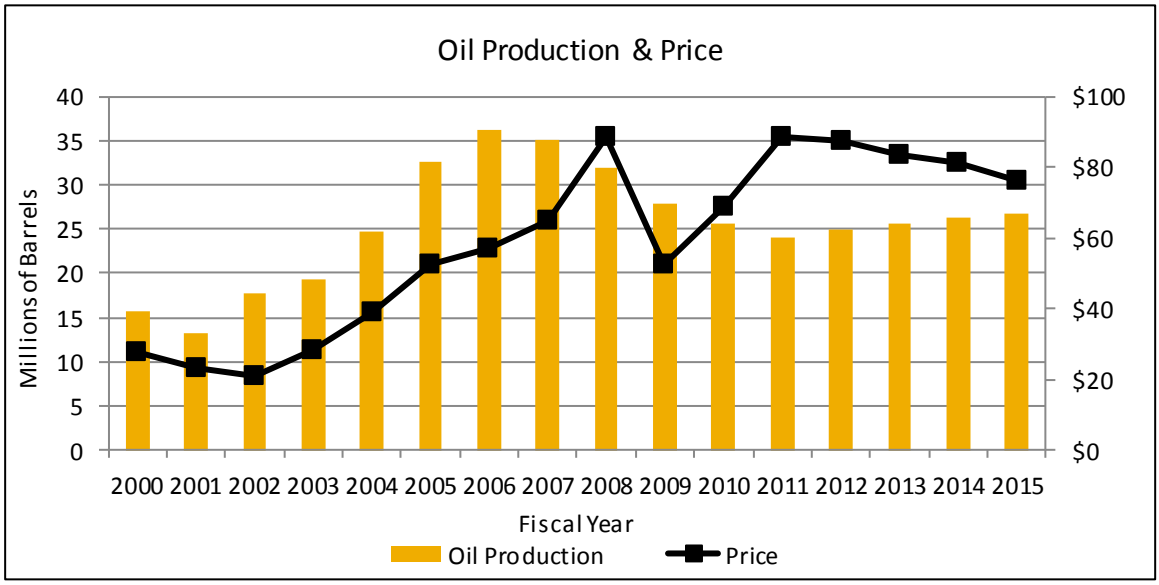
Data from the Board of Oil and Gas Conservation are used extensively to isolate monthly historical production of oil and natural gas by field and by individual well. IHS provides future estimates of West Texas Intermediate oil and national well head natural gas prices. Production, price, value, and revenue collections, by oil type, are provided on a quarterly basis by the Department of Revenue.

Oil Analysis

Production—The estimate is developed on a quarterly basis with production from horizontal wells separate from all other production. The majority of the increased production is from horizontal wells, as illustrated in the figure below.



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
All Other	15.7	16.5	18.1	22.5	25.6	26.2	25.1	23.3	20.1	19.8	19.4	20.2	20.7
New Horiz	3.6	8.1	14.6	13.7	9.5	5.7	2.9	2.3	3.9	5.3	6.3	6.1	6.1



Existing horizontal wells will follow a production decline curve unique to the characteristics of these wells. Future production from completed wells can be estimated by developing a normalized production decline curve from the producing wells. In doing so, the difficulty of having different starting time for each well can be eliminated by averaging each well's production from a common time point. The result is a curve that represents the average production of horizontal wells by month of production. Production from future wells can be estimated by applying the production curve coefficients to an estimate of future spudded wells. Knowing monthly production from each well and the date it was placed into production is essential for estimating oil tax revenue because tax rates vary based on the length of time a well has been in production. The dynamics in the timing of when wells enter and fall out of the various tax rates and the changes in production at the various stages is complex, but needs to be modeled to ensure accurate estimates.

Production from all other wells is also estimated on an annual basis and by the different taxation types. For each year, the estimate is derived by multiplying the previous year by the ratio of the results of a regression analysis for the current and the previous year. The results for each tax type are then summed by year.

Price—The price for each quarter is estimated by adjusting the IHS West Texas Intermediate oil price for that quarter by the ratio of the previous three year average Montana price to the three year average of the IHS price.

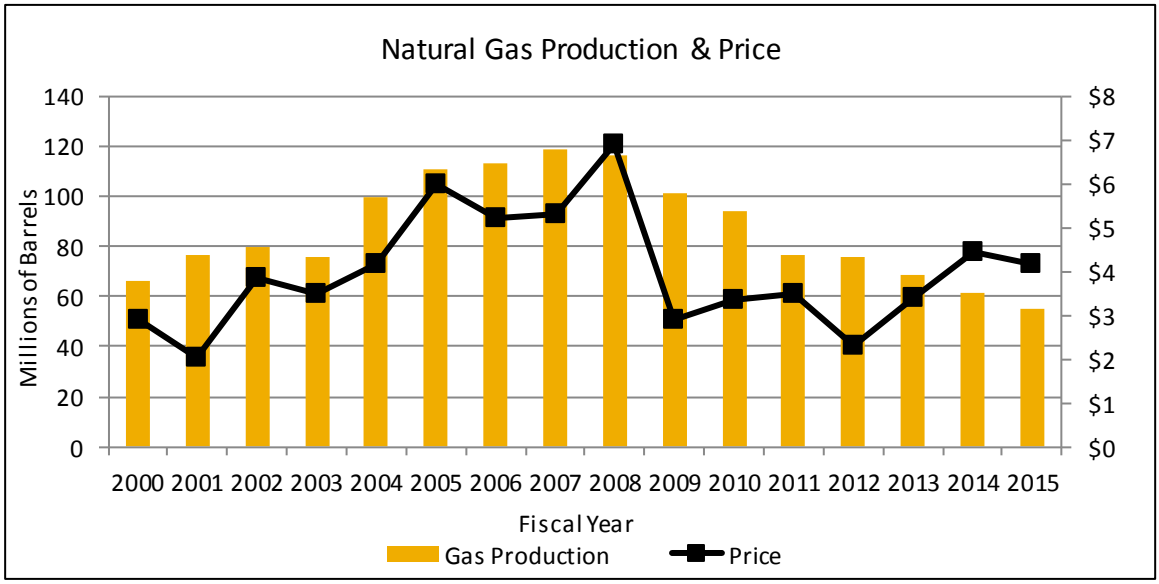
Once production and prices have been estimated, the value can be calculated by the product of the two. The quarterly value of each tax type is then multiplied by the applicable tax rate to obtain the estimate. The sum of the revenue from all tax types for each fiscal year determines the oil production revenue estimate.

Natural Gas Analysis

Production—The estimate is developed on quarterly basis with data from the Board of Oil and Gas Conservation. Existing wells will follow a production decline curve unique to the characteristics of these wells. Future production from completed wells can be estimated by developing a normalized production decline curve from the producing wells. In doing so, the difficulty of having different starting time for each well can be eliminated by averaging each well's production from a common time point. The result is a curve that represents the average production of wells by month of production. Production from future wells can be estimated by applying the production curve coefficients to an estimate of future spudded wells. Knowing monthly production from each well and the date it was placed into production is essential for estimating gas tax revenue because tax rates vary based on the length of time a well has been in production. The dynamics in the timing of when wells enter and fall out of the various tax rates and the changes in production at the various stages is complex, but needs to be modeled to ensure accurate estimates.

Production from all wells is estimated on an annual basis and by the different taxation types. For each year, the estimate is derived by multiplying the previous year by the ratio of the results of a regression analysis for the current and the previous year. The results for each tax type are then summed by year.

Price—The price for each quarter is estimated by adjusting the IHS West Texas national well head price for that quarter by the ratio of the previous three year average Montana price to the three year average of the IHS price.

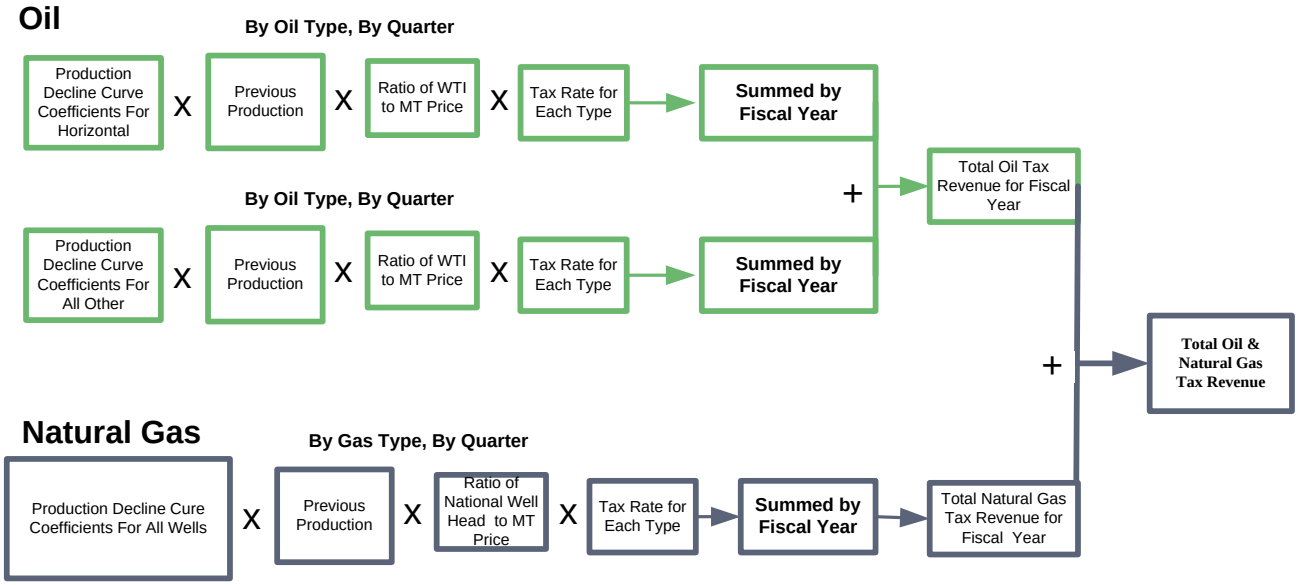


Once production and prices have been estimated, the value can be calculated by the product of the two. The quarterly value of each tax type is then multiplied by the applicable tax rate to obtain the revenue. The sum of the revenue from all tax types for each fiscal year determines the natural gas revenue estimate.

Adjustments and Distribution

Once the oil and natural gas estimates have been summed, the distribution formula is applied with the amounts to the Board of Oil and Gas and to local governments distributed first and the remainder subject to statutory percentages.

Forecast Methodology:



Legislative Fiscal Division

Revenue Estimate Profile

Oil and Natural Gas Production Tax

Revenue Estimate Assumptions:

	t Fiscal	Total Tax Millions	GF Tax Millions	GF Allocation Percent	Audits Millions	Total Tax Oil Millions	Total Tax Gas Millions
Actual	2002	50.304	12.902	25.6%			
Actual	2003	73.389	29.086	39.6%	2.436		
Actual	2004	92.676	41.324	44.6%	1.688		
Actual	2005	137.754	62.626	45.5%	1.127		
Actual	2006	203.681	92.563	45.4%	1.429	140.641	51.586
Actual	2007	209.946	96.335	45.9%	1.242	174.193	48.858
Actual	2008	324.311	149.994	46.3%	3.168	227.099	57.400
Actual	2009	218.425	100.491	46.0%	5.221	203.277	46.279
Actual	2010	206.286	95.491	46.3%	1.395	160.377	28.668
Actual	2011	215.130	99.764	46.4%	1.254	188.114	27.486
Actual	2012	210.644	97.560	46.3%	0.737	199.126	20.747
Forecast	2013	215.806	98.266	45.5%	0.737	195.545	19.525
Forecast	2014	219.313	99.857	45.5%	0.737	194.228	24.349
Forecast	2015	215.717	98.226	45.5%	0.737	191.020	23.960

Oil	t Fiscal	Barrels Millions	Price Per Barrel	Gross Value Millions	Effective Tax Rate	Tax Millions	Non-Tax Value Millions
Actual	2002						
Actual	2003						
Actual	2004						
Actual	2005						
Actual	2006	34.438	55.06	1896.214	7.6%	140.641	48.525
Actual	2007	35.654	60.89	2170.999	8.2%	174.193	54.924
Actual	2008	33.501	76.22	2553.434	9.1%	227.099	65.224
Actual	2009	29.929	71.92	2152.399	9.7%	203.277	56.681
Actual	2010	26.790	60.47	1620.102	10.2%	160.377	43.691
Actual	2011	24.781	78.58	1947.329	9.9%	188.114	51.144
Actual	2012	24.481	88.21	2159.382	9.5%	199.126	55.693
Forecast	2013	25.332	85.57	2167.661	9.3%	195.545	56.257
Forecast	2014	25.997	82.48	2144.073	9.3%	194.228	55.645
Forecast	2015	26.573	78.80	2093.921	9.4%	191.020	54.343

Legislative Fiscal Division

Revenue Estimate Profile

Oil and Natural Gas Production Tax

Gas	t	MCF's	Price	Gross Value	Effective	Tax	Non-Tax Value
	Fiscal	Millions	Per MCF	Millions	Tax Rate	Millions	Millions
Actual	2002						
Actual	2003						
Actual	2004						
Actual	2005						
Actual	2006	111.998	5.60	627.347	8.6%	51.586	29.763
Actual	2007	116.096	5.26	610.131	8.4%	48.858	27.796
Actual	2008	117.397	6.09	715.213	8.4%	57.400	31.173
Actual	2009	108.884	5.03	547.756	8.8%	46.279	24.422
Actual	2010	97.972	3.12	305.969	9.8%	28.668	14.269
Actual	2011	85.445	3.42	291.906	9.9%	27.486	13.262
Actual	2012	76.080	2.90	220.641	9.9%	20.747	10.149
Forecast	2013	71.991	2.83	204.028	10.0%	19.525	9.373
Forecast	2014	64.930	3.90	253.128	10.1%	24.349	11.629
Forecast	2015	58.273	4.32	251.467	10.0%	23.960	11.553

Oil	t	Barrels	Price	Gross Value	Effective	Total Tax	Non-Tax Value
	Cal	Millions	Per Barrel	Millions	Tax Rate	Millions	Millions
Actual	2002						
Actual	2003						
Actual	2004						
Actual	2005	32.679	52.76	1,724.104	7.5%	125.296	43.861
Actual	2006	36.196	57.14	2,068.324	7.7%	155.985	53.189
Actual	2007	35.112	64.75	2,273.674	8.7%	192.402	56.659
Actual	2008	31.890	88.84	2,833.194	9.5%	261.795	73.789
Actual	2009	27.967	52.62	1,471.605	10.1%	144.759	39.573
Actual	2010	25.613	69.05	1,768.599	10.2%	175.995	47.808
Actual	2011	23.949	88.78	2,126.059	9.7%	200.233	54.480
Actual	2012	25.013	87.66	2,192.705	9.3%	198.019	56.907
Forecast	2013	25.651	83.53	2,142.617	9.3%	193.070	55.607
Forecast	2014	26.342	81.45	2,145.530	9.3%	195.386	55.682
Forecast	2015	26.804	76.19	2,042.312	9.4%	186.653	53.004

Legislative Fiscal Division

Revenue Estimate Profile

Oil and Natural Gas Production Tax

Gas	t Cal	MCF's Millions	Price Per MCF	Gross Value Millions	Effective Tax Rate	Total Tax Millions	Non-Tax Value Millions
Actual	2002						
Actual	2003						
Actual	2004						
Actual	2005	110.440	6.00	662.994	8.7%	55.016	31.675
Actual	2006	113.555	5.21	591.700	8.5%	48.156	27.851
Actual	2007	118.636	5.30	628.562	8.2%	49.560	27.740
Actual	2008	116.157	6.90	801.864	8.5%	65.240	34.606
Actual	2009	101.611	2.89	293.648	9.8%	27.317	14.238
Actual	2010	94.332	3.37	318.289	9.9%	30.020	14.300
Actual	2011	76.559	3.47	265.523	9.9%	24.952	12.223
Actual	2012	75.601	2.32	175.758	9.9%	16.541	8.074
Forecast	2013	68.381	3.40	232.297	10.2%	22.509	10.672
Forecast	2014	61.478	4.46	273.959	10.0%	26.188	12.586
Forecast	2015	55.068	4.16	228.975	9.9%	21.733	10.519

Total Tax = Barrels × Price × Tax Rate + MCF's × Price × Tax Rate + Audits

GF Rev = Total Tax × GF Allocation + Audits

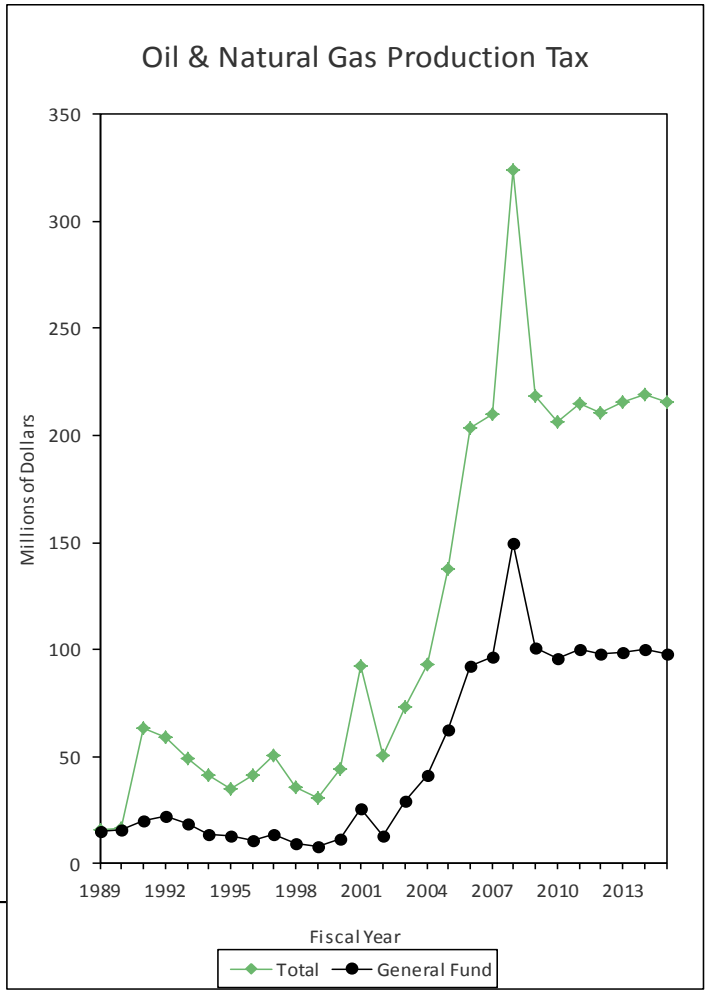
Legislative Fiscal Division

Revenue Estimate Profile

Oil and Natural Gas Production Tax

Revenue Projection:

	Fiscal Year	Total Collections Millions	General Fund Collections Millions	GF Percent Change
A	1989	15.748	14.959	Not App.
A	1990	16.486	15.567	4.1%
A	1991	62.880	20.163	29.5%
A	1992	58.892	21.823	8.2%
A	1993	48.651	18.677	-14.4%
A	1994	40.871	13.403	-28.2%
A	1995	34.704	12.964	-3.3%
A	1996	40.826	10.666	-17.7%
A	1997	50.150	13.283	24.5%
A	1998	35.709	9.120	-31.3%
A	1999	30.447	7.506	-17.7%
A	2000	43.773	11.363	51.4%
A	2001	92.396	25.792	127.0%
A	2002	50.304	12.902	-50.0%
A	2003	73.389	29.086	125.4%
A	2004	92.676	41.324	42.1%
A	2005	137.754	62.626	51.6%
A	2006	203.681	92.563	47.8%
A	2007	209.946	96.335	4.1%
A	2008	324.311	149.994	55.7%
A	2009	218.425	100.491	-33.0%
A	2010	206.286	95.491	-5.0%
A	2011	215.130	99.764	4.5%
A	2012	210.644	97.560	-2.2%
F	2013	215.806	98.266	0.7%
F	2014	219.313	99.857	1.6%
F	2015	215.717	98.226	-1.6%



Data Source(s): SABHRS, Department of Revenue, IHS, *Wall Street Journal*

Contacts: Department of Revenue, Board of Oil & Gas