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# NATURAL RESOURCE TAXES

## SECTION 4

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OBPP Staff:

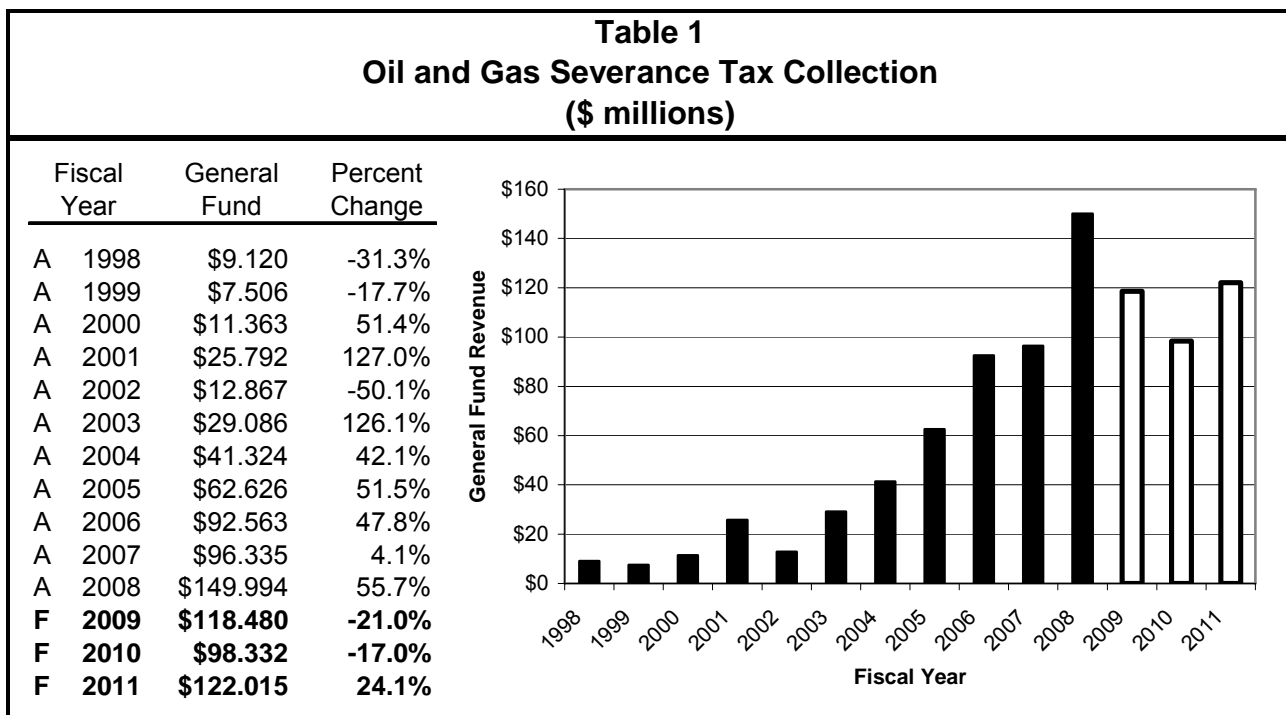
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## Revenue Description

In accordance with 15-36-304, MCA, Montana taxes the gross value of oil and natural gas production. The tax rates can vary depend on the product being produced, the method of production, the age of the well, the previous year's production, and the price of oil. Working interest owners, who share in a well's costs, pay lower rates than royalty recipients, who do not share in a well's costs. Revenues are distributed to a variety of state, county government, and school accounts. In FY 2008, approximately 46% of revenue from the oil and natural gas production tax was deposited in the general fund.

Table 1 shows actual general fund revenue from the oil and natural gas severance tax for FY 1998 through FY 2008 and projected revenues for FY 2009 through FY 2011.



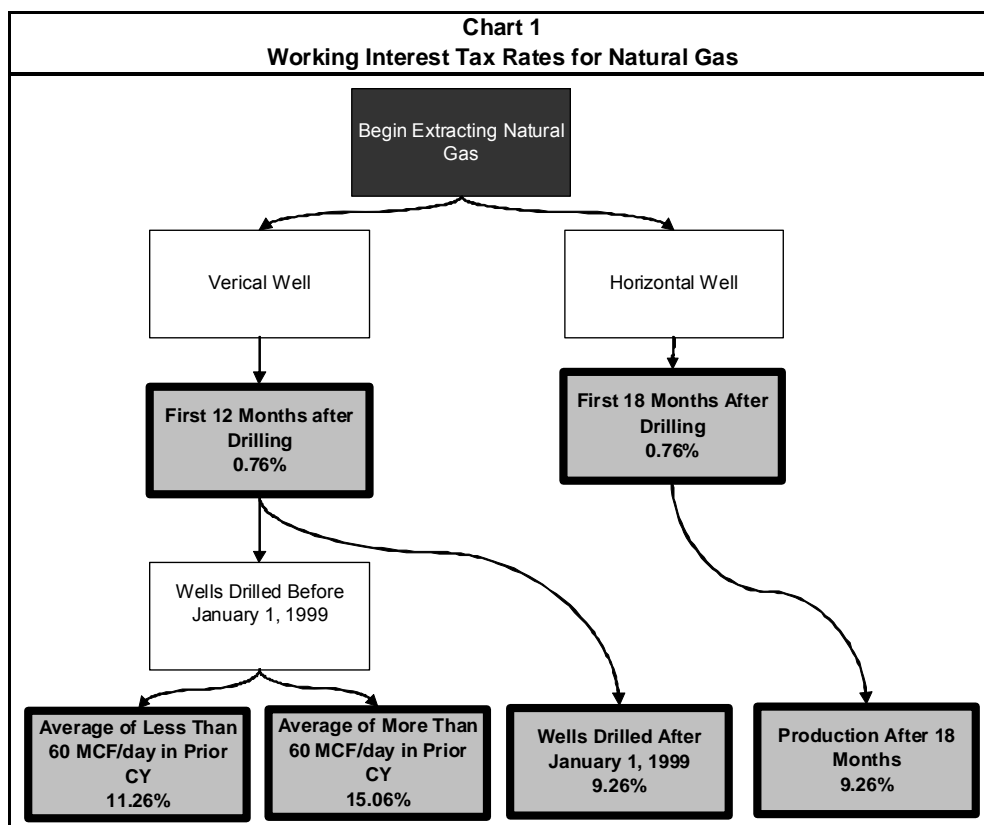
The increases in general fund revenue beginning in FY 2003 are attributable to two factors. There has been a large increase in the volume of oil and gas being produced mainly in the Richland County area, and at the same time, oil and natural gas prices rose to historic highs in the spring and summer of 2008.

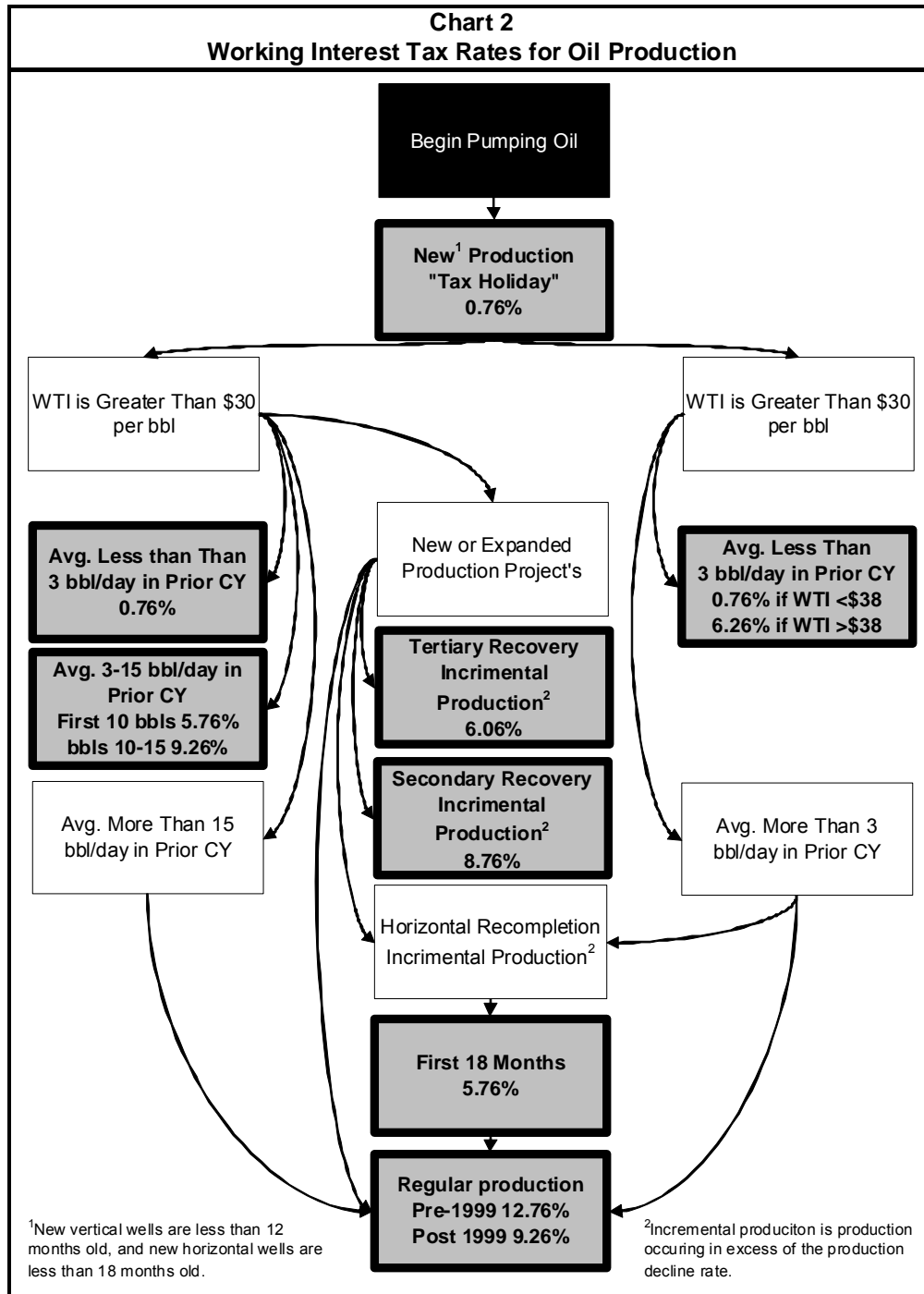
The varying tax rates for oil and gas production established in 15-36-331, MCA, are listed in table 2.

Table 2 Oil and Natural Gas Tax Rates by Well Category and Interest					
Product	Well Category	Working Interest		Royalty Interest	
		Production Tax	Total Tax	Production Tax	Total Tax
Gas	New Horizontal 0-18 Months -----	0.50%	0.76%	14.80%	15.06%
	After 18 Months-----	9.00%	9.26%	14.80%	15.06%
	New Vertical 0-12 Months -----	0.50%	0.76%	14.80%	15.06%
	Vertical Post-1999-----	9.00%	9.26%	14.80%	15.06%
	Vertical Pre-1999 Stripper -----	11.00%	11.26%	14.80%	15.06%
	Vertical Pre-1999 Regular -----	14.80%	15.06%	14.80%	15.06%
Oil	New Vertical 0-12 Months -----	0.50%	0.76%	14.80%	15.06%
	New Horizontal 0-18 Months -----	0.50%	0.76%	14.80%	15.06%
	Horizontal Recompletion 0-18 Months ---	5.50%	5.76%	14.80%	15.06%
	Post-1999 Regular -----	9.00%	9.26%	14.80%	15.06%
	Pre-1999 Regular -----	12.50%	12.76%	14.80%	15.06%
	Stripper Exemption (WTI < \$38/bbl) -----	0.50%	0.76%	14.80%	15.06%
	Stripper Exemption (WTI > \$38/bbl) -----	6.00%	6.26%	14.80%	15.06%
	Stripper <sup>1</sup> -----	5.50%	5.76%	14.80%	15.06%
	Stripper <sup>1</sup> 10-15 Bbl/Day-----	9.00%	9.26%	14.80%	15.06%
	Incremental Secondary <sup>1&amp;2</sup> -----	8.50%	8.76%	14.80%	15.06%
	Incremental Tertiary <sup>1&amp;2</sup> -----	5.80%	6.06%	14.80%	15.06%

1 Applies only when average price of WTI < \$30/bbl  
2 Applies only to increment of increased production

Table 2 shows the original tax rate as well as the combined tax rate when the tax Board of Oil and Gas Conservation's (BOGC) privilege and license tax of 0.09% and the tax of 0.17% distributed to the Oil, Gas, and, Coal Natural Resource Account. The tax rate on royalties is constant regardless of the any of the stipulation in the working interest tax rate. The working interest tax rates, however, have many stipulations that can affect the actual tax rate. The following charts illustrates the needed circumstances that would allow each of the working interest tax rates for both oil and natural gas. Chart 1 illustrates the different tax rates for working interest natural gas extraction.





## Risks

- Price
  - The prices received by Montana oil producers are not the same as the national and international prices, however, the prices are related and move together. Oil prices have been very volatile, and continued variation will have a direct effect on the revenues seen by the state.
  - Prices of both oil and natural gas on global markets have fluctuated greatly over the last two years; with oil being priced worldwide in dollars, supply-demand fluctuations will not fully account for severance tax revenues.
- Production
  - Oil production increased over 100% from FY 2003.

- Production has flattened since 2006, mostly due to the maturity of the Elm Coulee field, which lies within the Bakken formation.
- New technologies, both in discovery and in recovery methods have made Elm Coulee very productive.
- In April of 2008 the United States Geological Service (USGS) released an updated estimate of the Bakken formation located in North Dakota and Montana which raised the potentially recoverable oil 25 fold to over 3 billion barrels
- The analysis uses conservative short-term production rates that account for the maturing nature of the Elm Coulee field; but the potential for increased revenue as presented in the USGA findings could be substantial over the long run.
- Pipeline Constraints
  - Beginning around FY 2006, the increased production in the Bakken formation led to overcrowded pipelines in the area, and as a result, a sizable differential in the prices received by Montana producers versus national benchmark prices grew to approximately \$10 per barrel. While extensive work has expanded pipeline capacity in the Montana-North Dakota region, there remains the possibility that a significant price differential could occur again.

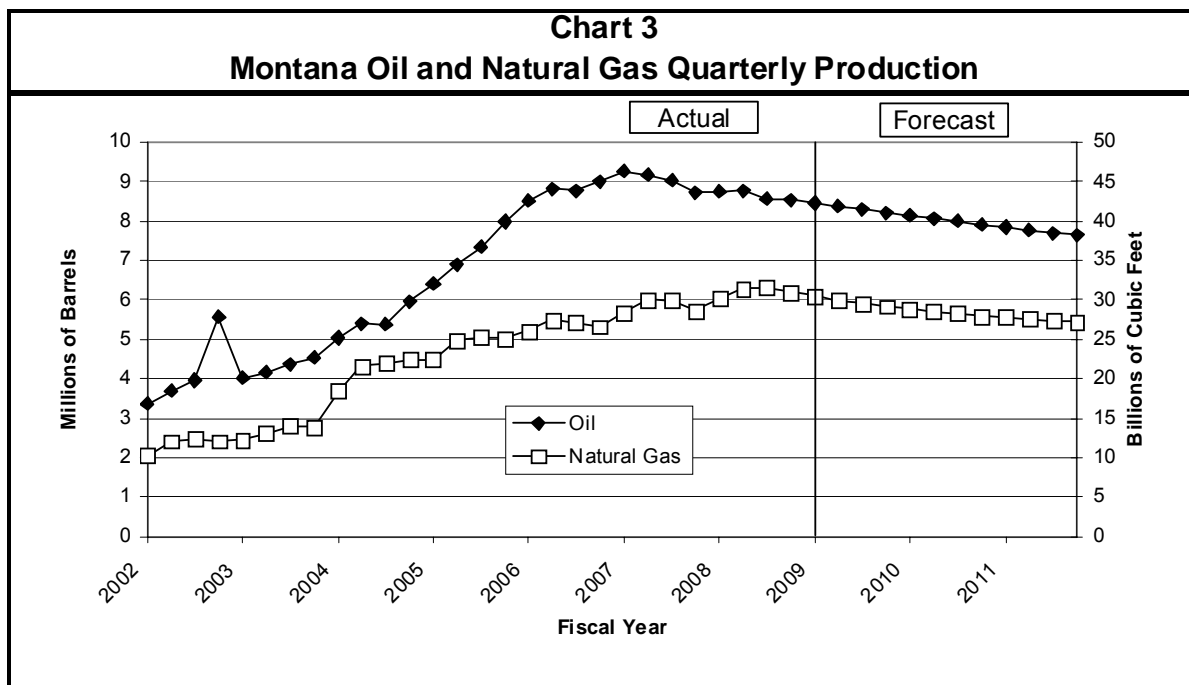
### Forecast methodology

The oil and tax revenue is forecast in three main steps:

#### Step 1: Estimate Production by Tax Type

- Estimate the production for Richland County (the Elm Coulee formation lies exclusively in Richland County) and classify each producer in that area into the appropriate tax category.
- Estimate oil production for the rest of the state by tax category.
- Estimate natural gas production for the state as a whole.

Chart 3 shows the actual and projected quarterly production levels of oil and natural gas in Montana from FY 2002 through FY 2011.



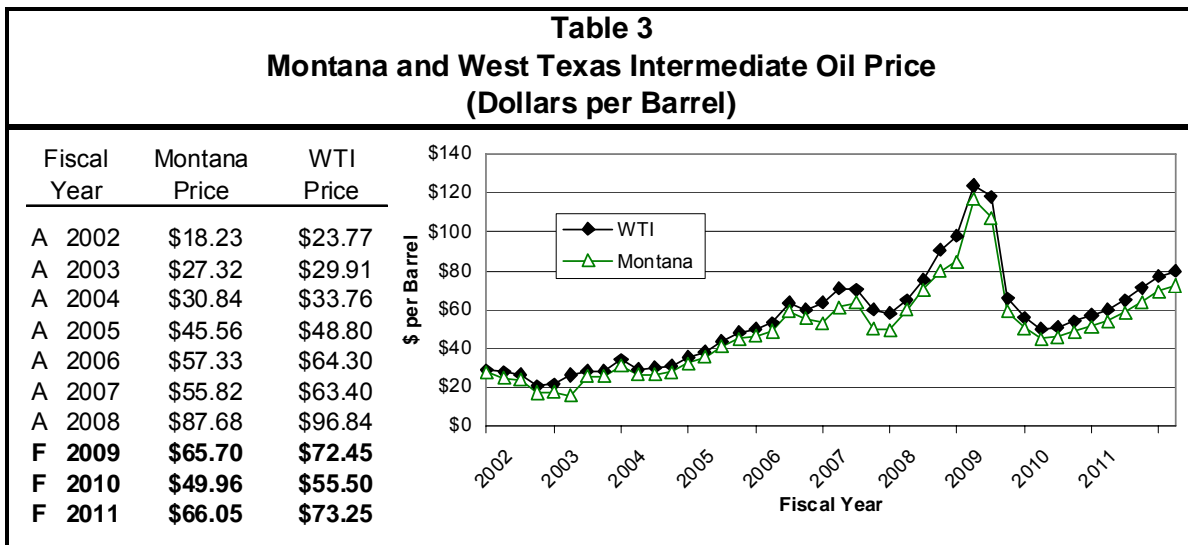
As Chart 3 shows: oil production has been leveling off since mid 2006 with the maturation of the Elm Coulee field. While this flattening trend is expected to continue through FY 2011 this forecast does not take into account large production increases that are possible given such a large increase in recoverable oil has now been expected to continue through FY 2011.

**Step 2: Estimate Price of Oil and Natural Gas**

There are many factors that are applicable to the price received by oil producers. Oil prices vary across the state as the quality and access to infrastructure are not uniform state wide. Oil prices were estimated in phases. Richland County oil prices were estimated separately, and then all other counties oil price was then estimated based on the respective relationship to West Texas Intermediary (WTI) price. Table 3 shows the actual weighted average price received by Montana Oil Producers for FY 2002 through FY 2008 and forecasted prices for FY 2009 through FY 2011. The table also shows the average WTI price for the same period, and the Global Insight's forecasted values for FY 2009 through FY 2010.

- Oil**
- Estimate the relationship between prices received in Montana and the price of West Texas Intermediate (WTI) price, and then assume the relationship will remain the same
  - Apply the price derived from the Global Insight forecast of the WTI price to the oil production to calculate gross value.

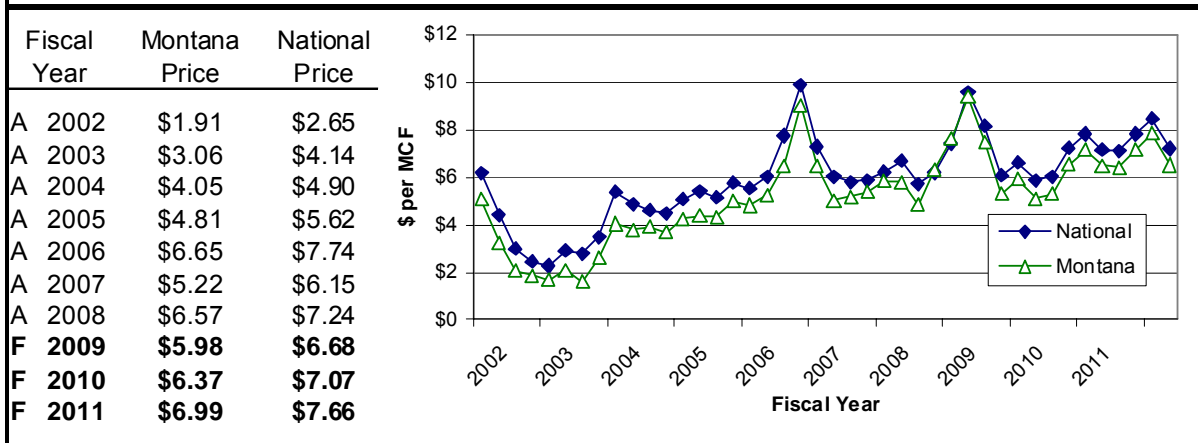
- Natural Gas**
- Estimate the relationship between prices received in Montana and the price received by national producers of natural gas and assume the relationship will continue in the future.
  - Apply the price derived from the Global Insight Forecast of the price received by national natural gas producers to calculate gross value.



The graph on the right shows the quarterly relationship between Montana oil prices and the WTI price.

Table 4 shows the actual weighted average price per thousand cubic feet (MCF) received by Montana natural gas producers for FY 2002 through FY 2008, and forecasted values for FY 2009 through FY 2011. Table 4 also shows the national price per MCF, as well as Global Insight's Forecast for FY 2009 through FY 2010.

**Table 4**  
**Montana and National Natural Gas Prices**  
**(Dollars per MCF)**



**Step 3: Determine Tax Revenue by Category**

- Estimate the percentages of the gross value that will be working interest and the percentage that will be taxable royalty value.
- Apply the appropriate tax rate to yield total tax revenue.

Table 5 shows the forecasted and actual production of oil and natural gas; the gross value of that production; the average tax rate; and the total revenue generated from the combined oil and gas severance tax for FY 2002 through FY 2011.

**Table 5**  
**Montana Oil and Gas Production and Tax Revenue**  
**(\$ millions)**

Fiscal Year	Millions of Barrels of Oil	Gross Value	Average Tax Rate	Tax Revenue
A 2002	16.577	\$302.128 X	9.42%	= \$28.463
A 2003	17.072	\$466.408 X	9.29%	= \$43.321
A 2004	21.755	\$671.034 X	8.71%	= \$58.480
A 2005	28.643	\$1,304.893 X	7.66%	= \$99.999
A 2006	35.095	\$2,011.954 X	7.25%	= \$145.913
A 2007	36.176	\$2,019.436 X	8.01%	= \$161.785
A 2008	34.601	\$3,033.699 X	8.79%	= \$266.547
<b>F 2009</b>	<b>33.343</b>	<b>\$2,190.697 X</b>	<b>9.02%</b>	<b>= \$197.524</b>
<b>F 2010</b>	<b>32.117</b>	<b>\$1,604.685 X</b>	<b>9.33%</b>	<b>= \$149.739</b>
<b>F 2011</b>	<b>30.957</b>	<b>\$2,044.594 X</b>	<b>9.56%</b>	<b>= \$195.428</b>

Fiscal Year	Billion Cubic Feet of Natural Gas	Gross Value	Average Tax Rate	Tax Revenue
A 2002	46.727	\$89.212 X	9.00%	= \$8.025
A 2003	53.099	\$162.278 X	9.28%	= \$15.062
A 2004	84.415	\$342.194 X	8.92%	= \$30.533
A 2005	97.773	\$470.325 X	8.47%	= \$39.845
A 2006	107.266	\$713.312 X	8.25%	= \$58.882
A 2007	116.845	\$609.553 X	7.95%	= \$48.481
A 2008	124.221	\$815.691 X	7.74%	= \$63.160
<b>F 2009</b>	<b>119.105</b>	<b>\$711.997 X</b>	<b>8.15%</b>	<b>= \$58.018</b>
<b>F 2010</b>	<b>113.503</b>	<b>\$723.046 X</b>	<b>8.50%</b>	<b>= \$61.426</b>
<b>F 2011</b>	<b>109.888</b>	<b>\$768.110 X</b>	<b>8.72%</b>	<b>= \$66.976</b>

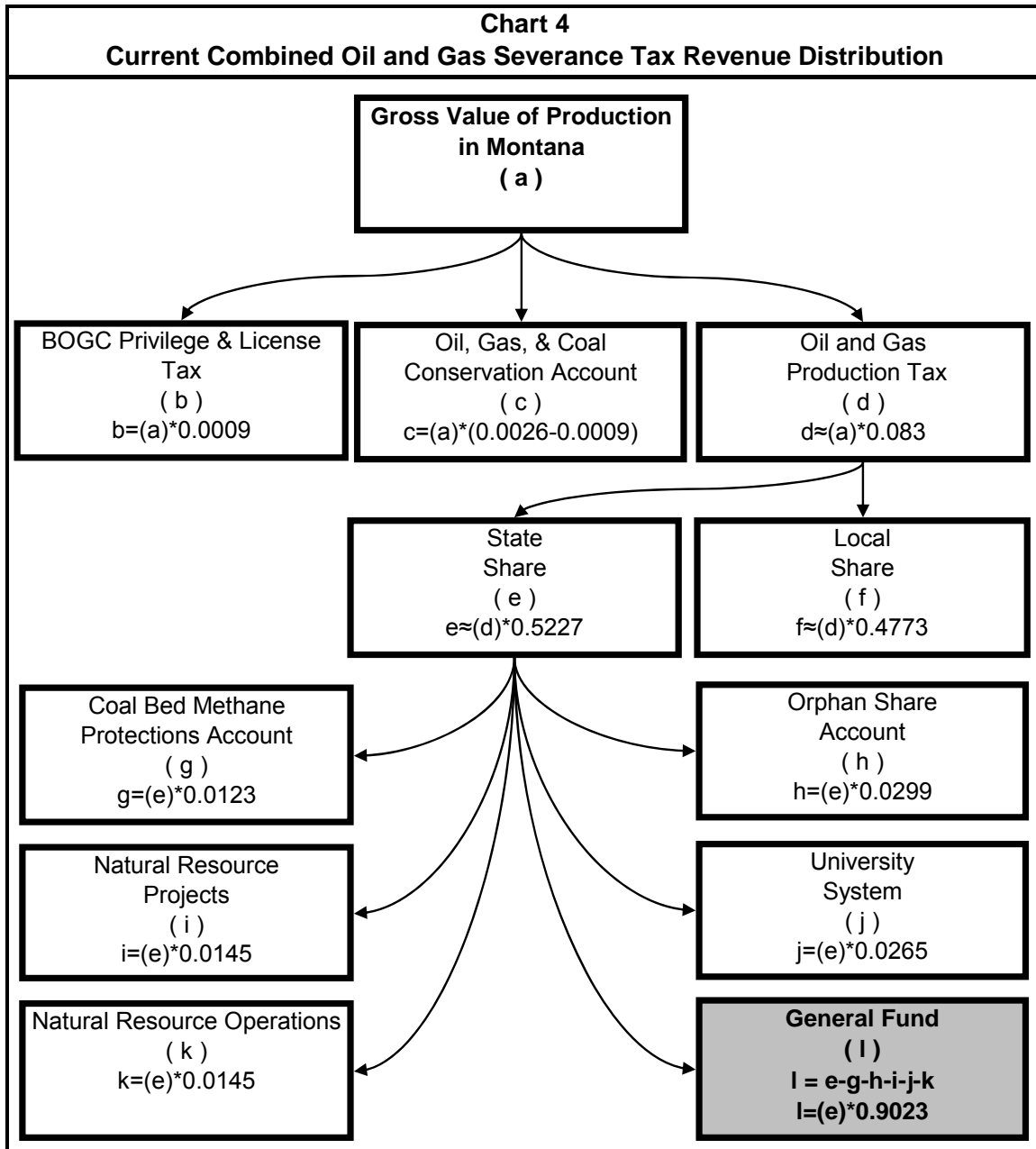
  

<b>Total Revenue</b>							
Fiscal Year	Oil Revenue	Gas Revenue	Audits, Penalties, & Interest	Total Revenue			
A 2002	\$28.463	+	\$8.025	+	\$0.221	=	\$36.709
A 2003	\$43.321	+	\$15.062	+	\$2.436	=	\$60.819
A 2004	\$58.480	+	\$30.533	+	\$1.688	=	\$90.701
A 2005	\$99.999	+	\$39.845	+	\$1.127	=	\$140.971
A 2006	\$145.913	+	\$58.882	+	\$1.429	=	\$206.223
A 2007	\$161.785	+	\$48.481	+	\$1.242	=	\$211.508
A 2008	\$266.547	+	\$63.160	+	\$3.168	=	\$332.876
<b>F 2009</b>	<b>\$197.524</b>	<b>+</b>	<b>\$58.018</b>	<b>+</b>	<b>\$1.500</b>	<b>=</b>	<b>\$257.042</b>
<b>F 2010</b>	<b>\$149.739</b>	<b>+</b>	<b>\$61.426</b>	<b>+</b>	<b>\$1.500</b>	<b>=</b>	<b>\$212.665</b>
<b>F 2011</b>	<b>\$195.428</b>	<b>+</b>	<b>\$66.976</b>	<b>+</b>	<b>\$1.500</b>	<b>=</b>	<b>\$263.903</b>



## Distribution

Oil and gas revenue is distributed in accordance with 15-36-331, MCA. Chart 4 is a graphic illustration of how the revenues are distributed.



The BOGC Privilege and License tax is currently set at 0.09% of the gross value of oil and gas production. The tax rate for the tax revenue that goes to the Oil, Gas, and Coal conservation account is equal to the difference between the 0.26% and the rate set by the BOGC, or in this case 0.17%. The tax revenue that goes to the state depends on the type of tax rate applied to the production. In FY 2008 the average tax rate (less the rates of the BOGC and the Oil, Gas, and Coal Conservation) was 8.3%. The revenue is then divided between the state and the counties of production. Prior to HB 748 (2003 session) the distribution was based primarily property tax mill levies. After HB 748 the counties and schools were each assigned a percentage of the severance tax revenue generated in their county they would receive. In FY 2008 the counties and schools received 47.73% of the remaining revenue and the state received 52.27%. The State share is then divided as follows:

- 1.23% to the Coal bed Methane Protections Account

- 2.99% to the Orphan Share Account
- 1.45% to the Natural Resource Projects State Special Revenue Account
- 1.45% to the Natural Resource Operations State Special Revenue Account
- 2.65% to the University System
- The remainder, 90.23%, is to be distributed to the general fund.

Table 7 shows the actual distribution of the oil and gas severance tax revenues for FY 2008, and forecasted distributions for FY 2009 through FY 2011.

<b>Table 6</b>				
<b>Oil and Gas Tax Revenue Distribution</b>				
<b>(\$ millions)</b>				
<b>Entity</b>	Fiscal Year 2008 <sup>†</sup>	Fiscal Year 2009	Fiscal Year 2010	Fiscal Year 2011
<b>Tax Revenue</b>	<b>\$321.143</b>	<b>\$255.542</b>	<b>\$211.165</b>	<b>\$262.403</b>
BOGC	\$3.371	\$2.612	\$2.095	\$2.531
Oil, Gas, & Coal Natural Resource Acct.	\$6.134	\$4.935	\$3.957	\$4.782
Local Share	\$148.730	\$118.348	\$97.796	\$121.526
State Share	\$162.908	\$129.646	\$107.317	\$133.564
Coal Bed Methane Protection Acct. (1.23%)	\$2.025	\$1.595	\$1.320	\$1.643
Natural Resource Projects Acct. (1.45%)	\$2.382	\$1.880	\$1.556	\$1.937
Natural Resource Operations Acct. (1.45%)	\$2.392	\$1.880	\$1.556	\$1.937
Orphan Share Acct. (2.99%)	\$4.922	\$3.876	\$3.209	\$3.994
University System (2.65%)	\$4.362	\$3.436	\$2.844	\$3.539
General Fund Share (90.23%)	\$146.825	\$116.980	\$96.832	\$120.515
Audits, Penalties, & Interest	\$3.168	\$1.500	\$1.500	\$1.500
<b>Total General Fund Revenue</b>	<b>\$149.994</b>	<b>\$118.480</b>	<b>\$98.332</b>	<b>\$122.015</b>

<sup>†</sup>Total revenue for FY 2008 does not match table 5 due to accrual reversals and amended tax returns.

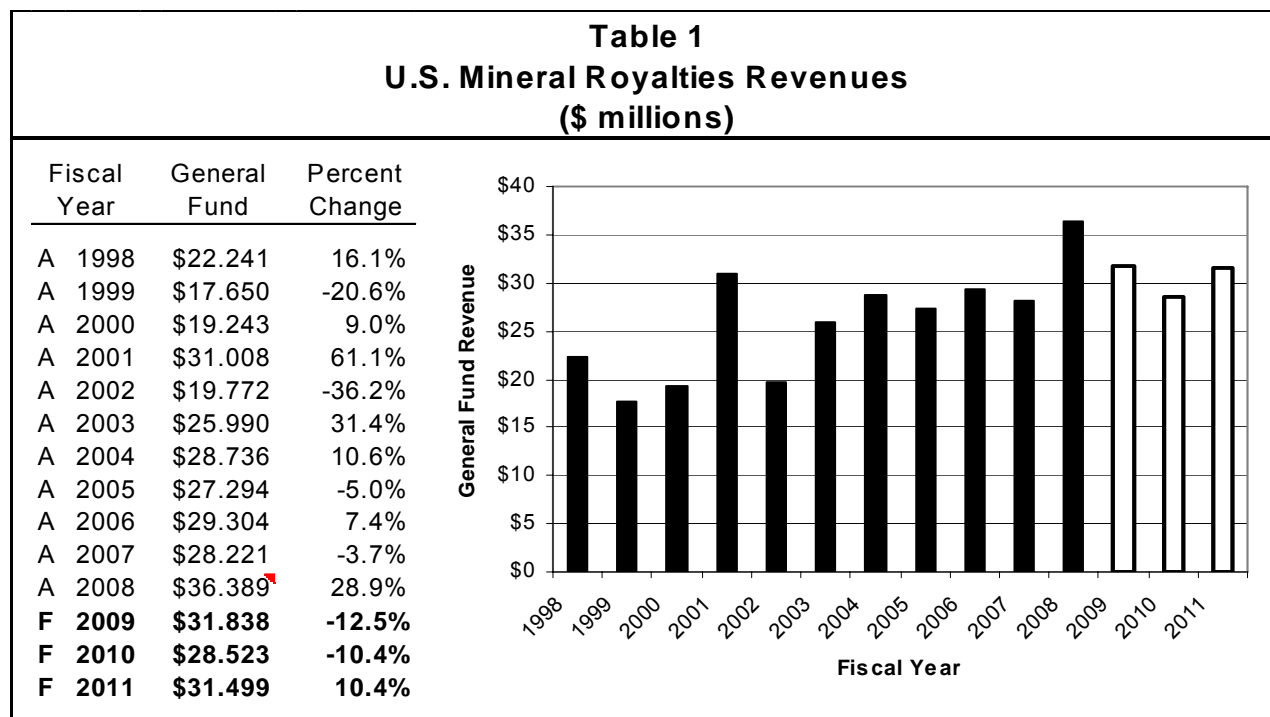
## Data Sources

Montana oil and tax data was supplied by the Montana Department of Revenue's GENTAX system. Historic and forecasted WTI prices, as well as historic and projected wellhead prices for natural gas are from Global Insight's September National Forecast. Supplemental data was obtained from the Board of Oil and Gas Conservation's website at <http://bogc.dnrc.mt.gov/default.asp>.

## Revenue Description

A portion of the minerals produced in Montana are derived from federal land. When the U.S. government leases public lands for mineral production, it pays part of the income to the state where the leased land is located. In the past, Montana received 50% of the royalty revenue from coal, oil, and natural gas production on federal lands within the state. With the passage of the federal budget for FY 2009, the federal government increased their share to 52% and effectively decreased the state share to 48%. From the state share, 75% is deposited in the general fund and 25% is deposited in a state special revenue fund for mineral impacts in accordance with 17-3-240, MCA.

Table 1 shows revenue to the general fund from U.S. mineral royalties



Receipts in FY 2001 include approximately \$8 million in payments for production in previous years that was collected due to audits. Without these audit collections, receipts would have been approximately \$23 million. Receipts in FY 2002 should have been higher, but \$1.7 million in royalties was paid late. This amount was recorded as an adjustment to the general fund ending balance rather than as revenue.

Prior to FY 2005, 12.5% of U.S. mineral royalty revenue was allocated to the counties. Currently, 25% of the U.S. mineral royalty revenue is allocated to counties. General fund revenue from U.S. mineral royalties fluctuates as mineral prices and production levels change. Changes in revenue for FY 2007 through FY 2009 are primarily attributable to price changes.

## Forecast Methodology

U.S. mineral royalty revenue is calculated in four steps.

**Step 1:** The gross value of production on federal land is forecast using the growth rates from other natural resource tax estimates.

The income generated from coal revenue is estimated using growth rate of the gross coal income from the *Coal Severance Tax* revenue estimate. The oil and gas income are also estimated using the growth rate estimated

in oil and gas gross income in the *Oil and Gas Severance Tax* revenue estimate. Rental and bonus income is estimated using the average of the past four fiscal years. Other income includes royalty income from sulfur and other types of mineral extraction. It is estimated using the average of the last five fiscal years, excluding FY 2007 due to its abnormally high level.

**Step 2:** The average royalty rate for each type of mineral production is then estimated. Multiplying the gross value by the estimated royalty rate yields the total royalty revenue from federal lands.

Royalty rental rates are estimated to stay at the FY 2007 level through FY 2011. The states portion is expected to remain the same for FY 2008 and then decreases two percentage *points* in FY 2009 as the federal government's share increases as discussed in the first paragraph of this estimate.

**Step 3:** The average percent remitted to the state is then estimated for each type of commodity. Although the requirement is for the federal government to remit 50% of the revenue to the state in FY 2008, the actual percentages are less than 50%. This is primarily due to the way federal leases are not all disbursed in the same manner. For example, a federal lease could be on General Services Administration (GSA), a federal agency of the United States government, land, in which case the revenue would be distributed 100% to the U.S. Treasury. Federal leases on Indian reservations also contribute to variation.

**Step 4:** The total royalty revenue is then multiplied by the state's share to yield total state revenue.

Table 2 shows the actual and forecasted revenues, royalty rates, and state revenue from federal mineral royalties for FY2001 through FY 2011. Due to the federal fiscal year, FY 2008 data is not available, and FY 2008 is also estimated.

Fiscal Year <sup>1</sup>															
	Coal Income	Royalty Rate	Royalty Revenue	State Percentage	State Revenue	Oil Income	Royalty Rate	Royalty Revenue	State Percentage	State Revenue	Natural Gas Income	Royalty Rate	Royalty Revenue	State Percentage	State Revenue
A 2001	\$236.940	11.44%	\$27.110	54.35%	\$14.734	\$90.934	11.52%	\$10.473	40.33%	\$4.224	\$75.410	12.26%	\$9.243	42.24%	\$3.905
A 2002	\$294.540	11.61%	\$34.182	41.95%	\$14.340	\$79.789	11.34%	\$9.052	38.33%	\$3.469	\$49.304	12.41%	\$6.121	34.79%	\$2.130
A 2003	\$318.585	11.77%	\$37.486	34.22%	\$12.828	\$109.341	11.33%	\$12.385	38.86%	\$4.812	\$79.257	12.37%	\$9.803	35.26%	\$3.457
A 2004	\$299.413	11.42%	\$34.201	45.97%	\$15.722	\$137.380	11.16%	\$15.336	39.06%	\$5.990	\$106.884	12.05%	\$12.884	40.11%	\$5.168
A 2005	\$274.574	11.98%	\$32.896	49.27%	\$16.208	\$194.277	11.46%	\$22.255	37.59%	\$8.365	\$150.990	11.82%	\$17.843	41.01%	\$7.318
A 2006	\$326.726	10.62%	\$34.695	42.65%	\$14.798	\$232.786	11.78%	\$27.433	38.43%	\$10.542	\$211.256	11.77%	\$24.875	42.11%	\$10.475
A 2007	\$364.386	10.95%	\$39.918	42.15%	\$16.827	\$230.818	11.46%	\$26.445	39.76%	\$10.515	\$180.376	11.01%	\$19.864	42.43%	\$8.428
F 2008	\$417.005	10.95%	\$45.683	42.15%	\$19.257	\$380.283	11.46%	\$43.569	39.76%	\$17.323	\$234.990	11.01%	\$25.879	42.43%	\$10.979
F 2009	\$413.748	10.95%	\$45.326	40.15%	\$18.200	\$281.807	11.46%	\$32.286	37.76%	\$12.192	\$215.858	11.01%	\$23.772	40.43%	\$9.610
F 2010	\$367.475	10.95%	\$40.257	40.15%	\$16.165	\$213.633	11.46%	\$24.476	37.76%	\$9.242	\$228.537	11.01%	\$25.168	40.43%	\$10.175
F 2011	\$372.686	10.95%	\$40.828	40.15%	\$16.394	\$278.817	11.46%	\$31.944	37.76%	\$12.062	\$249.185	11.01%	\$27.442	40.43%	\$11.094

Fiscal Year <sup>1</sup>																			
	Rentals and Bonuses	Royalty Rate	Royalty Revenue	State Percentage	State Revenue	Other Revenue	Royalty Rate	Other Revenue	State Percentage	State Revenue	State Coal Revenue	State Oil Revenue	State Gas Revenue	Other State Revenue	Total State Revenue				
A 2001	\$7.219	100%	\$7.219	59.60%	\$4.302	\$13.303	NA	\$13.303	30.58%	\$4.068	\$14.734	+	\$4.224	+	\$3.905	+	\$8.370	=	\$31.233
A 2002	\$3.183	100%	\$3.183	67.80%	\$2.158	\$0.974	NA	\$0.974	23.82%	\$0.232	\$14.340	+	\$3.469	+	\$2.130	+	\$2.390	=	\$22.329
A 2003	\$7.105	100%	\$7.105	39.72%	\$2.822	\$2.590	NA	\$2.590	50.81%	\$1.316	\$12.828	+	\$4.812	+	\$3.457	+	\$4.138	=	\$25.235
A 2004	\$5.009	100%	\$5.009	59.91%	\$3.001	\$2.306	NA	\$2.306	17.94%	\$0.414	\$15.722	+	\$5.990	+	\$5.168	+	\$3.415	=	\$30.295
A 2005	\$4.870	100%	\$4.870	42.53%	\$2.071	\$3.395	NA	\$3.395	47.16%	\$1.601	\$16.208	+	\$8.365	+	\$7.318	+	\$3.672	=	\$35.562
A 2006	\$4.653	100%	\$4.653	39.56%	\$1.841	\$2.785	NA	\$2.785	20.85%	\$0.581	\$14.798	+	\$10.542	+	\$10.475	+	\$2.422	=	\$38.236
A 2007	\$5.161	100%	\$5.161	41.83%	\$2.159	\$6.270	NA	\$6.270	19.61%	\$1.230	\$16.827	+	\$10.515	+	\$8.428	+	\$3.389	=	\$39.158
F 2008	\$4.923	100%	\$4.923	41.83%	\$2.060	\$2.769	NA	\$2.769	19.61%	\$0.543	\$19.257	+	\$17.323	+	\$10.979	+	\$2.603	=	\$50.163
F 2009	\$4.923	100%	\$4.923	39.83%	\$1.961	\$2.769	NA	\$2.769	17.61%	\$0.488	\$18.200	+	\$12.192	+	\$9.610	+	\$2.449	=	\$42.451
F 2010	\$4.923	100%	\$4.923	39.83%	\$1.961	\$2.769	NA	\$2.769	17.61%	\$0.488	\$16.165	+	\$9.242	+	\$10.175	+	\$2.449	=	\$38.030
F 2011	\$4.923	100%	\$4.923	39.83%	\$1.961	\$2.769	NA	\$2.769	17.61%	\$0.488	\$16.394	+	\$12.062	+	\$11.094	+	\$2.449	=	\$41.999

<sup>1</sup> Fiscal year refers to the federal fiscal year from Oct. 1 to Sep. 30 of the following year.

The Bottom right corner shows the actual summation of state revenue from the five sources for FY 2001 through FY 2007 and forecasted values for FY 2008 through FY 2011.

## Distribution

U.S. mineral royalties are distributed to the general fund and the Mineral Impact Account in accordance with 17-3-240, MCA. Table 3 shows the actual distribution of U.S. mineral royalty revenue to the state of Montana from FY 2001 through FY 2001 through FY 2008, and forecasted values for FY 2009 through FY 2011.

**Table 3  
U.S. Mineral Royalty  
Revenue Distribution  
(\$ millions)**

Fiscal Year	General Fund (75%)	Mineral Impact (25%)	Total <sup>2</sup>
A 2001	\$31.008	-	\$31.008
A 2002	\$19.772	-	\$19.772
A 2003	\$25.990	-	\$25.990
A 2004	\$28.736	-	\$28.736
A 2005	\$27.294	\$9.098	\$36.392
A 2006	\$29.304	\$9.768	\$39.071
A 2007	\$28.221	\$9.407	\$37.628
A 2008	\$36.389	\$12.130	\$48.518
<b>F 2009</b>	<b>\$31.838</b>	<b>\$10.613</b>	<b>\$42.451</b>
<b>F 2010</b>	<b>\$28.523</b>	<b>\$9.508</b>	<b>\$38.030</b>
<b>F 2011</b>	<b>\$31.499</b>	<b>\$10.500</b>	<b>\$41.999</b>

<sup>2</sup>Total does not match table 3 due to the federal fiscal year and accrual reversals.

Prior to SB 212 (2005 session) all revenue was deposited to the general fund. SB 212 allocated 25% of the revenue to the Mineral Impact Account and the remaining 75% to the general Fund. Note that prior county allocations were transfers from the state general fund and not a direct revenue distribution.

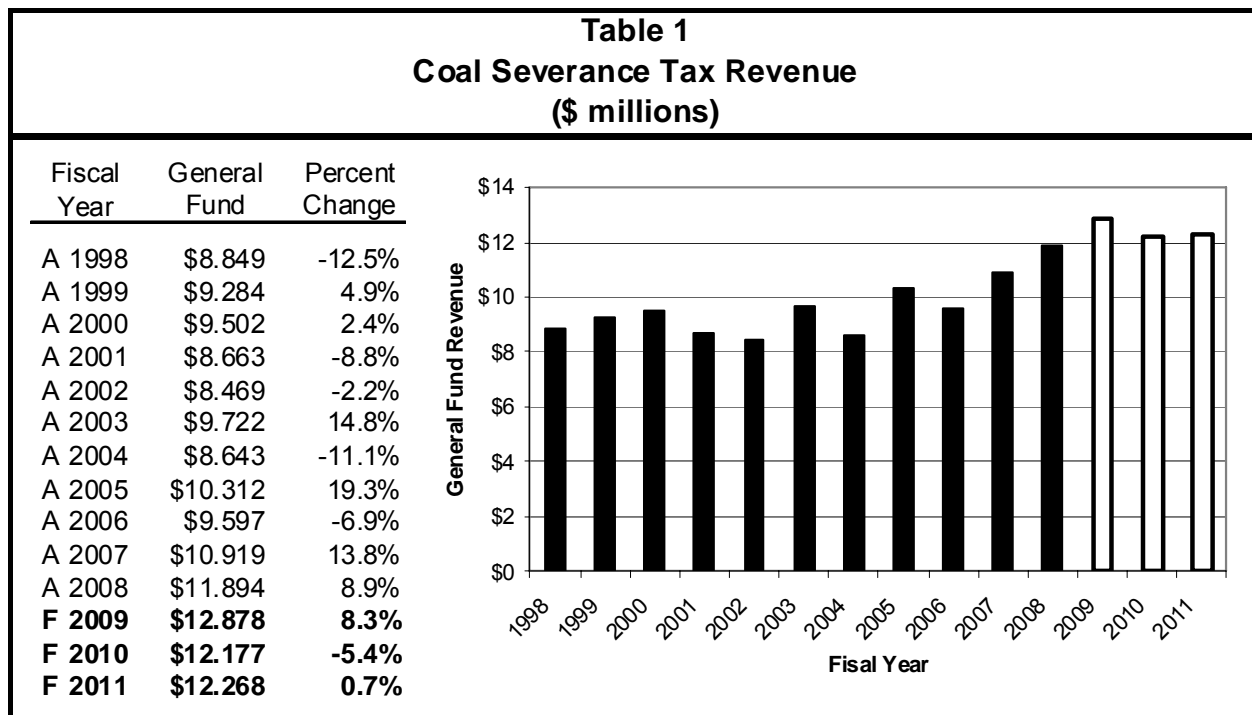
### Data Sources

Historic general fund and Mineral Impact Account amounts are from SABHRS MTGL0109 report. Federal mineral statistics are available at <http://www.mrm.mms.gov/MRMWebStats/Home.aspx>.

## Revenue Description

In accordance 15-35-103, MCA, Montana levies a tax on the value of coal produced in Montana. The tax rate on coal varies with heat content of the coal and the type of mine (open pit or underground). Each producer is exempt from tax on 20,000 tons per year, and mines producing less than 50,000 tons per year are exempt from the tax.

Table 1 shows actual coal severance tax revenue to the general fund for FY 1998 through FY 2008, and forecasted revenue for FY 2009 through FY 2011.



In FY 2000 through FY 2002, the general fund received 26.79% of the tax. Under the provisions of HB 10 (2002 Special Session) the general fund received 33.04% of the tax revenue. In FY 2004 and FY 2005 the general fund allocation changed to 27.4% under HB 18 (2002 Special Session). HB 688 (2007 Session) established that beginning in FY 2008 \$250,000 will be allocated to coal and uranium mine permitting and reclamation program.

## Forecast Methodology

There are four main steps in forecasting total steps in calculating coal severance tax revenue:

- Step 1:** The quarterly prices are estimated using Global Insights forecast for determining the rate at which coal prices will increase. The heating quality of coal produced in Montana varies by mine. Coal with higher heating qualities receive a higher price and thus may pay more in taxes, and vice versa.
- Step 2:** Coal production is then estimated using responses from a coal survey sent to coal producers currently paying the severance tax.
- Step 3:** The deductions and exemptions are then estimated to yield taxable coal production. Deductions and exemptions include the first 20,000 tons produced in a year as well as the deductions for other state and federal tax liabilities related to coal production, such as the Black Lung Tax, the Coal Gross Proceeds tax, and others.

**Step 4:** The appropriate tax rate is then applied to yield total coal severance tax revenue. The tax rate varies depending on the properties of the coal and the type of production. If the average tax rate goes down, then this could have a negative effect on tax revenue and vice versa.

Table 2 shows the actual coal production, the average price per ton, total deductions, taxable revenue, the average tax rate, and total tax revenue for FY 2007 and FY 2008, and estimated values for FY 2009 through FY 2011.

	Actual		Forecast		
	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Tons (millions)	34.712	37.504	36.251	39.394	44.137
Average Price	x \$11.19	x \$11.56	x \$12.96	x \$12.83	x \$12.92
Gross Revenue	\$388.298	\$433.575	\$469.732	\$505.515	\$570.175
Exemptions	- \$117.897	- \$129.317	- \$139.764	- \$146.696	- \$164.170
Taxable Revenue	\$270.400	\$304.258	\$329.968	\$358.819	\$406.005
Average Tax Rate	x 14.84%	x 14.92%	x 14.85%	x 12.93%	x 11.51%
Tax Revenue	<b>\$40.119</b>	<b>\$45.410</b>	<b>\$49.003</b>	<b>\$46.387</b>	<b>\$46.725</b>

### Distribution

Coal Severance tax is distributed in accordance with 15-35-108, MCA. Table 3 shows the distribution of actual and estimated coal severance tax revenue for FY 2007 through FY 2011.

Entity	FY 2008	FY 2009	FY 2010	FY 2011
	Actual <sup>1</sup>	Projected	Projected	Projected
Coal Tax Trust Fund (50%)	\$22.666	\$25.563	\$24.140	\$24.314
Long Range Building Program Account (12%)	\$5.440	\$6.135	\$5.794	\$5.835
Local Impacts (Shared Account) (5.46%)	\$2.475	\$2.792	\$2.636	\$2.655
Oil, Gas, and Coal Natural Resource Account (2.90%)	\$1.315	\$1.483	\$1.400	\$1.410
Parks Trust Fund (1.27%)	\$0.576	\$0.649	\$0.613	\$0.618
Renewable Resource Loan Debt Service Fund (0.95%)	\$0.431	\$0.486	\$0.459	\$0.462
Capitol Art Protection Trust Fund (0.63%)	\$0.286	\$0.322	\$0.304	\$0.306
DEQ Mine Permitting and Restoration (\$0.250)	\$0.250	\$0.250	\$0.250	\$0.250
<b>General Fund</b>	<b>\$11.894</b>	<b>\$13.447</b>	<b>\$12.684</b>	<b>\$12.778</b>
<b>Total Coal Severance Tax</b>	<b>\$45.332</b>	<b>\$51.127</b>	<b>\$48.279</b>	<b>\$48.628</b>

<sup>1</sup>Total revenue does not match table 2 due to accrual adjustments

## **Data Sources**

Historical coal statistics were obtained for the Department of Revenue coal severance tax returns. Forecasted production levels are from survey responses from the coal companies which pay the coal severance tax. Forecasted coal inflation factors were obtained from Global Insight.



## Revenue Description

In accordance 15-37-101, MCA, Montana levies a tax on the gross value of metals mined in the state. Gross value, as defined in 15-23-801, MCA, is the market value of the refined product, less the costs of transporting the unrefined product and refining it. The first \$250,000 of gross value is exempt from the tax, which exempts small mines from the tax. The tax rate for production beyond \$250,000 depends on the mineral and the amount of processing at the mine. Concentrate, which is non-smelted ore that may have undergone mechanical processing, is taxed at 1.81%. Metals that have been partially or completely separated from impurities by smelting, but may not have had the individual metals separated, are taxed at 1.6% (15-37-103, MCA).

Revenues from the metalliferous mines license tax are divided between the state and counties that have fiscal or economic impacts from large-scale mining. The state general fund currently receives 57% of the revenue. Table 1 shows actual revenue to the general fund for FY 1998 through FY 2008, and forecasted values for FY 2009 through FY 2011.

Fiscal Year	General Fund	Percent Change
A 1998	\$2.307	-14.4%
A 1999	\$3.306	43.3%
A 2000	\$2.703	-18.2%
A 2001	\$3.417	26.4%
A 2002	\$3.329	-2.6%
A 2003	\$4.586	37.8%
A 2004	\$3.232	-29.5%
A 2005	\$5.264	62.9%
A 2006	\$7.028	33.5%
A 2007	\$8.991	27.9%
A 2008	\$10.774	19.8%
<b>F 2009</b>	<b>\$9.200</b>	<b>-14.6%</b>
<b>F 2010</b>	<b>\$8.843</b>	<b>-3.9%</b>
<b>F 2011</b>	<b>\$8.935</b>	<b>1.0%</b>

Prior to FY 2006 the general fund received 58%, except for FY 2003 when the general fund received 65% of the tax revenue.

Revenue from the metal mines tax has varied across years because of changes in the tax due date, changes in production, and price variation. Through December 31, 2002, the tax was paid annually. Beginning January 1, 2003, the tax is paid semiannually. This resulted in taxes on eighteen months of production being recorded as revenue in FY 2003. Revenue increased from FY 2004 through FY 2006 due to production increases in FY 2005 and price increases in FY 2006 through FY 2008, which are forecast to decrease in FY 2009 and FY 2010.

## Forecast Methodology

There are five steps in estimating metal mines tax revenue:

**Step 1:** An inflation factor for each of the different types of metals is calculated based on changes in futures contracts in the New York Mercantile Exchange (NYMEX) and forecasted metal and metal products inflation factors from

Global Insight.

**Step 2:** The amount of production for each type of metal is then estimated based on survey responses for the major metal producers in the state of Montana. Currently, Montana production consists of gold, silver, platinum, palladium, lead, zinc, rhodium, molybdenum.

**Step 3:** Metal producers are also allowed to deduct transportation, treatment, and refining costs from the gross value to yield taxable value. As these cost go up, tax revenue will go down, and vice versa. The various deductions are estimated for each of the producing mines and deducted from the gross value of the minerals.

**Step 4:** The estimated average tax rate is then applied to each company to yield that companies tax liability.

**Step 5:** Each company's tax liability is then added with the other companies for each fiscal year to yield total tax revenue.

Table 2 shows prices for metal produced in Montana.

<b>Table 2 Montana Average Metal Prices FY 2004 Through FY 2011</b>										
Fiscal Year	Price Per Ounce					Price Per Pound				
	Rhodium	Platnium	Gold	Palladium	Silver	Molybdenum	Nickle	Copper	Lead	Zinc
A 2004	\$670.66	\$735.46	\$384.81	\$364.95	\$5.94	\$11.52	\$5.37	\$0.85	\$0.34	\$0.46
A 2005	\$1,507.60	\$848.16	\$425.81	\$363.32	\$6.83	\$29.18	\$6.84	\$1.18	\$0.45	\$0.57
A 2006	\$3,428.66	\$979.37	\$526.19	\$364.01	\$9.27	\$25.52	\$5.93	\$2.44	\$0.48	\$0.98
A 2007	\$5,431.96	\$1,145.03	\$644.90	\$375.56	\$12.97	\$27.52	\$16.22	\$3.39	\$1.08	\$1.66
A 2008	\$7,613.49	\$1,675.15	\$839.07	\$408.96	\$16.04	\$32.58	\$13.13	\$3.71	\$1.32	\$1.04
<b>F 2009</b>	<b>\$5,571.18</b>	<b>\$1,443.31</b>	<b>\$855.11</b>	<b>\$278.58</b>	<b>\$14.98</b>	<b>\$31.29</b>	<b>\$11.40</b>	<b>\$2.32</b>	<b>\$1.14</b>	<b>\$0.93</b>
<b>F 2010</b>	<b>\$5,371.89</b>	<b>\$1,391.73</b>	<b>\$861.41</b>	<b>\$268.51</b>	<b>\$15.23</b>	<b>\$30.14</b>	<b>\$10.99</b>	<b>\$2.33</b>	<b>\$1.10</b>	<b>\$0.90</b>
<b>F 2011</b>	<b>\$5,421.12</b>	<b>\$1,404.49</b>	<b>\$878.75</b>	<b>\$270.98</b>	<b>\$15.56</b>	<b>\$30.41</b>	<b>\$11.09</b>	<b>\$2.30</b>	<b>\$1.11</b>	<b>\$0.91</b>

The prices on the left side of the table are listed in dollars per ounce, while the prices listed on the right side of the table are in dollars per pound. NYMEX future prices were used to calculate the prices for gold, silver, and copper, while the inflation factor for metals and metal products forecasted by Global Insight was used to calculate the prices of all other types of metals produced in Montana.

Table 3 shows the gross value of all metal products in Montana, deductions taken by the metal producers, the average tax rate, and the total tax revenue generated for the metal mines license tax.

<b>Table 3 Metal Mines Production Forecast (\$ millions)</b>					
Fiscal Year	Gross Value	Deductions	Average Tax Rate	Tax Revenue	
A 2007	( \$1,033.514	- \$95.640	)X 1.71%	=	\$16.057
A 2008	( \$1,302.924	- \$98.540	)X 1.72%	=	\$20.688
<b>F 2009</b>	<b>( \$1,046.441</b>	<b>- \$107.489</b>	<b>)X 1.72%</b>	<b>=</b>	<b>\$16.141</b>
<b>F 2010</b>	<b>( \$1,023.137</b>	<b>- \$119.247</b>	<b>)X 1.72%</b>	<b>=</b>	<b>\$15.515</b>
<b>F 2011</b>	<b>( \$1,040.378</b>	<b>- \$126.093</b>	<b>)X 1.71%</b>	<b>=</b>	<b>\$15.675</b>

## Distribution

Table 4 shows the distribution of the metal mines tax to the various entities in accordance with 15-37-117, MCA.

<b>Table 4</b>				
<b>Total Collections and Allocation of Metal Mines Tax</b>				
<b>(\$ millions)</b>				
<b>Entity</b>	<b>Actual FY 2008<sup>1</sup></b>	<b>Projected FY 2009</b>	<b>Projected FY 2010</b>	<b>Projected FY 2011</b>
General Fund (57%)	<b>\$10.774</b>	<b>\$9.200</b>	<b>\$8.843</b>	<b>\$8.935</b>
Hard-Rock Mining Impact Trust (2.5%)	\$0.473	\$0.404	\$0.388	\$0.392
Impacted Counties (25.0%)	\$4.726	\$4.035	\$3.879	\$3.919
Natural Resource Operations (7.0%)	\$1.323	\$1.130	\$1.086	\$1.097
Hard-Rock Mining Reclamation Debt Service (8.5%)	\$1.607	\$1.372	\$1.319	\$1.332
<b>Total Collections</b>	<b>\$18.902</b>	<b>\$16.141</b>	<b>\$15.515</b>	<b>\$15.675</b>

<sup>1</sup>Totals do not match Table 3 due to accruals and amended returns

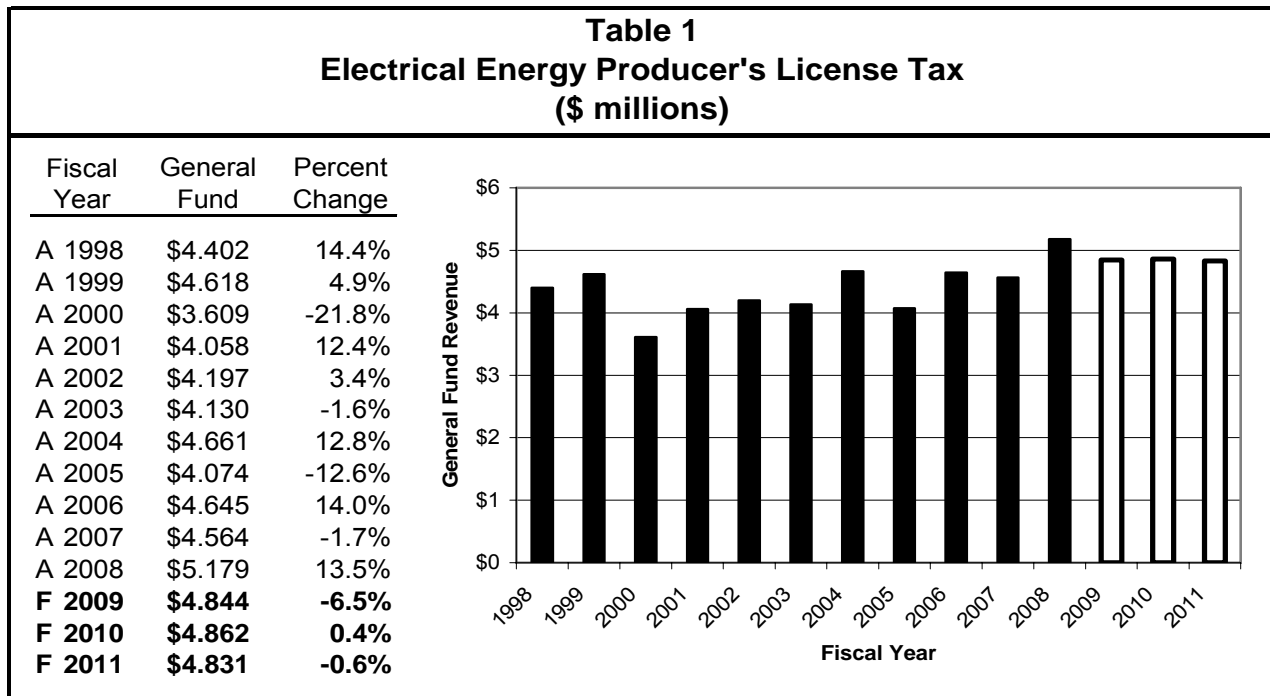
## Data

Historic Montana production, value, and deduction data was obtained from the Department of Revenue tax records. Future production and deduction estimates were obtained from a survey of metal mines producers large enough to pay the tax. Price forecasts are based on Global Insights metal and metal products inflation facto and future contracts from <http://www.nymex.com>.

## Revenue Description

In accordance 15-51-101, MCA, Montana levies an electric energy producer's license tax at a rate of \$0.0002 per kilowatt-hour (kWh). The tax applies to all electricity generated, manufactured, or produced in Montana for barter, sale, or exchange. Electricity generated for plant use is excluded from the tax. All electrical energy producer's license tax revenue is allocated to the general fund.

Table 1 shows actual revenue to the general fund revenue from the electrical energy producer's license tax for FY 1998 through FY 2008, and forecasted revenues for FY 2009 through FY 2011.



## Forecast Methodology

The electrical energy tax is forecast in two main steps:

**Step 1:** Total taxable electricity production is forecast using trends over time, and survey responses from electricity producers in the state.

**Step 2:** The tax rate of 0.02¢ per KWH is multiplied by the estimated amount of taxable electricity produced in the state to yield total tax revenue.

Table 2 shows the actual electricity production and tax revenue for FY 2004 through FY 2008, and forecasted values for FY 2009 through FY 2011.

**Table 2**  
**Electricity Production Tax Revenue**  
**(\$ millions)**

Fiscal Year	kWh (millions)	Tax Rate	Tax Revenue <sup>1</sup>
A 2005	23,065.262 X	\$0.0002 =	\$4.613
A 2006	23,156.213 X	\$0.0002 =	\$4.631
A 2007	23,160.458 X	\$0.0002 =	\$4.631
A 2008	23,489.093 X	\$0.0002 =	\$4.698
<b>F 2009</b>	<b>24,221.103 X</b>	<b>\$0.0002 =</b>	<b>\$4.844</b>
<b>F 2010</b>	<b>24,312.300 X</b>	<b>\$0.0002 =</b>	<b>\$4.862</b>
<b>F 2011</b>	<b>24,155.714 X</b>	<b>\$0.0002 =</b>	<b>\$4.831</b>

<sup>1</sup>Total Revenue does not match table 1 due to accrual adjustments and amended returns.

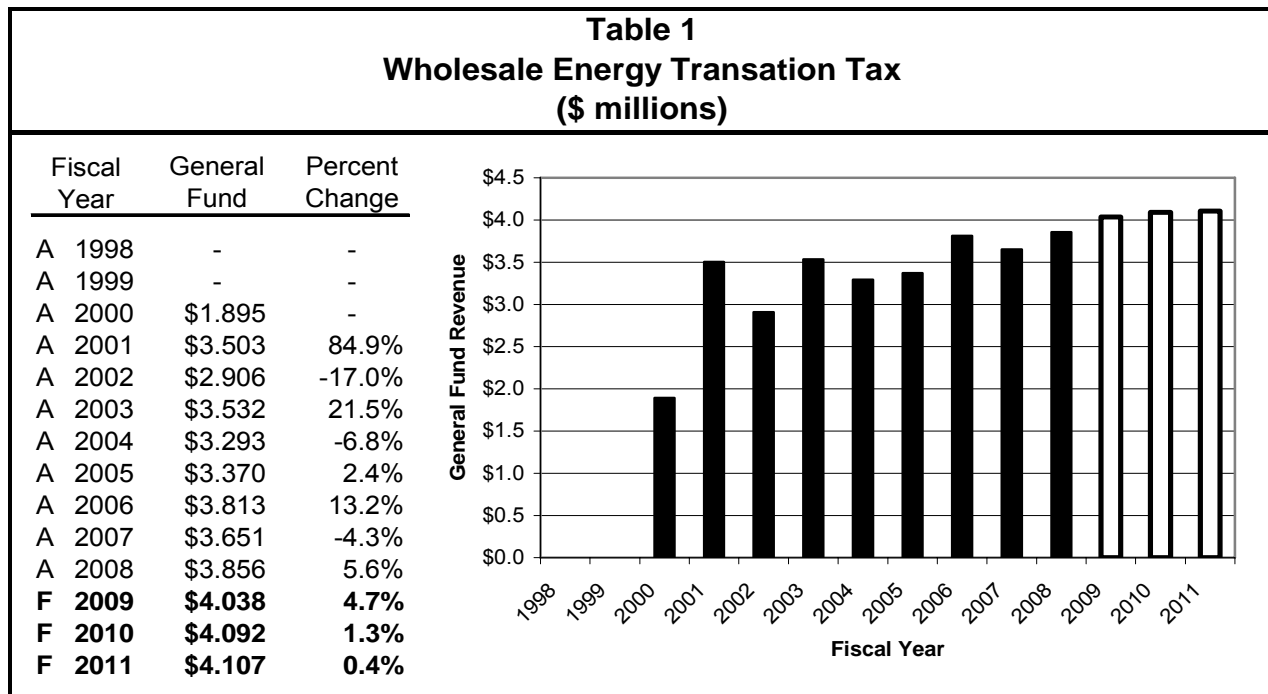
**Data Sources**

Historical electricity data was provided by the Department of Revenue. Global Insight’s forecast for utility production index and survey responses from electricity producers in the state of Montana were used to forecast electricity production in the state.

## Revenue Description

In accordance 15-72-103, MCA, Montana levies a wholesale energy transaction (WET) tax at a rate of 0.015¢ per kilowatt-hour (kWh) on electricity transmitted by a transmission service provider in the state. This tax was effective January 1, 2000 and is deposited 100% in the state general fund.

Table 1 shows actual general fund revenue from the WET tax from FY 2000 through FY 2008 and forecasted values for FY 2009 through FY 2010.



HB 174 (1999 session) enacted the tax, and it took effect in January 1, 2000. In FY 2000 the tax was therefore only collected for half of the fiscal year.

## Significant Factor

- There has been an investment to electricity infrastructure in Montana recently. Specifically a transmission line that would connect Montana to Canadian electricity markets. In FY 2009 this project (Montana Alberta Tie Ltd. or MATL) is scheduled for completion and will increase electricity transmitted in Montana.

## Forecast Methodology

The WET tax revenue is forecast in two major steps:

**Step 1:** Taxable electricity transmission is forecast using trends over time, and survey responses from tax filers.

**Step 2:** The tax rate of 0.015¢ per kWh is then applied to the estimated amount of electricity transmitted in the state to yield total tax revenue.

Table 2 shows actual taxable electricity and tax revenue for FY 2001 through FY 2008, and forecasted values for FY 2009 through FY 2011.

**Table 2**  
**Taxable KWH for Wholesale Energy**  
**Tax**  
**(\$ millions)**

Fiscal Year	Taxable KWH (million)	Tax Rate	Tax Revenue <sup>1</sup>
A 2001	21,930.454 x	0.00015 =	\$3.290
A 2002	22,077.361 x	0.00015 =	\$3.312
A 2003	22,474.593 x	0.00015 =	\$3.371
A 2004	23,235.939 x	0.00015 =	\$3.485
A 2005	23,576.673 x	0.00015 =	\$3.537
A 2006	24,112.351 x	0.00015 =	\$3.617
A 2007	24,609.110 x	0.00015 =	\$3.691
A 2008	25,396.158 x	0.00015 =	\$3.809
<b>F 2009</b>	<b>26,917.860 x</b>	<b>0.00015 =</b>	<b>\$4.038</b>
<b>F 2010</b>	<b>27,277.288 x</b>	<b>0.00015 =</b>	<b>\$4.092</b>
<b>F 2011</b>	<b>27,379.447 x</b>	<b>0.00015 =</b>	<b>\$4.107</b>

<sup>1</sup> Revenues do not match table 1 due to accrual adjustments and amended returns.

**Data**

Historic data on electricity transmission was provided by the Department of Revenue. Future Electricity transmission was forecast using survey responses and Global Insight's forecast for utility production index in Montana.