



The Economic and Fiscal Impacts of Montana's Oil & Gas Industry

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ECONOMIC RESEARCH

Montana's oil and gas industry produces incomes and revenues far larger than you would expect given its employment base, and it contributes proportionally more taxes and revenues to state and local governments than the typical Montana business.

Oil and Gas Production

It all starts with producing wells. In 2013, three counties (Richland, Fallon, and

Roosevelt) represented 80% of the 29.3 million barrels of crude oil produced in Montana (Figure 1). Natural gas wells in Phillips, Fallon, Blaine, and Hill counties produced nearly three-quarters of the state's total production. Based on average 2013 first- or wellhead-prices, total Montana oil and gas (O&G) production was worth \$2.6 billion.

The total quantity of oil production has been increasing for the past few years, but

County	Oil (Barrels) ^f	% of Total Production	Nat. Gas (MCF)	% of Total Production
Blaine			5,503,978	14%
Fallon	4,213,866	14%	8,924,808	23%
Hill			4,911,971	13%
Phillips			9,417,506	24%
Richland	14,979,981	51%		
Roosevelt	4,303,223	15%		
Rest of State	5,762,875	20%	10,220,955	26%
Total Production	29,259,945	100%	38,979,218	100%
Est. Mkt Value	\$2,596,234,920 ^g		\$140,325,185 ^h	

Figure 1 MT Oil and Gas Production in 2013

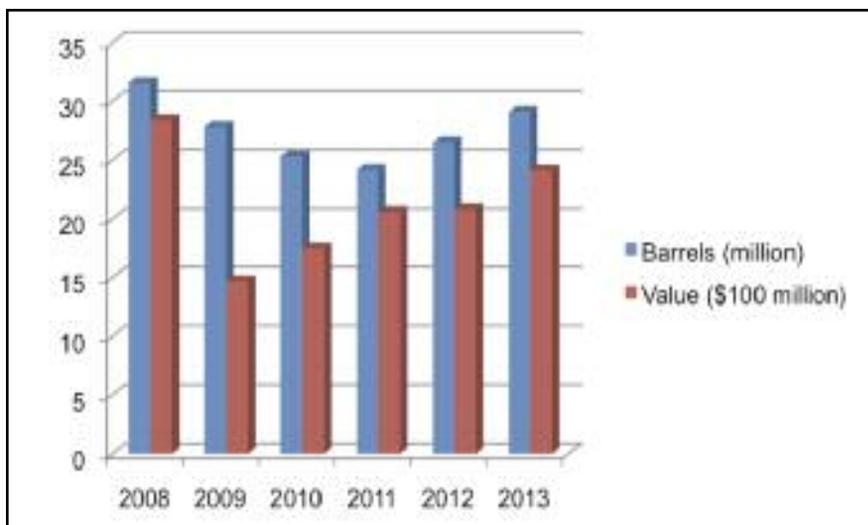


Figure 2 Production and Inflation-Adjusted Value of MT Crude Oil Production ^{iv}

after adjusting for the effects of inflation, the dollar value of production in 2013 is still 15% below where it was in 2008, when production of 31.6 million barrels was worth \$2.84 billion (Figure 2).

Montana's Oil and Gas Economy

For many people, discussing an economy is synonymous with discussing jobs. Montana's O&G industry continues to offer above-average wages to its production workers. Figure 3 lists average annual salaries for a number of O&G-related occupations. Many

Occupation	Avg. Annual Salary 2013
Petroleum Engineers	\$99,370
Geological and Petroleum Technicians	\$48,350
Derrick Operators, Oil and Gas	\$62,490
Rotary Drill Operators, Oil and Gas	\$56,290
Service Unit Operators, Oil, Gas, and Mining	\$48,340
Roustabouts, Oil and Gas	\$46,570
Helpers-Extraction Workers	\$33,820
Gas Plant Operators	\$64,380
Petroleum Pump System Operators, Refinery Operators, and Gaugers	\$76,630
Pump Operators, Except Wellhead Pumps	\$55,780
Wellhead Pumps	\$50,160

Figure 3 Oil and Gas Occupations ^v

of these occupations require technical training and experience rather than a typical college degree.

Figure 4 lists the estimated number of Montana jobs associated with its O&G economy. A little less than one-half of these positions (45%) are with Montana firms producing oil and gas products (upstream), while the rest (55%) are engaged in distributing these energy supplies to Montana households and businesses (downstream).

In the strictest sense, the size of the O&G industry could be measured as the sales or number of employees and owners working on exploring, drilling, producing, refining, and transporting crude oil or natural gas from a Montana well to a location where it becomes a 'final' product such as gasoline, diesel fuel, or natural gas. Loosen this classification a little and we capture the reality that some of Montana's O&G companies work on North Dakota or Wyoming operations.

For this report, let's focus on two groups:

1. The O&G Production Industry -The businesses involved with exploration, drilling, producing, refining, transporting, and constructing infrastructure for Montana's O&G industry. Without the oil-bearing land beneath us (or our neighbors) and citizens welcoming its development, these jobs and money wouldn't be there. ^{vii viii}
2. The O&G Economy - the O&G production industry plus those businesses involved in getting the final products to

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	<i>Employment</i>
<i>Oil and Gas Extraction</i>	761
<i>Drilling O&G Wells</i>	450
<i>Support Activities for O&G Operations</i>	2,532
<i>NG Distribution</i>	337
<i>O&G Pipeline and Related Structures Construction</i>	862
<i>Petroleum Refineries</i>	1,046
<i>Asphalt Paving, Roofing, and Saturated Materials Man.</i>	31
<i>Petroleum and Petrol. Product Wholesalers</i>	606
<i>Gasoline Stations</i>	5,191
<i>Fuel Dealers</i>	300
<i>Pipeline Transportation</i>	430
<i>Total Upstream</i>	5,682
<i>Total Downstream</i>	6,434
<i>Total</i>	12,546

Figure 4 Employment in O&G Industries ^{vi}

consumers and businesses. This includes petroleum product wholesalers and gas station employees.^{ix} In 2013 O&G production directly

accounted for more than 5,400 jobs and over \$550 million in labor income, and added more than \$1.5 billion to Montana's overall Gross Domestic Product (GDP). The aver-

	<i>Montana's O&G Production Industry (% of State Total)</i>	<i>Montana's Total O&G Economy (% of State Total)</i>
<i>Jobs</i>	5,470 (0.9%)	12,546 (2.0%)
<i>Labor Income (\$million)</i>	\$554 (2.3%)	\$747 (3.2%)
<i>Value Added (\$billion)</i>	\$1.54 (3.9%)	\$2.2 (5.6%)

Figure 5 Direct Contributions of MT O&G Production and O&G Economy *

age labor income for jobs in O&G production was more than twice the economy-wide average, and each job contributed to Montana's GDP at four times state averages.

Considering Montana's complete O&G economy, these totals grow to more than 12,500 jobs, \$750 million in labor income, and \$2.2 billion towards 2013 GDP.

Other parts of Montana's economy benefit from the O&G production thanks to local spending by these O&G firms. In 2013 an additional 4,900 jobs involved selling goods and services to the O&G production industry. This includes, for example, nearly 150 auto repair and maintenance positions and 175 additional Montana employees of accounting and tax preparation firms. The incomes, profits, and rents earned by industry workers support even more local economic activity, representing \$175 million dollars in labor income. In this case, think over \$35 million in wages and income flowing to Montana wholesale trade businesses and \$37 million going to the workers of physicians' office staff, dental clinics, and hospital employees.

Summing up these direct and direct benefits, in 2013 Montana's O&G Production Industry contributed over 15,000 jobs, \$950 million in wages and income, and more than \$2.25 billion to state GDP.

Fiscal Contributions to Montana's Economy

Montana's O&G production industries contribute far more in taxes and revenues to

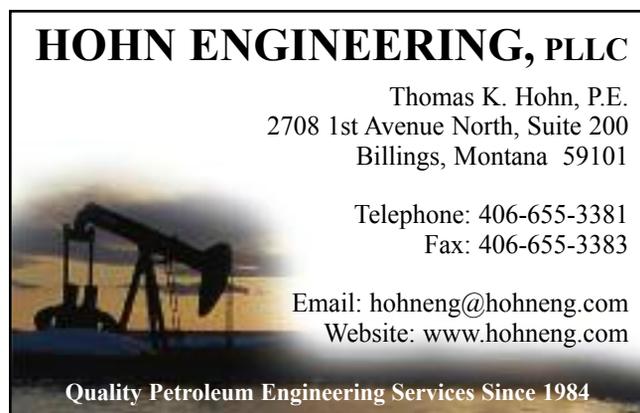


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	<i>Montana's O&G Production Industry (% of State Total)</i>
<i>Jobs</i>	<i>15,635 (2.5%)</i>
<i>Labor Income (\$million)</i>	<i>\$969 (4.1%)</i>
<i>Value Added (\$billion)</i>	<i>\$2.29 (5.8%)</i>

Figure 6 Total Contributions of MT's O&G Production Industries 2013

state and local governments than the average business or employee.

Earlier we saw that a few Montana counties make up the bulk of O&G production. Similarly, two counties (Richland and Fallon) produce two-thirds of all O&G production taxes and a total of six counties account for nearly 85% of these taxes (Figure 7).

Approximately 8% of Montana's oil production, 27% of its natural gas, and 4% of its associated gas is produced on federal lands. While these percentages are not large when compared to MT's overall O&G production, policy decisions adversely effecting how federal lands are used for energy development could still harm the MT economy. In 2013 O&G production on federal lands produced \$41.7 million in royalties, rents, and bonuses for Montana and local governments.

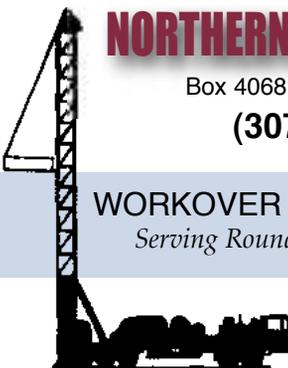
<i>COUNTY</i>	<i>O&G Production Tax Collections</i>	<i>Percent Total Production Taxes</i>
<i>Richland</i>	<i>\$103 Million</i>	<i>45.7%</i>
<i>Fallon</i>	<i>\$43.2 Million</i>	<i>19.1%</i>
<i>Roosevelt</i>	<i>\$21.2 Million</i>	<i>9.4%</i>
<i>Sheridan</i>	<i>\$10.5 Million</i>	<i>4.6%</i>
<i>Dawson</i>	<i>\$6.33 Million</i>	<i>2.8%</i>
<i>Wibaux</i>	<i>\$5.85 Million</i>	<i>2.6%</i>
<i>Rest of State</i>	<i>\$35.8 Million</i>	<i>15.8%</i>
<i>Total</i>	<i>\$226 Million</i>	<i>100%</i>

Figure 7 O&G Production Tax Collections by County 2013^{vi}

Montana's O&G production industry, and the businesses which indirectly benefited from its existence, generated nearly \$350 million in state and local taxes in 2013. Nearly two-thirds of this total (\$226 million) came from production taxes on producing wells. Over \$70 million of centrally assessed property taxes were paid in 2013 on the Montana equipment and facilities involved in O&G production (Figure 8). And nearly \$50 million in additional individual and corpo-

An Aside on Refining:

There are four refineries in Montana producing gasoline, diesel fuels, and other petroleum products. Most of the crude oil used in production came from Canadian (88%) or Wyoming (10%) wells. These refineries have spent the past several years reconfiguring themselves to be able to refine these heavy out-of-state crude oils. In some ways this diversifies Montana's O&G production industry, since an event reducing Montana production would have a limited impact upon Montana refineries. In 2013 Montana refineries employed just over 1,000 people and, as noted, paid very good wages. The value added from Montana refining contributed over \$1 billion to state GDP.



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Revenue Source	% of Total	Total Value 2013
Royalties	39%	\$ 35,616,406
Rents	3%	\$ 2,572,168
Bonus	3%	\$ 3,113,464
Other Rev	0%	\$ 359,950
TOT O&G	46%	\$ 41,661,987

Figure 8 Federal O&G Payments 2013 ^{xii}

rate taxes were paid by all of the business activity associated either directly or indirectly with Montana's O&G production industry. ^{xiv}

The Benefits of Expanding O&G Production

Expanding Montana's O&G production industry via increase exploration, drilling, and production benefits Montana's economy. For example, a recent estimate found that the drilling of an additional oil well which produces at the average rate adds \$6 million in gross output over its lifetime, \$2 million of which represents new contribution to state GDP (see Figure 11 ^{xv}). This new well would support an additional 11 jobs and \$665,000 in new wages to the Montana drilling and extraction workers. As these funds are spent in Montana, either by the businesses directly involved with oil and gas or by these additional workers, more Montana businesses and workers benefit. Overall, this additional productive well increases Montana gross output by \$9 million, adds \$3.6 million to Montana GDP, and produces an additional \$1.5 million in wages while supporting 33 additional jobs.

State and local governments would also

	Total State & Local Taxes
Taxes on Employee Compensation	\$ 2,193,874
Production Taxes	\$ 300,738,734
Taxes Paid by Households	\$ 31,061,350
Corporate Taxes	\$ 14,573,511
Total	\$ 348,567,469

Figure 10 Tax and Revenue Contribution of MT's O&G Production Industry

Property Tax Statistic	2013 O&G Value
2013 Total Assessed Value	\$1,955,475,338
2013 Total Taxable Value	\$180,166,245
Assessed Value within Towns/Cities	\$18,498,751
Taxable Value within Towns/Cities	\$1,830,477
Taxes Levied by Levy Type	
University (6 mills)	\$1,080,997
State General Fund (95 mills)	\$17,127,281
County	\$28,370,196
Miscellaneous and Fire	\$2,234,526
County Wide School Ret/Trans	\$4,118,873
Local Schools	\$18,203,917
Cities/Towns	\$414,267
Totals and Summaries	
Total Taxes Levied	\$71,550,057
Effective Rate	4.5%

Figure 9 Centrally-Assessed Property Taxes 2013 ^{xiii}

benefit, with this new well generating over \$625,000 in additional state taxes and revenues. ^{xvi}

Summary

In this analysis, you can see the contributions made by Montana's oil and gas sector: over 15,600 Montana jobs paying two-thirds more than the state average; a total of \$2.3 billion or nearly 6% of Montana's GDP; contributions to the state economy that are equivalent to an average Montana industry of twice or more its size.

In 2013 Montana state and local governments collected nearly \$1 million per day in taxes and revenues contributed by O&G production industries and the firms and workers that depended upon it. This level of funding would be hard to replace, being the equivalent

of raising state income taxes by one-third, or more than doubling vehicle licensing fees.

Oil and gas are significant industries in Montana, and they will likely play an important role in our state's economy for many years into the future.

References

- i. *Montana Board of Oil and Gas Data.*
- ii. *Oil prices based upon Energy Information Agency (EIA) 2013 average domestic crude oil first purchase price (\$88.73) (EIA).*
- iii. *Natural gas prices based upon Annual Energy Outlook (AEO) 2014 Henry Hub spot price for dry natural gas 2013 Average (\$3.60).*

	Gross Output	Value Added	Wages	Jobs
Direct	\$5,999,074	\$2,063,404	\$664,953	11.1
Indirect	\$2,140,764	\$1,013,528	\$614,308	13.1
Induced	\$947,630	\$525,375	\$284,047	8.2
Total!	\$9,087,467	\$3,602,307	\$1,563,309	32.5

Figure 11 Economic Impacts of an Additional Well

- iv. *Energy Information Agency*
- v. *Occupation Employment Statistics, US Bureau of Labor Statistics, www.bls.gov.*
- vi. *Quarterly Census of Employment and Wages, www.bls.gov.*
- vii. *Pipeline Transportation could possibly be included in either group. I've labeled it a Production Industry in part because the people who have a problem with O&G production also seem to dislike pipelines.*
- viii. *Some of this Montana business is due to production taking place in ND or WY. For example, when a ND producer contracts with a Montana-based technical specialist, we benefit from our neighbor's good fortune, but distances limit how much we can hope to gain. It's difficult to disaggregate in-state from out-of-state production.*
- ix. *This is the approach taken by the American Petroleum Institute's (API) 2013 nationwide analysis: Economic Impact of the Oil and Natural Gas Industry on the US Economy in 2011.*
- x. *Data sources: BLS (employment and wages), Minnesota IMPLAN Group (MIG) data, and adapting analysis reports from API and Considine (2013).*
- xi. *Montana Dept. of Revenue. Quarterly Collections and Distributions of O&G Production Taxes for Q1-Q4 of 2013.*
- xii. *FY2013 estimates from <http://statistics.onrr.gov>.*
- xiii. *Montana Dept. of Revenue.*
- xiv. *Analysis: A composite of MIG IMPLAN analysis runs of tax impacts for industry-level contributions to state's economy.*
- xv. *Considine, T. "The Economic Value of Energy Resources on Federal Lands in the Rocky Mountain Region" 2013. Found at <http://www.westernenergyalliance.org/site/default/files/2013%20Energy%20Dev%20Impact.pdf>*
- xvi. *This modifies Considine's example, where the well was drilled*

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