AN UPDATE ON THE ENERGY INDUSTRY INCLUDING PRICING, REGULATION AND THE ECONOMIC IMPACT ON COLORADO AND REGION

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OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Colorado’s economy continues to grow at a slower pace than in recent years.

• The labor market remains strong and the state is weathering the oil and gas industry’s contraction better than other states.

• The northern Front Range continues to bolster the economic indicators for the state; rural areas and regions with oil and gas activity are experiencing weaker economic activity.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• A stronger labor market and sustained consumer spending growth continue to propel the national economy forward while a slower global economy, stronger dollar, and financial market volatility present obstacles.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Weaker global economic activity and increased levels of uncertainty pose heightened downside risks to the economy.

• Colorado’s economy has been resilient during the deep contraction in oil and gas activity thus far, continued weakness in the industry may yet have larger adverse impacts on economic activity for the state.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Due to limited housing supply and the state’s population growth, Colorado home prices grew faster than any other state in the nation in 2015.

• Rents also continue to increase at strong rates in the state’s more populated areas, but new rental inventory in the Denver Metro area should lead to moderated rent growth over the next year.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Given the extremely low price environment from high oil supply levels and weakened demand, the oil and gas industry continues to contract.

• Employment in the oil and gas industry in Colorado decreased an estimated 25 percent through the end of 2015 and expectations are for another 10 to 15 percent decrease to occur in 2016.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Although employment in the oil and gas industry makes up a small share of overall employment in Colorado (roughly 1.5 percent), the industry and its associated activity made a strong contribution to Colorado’s overall growth, helping it to outpace national growth during the current expansion.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• The industry invests large sums of money and pays high wages, increasing the amount of money circulating in the economy.
• Average earnings in the industry are more than twice the average earnings in Colorado.
• Therefore, there can be material impacts on the state from growth or contraction in the industry.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Oil and gas prices remain suppressed due to continued oversupply – Oil prices, now about $50, hovered around the $30 per barrel range earlier in 2016 after averaging $48 in 2015 and $93 dollars in 2014.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Price projections for the remainder of the year indicate only minor improvements, and prices are generally expected to remain in the $40-$50 range through 2017, although there is a high degree of uncertainty in the trajectory of oil prices.

• You can find wildly different projections depending on who wins the election, regulatory change, tax changes, OPEC and finding and lifting costs.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Sustained expansion of oil production globally, combined with modest growth in global demand, continue to put downward pressure on prices.

• Additionally, natural gas prices remain nearly 50 percent lower than their 2014 levels, due to oversupply and slower demand.

• Natural gas prices are also expected to remain depressed through at least the remainder of 2016.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Given the dramatic decline in oil prices, expectations were for a large decline in production during 2015.

• However, production in Colorado was 25 percent higher in 2015 than it was in 2014.

• This compares with an 8 percent increase at the national level.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Production in Colorado has been increasing at a much faster rate than the national level, and continued to do so through the drop in oil prices.
Energy firms have become increasingly efficient as they focus on the most productive areas to drill new wells and technology advances have allowed them to produce more oil using fewer resources.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• The Denver-Julesburg Basin in northeast Colorado has been identified as one of the nation’s more productive and cost-effective areas to extract oil, which has contributed to the robust increase in Colorado’s production over the past few years.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Although production continued at unexpectedly high levels through 2015, national oil production has been on a downward trend recently.
• Production is expected to decrease by about eight percent, on average, in 2016.
• Decreases will vary greatly by region and firm, though, as they require different price levels to remain profitable.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Average breakeven prices - the price necessary to remain profitable - have continued a downward trend over the past few years as firms become more efficient.

• Breakeven prices vary greatly by firm though, with some firms reporting breakeven prices as low as $30 while others are as high as $80.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• According to the Kansas City Federal Reserve’s 2015 4th Quarter Energy Survey, energy firms in the 10th District, which includes Colorado, require an oil price of $60, on average, for a substantial increase in drilling to occur.

• When asked about expectations for oil prices moving forward, the respondents expected prices to remain below this level through most of 2017. Others disagree.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• The energy companies that can remain profitable in this lower price environment will be those that continue to adapt and focus on the areas, such as the Denver-Julesburg Basin, that are the most efficient and cost-effective.

• As a result, production levels in Colorado may not decrease as significantly as other areas around the nation in 2016.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• The number of oil and gas rigs operating in Colorado continues to track closely with the trend in oil prices.
• After averaging 68 rigs in 2014 and 38 rigs in 2015, rigs in operation around the state have declined to just 17 in the recent past.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• An increasing number of firms are struggling in the current environment. Many have been operating at minimal levels with the expectation that prices would have rebounded by now.

• Additionally, many firms in the industry are deeply indebted as they became highly leveraged during the boom years to extract as much oil as possible when prices were well over $100 a barrel.
OVERVIEW OF COLORADO’S ECONOMY AND ENERGY

• Expectations for 2016 are for more mergers and acquisitions to occur and, unfortunately, for more bankruptcies, as firms cannot afford to cover their debt payments at the current low prices.

• The impact will disproportionally hit smaller firms the hardest, as they tend to be the most highly leveraged firms in the industry.
DRILLING AND FRACKING REGULATION UPDATE

• Two measures that would limit oil and gas development in Colorado just missed getting on the ballot in November.

• A group of environmental and community organizations submitted the requisite 196,984 signatures — and then some — to the Colorado Secretary of State.
DRILLING AND FRACKING REGULATION UPDATE

• The signatures would allow initiatives 75, which would authorize towns and cities to regulate fracking, and 78, which would create mandatory setbacks for oil and gas development, to go to voters this fall.
DRILLING AND FRACKING REGULATION UPDATE

• The Daily Sentinel published an editorial in opposition to the measure, saying,

• “On their own — minus any understanding of the impact on jobs, the economy or state revenues — increased setbacks sound like a good thing. But Initiative 78 would make 90 percent of acreage statewide off-limits to hydraulic fracturing or future oil and gas development, effectively booting the industry out of the state.”
DRILLING AND FRACKING REGULATION UPDATE

• “That’s clearer now that the COGCC has mapped out how the setbacks would affect development. Some advocates say Initiative 78 is a response to a failure by the COGCC, lawmakers and the industry to do more to address public concerns.”
DRILLING AND FRACKING REGULATION UPDATE

• “Even if that’s true, the measure is an extreme overreaction that won’t solve anything. The measure would conflict with Colorado’s constitutionally protected mineral rights, setting the stage for a legal battle that could be very costly for taxpayers. The legal question would center on how far the state can go in usurping property rights. The state Supreme Court recently ruled that cities could not ban fracking in their city limits.”
DRILLING AND FRACKING REGULATION UPDATE

• “Worse, the measure throws collaboration and compromise out the window. As COGCC Director Matt LePore noted, backers of the measure “are proposing to amend the state Constitution in a way that offers no flexibility, no variance, no exception, one-size-fits-all for an industry that is anything but homogenous.”
DRILLING AND FRACKING REGULATION UPDATE

• “Tracee Bentley, the executive director of the Colorado Petroleum Council, pointed to the COGCC’s stakeholder process that has yielded “robust regulations” that ensure environmental protection.”
DRILLING AND FRACKING REGULATION UPDATE

• “Initiative 78 is just one of several measures that seek to limit drilling in some form or fashion. Those seeking to put these measures on the ballot need more than 98,000 signatures.”
DRILLING AND FRACKING REGULATION UPDATE

• “Those who sign must understand that they’re signing off on the death of an industry whose contributions totaled $126.5 billion in output in Colorado between 2008 and 2012 and supported more than 93,500 jobs, according to the University of Colorado Leeds School of Business.”
DRILLING AND FRACKING REGULATION UPDATE

• On August 29, Colorado Secretary of State Wayne Williams announced on Twitter that neither initiative received enough valid signatures to make the November ballot.
THE WEAKENED ENERGY SECTOR

• Oil prices have dropped sharply over the last two years, falling from more than $100 a barrel to less than $30 from June 2014 to January 2016 and now WTI is just under $50.

• In addition, natural gas prices have fallen more than 80 percent since mid-2008, and coal production has declined by half in the same period.
THE WEAKENED ENERGY SECTOR

• As the energy sector contracted, the economies of Colorado, New Mexico and Wyoming slowed to differing extents.

• This boom-bust cycle is not a new phenomenon for the energy sector or the Rocky Mountain States, with many residents remembering the sharp declines in the mid-1980s.
THE WEAKENED ENERGY SECTOR

• We will briefly examine the recent effects of low energy prices on the Rocky Mountain States and compare this downturn in the energy sector to past energy busts.
The energy sector is a key industry in Colorado, New Mexico and Wyoming, with each state’s share of economic activity attributed to the energy sector being larger than the national average.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• **Chart 1** shows the energy sector’s share of total employment, earnings, gross domestic product (GDP), and tax collections in the second quarter of 2014, just before the recent decline in oil prices began, and its share in the first quarter of 2016.
ENERGY SECTOR’S SHARE OF ECONOMY

Chart 1: Energy Sector’s Share of Economy

<table>
<thead>
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<th>Second Quarter, 2014</th>
<th>First Quarter, 2016</th>
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<tr>
<td>Employment</td>
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<td>Earnings</td>
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<tr>
<td>GDP</td>
<td>GDP**</td>
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<tr>
<td>Tax Collections</td>
<td>Tax Collections</td>
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</tbody>
</table>

- United States
- Colorado
- New Mexico
- Wyoming

*May, 2016
**Q4 2015

Sources: Bureau of Labor Statistics, Bureau of Economic Analysis, Census Bureau and Harver Analytics.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• Among the Rocky Mountain States, Wyoming is the most reliant on the energy sector.

• In the second quarter of 2014, almost 10 percent of Wyoming employment was tied directly to the energy sector.

• In addition, the energy sector accounted for 18 percent of personal earnings, 35 percent of GDP and almost 60 percent of tax revenues in Wyoming.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• Although the energy sector represents a relatively smaller share of the economies of Colorado and New Mexico, the sector still made up more than 6 percent of GDP in Colorado and more than 10 percent in New Mexico in mid-2014.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• As the energy sector has contracted, it now represents a smaller share of the economy.

• Energy’s share of Wyoming employment had fallen to less than 7 percent by May 2016, and its contribution to Wyoming tax revenues had dropped to 31 percent.

• The energy sector’s share of GDP in Colorado and New Mexico had declined to 3.1 and 8.0 percent, respectively, by the fourth quarter of 2015.
The Effect of the Recent Energy Downturn on the Regional Economy

• As energy prices fell sharply, activity in the energy sector contracted.

• The number of active drillings rigs has declined more than 70 percent nationally and in the Rocky Mountain States. (Source: Baker-Hughes).

• Initially, oil production continued to rise even as prices fell, with productivity in the industry continuing to increase as the least-productive rigs were shut down.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• Production started to drop in mid-2015 and is now down from peak levels by 4 percent in Colorado, 6 percent in Wyoming and 19 percent in New Mexico. (Source: Energy Information Administration).

• As energy companies struggled, layoffs in the sector increased and employment decreased sharply.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• Energy employment peaked several months after oil prices started to decline, but since has decreased more than 25 percent in Colorado, New Mexico and Wyoming (Chart 2).
ENERGY SECTOR EMPLOYMENT

Chart 2: Energy Sector Employment

Index 100 = June 2014, Seasonally Adjusted

- United States
- Colorado
- New Mexico
- Wyoming

Note: Energy employment refers to the Natural Resources and Mining sector.
Sources: Bureau of Labor Statistics and Haver Analytics.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• Although the effects of a low energy price environment are largest in the energy sector itself, there frequently are spillover effects on related industries or the economy as a whole.

• Employment in the transportation sector has declined over the past year in Colorado, New Mexico and Wyoming (Chart 3).
EMPLOYMENT BY INDUSTRY

Chart 3: Employment by Industry
Year-over-Year Percent Change, May 2016

Sources: Bureau of Labor Statistics and Haver Analytics
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• The transportation sector is closely tied to the energy sector, providing many logistical services such as moving commodities by truck or train.

• Coal shipments were about 39 percent of total tonnage moved by rail in 2014. (Source: Association of American Railroads).
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• Colorado, New Mexico and Wyoming also have experienced declines in wholesale trade employment, which may be tied to the energy sector.

• Many of the region’s manufacturing firms make goods directly for the energy sector, and therefore manufacturing employment in New Mexico and Wyoming has declined over the past year in part due to weakness in the energy sector.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• With almost one in 10 workers employed in the energy sector in mid-2014, Wyoming has seen the largest spillover effects from the recent downturn in energy.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• In addition to employment declines in energy, transportation, manufacturing and wholesale trade over the past year, employment has fallen in construction, financial services, information, leisure and state government.

• In contrast, most industries continued to expand in Colorado despite the slowdown in the energy sector.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• The effect on total employment will depend both on the concentration of the energy sector in the state and also the extent to which weakness in the energy sector spreads to other sectors of the economy.

• Total employment in Wyoming has dropped more than 4 percent due to the large presence of energy employment in the state and the large spillover effects to other industries (Chart 4).
TOTAL EMPLOYMENT

Chart 4: Total Employment
Index 100 = June 2014, Seasonally Adjusted

Sources: Bureau of Labor Statistics and Haver Analytics.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• In New Mexico, total employment has increased slightly despite layoffs in the energy sector.
• Employment gains in healthcare, leisure and professional and business services have helped to offset employment losses in energy, transportation, manufacturing and wholesale trade in New Mexico.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• Unlike New Mexico and Wyoming, employment in Colorado has expanded at a solid pace since June 2014.

• The diversification of employment in the state and the strength of many other sectors in Colorado have helped to mitigate the downside effects from the energy sector.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• The pace of employment growth in Colorado has slowed over the past year due in part to energy sector layoffs.

• As employment in the energy sector has declined, so have total personal earnings attributed to the sector.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• As of the first quarter of 2016, energy sector earnings had fallen about 14 percent nationally and in Colorado and more than 18 percent in New Mexico and Wyoming from their peak levels in mid-2014. (Source: Bureau of Economic Analysis and Haver Analytics).

• This decline in total earnings in the energy sector has been driven primarily by the decline in energy employment.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• The decline in energy prices, production, employment and earnings also have affected state tax revenues.
• Severance tax revenues are significantly lower than their mid-2014 levels as these taxes typically are based on both the price and extracted volume of natural resources.
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

• As the price of these commodities falls, so does severance tax revenue, even if the volume of extraction remains level.

• As of the first quarter of 2016, severance tax collections were down more than 70 percent nationally and in Colorado and Wyoming compared to peak levels, with New Mexico severance tax revenues down 55 percent. (Source: United States Census Bureau).
THE IMPORTANCE OF THE ENERGY SECTOR TO THE REGIONAL ECONOMY

- Income and sales tax revenues can also be affected by weakness in the energy sector, particularly if the sector makes up a large share of the state economy.
**HOW DOES THE RECENT ENERGY DOWNTURN COMPARE TO HISTORICAL DOWNTURNS?**

- There have been other significant energy price shocks over the last 40 years that are similar to the current downturn, including six periods when oil prices declined more than 30 percent (Chart 5).
REAL WEST TEXAS INTERMEDIATE OIL PRICES

Chart 5: Real West Texas Intermediate Oil Prices
April 2016 Dollars

Note: Red portions of the line indicate time periods with at least a $20 and 30 percent price decline. Shaded gray bars indicate recession. Sources: Private Industry Sources: Major Refiners’ Posting Bulletins, Haver Analytics & Bureau of Economic Analysis.
HOW DOES THE RECENT ENERGY DOWNTURN COMPARE TO HISTORICAL DOWNTURNS?

• Aside from the large energy price decline during the 2007 recession, which caused large negative economic effects due to the severity of the national recession, the oil price decline in the mid-1980s had the largest negative effect on the regional economy.
HOW DOES THE RECENT ENERGY DOWNTURN COMPARE TO HISTORICAL DOWNTURNS?

• Chart 6 shows employment growth for the energy sector during the seven periods when oil prices declined more than 30 percent. (Source: Data for the 1980s is annual but is monthly for the more recent time periods. The index is set to 100 for either the year or the month where the peak real price of oil occurred).
ENERGY SECTOR EMPLOYMENT DURING PERIODS OF DECLINING OIL PRICES

Chart 6: Energy Sector Employment During Periods of Declining Oil Prices

Index 100 = Energy Employment in the Month that Oil Prices Peaked

United States

Months Since Peak

Colorado

Months Since Peak

New Mexico

Months Since Peak

Wyoming

Months Since Peak

1981-1984
1985-1988
1990-1993
1997-2000
2000-2003
2008-2011
2014-Recent

Note: “2014-Recent” begins June 2014 and ends May 2016.
Sources: Bureau of Labor Statistics and Haver Analytics.
HOW DOES THE RECENT ENERGY DOWNTURN COMPARE TO HISTORICAL DOWNTURNS?

• In the most recent episode, oil prices peaked in June 2014.

• Initially, employment declines in the energy sector were less severe than the declines during the oil busts in the 1980s and the 2007 recession.
HOW DOES THE RECENT ENERGY DOWNTURN COMPARE TO HISTORICAL DOWNTURNS?

• After nearly two years of the current downturn, energy sector employment has declined more than in any previous oil price downturn.

• Between June 2014 and May 2016, energy employment has dropped more than 20 percent nationally and in Colorado and about 30 percent in New Mexico and Wyoming.
HOW DOES THE RECENT ENERGY DOWNTURN COMPARE TO HISTORICAL DOWNTURNS?

• Total employment, however, has performed better by comparison (Chart 7).

• Nationally and in Colorado, total employment has continued to increase at a solid pace and is outperforming most of the previous oil bust periods.
TOTAL EMPLOYMENT DURING PERIODS OF DECLINING OIL PRICES

Chart 7: Total Employment During Periods of Declining Oil Prices

Index 100 = Total Employment in the Month that Oil Prices Peaked

Note: “2014-Recent” begins June 2014 and ends May 2016.
Sources: Bureau of Labor Statistics and Haver Analytics.
HOW DOES THE RECENT ENERGY DOWNTURN COMPARE TO HISTORICAL DOWNTURNS?

• In New Mexico, total employment has fared worse than most previous energy downturns, but remains higher than employment levels in June 2014.

• And although total employment has declined about 3 percent in Wyoming since mid-2014, its performance is better than in the 1980s energy downturns and the 2007 recession.
HOW DOES THE RECENT ENERGY DOWNTURN COMPARE TO HISTORICAL DOWNTURNS?

• Heading into the current energy sector downturn, the sector’s share of employment and earnings was slightly lower than its share in the early 1980s (Chart 8).

• Energy employment made up 2 percent of Colorado employment in 2014 compared to 3.1 percent in 1981.
HOW DOES THE RECENT ENERGY DOWNTURN COMPARE TO HISTORICAL DOWNTURNS?

• Energy’s share of employment fell from 5.5 percent to 3.6 percent in New Mexico and from 14.5 percent to 8.7 percent in Wyoming.

• The slightly lower reliance on the energy sector in 2014 compared to 1981 may help explain why total employment performed better in Colorado and Wyoming during this downturn despite sharp losses in energy sector employment.
ENERGY SECTOR’S SHARE OF THE LABOR MARKET

Chart 8: Energy Sector’s Share of the Labor Market
Share in the First Year of Each Time Period

A LOOK AT COAL

• Colorado coal production in the first six months of the year dropped 42 percent compared with the same period of 2015.

• The Colorado Division of Reclamation, Mining and Safety released a report on mine production and safety for January through June of 2016.

• When compared with the same time period in 2015, Colorado’s active mines had cut production anywhere from 14 percent to 96 percent.
A LOOK AT COAL

• “I think that we are shocked but not surprised by these numbers,” said Stuart Sanderson, president of the Colorado Mining Association.”

• “Part of the drop was tied to the closing of Bowie Resources’ underground mine in Delta County, which produced 33,395 tons in 2016, down 96 percent from 856,749 tons in 2015. After removing Bowie from the equation, production of the remaining seven active mines still dropped 36 percent.”
A LOOK AT COAL

• “That this is being driven largely by an unprecedented regulatory assault that is designed to drive coal and with it clean, affordable energy out of the mix,” Sanderson said.”

• “What we are seeing is the ill-advised policies, both state and federal, now coming to fruition.”
A LOOK AT COAL

• Sanderson said Colorado coal is clean because it is low in sulfur and other emissions that helped power plants meet criteria for pollutants before regulatory deadlines.

• He said federal, state and Environmental Protection Agency regulations have been strangling the industry. At the same time, the value of coal has dropped over the past five years, according to Bloomberg data.
A LOOK AT COAL

• “There are some market forces at work here, but the principal driver of this is the government,” Sanderson said.

• He said EPA regulations alone caused 431 power plants to close or convert to natural gas, biomass or another fuel across the nation as of June 2016.

• In Colorado, 11 power plants, or 1,172 MW, have either closed or been converted.
A LOOK AT COAL

• Sanderson said that the court still has a stay on President Barack Obama’s carbon energy regulations, which he said is good for the coal industry.

• Colorado is among the states suing the EPA to challenge Obama’s Clean Power Plan.
A LOOK AT COAL

• Colorado used to export two-thirds of its coal out of the state, Sanderson said, but regulations in other regions have flipped the equation.
• More coal is now sold in Colorado.
• Meanwhile, coal supplied 60 percent of Colorado’s electricity in 2015, according to a CMA report.
A LOOK AT COAL

Coal Production From Colorado's Top Mines

- Foidel Creek Mine
- West Elk Mine
- Colowyo Coal Mine
- All Mines, Statewide

Data: Colorado Division of Reclamation, Mining and Safety
A LOOK AT COAL

• Production is down, and the Energy Information Administration expects coal to **further decline** under the recently adopted **Clean Power Plan** from the Obama Administration.
Here are four key issues to watch this year as the coal industry navigates some of the most challenging times in recent memory.

1. Natural Gas Prices

The country has a glut of cheap natural gas. The average annual natural gas spot price last year was at its lowest level since 1999.

Meantime, inventories are 15 percent above five-year average levels for this time of the year.
A LOOK AT COAL

• Utilities and power plants -- coal's main customers -- are opting to generate power from cleaner-burning natural gas if they have the capability to do so.

• The Obama Administration's Clean Power Plan, which seeks to reduce carbon dioxide emissions at coal-fired power plants, is expected to further nudge electricity generation toward natural gas and renewables.
A LOOK AT COAL

• 2. Wind And Solar Are Cheaper, More Plentiful
• The price of generating power from renewable energy continued to decrease in 2015.
• And in some markets the cost may be -- or already is -- catching up to coal and natural gas.
A LOOK AT COAL

• According to an October 2015 analysis by Bloomberg New Energy Finance, the cost of onshore wind energy has decreased globally from $85 to $83 per megawatt hour.

• The cost of photovoltaic solar went from $129 to $122 per megawatt hour.

• The cost of electricity generated from coal and natural gas is still cheaper, but the gap is narrowing as more renewables come online.
A LOOK AT COAL

• "Renewables have basically a zero cost of production, and gas has a low price, you're just kicking off all this coal off the production line," said Lange.

• "As you keep producing less and less coal, it's going to be harder to get these economies of scale in the mines' production to keep lowering prices."
A LOOK AT COAL

• Another bonus for renewables: Congress approved programs in December that extended tax credits for wind and solar—which are expected to provide a short-term boost for production and availability of the resources.
A LOOK AT COAL

• 3. Federal Coal Leases
• About 40 percent of the coal produced in the United States is mined on federal lands--the majority of which comes from western states including Colorado.
• Critics of federal coal leases have long complained that they don't accurately take into account the climate change impacts of extracting and burning the coal.
A LOOK AT COAL

• Others complain that royalties are too low.
• Current federal royalty rates are 8 percent for coal developed underground and 12.5 percent for coal developed above ground.
• Some groups like Center for Western Priorities complained over the summer that some companies end up paying rates as low as 4.9 percent.
A LOOK AT COAL

• 4. Managing Decline
• How the coal industry shrinks will matter to workers, local governments and taxpayers.
• The industry may already be in a difficult position when it comes to paying for land clean up after coal is mined. U.S. regulators require companies to post bonds to cover these costs.
A LOOK AT COAL

• But the largest coal companies have gravitated toward "self bonding," a legal practice that allows them to use their own balance sheets as collateral.
A LOOK AT COAL

• The price of coal, federal leases and self bonding are just a few aspects of the industry to watch.
• 2016 could also bring more bankruptcies and consolidation with coal companies.
• That could mean more layoffs and mine closures.
• If all the trends converge this year, 2016 could prove another rocky year for the coal industry.
CONCLUSION

• The recent decline in oil, gas and coal prices has led to a sharp pullback in the energy sector nationally and in the Rocky Mountain States.

• Not only has the energy sector itself experienced job losses, but related industries including transportation, wholesale trade and manufacturing also have experienced regional employment declines.
CONCLUSION

• Weakness in the energy sector has led to lower earnings in the sector and reduced severance tax collections for state governments.

• The extent to which the adverse effects permeate the rest of the economy depends on the size of the energy sector relative to other sectors of the economy.