Kansas Oil & Gas Industry Strategic Analysis

Prepared by:

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Special points of interest:

- *Kansas oil and gas industry focuses on value reconstruction for brighter days ahead.*
- *Fundamental challenges face policymakers and industry.*
- *Oil and gas producers need policies that enhance access to capital.*
- *Opportunities arise from addressing critical issues.*

Inside this Report:

Introduction

After many decades of productive stewardship, oil and natural gas resources continue to play an important part of the livelihoods of Kansans. In 2022, the Kansas oil and gas industry generated nearly $3.6 billion in output, put tens of thousands of people across Kansas to work, and pumped hundreds of millions of dollars into the state's economy. The industry supports 100,000 jobs, $3 billion in family income, and $1.4 billion in state/local tax revenue. The industry is an important element of the Kansas economy today and will be a critical part of the economy going forward.

The United States is the leading oil producing nation in the world - accounting for 15% of the world's total oil production. Thirty-two U.S. states produce oil and natural gas. Kansas ranks as the 11th largest oil producing state and 14th largest natural gas producing state. Over 2,200 licensed oil/gas operators produced over 28 million barrels of oil and 150 billion cubic feet of natural gas in Kansas in 2022.

Kansas Oil & Natural Gas Energy for the Future!

Oil and natural gas are an integral part of our society making our high standard of living possible. Today, an estimated 6,000 products are produced from petroleum. The Kansas oil and gas industry helps the Kansas economy and makes significant positive contributions to our way of life!

Challenges Face Policymakers and the Kansas Oil & Gas Industry

The latest (2022) world oil outlooks from the EIA and others project total global energy demand expanding by 23% by 2045. All forms of energy will be needed to support energy demand growth. Renewable energy sources will see the largest growth leading to a share of over 10.9% of the energy mix by 2045. Oil and natural gas are expected to retain the largest share accounting for roughly 50% of the energy mix in 2045.

Lawmakers should avoid energy policies driven by a zero-sum game philosophy for energy that says we must have less fossil fuels so we can have more of something else. All too often, proposals to establish some kind of green standard really have much more to do with raising revenue than helping the environment. Rational, data-driven, common-sense energy policy is what our state and nation needs. We should abandon the stale mindset of last century's thinking that increased oil and gas production and achieving climate goals are not compatible.

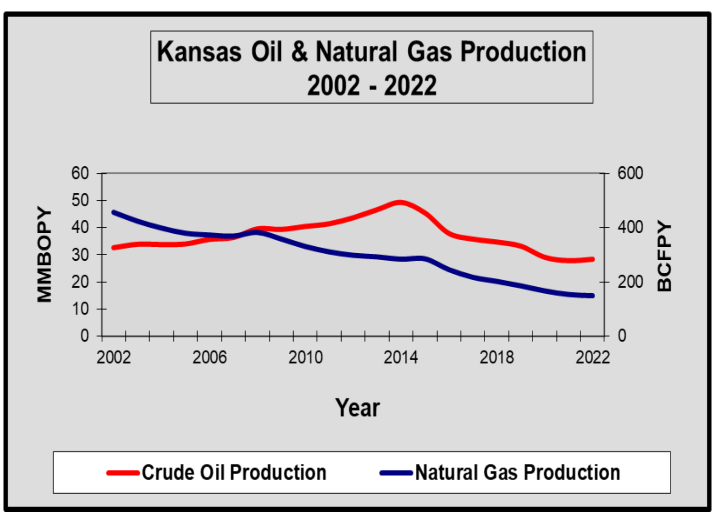
The American people want, expect, and deserve elected leaders who will place what's best for our state and nation's economy and energy future above partisan ideology and political posturing. We need real energy solutions!

Kansas Oil & Gas Industry Taxation Analysis

The Kansas oil and gas industry contributed over $205 million to the State of Kansas in taxes in 2022. In addition, $7.5 million in fees were collected from the industry. These tax dollars and fee collections come from oil and gas producers and royalty owners. We are happy to pay our fair share but also believe we are a highly taxed industry. Calendar year 2022 saw the oil and gas industry pay nearly $86 million in severance taxes and over $120 million in ad valorem taxes.

According to production data provided by the Kansas Department of Revenue, oil production in Kansas has fallen 7 of the last 10 years. Natural gas production in Kansas has declined by a Compound Annual Decline Rate (CADR) of 6.6% over the last 10 years. Oil production in Kansas has decreased by a CADR of 3.97% over the same period.

Demand destruction from COVID-19 and the concurrent crude oil supply shock had a profound impact on the Kansas oil and gas industry in 2020 and early 2021. As the economy began recovering and market conditions improved in 2022, oil and gas exploration/production activity increased throughout the year As a result, the Kansas Department of Revenue reports that Kansas collected nearly 82% more oil and gas severance tax receipts and 4.4% more oil and gas ad valorem tax receipts in calendar year (CY) 2022 than CY 2021. Improved market conditions in 2022 resulted in Kansas collecting about $38.6 million more in oil and gas severance tax receipts and $5 million more ad valorem tax receipts in CY 2022 than CY 2021 However, CY 2022 severance tax receipts remain nearly 46% below CY 2014 collections and ad valorem tax receipts remain nearly 53% below CY 2014 ad valorem tax collections.



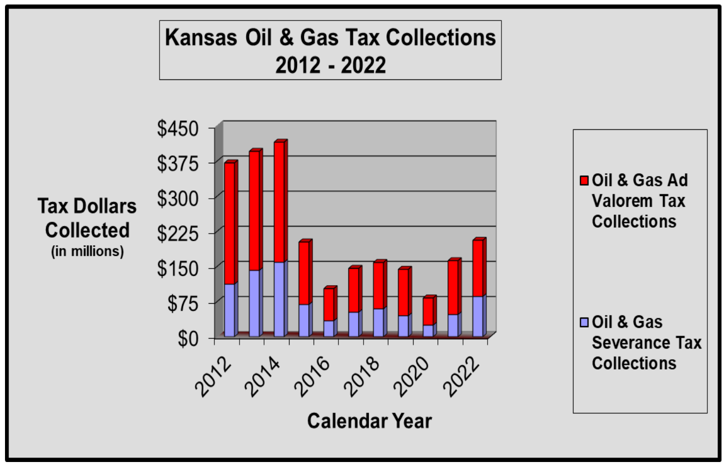
The relative tax burden on the Kansas oil and gas industry can be illustrated in three ways: marginal tax rate, discounted cash flow analysis, and average effective tax rate.

Marginal Tax Rate

The marginal tax rate for the Kansas oil and gas industry is a measure of the taxes paid on an increase/decrease in the marginal price of oil and natural gas expressed as a percentage of revenues. The marginal tax rate includes the combined effect of severance and ad valorem taxes on primary production. Kansas' marginal tax rate on primary oil and natural gas production was 12.3% in 2022.

Discounted Cash Flow Analysis

The discounted cash flow analysis evaluates the impact of taxes on the economics of specific investments over their entire life. For the oil and gas industry, the analysis is helpful in gauging the effect of taxes on new exploration and production investments. Discounted cash flow analyses on several Kansas exploration and development projects using current economic characteristics indicate the impact of Kansas severance and ad valorem taxes alone is to generally reduce rates of returns by 25%-35%.



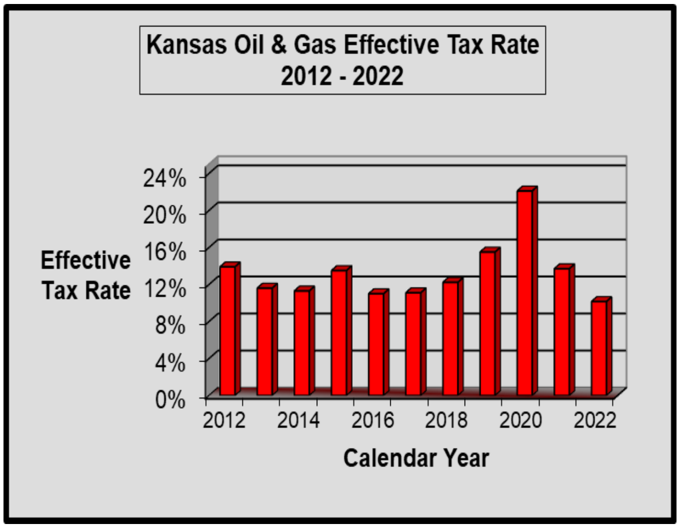
Impact of Oil Price on Tax Collections

After a tumultuous 2020 when Kansas crude oil prices averaged $29.79/bbl., crude oil prices began a slow recovery in 2021 and 2022 as the economy began to recover and demand began to return. Kansas crude oil prices averaged $57.77/bbl. in 2021 and $84.96 in 2022. Globally tight natural gas supplies and bad energy policy resulted in natural gas prices rising 94% in 2022 hovering near a 7-year high. As a result, oil and gas severance and ad valorem tax collections increased more than 25% from 2021 through 2022.

Taxation Analysis (continued)

Average Effective Tax Rate

The average effective tax rate focuses on the total taxes paid in relation to total taxable value. The Kansas oil and gas industry's 2022 effective tax rate was 10.15%. Different state tax systems greatly impact the average tax rate for the oil and gas industry. For example, the Oklahoma oil and gas industry pays a 7% severance tax and ad valorem taxes on equipment only, not reserves. In contrast, the Kansas oil and gas industry pays a 4.33% severance tax as well as ad valorem taxes on equipment **AND** reserves resulting in double-taxation of oil and gas reserves that leads to a higher average tax rate than Oklahoma.



Oil & Natural Gas Prices

The crude oil market is a global oligopolistic market. Kansas oil and gas producers are price takers, not price makers, in this oligopolistic market.

Crude oil prices received by Kansas oil producers are a result of several factors. The New York Mercantile Exchange (NYMEX) price is set daily by an open auction. The price is based on global supply/demand factors. West Texas Intermediate (WTI) is the benchmark price for crude oil produced in the U.S. A barrel of WTI crude oil produces more products, like gasoline, than any other crude oil produced in the world. Kansas common crude oil is a lesser quality oil generating less products per barrel than WTI and, as a result, is priced about $10-$11 per barrel less than WTI.

The U.S. Energy Information Administration (EIA) projects renewable energy sources (mostly wind and solar) will provide 22% of U.S. electricity generation in 2022 and 24% in 2023. Natural gas is projected to provide 38% of U.S. electricity generation in 2022 and 36% in 2023.

While the U.S. and Kansas economies continue to grow, uncertainty remains as a number of economic indicators are estimated to show smaller real growth over the next year. Significant concerns exist for the economy relative to inflation, volatility in energy prices, U.S. trade and foreign policy, and demand. U.S. GDP is projected to decrease slightly in 2023. Kansas Gross State Product (GSP) is projected to increase by 0.9% 2022 and flatten to 0% in 2023. However, the oil and gas sector is projected to have second-highest growth in employment in 2023.

The U.S. Energy Information Administration (EIA) project Kansas crude oil prices to average about $77/bbl. in 1H2023 and rise to $81/bbl. In 2H2023. This forecast reflects EIA's expectation that global oil consumption will outpace global oil production in 2023.

Conclusions

Tax analyses indicate that Kansas taxes on oil and gas production are high relative to other states examined, and are especially high considering the characteristics of the Kansas resource relative to most other states evaluated. Kansas oil and gas producers are taxed five times on each barrel of oil or Mcf of natural gas produced (severance tax, property tax on equipment, property tax on reserves, state income tax, and federal income tax). Kansas oil and gas producers pay considerably higher taxes as a percentage of revenue than most other oil and natural gas producing states.

While the oil and gas severance tax provides an important source of revenue for the State of Kansas, the volatile nature of markets makes it risky to depend on the revenue from year to year.

The ad valorem tax structure has several features which are detrimental to the state's oil and gas industry and hinders economic growth in the State of Kansas. Ad valorem taxes are levied based on ability to produce rather than actual production, resulting in very high taxes relative to revenues for some wells. In addition, ad valorem taxes vary county by county based on variations in local mill levies. The current tax policy of levying ad valorem taxes on reserves contradicts good engineering practices. Good engineering practices suggest slow development of oil and gas reserves to more thoroughly drain oil and gas reservoirs. Ad valorem tax policy encourages producers to produce oil and gas reserves as quickly as possible to avoid double-taxation. Finally, ad valorem taxes encourage premature abandonment of oil and gas wells by applying a minimum tax to non-producing marginal wells, thus creating an incentive to plug and abandon such wells. Perhaps tax structure revisions are needed.

Taxation Analysis (continued)

Policy Recommendations

Kansas oil and gas producers need policies that enhance access to capital to develop and maintain production. These small businesses do not have the substantial additional resources possessed by many major integrated and/or public traded companies. Independent oil and gas producers generate capital through their production, not by tapping equity markets or other corporate measures. Consequently, tax reforms that allow oil and gas producers to retain more of their revenues to reinvest directly translates into new resources and economic development for Kansas. Historically, independent oil and gas producers reinvest more than 100% of their cash flow into new projects. Every new oil and gas project is like a new small business start-up. Perhaps restructuring severance and ad valorem tax structures would promote more economic growth for Kansas and more energy for our nation.

Every new oil and gas project is like a new small business start-up.

The Kansas oil and gas industry contributed over $213 million to the State of Kansas in taxes and fees in 2022, over $170 million in 2021 and over $122 million in 2020. We are happy to contribute our fair share but we are a highly taxed industry. Perhaps restructuring the current severance tax structure could preserve the absolute tax dollars received by the State of Kansas while providing the incentives needed by oil and gas producers to expand oil and gas development and create significant economic growth for Kansas. The current severance tax structure as defined in K.S.A. 79-4217 imposes an 8% tax rate on the gross value of all oil and gas severed from the earth or water. K.S.A. 79-4219 provides for a property tax credit in the amount of 3.67% for ad valorem taxes paid. Therefore, the effective severance tax on oil and gas severed from the earth or water in Kansas is 4.33%.

Kansas oil production has declined 7 of the last 10 years and has fallen by more than 43% since 2014. For 2023, uncertainty in macroeconomic conditions could significantly affect energy markets.

Now is the time to consider restructuring the severance and ad valorem tax system to maintain absolute tax dollars received by the State while providing producers incentives to expand economic growth. Perhaps amending K.S.A. 79-4219 to increase the property tax credit from 3.67% to 4.5% is in line. A property tax credit of 4.5% would make the effective severance tax rate 3.5% and allow producers to retain more of their revenues to reinvest into projects that generate economic growth for Kansas. Any decrease in absolute tax revenues to the State of Kansas would be mitigated by increased economic growth.

A different approach might consider addressing the ad valorem tax structure directly. Only Kansas, California, Utah. and Texas assess ad valorem taxes on reserves. Other states assess ad valorem taxes on equipment only. Empirical evidence suggests assessing ad valorem taxes on reserves causes outside oil and gas investors to devalue Kansas properties by 25%-30% greatly reducing outside investment capital.

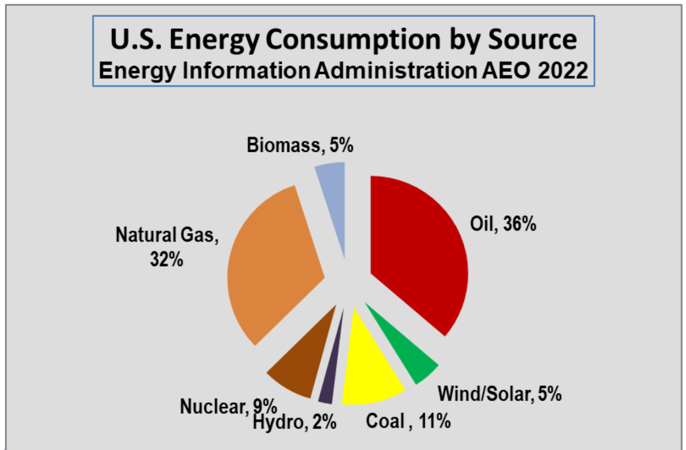
Perhaps Kansas could restructure ad valorem taxes to eliminate the double-taxation of reserves. By assessing ad valorem taxes on equipment only, reserves would be taxed only once through the severance tax structure. A small increase in the severance tax rate from the effective 4.33% could make up the difference between total taxes collected under the current ad valorem tax system of assessing equipment and reserves and the proposed ad valorem system of assessing only equipment. By eliminating ad valorem taxes on reserves, counties and companies will be able to greatly reduce administrative costs. The severance tax receipts to the State's general revenue fund could then be allocated as seen fit back to the counties. Such a design would eliminate the need for counties to perform oil and gas property appraisals and greatly reduce complaints, all of which saves the State, counties, and companies time, money, and resources.

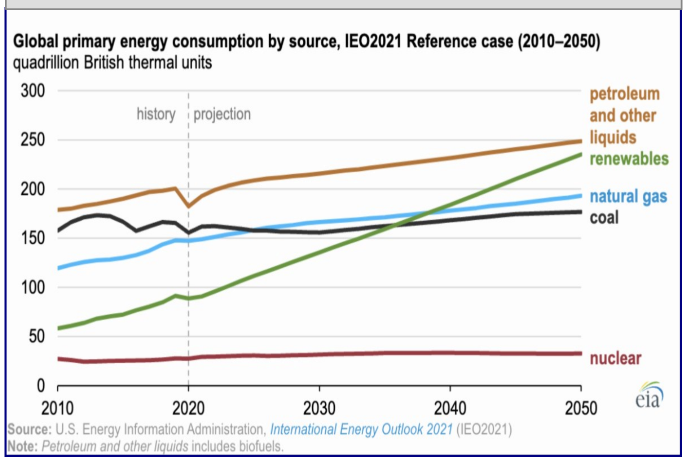
Kansas Energy Outlook & Key Energy Issues

Small independent oil and gas producers account for 92% of the oil and 63% of the natural gas produced in Kansas. Nationally, small independent producers drill 95% of domestic wells. Nationally, small independent producers' employees paid $30.7 billion in income taxes (federal and state), sales tax, and excise tax last year. The entire direct/indirect/induced economics of small independent producers generated $131 billion of federal and state taxes last year, a figure that will increase to $189 billion by 2025. Every $1 million of capital expenditures (capex) for independents result in $1.1 million of total taxes generated along with the creation of 39 total jobs. Every $1 million of capex for independents result in $2.4 million of direct and $5.1 million of overall contribution to GDP.

The average Kansas oil well produces 2 barrels of oil per day and the average Kansas natural gas well produces 23 Mcf of natural gas per day. Marginal wells account for nearly 80% of the total wells in the U.S. and are responsible for about 20% of total oil and gas production domestically. Every $1 million generated by marginal well production generates $2 million in economic activity elsewhere in the economy.

Studies show that the impact of losing marginal well production would cost the U.S. economy $184.5 billion, 178,000 jobs, and $115 billion in earned labor income per year. The livelihood of the small business sector of the oil and gas industry and that of nearly 10 million royalty owners nationwide is based on marginal well production.





The studies show the economic cost of losing marginal well production to the U.S. and Kansas economy is large and grows over time. The direct and indirect costs to other industries are larger than the direct costs to oil and gas producers.

The U.S. oil and gas industry generates an economic stimulus of nearly $1.7 trillion each year and supports more than 11.3 million jobs nationwide. In Kansas, the oil and gas industry supports over 100,000 jobs and $3 billion in family income.

As the public debate focuses on how to move to a vibrant energy future, we must recognize that oil and gas will continue to serve as the principal component of our economy for many years to come. The Energy Information Administration (EIA) reports that oil and gas supplied 68.3% of our nation's energy in 2022. By 2045, the EIA estimate that oil and gas will supply roughly 50% of U.S. energy needs.

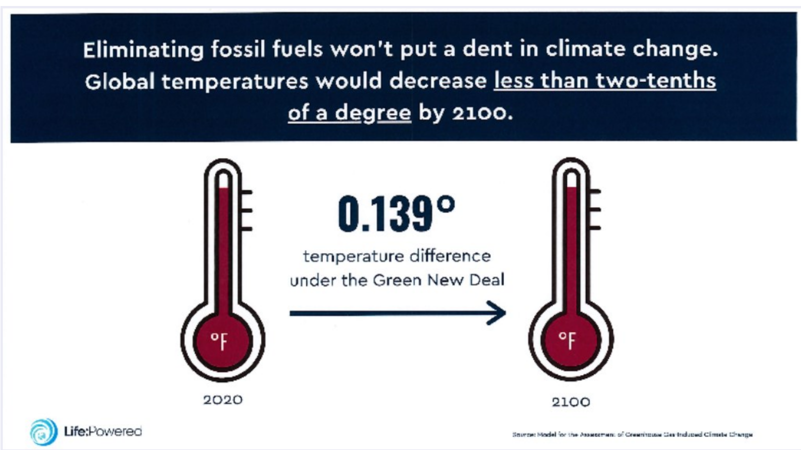
Globally, the EIA projects that by 2050, world energy demand will increase by 23%, and 50% of that demand will be supplied by oil and natural gas. Oil and natural gas are expected to remain the primary energy sources through 2045. Coal is expected to see global market share shrink. Solar and wind are expected to grow briskly in the coming decades and could approach 11% of the global energy mix by 2045. Most wind and solar installations are not cost-effective on the open market, necessitating subsidies. As long as subsidies exist, taxpayers have to support industries that are not economically viable on their own. Funding underperforming assets often comes at the cost of starving productive assets.

Energy Issues (continued)

As the U.S. continues to grapple with high inflation, market volatility, and economic pessimism, American families continue to see costs of important goods and services rise.

America leads the world in environmental quality

This means a family budget that needs to account for keeping the lights on, the family fed, keeping the family healthy, and providing for their children's future has only seen price relief from lowered energy costs while critical needs in other areas have risen dramatically. We understand the need to provide reliable, affordable energy to consumers to ensure economic stability. We have also heard the concerns of Americans related to ensuring we protect the environment and mitigate environmental impact as we produce energy in the U.S.



Emissions - Over the last 50 years, the six major pollutants regulated by the EPA have fallen 77% while the U.S. economy grew 285% and its population grew by 60%.

From 2005 to 2019, total U.S. energy-related CO_2 emissions fell 14% while global energy-related emissions increased nearly 24%.

Additionally, according to EPA, American oil and natural gas producers have reduced methane emissions (1990-2017) by 14% while increasing natural gas production by 51% and oil production 80% over that same time frame.

The latest Energy Information Administration (EIA) data (2021) show natural gas is responsible for 2.8 billion metric tons of CO_2 emission reductions since 2005. That represents 61% of overall power sector reductions during that time frame and 57% more than reductions attributable to renewable energy sources. **America is a world leader in clean air and water.**

When looking at environmental policies needed going forward, we highlight the following:

- Assuring adequate access to capital by having sound tax and banking practices rather than using tax and financial policies to cripple American oil and natural gas production
- Assuring a predictable and cost effective regulatory system that recognizes the diversity of oil and natural gas production, including large versus small wells and large versus small businesses.
- Recognize in energy and economic policy that oil and natural gas will be essential energy sources for the foreseeable future, that American oil and natural gas production is more environmentally sound than most foreign sources, that reliance of foreign sources of energy will undermine the American economy and any agenda to improve its environment, and that oil and natural gas provide a more realistic option than overreliance on perceived clean energy sources.
- Technology within industry often moves faster than the regulatory systems within government. Providing regulatory agencies with tools to allow for more rapid deployment of new technologies which are more accurate and cost-effective is an important policy change to consider.

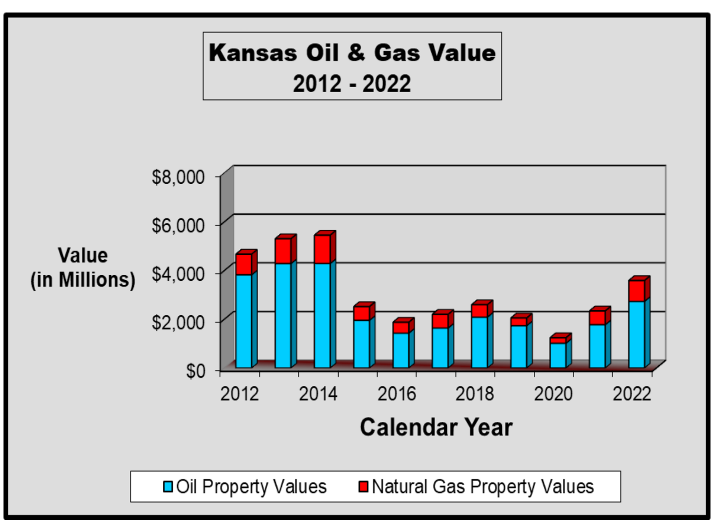
State and federal policymakers should advance a pro-American energy agenda that embraces American energy independence so we don't beg untrustworthy foreign governments for energy that we could easily produce ourselves.

Energy Issues (continued)

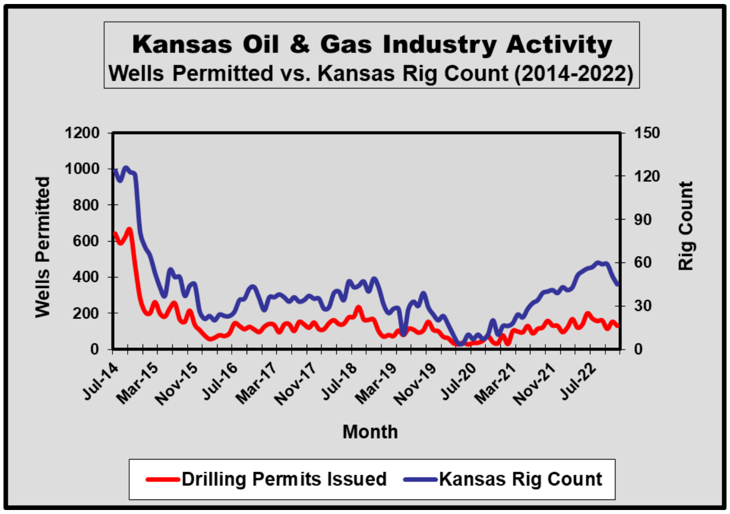
The Kansas oil and gas industry is a $3.6 billion industry that that supports more than 100,000 jobs, over $3 billion in family income, and over $1.4 billion is state and local taxes.

Over 1,700 permits to drill oil/ gas wells were issued by the Kansas Corporation Commission (KCC) in 2022. The industry produced over 28 million barrels of oil and 150 billion cubic feet of natural gas in 2022. Nearly 76% of the value of the Kansas oil and gas industry came from oil production and 24% came from natural gas production.

The Kansas oil and gas industry directly employs an average of 13,800 people paid $940 million per year - an average salary of nearly $60,000 per year. In areas where oil and gas are found, the industry represents a quarter of the jobs in some counties and 60%-70% of the property tax. Add in every Kansas job touched by the oil and gas industry, and the number of employees swell to 118,000, payroll to $3 billion and taxes to $1.4 billion.



Oil and gas activity in Kansas during 2022 was robust. The industry saw 41-60 drilling rigs running each month. According to *IHS Markit* report, the number of oil and gas drilling permits issued in Kansas was second only to Texas in 2022.



Fallout from COVID-19 and concurrent crude oil supply shock in 2020 - 2021 slowed Kansas oil and gas activity dramatically. Nearly 5,000 wells were shut-down in Kansas in 2020 resulting in oil production dropping by 12.4% and natural gas production dropping by 10.8%. In 2020, Kansas experienced **over $810 million in lost oil output**.

Kansas producers worked in 2022 to optimize supply chain relationships, improve operational efficiencies, and refocus capex on the most resilient short-cycle projects.

As market conditions improved in 2022, oil and gas exploration/production activity increased throughout the year. As a result, Kansas crude oil production increased by 1.9% in 2022 and natural gas production declined by only 3%.

Kansas producers have reduced development costs by $10.23/bbl over the last five years. For Kansas producers, improved productivity and efficiency is less about improved technology and more about better application of existing technology.

Kansas oil and gas operating costs are 16%-20% lower than the average of the past 5 years. These operating efficiencies have led to an overall decrease in cost per barrel of oil equivalent produced. The unit cost concept does not, however, factor in the market value of oil and gas produced from these wells, which is important for calculating net present value of profit or loss.

The oil and gas industry has lived through several ugly downturns before, and we know that patience, persistence, insight, and innovation payoff. We move forward together in 2023 to focus on value reconstruction and prepare for brighter days ahead.

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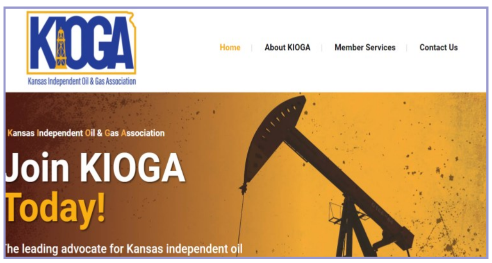

The challenges facing the oil and gas industry have grown both in number and complexity. KIOGA continues to leverage our core competencies, namely intellectual capital, volunteerism, and leadership. These competencies set KIOGA apart from other oil and gas advocacy groups and makes us the lead state and national advocate for the Kansas oil and gas industry. Because of the efforts of KIOGA members, voters and policymakers in Kansas are learning that the oil and gas industry is working for them, the economy, and the environment.

Kansas Independent Oil & Gas Association

Founded in 1937, the Kansas Independent Oil & Gas Association (KIOGA) is a non-profit member organization representing oil and gas producers in Kansas, as well as allied service/supply companies. The purpose of KIOGA is to serve as an advocate to promote the exploration, development, and production of oil and natural gas in Kansas at all local, state, and federal levels through non-partisan, common-sense solutions to challenges facing the oil and gas industry.

Through rigorous engagement at the state and federal level, KIOGA works to create a more stable and predictable political and regulatory environment for our members. KIOGA is committed to being a positive, credible, and proactive voice for industry, promoting respectful dialogue and education to advance oil and gas interests at the state and federal level.

KIOGA's vision is simple - to promote the development of Kansas's oil and natural gas resources for the betterment of society. We believe in seeking common ground, through common sense solutions, to the challenges facing the Kansas oil and gas industry. Our non-partisan approach provides a uniquely powerful voice for our members at the state and national level.

Today, KIOGA is nearly 3,000 members strong - making KIOGA the lead state and national advocate for the Kansas oil and gas industry. Please feel free to contact KIOGA with any questions or comments at 800 SW Jackson Street, Suite 1400, Topeka, Kansas 66612, phone 785-232-7772, or visit our website at www.kioga.org.