



Kansas Independent Oil & Gas Association

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State of the Oil & Gas Industry

Dynamic Challenges Facing Kansas Oil & Natural gas Industry

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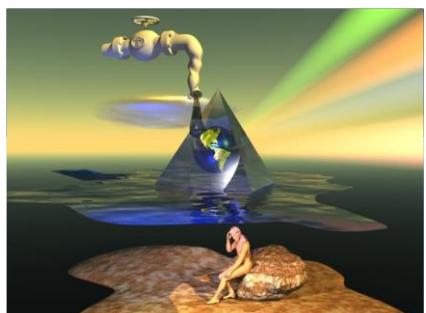
While the U.S. and Kansas economies continue to recover from the worst of the coronavirus, significant concerns exist including high inflation, volatility in energy markets, U.S. trade and foreign policies, and more. Inflation is a staggering 14% over the last two years and real wages have fallen 4% and the stock market is down 16%. Most destructive for the economy has been the historic federal spending spree. Over the last two years, the federal government has added \$4.8 trillion in new spending which the Federal Reserve said was the main inflation contributor.

The cost to heat a home, drive to work, and run a business have increased exponentially over the last two years. Currently, a record 20 million Americans are behind on their utilities and one in six families will receive a disconnect notice from a provider this year. We now beg foreign dictators for oil while domestic production has still not returned to its 2019 level, despite oil prices being much higher. In two short years, we have gone from American energy dominance to American energy despair. The American people are suffering and they expect a new course in 2023.



The Kansas Independent Oil & Gas Association (KIOGA) represents thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that are significantly affected by crude oil prices. In Kansas, small independent producers account for 92% of the oil and 63% of the natural gas produced. The oil and natural gas industry is an important part of the livelihoods of Kansans throughout the state. Nationally, independent producers drill about 90% of American oil and natural gas wells; produce about 54% of American oil, and more than 85% of American natural gas. With nearly 3,000 members, KIOGA is the lead state and national advocate for the Kansas oil and natural gas industry.

Global Crude Oil Supply/Demand Dynamics



Global oil prices retreated in late 2022 as the outlook for energy consumption deteriorated. Analysts project energy consumption declines with the onset of a business cycle slowdown or recession. Oil markets six-month calendar spread swung into contango from a backwardation.

The explosive cyclical upswing in both the economy and oil that began after the first wave of the coronavirus and lockdowns in the second quarter of 2020 (2Q20) peaked in the 2Q22. Since then, most indicators have pointed to decelerating economic growth and oil consumption, with outright declines in some regions.

The United Kingdom and European Union have experienced the most severe slowdown, entering a recession as a result of Russia's invasion of Ukraine, sanctions, and their reliance on expensive alternative energy sources and energy imports. China has experienced a sharp slowdown and is likely in recession as a result of the cycle of city-level lockdowns imposed to control the spread of coronavirus. The U.S. has experienced the mildest deceleration, concentrated in consumer spending, manufacturing, and freight transportation. The result has been slower petroleum consumption growth.

Global oil and energy consumption have been falling since 3Q22 under the impact of exceptionally high prices and a slowing economy. But the impact was initially masked by concerns about planned introduction of the price cap on Russia's crude and refined products exports.

Analysts anticipated Russia's response to the price cap would be to cut production by more than the economic slowdown cut consumption. Fears about the impact kept prices elevated, and even increased them from late September through October 2022, despite the increasingly poor outlook for the economy.

The underlying deterioration in consumption was unmasked, leading to sharp drop in prices consistent with past downturns in the global business cycle.

The slump in oil prices in late 2022 shares some characteristics with the slump that occurred in 3Q14. In 2014, the deteriorating consumption environment was also masked by the threat to production from civil war in Libya and the rapid advance of Islamist fighters towards the oilfields of northern Iraq. Once those threats began to erode in July 2014, oil prices fell rapidly. The slide in prices turned into a slump when Saudi Arabia, Russia, and U.S. declined to cut production a fought a volume war for market share.

Federal policies and regulations restricting U.S. production means that a volume war for market share is less likely to be fought in 2023, so prices are unlikely to fall as far this time around.

The energy outlook for 2023 remains subject to heightened levels of uncertainty. 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 in 2021 and \$84.96 in 2022. Despite a 20% drop in crude oil prices in late 2022 when Kansas crude oil prices dropped to \$61.25, the Energy Information Administration (EIA) projects falling global inventories of oil early in 2023 will push crude oil prices back up above \$75/bbl. by the beginning of 2Q23. Although some downward oil price pressure could emerge in 2H23 based on rising oil inventories, that pressure will likely be balanced by the ongoing possibility of supply disruptions or production growth that is slower than expected. EIA projects Kansas crude oil price will average \$77/bbl. in 2023. Volatile crude oil prices have a significant impact on the small businesses that make up the Kansas oil and natural gas industry.

Long-Term Oil Forecasts – The prevailing view that the energy transition is a linear trajectory from oil and other fossil fuels to renewables is misleading and potentially dangerous to a world that will continue to be thirsty for all energy sources.

To place expected future energy demand in some context, the OPEC's 2022 World Energy Outlook sees the need to annually add on average 2.7 million barrels of oil equivalent a day (mmboe/d) in the period to 2045. This requires huge investments.

Moreover, the oil industry will need to add 5 million barrels of oil a day (mb/d) every year to just maintain current production at around 100 mb/d, given an average annual industry decline rate of around 5%.

The overall investment number for the oil sector is \$12.1 trillion out to 2045. However, chronic underinvestment into the global oil industry in recent years, due to industry downturns, the COVID-19 pandemic, as well as flawed policies centered on ending financing in fossil fuel projects, is a major cause of concern.

From 2021 to 2045 total world energy demand is expected to increase from 286 mboe/d to 351 mboe/d, up 65 mboe/d or 23%. Population and energy demand grow together as has always been the case.

The driver of global energy demand is non-OECD (Organization for Economic Cooperation and Development) nations, increasing by almost 69 mboe/d. India alone accounts for 28% of this rise. OECD energy consumption will decline by 3.6 mboe/d over the period.

The biggest factor is population growth. From 2021 to 2045 the world will gain 1.6 billion people, growing from 7.9 billion to 9.5 billion. Only 51 million will live in OECD countries. The Middle East and Africa will grow by 747 million, India 238 million, OPEC nations 244 million, and “other Asia” 290 million. China’s population is expected to decline steadily from 1.426 billion in 2021 to 1,350 billion in 2045.

Rising populations drive economic growth. The OECD’s GDP growth rate to 2045 is expected to be only 1.7% annually. The non-OECD world will be twice that at 3.8%. The leaders will be India at 6.1%, Middle East and Africa 3.9%, China 3.8%, “other Asia” 3.6%, and OPEC nations 3.2%.

More people will need more fuel. Oil's share of total energy will only decline from 30.9% to 28.6%. Coal will fall further, from 26.1% to 16.6%. Natural gas will rise, as will nuclear, hydro, and biomass. The biggest growth area will be renewables, which will grow from 2.6% in 2021 in 10.9% in 2045.

If you're in the oil business today, you will still be in 2045 – governments permitting. OPEC's required "liquids supply" will rise from 95.2 mboe/d in 2021 to 109.8 mboe/d in 2045, a gain of 14.6 mboe/d. This explains the large investment requirements as reported above. OECD's share of oil and liquids production will rise by only 0.3 mboe/d, non-OECD by 2.8 mboe/d, and OPEC will supply the rest by increasing output by 10.7 mboe/d. Production from the Americas will stay flat, with the U.S. down by 0.5 mboe/d.

The International Energy Agency (IEA) also makes energy projections. However, the IEA is a politicized group funded by OECD countries and does what it is told by its political masters. The IEA intertwines energy and climate change, and how the former must be manipulated to impact the latter. IEA's energy forecasts are based on "aspirational" public policy announcements of the governments of the countries that fund it. OPEC's forecasts are based on demographics, economics, and long-range supply/demand forecasts. The IEA changes its forecasts when its sponsoring countries changes their positions.

Despite the aspirational policies attempting to define a transition away from fossil fuels, actions speak louder than words. Countries are showing every day that they are more interested in affordable energy than in paying a green premium. That's proving particularly true in light of the energy-price crisis, whether considering China's interest in buying Russian oil, or climate warrior Germany's decision to hold onto coal.

Believe what you see, and what is actually happening in the marketplace, not what you hear. Germany and California show that alternative energy is really just supplemental energy.

Natural Gas – A slow rebound in natural gas production is expected in 2023, about 2% more than in 2022. Natural gas is one of the preferred sources of energy in this country not only for electricity and factories but mainly as a heating source for people's homes. Over 50% of U.S. homes are heated by natural gas and even those that use electric heat pay for natural gas price increases through the backdoor as 38% of total U.S. natural gas consumption goes into providing electricity.

Increased onshore natural gas production was a historic game-changer as we went from a country that couldn't produce enough to meet our own needs to the biggest producer in the world. Our increased production of natural gas also dramatically lowered our greenhouse gas emissions as the U.S. was able to replace coal plants with much cleaner-burning natural gas.

U.S. natural gas production grew by 10 billion cubic feet per day (Bcf/d) in 2018, an 11% increase from 2017. The growth was the largest annual increase in production on record. But the anti-drilling campaign by the Biden administration created a situation where U.S. production became stagnant as opposed to growing. Natural gas production fell to 91.7 billion cubic feet in 2021. As a result, natural gas future prices rose 94% since over the last two years. That is the biggest surge in natural gas prices going back to the year 2000.

That pullback in U.S. natural gas output has exasperated a global shortfall of natural gas that is driving prices to record highs in Europe and Asia. Wind Power generation has also underperformed and that is forcing those countries to switch fuel use to coal.

Crude Oil Market Structure

The crude oil market is a global oligopolistic market mostly influenced by the OPEC cartel. The OPEC+ cartel is made up of 20+ oil producing nations. The OPEC cartel control about 1/3 of the world's oil supplies and collude to control global crude oil prices. The U.S. is the largest oil producing nation in the world. Kansas oil and gas producers are perfect competitors in an oligopolistic market. That is to say, we are price takers, not price makers.

Kansas oil and gas producers have no control of crude oil prices but can only manage their internal costs. For Kansas oil and gas producers, optimizing internal operating efficiencies is paramount in order to hedge against volatile crude oil price swings.

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.

Low-cost oil producers across the U.S. establish a fair price for oil based on how low they can get production costs. Kansas oil and gas production will likely remain a conventional, small business operation that will be tweaked with technology. The bottom-line is the low-cost producer will stay in business.

Kansas Oil & Gas Summary



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.

Economic Impact – 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. In 2020, Kansas experienced over \$810 million in lost oil output.

Kansas producers worked in 2021-2022 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% and natural gas production declined by only 3%.

The Kansas oil and gas industry produced over 28 million barrels of oil and nearly 150 billion cubic feet of natural gas in 2022. Nearly 76% of the value of the Kansas oil and natural gas industry comes from oil production and 24% comes from natural gas production. The industry saw 41-60 drilling rigs running each month during 2022. The KCC reports over 1,700 drilling permits were issued in 2022 (up 35% from 2021). While the average oil well in Kansas produces 2 BOPD and the average natural gas well produces 23 Mcf per day, the industry supports more than 100,000 jobs, \$3 billion in family income, and pay \$1.4 billion and state and local taxes.

Oil production in Kansas during calendar year (CY) 2020 was about 29.1 million barrels (79,630 bbls/day). In CY 2021 Kansas oil production was 27.9 million barrels (76,186 bbls/day). In CY 2022 Kansas oil production was about 28.33 million barrels (77,624 bbls/day) – up about 1.9% from CY 2021. Hopefully, production will continue to improve in 2023, but it will be some time before we get back to the 90,000 - 100,000 barrels per day level.

Kansas oil production fell by about 43% from 2014 to 2022. After the oil price collapse of 2014 and 2015, the market began to balance and oil prices stabilized in 2018 and 2019. As a result, Kansas oil production began to slowly stabilize at a lower level. Oil production in Kansas rose by 1.9% in 2022 after falling 4.3% in 2021 after falling 12.5% in 2020, 4.4% in 2019, 3.1% in 2018, 5.6% in 2017, and 16.6% in 2016.

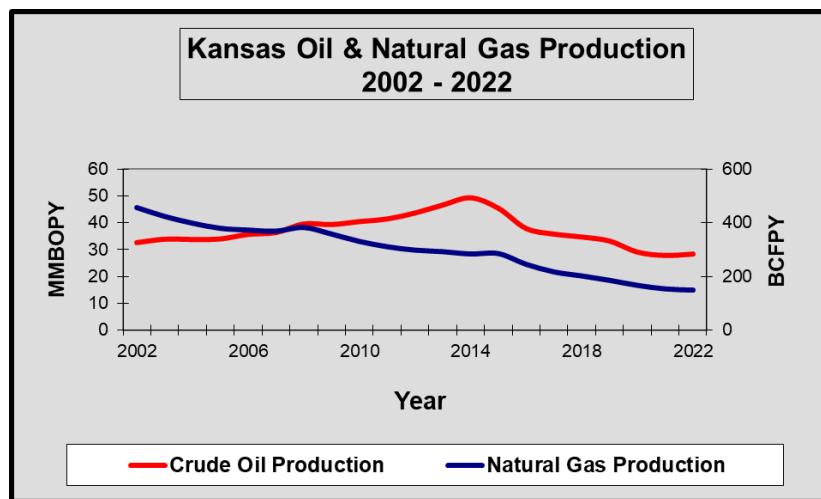


Figure 1

Figure 1 illustrates the trend in Kansas oil and natural gas production over the last 20 years.

As the economy began recovering and market conditions improved in 2022, oil and gas exploration/production activity increased. As a result, tax collections to the State of Kansas and Kansas counties increased in CY 2022. Kansas collected 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 over 53% below CY 2014 ad valorem tax collections.

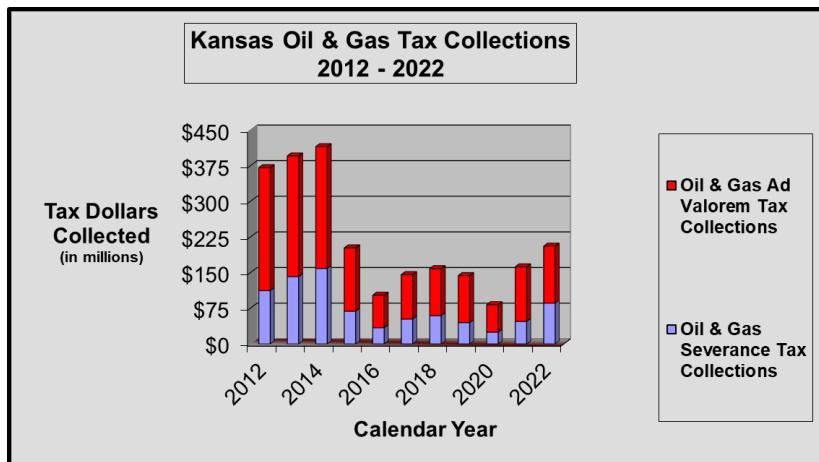


Figure 2

Figure 2 illustrates oil/gas severance and property tax collections trends.

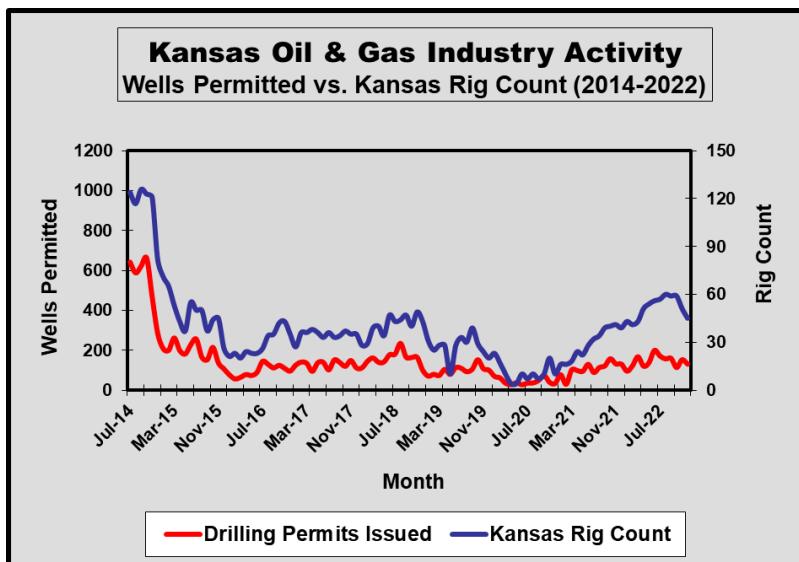


Figure 3

Figure 3 illustrates oil and gas activity in Kansas from 2014-2022. The industry experienced a 56% drop in drilling rig count and a 76% drop in drilling permits issued in the 2014-2022 period.

What are Kansas oil & gas companies doing?

The Kansas oil and gas industry displayed a lot of discipline in 2022 after learning some tough lessons from experiences with market volatilities/disruptions in the past - from the mid-1980s and late 1990s to the more recent 2014-2016 and 2020-2021 downturns.

Many Kansas companies are refocusing capex to strategize their way out of the current downturn. Companies are working to optimize operating cost structures to achieve more efficiency gains and became more specialized regarding their core producing assets. Kansas producers are focusing on the most resilient short-cycle projects and concentrating on their core competencies and smaller producer advantages. Many oil and gas producers across Kansas are working to optimize supply chain relationships, improve operational efficiencies, reduce and refocus capex, and examine acquisition and divestiture opportunities. Operators are high-grading and drilling only the best prospects. In many cases, improved productivity is less about improved technology and more about better application of existing technology.

Expenditures for exploration and development constitute most of a company's upstream capital investment. When calculated on a reserve addition per barrel basis, these expenditures represent the cost of finding and developing a barrel of oil. Studies have indicated finding and development costs declined by \$10.23 per barrel since 2014.

Efficiency gains achieved by Kansas oil and gas producers over the years have proven to be very important for reducing break-even prices. Many Kansas operators have reduced breakeven points to about \$25-\$30 per barrel. Kansas operators in general adhere to cash flow neutrality.

Once demand and prices return to normal, several things should be considered to help the Kansas oil and gas industry, none of them involving bailouts.

We need to find solutions to high Kansas electric rates - which hurt not just the oil industry, but general economic development as well.

Kansas rates are the highest in our region. Kansas consumers spent more than \$775 million more on electricity than just 10 years ago.

With electric costs that are 30-50% of expenses, oil wells in rural Kansas could run for many years longer with more competitive electricity prices. Who will be left to absorb the high fixed costs that burden rates? Oklahoma rates can be more than 50% less than in Kansas.



Labor is a critical issue for the Kansas oil and gas industry. The oil and gas industry was shielded from pressure to innovate by high oil prices in 2011-2013. When prices fell in 2014-2017 and again in 2020 companies were forced to innovate. Many companies embraced new technologies and automation to manage complex systems and data analytics (do work better, cheaper, and with less people). These changes made companies more efficient, but it also transformed labor needs in the O&G industry. The process was disruptive for workers (those who lose work due to automation are seldom the same folks in newly created jobs.)

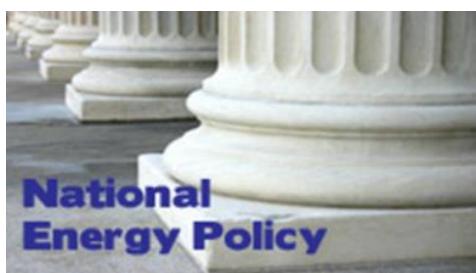
Renewable energy sources like wind need to be carefully considered going forward. The state has adequate renewable energy generation, and careful study is required before allowing more subsidies. Methane and carbon dioxide emissions are significantly down in the U.S. even as oil and gas production has dramatically increased. We must resist unduly penalizing and regulating the fossil fuel industry for political expedience.

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

Other Key Challenges

The oil and gas industry continues to address many challenges including energy policy, carbon tax, emissions, ESG, prices, and more.

Energy Policy – One area where Republicans and Democrats are expected to work to find a compromise is in the area of energy policy. During times of economic recession and recovery, the public's priorities revolve around improving the economy. This extends to energy legislation.



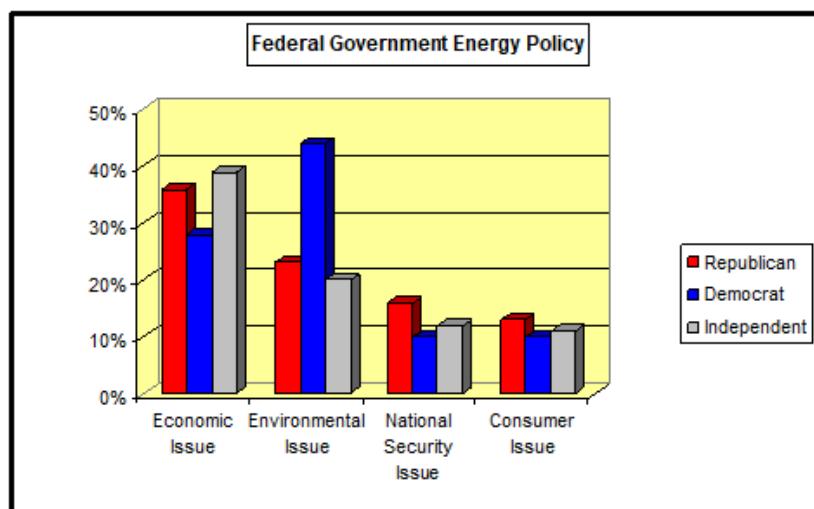
According to several recent public opinion reports, the public supports moving to renewable energy, but is concerned about the impact to the lives and finances of the American consumer. The U.S. public wants Congress to provide energy legislation that will help bolster the economy, protect the environment, and require very minimal personal sacrifice by the consumer.

There is also large support from both Republicans and Democrats to continue the development of alternative fuels in order to become less dependent on fossil fuel sources. However, while the end goal is the same, the approach to the transition to renewable fuel sources differs. The difference is the time frame in which renewable fuels can meet the demand and replace the economic benefits fossil fuel sources currently provide.

While not all segments of the population are ready for a transition to renewable fuels to begin, it is clearly an expectation for the future. We can expect the 118th Congress to propose energy initiatives that not only promote renewable energy but protect the economic benefits currently provided by fossil fuel industries.

The public primarily sees energy policy as an economic issue (33%) or environmental issue (32%), with some individuals identifying energy policy as a national security issue (13%) or a consumer issue (11%). Men and Republicans primarily view energy policy as an economic issue. This is in stark contrast to individuals who view energy policy primarily through an environmental perspective. Democrats are far more likely to view energy policy as an environmental issue (44%) compared to Republicans (23%). Not surprisingly, those who are more environmentally conscious also view energy policy as an environmental issue. Also, individuals with an annual household income of over \$100,000, women, and college graduates are more likely to associate energy policy as an environmental issue.

The energy policy challenge for the 118th Congress will be to mediate these two opposing viewpoints to create policy that is beneficial to the economy and the environment.



The federal government has a variety of issues to address, and for some energy policy is not a top priority in comparison to inflation, healthcare, reducing the deficit, improving education, and ensuring national security. However, for many, energy policy is a top priority issue that needs to be addressed.

The public is divided as to whether U.S. energy policy is an economic or environmental issue. Essentially, the public wants a strong economy while improving environmental standards. We can expect Congress to try to achieve this outcome.

Public opinion on a couple of key issues affecting the small independent oil and gas producer is intriguing. There is moderate support for eliminating the tax provisions critical for the small independent oil and natural gas producer (percentage depletion, intangible drilling costs, etc.). Republicans have traditionally been the base of support for fossil fuel industries such as oil, natural gas, and coal, while Democrats are more likely to support eliminating these tax provisions. There appears to be a strong element of opposition in the Republican Party to eliminating these tax provisions.

The general public is supportive of policy initiatives that expand renewable energy sources, but they are not as supportive of penalizing the oil and natural gas industry. Less than half of the general public supports a tax on carbon emissions. While Democrats are largely supportive of taxing carbon emissions, Republicans are likely to oppose such initiatives. The public seems far more supportive of incentivizing companies to pursue renewable fuel sources rather than penalizing industries.

Many folks across the nation are not financially secure enough to deal with rising energy costs and unwilling to make significant changes to their lifestyle. Republicans and Democrats will need to work together to improve energy policy. This will be difficult due to the competing interests of industries and environmental organizations. Environmental organizations want policy that utilizes the highest environmental standards and industry wants policy that has minimal impact to the economy. If energy legislation does not serve the best interest of the public, it offers no incentive for the public to make significant changes in their lifestyle.

Is energy policy that creates a compromise of all interested parties and public expectations better than no energy policy at all? That is a question the 118th Congress may have to answer. One thing is certain. The public places high priority on energy policy and will continue to be dissatisfied with the direction of energy policy unless progress is made.

Just a few years ago, no one would have imagined the U.S. could increase production of oil and natural gas while cutting greenhouse gas emissions, which are now near 25-year lows. The oil and gas industry has proven that over the long-term, it is possible lead in energy production and environmental stewardship.

By focusing on more efficient use of energy, it is possible to lower emissions without imposing a carbon tax or even more environmental restrictions. Energy policy that values innovation over regulation can turn energy policy challenges into great opportunities for economic growth and energy security. This approach is not just good business, it's good stewardship and a much better strategy for improving the quality of life for all.

Energy prices affect all corners of the economy, and keeping up with demand is essential for maintaining a high standard of living. Thankfully, that doesn't require abandoning efforts to protect the environment, because newer technology is cleaner technology. The key is to avoid placing unnecessary political or legal obstacles in the way of innovation and expansion.

Energy Matters – A Lot – In the last 200 years, global life expectancy has doubled. Extreme poverty has dropped from 90% of humanity to 10% and falling. The growth in human liberty and the dramatic increase in available energy are likely the two main catalysts for this tremendous progress.

Few doubt that energy has improved lives and enabled human progress. Yet one of the biggest challenges facing the world is the polarized debate over the future of energy. Facts and economics are too often replaced with assertions and emotions. Discussions about fossil fuels and alternative energy sources often degenerate into a battle to delegitimize the other side. This is a recipe for inaction. And it keeps billions of people trapped in energy poverty. Almost 40% of humanity, or three billion people, have access to only rudimentary forms of energy and a very low standard living. The world expects and deserves better.

We should avoid energy policies driven by a zero-sum philosophy for energy that says we must have less fossil fuel so we can have more of something else. History has shown that short-sighted energy plans often fail because they start with a preferred resource and work backwards.

According to the U.S. EPA and U.S. EIA, the U.S. decreased energy related CO₂ emissions in 2019 more than any other country. America leads the world in environmental quality.

It doesn't make sense to place unnecessary political and legal obstacles in the way of responsible American oil and natural gas production, cancel oil pipelines, discourage investment in fossil fuels, stimulate demand through outlandish spending, and then beg OPEC+ (where oil is produced under much less-strict environmental standards) for more oil to contain inflation.

The oil and gas industry has done such a good job of creating abundant, affordable, always-available energy that the world takes it for granted. Energy is so woven into our daily lives that few question whether it will be there, or where it comes from. Because energy is so reliable and available, the public believes they no longer require it.

We often encounter this paradox anytime we engage in a conversation about energy and the environment. Some folks assume that we don't need fossil fuels anymore. A stark example is anyone who wants to end oil and gas production while still benefitting from oil and gas based materials and fuels.

Economic prosperity allows countries to invest in new technologies and policies that improve not only environmental health but also the well-being of the people. Thus, if we want to continue to improve our relationship with the environment and human progress, we should be more supportive of economic growth and the entrepreneurship that drives it. We should all work together to ensure more people have access to safe, affordable, and reliable energy, no matter which state, nation, or continent they reside.

This is what happens when political orthodoxy drives energy policy - We are witnessing dramatic changes in our energy landscape and economy. Such developments have a profound impact on the independent oil and natural gas industry and underscore our need to stay ever-vigilant in defense of our industry.

Due to political agendas targeting oil and natural gas production, federal and state debate over taxes, regulatory issues, and energy policy often puts the oil and gas industry in the crosshairs. Also, groups of activists across the nation continue to work to obstruct responsible energy development under a false belief that oil and gas production and use are incompatible with environmental progress. Mischaracterizing oil and gas activity has been and continues to be a common practice and strategy for these groups.



President Biden and his supporters continue to look for every opportunity to attack, weaken, and destroy domestic oil and natural gas production including carbon and/or methane tax proposals, unilaterally increasing federal regulation of oil and natural gas production, and proposing to eliminate critical oil and gas cost recovery tax provisions. The Biden administration's actions are making it harder for our economy to recover and damaging our nation's future energy security.

That's not only bad politics; it's bad policy and an unnecessary drag on the economy. This is an example of what happens when political orthodoxy drives energy policy and highlights the need to get our nation's energy policy right. When we hear calls for higher taxes or greater regulatory burdens on U.S. businesses without any basis in science, we see a political agenda at work – all at the expense of American consumers.

Increasing taxes and regulations results in fewer jobs because businesses spend their resources on tax burdens and regulatory compliance instead of job creation. When tax expenditures and regulatory costs increase more than the real economy, the results are destructive to economic growth. The wrong governmental policy framework generates wrong policy and this is what we have been seeing in Washington. We need a change in basic policy.

The oil and natural gas industry can be part of the solution to our nation's energy policy challenges. Entrepreneurs in the private sector and smart, state-led policies have created and will continue to drive American energy leadership.

Before the pandemic, the U.S. had become the world's largest oil producer. America had reduced the strategic leverage of foreign producers such as Russia's Vladimir Putin. But since taking office, the Biden Administration has cancelled North America oil pipeline projects; cancelled oil leasing in Alaska; suspended oil leases on federal land (even after a court ruled the moratorium illegal); and invoked the Endangered Species Act as part of a strategy to reduce drilling.

It doesn't make sense to place unnecessary political and legal obstacles in the way of responsible American oil and natural gas production, cancel oil pipelines, discourage investment in fossil fuels, stimulate demand through outlandish spending, and then beg OPEC+ for more oil to contain inflation.

Inexpensive energy is necessary for economic advancement by the world's poor and for recovery from the staggering economic effects of COVID-19. Ideological opposition to fossil fuels is an anti-human stance that views ordinary people not as problem-solving sources of ingenuity but as only mouths to feed, producing environmental damage.

The U.S. has a unique opportunity to show the world how energy can be used as a positive force to lift people up, which is different than a philosophy of embracing a zero-emissions world. We should work to ensure more people have access to safe, affordable, and reliable energy. Because to rise out of poverty and enjoy health and safety, people need more energy, not less.

American energy policy is not a Republican issue or a Democrat issue. It is an American prosperity and leadership issue. The American people want, expect, and deserve elected leaders who will place what's best for our nation's economy and energy future above partisan ideology and political posturing. The American people need and want moral, intellectual, and strategic clarity and courage from our policymakers at both the state and federal levels.

Policymakers at all levels should pursue energy policies that drive economic growth, lower costs for consumers, protect the environment, increase American competitiveness, and use our considerable resources as a way to lift people up.

American Energy = American's safety, energy security, and prosperity - American domestic energy sources, like oil and natural gas, creates jobs and ensures more affordable energy for American families and businesses. But, that's not all it does. It also keeps us safe. Which is why it is concerning when we increasingly see energy policies that put our energy independence and our safety on the line.

For example, renewable energy and electric vehicles are dependent on rare earth metals, and China already has at least 85% of the world's capacity to process those metals—by using forced labor and leaving behind devastating pollution. And now, as the U.S. hastily pulled out of Afghanistan and the Taliban restored their reign of terror, China is waiting patiently in the wings to turn this chaos and tragedy into opportunity.

Afghanistan happens to sit on one of the largest deposits of rare earth metals, valued around a trillion dollars. China wants to gain access to these resources to maintain their control over the renewable energy supply chain. China cozied up to Taliban leadership in July 2021, in anticipation of the recent power shift. It just goes to show, China will stop at nothing to exert their influence over the rest of the world.

We can't let these extreme, short-sighted policies take us backward to the days of dependence on unfriendly nations and decades-long wars. From 2008 to 2018, the U.S. energy trade deficit was reduced by 87%. And, in recent years, we surpassed Russia and Saudi Arabia to become the world's top producer of oil and natural gas. We must protect these achievements, not squander them. Our American energy independence is not just about the price of a tank of gas—it is about keeping our families safe and our nation sound.

Wrong Policies at the Wrong Time - Debate continues across the country on our nation's energy future. The competing visions, however, are not just philosophical arguments. There are real differences between these two visions and their outcomes on our economy, on consumers, and on our way of life.

On one hand, we have the energy reality that the U.S. can lead the world in production of oil and natural gas and consumers enjoy almost unprecedented energy security. This pro-energy vision means energy from all sources, including oil and natural gas, generate economic growth and reduce carbon emissions.

On the other hand, extreme environmental activists work to obstruct energy development and infrastructure projects, reducing our energy options under a false belief that oil and natural gas production and use are incompatible with environmental progress. Their vision is one of constrained energy choices, with less certainty and reliability, less assurance on affordable power and higher energy costs.

In mid-August, President Biden signed the *Inflation Reduction Act* into law. The measure included punitive new taxes and regulatory red tape that undermines the oil and gas industry's ability to promote energy security for the American consumer.

While the *Inflation Reduction Act* would in some cases expand domestic oil and gas production, including provisions that help offshore energy production, the overall impact of the measure will harm the ability of America's oil and natural gas producers to successfully operate to their potential. In addition to a methane tax that singles out the oil and natural gas industry, the measure creates disincentives for oil and natural gas production at a time when our country needs more energy, not less. The *Inflation Reduction Act* adds costs and regulations to producers when the federal government should be taking actions to support increased American energy production.

According to an independent study from the Penn Wharton School Budget Model, the *Inflation Reduction Act* won't reduce inflation at all. This measure will exacerbate supply concerns at a time of high oil and gasoline prices. It will not bring greater stability nor help Americans with inflation.

Also, when the climate measures of the *Inflation Reduction Act* are evaluated under the UN's climate model, the temperature reduction attributable to the measure is 0.0009°F to 0.028°F in 2100. Why is there no discussion about how little \$369 billion will achieve?

Furthermore, we all heard President Biden tell American voters that there would be no tax increases for those earning less than \$400,000 under his leadership. Well, that is not correct. A study by the Joint Committee on Taxation is projecting taxes to go up for almost every tax bracket.

The *Inflation Reduction Act* is nothing more than a newer version of the Build Back Better blunder. This measure will increase taxes at a time when families and companies are recovering from post-Covid woes and rising inflation.

The bottom line is the *Inflation Reduction Act* is a deceptive and misleading measure flawed in numerous ways. Climate benefits from the Act are unnoticeable even by the year 2100 and the taxes will get passed along to families in their monthly energy bills and at the pumps.

The most pressing risks facing U.S. companies in the foreseeable future are unlikely to be those arising from climate change or an energy transition. Rather, the factors to watch are more apt to be inflation, rising energy costs, and national security threats. The Biden Administration is too focused on climate change to anticipate or deter these significant real threats.

President Biden and all federal and state policymakers should prioritize advancing American energy leadership with policies that encourage development of responsibly produced energy here at home. These policies should recognize the volatile world we live in and the long-term impacts of returning to the days of foreign energy dependency.

Green New Deal – President Biden's energy and environment plan reflects much of the Green New Deal (GND) introduced in 2019 by U.S. Representative Alexandria Ocasio-Cortez (D-NY) and includes an enormously damaging and historically large tax increase. The plan calls for setting a 100% clean-electricity standard by 2035 and investing \$2 trillion over four years on clean energy. The philosophies and ideas behind this textbook socialism are not just foolish. They're dangerous.

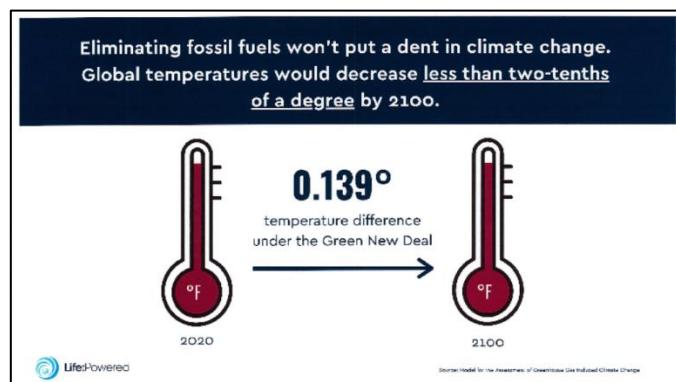


This is not the first time Biden has advanced an anti-energy agenda under the guise of climate change. Biden is promising to repeat the Obama-Biden legacy of failed energy policy, but this time he intends to spend more taxpayer money on what will likely be another failed enterprise.

Reality has a way of biting back if you're not paying attention to it. The Biden Administration's desire for extensive climate regulations will drive up the cost of energy. Higher energy costs disproportionately harm low-income groups. The Biden Administration's energy policy is out-of-touch with working people and the economy.

Facts debunk GND ideas. Many scientists, policymakers from both parties, and common sense have discredited the ideas proposed in the GND. Climate science conventional wisdom is flawed, relies on alarmist scenarios, and exaggerates economic impacts. The GND will fail for many reasons. One is that the people pushing it seem oblivious to the needs of low-income families, who would be directly hurt by the plan.

The whole idea behind the GND is to take fossil fuels away from the people. And the bureaucrats are nowhere near having a replacement for fossil fuels, nor will they ever be until they embrace nuclear energy. Sooner or later, the people will figure this out.



Regardless of the urgency, or lack thereof, of the climate issue, the GND is not something America can remotely afford to implement.

It is impossible for us to protect our environment without freedom and prosperity. Our environment will benefit the most when our government allows energy producers and consumers, not regulatory bureaucracies, to determine our energy future.

The choices policymakers make in 2023 and beyond will determine whether we build on America's energy progress or shift to foreign energy sources with lower environmental standards. You can't address the risks of climate change without America's oil and natural gas industry.

Carbon Tax – Taxing carbon to tackle climate change may sound like a good idea. However, a nationwide survey conducted in 2021 indicated Americans don't place high priority on climate change. When asked how much they are willing to pay to address climate change, the median response was consistently between \$25 and \$50 a year. Public support for climate action appears to be broad, but it is shallow. Addressing climate change enjoys widespread approval, until climate action comes with a tangible price tag.

All too often proposals to tax carbon have much more to do with raising revenue than helping our environment. However, taxing carbon only takes more resources from the private sector to support swelling state and federal government.

A recent study analyzed probable effects of a U.S. carbon tax that starts at \$20 per ton and then rises 4% per year, which is in line with recent proposals. The study suggests that such a tax would decrease household consumption, due to the increased cost of goods. The average household would have to pay 40% more for natural gas, 13% more for electricity, and more than 20 cents per gallon extra for gasoline. Costs would rise even more in subsequent years.

Price hikes like these can only mean lower standards of living and less opportunity. Families that spend a bigger portion of their household income on transportation, utilities and household goods are hurt, not helped, by carbon tax schemes that make traditional forms of energy more expensive.



Recently, some major integrated companies have supported a carbon tax. Clearly, this is just a ploy to stifle competition. Major integrated companies can pass along tax increases to consumers while small companies that are not integrated from production through end-product do not have the ability to pass along tax increases.

U.S. Doesn't Need a Carbon Tax – Even if the U.S. imposed some kind of carbon tax, it would not make a difference to global climate. In 2018, U.S. carbon emissions were around 5,100 billion metric tons from all sources, an almost 20% drop below emissions in 2007. While U.S. greenhouse gas emissions have been falling in recent years, world carbon emissions keep increasing by an average of more than 300 gigatons each year for the last decade, driven primarily by China's and India's increasing demand for energy. Together, these two countries now account for one-third of world carbon emissions. China and India are not going to impose a carbon tax on themselves. Doing so would increase their energy costs and reduce their economic growth. Neither will Russia, nor countries in the Middle East, nor developing nations whose primary concern is improving the economic well-being of their citizens.

Methane Emissions Tax – Wrong Path to Manage Methane - The Biden Administration included a methane tax in their *Inflation Reduction Act* (IRA) passed in late 2022. The methane tax in the IRA is inappropriate and unworkable.

A methane tax is unnecessary in light of the regulations in place and anticipated. The fee would be difficult to implement, duplicative, punitive, and will be costly. This tax is inequitable, unworkable and the wrong path to manage methane. Here's why:

Reducing methane emissions is a top priority for the oil and natural gas industry. As a result of technology and efficiency measures, emissions relative to oil and natural gas production were down nearly 70% between 2011 and 2019 and are expected to continue to trend downward. The U.S. EPA already directly regulates methane emissions from the oil and natural gas sector, and the EPA is planning additional regulations.

The tax is based on ambient methane emissions measurements. The measurements would have to distinguish between oil and natural gas production, agricultural emissions – about a third of U.S. methane emissions – and landfill emissions – about a third of U.S. methane emissions. And the measurements would have to be continuous – 24 hours/day every day. No such system exists and cannot be created in the foreseeable future.

The tax only targets emissions from the oil and natural gas industry, ignoring methane emissions from other segments of the economy. Because oil and natural gas account for nearly 70% of energy consumption in the U.S., new fees could have a ripple effect across the U.S. economy at a time when inflation is already on the rise. This could reduce the number of jobs supported throughout the economy by 155,000, with the largest jobs impact concentrated in the services industries.

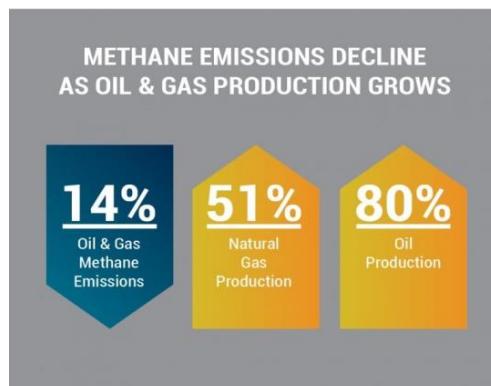
The increased product costs for natural gas created by the tax will reduce its demand as users shift to cheaper fuels, like coal.

Finally, industry segments would be taxed multiple times. For example, pipelines that cross multiple AAPG geological provinces would pay the tax multiple times. A natural gas pipeline beginning in western Kansas could pass through five geological provinces before reaching its market and would have to pay five different times.

Emissions – From 2005 through 2017, the U.S. has led the way by reducing our carbon emissions by 617 million metric tons. The second leading nation (United Kingdom) coming in far behind the U.S. at 163 million metric tons, less than one-third of what we have accomplished as a nation.

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.

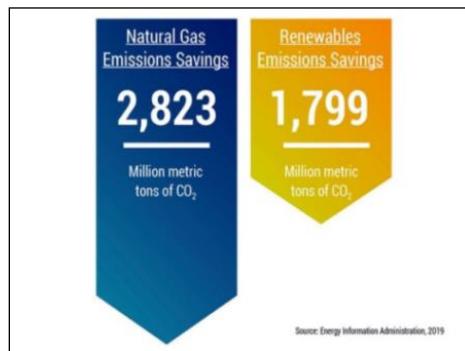
Further, scientific consensus is that the benefits of natural gas use continue to accrue. Fourteen different studies show that leakage rates from the industry range from .4% to 1.7%, well below the consensus average of 3.2% for natural gas to be an environmentally beneficial alternative.



Source: U.S. EPA, U.S. EIA 1990-2017

The fact is our nation's 21st century oil and gas market-driven success has helped our nation achieve significant emission reductions. The U.S. emitted 14% fewer energy-related carbon emissions in 2019 than 2005. As a result of technology and efficiency measures, emissions relative to oil and natural gas production were down nearly 70% between 2011 and 2019 and are expected to continue to trend downward.

Energy Information Administration (EIA) data (2019) show natural gas is responsible for 2.8 billion metric tons of carbon dioxide emission reductions since 2005. That represents 61% of overall power sector reductions during that time-frame and 57% more than reductions attributable to renewables.



The EIA reports U.S. carbon emissions are the lowest they have been in nearly seven decades. Even more interesting is the fact that U.S. carbon emissions dropped while emissions from energy consumption for the rest of world increased by 1.6%. The U.S. emitted 15.6 metric tons of CO₂ per person in 1950. After rising for decades, it has declined in recent years to 15.8 metric tons per person in 2017, the lowest measured levels in 67 years. European emissions rose 2.5% and Chinese emissions rose 1.6%. **America leads the world in environmental quality.**

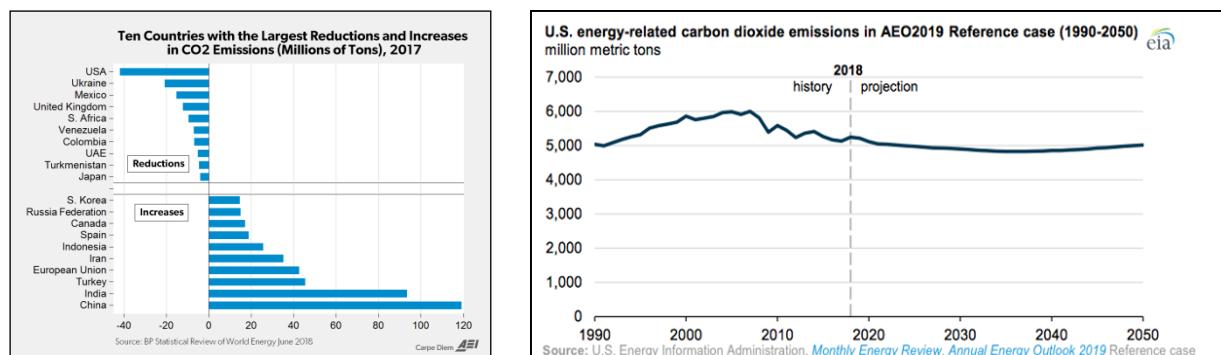


Figure 4 illustrates the significant decline in U.S. greenhouse gas emissions

The men and women of the oil and gas industry reject the stale mindset of last century's thinking peddled by some that oil/gas production and environmental stewardship are not compatible.

COP27 Climate Talks – The United Nations (UN) completed the COP27 climate talks in November 2022 in Egypt. Sadly, the highlights were more of the same old hysterical alarmism.

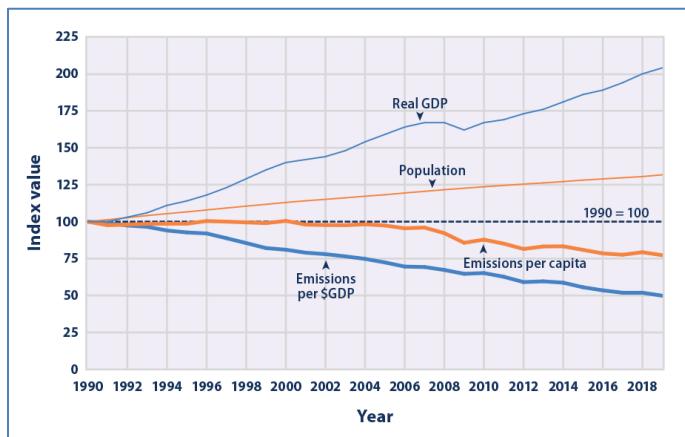
The COP27 climate carnival was expensive, energy-burning theater. One hundred eighteen private jets flew into the airport.

The 20,000 wealthy diplomats/financiers/activists who attended claim that the world's future is their priority, but their actions reveal a disdain for humanity that should undermine any ideas they propose. The main message was people should use less and do with less.



President Biden should have touted America's successes in reducing emissions. From 2005 to 2018, total U.S. energy-related CO₂ emissions fell 12% while global energy-related emissions increased nearly 24%. Since 2005, national greenhouse gas emissions fell by 10%, and power sector emissions by 27% — as the US economy grew by 25%. Biden should have compared that to China's announcement of 30 new coal-fired power plants and China being the world's biggest polluter. The president should have stood up for his people. Our people.

The truth of the climate summit and energy policy is that people don't want high energy costs or to be cold, and their governments have to respond – in China, in Europe, or in America the ramifications of high energy costs and cold citizens are politically dangerous whether they go to the ballot box or have revolutions.



A Puzzle of Contemporary Society – The climate of opinion surrounding climate change is a powerful social force. A puzzle of contemporary society is the broad acceptance by young people – Millenials and Generation Z. This climate of opinion acts independently of the facts and the science of climate change. It is nothing short of a calamity for Millenials and Gen Z, yet it is promoted to appeal to them. It grants them a halo of climate victimhood while hiding the truth from them. They are indeed victims. Their prospects are already blighted by the financial crisis and the accumulation of massive public debts, theirs is the generation that will bear the main burden of climate change policies. Decarbonization will greatly diminish already weakened economies. Millenials and their children won't benefit from climate policies; only those born in the second half of this century will begin to see any net benefits.

Hydraulic Fracturing

Some uninformed policymakers and environmental activists continue to call for a ban on hydraulic fracturing (HF).

Without HF, studies by IHS Global Insight indicate 50% of America's oil wells and 33% of America's natural gas wells would be closed. Domestic oil production would be slashed by 183,000 barrels per day and domestic natural gas production would be slashed by 245 billion cubic feet per day. By 2025, our nation's real GDP would be lowered by \$7.1 trillion, \$1.9 trillion in state and local tax revenue would be lost, \$3.7 trillion in household income would be lost and more than 19 million jobs would be lost, including 10,000-14,000 Kansas jobs.

A ban on HF would also damage America's standing in the world. We would surrender our status as a global energy superpower and weaken our national security as we become more reliant on foreign sources of energy.



ESG Reporting



Environmental, Social, and Governance (ESG) reporting is a dominant topic of industry discussions and market evaluation criteria. While this may seem daunting and arbitrary to some, many oil and gas operators, service companies, and individuals are navigating this new landscape to elevate the good already being done. ESG is not going away anytime soon.

Activists have increasingly set their sights on the financial sector and legal system, not Congress, for pushing their aggressive climate agenda. These activists want to use non-legislative ways to impose perceived climate costs and raise the price of energy. One of the ways they are doing it is under the guise of ESG.

Employing so-called ESG initiatives, some financial institutions and government agencies espouse policies prioritizing a focus on factors unrelated to a company's bottom line. ESG forces investors and company managers to view company operations through the eyes of a vocal set of stakeholders, for whom a company's climate reputation is of equal or greater importance than a company's financial performance.

ESG is nothing new for the oil and gas industry. Small independent oil and gas operators are good stewards of the land, value diverse and talented workforce, and put accountability first with every handshake or deal signed. KIOGA values the tools that allow for operators to tell their story of fueling the American economy with innovation and hard work but adamantly oppose tests and efforts designed to put an end to domestic oil and gas production.

KIOGA believes financial institutions should award financing based on an unbiased, non-political basis. Oil and gas companies are not asking for special treatment but are simply asking for financial institutions to be unbiased in their assessments.

Long-Term Value Creation (LVC) - Some companies have now embarked on an alternative to ESG with the Long-Term Value Creation (LVC) reporting. LVC seeks to increase shareholder value by engaging in long-term value creation including mutually-beneficial relationships with trading partners and communities, as well as high ethical standards. ESG says companies should serve "stakeholders" – an overly-broad term that includes committed enemies.

Prices

EIA Oil Price Forecast – The U.S. Energy Information Administration (EIA) Short-Term Energy Outlook (STEO) released in January 2023 expects U.S. crude oil production will increase by 0.47



million b/d in 2023 reaching 12.34 million b/d in 2023. During the 2022, crude oil prices rose steadily as a result of steady draws on global oil inventories. Kansas crude oil prices averaged \$84.96 in 2022. In 2023 the EIA expressed supply uncertainty from OPEC+, U.S. oil production, and other non-OPEC countries. EIA projects Kansas crude oil prices to average \$77/bbl. in 2023.

What can be done to preserve America's affordable, reliable energy?

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. Energy has been no exception. From 2008-2019, American families have seen the increased costs to fundamental needs.

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 residential, industrial, and commercial 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 United States.

Environmental policies needed going forward include:

- 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 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 on a global scale there are many countries where oil and natural gas provide a better option than their current sources and a more realistic one than overreliance on perceived clean energy sources.
- Technology within industry often moves faster than the regulatory systems within government. Providing regulatory agencies with tools for better deployment of more accurate and cost-effective technologies are important policy changes to consider.

Ultimately, three things can be done to preserve America's affordable, reliable energy.

1. Oppose extending/expanding subsidies that use tax dollars to prop up unreliable renewable energy companies, many of which can't make a profit without them.
2. Roll back burdensome regulations that tie the hands of America's responsible energy workers and give the upper hand to hostile, unstable, and polluting foreign countries.
3. Fight "energy discrimination" and politically motivated investing that denies financing to energy producers.

Fossil Fuels Will Continue to Dominate for Decades to Come

President Biden rejoined the Paris Climate Agreement and promised to set aside \$2 trillion for decarbonization. Reality creates two major problems. First is achieving the adoption of renewable energy at an incredibly unrealistic speed. The second is ensuring that the system we are transitioning to does what it needs to do. It is important to note that we do not currently have the technology needed to reduce carbon emissions to the levels set out in the Paris Climate Agreement.

Another obstacle is the inherent limitations of renewable energy sources. One of these is power density (amount of power per unit volume). The power density of an energy system running on fossil fuels is two or three orders of magnitude above that of a wind or hydro-generation system. Closely related to this concept is the element of spatial constraints.

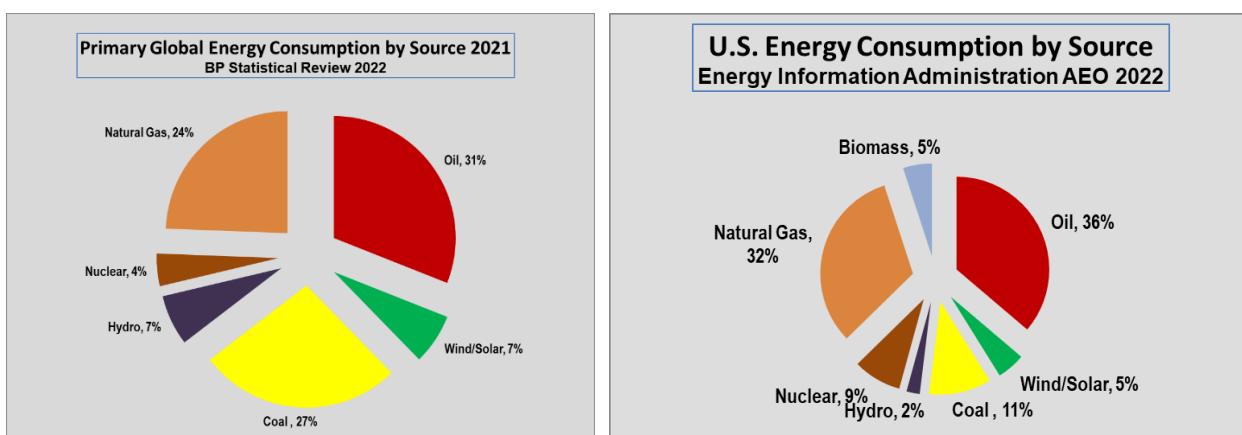
Renewable energy systems, due to their low power density, require vast swaths of land. An MIT study predicts 33,000 square miles of land would be required in order to power U.S. electricity demand with solar energy. The U.S. would have to dedicate 30%-50% of its landmass to solar and wind to satiate U.S. energy consumption with renewables.

While the ambitious pledges from various international bodies and governments would suggest the energy transition is near, the gap between theory and reality is vast. Fossil fuels supplied 82% of global energy needs in 2022. It will likely be decades before an energy transition can take place. The energy transition may have begun, but there is a very long way to go before fossil fuel dominance is truly challenged.

Primary energy consumption continues to grow worldwide. As a overall share of energy consumption, oil remained on top with 33% of all energy consumption. The remainder of global energy consumption came from coal (27%), natural gas (24%), hydropower (6%), renewables (5%), and nuclear power (4%). Cumulatively, fossil fuels still accounted for 82% of the world's primary energy consumption in 2022.

Renewable energy sources, led by wind and solar, are expected to grow briskly in the coming decades and could approach 11% of the global energy mix by 2045. Renewable energy remains too unreliable and expensive to be a primary energy source.

The U.S. Energy Information Administration (EIA) reports that oil and natural gas supplied 68% of U.S. energy in 2022. By 2045, the EIA estimates that oil and natural 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.



What will power the U.S. in the future? - The EIA estimates that 30 years from now fossil fuels will account for 69% of our country's energy consumption.

The 2022 World Energy Outlook projects that by 2045, 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 2050.

The end of oil and gas has been predicted on a regular basis since 1885, yet today, we use more of both than ever before and no end is in sight. Figure 5 shows global primary energy consumption by energy source projected to 2050. Oil consumption grew by 35% from 1990 to 2015 and is projected grow by 14% from 2015 to 2035. Similarly, natural gas grew 77% from 1990 to 2015 and is expected to grow 37% from 2015 to 2035.

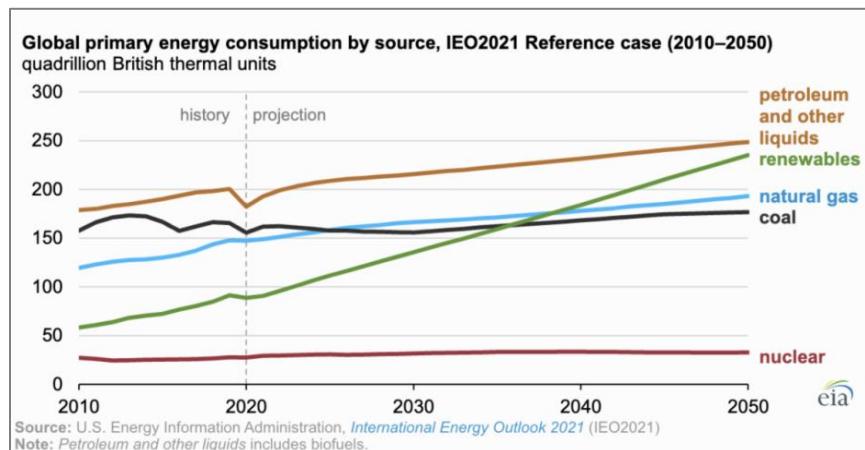


Figure 5

Fig 5 illustrates global primary energy consumption by energy source. By 2050, oil and gas are projected to supply roughly 50% of global energy needs. Source: [Energy Information Administration \(EIA\)](#)

When looking at energy policy it is important to know that our nation is the worldwide leader in energy production. With the right energy policy, we can now move forward and build upon our nation's new era of energy abundance, self-determination, and global energy leadership. We need tax policies that don't compromise our ability to grow the economy and create jobs. We need regulatory reforms that don't add unnecessary layers of compliance burdens on top of existing protections. We encourage everyone to listen to the facts when it comes to energy policy discussions and focus on what's important: American jobs, American energy security, and American global energy leadership.