Crude oil prices were relatively bearish in 2019. The ongoing U.S./China trade dispute curbed fuel demand and kept crude oil prices suppressed most of the year. Fear exists on both sides of the oil ledger with concerns about slowing demand and swelling supplies. Without some resolution to the trade wars, crude oil prices will likely remain bearish. However, the U.S. and China made progress in a trade deal in December 2019, supporting the outlook for fuel demand and slightly increasing crude oil prices in late 2019. Volatile crude oil prices have a significant impact on the small businesses that make up the Kansas oil and natural gas industry.

We can all be proud that Kansas ranked 3rd in a December 2019 national survey of attractive oil and gas investment states by the Fraser Institute. Texas was ranked first followed by Oklahoma, Kansas, and Wyoming. Alarmingly, Colorado was the least-attractive on the list finishing a dismal 20th out of 20. Colorado passed sweeping oil and gas drilling measures last year (2019) that imposed onerous and uncertain regulations on the oil and gas industry.

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 over 4,000 members, KIOGA is the lead state and national advocate for the Kansas oil and natural gas industry.
Crude Oil Market Dynamics

Crude Oil - Several energy economists and analysts have recently warned that prices in 2020 could reach highs near $100 dollars per barrel or lows ranging from $30 to $40 per barrel. In late 2007, oil price was approaching $80 per barrel and various experts projected that oil price in 2008 could reach as high as $120 or as low as $40. As it turned out the price not only reached $120, but went on to $145 on the futures market that July. By the end of 2008 it was in the low $30s.

Once again the market is fraught with uncertainty and it is certainly possible that in the next 12 months we could experience price fluctuations similar to those experienced in 2008.

Global petroleum inventory stocks summarize supply and demand. If stocks are rising then supply exceeds demand and if stocks are falling, it indicates consumption is higher than production. Current global petroleum stocks are a single indicator encapsulating the overall industry. The Organization of Petroleum and Exporting Countries (OPEC) has emphasized for years the need to keep global petroleum stocks at a running 5-year average.

Stocks were above the 5-year average from October 2014 through March 2018. In April 2018, stocks dropped below the 5-year average and remained below through September 2018. Beginning in October 2018, stocks again exceeded the 5-year average. In November 2019, stocks again fell below the 5-year average.

The U.S. economy expanded at a 2.3% pace in 2019 and is projected to grow 1.9% in 2020. This reduction in the growth rate (from 2.3% to 1.9%) has fueled fears of an economic slowdown in 2020. The threat of recession and slowdown in the world economy could significantly reduce oil demand. However, should the U.S. and global economy expand more than projected, crude oil demand would increase putting pressure on global crude oil stocks and upward pressure on prices.

One of the major factors influencing price is spare production capacity. Virtually all of the world’s spare capacity is concentrated in three OPEC countries: Saudi Arabia, Kuwait, and United Arab Emirates.

Even if production is adequate, there is an inverse relationship between spare capacity and price. There is plenty of potential for supply interruptions. The demand for oil is quite price inelastic and a supply shock would likely be met with higher prices.
**Crude Oil Market Timeline 2014-2019** - Crude oil prices fell 75% over 20 months beginning in 2014 before stabilizing in late 2017 and improving in 2018. Several drivers contributed to the fall. However, the most significant factor contributing to the severe drop in crude oil prices in 2015 and 2016 was the shock that OPEC created in the oil markets through their actions to regain market share at any cost. In response to a dramatic increase in U.S. oil production over the last decade, OPEC decided in November 2014 to dump low-cost oil into the global markets in an effort to drive down the price of oil and punish U.S. oil producers.

A steady contraction in production by U.S. producers and a corresponding slide in crude oil inventories fueled modest price rebounds in late 2016. Then on November 30, 2016, OPEC and Russia agreed to remove 1.8 million barrels of oil per day from global oil production.

OPEC’s output exceeded demand in the first half of 2017 explaining the lack of a sustainable price rally. Oil prices slumped in mid-2017 into a bear market on concern that production cuts implemented by OPEC and Russia since the start of 2017 were not deep enough to clear a global glut, while U.S. oil producers geared up to fill in any shortfall.

On November 28, 2017, OPEC and its partners agreed to persevere with their cuts until the end of 2018 with the proviso for adjusting in June 2018. The proviso to consider adjusting actions in June 2018 encouraged backwardation in the oil market.

It is to OPEC’s advantage to have the U.S. market in backwardation with the expectation of lower oil prices. If the U.S. market expects lower prices (backwardation), producers would expect lower revenues from wells in the future and delay drilling new wells. A U.S. market in contango makes it more attractive to U.S. producers while it does less for OPEC.

On June 22, 2018, sensing a tightening in the oil markets brought on by falling crude inventories, OPEC decided to modestly increase production by boosting output by 1 million barrels per day. OPEC said the production increase would dampen bullish expectations and the perception that the market was flipping from being supply-driven to demand-driven.

In June 2018, China began targeting U.S. energy in response to President Trump’s decision to place tariffs on $50 billion in Chinese goods. The Chinese proposed tariffs of 25% on U.S. energy commodities including oil and natural gas.

In August 2018, China abruptly changed course and removed oil from a list of American products it is subjecting to tariffs, as China acknowledged the limits on trade war losses it can absorb. China spared U.S. oil because it may struggle to get it elsewhere due to disruptions from other major suppliers.
In November 2018, the U.S. imposed sanctions on Iran taking Iranian oil off the market. However, the Trump administration granted waivers to Iran’s 8 biggest customers for six months. President Trump said he wanted the sanctions to go into effect slowly to guard against shocks to the oil market that might cause global price spikes.

In November 2018, builds in crude oil inventories pushed the crude oil markets into contango. However, the contango was not strong. The price spread between Brent and WTI rose because Brent is more sensitive to supply risks in the Middle East and the Iranian sanctions. However, as it became apparent that there were more exemptions, the spread weakened.

In December 2018, President Trump pressured OPEC and Saudi Arabia in particular, to maintain production levels and keep oil prices low. President Trump sees low oil prices as key to sustaining economic growth.

On December 7, 2018, OPEC and non-OPEC (Russia) countries agreed to reduce their output by 1.2 million barrels per day for six months to balance the global crude oil market. Saudi Arabia was concerned that Russia would not cut production as rapidly as other OPEC countries, as it is more difficult for Russia to cut production during the winter without damage to production capacity. Given that concern, Saudi Arabia dropped January 2019 production more than is necessary in order to balance the market. This resulted in a more rapid return of stock levels to the 5-year average. OPEC has learned that it takes much longer for U.S. production to fall 1.2 million barrels than their economies can endure. OPEC does not want to live through that hardship again.

Again in February 2019, President Trump called for OPEC to soften output cuts to lower the cost of crude oil. OPEC brushed off Trump’s request saying they were taking a very slow and measured approach to establish market stability.

This is a complicated issue for Kansas producers. Historically, high oil prices slowed economic activity and low oil prices led to a strong economy. However, the leadership role the U.S. plays in world oil markets has helped flip the historic model. Today, with the U.S. leadership role in world oil markets, higher oil prices give rise to an increase in production and jobs in the U.S. Job creation is a huge trade-off. The bottom-line is policymakers and the Trump administration should work to advance policies which lead to stable oil prices at a level which supports healthy and robust economic activity.
In early-February 2019, in a move intended to weaken the fourteen-nation oil producer group known as OPEC, the U.S. House Judiciary Committee advanced the “No Oil Producing and Exporting Cartels Act” (NOPEC). The legislation would make OPEC the subject of possible antitrust action by the Department of Justice. The bill would also revoke the sovereign immunity that has long shielded OPEC countries from U.S. legal action.

The problem? The NOPEC law, if passed, would weaken the U.S., not foreign oil powers. Targeting OPEC with the rhetoric of breaking up the global oil cartel isn’t a novel approach. Variations of such legislation date back decades. Fortunately, past presidents have stepped in before targeting foreign oil producers backfired on U.S. consumers.

NOPEC’s premise doesn’t sound far-fetched: stop OPEC’s fourteen nations from coordinating production and influencing oil prices and score a victory for consumers. Only the reality is much more complicated.

At best, the move could cause unintended consequences in global oil markets, with oil-producing nations responding in their own self-interest. At worst, the gambit could backfire completely, undercutting America’s current leading role as a net exporter of oil.

Passing NOPEC could also lead to market instability. If such legislation moved forward, it would threaten the sustainability of the OPEC and OPEC+ grouping, add more volatility to the market, and make the perceived floor under prices even more fragile.

Finally, targeting OPEC could result in serious retaliation that hurts both the U.S. and domestic oil producers. For example, OPEC nations could not only refuse to work with American oil and gas firms, but they and their allies, including Russia, could hurt the U.S. by pulling assets out of the country or simply replacing U.S. imports with goods from elsewhere. Consider a scenario in which an OPEC nation reacts to U.S. action on oil by limiting import of U.S. agricultural products.

The broadness of the bill also poses dangers. For example, the legislation is supposed to target OPEC nations, but it could end up involving other nations and companies that do business with OPEC nations. The language is so broad, in fact, that it could be used to sue non-OPEC states and even U.S. energy companies that do business with OPEC members. There is even a possibility that DOJ actions could cascade into private torts filed against energy firms that do business with OPEC defendants. The diversity of danger to the U.S. should trouble policymakers.
While the NOPEC act would allow litigation against an OPEC cut in production, inconsistencies emerge. The U.S. imposes sanctions on Iranian production leading to lower production in the Obama and Trump administrations to pursue U.S. policy while now making a law against oil exporting countries cutting output to protect their own interests.

Those are serious implications. We are counting on policymakers to allow wisdom to prevail in stopping NOPEC’s momentum before real damage is done.

In September 2019, Saudi Arabian oil facilities were attacked by Iranian-backed Houthi rebels of Yemen. Oil markets made very little change in response to the attacks. That situation reinforced the value of American oil. Fifteen years ago, we would have seen a much more drastic market response. Thanks to the American oil renaissance, ample U.S. oil inventories provided market stability and protected the American public’s domestic energy needs. The fragility of the Middle East shows that those who say we can turn our back on American-produced energy are foolish and risk our economic and energy security. In reality, the U.S. should be looking to broaden energy exploration to discover new resources, secure our energy future, and strengthen our economy.

On December 6, 2019, OPEC, Russia and its allies agreed to cut an additional 500,000 barrels a day of production through March 2020 in a new deal that was strengthened by Saudi Arabia’s vow to stay well below its production quota and reduce its output even more in early 2020.

Previous quota violators – including Russia, Iraq and Nigeria – all pledged to make additional cutbacks and to comply with the new agreement. OPEC’s own outlook reflected a surplus of around 70,000 barrels per day (bpd) next year. A Reuter’s poll of 42 economists and analysts forecast demand growth at 0.8-1.4 million bpd next year.

Since January 2019, OPEC and its allies have been cutting output by 1.2 mbpd. The first half of 2020 could see global inventory builds as weaker economic growth chips away demand.

OPEC+ said it will increase its existing production cuts of 1.2 million barrels a day to 1.7 million barrels in the first three months of 2020.

Saudi Arabia’s new production quota will fall from 10.3 million barrels a day down to 10.14 million barrels. However, the Kingdom has only produced 9.9 million barrels per day recently to help offset a global glut of oil, and it is reported that they will cut well below its quota and hold production at close to 9.75 million barrels a day in early 2020.
OPEC+ is scaling back production again because of the ongoing U.S. oil production boom — the U.S. has more than doubled its oil output since 2011 — and a wave of new oil coming online from non-OPEC nations such as Norway, Brazil, Canada, and Guyana. The concern among OPEC+ members, as well as other producers, is the new supplies could send crude prices tumbling without intervention by the cartel.

Natural Gas – Total natural gas in storage is 22.1% lower than last year (2018) and 0.3% lower than the 5-year average. The Energy Information Administration (EIA) expects storage withdrawals to total 1.9 trillion cubic feet (Tcf) from the end of October 2019 through the end of March 2020, which is less than the five-year average winter withdrawal. A withdrawal of this amount would leave the end-of-March inventories at almost 1.9 Tcf, which would be 8% higher than the five-year (2015-2019) average.

EIA forecasts that annual U.S. dry natural gas production will average 92.1 billion cubic feet per day (Bcf/d) in 2019, up 10% from 2018. EIA expects that natural gas production will grow much less in 2020 because of the lag between changes in price and changes in future drilling activity. Low prices in the third quarter of 2019 will reduce natural gas-directed drilling in the first half of 2020. EIA forecasts natural gas production in 2020 will average 95.1 Bcf/d. EIA forecasts Henry Hub natural gas price to average $2.45/MMBtu in 2020, down 14 cents/MMBtu from the 2019 average.

It is important to realize that natural gas, which historically was used to supply additional power during periods of peak demand, is now increasingly used as a replacement for coal for base-load electricity. A major contributor to higher gas usage is the construction of more combined cycle gas fired power plants. They are more efficient than the traditional plants. That means they can substitute for coal at higher gas prices than a traditional gas fired plant. Further, they are much cheaper to build than coal fired power plants and have lower levels of pollutants.

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 14 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.

Technological advances have transformed one industry after another. Starting in 2005, oil and gas producers began to unlock massive new supplies of oil and natural gas thanks to new technologies like horizontal drilling. Engineers worked out how to drill shafts vertically and then turn to drill horizontally along a shale seam. This technology have helped drive oil prices down from an all-time high of $145 per barrel in 2008 to less than a third of that in 2015, and supply became much more responsive to market conditions, undercutting the ability of OPEC to influence global oil prices. Today, smarter management of complex systems, data analytics, and automation are remaking the industry once again, boosting productivity and flexibility of oil and gas companies. In the coming years, these trends are likely to keep energy cheap and plentiful, responsive to market conditions, and more efficient than ever.

IHS recently completed a study on upstream drilling and production activity and found that upstream costs in 2019 for onshore plays were 25% to 30% below their 2012 levels and 16% to 20% lower than the average of the past five years. 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. More efficient service providers and decreased drilling times have all contributed to cost savings.

Technology has already transformed labor needs in most of the world’s manufacturing. It is now upending the oil and gas business. The energy sector has been shielded from pressure to innovate by high oil prices. When prices fell 75% over 20 months beginning in 2014, oil and gas companies were forced to modernize to squeeze out profits. Many companies found they could use new technologies to do the work better and cheaper, with fewer people. Companies invested billions of dollars embracing artificial intelligence, automation, and other technologies.

For decades, high school graduates could jump into a job on a drilling rig with few technical skills and expect a well-paid career. Today, companies are recruiting computer scientists, who develop algorithms and other tech tools. Technological changes create new jobs in the oil industry to replace ones rendered obsolete. But the process is disruptive for workers, because those who lose work due to automation are seldom the same people in newly created jobs. The changes have more of an impact on rural communities, which are less likely to have workers with skills needed for tech-driven jobs. Some companies have reduced their workforce by 40% and cut lease operating expenses by 48% since 2014, largely through technology updates.
New technology will have a critical impact for Kansas producers. Low-cost oil producers across the U.S. will establish a fair price for oil based on how low costs can go using technology. 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.

The oil and natural gas industry is displayed a lot more discipline in 2018 and 2019 after learning some tough lessons from the experience of the last couple of years. However, the oil and natural gas industry has a history of destroying capital as commodity prices improve. Moderate growth of oil production in the U.S. might best serve the industry by reducing the risk of a repeat of 2015.

**Impact of Crude Oil Price Collapse**

Crude oil prices fell 75% over 20 months beginning in 2014. As a result, Kansas lost over $730 million in oil and gas output over that period. This aligns with the roughly $1 billion cut in capital expenditures (capex) in Kansas over the same period.

To understand this better, let’s look at capital expenditures (capex) which are *Funds used by companies to maintain or increase the scope of their operations*. This kind of spending is very good for an economy. It builds infrastructure, creates jobs, and is an investment in the future. Companies make these investments because they believe they will get a good return on those investments. Unfortunately, when the price of oil crashes, those investments become unprofitable and capex gets cut.

Many oil and gas companies in Kansas and elsewhere cut capex by 75%-80% in 2015-2016. Kansas oil and gas companies invested about $300 million in 2019, down from $1.3 billion invested in 2014. Companies deferred well completions and many high-cost marginal wells were temporarily shut-in. As a result, royalty payments to Kansas oil and gas royalty owners dropped by about $400 million since 2014.

In Kansas, much like the rest of the nation, some oil and gas service companies layed off as much as 55%-60% of their workforce and reduced wages by as much as 20%-25% and some producers have layed off as much as 20%-25% of their workforce in 2015-2016. As a result, family income has dropped by about $341 million across Kansas. Direct oil and gas employment loss in Kansas since 2014 is over 3,100. When you add in indirect jobs, employment losses in the Kansas oil and gas industry jumps to over 6,100.
Kansas oil production fell by 32.4% from 2014 to 2019. As the market balanced and oil prices stabilized in 2018 and 2019, Kansas oil production stabilized. Oil production in Kansas fell by 3.6% in 2019 after falling 3.1% in 2018, 5.5% in 2017, and 16.7% in 2016.

**Figure 4**

*Figure 4* illustrates the trend in Kansas oil and natural gas production over the last 20 years.

As a result of low oil prices, tax collections to the State of Kansas and Kansas counties have also declined dramatically. Oil and gas severance tax collections by the State of Kansas in 2019 declined by nearly 70% since 2014. Property tax collections by counties in 2019 declined by over 64% since 2014.

**Figure 5**

*Figure 5* illustrates the impact of falling oil prices on oil and gas severance tax collections and property tax collections in Kansas.
Figure 6 illustrates oil and gas activity in Kansas from 2014-2019. The industry experienced a 77% drop in drilling rig count and an 83% drop in drilling permits issued in the 2014-2019 period.

The ripple effects are everywhere. If you think about the role of oil in your life, it is not only the primary source of many of our fuels, but is also critical to our lubricants, chemicals, pharmaceutical, plastics, and many other items. If you think about the law, accounting, and engineering firms that serve the industry, the pipe, drilling equipment, and other manufactured goods that it requires, and the large payrolls and their effects on consumer spending, you will begin to get a picture of the enormity of the oil and gas industry. Clearly, lower oil prices do not compensate for the loss of capex in the U.S. and Kansas economy.

Today, many producers are restructuring and refocusing capex. Opportunistic buyers are looking to acquire oil and gas fields. Recently, buyer activity has increased tremendously. The buyer/seller value gap is closing. Several oil and gas companies are looking at the lower 10%-15% of their portfolio to see if efficiencies can be created by divesting and then redeploying capital into better assets.
What are companies doing?

Many companies refocused capex to strategize their way out of the 2015-2016 downturn. Companies optimized 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.

The efficiency gains achieved by U.S. oil and natural gas producers over the last couple of years have proven to be very important for reducing break-even prices. A recent study by Wood Mackenzie revealed that the average breakeven is $32/barrel. Also, there exists a key juxtaposition between those producers that are more aggressively adding core acreage and development activity and those that are still dealing with leverage on their balance sheets and adhering to cash flow neutrality. For many Kansas producers, the upswing has begun depending on portfolio economics and capital availability and exploration and development activity remains conservative and more muted.

Other Key Challenges

The oil and gas industry continues to address many challenges including energy policy, carbon tax, carbon capture, tariffs, emissions, demand, and prices.

Energy Policy – In the 1970s, many experts forecasted a permanent energy shortage in the U.S. Fast-forward to today and we see the U.S. is the top producer of oil and natural gas in the world. Technological developments and efficiency gains have resulted in U.S. oil production doubling since 2011. The U.S. is projected to become energy independent in 2020. U.S. oil production is now projected to grow another 50% over the next decade. The energy shortage predicted in the 1970s has not come true. In reality, we did not have an energy shortage in the 1970s, but had a shortage of imagination and loss of confidence in our ability to innovate.
The United States has become a leading energy producer by posting the first full month as a net exporter of crude and petroleum products since government records began in 1949.

The U.S. exported 89,000 barrels a day more than it imported in September 2019, according to data from the Energy Information Administration (EIA).

While the U.S. has previously reported net exports on a weekly basis, this marks a key milestone due to the onset of the oil production boom.

While the net exports show decreasing reliance on imports, the U.S. still continues to buy heavy crude oil from other nations to meet the needs of its refineries. It also buys refined products when they are available for a lower cost.

The U.S. position as a net exporter serves to remind how the oil industry can deliver surprises that upend global oil prices, production, and trade flows.

Soaring output from oil producing regions across the U.S. has been the main driver of the transition. But many oil and gas producers see a decline in production growth next year, while some Democratic presidential candidates have called for a ban on fracking.
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.

In the days of the Jimmy Carter Administration and even the Ronald Reagan Administration, we would have longed for this day. Now we scarcely notice it at all.

In its Short-Term Energy Outlook released in December 2019, the EIA flagged the turnaround and forecast total net exports of crude and products of 750,000 barrels a day in 2020, compared with average net imports of 520,000 barrels a day this year.

The U.S. is only months away from achieving energy independence. This is a very big deal, not just rich in symbolism but marking a major and tangible benefit to the US economy. It’s the end of an era that began with the oil crises of the 1970s. Middle Eastern nations can no longer use their vast supplies of oil as a political weapon on the world stage.

**Energy Policy Challenges** - The U.S. currently has a better, more sensible approach to energy development than any other country in the world, both short-term and long-term. Where government policy has been absent, free markets have filled the void with great success.

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. An American 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. Let America’s entrepreneurs continue modernizing our energy technology as they work to meet growing demand. That’s a prescription for economic prosperity and a cleaner environment.

America’s newfound status as a global energy superpower has created economic opportunities and a cleaner environment here at home as well as stability around the world. The oil and gas industry is leading the way in technology developments and innovative solutions to find new and better ways to produce and use energy. In order to harness our abundant natural resources and spur innovation, we need elected officials who support forward-looking policies.

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.

**Green New Deal** – In February 2019, U.S. Representative Alexandria Ocasio-Cortez (D-NY) and U.S. Senator Ed Markey (D-MA) introduced the nonbinding Green New Deal (GND) resolution that called for a 10-year national mobilization to exorcise carbon from the U.S. economy. The plan called for generating 100% of power from renewables and removing greenhouse gas emissions from manufacturing and transportation. Members of both parties have called the idea unrealistic. The GND is the far-left’s wish list dressed up to look like serious policy. The philosophies and ideas behind this textbook socialism are not just foolish. They’re dangerous.

Facts debunk GND ideas. Many scientists, policymakers from both parties, and common sense have discredited the dingbat 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. Such an unserious proposal leads one to surmise its authors and proponents do not take climate change seriously either.

Carbon Tax – Taxing carbon to tackle climate change is one of those big ideas that have long held a kind of bipartisan sway in Washington. However, fuel-tax riots in Paris in December 2018 and the defeat of a carbon-fee ballot measure in the state of Washington in November 2018 shows the difficulty of getting people to support a levy on the energy sources that heat their homes and power their cars. 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 state and federal proposals to tax carbon directly or launch new carbon tax schemes have much more to do with raising revenue than helping our environment. For those who prefer higher taxation to spending cuts, having an entirely new source of revenue is appealing. 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, several major integrated companies who were once powerful skeptics of global warming, are now supporting 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 product do not have the ability to pass along tax increases.

The power to tax involves the power to destroy, and never more so than in the case of a carbon tax. That’s because unlike other taxes, a carbon tax is designed to tax away the base on which it is levied.

**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.

In October 2019, climate activists touted a carbon tax-dividend scheme, under which they promise ‘the vast majority of Americans will be economic winners.’ The plan sounds too good to be true because it is. In reality, such a tax would cripple the economy and set off trade wars with the rest of the world that would dwarf our current dispute with China. And to top it off, the proposal would have no measurable impact on global climate. The winners of the yax-and-dividend scheme, setting aside virtually every foreign power with which we compete economically, will be those who don’t use much energy, such as individuals living in large cities, and those with the financial means to take advantage of the myriad subsidies offered for electric vehicles, solar panels, and so on. The biggest losers will be everyone else, especially the millions of rural Americans, the same individuals who produce most of the energy we use, grow the food we eat, and manufacture many of the goods we purchase.
Tariffs – A limited trade agreement between the U.S. and China will be signed and released in January 2020 that will see some tariffs reduced and prevent an escalation on the conflict between the world’s two largest economics. While leaving most of the tariffs built up over the trade war in place, the partial deal has relieved many economists worried about further escalation slowing down the world economy and threatening recession. The trade pact deal has driven gains across the commodity complex with oil prices reaching three-month highs in December 2019. The trade pact follows deeper-than-expected crude oil output cuts agreed by OPEC+ in December 2019.

Carbon Capture Tax Credit - While Congress passed legislation in July 2018 which expands and extends the tax credit for carbon capture (45Q tax credit), problems remain with establishing regulatory certainty and criteria to access the tax credits. The expansion is still a problem because the definition of secure geologic storage does not work for Enhanced Oil Recovery (EOR) projects. Congress or the Treasury Department need to act to ensure regulatory certainty, as well as incentivize carbon capture through access to the 45Q tax credits. Without clarity and certainty on what constitutes secure geologic storage, oil and gas operators are not likely to access 45Q tax credits for carbon capture EOR projects.

Emissions - The Trump administration and the 116th Congress has an opportunity to reset the harmful energy policies of the last administration. According to EPA Greenhouse Gas (GHG) reporting data, oil and gas methane emissions account for only 1.22% of total U.S. GHG emissions. The EPA found that U.S. GHG emissions fell 2.7% from 2017 to 2018. This downward trend is occurring even as U.S. oil and natural gas production grows dramatically.
The EPA also found that methane emissions from hydraulic fracturing fell 81% between 2012-2014. Methane emissions from the oil and gas sector declined by 8% last year, marking the 6th consecutive year of decline.

The fact is our nation’s 21st century oil and gas renaissance has made domestically produced oil and gas economical and abundant. This market-driven success has helped our nation to achieve significant emission reductions. The U.S. emitted 23% fewer energy-related carbon emissions in 2015 than 2005. The oil and gas industry played a significant role in reducing U.S. greenhouse gas emissions by over 20% over the last decade.

The latest 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. In the latest report from the Energy Information Administration (EIA), 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% along with Hong Kong’s 7% surge.

The men and women of the oil and gas industry reject the stale mindset of last century’s thinking peddled by some that oil and gas production and environmental stewardship are not compatible.
Figure 7 illustrates the significant decline in U.S. greenhouse gas emissions.

**Demand** - The world’s appetite for oil should remain robust through 2020 even as U.S. production continues to dominate supply growth, the Energy Information Administration (EIA) reported in December 2019. The EIA projects oil demand to grow by 1.2 million BPD in 2020.

The International Energy Agency (IEA) says global oil markets are likely to remain “calm” in 2020 as soaring production outside OPEC and high inventories keep consumers comfortably supplied. Supplies outside OPEC – driven by the U.S., Brazil, Norway, and Guyana – will keep oil supplies relatively high. As a result, OPEC+ cut production in December 2019 to prevent a surplus. IEA sees oil demand growth accelerating in the short term. Relatively low oil prices and robust U.S. demand for petrochemicals will spur worldwide consumption expansion.

**Prices** – Oil prices advanced at the end of 2019 as the U.S. and China made progress on a phase-one trade deal, supporting the outlook for fuel demand. For months, the oil market has been focused on a worsening demand outlook and trade tensions between the world’s two biggest economies with the bearish mood. China said its negotiating team was in close contact with its American counterparts for the signing of an agreement, which is expected in January 2020. In addition, government data shows U.S. crude oil inventories fell significantly in late 2019.

Oil has been on an upward trend since early October 2019 as easing tensions between the U.S. and China allayed fears that slowing global growth will erode fuel demand. Oil also received a boost as the OPEC+ producers pledged deeper output cuts in December 2019 in an effort to prevent a supply surplus. The deeper-than-expected output cuts agreed by OPEC+ will help keep a floor under prices and allayed concerns that 2020 will see a renewed oversupply.
A sense of cautious bullishness is developing as we head into 2020. Conditions for rising oil prices appear favorable at present. Economic optimism coupled with a weaker U.S. dollar and growing investor demand has allowed oil prices to climb. Going forward into 2020, the market will test OPC’s resolve on its commitment to coordinate output cuts. The current production cuts deal, agreed to by OPEC+, will expire in March 2020.

Crude oil prices received by Kansas oil and gas 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. WTI crude oil produces more gasoline per barrel of oil than any other crude oil, not only in the U.S., but in comparison to almost any other crude oil produced in the world. Kansas Common Crude Oil contains more contaminants and produces less gasoline per barrel than WTI and, as a result, is priced about $10-$11 lower than WTI.

Going Forward

What powers the U.S. today? In recent years, market forces have spurred massive amounts of new energy production. Oil and natural gas production in the U.S. has increased 10 times more than wind and solar production since 2012, even as wind and solar energy producers received billions of dollars in subsidies.

**Figure 8**

*Figure 8* illustrates U.S. energy consumption by source. Oil and natural gas supply 68% of U.S. energy consumption today. Add in coal, and fossil fuels supply 81% of U.S. energy consumption today.
What will power the U.S. in the future? The Energy Information Administration (EIA) estimates that 30 years from now fossil fuels will account for 69% of our country’s energy consumption.

The International Energy Agency (IEA) projects that by 2050, world energy demand will increase by 50% and 69% of that demand will be supplied by fossil fuels. Even though the IEA projects world oil demand to plateau around 2030, 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 9 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 9 shows the projected global primary energy consumption by energy source from 2010 to 2050. By 2050, oil and natural gas are projected to supply more than 49% of global energy needs. Source: Energy Information Administration (EIA)

Fossil fuels have provided more than 80% of total U.S. energy consumption for more than 100 years. Since 1928, when consumption of natural gas surpassed that of biomass, the three fossil fuels—petroleum, natural gas, and coal—have been the most consumed fuels in the U.S. In 2019, fossil fuels accounted for 81% of total U.S. energy consumption.
In 2019, the renewable share of energy consumption in the U.S. was about 11%. This was the largest renewable share since the 1930s, when overall energy consumption was lower and the amount of biomass consumption (mainly wood) was relatively high. The greatest growth in renewables over the past decade has been in solar and wind electricity generation. Liquid biofuel consumption—more than half of which is ethanol blended into motor gasoline—has also increased in recent years, contributing to the growing renewable share of total energy consumption.

In addition to the increasing share of renewables, the decline in the fossil fuel share of consumption is attributable mainly to declines in coal consumption. U.S. coal consumption has fallen almost 38% since 2005. In each of the past 20 years, the power sector has accounted for more than 90% of total U.S. coal consumption.

Petroleum, which encompasses nearly all transportation fuels and petroleum-based fuels used in homes, businesses, and industries, continues to be the largest source of energy consumption in the U.S. Petroleum consumption has increased in each of the past four years.

Consumption of natural gas has risen in 9 of the past 10 years. As recently as 2006, the U.S. consumed more coal than natural gas (in energy-equivalent terms), but as natural gas consumption has increased—particularly in the electric power sector—natural gas use in 2018 was about twice that of coal.

Solar and wind are expected to grow briskly and could approach 8% of global energy demand by 2050. Most wind and solar installations are not cost-effective on the open market, necessitating subsidies. As long as subsidies exist, tax-payers have to support industries that are not economically viable on their own. Funding underperforming assets often comes at the cost of starving productive assets.

Increased volumes and efficiencies of oil and gas production are providing U.S. oil and gas producers increased productivity and global reach. U.S. oil and gas producers have arrived at a distinct global competitive advantage in technologies and efficiencies to the point where differentiation and cost advantages have occurred. Continued growth in energy demand and persistent geopolitical friction will provide ample opportunities for U.S. energy both at home and abroad. The U.S. oil and natural gas renaissance is truly a shining example of American exceptionalism.
When looking at energy policy it is important to know that our nation has left behind decades of energy scarcity and has become a 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 reform solutions 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.

By producing the most abundant, affordable, reliable energy in the world, the oil and gas industry makes every other industry more productive. And it makes every individual more productive giving them an opportunity to pursue happiness that previous generations never dreamed of. The oil and gas industry makes our environment far safer and creates new resources out of raw materials.

The energy we get from oil and natural gas is particularly valuable for protecting ourselves from the climate. The climate is inherently dangerous and is always changing, whether we influence the change or not. In the last 80 years as CO₂ emissions have risen from an atmospheric concentration of 0.03% to 0.04%, climate related deaths have declined by 98%. Clearly, oil and gas make the planet dramatically safer.

Oil and natural gas have also made the planet dramatically richer in resources. Until the Industrial Revolution, there were almost no energy resources. Oil and natural gas are not naturally resources. Those who first discovered how to convert oil and natural gas into energy weren’t depleting a resource, they were creating a resource. The world is a better place for it. Life is all about taking materials in nature and creatively turning them into useful resources. And by creating the best form of energy resource, the oil and natural gas industry helps every other industry more efficiently create every other type of resource, from food to steel.