



Kansas Independent Oil & Gas Association
800 SW Jackson Street - Suite 1400
Topeka, Kansas 66612-1216
785-232-7772
www.kioga.org

Crude Oil Market Dynamic Challenges
Edward Cross, President
Kansas Independent Oil & Gas Association
August 2020

Since mid-March, our states, nation, business owners, and employees have had their world turned upside-down because of a virus.



The economy has been engaged in a slow recovery from the worst of the coronavirus, and the accompanying improvement in energy demand has been evident in crude oil prices. Kansas crude oil prices topped \$53/bbl in early January and then dipped below \$11/bbl in March and below \$1/bbl in April. Crude oil prices began to recover thereafter, surpassing \$25/bbl in May before pushing above \$30/bbl in late June. Kansas crude oil prices were \$32/bbl in early August.

Signs of improving market conditions come against the backdrop of rising COVID-19 cases and chatter anew about implementing restrictions on economic activity, raising concerns about the sustainability of higher prices and rising demand. Fear exists on both sides of the oil ledger with concerns about slowing demand and swelling supplies. Until there is a resolution to the COVID-19 pandemic, crude oil prices will likely remain bearish. The crude oil market is fraught with uncertainty that creates volatility in crude oil prices. Volatile crude oil prices have a significant impact on the small businesses that make up the Kansas oil and natural 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 nearly 3,500 members, KIOGA is the lead state and national advocate for the Kansas oil and natural gas industry.

Kansas ranked one of top three states for oil and gas investment

On a positive note, we can all be proud that Kansas ranked 3rd in a recent national survey of attractive oil and gas investment states by the Fraser Institute. Texas was ranked first followed by Oklahoma, Kansas, and Wyoming. Interestingly, Colorado was the least attractive on the list finishing a dismal 20th out of 20. Colorado passed sweeping measures in 2019 that imposed onerous, unnecessary, and uncertain regulations on the oil and gas industry.

Global Crude Oil Supply/Demand Dynamics



COVID-19 pandemic has destroyed about 30% of crude oil demand worldwide. The 20 countries of OPEC+ agreed to an historic production cut on April 9th to address the crude oil demand destruction of COVID-19. They cut production by about 10 million b/d. OPEC+ met again on July 16th and agreed to extend output cuts through the end of July 2020, and then reduce those cuts (otherwise known as raising production) by 2 million bpd to a cut of 7.7 million bpd from pre-COVID levels through the end of the year. According to the plan, the cuts would be further tapered to 5.8 million bpd from January 2021 – April 2021.

Saudi Arabia and Russia, the de-facto leaders of the OPEC+ coalition, lost patience with the errant behavior of the next biggest member, Iraq. Iraq had been cheating on its oil cut quota by about 600 Mbbl/d. The next largest offender is Nigeria who is almost 300 Mbbl/d over its promised reduction. Russia and Saudi Arabia worked out their differences with Iraq.

If Brent prices exceeds \$50 per barrel, Russia will likely raise production. The Saudis would prefer something closer to \$70 per barrel. The tug of war between Russian and Saudi Arabia will likely become more pronounced as demand and prices increase.

According to a July 31st U.S. Energy Information Administration (EIA) report, U.S. crude oil production plummeted in May 2020, falling a record 2 million barrels per day to 10 million bpd. Gasoline demand was down 23.5% and diesel demand was down 12.6% from year-ago levels. Natural gas production in the U.S. dropped 5.7 billion cubic feet per day (bcfpd) in May 2020 to 97.4 bcfpd. U.S. natural gas output hit an all-time high of 107 bcfpd in November 2019.

The global and domestic supply/demand balance is cleaning up, with shut-ins, OPEC+ cuts, and the return of demand. Signs of improving market conditions come against the backdrop of rising COVID-19 cases and chatter anew about implementing restrictions on economic activity, raising concerns about the sustainability of higher prices and rising demand.

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.

IHS recently completed a study on upstream drilling and production costs 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. This cost analysis 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.

Impacts of Crude Oil Price Collapses from the Past

We can learn from past market downturns. 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 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 2017, 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 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.

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.

Kansas Oil & Gas Summary

The fallout from COVID-19 and concurrent crude oil supply shock continues and has had a profound impact on the Kansas oil and gas industry. Oil and gas exploration and production activity in Kansas and across the nation has slowed dramatically. Operators across Kansas and the nation have responded quickly by laying down rigs, shutting in production, and cutting capex by as much as 60%.



Oil production in Kansas during calendar year 2019 was about 32.9 million barrels (90,137 barrels per day). Kansas oil production in January - April 2020 was about 81,400 barrels per day – down about 9.7%. However, the January-April 2020 data provides a misleading projection for the future. After talking with crude oil purchasers in Kansas, industry anticipates Kansas oil production will be down to about 50,000 - 60,000 barrels per day in May and June before recovering to around 60,000 - 70,000 by the end of 2020. Hopefully, we will see production improvement in 2021 if prices recover adequately, 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 32.9% 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 4.4% in 2019 after falling 3.1% in 2018, 5.5% in 2017, and 16.7% in 2016.

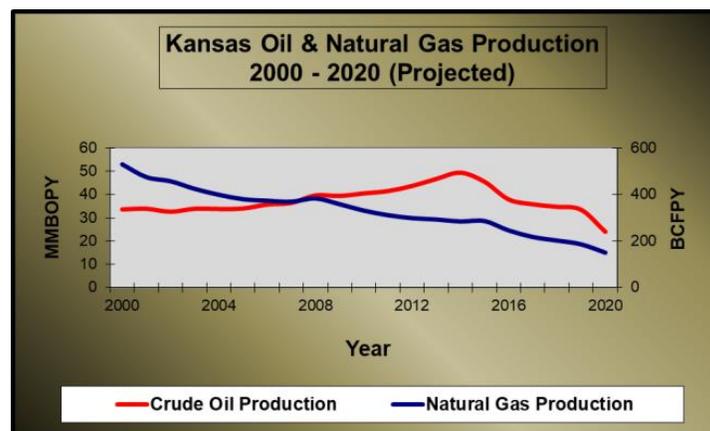


Figure 1

Figure 1 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 72% since 2014. Property tax collections by counties in 2019 declined by over 61% since 2014.

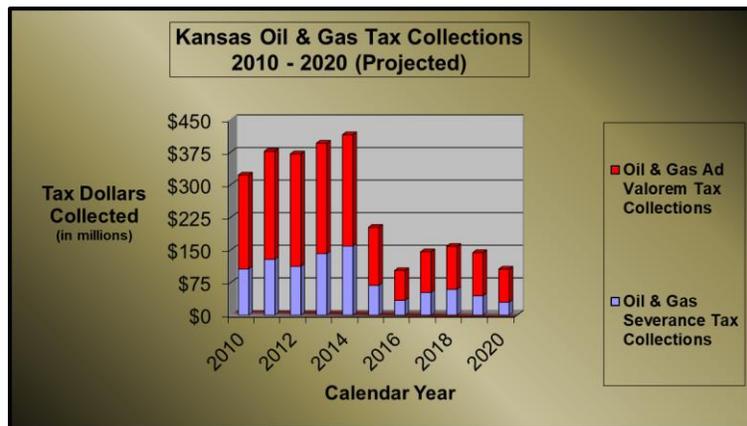


Figure 2

Figure 2 illustrates the impact of falling oil prices on oil and gas severance tax collections and property tax collections in Kansas.

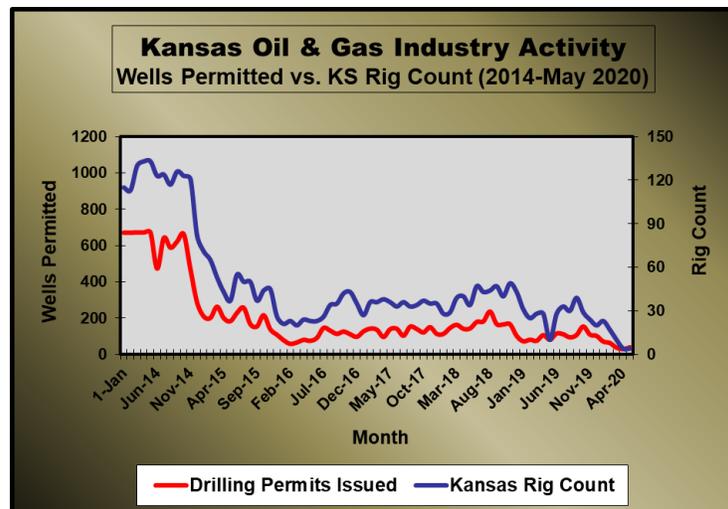


Figure 3

Figure 3 illustrates oil and gas activity in Kansas from 2014-May 2020. The industry experienced a 91% drop in drilling rig count and a 92% drop in drilling permits issued in the 2014-May 2020 period.

What are Kansas oil & gas companies doing?

The Kansas oil and gas industry is currently displaying a lot of discipline after learning some tough lessons from experiences with past low-price markets, from the mid-1980s to the last 1990s and the more recent 2014-2016 downturn.

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 last couple of 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 are adhering to cash flow neutrality. Currently, exploration and development activity in Kansas is very conservative and muted.

The oil and gas industry and the economy in general can be helped by getting people back to work. The longer this goes on, the deeper you dig the hole; the harder it is to crawl out. The solution for our industry and everybody is to get people back to work.

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 and Kansas consumers spend more than \$1 billion per year 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.

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 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, trade deals, prices, and more.

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. 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.

Soaring output from oil producing regions across the U.S. has been the main driver of the transition. But with the emergence of the COVID-19 pandemic and corresponding demand destruction, we are now seeing declines in production. In addition, some uninformed policymakers and environmental activists have called 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.



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. 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.

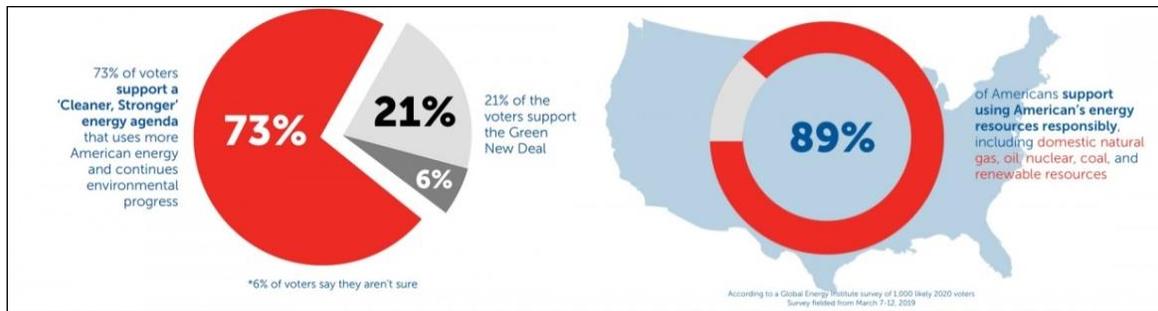
Few doubt that energy has improved lives and enabled human progress. Yet one of the biggest challenges facing the world is the polarized debate over the future of energy. Facts and economics are too often replaced with assertions and emotions. Discussions about fossil fuels and alternative energy sources 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 – On July 14, 2020, former Vice President Joe Biden's campaign released an updated energy and environment plan which reflected much of the Green New Deal (GND) introduced in 2019 by U.S. Representative Alexandria Ocasio-Cortez (D-NY) and included 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. 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. Biden's plan 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 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.



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.

Americans who have observed stay-at-home orders or quarantined themselves at home this year need to look around and think about what their lives would be like if they no longer had ample and affordable power, or natural gas to use to cook their meals. Because, make no mistake about it, that is what Biden is really proposing.

We stand at a crossroads for the nation's energy future and the choices policymakers make in 2020 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, which continues to lead the world in emissions reductions while delivering affordable, reliable, and cleaner energy to all American.

Carbon Tax – Taxing carbon to tackle climate change is one of those big ideas that have long held a kind of bipartisan sway. Democratic Presidential candidate Joe Biden released a climate action plan in July 2020 that would cost \$16 trillion – or about \$55,000 for every American. However, a nationwide survey conducted in May 2020 indicated voters don't place high priority on climate change. Moreover, 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 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.

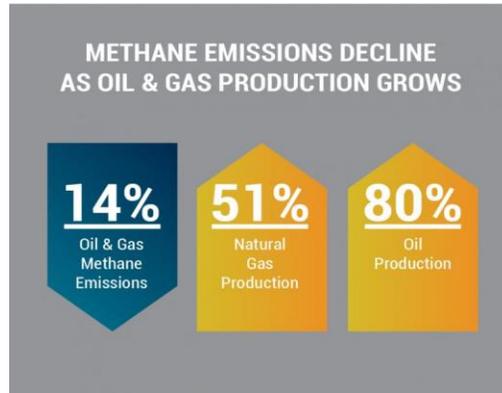
Price hikes like these can only mean lower standards of living and less opportunity. Families that spend a bigger portion of their household income on transportation, utilities and household goods are hurt, not helped, by carbon tax schemes that make traditional forms of energy more expensive.

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.

Emissions - 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 occurred even as U.S. oil and natural gas production grew dramatically.

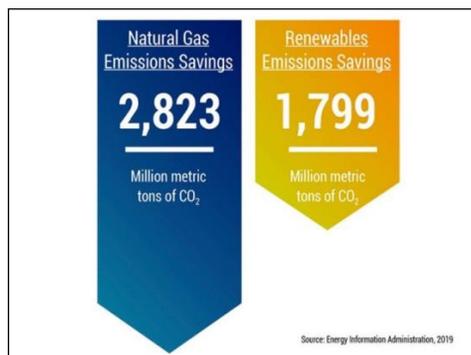


Source: U.S. EPA, U.S. EIA 1990-2017

The EPA also found that methane emissions from the oil and gas sector declined by 8% last year, marking the 8th 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 12% fewer energy-related carbon emissions in 2018 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.

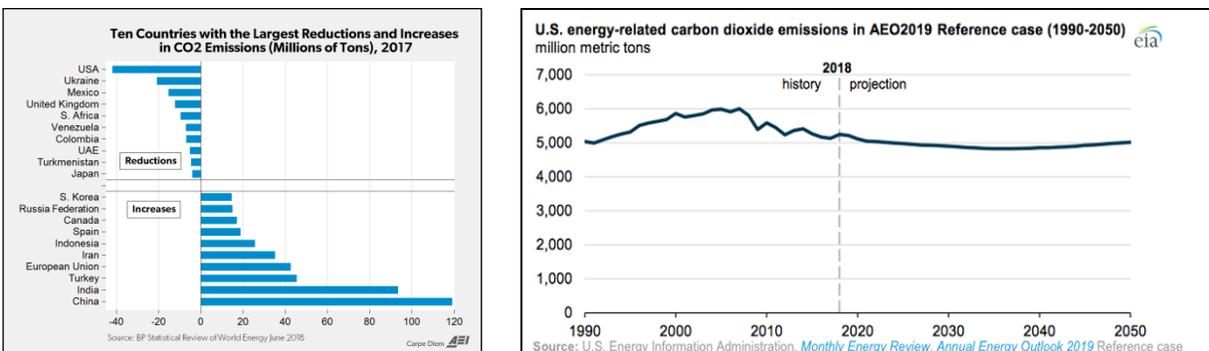


Figure 4

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

China Trade Deal

The Phase 1 trade deal signed between the U.S. and China in January 2020 could provide a big boost to American oil and gas producers by creating new export markets. Just how well they fare against exporters who are much closer to the world's biggest energy importer may depend as much on economics as on politics.

The energy trade section of the deal commits China to increasing its purchases of American energy products — crude oil, refined products, liquefied natural gas and coal — from 2017. The countries agreed that shipments should increase from the 2017 level by no less than \$18.5 billion this year and be at least \$33.9 billion above the same baseline in 2021.

U.S. producers need to develop new export markets for domestic production that exceeds domestic energy needs. The deal could result in a significant jump in U.S. oil and gas export to China. But, the Chinese markets may be limited if Chinese import tariffs of 5% for American crude oil and 25% for LNG and propane remain in effect.

Natural gas exporters may find it particularly difficult. China imported 121 billion cubic meters (4.29 trillion cubic feet) of natural gas in 2018, with about 60% of the total in the form of LNG and the rest delivered by pipeline from countries in Central Asia. China's biggest LNG suppliers — Australia, Qatar, Malaysia and Indonesia — are all much closer than the U.S., which gives them significant shipping-cost advantages.

There is also competition from pipeline supplies from the Power of Siberia link from Russia's East Siberia, which will deliver at least 5 billion cubic meters of Russian gas this year. That volume will double in 2021 and eventually rise to as much as 38 billion cubic meters per year.

And all natural gas suppliers face the challenges of weaker Chinese demand growth as the country faces COVID-19 recovery and a plethora of competitive supply options. China's own natural gas production is projected to rise by 9% this year.

In the oil sector, U.S. suppliers met just 3% of China's crude oil import requirements in 2018, giving them plenty of room for growth. U.S. crude oil grades are unlikely to supplant flows from the Middle East, which are typically heavy and sour (containing high concentrations of sulfur that have to be removed). Russian crude is similar, as is much of the oil imported from Central and South America. Their easiest targets may be producers in West Africa and the North Sea, which pump crudes that are more like U.S. grades than those from China's other big suppliers. But even here U.S. producers are at a disadvantage in terms of distance and thus transport costs.

One area where U.S. producers may face fewer obstacles is in the natural gas liquids that form the basis of most petrochemical processes. Plastics are seen as a key growth area for oil demand in medium-term forecasts and China vies with the U.S. for the top spot in the International Energy Agency's list of incremental feedstock use.

Producers of very light, sweet (low-sulfur) crude and natural gas liquids from the U.S. (including many marginal well production like that in Kansas) face far fewer competitors for their shipments and it may be them, rather than the exporters of more conventional U.S. crude grades, who are the real energy winners from the Phase 1 trade deal.

Prices

EIA Raises Oil Price Forecast - The U.S. Energy Information Administration (EIA) raised its Brent and West Texas Intermediate (WTI) oil price forecasts again, the organization's July 2020 Short Term Energy Outlook (STEO) report has revealed. According to the latest STEO, the EIA now  expects the Brent spot price to average \$40.50 per barrel in 2020 and \$49.70 per barrel in 2021. In the EIA's June STEO, the Brent spot price was expected to average \$38.02 per barrel in 2020 and \$47.88 per barrel in 2021. Back in May's STEO, the 2020 and 2021 Brent spot price was projected to average \$34.13 and \$47.81 per barrel, respectively. In July's STEO, the WTI spot price is expected to average \$37.55 per barrel this year and \$45.70 per barrel next year. In June these prices were forecasted to hit \$35.14 per barrel in 2020 and \$43.88 per barrel in 2021 and in May they came in at \$30.10 per barrel in 2020 and \$43.31 per barrel in 2021.

However, surging coronavirus cases raises concern about demand. Surging infections across major economies is leading to the tightening of restrictions to curb the outbreak, with the virus showing no signs of abating. Oil's rally from its plunge below zero in April slowed in early July after a tumultuous few months sparked by virus-driven demand destruction. Historic output cuts from OPEC and its allies look to be extended through August.

Goldman Sachs Sees Oil Demand Returning to Pre-Coronavirus Levels by 2022 - Goldman Sachs said a pick-up in commuting, a shift to private transportation and government efforts to improve economies with higher infrastructure spending should help global oil demand return to pre-coronavirus levels by 2022. Demand is expected to fall by 8% this year, before rebounding 6% in 2021 and fully recovering to pre-pandemic levels by 2022, the U.S. bank said on July 2nd. The bank expects gasoline to stage the fastest demand recovery among oil products, while jet fuel consumption, which has been hit the most by the pandemic, could suffer more as consumer confidence in air travel is likely to stay low in the absence of a vaccine. While fuel demand is gradually recovering as lockdown measures ease, a second coronavirus wave could quickly undermine the trend. A recent Reuters poll estimated oil prices will consolidate at around \$40 a barrel this year, with a recovery gaining steam in the fourth quarter and into 2021 on OPEC-led production cuts and as economies limp back from coronavirus lockdowns.

Saudi Aramco CEO on Oil Markets: The Worst is Behind Us - The worst is behind us in oil markets, says Saudi Aramco President and Chief Executive Officer Amin H. Nasser. Already-recovering demand has him “very optimistic” for the second half of 2020 and countries are now better prepared for a second wave of COVID-19 if and when it occurs. In a conversation with Daniel Yergin, vice chairman, IHS Markit, Nasser talked about the near-term outlook for oil markets. “The worst is behind us. We went from -\$40 to +\$40 with WTI. In April we were looking at demand of about 75-80 million b/d with significant supply at that time. Currently you are looking at almost close to 90 million b/d. I’m very optimistic about the second half of this year. We see it in China today—it’s almost at 90%. In gasoline it’s around 95% in China. Gasoline and diesel are picking up to pre-COVID levels. Jet fuel is still lagging in terms of less air travel. More countries will start opening up. So, we see that reflected in the demand on crude.”

Saudis Hike Oil Prices to Key Markets on Rising Energy Demand - Saudi Arabia raised pricing for August oil shipments to Asia, the U.S. and northern Europe amid signs that energy demand is continuing to recover from its coronavirus-triggered collapse. The move comes as the world’s biggest crude exporter pushes other major producers to join it in cutting supply to re-balance the market. OPEC+ has been reducing crude production since last April to drain stockpiles. The group agreed in June to extend cuts totaling nearly 10 million barrels a day -- roughly 10% of world supply before the pandemic hit -- for a third month until the end of July. They plan to scale them back after that.

Challenges on How to Price U.S. Crude Oil Emerging - Two companies have released price benchmarks for oil in the U.S., challenging West Texas Intermediate (WTI) crude as the standard indicator of the cost of the commodity. The two new benchmarks are measured on the Gulf

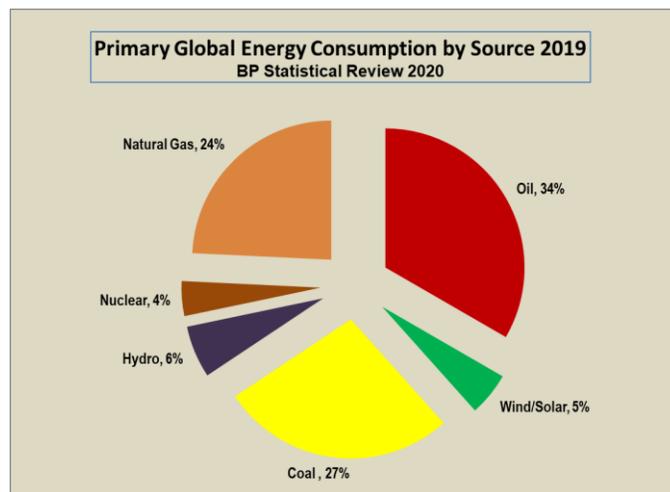


Coast, where much of the action in the oil market takes place these days. S&P Global Platts created the Platts American GulfCoast Select and Argus Media launched the American Gulfcoast Select. Both were started on June 26th. U.S. oil companies have been producing so much oil in recent years that they have begun shipping nearly a third of it overseas. That’s made the Gulf Coast a new central hub of the domestic oil market. But the way that oil is priced in the U.S. depends on a futures contract based at a landlocked hub in Cushing, Oklahoma.

Fossil Fuels Still Supply 84% of World Energy

On June 23, 2020, BP released its *Statistical Review of World Energy 2020*. The Review covers energy data through 2019, and provides a comprehensive picture of supply and demand for major energy sources on a country-level basis. This annual report is one of the most important sources of global energy data. It is a primary source of data for numerous companies, government agencies, and non-government organizations. Some highlights from the report include:

Primary energy consumption grew by 1.3% last year, which was less than half the rate of 2018 (2.8%). Nevertheless, this still represents the 10th consecutive year that the world set a new all-time high for energy consumption. The largest share of the increase in energy consumption, 41%, was contributed by renewables. Natural gas contributed the second largest increment with 36% of the increase. However, as an 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 84% of the world's primary energy consumption in 2019.



China was responsible for three quarters of the world's energy consumption growth, followed by India and Indonesia. The U.S. and Germany posted the largest declines.

Oil consumption also grew to a new record, again led by demand from China. But global oil production fell for the first time in a decade, as growth in the U.S. was more than offset by OPEC production cuts. Given the impact Covid-19 is having on the world's energy markets, it looks like 2018 may stand as the high mark for oil production for at least a couple of years.

Natural gas consumption rose by 2% in 2019 as the share of natural gas in primary energy consumption rose to a record high of 24.2%. Natural gas production grew to a new record, with U.S. production accounting for almost two-thirds of this increase.

Renewable energy continued its growth streak. Wind was the largest contributor, but solar was close behind. China once again led all countries in consumption of renewables, followed by the U.S. and Japan. The share of renewables in power generation increased to 10.4%, surpassing nuclear power for the first time.

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 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 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.

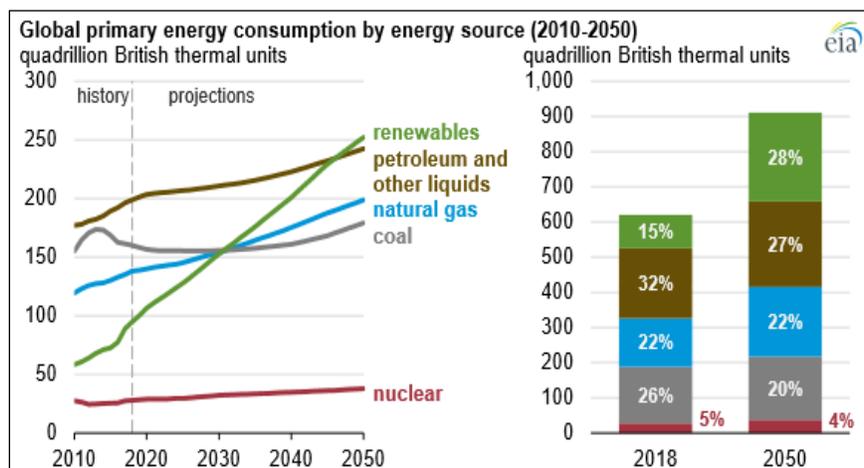


Figure 5

Fig 5 illustrates global primary energy consumption by energy source. By 2050, oil and gas are projected to supply more than 49% 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.