

Energy In the 21st Century

An Applied Economist's Perspective



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Introduction

Fossil fuels are still the “Lifeblood” of U.S. & World economies. The crude oil and natural gas produced here in the U.S. and around the world, helps to produce products and provides energy to move the economy forward. Even as we continue to phase out coal from its primary role in generating power for the world, it played a key role in developing the world’s largest economies. Today, we are looking at new technologies including nuclear energy in several different forms and the renewables including wind and solar that can help supplement the need for more power.

Many times, over the last several years, I have been asked to give interviews, presentations or publish commentaries on the future for “Fossil Fuels Energy” in the U.S. and abroad. I have given commentary on both the Fossil Fuels side as well as the renewable side (primarily ethanol, biodiesel). I have given commentary on both wind and solar as well, but not as a primary energy source.

I have been asked if security in energy is “Iron-clad” or is it tenuous. I have been asked if it can withstand great pressures or is it what we call in economics, elastic (able to bend but not break). I have been asked how much longer Fossil Fuels Energy can withstand the economic and political challenges it currently faces now and moving forward into the middle of this century. These are the questions many of you and many in the media have asked me since the early 2000’s and oddly enough, they are the same questions being asked today more than twenty-five years later. I fear we are not any closer to a clear and concise answer than we were then, as market conditions have become much more volatile, and risk continues to accumulate.

Today’s “Fossil Fuels Industry” is as robust as it ever has been. U.S. crude oil production stands at a record 13.5 million barrels per day, (mmbpd) in crude oil and we are producing 3,785 billion Cubic Feet, BCF in natural gas. Gasoline and the distillates, including diesel fuel prices, are retreating from the most recent round of inflation. The U.S. stands as the largest producer of crude oil in the world, followed by Russia at 10.3 mmbpd and Saudi Arabia at 8.95 mmbpd.

According to CEICdata.com (32) Global demand for crude oil, at the end of 2023, stood around 102.21 million barrels per day. U.S. demand stood around 18.98 million barrels per day. The highest demand on record for the U.S. was 20.5 million barrels per day in 2005. More recently, and because of the pandemic, demand dipped to 17.1 mmbpd by the end of 2020 and recovered to 18.7 mmbpd by the end of 2021.

There have been significant new reserves discovered in the U.S. with the Wolfcamp find and the Apache Oil find in 2016, finds in the Artic Circle in the late 20-teens, and off the South American Coast just recently, and more. All of these are countering what was thought to be settled science, in the assumed finite nature of fossil fuels. New finds are being discovered much more often than we all thought. It turns out that anyone who declares something is “Settled Science,” does not understand science at all. Science is evolving and never settled, especially when it comes to predicting future events. Unfortunately, the term “Settled Science” has more of an impact from a political standpoint, than it has from a science perspective.

We will endeavor to unwrap current energy conditions for fossil fuels and compare where we were twenty-five short years ago and where we see conditions pointing us, for the next twenty-five years

moving forward. We will look at production and pricing and we will tie geopolitical “Tripwires” to the timelines of the first quarter of this century. Then we will compare where we started in the year 2000 to where we are today, and then project these “Tripwires” to what we expect for the next twenty-five years.

Applied Economics

My journey to become an Economist, more to the point Applied Economist began an exceptionally long time ago. There are a few coincidences between now, the turn of the millennium and the middle 1970s when I learned my first lessons in applied economics.

Looking back fifty years, plus one, it was the summer of 1973, I got my license, and my mom helped me buy my first car. The price of gasoline was \$.39 per gallon, and I could fill the tank of my 1969 Oldsmobile Delta 88, for \$9.67 for a full tank. (24.8-gallon tank) After only three short months, the Arab Israeli War began on October of 1973, on Yom Kippur and the cost of gasoline jumped 25% to \$.52 per gallon.

Then to add insult to injury, rationing became a thing, where we could only buy gasoline based upon the last number on our license plate. Odd could buy gas on Monday, Wednesday, or Friday and even could buy gas on Tuesday, Thursday, or Saturday. I may have those backwards, but you get the point, and we could not buy gasoline on Sunday at all. With all that, my mom had me park my car after just three short months and I went back to riding my bicycle to good ole Seguin High School, it was humiliating. That is when I got my first lesson in Applied Economics, my mom told me I had to get a job if I wanted to drive that car.

I needed a plan because bicycle dates with “sugar muffin” just were not much fun and dangerous at night. It is interesting how much of a motivator being demoted back to a Western Auto Ten-Speed bicycle can be. Economics became real for me that fall. It has been my life’s work.

So, what is an Applied Economist? According to Investopedia, “Applied Economics” relates the conclusions drawn from economic theories and empirical studies to real-world situations. The purpose of applied economics is to improve the quality of practice in business, public policy, and daily life by thinking rigorously about costs versus benefits, incentives, and human behavior.” In other words, the focus is on what benefits the economic data brings to the business owner, a stockholder, or an investor.

As an “Applied Economist” I work with business owners and policy makers and apply economic theory to improve outcomes and returns to the bottom line for their business. For the purposes of this paper, we will define terms and conditions from this perspective.

We will begin this study by addressing the connection between today’s prices and turn of the century prices. We will address what is missing and we will draw comparisons between Energy Security and National Security. Plus, we will discuss what creates economic “Tripwires” for this nation’s economy and how to avoid them.

The last Twenty-Five Years

My first day in graduate school, my professor called me into his office and said, “the most valuable tool you will have in your toolbox as an economist, is your gut. After years of trial and error, you will

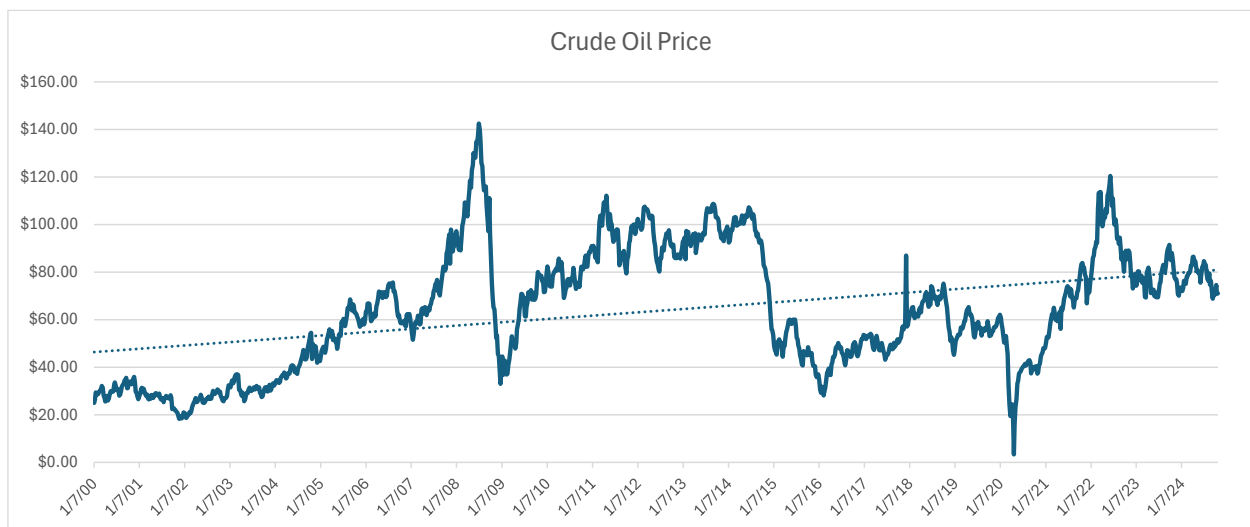
discover a set of gut instincts. These instincts are acquired over time and cannot be learned from a book or gleaned from attending a short course. These gut instincts will not fail you, when the numbers do.” Trust them, they are your most valuable tools. This has led to my work in economics since that day in my professor’s office. This is the prism through which I focused my work in applied economics, especially in energy.

They say, “History Repeats Itself.” So, let us start here. In October of 1973, Egypt and Syria attacked Israel on Yom Kippur, kicking off the fourth Arab Israeli War. Then, right after the attack came the Arab Oil Embargo, on the U.S. & Netherlands by OPEC. OPEC was upset at our decision to support our ally Israel, so they sanctioned us and cut off oil shipments to the U.S. for the next six months.

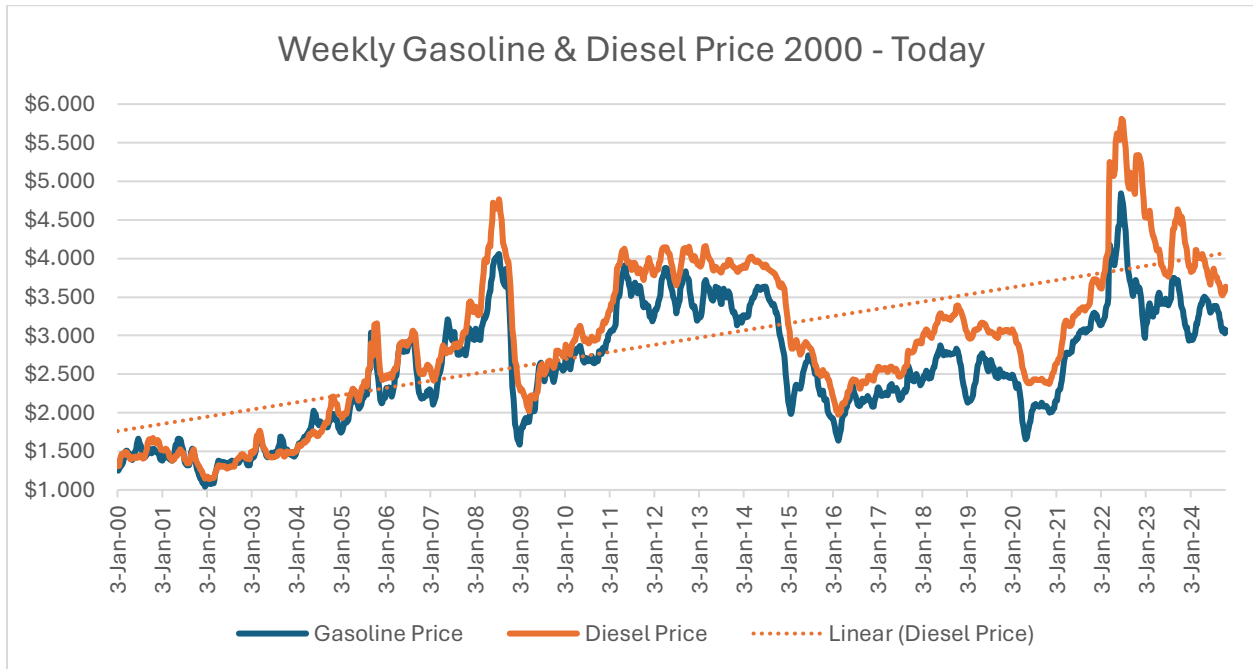
Fast forward to, last year, October 7, 2023, a short fifty years after the 1973 Yom Kippur War. Again, came another attack on Israel, and again on Yom Kippur, but this time it was the Iranian proxy group Hamas. More than fifteen hundred people were lost on that one day. Over the last year many more have lost their lives in this protracted conflict. So, while we focus primarily on the last twenty-five years in fossil fuels energy, the genesis for today’s market actions, had their roots planted over fifty years ago, in the same Israeli soil. One wonders if anything has really changed!

As I look back at the last twenty-five years in the energy world, I am amazed that so much has happened in such a brief period. We started the “New Millennium” with crude oil trading at \$24.95 per barrel, gasoline was \$1.26 per gallon and diesel fuel was \$1.30 per gallon. Natural gas was trading at \$2.30 per million cubic feet, mmmcf and the markets were mostly tame compared to where they are today. (for the most part)

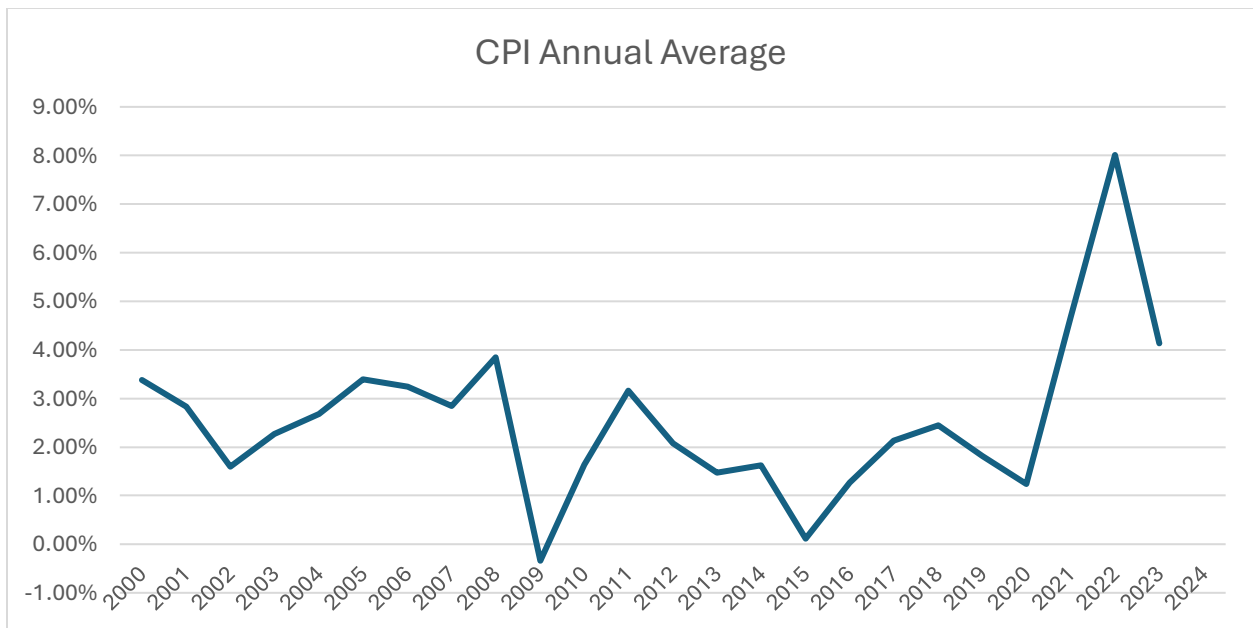
Let us look at some numbers and a timeline for the first quarter of a century. As you can see below, we began the New Millennium at \$24.95 per barrel on a weekly average. For this paper we will use the “Weekly Average Price.” We closed the chart for the purpose of this paper at \$68.78 on October 15, 2024. The record high for the period was \$142.52 on July 4, 2008, and the record low was \$3.32 per barrel on April 4, 2020. The average price for a barrel of crude oil during the first quarter of a century was \$63.63.



Gasoline & diesel fuel followed crude oil, with a number of production disruptions affecting the production of distillates like diesel fuel and jet fuel. Here is a graph of diesel fuel and gasoline for the first twenty-five years for comparison.



The Consumer Price Index is a solid indicator of inflation. I am sure you have heard that the most powerful force on Earth is water. It quenches thirst, puts out fire, molds granite and can dissolve many minerals. Inflation is a powerful force as well, but it exists in the economic world, it is just as powerful, and destructive. The chart below shows the range of CPI/Inflation values, since the new Millennium.



The closing price on October 25, 2024, for West Texas Intermediate crude oil was \$71.78 per barrel, the U.S. Average retail price for a gallon of gasoline was \$3.10 per gallon and diesel fuel was \$3.57 per gallon. Natural gas was trading at \$2.56 per mcf and markets are extremely volatile. Just for continuity, cell phones now do everything as well as making a call. We can pay bills, transact business with your bank, take highly refined pictures and videos, facilitate conference, or zoom calls and they can even check your blood pressure and tell you when your sugar is too high.

The last twenty-five years have moved the technical revolution significantly across the Production Possibility Frontier, PPF and prices have been all over the chart as well. Technology continues to evolve and is moving towards a new realm, artificial Intelligence, AI. Who knows where we will go from here, the possibilities are just now starting to expand across the frontier.

But let us be clear here, even with all the advancements across the PPF frontier, the world is nowhere near ready to transition away from gasoline or diesel engines or even away from natural gas to heat our homes. There are too many essential steps for development that are either wrong or just missing all together before we can take on this transition.

What Was Missing

Has anyone seen the transition plan from the U.S. Department of Energy, to move from fossil fuels to renewable forms like wind and solar. Has there been a referendum (vote) taken to gauge our nation's interest in making the change? Was there a threat assessment done that conclusively stated that the World and its inhabitants were in imminent danger from a changing climate and man was the guilty party to this disaster? Has there been a thorough and peer reviewed collaboration of science making comparisons? Point blank, did anyone ask the public what we thought about abandoning fossil fuels and has anyone seen the so-called settled science these decisions were mad off?

We have seen no development plan that defines the parameters for the change. We have seen no timeline for development, construction, implementation or even an exit strategy for replacing all the internal combustion engine vehicles. There are no budgets and there are no guidelines for the research that is necessary to support this change. All we have are bureaucrats tasked with making a change, with nothing to support their actions other than claims of imminent death and threats to follow the governments narratives, or else! All the essential steps to facilitate this change are either missing or never existed in the first place. All the activists had was a motive and a threat.

Consider this, If the CEO of a business walked into a bank, and asked for a loan to begin a development project that would change the world and he didn't have a business plan, implementation strategy, environmental impact study, set of budgets and financials in order for the bank to evaluate, the CEO would be tossed out of the bank on his ear and never allowed back in the building! Then, after the CEO is ousted by the bank, he reenters the bank and tells everyone inside they are going to die in the next ten years, because the bank would not give the CEO the loan. Who motivates me like that?

No credible endeavor begins without these essential documents in hand. But, somehow, we just saw this very scenario played out by the current administration and all they had in their hands when they went to Congress to appropriate the funds, was an excuse and a threat. The excuse was if you

do not fund this change now, we are all going to die in ten short years. Things just do not work this way. Consequently, we still need our fossil fuels and will need them for a long time.

I believe, to prepare the nation for the transition from fossil fuels to wind and solar, I would estimate we will need our fossil fuels for at least the next seventy-five years. Crude oil & natural gas are the energy that runs our lives and drives our economies today. Coal and was responsible for energizing Henry Ford's assembly lines along with hydroelectric and fuel oils. Nuclear played a big part as well as the technological revolution took hold in post WW-II America, and it will take time and planning to undertake the massive shift to the electric world as well. If that is the real motive.

There is no energy "Field of Dreams" here. The concept of "If we build it, they will come" works in the movies, but economic life simply does not work that way. We still need to feed and clothe our families, heat, and cool our homes, keep our businesses functioning and have sufficient reserves of all of these to help our neighbors when they need our help. That is who we are as Americans.

Working the Plan

If we extricate politics from the process, then we can begin to formulate real plans for this transition to all-electric. When I do development work, my team and I always start with a functional timeline and then we add deliverables along the timelines to create our own version of a Gantt Chart. It includes every stage deliverable, with time, conditions, and budgets. Before we begin, we know what finished looks like and what finished will cost over time and overall. No one has undertaken this kind of approach in energy transition, so we cannot be sure anyone is serious about accomplishing a set of outcomes or goals. Even if there are documents that provide the necessary details for energy transition, their approach to scare and intimidate businesses and our citizens betrays the public trust. President Reagan coined the phrase, "Trust but verify" that needs to be followed here. Tell me we need to make the change but show me the proof.

Here is a point to ponder. In the early 2000's we began to see giant windmills pop-up in West Texas. The developers had a plan for how many windmills to construct and what the timeline was and budget for building the new high voltage power lines, which would move the power generated from the source to the point of consumption. It was a good plan, and it was working to help supplement the power needs of the people of Texas. The wind project knew that the power transmission phase would begin in 2008 and would be completed in 2012 so power could begin to be transported from West Texas to cities down state, which needed the boost in power. It worked like a charm, until the developers built on more power generation than the power lines could handle. We were told by a state official that the High Voltage power lines from the Competitive Renewable Energy Zones, CREZ, in West Texas were running at full capacity by 2015, with no available expansion space. That was nine years ago, and nothing has changed. Now, as you pass by a wind farm in West Texas and you see several of the wind mills are not turning, you understand there is no available capacity to move the excess power, so the wind mills are turned off, until there is room on the distribution lines to move more power.

My point is this, even with a plan, sometimes we overplay our hand and there is no place to turn with the spare capacity to transfer the power. Unfortunately, this scenario plays out too often. It begs the question, why do we try to pull added demand from the power grid, when we cannot move the power because the lines are at capacity? That is where we are in the transition with wind and

solar. We are creating more demand for power when we cannot deliver it. This is why we are so far behind in having a system that can replace traditional sources for our power needs. We will need our fossil fuels to continue keeping the wheels of commerce rolling for a long time to come.

Occam's Razor

Right after the 9-11 attacks in 2001, the narrative following fossil fuels was the U.S. would run out of crude oil by the year 2050. I heard this from elected officials, and I heard this from the proponents of renewable fuels. The Ethanol folks were talking up a storm on how ethanol could easily replace gasoline and ethanol biorefineries started popping up everywhere. Unfortunately, I was one of those people promoting ethanol, but only as an additive, not as a total replacement for gasoline.

The biodiesel folks were not far behind and before you knew it, we had a full-blown panic going on. Many in the Exploration and Production, E&P world were not listening to the hype, they were busy looking for a much simpler and extremely less expensive solution, find more oil! They knew the more complicated solutions most often do not pan out.

If you follow the theorem of Occam's Razor, you will naturally gravitate to the simplest solution first. The simplest solution was to find more oil! That postulate worked, as on September 8, 2016, CNN reported Apache Oil had revealed it had discovered over three-billion barrels of crude oil and more than seventy-five-trillion cubic feet of natural gas in the Permian Basin and dubbed it the "Alpine High" find. Then, here we go again, on November 15, 2016, the U.S. Geological Survey, USGS announced the "Wolfcamp Shale" find. The USGS estimated that more than twenty-billion barrels of crude oil and sixteen trillion cubic feet of natural gas reside within this shale formation. Within sixty-seven days of each other, U.S. E&Ps discovered over 23-billion barrels of crude oil and ninety-one-trillion cubic feet of natural gas and natural gas liquids. Crisis averted, right?

With just these two record fossil fuel finds, the game had changed, and the battle lines had been drawn. Once again, if you follow Occam's Razar, the simplest solution would be to continue the established path for fossil fuels. Unfortunately, way too much water had crossed under the bridge and the folks who supported the replacement of fossil fuels were already in too deep. Money had been spent and now, a smoothly rolling economy was driving down the road like a car with one square wheel. It will get you there, but it is not going to be a fun ride!

The environmental community found a way to spoil ethanol and was well on its way to spoiling fossil fuels as well. Now we had a significantly greater problem, we found the simplest source for feeding the economic engines of the world, now comes the question, "Can the two opposing groups find a way to work together." The answer was "No" from the environmentalists. They wanted fossil fuels gone completely. There was no room for compromise. While the E & Ps of the world embraced the "all-of -the-above" mentality the battle had just gone political. Lines were crossed and nations fortunes were soon to be pledged to rid the world of fossil fuels.

Occam's Razor worked, as we found significantly more reserves for oil & natural gas, and we kept making finds, but the lines were already drawn, and a battle was brewing.

Energy and National Security

While there is no “official” definition for Energy Security, its functions are essential for keeping the wheels of commerce moving and out of harm’s way. It is about supporting U.S. production of energy source materials including the fossil fuels, to generate power and drive U.S. commerce. It is also prudent to recognize that Energy Security is a major subset of National Security. (33)

Energy Security keeps our U.S. economy and our own individual economies moving forward producing goods and services and strengthening the bonds between U.S. natural resources and our national interests, including national security. Energy Security keeps secure, the lifeblood of a nation’s economic activity. It ensures that the economic wheels keep turning and remain profitable for U.S. companies.

In the late nineties I conducted a survey for a grocery chain that had a fuel pump island in the parking lot of the store. Among the ten questions I asked the shoppers was to define Energy Security. Most respondents said, becoming energy independent so we can control prices at the pump. Fast forward to the Spring of 2012, I was conducting a survey for another grocery store group. We asked 902 customers the exact same ten questions that I did in the late nineties. The new store owners wanted to compare the data, as they were the ones who had me do the original survey at the old store. This time around the responses were different.

When asked to define Energy Security, the overwhelming response was to keep oil and gas protected from supply disruption or terrorism and keep prices from spiking. It was interesting to note that 86% (776/ 902) of the respondents gave some similar form of the same answer. In the original group energy independence had the highest number of responses had the highest number of the responses. The new survey shifted to a concern over terrorism and their own personal economics, as they feared price spikes again. It was clear that the terrorist attacks on 9-11 and the ongoing war in Afghanistan were taking a toll. Geopolitics was the golden thread that tied the two groups together. Supply and demand have taken a back seat to what damage a geopolitical event, whether it is a war or terrorism, this is what drives drove concerns thirteen years ago.

I would speculate that if I conducted the same survey today, concerns over the environment and the growing demand for energy would be top of mind today. So, out of curiosity, I asked ChatGPT to answer this question. I wrote, *“If I asked people today, what would they say the biggest concern would be in energy today?”* The [ChatGPT 4o mini](#) response was this, *“Today, many people would express concerns about climate change and the need for sustainable energy solutions. Issues like fossil fuel dependency, energy security, and the transition to renewable energy sources—such as solar, wind, and hydro—would also come up. Additionally, affordability and access to energy, especially in developing regions, might be highlighted as significant concerns. There is also increasing awareness around energy efficiency and the impact of energy production on ecosystems. Overall, the conversation is heavily focused on balancing energy needs with environmental responsibility.”*

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The best definition for National Security came from en.wikipedia.org/wiki/National_security_of_the_United_States. It says, “*National security of the United States is a collective term encompassing the policies of both U.S. national defense and foreign relations.*” It includes the following elements of policy: (34)

- Using diplomacy to rally allies and isolate threats.
- Marshaling economic power to elicit cooperation.
- Maintaining effective armed forces.
- Implementing civil defense and emergency preparedness policies (including anti-terrorism legislation)
- Ensuring the resilience and redundancy of critical infrastructure.
- Using intelligence services to detect and defeat or avoid threats and espionage, and to protect classified information.
- Tasking counterintelligence services or secret police to protect the nation from internal threats.

(Under bullet point #3, Maintaining Effective Armed Forces, would include maintaining the nation’s Strategic Petroleum Reserves.)

Today’s needs in a globalized world, are a more important than ever as we work to maintain sovereignty and structure for U.S. societal integrity. Breaking down territorial barriers makes it significantly more difficult to protect interests within the U.S. Energy Security is the lifeblood that keeps the heartbeat of the U.S. economy running. The “Policy Elements” described above help form the framework to keep our homeland safe from harm. Whether it is a direct military threat, a cyber-attack, espionage, territorial invasion or tariffs, Energy Security is a function of National Security and an essential element for keeping our economy strong and secure.

Many pundits say that President Biden’s decision to pull 291 million barrels of crude oil out of the Strategic Petroleum Reserve, SPR not only put the Energy Security of the U.S. in danger it threatened the National Security of the U.S. as well. This 45.6% draw in strategic reserves brought the number of gallons of crude oil from 638 million barrels to 347 million barrels. Had the U.S. been attacked, this would have significantly put the U.S. at risk. Today, the Energy Department is slowly adding back crude oil, and the inventory level stands at 385.8, still significantly down from 638 million barrels.

Tripwires

Wade Wilkes is my Co-Host, on our daily radio program and he & I coopted the term “Tripwire” to identify an economic anomaly that creates a disruption, and makes market prices rise. We selected this term because it is an accurate term to define a short-term economic disruption, which can pop up out of nowhere and disrupt normal functions within a market. They occur with greater frequency and can be as devastating as a “Black Swan Event,” when they occur one right after another, or concurrently. Here’s a couple examples of what I see as potential tripwires to the U.S. Economy.

Potential Tripwires

| | |
|-------------------------------------|-----------------------------|
| Soaring Inflation | Tariffs (Both Directions) |
| Government Overreach | Recession |
| Regressive Macroeconomic Indicators | Rising Interest rates |
| War outside the US | National Elections |
| War Involving the US | Antitrust activities |
| Espionage | Credit Availabilities |
| Cyber attacks | Rising Interest Rates |
| Organized Labor Issues Strike | Banking Instability |
| National Supply Chain Disruption | Extreme Weather |
| International Supply Disruption | Stock Market Volatility |
| Adversarial Alliances | Commodity Market Volatility |

The “Black Swan Event” is a longer term devastating economic event that has severe negative consequences to markets in every way possible, but they occur rarely. As the name suggests, the “Black Swan Event” occurs as rarely as the likelihood of seeing a Black Swan! Flu-Pandemic 1918, Great Depression 1929, The Dust Bowl 1930, the Great Recession 2007, Covid-19 Pandemic 2019 are all examples of a “Black Swan Event” are examples of this type of event.

The Y2K scare had the potential to be a “Black Swan Event,” but it never really materialized, though it did cause a spike in cyber security, so it was a “Tripwire.” 9-11 was a pure “Black Swan Event” it was rare, caused the loss of life and financial losses and disrupted the U.S economy for a year.

The upcoming National Election will be a “Tripwire” event, no matter who wins or loses. The financial risk is tremendous. The chart below shows the weekly average price for crude oil, during their term in office, for the last four presidents, as they coincide with the first quarter of a century.

| | |
|---------------------|----------------|
| Bush Avg PX | \$49.85 |
| Obama Avg PX | \$76.92 |
| Trump Avg PX | \$53.66 |
| Biden Avg PX | \$80.81 |

This chart tells us, during the last twenty-five years, that prices for crude oil tend to rise during Democrat Administrations and tend to fall during Republican Administrations. One might be tempted to think the Democrats are better for the oil & gas industry because of higher prices when they are in office. However, quite the opposite is true. Prices tend to fall during Republican Administrations because, Republicans tend to be more energy supportive and create conditions that favor greater efficiencies in Upstream, Midstream and Downstream operations. These conditions help create an environment that helps reduce inefficiencies and lower break-even costs. These benefits will flow into the pockets of consumers and will bring down inflation, as the lower prices spread across transportation, production and distribution of the products derived from crude oil. You might remember, national elections are on our list of potential “Tripwires” in the previous section.

Our thought here was this, “Tripwires” are developments that stand to significantly disrupt or redirect supply chains, production, storage, and transportation. The damage left behind or moving forward from a “Tripwire” can be quite drastic, but it can also only hit a market lightly and not for

very long. We always know when we have snagged a "Tripwire," its damage is easily defined and in plain sight to see. Sometimes we see them ahead and sometimes we do not.

Pre-Pandemic Conditions

It is much more difficult to put a finger on the date when the Pandemic was finally over. But we all remember when we first heard or read about the virus that would spread across the globe.

Some say there are lingering effects that will be with us for years, and not just from a medical standpoint. The SARS-Covid-19 virus spread was first called a Pandemic on March 11, 2020, by the World Health Organization. It was officially ended on May 5th, 2023, but that was from the health effects of the pandemic. The economic effects began in late 2019, as it began to disrupt travel to and from China and other world destinations. Some economists will say there are lingering economic effects left over from an incomplete recovery. I am one of those economists.

I remember reading about a virus outbreak in China, back in December of 2019. As the media attention began to increase across the globe on this virus, it acquired a name, and deaths from the virus were beginning to increase as it spread to the U.S. in January of 2020.

At the same time, the U.S. & China had just reached agreement on phase-1 of the U.S. China trade agreement. Phase-1 of the two-part trade agreement was structural and focused on conditions that needed to be met, to have the U.S. remove the onerous tariffs placed upon China and China needed to commit to reforms. Here is an excerpt from a report from the U.S.D.A. Foreign Agriculture Service. *"In 2020, the United States and China reached an historic and enforceable agreement on a Phase One trade deal that requires structural reforms and other changes to China's economic and trade regime in the areas of intellectual property, technology transfer, agriculture, financial services, and currency and foreign exchange. The Phase One agreement also includes a commitment by China that it will make substantial additional purchases of U.S. goods and services in the coming years. Importantly, the agreement establishes a strong dispute resolution system that ensures prompt and effective implementation and enforcement. The United States has agreed to modify its Section 301 tariff actions in a significant way.)"*(36) Unfortunately, the talks had just begun for Phase-2 of the agreement, when the pandemic reached across the Pacific and a Washington State resident was the first U.S. citizen to die from the virus. It was a tricky time for U.S. trade relations, it was now an election year, and we had a virus moving across the globe. We did not need anything to disrupt the progress that was being made.

On January 20, 2020, I wrote in Energy Brief Today, this cryptic comment, "There are conflicting signals across the markets this morning, and we are beginning to build momentum to the downside. We cannot have a miss or a BLACK SWAN EVENT, which shakes market support." It was the pandemic, and it was about to neuter the U.S. China Trade Agreement and kill millions of people worldwide!

By March 15, 2020, schools began to close, from primary to universities. Businesses closed their doors, bank lobbies were closed, car dealerships shut down operations and thousands lost their jobs due to concerns over the spread of this deadly virus. Demand for crude oil and gasoline fell significantly and port systems closed so our transportation supply chain was disrupted.

On April 20, 2020, the price for WTI crude oil dipped into negative territory on the futures market. It was the Last Trading Day for the May 2020 contract and the cash market had to equal delivery. That price was -\$37 per barrel. While the price did recover quickly, the shock of that day still lingers.

I said on our radio program on January 20, 2021, that there needs to be a plan to recover this economy, as we exit the depths of the pandemic. GDP in the second quarter of 2020 was -31.4%, the third quarter was +33.1%, and we finished the year at 4% growth. The markets were beginning to lean lower, and we could see there was more trouble in the recovery ahead.

On the day President Biden was inaugurated, he famously signed seventeen executive orders, one of which was to kill the Keystone XL Pipeline. This began a spiral of events that immediately ignited a round of inflation the U.S. had not seen since the early 1980's. Inflation was running around the 1.4% when President Biden took office and would spike up to 9% by the summer of 2022. The upward trajectory of U.S. Inflation followed the increase in the prices for crude oil. The price for a barrel of crude oil was \$53.31 when President Biden took office but, when inflation was at its zenith, it was in June of 2022, the price for WTI crude oil was \$120.67 per barrel. Putting it plain and simple, President Biden's desire to kill fossil fuels was pushing inflation to levels that would extend the "grief factor" from the pandemic. We had gone from tight grocery supplies during the pandemic, to not being able to afford those groceries, because of the highly inflationary policies of the Biden Administration.

To add insult to injury on February 24, 2022, Vladimir Putin ordered the invasion of Ukraine, adding further upward pressure to the cost of energy around the world. This action was followed by the WTO sanctioning Russian crude oil and natural gas. Then Hamas invaded Israel killing thousands and setting the Middle East on a crash course for war. Then to "add insult to injury" China makes it known that there will be a point soon, when it takes back control of Taiwan, like they did in Hong Kong. Was this because of U.S. Weakness or sheer imperialistic aggression? So, now the energy economy is back on a war footing in Eastern Europe and the Middle East. These actions have put a floor under the price for crude oil, natural gas, and LNG, as the risk continues to escalate.

The New Millennium 2000 through 2004

The new millennium started off with a measure of consternation, as the incredibly young internet, personal computer industry, and anything that had an internal clock, held their collective breath waiting for the Y2K Bug. The story was that the Y2K bug would render all electronic systems useless at midnight on 1-1-2000 and the wheels of commerce would just stop. Life as we knew it, on this planet would just stop all the industrialization that came with an internal clock or run with the assistance of a microchip!

On 12-31-1999, the clock ticked up to 24:00:00, then 24:00:01, then 24:00:03 and just kept on going. Nothing happened, I, like many of you, was watching the New Years Eve Countdown on television and Frank Sinatra, was singing "New York, New York," nothing stopped working and he kept on singing. Looking back, we were about to embark on one of the most tumultuous quarter centuries in U.S. History. The Y2K Bug was a bust, but the next 25 years was a boom, both good and bad!

Little did we know that several geopolitical crises, pandemics, several financial crises, and record crude oil prices and production, would set the tone for this century and much more. In this paper, we will look at five timelines that represented a smattering of events, cut into five-year segments for the first twenty-five years of this century. Here is the first timeline.

Crude oil prices started the New Millennium at \$24.95 per barrel. Optimism was high for the new century, with the inclusion of the World Wide Web. The rate of inflation was 3.36% and the economy was stable.

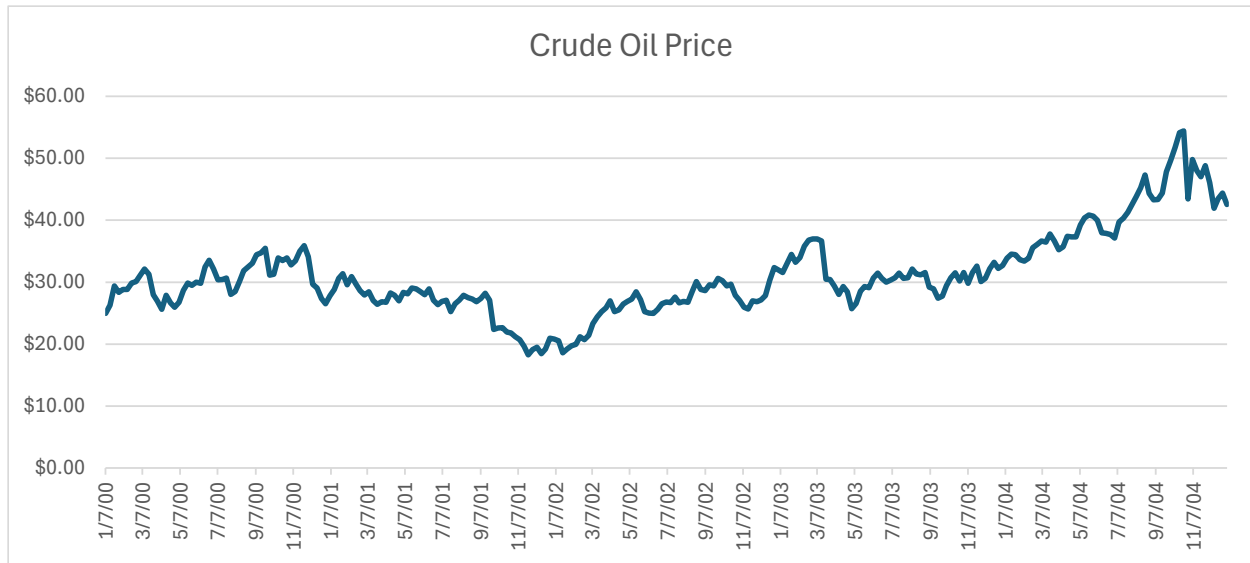
The World Wide Web become popular in the late 1990’s and the expansion into the “.com Boom” was at its peak at the turn of the century. The “.com-Boom” became the .com-Bust” in March of 2000 as many of the startups within this industry sector went bankrupt.

What makes this five-year section of the timeline significant is the Invasion of Afghanistan and Iraq, in retaliation for the 9-11 attacks. The 9-11 attacks began a roller coaster of prices in the energy complex of markets, because it added significant layers of risk to the price of crude oil.

Here are key timeline items that occurred during the period from 2000 through 2004.

| Year | Events 2000 through 2004 |
|-------------|--|
| 2000 | Y2K Bug In September of 2000, a few months after negotiations at Camp David fail, a Second Intifada began. Hamas influence grows within Palestine, against Israel (2) George W. Bush elected President of the U.S. |
| 2001 | President Bush pulls US out of the Kyoto Protocol (31) 911 Attack (3) War in Afghanistan (2001- 2021) |
| 2002 | Congress of the US approves a joint resolution that authorizes President Bush to use the US Armed Forces against Iraq (4) |
| 2003 | U.S. Invasion of Iraq on March 20 (5) U.S. Invasion of Iraq over on May 1st |
| 2004 | 28 named Tropical Storms or Hurricanes from June to January of 2006 (6) |

The graph below shows the highlights for the five-year period from 1-1-2000 through 12-31-2004. The graph shows the starting point for the price of crude oil was \$24.95 the week of 1-1-2000. The high price for that period was \$54.43 the week of 10-22-2024 and the low for the period was the week of 11-23-01 at \$18.28. The average price for WTI crude oil was \$30.98 and the Futures spot month closing price was \$42.52, the week of 12-31-2004. The chart below ties to the invasion of Afghanistan and Iraq and is signified by increasing prices.



Renewable Fuels & Recession
(2005 through 2009)

In September 2005, I opened my company Agri-Energy Solutions, Inc, (Now Matador Economics) for the purpose of assessing my entrepreneurial abilities with a growth industry in renewable fuels, mostly ethanol and biodiesel. I had spent a sizable portion of the previous five years helping to develop opportunities for a commodity organization to produce ethanol.

During my time at the commodity group, I came across an impressive set of research, on the value of grain sorghum, as a starch source, which could replace or supplement corn for producing ethanol. The starch output in grain sorghum equals the starch output for corn and there are areas of the U.S. where grain sorghum was more readily produced, due to limited rainfall its benefits as a rotation crop, but grain sorghum was being traded at a 15% discount to corn. Not only was it a great substitute for corn in the dry grind milling process, but it was also a good economic choice as well.

They say timing is everything and ethanol was in the “right place at the right time” to serve as the proper replacement for Methyl Tertiary Butyl Ether, MTBE. MTBE was used as the oxygenate by refiners to boost octane in gasoline for reformulated fuels. However, studies showed it would enhance the “Greenhouse Effect” adding to the earth’s temperatures, so there was a highly active mission, by refiners to replace MTBE.

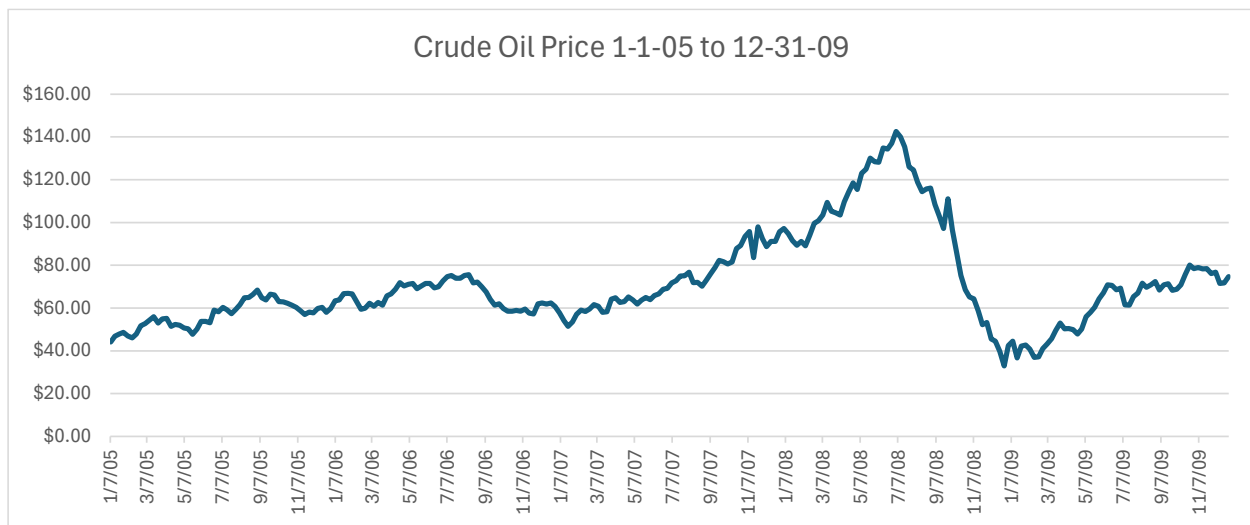
In 2005, Congress passed the Energy Policy Act that removed the oxygenate requirement in reformulated fuels and at the same time instituted the Renewable Fuels Standard, RFS. And ushered in the new national ethanol era. To further insure that finished gasoline includes ethanol, Congress added another renewable fuel mandate, RFS-2 in the Energy Independence and Security Act of 2007. (35)

It is important to understand that today’s reformulated gasolines use 10% ethanol in their finished fuels, and it is estimated that 98% of all gasoline sold in the U.S. has ethanol blended in the finished fuel. The E-85 fuel blend includes from 51% to 85% ethanol, depending on where the fuel is sold, for use in the Flex-Fuel vehicle.

Here are key timeline items that occurred during the period from 2005 through 2009.

| Year | Events 2005 through 2009 |
|------|--|
| 2005 | Hurricane Katrina costliest hurricane on Record \$108-Bil, killed 1836 people (7) President Bush signs into law the Renewable Fuel Standard |
| 2006 | US Turned down Iranian offer to settle differences about recognizing Israel's right of existence and alleged Iranian support for terrorism (8) |
| 2007 | Great Recession began (9) |
| 2008 | Global financial crisis continues. Barack Obama is elected President of the U.S. George W. Bush reelected President of U.S. (10) |
| 2009 | Great Recession subsided Mid-2009 (11) |

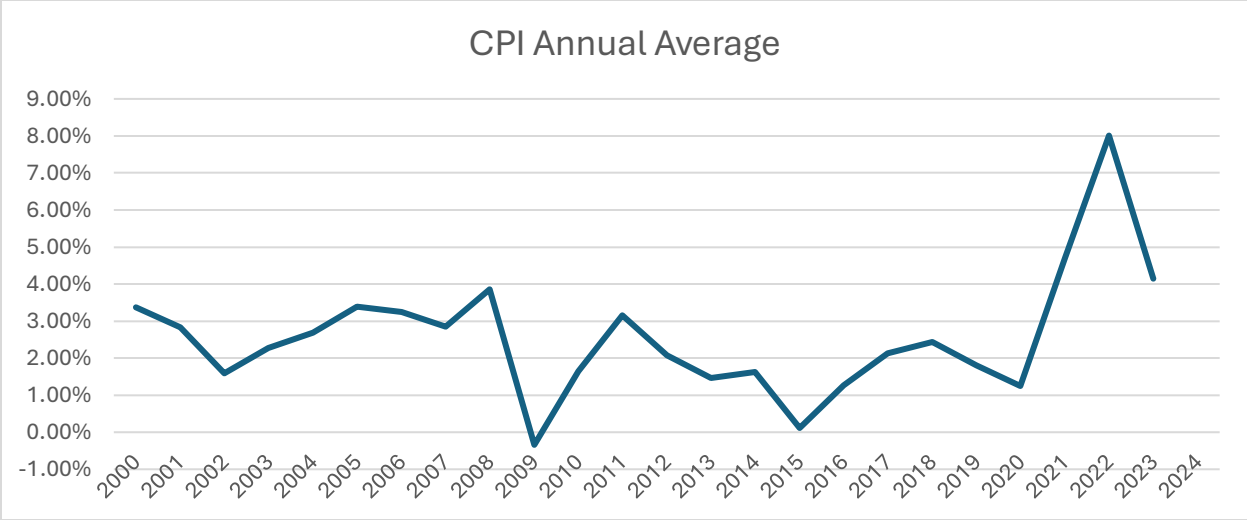
The graph below shows the highlights for the five-year period from 1-1-2005 through 12-31-2009. The graph shows the starting point for the price of crude oil was \$44.07 the week of 1-1-2005. The highest price for that period was \$142.52 the week of 7-4-2008 and the lowest for the period was the week of 12-26-2008 at \$32.98. The average price for WTI crude oil was \$71.21 and the Futures spot month closing price was \$74.76, the week of 12-31-2009. (See Chart Below)



Fossil Fuels & the Economy After the Great Recession (2010 – 2014)

The great recession in 2007- 2008 brought about the, the Affordable Care Act, debt ceiling crisis and the Dodd Frank Act. The “Dodd-Frank Wall Street Reform and Consumer Protection Act” came along and created significantly more rules and regulations and grew the government, post-recession. According to the Wikipedia, this bill signed by President Obama required that regulators revamp the U.S. financial system, as a remedy for the Great Recession. Dodd-Frank was considered so onerous, that in 2018 many of the highly restrictive provisions of the Dodd-Frank Bill were rolled back.

Inflation was 1.64% in 2010 and rose quickly to 3.16% in 2011 in part due to over regulation by the provisions of Dodd-Frank. By the end of 2015, the annual inflation rate as measured by the Consumer Price Index had dropped to .12%. Here is a chart showing the CPI from 2000 through 10-25-2024.

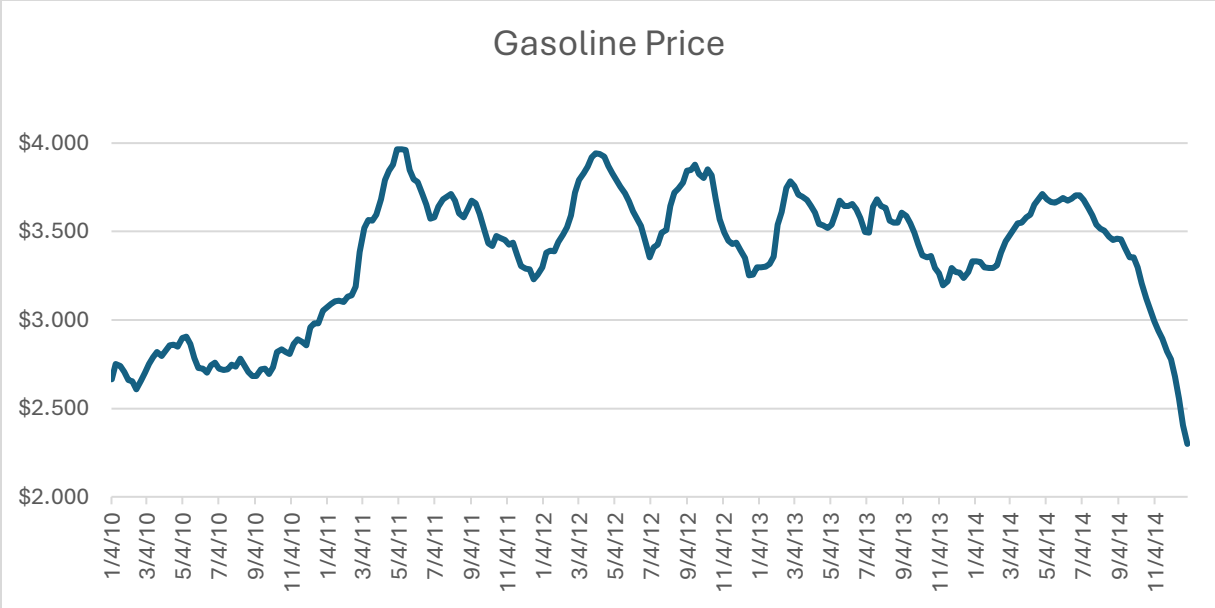


Fossil Fuels & The Great Recession (2010 – 2014)

At the end of the Great Recession and post-approval of the disastrous Dodd-Frank Regulations where hundreds of new rules were implemented including the soon to be repealed “Mark to Market” rules. This country was trying to recover from an avoidable financial mess.

The previous graph showing inflation during this period shows how drastic the change was in the run up to 2021, only to falter again, as prices remained elevated. Gasoline & diesel prices fell during the period from \$ 2.665 for gasoline to \$2.299 per gallon on December 31, 2014.

While most of the five-year period showed significant volatility, prices hit a wall in July of 2014, because OPEC cut production targets by 4.2 million barrels per day in 2010. That pushed prices higher, and the U.S. began to increase production for crude oil to offset the OPEC cuts. This back and forth shows very clearly in the graph below. In fact, U.S. Crude Oil production increased from 5.584 million barrels per day on 1-1-2010 to 9.687 million barrels per day at the end of December 2014.

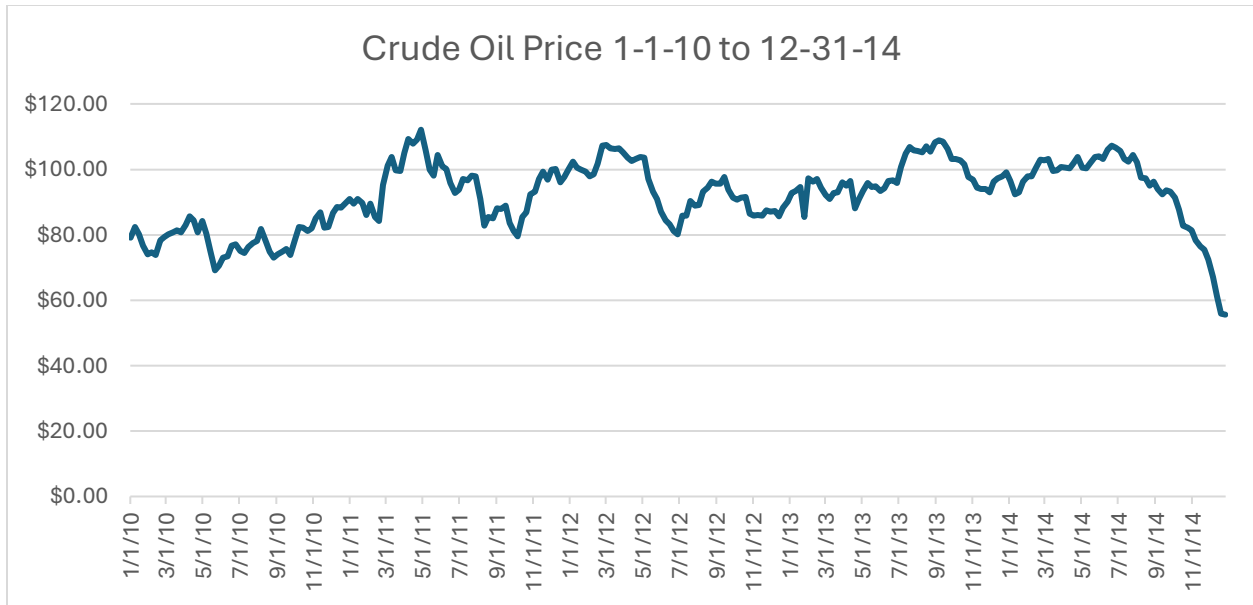


By increasing U.S. crude oil production to offset OPEC cuts, our economy staved off a potentially catastrophic spike in energy prices, forcing hyper-inflation across the economic spectrum. The nation’s economic future was spared by increasing crude oil production helping to lower the price of U.S. refined products. Our U.S. E&P companies stepped up and filled an economic role, to preserve our economy. This was the essence of “Energy Independence.” OPEC worked to bring the prices for world crude oil to over \$100 per barrel in the background, and the US countered OPEC’s moves and brought the prices right back down.

Here are key timeline items that occurred during the period from 2010 through 2014.

| Year | Events 2010 through 2014 |
|------|---|
| 2010 | OPEC cuts production capacity (12) |
| 2011 | Arab Spring protests begin and spread to Libya, Egypt, Yemen, Syria and Bahrain (13) |
| 2012 | Arab Spring continues. Crude oil prices spike over \$107 per barrel. President O'Bama is reelected (14) |
| 2013 | Crude oil prices to \$112.10 per barrel (15) |
| 2014 | OPEC holds production quotas where they were |

The graph below shows the highlights for the five-year period from 1-1-2010 through 12-31-2014. The graph shows the starting point for the price of crude oil was \$79.07 the week of 1-1-2010. The high price for that period was \$112.10 the week of 4-29-2011 and the low for the period was the week of 12-26-2014 at \$55.58. The average price for WTI crude oil was \$91.92 and the Futures spot month closing price was \$55.58, the week of 12-31-2014. (See Chart Below)



The Election of 2016 & Energy Independence

The election of 2016 brought about wholesale changes in the energy complex and consequently the U.S. economy. It is no mystery that the election of Donald Trump in 2016, changed the fortunes for U.S. Energy Independence and stabilizing the U.S. Economy. The Trump Administration used the energy complex and the availability of U.S. fossil fuels to strengthen not only the economy, but also National Security.

When President Trump took office, the price for WTI crude oil was \$53.22 per barrel, the price for gasoline was \$2.405 per gallon and the price for diesel fuel was \$2.031 per gallon. When President Biden took office, WTI crude oil was trading at \$58.54 per barrel, the price for gasoline was \$2.495 per gallon and diesel fuel cost \$2.738. The SARS Covid-19 Virus wreaked havoc on world economies and the entire world energy complex took a direct hit, though it was noticeably short lived.

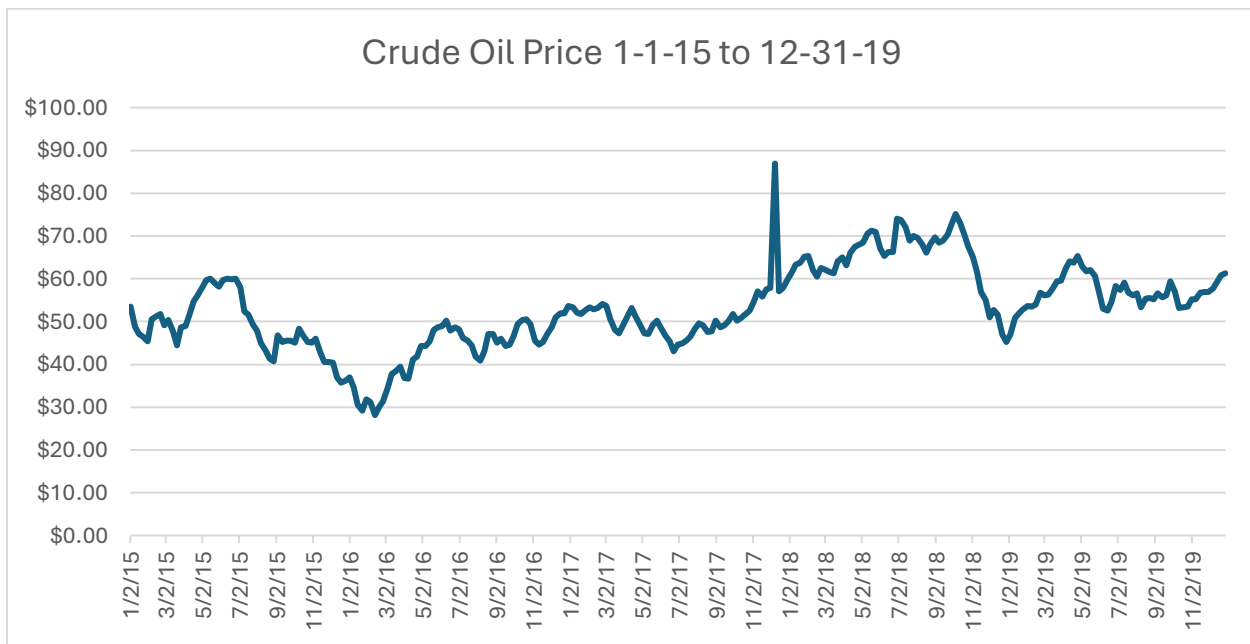
The actions of the Trump Administration prepared a buffer layer for U.S. economy, by building an independence from OPEC and the rest of the world, in the event of the pandemic we all experienced. We outlived a “Risk-On” event that could have pushed the U.S. economy into the great abyss. Remember the April 20, 2020, close of the month dip in crude oil that went into negative numbers? The start of the pandemic along with the “Last Trading Day” requirement to tie the futures price to cash prices, was in imbalance and the EOM number posted a **-\$30** plus closing price for the May contract. It did recover the very next day, but the mark was made. Even with the historic shut down of the US Economy, we recovered energy prices back to the Middle \$50’s per barrel for WTI crude oil.

While we proved that history tends to repeat itself is true, we also proved the need for the U.S. to remain Energy Independent. We must always be prepared to protect against the long-term effects of a pandemic. It also proved that overreacting to a “Black Swan Event” or even a significant “Tripwire” can exacerbate the negative economic impact on a nation’s economy. We proved this fact in the next five-year cycle as well.

Here are key timeline items that occurred during the period from 2015 through 2019.

| Year | Events 2015 through 2019 |
|------|---|
| 2015 | OPEC production left unchanged (17) |
| 2016 | War in Afghanistan continues. Donald Trump is elected President of the U.S. (18) |
| 2017 | Trump Economy begins in earnest (19) |
| 2018 | Remain in Mexico immigration program written and signed into law in January 2019 (20) |
| 2019 | Coronavirus released from Chinese lab (21) |

The graph below shows the price movement for the five-year period from 1-1-2015 through 12-31-2019. The graph shows the crude oil opened the year at \$53.44 the week of 1-1-2020. The high price for that period was \$86.92 the week of 12-8-2017 and the low for the period was the week of 2-12-16 at \$28.14. The average price for WTI crude oil was \$53.05 and the Futures spot month closing price was \$61.29, the week of 12-31-2019. (See graph below)



Changing the Status Quo (2020 – 2024)

SARS COVID-19 was racing across the world at breakneck speed. There was little in terms of science which could stop the spread. Vaccines did not exist, protective protocols were not sufficient to protect, at least initially, the most vulnerable, but then everyone. Pfizer and Moderna went to work immediately to find a vaccine to protect against the virus, but the virus kept mutating. Rules on masking and sanitizing went out the window, so no matter what someone did to protect themselves against the deadly virus, it was not enough, or it just was not right.

US and world leaders struggled to keep their citizens from an all-out panic. President Trump was working with industry leaders to keep our economy structured and functioning, while the government fought the effects from the virus. Many soon realized that the previous three years working toward energy independence had helped the U.S. stave off a depression by creating a buffer and building the balance in the Strategic Petroleum Reserves, SPR to nearly 700-million barrels should we need it. By the time the election of 2020 came around, a significant portion of the economy had recovered, and was beginning to reopen, but the toll from the pandemic, caused a seismic shift in that election cycle and the U.S. elected a new president, Joe Biden.

President Biden won the election and was sworn in at a time that would not be the envy of any of his predecessors. Imagine being sworn in as President to a nation under siege from a pandemic! No matter how you cut it, this disaster not only cost lives, but it created a chasm between the government and the citizens of the U.S. because of the frequent changes of direction on so many issues like masks, closing schools, shutting down businesses, leaving open bars, with restrictions, but limiting the number of people who could attend a church at one time to twelve or twenty five. Nothing made sense and that brings us to new management for the pandemic.

First, the U.S. did not contribute to the creation or spreading of the virus, but we sure did create one whale of a problem after the initial spread by the myriads of missteps in managing the virus. Not the least of which was stimulus!

The U.S. response to the COVID-19 Pandemic saw the issuance of two kinds of stimulus programs. (38) The first was “Economic Impact Payments.” These payments consisted of one round of \$1,200 payments sent out in March 2020 from the “CARES ACT” and a second round of payments was \$600 paid in December 2020 from the “Consolidated Appropriations Act of 2021”. Then a third payment was authorized by President Biden of \$1,400 per tax filer that went out in March of 2021 from the “American Rescue Plan Act”. (39)

Then, the government decided it needed to bail out businesses, which were shutting down from the pandemic, so they hastily created the Payment Protection Program, PPP designed to keep businesses from closing and to ensure that employers kept their employees paid. The citizens got \$3,600 from the government in income and then their employers got a forgivable loan from the government, to pay the salaries of employees who were affected by pandemic mandated closings; a “double dip”. (38) Here are the numbers:

1. 86-million jobs were protected by the PPP loan program
2. 649 loans were either partially or fully forgiven, in the amount of \$10 million.
3. \$72,100 was the average forgivable loan amount.

I realize Congress and the White House were trying to help by sending the initial “Stimulus Checks” to each taxpayer but the problem we created was this. Sending payments directly to taxpayers and giving forgivable loans to employers to retain employees, was in most economists’ minds, a double benefit to both employers and employees. This additional income flowed directly back into the economy and created a bout of inflation that has taken more than three years to correct.

There is a rule in economics, regarding inflation. You have all heard this before, it goes, “The definition of inflation is too much money pushing too few goods.” In this case the government was

pushing cash into the people's checking accounts, and providing a forgivable loan, to the employer, to keep employees on staff. This was happening concurrently with supply chain disruptions because the companies who had shipped goods to the U.S. could not get the goods offloaded from the ships, because port facilities were closed. So imported items like cars and car parts were stuck on ships. Control panels for new houses were stuck in containers on container ships and so on. We had the money, but no way to get the goods. Then when the goods became available, the product went to the highest bidder. This is how the 2021 round of inflation began. (37) What a mess!

There is a tendency in countries where abundance exists. That tendency is to believe that if one item is good, then two items are better and three items are best. We do that a bunch in this country. Business development works that way as well. I was the first developer to bring an ethanol biorefinery to Texas to take advantage of good grain for starch and an excellent co-product from the production of ethanol, wet and dry distiller's grain.

When I first spoke with the City of Hereford, TX about the project the average size of a new ethanol biorefinery was 40-million gallons of ethanol per year. That was in March of 2003. The word got around, and a competing group came to Hereford and suggested a plant that was 50-million gallons, then 75-million and we settled one year later our 110-million-gallon ethanol biorefinery. You can see that the threat of competition for building a project that size was going to be enormous, and we had to win, so if 40 wasn't big enough, then we bumped it to 75, then to 110-million gallons because the money was available and we needed to win.

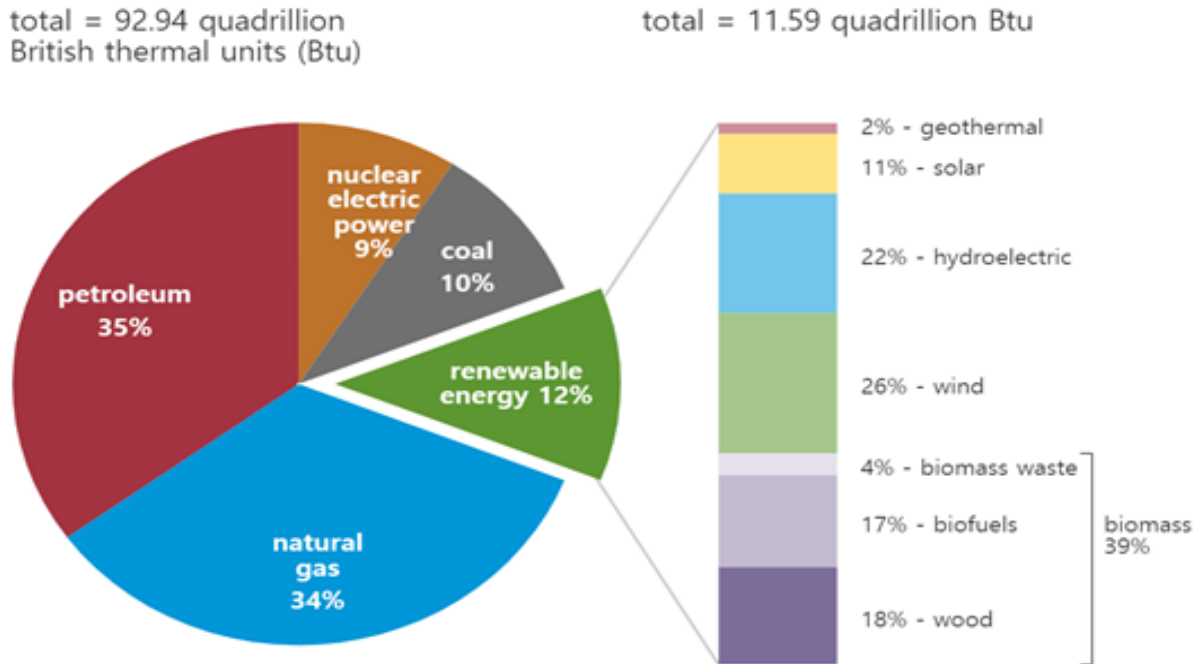
The idea here is this, if money is available, then people will spend it and the people with the best access to the capital will usually adapt to win, every time. That is also what contributed to inflation in 2021. However, the deed was not done yet, as the Biden Administration had declared war on the fossil fuels.

As mentioned earlier, on day one of President Biden's Administration, he signed seventeen executive orders, one of which was to kill the Keystone XL Pipeline. Then he immediately signed the U.S. back on to the Paris Climate Accords, committing the U.S. to reducing the carbon emissions from fossil fuels. President Biden also appointed John Kerry as Climate Czar to begin negotiations with other U.N. members to decarbonize the world and kill fossil fuels.

One of President Biden's first Cabinet picks was former FED Chairwoman, Janet Yellen, to the post of Treasury Secretary. One of her first actions was to instruct banks to consider deemphasizing loans to fund programs for development and operations of fossil fuels. This in turn increased production costs and began a push for prices to go higher for crude oil and refined products. It created an environment of destabilization within energy, and prices rose again, further contributing to the 2021 recession. Remember a couple chapters ago, we discussed inflation was 1.4% when President Biden took office in January of 2021. By June of 2022 inflation was running at 9% and the price for crude oil was back above \$100 per barrel.

At the zenith of the inflation crisis, opportunities for more renewable forms of energy to produce electricity were growing in popularity. According to the Energy Information Agency, EIA the percentage of renewables to produce electricity in 2021, was around 12%. Natural gas produces 35% of the nation's electricity, while petroleum products produce 35% of the world's electricity needs. Coal still provides 10% of our power needs and nuclear energy is produced around 9%.

Here is a chart showing the breakdown of sources for 2021 power production.



Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 1.3 and 10.1, April 2021, preliminary data
 eia Note: Sum of components may not equal 100% because of independent rounding.

Now for the fun part, at the time in 2021, the U.S. consumed 92.94 quadrillion Btus of power for the year. At the time only 11.59 quadrillion Btu's of electricity came from any of the renewable sources listed above.

The fun is not over yet, as another of President Biden's Cabinet picks was Jenifer Granholm, Energy Secretary. During her last four years, the U.S. Department of Energy, along with the Environmental Protection Agency, EPA, sent down regulations that would strangle the fossil fuels industry and remove vehicles that were not "Zero-Emissions" by the year 2030. That included both heavy and medium duty trucks as well. Unfortunately, the "law of unanticipated consequences" came into play, as the transition to zero-emission electric vehicles hit a snag.

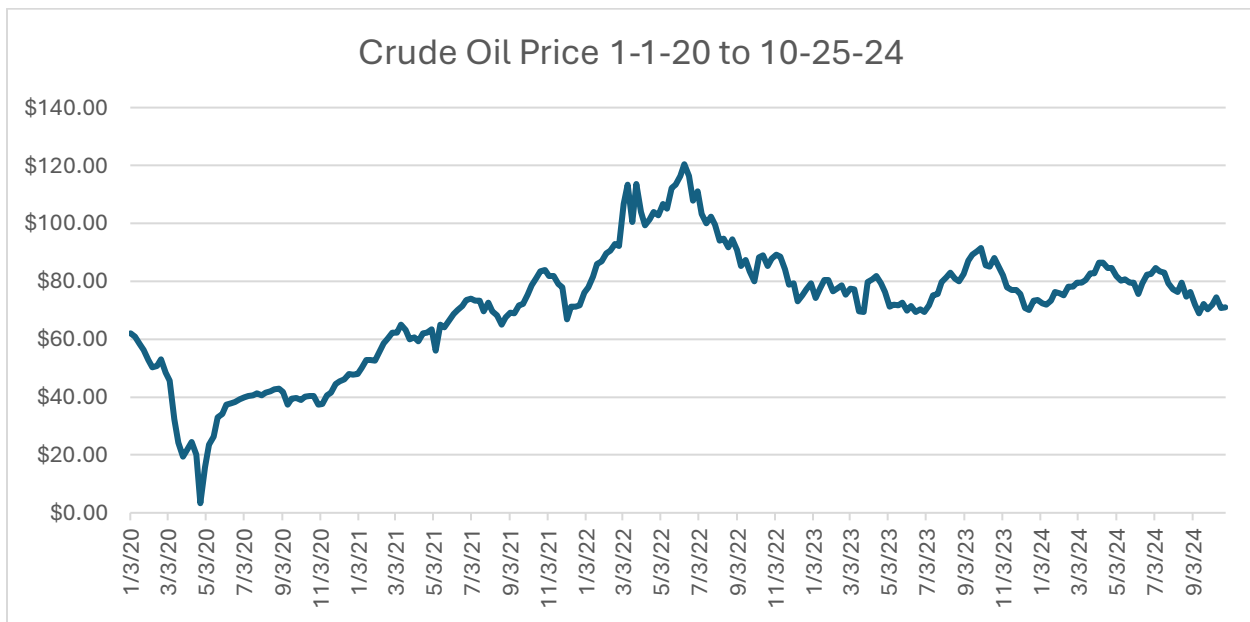
The problem is this, the US and most other developed nations are not embracing the electric vehicle mandate and that is not all. The US will now need to increase its power needs to power all the replacement vehicles to kill the internal combustion engine cars we have today, and more.

Reading the financial news, you might have read that the Artificial Intelligence, AI move is pushing ahead at remarkable speed. If you add just where we are today in AI, as for power needs, we will need to add 40 % more to the power grid. Then add in another 20% more power for Electric vehicle conversion and 15% more for data mining purposes, we will need another 69.7 quadrillion Btu's of power for next year alone if the EV transition is allowed to continue as a sole source energy provider. Many of the fossil fuels-based companies have embraced a position that includes all sources for producing our power needs. We need coal, crude oil, natural gas, wind, solar, nuclear, hydrogen, ethanol, and biodiesel all, or we will not be able to meet our immediate needs for energy.

Here are key timeline items that occurred during the period from 2020 to today.

| Year | Events 2020 through 2024 |
|------|---|
| 2020 | Global Pandemic dredsuces oil demand (22) |
| 2021 | President Biden inagurated and immediately goes after Fossil Fuels (23) Russia invades Ukraine |
| 2022 | The height of the Inflation peaks in July (24) |
| 2023 | Iranian proxy Hamas, attacks Israel, killing approximately 1200 people (25) |
| 2024 | Inflation begins to slow its rise, but prices remain elevated (26) President Biden is asked not to seek reelection, Kamala Harris steps in to run Attempted assassination of Donald Trump Lower than anticipated numbers of tropical ssystems this year but Helene may be the most expensive of all time due to flooding |

The graph below shows the price movement for the five-year period from 1-1-20 through today 10-25-24. The graph shows the crude oil opened at \$60.84 per barrel the week of 1-1-20. The high price for that period was \$120.43 the week of 6-10-22 and the low for the period was the week of 4-24-20 at \$3.32. The average price for WTI crude oil was \$71.26 and the Futures spot month closing price was \$71.02, the week of 10-25-24. (See graph below)



Conclusion

To wrap this up we are going to have to look back 78 years to 1944 and the signing of the Bretton Woods System agreement. This agreement between the U.S., Canada, Western European countries, Australia and more, was needed to rebuild a system for international stability between the world's currencies.

A total of forty-four nations signed on to this system to stabilize and hold secure trade between nations. According to Wikipedia, *“The Bretton Woods system required countries to guarantee convertibility of their currencies into U.S. dollars to within 1% of fixed parity rates, with the dollar convertible to gold bullion for foreign governments and central banks at US\$35 per troy ounce of fine gold (or 0.88867 gram fine gold per dollar). It also envisioned greater cooperation among countries in order to prevent future competitive devaluations, and thus established the International Monetary Fund (IMF) to monitor exchange rates and lend reserve currencies to nations with balance of payments deficits.”* (40) This is the point where the U.S. Dollar became the world reserve or “Fiat” currency.

With the system in place, all currencies were fixed to the U.S. Dollar that was then backed by the value of U.S. gold reserves. It created stability for nations whose economies were decimated by World War II. It also provided a framework that would carry member nations through their rebuilding after the war and into a more prosperous time. Unfortunately, this agreement would sunset when President Richard Nixon took the U.S. Dollar off the “Gold Standard.” This left a vacuum for financial markets, as the former agreement was because the dollar was backed by gold.

The International Monetary Fund and the World Bank, stepped in to help guarantee international transactions, but unrest in the Middle East, the Yom Kippur War, the OPEC oil embargo of the U.S, and fluctuating currency values around the world, made it clear that there needed to be a new system that guaranteed international transactions in U.S. Dollars again. President Nixon sent his Secretary of State Henry Kissinger to the Middle East to work out a deal.

Kissinger had only two tasks. One was to find a Middle East Ally and the second was to secure an agreement that would at the very least guarantee the international sale of petroleum products, since every nation in the world needed oil. This would create demand for U.S. Dollars and would reestablish the U.S. Dollar as the world’s Fiat Currency again.

Secretary Kissinger found a willing ally in the Saudi’s and struck a deal that would secure all international sales of petroleum products if they were transacted in U.S. Dollars. The agreement had the U.S. giving the Saudi’s advanced military equipment and training and security guarantees. The agreement would be sunset in fifty years (June of 2024) and as time went on the agreement was adopted by any nation who purchased crude oil.

Fast forward to this past June 2024. The U.S.-Saudi Petrodollar Agreement was set to expire. The Biden Administration was committed to killing any economic activity that related to fossil fuels, and they did not have a good relationship with the Saudi’s, so the agreement lapsed. Trade in the petroleum world has started to shift away from transactions in U.S. Dollars. We have seen the Indians buy crude oil and pay in Rupees. We saw China buy crude oil and pay in Yuan and more. Unfortunately, this is not the end of the story.

During a United Nations General Assembly meeting in 2009, four nations stepped away to discuss forming a new trade alliance. The original four were Brazil, Russia, India, and China. Their goal was to form an alliance to highlight investment opportunities that would benefit the signatory nations economically. But overtime, their focus was to one day take the place of the U.S. Dollar, as the “FIAT” World trade Currency.

In December of 2010, South Africa was asked to join the alliance and become the fifth signatory nation and they officially changed the name of the alliance to B.R.I.C.S. At the time tensions between the U.S. and many nations in the Middle East were becoming strained, mostly on pressures by the U.S. on OPEC nations and the production cut backs, that forced prices higher at the time. Today's membership includes Brazil, Russia, India, China, South Africa, Iran, Egypt, Ethiopia, Saudi Arabia, and the United Arab Emirates. For the record, fifteen other nations are on a waiting list hoping for an invitation. They are, Algeria, Bahrain, Bangladesh, Belarus, Bolivia, Cuba, Honduras, Kazakhstan, Kuwait, Nigeria, Palestine, Senegal Thailand, Venezuela, and Vietnam.

Since the election of the Biden Administration, these BRICS nation countries have become increasingly more hostile to the U. S. and U.S. interests around the globe. Now their #1 focus, since the U.S. ignored the sunset of the U.S. – Saudi Petrodollar agreement, is to replace the U.S. Dollar in international trade, with a currency backed by BRICS members gold. They are actively working NOW, to create their currency, gain IMF and World Bank Approval and kill the U.S. financial interests in petroleum products around the world. As you might imagine, the consequences of this action would be catastrophic to the free world economies and significantly downgrade U.S. Debt, that now stands north of \$35 Trillion.

This is the point we have been working toward, within this paper. One must ask we, how troublesome is the increasing U.S. Debt. Are we vulnerable to a financial collapse if the dollar is replacing as the world's Reserve Currency and what will the "Full Faith and Credit of the United States" mean if the BRICS Alliance gains control of the world's financial systems.

Here are key points to consider:

1. BRICS nations are the largest occupiers of land mass in the world.
2. BRICS nations have the highest population base in the world.
3. BRICS nations are rumored to own the greatest quantities of gold in the world.
4. BRICS nations have a geographical advantage as they control access to most world trade corridors.
5. BRICS nations are rallying their members against the influence of the U.S. and the U.S. Dollar.

BRICS nation members are not our allies. The Saudi's were once a great ally to the U.S, but the relationship has deteriorated significantly. BRICS members Russia and China are playing a significant role in destabilizing U.S. interests abroad and are rumored to be working against the interests of the U.S. here as well, using cyber-attacks and social media campaigns to influence U.S. citizens.

They say elections have consequences and the election of 2024 will be a monumental referendum on not only the value of energy and energy security in the U.S., but also the role fossil fuels play in maintaining economic balance in the financial world as well. One misstep here can topple the last two hundred forty-eight years of this grand experiment, in a representative republic. Energy Security is a central component of our National Security and will remain a key pillar in the foundation of our national identity moving into the future.

Bibliography

| | | | | | |
|----|--|--|--|--|--|
| 1 | New York Times 10-7-2023, By Emma Bubola | | | | |
| 2 | 2000 in politics - Wikipedia | | | | |
| 3 | 2001 in politics - Wikipedia | | | | |
| 4 | 2002 in politics - Wikipedia | A Historical Timeline of the Israeli-Palestinian Conflict | | | |
| 5 | 2003 in politics - Wikipedia | | | | |
| 6 | 2004 in politics - Wikipedia | | | | |
| 7 | 2005 in politics - Wikipedia | | | | |
| 8 | 2006 in politics - Wikipedia | | | | |
| 9 | 2007 in politics - Wikipedia | | | | |
| 10 | 2008 in politics - Wikipedia | | | | |
| 11 | 2009 in politics - Wikipedia | | | | |
| 12 | 2010 in politics - Wikipedia | | | | |
| 13 | 2011 in politics - Wikipedia | | | | |
| 14 | 2012 in politics - Wikipedia | | | | |
| 15 | 2013 in politics - Wikipedia | | | | |
| 16 | 2014 in politics - Wikipedia | | | | |
| 17 | 2015 in politics - Wikipedia | | | | |
| 18 | 2016 in politics - Wikipedia | | | | |
| 19 | 2017 in politics - Wikipedia | | | | |
| 20 | 2018 in politics - Wikipedia | | | | |
| 21 | 2019 in politics - Wikipedia | | | | |
| 22 | 2020 in politics - Wikipedia | | | | |
| 23 | 2021 in politics - Wikipedia | | | | |
| 24 | 2022 in politics - Wikipedia | | | | |
| 25 | 2023 in politics - Wikipedia | | | | |
| 26 | 2024 in politics - Wikipedia | | | | |
| 27 | untitled | MTBE: recent carcinogenicity studies Kathleen M. Burns , Ronald L. Melnick | | | |
| 28 | Who Founded Tesla? It Wasn't Elon Musk | | | | |
| 29 | Climate Change History - Greenhouse Effect, Treaties HISTORY | | | | |
| 30 | The Rise of Renewable Energy Scientific American | | | | |
| 31 | THE UNITED STATES WITHDRAWAL FROM THE KYOTO PROTOCOL on JSTOR | | | | |
| 32 | US Oil Consumption, 1965 – 2024 CEIC Data | | | | |
| 33 | National security - Wikipedia | | | | |
| 34 | National security of the United States - Wikipedia | | | | |
| 35 | Renewable Fuel Standard Program US EPA | | | | |
| 36 | China Phase One Agreement USDA Foreign Agricultural Service | | | | |
| 37 | What is the Current U.S. Inflation Rate? | | | | |
| 38 | PPP Loan Forgiveness Fact Sheet | | | | |
| 39 | PPP Loan Forgiveness Fact Sheet -Stimulus Fact Sheet | | | | |
| 40 | Bretton Woods system - Wikipedia | | | | |