Political Pain at the Pump

By Sydney Marvel Schellinger

Public Policy Senior Thesis

Professor Phil Escamilla

William Jessup University
# TABLE OF CONTENTS

**INTRODUCTION** 2

**HISTORY**

- HISTORY OF OIL PRODUCTION IN THE UNITED STATES 2
- HISTORY OF OIL PRODUCTION IN CALIFORNIA 4
- HISTORY OF OIL PRODUCTION IN NORTH DAKOTA 7

- HISTORY OF GAS TAX IN THE UNITED STATES 9
- HISTORY OF GAS TAX IN CALIFORNIA 10
- HISTORY OF GAS TAX IN NORTH DAKOTA 12

**REGULATIONS IN THE UNITED STATES** 12
**REGULATIONS IN CALIFORNIA** 15
**REGULATIONS IN NORTH DAKOTA** 18

**SOLUTIONS**

- REGULATIONS 20
- EXCITE OIL TAX 24
- ENVIRONMENTAL SOLUTIONS 24
- DRILL HERE, DRILL NOW 27

**CONCLUSION** 30
There are many events that can affect the life we know today; however, when looking at variables, one that stands out that effect the economic stability of not only the individual but the state is oil. We use petroleum as part of the main facets of life: especially when we hop into our cars and drive. What affects the price of gasoline? Is it those dirty oil companies who gouge prices? Does the United States government affect the price of oil? If so, how much does this regulation cost? How much regulation is too much regulation? The government regulation can come in the form of federal, state and local taxes and affects the price of oil in each state. We will see the difference state regulation can make in comparing California and North Dakota. In California, we have the most repressive regulation; where North Dakota has had the latest oil boom which has led to an three percent unemployment rate, and a one billion dollar government surplus. What can we do to make the price of gas less expensive? This has led to the question: should we drill here (in the United States and California)?

**History and Background of Oil Production in the United States**

To understand the oil power plays in our society we need to understand where the current dependence on oil came from. The history of oil production in the United States, California, and North Dakota focuses on how these states have developed oil wise.

The first petroleum well was found in Oil Creek, Pennsylvania in 1859. Colonel Edwin Drake created the petroleum well to find the fix for high kerosene prices. Crude oil, when refined, became kerosene, the other products that came from this crude oil was either too light and volatile or too dense and smoky to be used as lamp oil. These became known as gasoline and diesel.\(^1\)
Following the first well, small discoveries were made in Texas, Oklahoma, and California; together these wells produced less than 50 barrels of oil a day. The first Model T Henry Ford designed ran off ethanol because there so little oil.  

As the old saying goes: everything is bigger in Texas; the first large scale oil well was found in Beaumont, Texas called Spindletop in 1901. Spindletop produced over 50,000 barrels per day. Patillo Higgins discovered this black gold 1,100 feet underground, which was the deepest well at the time. The spindletop well produced 20% of the United States oil production at the time. After this discovery, the need for oil grew with the abundance of this resource.

The oil discoveries after Spindletop led to the launch of the automotive age. “Winston Churchill, while being commander of the British Navy, changed their slow coal-powered vessels to rapid response oil-powered military ships in World War I which became the conclusive factor of the war. Oil was also essential to power flight. A gasoline engine powered the Wright Flyer in 1903.”

By 1950, crude oil had been transformed from a lamp oil source to a fundamental of the age being used as transportation fuel.

Oil had been converted to a needed economic output. This led to the impact it has economically on the country and its growth. Over the years, economists have incorporated energy and other natural resources as additional factors of production in growth models, demonstrating the importance of the energy sector in economic performance. With the
increase of affordable energy supply and improved energy efficiency can boost economic growth.\(^6\)

The United States has seen the benefits of the growth of energy supply in our past economic successes, from the development of coal reserves in the 19\(^{th}\) century making the industrial revolution possible, to the 1970’s oil boom and the current energy boom. “The energy intensity of the US economy increased during the industrial boom of the early 1900’s. Our domestic energy levels tapered off beginning in 1970’s, now, as of 2012, the United States requires less than half as much energy for each unit of economic output as in 1972.\(^7\) The energy sector has been on a roller-coaster ride since the beginning because the prices and supply going both up and down, Because of this, the energy sector has developed making each unit of energy more potent. For example: the car companies have increased the gas mileage tenfold since the 1970’s.

The energy sector developments have had transformative effects in the United States in the past. The current oil and gas boom has not created a new energy source but has created a way to get the same energy at a lower price.

**History and Background of Oil Production in California**

California has always been rich in oil. Before the invention of oil wells, California relied on oil seeps. Oil seeps are: leaks in the ground, transported through small openings, or they are found in a small spring or places where oil is discovered.\(^8\) The first well was drilled in California in 1861 in Humboldt County, however it was unsuccessful. The first commercial well was ‘Pico
Lakeview Well, located near Maricopa, CA, is the most productive well ever drilled in the United States to date with 8.2 million barrels of oil in 18 months in 1910.

4' which produced 30 barrels a day in 1876. Los Angeles County was discovered to be an oil hotbed which produced about 750,000 barrels; over half of the 1.2 million barrels produced in the state in 1895. In 1896, the first offshore well was drilled in the Santa Barbara coast line. Production continued to rise with each well dug. In 1900, wells in Los Angeles, Coalinga, and Kern River oil fields were the leading producers, and the annual state production reached over 4.3 million barrels. Five years later, California had increased its production to 15 million barrels.

Starting in the 1960’s, large oil discoveries occurred offshore in the Santa Barbara coastline. On January 28, 1969, there was a blow-out on Union Oil’s Dos Cuadras Offshore Oil Field. Within ten days, an estimated 80,000 to 100,000 barrels of crude oil spilled into the Santa Barbara channel. The Santa Barbara oil spill, which was about six miles off the coast of Summerland, California killed thousands of sea birds, as well as marine animals like sea lions, elephant seals, and dolphins. The public outrage over the spill received noticeable media coverage around the United States leading to multiple pieces of environmental legislation within the next several years.

Looking back, the simplified cause of the Dos Cuadras blowout was an industrial accident. The United States Geological Survey gave Union Oil an waiver which allowed them to use a shorter casing on the pipe instead of the then Federal standards. The casing Union Oil didn’t
use was a reinforcing element of the well that was supposed to prevent blowouts. Even though the well itself was capped, the fragmentation of the wellhead produced a disaster. “Oil and natural gas broiled to the ocean surface in the vicinity of the oil platform for ten days while increasingly desperate attempts were made to contain and stop the spill of this magnitude did not exist at the time. On the eleventh day, chemical mud was successfully used to seal the cracks in the seafloor.”

Fred L. Hartley, President of Union Oil Company said, “I don’t like to call it a disaster, because there has been no loss of human life. I am amazed at the publicity for the loss of a few birds.”

Thomas Storke, Santa Barbara News Press Editor, said, “Never in my long lifetime have I ever seen such an aroused populace at the grassroots level. The oil pollution has done something I have never seen before in Santa Barbara – has united citizens of all political persuasions in a truly nonpartisan cause.”

The terrible tragedy that was the Santa Barbara oil spill is a horrible accident, however, if we didn’t pursue things that could cause calamity we wouldn’t drive or get into planes. Life is about managing the risk.

“The California State Lands Commission has not granted any new leases for offshore drilling within its jurisdiction which is 3 nautical miles out or 6 km since 1969. The issue of drilling beyond the three-mile limit, in federal waters of the Outer Continental Shelf (OCS), has been more complicated. Production from existing leases has been allowed almost without break since the spill, as well as new drilling from existing platforms within lease boundaries. However, no new leases have been granted in the OCS since 1981.”

The Exxon Valdez Oil Spill was 260,000 to 750,000 barrels

The Santa Barbara coastline is now naturally spilling oil into the ocean today. “Oil residue in seafloor sediments that comes from natural
petroleum seeps off Santa Barbara, Calif., is equivalent to between 8 to 80 Exxon Valdez oil spills, according to a new study by researchers at Woods Hole Oceanographic Institution (WHOI) and the University of California, Santa Barbara (UCSB)."¹⁶ "There is an oil spill every day, the natural seeps off Santa Barbara, where 20-25 tons of oil have leaked from the seafloor each day for the last several hundred thousand years."¹⁷ The California State Lands Commission has prohibited drilling in the Santa Barbara coastline but with the natural oil seeps, the underwater ecosystem is still suffering.

**History and Background of Oil Production in North Dakota**

North Dakota was late to the oil discovery, but have made up for it with the current oil boom the state is having. Amerada Oil Company struck oil in eastern Williams County near Tioga in 1951. "Since this discovery, more than 13,000 wells have been drilled, resulting in 1.3 billion barrels of oil."¹⁸ In 1988, horizontal drilling began at the Bakken formation, a rich oil and natural gas play located within the Williston Basin in North Dakota and Montana.¹⁹ However, the current oil boom began in the Parshall Oil Field in 2006. North Dakota’s Bakken shale oil play is roughly the size of West Virginia.²⁰

The United State Geological Survey (USGS) released a report that found there is around 7.4 billion barrels of undiscovered, recoverable oil.²¹ "The USGS undertook this assessment of
the Bakken and Three Forks Formations as part of a nationwide project assessing U.S. petroleum basins using standardized methodology and protocol,” said Acting Director of the USGS Suzette Kimball. “Through this improved understanding of our energy resources, government, industry, and citizens are better able to understand our domestic energy mix and make wiser decisions for the future.”

North Dakota is now the second largest oil producing state in the United States. In July 2013, an average of 874,460 barrels of oil per day was produced. In 2012, the average wage in the oil and gas industry was $97,841, that was 118% above the statewide average wage of $44,914. The oil boom has resulted in enough jobs to give North Dakota the lowest unemployment rate in the United States. The boom has given the state of North Dakota, a state with a 2013 population of about 700,000, a billion-dollar budget surplus.

North Dakota has been up in arms against the United States Government when it comes to the idea of new federal fracking laws. “Though only 5% of oil in the United States comes from public lands, both sides of the aisle in North Dakota are fighting against intrusion from D.C. politicians. In May, a bipartisan delegation from the state claimed that these federal regulations were completely unnecessary. “We believe we already have substantial regulations in place that allow for continued oil and gas production while protecting the environment and the health and safety of our citizens," Sen. Heidi Heitkamp (D-N.D.) said. Continental Resources CEO Harold Hamm also stated the bureaucracy that would be added if the federal government got involved in the oil industry in North Dakota. Drilling permits in North Dakota
takes about 39 days while the same permit would take close to nine months through the federal government.\textsuperscript{26}

The History of Gas Taxes in The United States

Federal intervention into America’s energy market began in the 1930s.\textsuperscript{27} However Oregon enacted the first tax on motor fuels in 1919.\textsuperscript{28} As of January 1932, all states had enacted some sort of legislation imposing tax on gasoline ranging from two to seven cents per gallon.\textsuperscript{29} The federal government imposed its first excise tax on gasoline of one cent per gallon in 1932. The gas tax was enacted to correct a federal budgetary imbalance, when first introduced the federal gas tax or section 617(a) and 629 of the Revenue Act of 1932 was supposed to end in 1934. However, to this day we still have the federal gas tax.\textsuperscript{30} The gasoline tax represented 7.7\% of the total Internal Revenue collected from all sourced during the 1933 fiscal year.

After it was first imposed, the gas tax has been increased fourteen times, first to pay for increased costs of going to war, and now its part of the Highway Trust Fund and general fund. At first, in 1956, 100\% of the receipts from the gas tax went into the Highway Trust Fund to pay for the roadwork that had to be created for the cars on the road.\textsuperscript{31} In 1990, the Omnibus Budget Reconciliation Act of 1990 increased the gas tax by five cents, however, instead of all of the tax increase going to the Highway Trust Act, half of the increase went into the general fund. This
 lasted until the Taxpayer Relief Act of 1997. In the Taxpayer Relief Act of 1997, the 18.4 cent
gas tax was split: 15.44 to the Highway account, 2.86 to the Mass Transit (Public transportation)
account, and .1 cent to the Leaking Underground Storage Tank (LUST) Trust.32

The United States drives nearly 3 trillion miles a year, that’s about 820 trips from the
Sun to Pluto. The United States consumes about 20 million barrels of oil a day. The breakdown
of each dollar you spend on gas (on average, changes per state) by the United States
department of energy is:

- Taxes: 13 cents
- Distribution and Marking: 8 cents
- Refining: 14 cents
- Crude Oil production: 65 cents

“Crude oil inventories have the single biggest effect on gas prices, and the United States
depends heavily on foreign oil supplies. In July 2008, the United States imported about 13
million barrels of oil and petroleum products per day.”33 Oil companies are fierce competitors
to have the most inexpensive product. Per gallon, ExxonMobil makes about 9 cents, wherein
the federal government alone makes 18.4 cents a gallon. Compare that to the profit margin to
Apple who profits are about 24 percent and McDonalds which makes about 20 percent.34

The History of Gas Taxes in California
The Gas excise tax in California is at a record high, it’s actually the highest in the nation. In July 1, 2013 the excise tax for gas was 39.5 cents a gallon. The Schwarzenegger administration in early 2010 found a way to help California close a nearly $20 billion budget gap by nullifying laws reserving most of the gas-pump sales tax for transit agencies. “The excise tax is the byproduct of laws, signed by former Governor Arnold Schwarzenegger in 2010, that created a new tax structure for gasoline and mandated that the board adjust the state gas excise tax rate by March 1 of each year.”

The Board of Equalization says the 3.5 cent increase on the 14.6 billion gallons of gas purchased in California would generate over $500 million in the current fiscal year. “California consumers currently pay 71 cents per gallon in taxes every time they fill up their tanks. That’s the highest gas tax rate in the country. The average American pays less — about 50 cents per gallon. That translates into hundreds of dollars a year in higher taxes for Californians.” On top of that, Californians are double taxed. Sales tax is calculated after excise taxes are added on. “Californians now pay 39.5 cents a gallon in excise tax, a sum that will fall to 36 cents as of July 1, 2014 according to the Board of Equalization, the state’s tax collector, this part of the tax goes into the statewide highway fund that pays for mass transit and roads. Motorists also pay 2.25 cents a gallon in statewide sales taxes.”
tax, this tax however, goes into the general fund. California’s average regular gasoline price was $3.80 on Feb. 25, 2014 second highest in the US after Hawaii, according to AAA.com.”

The History of Gas Taxes in North Dakota

“A motor vehicle fuel tax of 23 cents per gallon is imposed on motor vehicle fuel sold. The State of North Dakota uses 22 cents per gallon for construction, reconstruction, and maintenance of roads and highways. One cent is retained in the Township Highway Aid Fund.”

Regulations in the United States

The United States government started its large scale regulation intervention in the 1930’s. The regulations correlate with peaks and troughs of oil cycles. In the 1920’s, for example, oil prices were peaking because of a fear we running out of oil. At this time, Congress confronted the problem by allowing oil companies to explore additional exploration activity, and consequently the discovery of new, larger oil reservoirs. In the next decade, the situation reversed, and we had an overflow of oil which led to the demands from oil companies for ‘orderly’ competition and oil price support. Congress then enacted a price support system policy instead of just repealing the supply-enhancement policies it created in the 1920’s. They continued this same cycle when the crisis of the 1950’s and 1970’s happened.
Government intervention escalated during the 1930’s, starting with the National Industrial Recovery Act (NIRA). NIRA was passed by Congress in 1933; it authorized the President to regulate the industry in an attempt to raise gas prices after a severe deflation and in an attempt to stimulate an economic recovery. The National Recovery Administration (NRA) created from NIRA was highly praised by business in 1933 but business support had deflated by 1934, NIRA and NRA was abolished by the Supreme Court in 1935. After the Supreme Court decision, congress passed the Connally Hot Oil Act of 1935. The Connally Hot Oil Act of 1935 gave federal sanction to the state porationing (supply restriction) programs that restricted competition and raised prices.

“The Reciprocal Trade Act Amendments of 1955 authorized that the president to limit imports of a commodity if he thought such imports were detrimental to national security. President Dwight Eisenhower invoked the clause and imposed oil import quotas.” Congress passed the Emergency Petroleum Allocation Act in 1973 and allowed the President to promulgate regulations for allocation and price controls of petroleum products in response to the 1973 oil crisis. The Emergency Petroleum Allocation Act of 1973 was extended into the Energy Policy and Conservation Act of 1975(EPCA). The EPCA created a comprehensive approach to federal energy policy. The primary goals of the EPCA was to: increase energy production and supply, reduce energy demand, provide energy efficiency, and gave the President more power to respond to disruption in energy supply. EPCA also established the Strategic Petroleum Reserve, the Energy Conservation Program for Consumer Products, and Corporate Average Fuel Economy regulation. “In 1979, President Jimmy Carter began to
repeal price controls through a series of administrative actions. President Ronald Reagan finished the job in 1981.\textsuperscript{52} “In 1980, the United States enacted the Crude Oil Windfall Profit Tax Act as part of a compromise between the Carter Administration and the Congress over the decontrol of crude oil prices. The Act was intended to recoup the revenue earned by oil producers as a result of the sharp increase in oil prices brought about by the OPEC oil embargo. According to the Congressional Research Service, the Act's title was a misnomer. Despite its name, the crude oil windfall profit tax... was not a tax on profits. It was an excise tax... imposed on the difference between the market price of oil, which was technically referred to as the removal price, and a statutory 1979 base price that was adjusted quarterly for inflation and state severance taxes.\textsuperscript{53} Today, “the taxes paid by domestic oil companies have been consistently far greater than their profits and now total more than $2.2 trillion (adjusted for inflation) over the past quarter century. The largest share of those taxes is federal and state gasoline excise taxes. (These figures do not include local property taxes, state sales and severance taxes and on-shore royalty payments) Overall, governments have collected $1.34 trillion in gasoline excise taxes since 1977.\textsuperscript{54} In this same time period, “the 29 largest domestic energy firms earned a collective $630 billion after adjusting for inflation.” That amounts to more than three times
what they earned in profits during the same period, according to the latest numbers from the Bureau of Economic Analysis and U.S. Department of Energy.\textsuperscript{55}

There are many reasons why gas costs so much however one reason is that the United States doesn’t have enough refineries. “The National Petrochemicals and Refiners Association says that the last new refinery built in the United States was Marathon Ashland’s Garyville, La., plant — and it was completed in 1976. According to this report, between 1999 and 2002 refining capacity in the United States rose only 3 percent, squeezing up prices since demand grew much faster than that.”\textsuperscript{56}

\textbf{Regulations in California}

\begin{itemize}
  \item RFG stands for Oxygenated and Reformulated Gasoline
  \item The Clean Air Act (CAA) of 1990 called for the introduction of reformulated gasoline in the worst ozone areas—which included California.\textsuperscript{57} Being California, the leader in innovation, had to take it the next step. This reformulated gas requires a 2% oxygen content which is included in gas as ethanol and methyl tertiary butyl ether (MTBE).\textsuperscript{58} These are renewable energy sources but they are highly ‘volatile’ which means it evaporated far more rapidly than gasoline. The RFG program is being advertised as great for the environment, however, the benefits for the consumer are hard, if not impossible to find. The oxygenated additives usually cost twice as much as gasoline, reformulated gas costs on average 10 cents more per gallon than normal gasoline. The oxygenation also lower the energy content which means we loss about 2-3 in fuel
\end{itemize}
efficiency.\textsuperscript{59}

California has two different types of fuel: summer and winter blend. The California Air Resource Board (CARB) regulations are so strict that California cannot use other states oil.

California retailers have to sell a higher-quality blend of gasoline to reduce smog and other pollutants because of California’s strict pollution regulations.\textsuperscript{60} “Only a handful of refineries outside of California can make this type of gasoline. These are located on the U.S. Gulf Coast, in the Caribbean and in Finland. Shipping gasoline by supertanker from these locations can take up to a month and has very high shipping costs.” California is considered an "island" market. It is not directly connected to other places that make gasoline because there are no pipelines that can easily and cheaply deliver gasoline from the U.S. Gulf Coast. The West Coast is cut off from the rest of the country petroleum wise.\textsuperscript{61} The supply of special reformulated gasoline that California uses is only produced by a handful of companies, Chevron, alone, controls more than 20% of the market.\textsuperscript{62}

Michael Centrone observes: “the need for oxygenated fuels may be unfounded in as much as 75–85\% of [the] smog in major cities is from non-automobile sources and tailpipe emissions of new cars are 95\% lower that they were in the 1960s.” Eric Stork, a former EPA employee, stated that “reformulated gasoline was a good idea 30 years ago, but in cars built in 1983 or later, the fuel is obsolete and pointless.”\textsuperscript{63}

“SB 4, written by Sen. Fran Pavley (D-Agoura Hills) focused on regulating fracking. “SB 4 would still require
disclosure of the chemicals used in fracking. It also would require an overarching environmental impact report as well as a scientific report on the potential effects of fracking in the state."\(^{64}\)
The principles of SB 4 represent the strictest hydraulic fracturing regulations in the United States. For California, they strike the right balance achieving both responsible environmental protection and guidance for operators working to deliver energy products that drive California’s economy, empower local communities, and push the state towards greater energy independence.\(^{65}\) California Democrats at their California Democrats State Convention voted almost unanimously to update their platform which includes a proposed ban on fracking.\(^{66}\)

Future regulation has already been proposed. State Senator Noreen Evans (D- Santa Rosa) introduced her bill, SB 1017, this February. “SB 1017 would impose a 9.5 percent severance tax on the extraction of oil from ground or water within California’s jurisdiction. Half the estimated $2 billion in taxes generated by the bill would go to higher education, a quarter to state parks and a quarter to fund unspecified health and human services programs.”\(^{67}\)

The opposition of SB 1017 has come in the form of California Chamber of Commerce. "We just raised California taxes by $7 billion a year for seven years,” said CalChamber President and CEO Allan Zaremberg. “We now have a projected $5 billion surplus. To create a new tax on oil only extracted in California will drive up the price of California oil which constitutes about 40% of the California gasoline market. California’s robust oil industry will be at a competitive disadvantage. This new tax will kill jobs and hurt local tax revenues. In addition, the bill would create an unaccountable, unnecessary, and expensive bureaucracy.”\(^{68}\)
Regulations in North Dakota

North Dakota century code 38 on the control of gas of oil resources is very pro-oil. It states, “in the public interest to foster, to encourage, and to promote the development, production, and utilization of natural resources of oil and gas in the state (North Dakota) in such a manner as will prevent waste; to authorize and to provide for the operation and development of oil and gas properties in such a manner that a greater ultimate recovery of oil and gas be made and that the correlative rights of all owners be fully protected; and to encourage and to authorize cycle, recycling, pressure maintenance and secondary recovery operations in order that the greatest possible economic recovery of oil and gas be obtained within the state to the end that the landowners, the royalty owners the producers and the general public realize and enjoy the greatest possible good from these vital natural resources.”

The oil and gas industry in North Dakota is regulated by the Department of Mineral Resources’ Oil & Gas Commission. “In a resolution called HCR 2008, the state legislature urged the federal government to give full regulatory power over the industry to states and has repeatedly expressed displeasure regarding forthcoming nationwide fracking regulations proposed by the EPA. Compelled by issues wrought from worker population explosions in the towns near fracking operations, the Commission has updated its Administrative Code and will devote oil taxes & revenues to address grievances. As of 2012, the DMR also requires that companies disclose fracking fluid chemicals via FracFocus – as well as
the date of stimulation, vertical depth, and total water volume used in each treatment. This information must be disclosed within 60 days after well stimulation treatments.”

North Dakota oil wells are 90 percent private, 2 percent state, and 8 percent federal run. However, the twenty-two federal rigs out of the 185 rigs are producing 257,000 barrels of oil out of the states total production of 820,000.

In April, 2012, North Dakota added new environmental regulations. The summary of those regulations are, “Dumping liquid drilling wastes into an open pit is banned under the new rules, except in cases where the oil well is less than 5,000 feet deep. Instead of going into pits, the liquid wastes will have to be disposed of at authorized sites or stored in tanks. The new rules require that existing waste pits be emptied and reclaimed within a year. In addition, companies also will be required to disclose the chemicals used in hydraulic fracturing. The rules also call for tougher requirements related to the construction of wells to ensure that the groundwater is protected.” According to the North Dakota Petroleum Council these new regulations are going to cost oil producers an additional $400,000 per well.

Oil production in North Dakota has increased more than 600 percent. In 2005, North Dakota produced 36 million barrels of oil, to over 237 million barrels. The Bakken region wells cost about 10 million dollars to build-about $3 million more than other United States areas. Each well in North Dakota will generate about $20 million dollars in profit, $4.4 million in taxes, $1.6 million in salaries and wages, and $7.6 million in royalties. North Dakota’s gross domestic product grew by an annual average of 6.7% for the years 2008-2011 – the nation’s fastest growth rate.
“The drilling activity taking place in North Dakota is boosting the economic output and employment in those areas and beyond by creating demand for a wide range of goods and services. Higher production has lowered domestic natural gas and electricity prices already and could do the same for the price of oil. The means household incomes will go father and business expense will be lower.”76 “Oil production has quadrupled since 2005—North Dakota is now the 2nd largest oil producer in the US behind Texas—and state regulators have effectively balanced economic growth and environmental protection.”77

Solutions

Regulations

Changes in energy prices also affect economic growth. Lower energy prices mean lower production costs for business, lower prices on goods and services, and lower household energy bills, which can lead to greater energy consumption. This has kept primary energy expenditures 3 to 4 percent GDP on average over the last 40 years.78 Energy plays an important role in shaping the United States international economic position. Overall, The United States spent $284 billion on imported energy in 2012. Three energy analysis forecasters (Wood Mackenzie study, McKinsey & Co study, and HIS Cambridge Energy Research associates (CERA)) have each came up with different but realistic ideas for the current and future oil boom.

A 2011 Wood Mackenzie study found that pro-oil-and-gas-development policies that includes access to currently closed federal lands, to drill onshore, offshore, and Alaska National Wildlife Refuge could create 1.4 million jobs by 2030. The McKinsey & Co estimates that increased oil and gas production and associated infrastructure and manufacturing
competitiveness could add about $380 billion and $690 billion in annual economic output and around 1 million to 1.7 million jobs by 2020. The last study, The IHS Cambridge Energy Research Associates consulting firm estimates that the oil and gas boom will deliver cover 3.5 million jobs and $475 billion in annual economic output by 2035.\textsuperscript{79}

These three studies used the input-output (I-O) models. This model is best explained by finding the economic effects of a $1 million increase in the oil and gas productions. With the I-O model, we see the direct economic effect of the $1 million dollars can increase a certain amount of jobs in the industry with the amount of production that million could support. However, the increase in the oil and gas industry also has an indirect economic effect. An increase in oil and gas production creates demand for intermediate goods and services such as: steel, trucking, lawyers, and engineers. Another effect is when the new employees of the oil and gas industry, or employees of industries that support oil and gas, spend their paychecks, (for example- restaurants, real estate, and entertainment), more economic activity and employment are created.\textsuperscript{80} Estimates for the current oil boom outrank the American Recovery and Reinvestment Act and the tax payers don’t have to pay for this recovery.

The studies have shown that opening up drilling could have on our economy. Throughout this study we have compared California and North Dakota; this is because the current North Dakota regulations on Oil drilling have been economically beneficial while including environmental aspects as well. My policy recommendation is to model the North Dakota legislation over the
United States. Compromise has to made on both sides. As the saying goes, “If both sides walk away from the table unhappy, then there was compromise.”

The economic prosperity in North Dakota has been overwhelming. Oil production in North Dakota has increased more than 600 percent. A new well costs about $10 million dollars to build in the Bakken (which is about $3 million more than any other oil-producing regions like Texas). Each well makes about $20 million in profits, $4.4 million in taxes, $1.6 million in salaries and $7.6 million in royalties. North Dakota has over 40,856 oil industry jobs, plus another 18,000 jobs supporting the industry. The state has a three percent unemployment rate, and the Bakken area has a one percent unemployment rate. The state of North Dakota has a billion dollar budget surplus. The economic impact of oil production to the state’s economy is about $34.4 billion.  

Other areas of the North Dakota economy have grown as well. Local North Dakota McDonalds can’t even find enough workers. The McDonalds Corporation is now offering $15 an hour and a signing bonus of $300 in certain local North Dakota reigns. Average weekly wages are 40 percent higher since 2009. The number of millionaire taxpayers in North Dakota has nearly tripled from 266 in 2005 to 634 in 2011. The population in North Dakota is supposed climb fifty percent in the next twenty years.  

With this economic boom, they have also instituted some environmental policies. These policies are: “Dumping liquid drilling wastes into an open pit is banned, except in cases where the oil well is less than 5,000 feet deep. Instead of going into pits, the liquid wastes will have to be disposed of at authorized sites or stored in tanks. The new rules require that existing waste
political pain at the pump

pits be emptied and reclaimed within a year, companies also will be required to disclose the chemicals used in hydraulic fracturing.” According to the North Dakota Petroleum Council these new regulations are going to cost oil producers an additional $400,000 per well.83 On top of North Dakota’s environmental rules, the State government uses their billion dollar surplus to help the impacted counties with environmental costs.

The United States should follow these examples of mixing environmental and business policies. The United States should: “in the public interest to foster, to encourage, and to promote the development, production, and utilization of natural resources of oil and gas in the United States in such a manner as will prevent waste; to authorize and to provide for the operation and development of oil and gas properties in such a manner that a greater ultimate recovery of oil and gas to be had and that the correlative rights of all owners be fully protected; and to encourage and to authorize cycle, recycling, pressure maintenance and secondary recovery operations in order that the greatest possible economic recovery of oil and gas be obtained within the United States to the end that the landowners, the royalty owners the producers and the general public realize and enjoy the greatest possible good from these vital natural resources.”84 This policy will lower gas prices on crude oil which will lead to lower prices at the pump. This will also allow us to become energy independent.

In today’s political environment this policy recommendation would not pass. However, the American people would be behind the bill. Most Americans do not understand the implications of regulations. The proposed ideas would open oil reserves all around the United
States, however, the current environmental standards of the Senate, and President would not allow the regulation proposed to pass.

**Excise Oil Tax**

I advocate for drilling here to make the resources we need now to be readily available inexpensively. However, my oil tax recommendation looks at the overall car market. Today, we are slowly increasing the amount of green cars we have on the road. Cars like the Tesla and Leaf do not pay excise taxes on oil because their cars do not need it. Looking to the future, I see these types of cars becoming more prevalent which is why I recommend getting rid of an excise tax in favor on a nationwide sales tax of one cent to pay for the road maintenance. Everyone benefits from nice roads. The Nationwide sales tax will be given to each state by population. If 15% of the population lives in California, California will get 15% of the sales tax.

**Environmental Solution**

Just like when you step onto airplane you take a risk that something could go wrong, however, the likely chance of the plane going down however is slim. The same can be said for the negative effects of drilling. Regulation is here to minimize risk but it cannot make an industry perfect.

The process of fracking, which is the new drilling technique, which is performed by “injecting pressurized water, sand, and additives into a wellbore to create fissures in semipermeable shale or tight gas reservoirs. This releases trapped natural gas, which, along with the
fluid used to fracture the well, where it then flows back up the wellbore. While shale and gas reservoirs are generally located between 3,000 and 12,000 feet below the surface, wells often pass through groundwater reservoirs before reaching shale. The wellbore is sealed in cement to protect groundwater supplies, but many environmental and community groups are concerned that the chemicals used in fracking could still find their way into local water supplies.\textsuperscript{85} Some environment problems have occurred. In 2008, the residents of Pavilion, Wyoming, began complaining about foul-smelling and discolored water. The Environmental Protection Agency (EPA) investigated and in 2011 issued a report citing the water contamination was from a local natural gas drilling. However, of the tens of thousands of fracking gas wells in the United States, this was the first government finding of groundwater contamination, (and it was from a tight gas or natural gas rather than a shale gas well.)

Another concern about drilling is forced earth quakes. Oil and gas extraction can induce seismic events as well if injection or withdrawal of fluids significantly alters subsurface pressure valances. Such occurrences are rain, and have been largely been caused by enhanced oil recovery techniques, such as water flooding. Only one induced seismic event in the United States has been suspected to have been cause by injection of fracking fluids into a shale gas well at 2.8 magnitude.\textsuperscript{86}

The main complaint against oil and gas development is the air quality problems. Trucks and drilling equipment emit particulate matter and sulfur dioxide, and oil and gas drilling is leading source of emissions. At the United Nations climate change summit
in Copenhagen in 2009, the United States pledged to reduce greenhouse gas emission to seventeen percent below 2005 levels by 2020. Currently, the Environment Protection Agency estimates that between 2008 and 2012, United States sulfur dioxide emissions fell by fifteen percent each year. Despite the lack of United States federal policy (because the Federal Cap and Trade bill died), United States emissions has fallen in the recent years. In 2012, energy-related CO₂ emissions, which account for 79 percent of the total US greenhouse gas emissions, were 12 percent below 2005 levels.\(^{87}\)

| By itself, the oil and gas boom does little to reduce emission down the road. However, it makes emission reduction policy cheaper and potentially more politically attractive. |

The oil and gas boom is neither the environmental savior that some industry proponents claim nor is it the existential threat that environmentalist believe. The International Energy Agency estimates that the implementation of golden rules addressing the local environmental consequence of unconventional gas development—whether voluntarily adopted by the industry or imposed by the government—would raise cost by only seven percent.\(^{88}\) “The Golden Rules underline the importance of full transparency, measuring and monitoring of environmental impacts and engagement with local communities; careful choice of drilling sites and measures to prevent any leaks from wells into nearby aquifers; rigorous assessment and monitoring of water requirements and of waste water; measures to target zero venting and minimal flaring of gas; and improved project planning and regulatory control.”\(^{89}\) In the studies of the economic prosperity of what could happen in the oil and gas boom, which would lead to prices falling between 25-60 percent, a 7 percent charge for meeting environmentalist in the middle is a small price to pay.\(^{90}\)
For California, I recommend that we get rid of the California reformulated gas. This fuel makes California an energy isolationist. The RFG program is being advertised as great for the environment, however, the benefits for the consumer are hard, if not impossible to find. The oxygenated additives usually cost twice as much as gasoline, reformulated gas costs on average 10 cents more per gallon than normal gasoline. The oxygenation also lowers the energy content which means Californians loss about 2-3% of our mileage in fuel efficiency.91

“Only a handful of refineries outside of California can make the California regulated gas. California is an "island" market. We are not directly connected to other places that make gasoline because there are no pipelines that can easily and cheaply deliver gasoline from the U.S. Gulf Coast. The West Coast is literally cut off by the mountains.” The supply of special reformulated gasoline that California uses is only produced by a handful of companies, Chevron, alone, controls more than 20% of the market.92

Like the smart people who invested in the budding Apple or Microsoft companies, Investors are waiting to buy into the next big thing, but they will only invest in an option that has an actually change to become big, this includes the next sustainable green car. In 2012 the United States economy required less than half as much energy for each unit of economic output as in 1972, this shows we are on our way to the green product, but currently we are not there.

Drill Here, Drill Now

The conservative estimate for the amount of oil in the United States is 33 billion barrels of recoverable oil. With new technology the amount recoverable constantly rises. For example: the United States Geographical survey (USGS) estimated that there were 3 to 4.3 billion barrels
in 2008 in the Bakken formation in North Dakota, but this year it was revised to 7.4 billion barrels of oil in the North Dakota Bakken region. There are five states rumored to be the next oil boom. They are: Texas, Louisiana, Oklahoma, Colorado, and California.  

Texas is state known for its drilling on shore and in the Gulf of Mexico. However, it is expected to nearly double its production in 2014 and is on pace to surpass Kuwait and the United Arab Emirates by 2015. The Eagle Ford area in west Texas estimates the capital investments of that region could reach $22 billion dollars in the next five years. In the Northeastern Texas panhandle where the Granite Wash and Hogshooter reservoirs are, it is estimated that each well planted in the 2.5 million acre region has the ability to recover over 1.1 million barrels of oil. These Texas numbers don’t include the already bustling refining business in Texas.

Louisiana’s Tuscaloosa Marine shale is over 2.7 million acres and has an estimated seven billion barrels of recoverable oil. Another Louisiana shale is the Smackover Brown Dense shale. This Northern Louisiana shale is estimated to have over three billion barrels of oil.  

Oklahoma is the third fastest growing state for oil production after North Dakota and Texas, doubling its production since 2010. Output has doubled because of a new region of the Anadarko Basin part of the Woodford shale formation in Southern Oklahoma. The Woodford shale formation is estimated to contain 400 million barrels of recoverable oil. Continental Resources says the Woodford shale is “one of the thickest, best quality resource shale reservoirs in the country”. In Northern Oklahoma the Mississippian Lime formation is another big oil producing area. Sandridge Energy’s former CEO,
Tom Ward, believes that the Mississippian Lime Formation could rival the Bakken Formation. This region is currently producing about 3.5 million barrels of oil a month, and in the next five year is expected to create over one million jobs.

Colorado is state full of potential. Colorado approved over 1,200 new drilling permits and currently produces around 156,000 barrels of oil a day, the highest state level in fifty years. In northwest Colorado, Wyoming, and Utah, is the Green River Formation. The Green River Formation is estimated to hold around three trillion barrels of oil, which is more than enough to satisfy the world’s oil needs for 100 years.96

California has the Monterey Shale in Southern California which is over four times larger than the North Dakota Bakken.97 The USC Viterbi School of Engineering and USC Price School of Public Policy reported on the Monterey Shale concluded that, “the prudent development of the Monterey Shale could add hundreds of thousands of new jobs to California over the next decade while stimulating the economic growth and generating significant new state and local tax revenues.”98 California boasts one of the largest, if not the largest, deep shale reserves in the world. The Unites States Energy Department estimates that the formation contains more than 15 billion barrels of oil that is currently recoverable, accounting for approximately two-thirds of the shale-oil reserves in the United States.99 However, The Monterey Shale could hold over 400 billion barrels, yet we don’t have technology to retrieve it.100 The potential impact of the Monterey Shale is dramatic.

The development of the Monterey Shale could create 512,000 to 2.8 million jobs a year. It could also increase the gross domestic product around 2.6 to 14.3% on a per-person basis. On the statewide level, personal income could grow by an average 2.1 to 10% increase. The
government as well benefits by the taxes collected, on average tax revenue increase would be around 4.5 billion to 24.6 billion.

The International Energy Agency projects that by 2035, the United States would become 97% energy self-sufficient\textsuperscript{101} especially if we can loosen our oil regulations.

**Conclusion**

After looking at the history, regulation, and taxes in the overall United States, and on the state level in California and North Dakota, the answer is simple: Drill Here, Drill Now. Not to copy Rush Limbaugh, Newt Gingrich, and country singer, Aaron Tipper, but the benefits outweigh the negatives. Allowing Drilling in the United States would not only lower the cost of oil, bring millions of jobs to United States, give trillions of dollars to the federal and state government, but also make the United States practically energy independent.

I recommend that we get rid of the California reformulated gas. This fuel makes California an energy isolationist. The RFG program is being advertised as great for the environment, however, the benefits for the consumer are hard, if not impossible to find. The oxygenated additives usually cost twice as much as gasoline, reformulated gas costs on average 10 cents more per gallon than normal gasoline. The oxygenation also lower the energy content which means we loss about 2-3 in fuel efficiency.

I advocate for drilling here to make the resources we need now to be readily available inexpensively. However, my oil tax recommendation looks at the overall car market. Today, we are slowly increasing the amount of green cars we have on the road. Cars like the Tesla and Leaf do not pay excise taxes on oil because their cars do not need it. Looking to the future, I see these types of cars becoming more prevalent which is why I recommend getting rid of an excise
tax in favor on a nationwide sales tax of one cent to pay for the road maintenance. Everyone benefits from nice roads. The Nationwide sales tax will be given to each state by population. If 15% of the population lives in California, California will get 15% of the sales tax.

On the regulation side, the United States would benefit from using North Dakota as an example. Instead of having states banning fracking like New York, or moratoriums of drilling off shore like California, the United States should use the resources our great country has. Why be dependent on another country for a product we can produce safer and cheaper here?

Imposing the “Golden rules” of gas introduced by the International Energy Agency, the United States can have a perfect blend of business and environmental benefits. These golden rules are: full transparency, measuring and monitoring of environmental impacts and engagement with local communities; careful choice of drilling sites and measures to prevent any leaks from wells into nearby aquifers; rigorous assessment and monitoring of water requirements and of waste water; measures to target zero venting and minimal flaring of gas; and improved project planning and regulatory control.102

However, the main thing we need to do is DRILL HERE. With reports like the ones from The McKinsey & Co that estimates that increased oil and gas production and associated infrastructure and manufacturing competiveness could add about $380 billion and $690 billion in annual economic output and around 1 million to 1.7 million jobs by 2020. How can the United States deny an industry that is begging us to let them drill? Drilling here gives people jobs, governments taxes, and a new hope for an economy that has yet to get out of the great recession.
1 Downey, Morgan, *Oil 101*, 2009

2 Downey, Morgan, *Oil 101*, 2009

3 Downey, Morgan, *Oil 101*, 2009

4 Downey, Morgan, *Oil 101*, 2009

5 Downey, Morgan, *Oil 101*, 2009

6 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014

7 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014


11 "Brief Oil and Gas History of Santa Barbara County". Energy Division, Santa Barbara County. April 18, 2011. Retrieved March 7, 2014 [http://www.webcitation.org/5y21hCCkz](http://www.webcitation.org/5y21hCCkz)


15 Hein, Jayni Foley, Offshore fracking battles brewing in the Golden State, 2/6/14

16 InTech, Natural Oil leaks equal 8-80 Exxon Valdez spills, May 19, 2009 Rerieved 3/7/14
http://www.isa.org/InTechTemplate.cfm?template=/ContentManagement/ContentDisplay.cfm&ContentID=76955

17 InTech, Natural Oil leaks equal 8-80 Exxon Valdez spills, May 19, 2009 Rerieved 3/7/14
http://www.isa.org/InTechTemplate.cfm?template=/ContentManagement/ContentDisplay.cfm&ContentID=76955

18 North Dakota Energy Forum, North Dakota Oil and Gas History, retrieved 3/7/14

19 North Dakota Energy Forum, North Dakota Oil and Gas History, retrieved 3/7/14


21 Androff, Blake, Wade, Anne-Berry; USGS Releases New Oil and Gas Assessment for Bakken and Three Forks Formations; 4/30/2013, Retrieved 3/7/14
22 Androff, Blake, Wade, Anne-Berry; USGS Releases New Oil and Gas Assessment for Bakken and Three Forks Formations; 4/30/2013, Retrieved 3/7/14


23 North Dakota Oil Can!, North Dakota Facts and Figures retrieved 3/7/14

http://www.northdakotaoilcan.com/NDenergyfacts/


27 Van Doren, Peter, A Brief History of Energy Regulation, CATO Institute, February 2009, Retrieved 2/27/14 http://www.downsizinggovernment.org/energy/regulations


www.fas.org/sgp/crs/misc/RL30304.pdf

29 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014
30 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014

31 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014

32 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014


35 Glover, Mark; California Gas Tax: Excise Free raises by 3.5 cents; 3/1/13 Retrieved 3/7/14 http://www.huffingtonpost.com/2013/03/01/california-gas-tax_n_2788918.html

36 Glover, Mark; California Gas Tax: Excise Free raises by 3.5 cents; 3/1/13 Retrieved 3/7/14 http://www.huffingtonpost.com/2013/03/01/california-gas-tax_n_2788918.html

37 Glover, Mark; California Gas Tax: Excise Free raises by 3.5 cents; 3/1/13 Retrieved 3/7/14 http://www.huffingtonpost.com/2013/03/01/california-gas-tax_n_2788918.html

38 Glover, Mark; California Gas Tax: Excise Free raises by 3.5 cents; 3/1/13 Retrieved 3/7/14 http://www.huffingtonpost.com/2013/03/01/california-gas-tax_n_2788918.html

39 Runner, George; California’s gas tax should be revamped, not raised; The Sun, 3/6/14, Retrieved 3/7/14 http://www.sbsun.com/opinion/20140306/californias-gas-tax-should-be-revamped-not-raised-george-runner
40 Runner, George; California’s gas tax should be revamped, not raised; The Sun, 3/6/14, Retrieved 3/7/14 http://www.sbsun.com/opinion/20140306/californias-gas-tax-should-be-revamped-not-raised-george-runner


43 Van Doren, Peter, A Brief History of Energy Regulation, CATO Institute, February 2009, Retrieved 2/27/14 http://www.downsizinggovernment.org/energy/regulations

44 Van Doren, Peter, A Brief History of Energy Regulation, CATO Institute, February 2009, Retrieved 2/27/14 http://www.downsizinggovernment.org/energy/regulations

45 Ellis W. Hawley, New Deal and the Problem of Monopoly: A Study in Economic Ambivalence (1971)

46 Roger Biles, A New Deal for the American people (1991)

47 Van Doren, Peter, A Brief History of Energy Regulation, CATO Institute, February 2009, Retrieved 2/27/14 http://www.downsizinggovernment.org/energy/regulations

48 Van Doren, Peter, A Brief History of Energy Regulation, CATO Institute, February 2009, Retrieved 2/27/14 http://www.downsizinggovernment.org/energy/regulations


52 Van Doren, Peter, A Brief History of Energy Regulation, CATO Institute, February 2009, Retrieved 2/27/14 http://www.downsizinggovernment.org/energy/regulations
56 Gross, Daniel; The Great Refinery Shortage; Slate, June, 2004; Retrieved 3/9/14 http://www.slate.com/articles/business/moneybox/2004/06/the_great_refinery_shortage.html
58 Heberling, Michael; Government-Reformulated Gas: Bad in More Ways than One; FEE, September 1, 2003 Retrieved 2/26/14 http://www.fee.org/the_freeman/detail/government-reformulated-gas-bad-in-more-ways-than-one/
59 Heberling, Michael; Government-Reformulated Gas: Bad in More Ways than One; FEE, September 1, 2003 Retrieved 2/26/14
http://www.fee.org/the_freeman/detail/government-reformulated-gas-bad-in-more-ways-than-one/

60 Plumer, Brad; Why California’s gas prices are going haywire; The Washington Post; October 8, 2012, Retrieved 2/26/14

61 Pride Gas, 10 questions about California Gasoline & Gasoline Prices, Retrieved 3/9/14
http://www.pridegas.com/10questions.html

62 Plumer, Brad; Why California’s gas prices are going haywire; The Washington Post; October 8, 2012, Retrieved 2/26/14

63 Heberling, Michael; Government-Reformulated Gas: Bad in More Ways than One; FEE, September 1, 2003 Retrieved 2/26/14
http://www.fee.org/the_freeman/detail/government-reformulated-gas-bad-in-more-ways-than-one/


65 Reheis-Boyd, Catherine; Statement from WSPA President Catherine Reheis-Boyd On New Interim Hydraulic Fracturing Regulations; Western States Petroleum Association;
Political Pain at the Pump


http://www.huffingtonpost.com/2014/03/10/california-fracking-ban_n_4936226.html

67 Cox, John; New Bill resurrects old oil tax idea; Bakersfield Californian; February 19, 2014; retrieved 3/11/14


68 Zaremberg, Allan; New Coalition To Educate Californians on Consequences of Another Oil Tax; California Chamber of Commerce; March 5, 2014; Retrieved March 11, 2014

http://www.calchamber.com/Headlines/Pages/03052014-New-Coalition-To-Educate-Californians-on-Consequences-of-Another-Oil-Tax.aspx#.UxdhrlI1NM8.twitter

69 State of North Dakota, North Dakota Century Code 38-08, Retrieved 3-9-12

http://www.legis.nd.gov/cencode/t38.html


Political Pain at the Pump


73 Briody, Blaire; 11 Shocking Facts about the North Dakota Oil Boom; The Fiscal Times; June 6, 2013, Retrieved 3/10/2014 http://www.thefiscaltimes.com/Articles/2013/06/06/11-Shocking-Facts-about-the-North-Dakota-Oil-Boom

74 Briody, Blaire; 11 Shocking Facts about the North Dakota Oil Boom; The Fiscal Times; June 6, 2013, Retrieved 3/10/2014 http://www.thefiscaltimes.com/Articles/2013/06/06/11-Shocking-Facts-about-the-North-Dakota-Oil-Boom

75 The USC Viterbi School of Engineering and USC Price School of Public Policy, Powering California: The Monterey Shale and California’s Economic Future; Retrieved 3/15/2014 gen.usc.edu/assets/001/84787.pdf

76 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014

77 Stewart, Brandon; A Fracking Miracle: North Dakota’s Bakken Boom; Heritage Foundation; June 19, 2012; Received 3/11/14 http://blog.heritage.org/2012/06/19/a-fracking-miracle-north-dakotas-bakken-boom-video/

78 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014
79 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America's Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014

80 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America's Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014

81 Briody, Blaire; 11 Shocking Facts about the North Dakota Oil Boom; The Fiscal Times; June 6, 2013, Retrieved 3/10/2014

http://www.thefiscaltimes.com/Articles/2013/06/06/11-Shocking-Facts-about-the-North-Dakota-Oil-Boom

82 Briody, Blaire; 11 Shocking Facts about the North Dakota Oil Boom; The Fiscal Times; June 6, 2013, Retrieved 3/10/2014

http://www.thefiscaltimes.com/Articles/2013/06/06/11-Shocking-Facts-about-the-North-Dakota-Oil-Boom


84 State of North Dakota, North Dakota Century Code 38-08, Retrieved 3-9-12

http://www.legis.nd.gov/cencode/t38.html

85 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America's Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014

86 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America's Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014
87 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014

88 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014


90 Houser, Trevor & Mohen, Shashank; Fueling Up: The economic Implications of America’s Oil and Gas Boom, Peterson Institute for International Economics, Washington, DC, 2014

91 Heberling, Michael; Government-Reformulated Gas: Bad in More Ways than One; FEE, September 1, 2003 Retrieved 2/26/14
http://www.fee.org/the_freeman/detail/government-reformulated-gas-bad-in-more-ways-than-one/

92 Pride Gas, 10 questions about California Gasoline & Gasoline Prices, Retrieved 3/9/14 http://www.pridegas.com/10questions.html

93 Briody, Blaire; The Next North Dakota: 5 states about to Go Oil Boom; The Fiscal Times: December 2, 2013, Retrieved 3/15/14 http://www.thefiscaltimes.com/Articles/2013/12/02/Next-North-Dakota-5-States-About-Go-Oil-Boom

94 Briody, Blaire; The Next North Dakota: 5 states about to Go Oil Boom; The Fiscal Times: December 2, 2013, Retrieved 3/15/14 http://www.thefiscaltimes.com/Articles/2013/12/02/Next-North-Dakota-5-States-About-Go-Oil-Boom
95 Briody, Blaire; The Next North Dakota: 5 states about to Go Oil Boom; The Fiscal Times: December 2, 2013, Retrieved 3/15/14

http://www.thefiscaltimes.com/Articles/2013/12/02/Next-North-Dakota-5-States-About-Go-Oil-Boom

96 Briody, Blaire; The Next North Dakota: 5 states about to Go Oil Boom; The Fiscal Times: December 2, 2013, Retrieved 3/15/14

http://www.thefiscaltimes.com/Articles/2013/12/02/Next-North-Dakota-5-States-About-Go-Oil-Boom

97 Briody, Blaire; The Next North Dakota: 5 states about to Go Oil Boom; The Fiscal Times: December 2, 2013, Retrieved 3/15/14

http://www.thefiscaltimes.com/Articles/2013/12/02/Next-North-Dakota-5-States-About-Go-Oil-Boom

98 The USC Viterbi School of Engineering and USC Price School of Public Policy, Powering California: The Monterey Shale and California's Economic Future; Retrieved 3/15/2014
gen.usc.edu/assets/001/84787.pdf

99 The USC Viterbi School of Engineering and USC Price School of Public Policy, Powering California: The Monterey Shale and California’s Economic Future; Retrieved 3/15/2014
gen.usc.edu/assets/001/84787.pdf

100 Briody, Blaire; The Next North Dakota: 5 states about to Go Oil Boom; The Fiscal Times: December 2, 2013, Retrieved 3/15/14

http://www.thefiscaltimes.com/Articles/2013/12/02/Next-North-Dakota-5-States-About-Go-Oil-Boom
101 The USC Viterbi School of Engineering and USC Price School of Public Policy, Powering California: The Monterey Shale and California's Economic Future; Retrieved 3/15/2014 gen.usc.edu/assets/001/84787.pdf