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# THE NEW DOMESTIC ENERGY PARADIGM: DOWNSTREAM CHALLENGES FOR SMALL ENERGY BUSINESSES

## HEARING

BEFORE THE

SUBCOMMITTEE ON AGRICULTURE, ENERGY, AND TRADE

OF THE

COMMITTEE ON SMALL BUSINESS
UNITED STATES
HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

SECOND SESSION

HEARING HELD
JUNE 26, 2014

Small Business Committee Document Number 113–073
Available via the GPO Website: www.fdsys.gov

U.S. GOVERNMENT PRINTING OFFICE

88–430 WASHINGTON : 2014

For sale by the Superintendent of Documents, U.S. Government Printing Office
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# CONTENTS

## OPENING STATEMENTS


| | Page |
|---|---|
| Hon. Scott Tipton | 1 |
| Hon. Patrick Murphy | 2 |


## WITNESSES


| | |
|---|---|
| Mr. Russell Smith, Executive Vice President, Public Affairs, Quantum Energy, Inc., Williston, ND | 4 |
| Mr. Kevin Book, Managing Director, ClearView Energy Partners, LLC, Washington, DC | 5 |
| Mr. Jared Blong, CEO/President, Octane Energy, Midland, TX | 7 |
| Mr. Greg Dotson, Vice President for Energy Policy, Center for American Progress, Washington, DC | 9 |


## APPENDIX


| | |
|---|---|
| Prepared Statements: | |
| Mr. Russell Smith, Executive Vice President, Public Affairs, Quantum Energy, Inc., Williston, ND | 24 |
| Mr. Kevin Book, Managing Director, ClearView Energy Partners, LLC, Washington, DC | 36 |
| Mr. Jared Blong, CEO/President, Octane Energy, Midland, TX | 44 |
| Mr. Greg Dotson, Vice President for Energy Policy, Center for American Progress, Washington, DC | 56 |
| Questions for the Record: | |
| None. | |
| Answers for the Record: | |
| None. | |
| Additional Material for the Record: | |
| None. | |

# THE NEW DOMESTIC ENERGY PARADIGM: DOWNSTREAM CHALLENGES FOR SMALL ENERGY BUSINESSES

**THURSDAY, JUNE 26, 2014**

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SMALL BUSINESS,
SUBCOMMITTEE ON AGRICULTURE, ENERGY AND TRADE,
*Washington, DC.*

The Subcommittee met, pursuant to call, at 10:02 a.m., in Room 2360, Rayburn House Office Building, Hon. Scott Tipton [chairman of the Subcommittee] presiding.

Present: Representatives Tipton, Luetkemeyer, Huelskamp, Murphy, and Schrader.

Chairman TIPTON. I would like to call our hearing to order.

I need to start off by congratulating Mr. Murphy and the Democrat Members on their victory at the baseball game last night, even though there were many questionable umpire calls that we certainly would like to have reviewed.

I would like to thank our witnesses for taking the time out of your busy schedules to appear before our Committee to discuss a topic that was all but unimaginable just a few short years ago.

For decades, the consensus among geologists, energy producers, and policymakers was that oil production in the United States was in permanent and irreversible decline. However, advances in new technologies and the adaptation of old technologies for new purposes have now made it economical to produce enormous quantities of oil and natural gas in the United States, which has substantially increased the volume of our Nation's proven reserves of oil and gas.

The potential benefits of this new domestic energy paradigm to small businesses and the broader economy are significant. As the Subcommittee has previously examined, the full upstream development of our Nation's oil and gas resources could produce more than 1.4 million direct and indirect energy-sector jobs and another 1.4 million jobs outside the oil and gas industry.

Many of these energy-production-associated manufacturing jobs will be created by small businesses. Of course, these jobs will only materialize if the United States responsibly utilizes the abundant resources it has at its disposal. Unfortunately, that is presently not the case.

In previous hearings, the Committee has examined upstream challenges to realizing America's full energy potential, predominantly those created by government regulations and bureaucratic inertia. These upstream impediments include policies that have

made it difficult to obtain access and permits to drill for oil on Federal lands.

However, it now appears that additional challenges are emerging further downstream that could likewise reduce the potential production of oil in the United States and jeopardize the new jobs and other economic benefits that would result from that production.

Specifically, there is growing mismatch between the increasing amount of light, sweet-grade crude being produced in the United States and the available utilization capacity of the midstream and downstream refining sector to process this grade of crude into high-value products such as transportation fuels.

The reasons for this are many, but they include previous assumptions that the United States would import most of the oil it consumed, and those imports are different grades of oil than what the U.S. is producing today. There are also regulatory requirements and other burdens that make it difficult to significantly expand refining capacity in the United States.

The solutions to these challenges are complex. They are not only including building up the refining capacity but may also include ending of our Nation's de facto ban on petroleum exports, which proponents claim would address downstream challenges to upstream oil production and help facilitate a reduction in the price consumers pay at the pump for gasoline and other transportation fuels.

In relation to the matter of oil exports, today's hearing couldn't be more timely. As Members may know, according to reports, the Obama administration may soon approve licenses for two companies to export minimally produced petroleum condensates. Whether this is a significant step or an interim step in addressing the oil supply and refinery utilization challenges and what impacts it will have on domestic fuel prices is a question that I believe today's witnesses will help answer.

I would now like to yield to Ranking Member Murphy for his opening statement.

Mr. MURPHY. Thank you, Mr. Chairman.

And thank you all for being here.

Excuse my voice. It was a very exciting baseball game, and I got a little raspy last night.

Today, America is producing more oil than we have in decades. In 2013, domestic oil production reached its highest level since 1989 and helped satisfy nearly half of America's oil demands. These developments in drilling are now leading to changes in the American refining industry.

Over the last 10 years, refiners have faced several market challenges based on various factors. Because of changes in the U.S. market, refiners have had to confront possible long-term reductions in demand, and they responded by cutting costs, reducing capacity, and closing facilities.

But, now, new, cheaper crude oil is leading to the expansion of existing refineries and the reopening of many shuttered ones. After a period of refinery closings and several decades after no new single large refinery had been built in the United States, a few new refineries are being planned or built in North Dakota, Texas, and Utah. These refineries and expansions that are scheduled to be

completed over the next few years represent roughly $5 billion in investments in the refining industry.

With new oil sources and types of crude, this industry must adapt to the changing market. These new conditions are growing our domestic refining capacity and making smaller refineries more competitive.

Our hearing today will focus on how to make this industry more efficient by analyzing the strategic investment and operating choices by oil refineries in response to the changing market. We will also look at how these decisions affect downstream gas prices and small businesses.

The refining industry is subject to environmental rules that are designed to increase energy efficiency and reduce energy production's impact on our climate. Standards for greenhouse gas emissions, Tier 3 rules, and renewable fuel standards all play a part in the planning necessary to small refiners and producers but also serve a critical purpose in reaching our Nation's environmental policy goals.

I also look forward today to hearing about the ongoing debate surrounding the ban on domestic oil exports. Some experts claim that continuing the ban is critical for protecting American jobs, while others claim that lifting the ban could lower gas prices and help our economy.

As we examine the policies that make oil production and the refining industry more efficient and that impact their business decisions, it is important to understand the potential effect that these changes have on small-business energy consumers. A healthy economy requires a thriving small-business sector, so we must ensure small firms continue benefiting from the recent developments in the energy industry.

I thank the witnesses for being here today, and I look forward to your comments.

Thank you, Mr. Chairman.

Chairman TIPTON. Thank you, Mr. Murphy.

If the Committee members have an opening statement prepared, I would ask that they submit it for the record.

I would like to be able to take a moment to be able to explain our timing lights that are in front of you. The light will start out as green. When you have 1 minute left, it will turn to yellow. And then when it turns red, if I would summarize your comments, we would appreciate it. We do have votes that are going to be coming up shortly, and so, if we can kind of stay on schedule, it would be much appreciated.

I would like to begin with our first witness. I would like to welcome Mr. Russell Smith. He serves as executive president of Quantum Energy, a small business in the process of building five small-scale refineries in North Dakota. In addition to his experience in the energy industry, Mr. Smith has also worked in the technology, defense, and healthcare industries.

Mr. Smith, thank you for taking the time to appear today, and please deliver your testimony.

**STATEMENTS OF RUSSELL SMITH, EXECUTIVE VICE PRESIDENT, PUBLIC AFFAIRS, QUANTUM ENERGY, INC., WILLISTON, NORTH DAKOTA; KEVIN BOOK, MANAGING DIRECTOR, CLEARVIEW ENERGY PARTNERS, LLC, WASHINGTON, D.C.; JARED BLONG, CEO AND PRESIDENT, OCTANE ENERGY, MIDLAND, TEXAS; AND GREG DOTSON, VICE PRESIDENT FOR ENERGY POLICY, CENTER FOR AMERICAN PROGRESS, WASHINGTON, D.C.**

**STATEMENT OF RUSSELL SMITH**

Mr. SMITH. Thank you, Mr. Chairman, Ranking Member Murphy, and members of the Committee. Thank you for the opportunity to come before you today. Much appreciated.

I would like to discuss some issues that are important for small business, not only in the oil and gas industry, but also in the agricultural, retail, services, and mom-and-pop business community in the Williston Basin and the Bakken shale formation.

Quantum Energy is here before you as a development-stage company. We are currently in the capital acquisition process to build five 21st-century energy centers that will consist each of one 20,000-barrel-per-day microrefinery, a 100,000-barrel-per-day natural gas, or NGL, stripping facility, and a CO2 recapture capability for use in downhole recovery enhancement.

As a development-stage company, we have had to make some tough decisions in the early stages of our business planning processes. The toughest of these decisions was facing the reality that EPA emissions regulations have basically put a limit on the feedstock size of new refineries to avoid being classified as a major refinery.

That threshold is required because the emissions, if you work backwards, limit us to 20,000 barrels per day. And that is evidenced by the Montana-Dakota Resources new refinery currently being built near Dickinson, Montana. That refinery, when it comes on line later this year or early next year, will be the first greenfield refinery built in the United States since 1976, which is an important development and one we look forward to, in essence, copying the process that they went through.

The economic model that drives our current business plan is built around a pressing need for local and regionally refined supplies of diesel fuel in the Williston Basin and a very pressing need for local and regionally refined propane in the Upper Midwest and the northern mountain west States. Both supply deficits have created distinctly higher prices for these essential commodities.

The region currently has a daily need for over 55,000 barrels per day of diesel, a need which will grow over the coming 18 to 24 months to exceed 75,000 barrels per day. The region's sole legacy refinery meets only approximately 28,000 barrels per day of this need. This new microrefinery outside of Dickinson will meet another 6,000 to 7,000 barrels per pay.

Our five 21st-century energy centers will, using a similar design to the Dickinson refinery, each produce 6,000 to 7,000 per day, for an aggregate of 30,000 to 35,000 barrels per day of new diesel. In aggregate, that will then mean that these seven refineries will be

meeting 85 to 90 percent of the region's diesel requirements within the 24- to 36-month timeframe.

Likewise, our NGL-stripping facilities will provide the opportunity for relief from skyrocketing propane prices in the greater region. Low- and middle-income families are struggling under the burden of these prices, particularly in rural areas, where propane is the most common home heating fuel.

We additionally believe that our NGL-stripping facilities deliver a refined crude product that meets the language contained in the 1970s-era rule that banned the export of nonrefined crude from the lower 48. The language in that rule that comes the closest to providing a definition of "refined crude" surrounds crude that has passed through a distillation tower. Our NGL-stripping facilities do utilize distillation towers and, as such, we believe, meet that standard.

As the production in the Bakken continues to ramp up from a current level near a million barrels per day to an anticipated 2 million barrels per day in the next 3 to 4 years, the domestic refining capacity, which is already struggling to handle the supply, may force a slowdown in production growth. This will be harmful to producers, the local economies, and the continued growth of good, well-paying jobs throughout the region.

Therefore, in the absence of an abolition of the ban, we strongly feel that locally refined and NGL-stripped crude made available to the export markets can play a vital role in alleviating any potential slowdown in the growth of Bakken production.

In summary, local and regional refining capacity helps: one, producers, large and small, through limiting impediments to both increased drilling and production while opening potential export markets in an age of a global economy; number two, local and regional economic development by reducing prices and increasing the local and regional supply of vital commodities such as diesel and propane; and, third, low- and middle-income families through provision of the above-mentioned benefits.

Members of the Committee, we thank you for the opportunity to appear before you, and we welcome any questions.

Chairman TIPTON. Thank you, Mr. Smith.

I would now like to introduce Kevin Book. He serves as managing director of ClearView Energy Partners, an economic analysis firm with expertise on energy issues. In addition to his work at ClearView, Mr. Book was appointed to serve on the Department of Energy's National Petroleum Council Advisory Committee.

Mr. Book, thank you for being here, and we look forward to your testimony.

## STATEMENT OF KEVIN BOOK

Mr. BOOK. Thank you, Chairman Tipton, Ranking Member Murphy, and distinguished members of the Committee, for inviting me to appear before you today.

My name is Kevin Book, and I head the research team at ClearView Energy Partners, an independent firm headquartered here in Washington, D.C., that provides macro-level analyses to institutional investors and corporate strategic planners.

My testimony today suggests that, even as many Americans celebrate the renewed production of light, sweet crude oil, current trends may be creating an unstable equilibrium. Shale oil production has been growing incredibly fast. Demand has been growing fast, too. Newfound U.S. volumes have gone to three principal outlets: increased refinery utilization; displacement of imported light, sweet crude; and exports to Canada.

In my written testimony, there is a picture, Figure 1, which shows the growth of shale oil supply relative to those three outlets, and it looks pretty balanced. But there are several caveats.

First, petroleum refining is a manufacturing process that requires a certain amount of downtime to ensure safety and optimal performance. This limits the extent to which existing capacity can absorb incremental crude volumes without capacity expansions. Refiners have already ramped up their throughput considerably.

Second, domestic production has already replaced nearly all of the volumes of light, sweet crude previously imported into the east coast and the Gulf of Mexico.

Third, during the course of the last 2 decades, much of the U.S. refinery fleet was upgraded to process heavy, sour crude that tends to yield a thicker cut of the middle distillates that earn a premium relative to other products, such as gasoline. As the U.S. crude mix gets lighter and sweeter, U.S. producers must offer the Nation's newly upgraded refiners discounts to encourage greater acquisition of a less suitable feedstock.

Fourth, and perhaps most importantly, many government agencies and private forecasters expect U.S. crude production to continue growing in the years ahead, likely exhausting import substitution here in the U.S. and eventually in Canada and outgrowing the ability of U.S. and Canadian refineries to increase their runs without expansions or modifications. This creates the prospect that the U.S. could soon become saturated with light, sweet crude, driving the price down here at home.

Despite high global prices, widening discounts to global prices could discourage new upstream investment. Most producers plan their drilling programs 6 to 12 months ahead, but the smaller investments involved and faster completion of shale wells theoretically offer them the ability to change their drilling plans in the event that saturation leads to a sustained atypical discount. My cursory examination of the correlation between West Texas Intermediate and Bakken prices and rig counts suggest somewhere between 4 and 8 months of skid marks between a price collapse and a production slowdown.

It is no secret that shale oil has benefited producer States in the Nation at large. A jobs multiplier may be responsible, meaning that States don't just realize direct economic benefits from upstream production activities but also the benefits from activities indirectly associated with production as well as the jobs induced by new income. Put another way, oil and gas production jobs may have disproportionate economic impact because of this multiplier. And it may be worth considering the extent to which a jobs multiplier could also work in reverse if saturation leads to a production slowdown.

Current U.S. crude-oil export prohibitions tend to favor refiners, especially low-complexity refiners that rely on light, sweet crudes, by providing them with discounted feedstock relative to their global competitors. Trade statistics from the U.S. Bureau of Economic Analysis show that the combination of importing less petroleum of all kinds and exporting more refined products appears to be responsible for roughly $40 billion per quarter in combined trade benefit.

It may be tempting to extrapolate from the status quo and conclude that continuing current policies might perpetuate these economic benefits, particularly if U.S. refiners add capacity. On the other hand, that may not be true for several reasons, even without liberalized crude-oil exports. Saturation could lead producers to pare back upstream investment. Alternatively, significant downstream capacity expansions could exert upward pressure on feedstock costs from the demand side.

However they come about, higher costs could weaken the business case for new refining capacity. That said, even if U.S. crude prices rise, U.S. refiners appear likely to continue to enjoy lower process energy costs, thanks to cheap natural gas, contributing to their overall competitive advantage.

In conclusion, producers may be soon selling their crude at deeper discounts relative global prices, while refiners must consider whether to commit capital to new infrastructure, predicated in large part on these feedstock discounts. I believe that moving as quickly as possible towards a clear and durable policy decision regarding crude-oil exports appears to be in the interest of all parties.

Mr. Chairman, this concludes my prepared testimony. I look forward to any questions at the appropriate time.

Chairman TIPTON. Thank you, Mr. Book.

I would now like to introduce Jared Blong. He serves as president and CEO of Octane Energy, a small business that provides oil field services, headquartered in Midland, Texas. Mr. Blong and his partner started their business last year and currently employ 12 workers.

Mr. Blong, thank you for being here, and we look forward to your testimony.

## STATEMENT OF JARED BLONG

Mr. BLONG. Thank you, Chairman Tipton, Ranking Member Murphy, members of the Subcommittee. My name is Jared Blong, and I serve as chief executive officer and president of Octane Energy, a Midland, Texas-based small business that provides oil field services to oil and gas exploration companies. It is an honor to address you today on the critical subject of crude-oil exports and the downstream challenges facing small energy businesses.

Today I have the privilege of speaking to you not as a representative of a special interest group or a research firm but, instead, from the perspective of a small-business owner from the heartland of the American energy industry—real boots-on-the-ground perspective from a small-business owner who could very well succeed or fail based on the policies you adopt.

Octane Energy is truly a small business. Our company was founded in 2013 in response to the energy renaissance our country is experiencing. We have a staff of 12, of which 50 percent are veterans of the American forces, and we hope to double in size over the next 12 months.

Our company is on the front lines of the energy resurgence. We see firsthand how this energy renaissance has positively impacted jobs, how it has created greater sustainability in a historically cyclical market, and how it is helping to achieve energy security for our country.

But I also see unnecessary hurdles that could limit the opportunities for U.S. businesses. For instance, the 1970s-era policy banning oil exports is creating growing market distortions and needs to be revisited. This policy prevents our small business and others from growing as we otherwise could, prevents us from creating jobs as we otherwise could, and, most importantly, prevents our country from being as energy-secure as it otherwise could.

Let me explain how.

First, I should state that our small business, like many other small businesses involved in the energy industry, is directly impacted by the rig count—that is, by the number of rigs that are actually drilling for oil and gas in the United States. The more rigs that are drilling in the United States, the more people I can employ, as a general rule.

In addition to simply adding numbers to our team of people, the quality of jobs is also very notable. As an example, in Octane's consulting practice, we can conceivably add up to four well-site leaders per rig at a typical remuneration of $220,000 per year per team member. We also are in the process of establishing a drilling company, which will require up to 25 employees per rig, with an average annual pay of $76,000 per employee.

Many of these folks we seek to employ are American veterans who possess small-unit leadership skills and an intrinsic appreciation for teamwork, sweat, and rigid operating procedures that are crucial to exceeding mission objectives in the energy industry.

Lifting the ban on oil exports would ensure sustainability of these well-paying jobs in our company and in companies around the industry. The same goes for catering companies that feed rig hands, restaurants in those communities nearby, for steel manufacturers that make drill pipe, for countless other businesses that take part in supporting energy exploration and production.

Creating a sustainable and increased rig count is directly tied to lifting the export ban and will facilitate Octane Energy's direct investment in the manufacturing of an American-made rig fleet, which will also create secondary and tertiary job growth. The $12 million to $15 million manufacturing investment for each Octane rig would create and sustain jobs in New York for the production of shale shakers, in Illinois for the manufacture of mud pumps, and various locations in Texas for drill pipe, automation, and iron, just to name a few.

Current U.S. policy is artificially suppressing that very rig count and thereby suppressing U.S. jobs, manufacturing investment, tax revenue, as well as oil and gas production—by a lot, as it turns out. If it is suppressed, we have reduced investment, which means

fewer rigs. Fewer rigs means fewer rig hands and support services, fewer oil field service companies like Octane, and fewer people employed at well-paying jobs.

So, today, on this hill, America finds itself at a crossroads: Do we cap oil production or allow exports?

At a time when unemployment sits at nearly 7 percent and first-quarter GDP in negative territory, the energy sector has sustained and added jobs for millions of Americans, both directly and indirectly, through energy production, service and equipment companies. As an example, the unemployment rate in the Permian Basin is currently 2.3 percent and has been below 4 percent for the last half-decade.

By supporting the export of domestically produced crude, U.S. lawmakers can counteract the national trends in the form of increased jobs, GDP, tax revenues, not to mention helping put veterans to work as they return from battle and transition to civilian life.

I ask you to consider the course of our energy future. The world has changed significantly since the OPEC oil embargo and enactment of Federal regulations in the 1970s. Today I ask you to take a stand for a fundamental principle: that the role of government is to enable its people and to remove unnecessary roadblocks that stand in the way of our national security and prosperity.

Thanks for considering our views.

Chairman TIPTON. Thank you, Mr. Blong.

And I would now like to yield to Ranking Member Murphy for introduction of our next witness.

Mr. MURPHY. Thank you, Mr. Chairman.

It is now my pleasure to introduce Mr. Greg Dotson, vice president for energy policy at the Center for American Progress. For more than 18 years, he was the lead environmental and energy staffer to Representative Henry Waxman and top staffer on the House Energy and Commerce Committee and the House Committee on Oversight and Government reform.

Welcome, Mr. Dotson.

**STATEMENT OF GREG DOTSON**

Mr. DOTSON. Chairman Tipton, Ranking Member Murphy, and members of the Subcommittee, my name is Greg Dotson. I am the vice president for energy policy at the Center for American Progress. Thank you for the opportunity to testify today regarding the future of the oil industry.

There are three main points I would like to make today. One is that U.S. oil production is up and is expected to increase, but this does not insulate the country from price shocks in the global oil market. Second, lifting the crude-oil export ban could have negative economic and environmental impacts on the Nation. And, third, energy policy decisions should be made in a way that helps to mitigate the serious threat of climate change.

I am submitting a lengthier statement for the record, but because the crude-oil export ban has been a topic that has come up repeatedly, I will focus my oral testimony on that issue.

For decades, oil in the U.S. has been characterized by ever-increasing demand and declining domestic production. We were rely-

ing more and more on imported oil. But this has changed in recent years. Since 2008, we have experienced a transformation in our oil markets. New tailpipe standards for cars and trucks are curbing pollution and bringing increasingly efficient vehicles to market, and our oil consumption is no longer on the rise.

New technology and policy have unlocked additional oil supply. North Dakota is producing more oil than previously understood to be possible because of new drilling technology. Heavier and dirtier forms of oil, such as the Canadian tar sands, are being brought to market. North America is awash in oil for the time being.

But this new oil supply doesn't ease the challenge of our Nation's dependence on oil. Global demand for oil is still on the rise. Supply disruptions in far-flung areas of the world still impact the prices we pay here. Just look at what is happening due to the situation in Iraq.

Oil is a global commodity, and, absent unique regional market conditions, prices are generally set by the world market. Experiences in other countries show that price spikes are not prevented or mitigated by higher levels of domestic oil production.

The nonpartisan Congressional Budget Office examined gasoline prices in Canada, the United States, and Japan over the last decade. CBO found that gasoline prices in those countries rose and fell in tandem with the world market, even though Japan produced almost no oil, Canada was a net exporter, and the United States produced less than half of its own oil. More domestic supply did not protect Canadian consumers from price shocks.

Some have cited a recent study by IHS to argue that lifting restrictions on oil exports will reduce global oil prices and save American consumers money through 2030. It would be prudent to approach this study with a good deal of caution. The IHS study essentially suggests that, rather than reduce our dependence on oil, the United States should double down on our dependence on oil. The study is not on strong ground in making that recommendation, and I would like flag two points related to that.

First, the study assumes that there is a vast domestic resource base that will support a massive increase in oil production for decades to come. This assumption differs from that of the U.S. Energy Information Administration's Annual Energy Outlook for 2014. The EIA's reference case projection is a business-as-usual trend estimate given known technology and technological and demographic trends. The reference case projects that domestic oil production will peak in 2019 and then begin to decline.

That is a point that is very important to emphasize and one that I don't think you have heard earlier today. EIA suggests that there may be more oil, much more oil than that, but they also say there may much less oil than that. And that is a huge uncertainty that should be resolved prior to taking rash action on the crude-oil export ban.

There is another aspect of the study that deserves further examination. The study assumes that the U.S. is able to boost oil production to such a degree that it decreases world oil prices significantly and that American households are able to enjoy those reduced prices unabated through 2030. This assumption deserves serious scrutiny.

The Congressional Budget Office has stated that, even if the United States were to develop additional resources, this process would take years, and oil producers around the globe would likely respond by constraining their development, dampening the effects of increased production on prices. CBO stated, and I quote, "Increasing production of oil in the United States might not increase the world's oil supply substantially or lower the price of oil significantly."

That means that even if increased domestic production could reduce oil prices, such price reductions could be short-lived, severely undermining the policy argument advanced by the IHS study. That is why we need to reduce our dependence on oil overall, not just from other countries. The less oil we use as a Nation, the less impact we will feel from international disruptions in oil markets.

Thank you. I am happy to answer questions at the appropriate time.

Chairman TIPTON. Thank you, Mr. Dotson, for your testimony.

We will now move into the questioning phase, and I would like to begin with Mr. Luetkemeyer.

Mr. LUETKEMEYER. Thank you, Mr. Chairman.

Mr. Dotson made some interesting remarks there.

I was just kind of curious, I saw something the other day that we have, like, 800 years' worth of oil that we have now found here in the United States. Is that correct? Can anybody answer that question?

Mr. DOTSON. I think——

Mr. LUETKEMEYER. What the volume of supply is that is known and anticipated to be able to be touched and tapped in the next 100 years?

Mr. DOTSON. Congressman, I would be happy to expand on my remarks slightly. The——

Mr. LUETKEMEYER. Well, Mr. Dotson, everything you said in your—I wrote down the words "could," "may," "might," "maybe," "could happen." I never heard anything definitive from you. I am looking for somebody who can give me a definite answer on how much they think is underneath the ground here.

Mr. BOOK. I can give you a different answer that isn't definite, which is that, in the history of oil production, we have run out a bunch of times, and it has never happened. And the reason is that our understanding of what can be economically produced from existing technology is always undercounting the success of our innovation and our ability to respond to price signals.

We are in a pretty high-price environment right now, I don't think anyone is missing that point, and the innovation is going crazy. We are at the very beginning of our learning curve on formations, but we have no idea of what the tails look like. I think it is reasonable to expect, based on history, that we are going to see far more than we currently think we are going to get, not less.

Mr. LUETKEMEYER. Well, it would seem to me, you know, to follow your line of thought, Mr. Book, I think that that would, you know, certainly undermine many of the arguments that Mr. Dotson made about concerns about production down the road, about prices, you know, production may decline. I don't know where that remark comes from, but all of the things I have seen is natural gas, coal,

all the fossil fuels, including oil, there is more and more that is being found.

And, Mr. Book, you make the point that, as we continue to develop new technologies and new ways of getting it out of the ground, it makes more of it available. We can go back to old oil wells, if I am not mistaken, and pull some old oil back out of those wells and make them profitable again. I assume that that is still the case. I mean, I have been told this by many people in the business.

I guess, Mr. Blong, you are in the business of putting these rigs together. I am kind of curious, what does a rig cost to put up and then to operate? You said 25 people to run it. The actual physical-structure rig, what does it cost? And then how much capital does it take to operate the rig?

Mr. BLONG. So capital expenditures for a drilling rig, at least of our design—and they vary, obviously, from company to company, and those range, generally speaking, from $12 million to $25 million. For our design, we are looking at deploying from $12 million to $15 million per unit.

Mr. LUETKEMEYER. So when you decide that you want to drill, what is the anticipated amount of oil that you have to pull out of the ground to be able to make that thing work? So many barrels per day? Per month? Or how do you do that?

Mr. BLONG. Right, so, fortunately for us, we work for the companies that are extracting that oil from the ground, and we are the means to that extraction. So, for us, the internal rate of return on that well is important from a sustainability standpoint for our company, because we want to continue working. So if our customers are realizing the quantity of oil that they want out of each wellbore, then it would make sense for us to continue on and sustain those jobs and that sort of thing.

Mr. LUETKEMEYER. One of the comments you made, though, was that, you know—and I think I saw it in your testimony or somewhere—I mean, I think you made the point, as well, with regards to being able to sort of turn these things off and on. I mean, you could do it every 3 or 4 months, you could ramp it up with a rig, and then you could ramp it down.

Is that possible? I mean, when you have the kind of investment out there, are you looking to be able to have that sort of flexibility, be able to move this around?

Mr. BLONG. I don't recall that particular portion as my testimony that was submitted.

Mr. LUETKEMEYER. Maybe I misunderstood what you were saying.

Mr. BLONG. Yes, sir.

You know, I will speak in maybe a broader brush. In our opinion, you know, the Permian is a really great case study for the first portion of your question that you addressed and then the secondary part. You know, we have been commercially producing oil in the Permian Basin for almost a century, and we continue to find new horizons to drill into, which makes our basin somewhat unique in the North American landscape and, really, the global drilling landscape, for that matter.

So ramping up and ramping down I don't think is really the key question that we are asking our customers, that our customers are asking of us. The question more is, how can we delineate and develop this in almost a manufacturing environment, where we gain efficiencies, thereby increasing their rates of return so they can continue to deploy rigs and capital into the field? That allows them to continue to produce.

But the turning off and turning on, I wouldn't be able to speak to that with any level of conviction.

Mr. LUETKEMEYER. Okay.

I see my time is up, but I was kind of curious, also, about the numbers of refineries and how that may be a chokepoint for being able to access and produce and really flood the world with oil and oil products, but I am sure the chairman will get into that.

I thank you for your time and your testimony.

Thank you, Mr. Chairman.

Chairman TIPTON. Thank you, Mr. Luetkemeyer.

I would now like to turn to Mr. Schrader for his questions.

Mr. SCHRADER. Thank you, Mr. Chairman.

Mr. Smith, just a little background. I am not an oilman. The original ban set up in the 1970s, can you give a quick, you know, why it was set up, what was the rationale, and why that may not be applicable right now, in your opinion?

Mr. SMITH. To the best of my understanding, having been somewhat young at the time, the original rationale came out of the Arab oil embargo. I think that was the motivation for the act that was passed in 1975.

It was an interesting piece of legislation, in that, rather than provide a legislative prescription for exported crude, it was essentially an authorization bill that gave the administration the authority to do a rulemaking.

And the rulemaking is somewhat vague. I actually have with me a Congressional Research Service paper that looked into the history of the bill, Mr. Schrader, and examined what definitions existed in the bill. And it is interesting that the language of the rule that was issued does not explicitly define "refined crude."

What it does define is "crude." And that definition, I will read it very quickly, sir. I think it is relevant. "'Crude oil' is defined as a mixture of hydrocarbons that existed in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities and which has not been processed through a crude oil distillation tower."

That is the only definition of "crude." But, by inference, one could say that refined crude would be something that had been passed through a distillation tower. That is the part of the process that is involved in our natural gas liquids, or NGL, stripping facilities.

Mr. SCHRADER. Okay.

Mr. SMITH. And I think that, as that affects the ban itself, it also impacts some of the downstream refining issues that we have mentioned. Because some of the issues, Mr.——

Mr. SCHRADER. Can I just stop you there?

Mr. SMITH. Yes, sir.

Mr. SCHRADER. I appreciate that. That is a very thorough explanation, most of which went over my head, but I am sure my staff will explain it to me later.

Mr. Dotson, would you comment also, your perspective also?

Mr. DOTSON. On the crude-oil export ban?

Mr. SCHRADER. Yes.

Mr. DOTSON. I think, you know, essentially what we are seeing right now is a discussion that is happening within the oil industry. And the producers see that they can perhaps get a few additional dollars per barrel if they are able to bypass the domestic refining sector and export directly overseas.

And I think, from the refiners' perspective, they say: We have made hundreds of billions of dollars of investments in this refining infrastructure. We have good-paying jobs today. We have skilled workers. Don't bypass us.

In fact, the Congressional Research Service said that lifting the crude-oil export ban could affect refining operating margins and, they say, quote, "may result in some refineries ceasing operations."

So I think there are economic reasons to really take a very close look at this, and there are environmental reasons, as well.

Mr. SCHRADER. Mr. Blong, do you—just trying to get perspective here. Mr. Dotson has indicated there may be an opportunity for increased excess capacity, refining capacity, right now. Your testimony seemed to indicate the opposite a little bit. Where are we on that, in your opinion?

Mr. BLONG. We feel that the chokepoint, more than the refining sector, is really in the transmission sector still—pipelines getting that crude oil, or railcars, for that matter, getting crude oil to market, wherever that market may be most economically viable for that particular product and that particular basin.

Contrasting Mr. Dotson's remarks, however, we have 10,000 operating companies, or producers, in the U.S. that we would consider as independents, and they have no stake in refineries. And so they are forced to essentially take a discount simply because they don't have the organizational wherewithal or financial structure to have that investment in a refinery, whereas the super-majors, as we call it in the industry, or the integrateds, have that excess.

And we feel like that is a disproportionate and maybe somewhat governmentally augmented advantage that is given to those integrated companies versus the small operators that are really the ones driving this shale revolution.

Mr. SCHRADER. I guess a question for Mr. Blong, Mr. Book, and Mr. Smith, from my standpoint, is, you know, if we go ahead with the increased oil/gas production, there is a big concern by a lot of people in America, regardless of where you personally are on the issue, about greenhouse gas emissions.

So how do we deal with that concern? You know, the oil could be a great export opportunity, could maybe drive prices down worldwide, maybe we have centuries of it, but how do we answer the concerns of folks about how do we keep that production from destroying our climate at the same time?

Is that okay, Mr. Chairman, to ask those three guys?

Chairman TIPTON. Go ahead.

Mr. SMITH. One of the new technologies that is coming out, it is very cutting-edge, it is one that we are strongly examining using in our microrefineries, Mr. Schrader, is the CO2 recapture capability. And there is a large market for that in the downhole recovery enhancement that was mentioned by the other Member earlier asking about reworking some of these old wells.

This is a great opportunity to take that CO2 out of the emissions that are a resultant from the refining process and basically go bury it in the ground. There is a market for doing that, because you are helping rework old wells and enhance the production of existing wells. And so it is a get rid of it, get rid of the bad stuff, in a really good way. And there is a market for it.

Mr. SCHRADER. Mr. Book?

Mr. BOOK. Thank you for the question.

Generally speaking, producing hydrocarbons corresponds to greater amounts of greenhouse gases. That is a fact. But there are different ways of producing those hydrocarbons. More venting and flaring, more greenhouse gases into the atmosphere. Good operating practices here in the U.S. can make our crudes potentially less greenhouse-gas-intensive than overseas crudes, which would mean that if we were to export and displace other production elsewhere, we might have small, but significant over time, differential results.

Most of the impact really has to happen on the demand side. And ultimately what you are seeing is that, along the way, some of the interim steps include things like using carbon dioxide as a way to get more oil out of the ground and storing that carbon dioxide as a consequence of production in the geological formation.

So there are small opportunities, but you wouldn't want to oversell it.

Mr. SCHRADER. All right.

And Mr. Blong?

Mr. BLONG. I can speak to our company from the drilling perspective, really, most efficiently, and that is, you know, innovation has really started to impact the notion of greening up the oil patch, if I can use that term.

Drilling companies like ours and many counterparts are looking at bi-fuel solutions where we are using that flare gas that is typically seen if you drive through the oil patch and see flares going about. You can recapture that energy in power drilling rigs, which offsets an incredible diesel expenditure as far as just sheer consumption.

Some other things that we are looking at implementing specifically is waste-heat capture using the organic Rankine Cycle to generate fuel-free, emission-free electricity off of those bi-fuel motors, engines, generators, so that we are capturing more of that energy and putting it to good use, rather than it simply just being a waste product.

So, within the context of the drilling industry, those are just a couple of examples of what we are trying to do to deal with that more from an innovative perspective. And we see that if we lead out in that effort that the production community will follow suit.

Mr. SCHRADER. Thank you very much.

I yield back, Mr. Chairman.

Chairman TIPTON. Thank you, Mr. Schrader.

Mr. Huelskamp?

Mr. HUELSKAMP. Thank you, Mr. Chairman.

I appreciate the opportunity to be at this hearing and visit with the gentlemen here that are talking about the restrictions on your business.

I am a cosponsor of the Bridenstine bill that was referenced earlier, as I believe we need to lift the restrictions to allow you to actually continue to do your business and actually create some more American jobs, which are in desperate need in many areas of the country.

But I want to shift gears to a very specific topic and, I believe, a specific threat to the industry, and that is the Endangered Species Act and the efforts by a number of environmental groups to use that to impact and shut down parts of your industry.

In May, the lesser prairie chicken, which I understand is a very tasty bird, was listed as threatened. And in my district in western Kansas, it has essentially shut down a number of operations, not just temporarily till the mating season is over, but we are hearing many cases where drilling rigs are pulling out permanently, leases are going away, they are not happening, because folks are not going to take that risk. Because there is a $25,000 to $50,000 fine not only for killing the bird, but if you would somehow impact the habitat, which is very undefined.

But the truth is, with the lesser prairie chicken, here supposedly the historical habitat area, that also happens to match up with something called a drought. And, ladies and gentlemen, until it rains—and I am trying to get this message across to the Fish and Wildlife Service—until it rains, you are not going to grow any habitat. And so hopefully it will start raining.

But one thing I do want to note, that the impact is—because of the sue-and-settle strategy, in which environmental groups have sued, settled basically out of court with the Federal Government and cut a deal that could lead to the listing of 250 new threatened or endangered species—and I know that, after the lesser prairie chicken, the next one is the sage grouse, which will impact a lot of areas.

But the reality is that folks in this industry are not going to take the risk of a $50,000 fine or going to jail for a bird they may never see or for a habitat that is undefined. But what we have seen, particularly with the sagebrush lizard, which is not in my area, and I think it might be in Mr. Blong's area, you had a voluntary conservation effort between the industry, and it was able to say, hey, we don't need that, we can take care of it ourselves without a Washington approach.

So, Mr. Blong, I don't know if you have any background with the sagebrush lizard, but can you tell how your industry works together to do this in a voluntary manner to preserve and protect our species?

Mr. BLONG. One of the things that we have seen in the Permian Basin, in particular, which is really the epicenter of the North American energy renaissance now, is an unusual collaboration effort that has not historically been seen on that front. And I would be reckless to say that it was simply economically driven. I think

the Permian Basin houses some of the most entrepreneurial and innovative people in the country, where opportunity exists, as we mentioned, to create jobs, but, in light of that, we also see some of the finest stewards in North America in our basin.

And if any of you have traveled there, it would appear to the eye that there is not a whole lot to be stewards of. We happen to live in a very flat north Chihuahuan desert with lots of mesquite scrub brush.

So the fact that we are really taking the initiative to meet with regulators not just simply in Washington but in Austin and Santa Fe, as well, which are the other areas that are affected by what we are doing, or trying to do, I would say that operators, the service contractor community, both are really taking an aggressive initiative to say: Listen, we can collaborate and work together, because we all have a vested interest. We actually all live here. Water matters to us. Our surroundings matter to us. We are raising our children in this place. So why on earth would we be so haphazard with our home, our own backyard?

Mr. HUELSKAMP. Well, I appreciate your efforts on that. And that is a great example where it can be done voluntarily and together with folks in the oil and gas industry as well as the ag industry, which I am in, as well.

Mr. Book and Mr. Smith, any thoughts on these endangered species efforts, which I think are directly going to impact your industry?

Mr. SMITH. Yes, sir. I think it is also interesting to note that a number of the new technologies that are coming out, the things such as I mentioned before, like CO2 capture, much more responsible drilling practices than, say, you would have seen even 15, 20, 30 years ago, pose far less of a threat to birds than wind farms, for which the Obama administration has recently issued an exemption from the raptor act to allow for wind farms to slaughter as many eagles and hawks and owls as they want, while you or I, if we shot one on our ranch, would go to Federal prison.

Mr. HUELSKAMP. Absolutely.

Mr. Book?

Mr. BOOK. Yeah, I think that Mr. Smith made perhaps the most important point, which is that the operating practices have become decreasing invasive to the habitat of species, whether they be endangered, threatened, or just out there. You are seeing less surface impact in drilling operations now.

And I think it is safe to say that, also, what Mr. Blong pointed out is very true; there is an incentive for companies to become able stewards of their operating environments. And there are histories here. The sage grouse was managed locally sufficiently that it was deemed to be maybe at risk but still just a candidate. There are good stories, there are good-news stories in the history of species management and oil production alongside it.

Mr. HUELSKAMP. Those are great to see.

And your point, Mr. Blong—if I might, Mr. Chairman, one last thing—the idea that the folks closest, that actually live there actually know a little bit more than some lawyers in a courtroom somewhere, where it was at, to make a decision about what happens in your area or my home area.

We are working hard, but until it rains in my area significantly, it doesn't matter, you are not going to grow anything. And I just can't get the lawyers and the bureaucrats to understand that. So I appreciate you shedding some light on that.

I yield back, Mr. Chairman.

Chairman TIPTON. Thank you, Mr. Huelskamp.

I now recognize Ranking Member Murphy for his questions.

Mr. MURPHY. Thank you, Mr. Chairman.

From my understanding, it sounds like some companies are finding ways around the restrictions to export crude oil. Can any of you explain how this is happening and what it means for the smaller competing refineries that are actually following the rules?

Go just in order. Mr. Smith, go ahead. Or whoever wants to answer it.

Mr. SMITH. Yes, I am not really aware of any individual companies that are specifically getting around the ban, Mr. Murphy. What some companies are doing is developing splitter refineries, which do partially refine the crude.

And, again, in response to the Member's question about the export ban, it is that distillation process that occurs in a splitter refinery. So you are actually taking different components of the crude off the crude, if you will, lighter components that are often more volatile than the heavier components. And their position is, as is our position, sir, that that is exportable crude and falls under the definitions of the rule that was promulgated after the 1975 act.

Yesterday, the administration announced that they were going to offer an exemption for certain condensates. We do not yet know specifically whether those are lease condensates or plant condensates or a combination thereof. Those are different processes that result in those condensates. But our position would also be that that exception to the ban was a valid exception under the language in the rule.

Mr. MURPHY. Does anyone want to add anything?

Mr. BOOK. Well, part of the problem in answering the question, Congressman, is that we don't know what BIS actually did, other than what we can read in the newspapers.

Simply put, what seems to have occurred is that a subset of the oil being produced from shale formations is being processed in a fashion that BIS has deemed acceptable for export once the processing is complete.

So that is a subset of a subset, and it is not necessarily a very big change, but there is a lot of question about where the line might be. I know yesterday I spent a lot of time on the phone with my clients, who were trying to make sense of it, too.

But whether this compromises other refineries is entirely a question of the scale of its impact.

Mr. MURPHY. Okay.

Mr. BLONG. If I may reword the question, Mr. Murphy, or at least regurgitate the question, can we speak to several producers getting around the ban, I think what we have really seen more than anything else is American ingenuity in its finest working and business folks understanding the context of the law and creating innovations, much like Mr. Smith's company has done, to facilitate continued growth.

I certainly would say, from our perspective, not that we are legal experts by any stretch, but it seems like they have taken what is written in the law and understood that well and are trying to play within the confines of those rules, but innovatively and creatively as they can.

Mr. MURPHY. Just as a follow-up, it was recently reported that the Obama administration approved recently the export of unrefined oil, and that was the first time in, I guess, nearly 4 decades.

How does that affect your business plan and other—I guess, any of your industries and that of the refining industry?

Mr. BLONG. Based on all the reports that we have read really in the last 24-plus hours, I think it is too early for us to tell, really. I think we are trying to interpret what exactly has taken place and what the impacts would be on our clients and our businesses.

Mr. MURPHY. That is votes, so we are going to run out of time here. Just real quick, I want to kind of switch gears a little bit.

This is the Small Business Committee. You sort of alluded earlier, I guess, Mr. Dotson, to the super-majors and their prowess in the market. What can we do on this Committee specifically? If there was one regulation, if there was one rule, if there was one thing we could do to help small businesses enter the market, help you grow, help you expand, and help new startups, what would that be?

Mr. BLONG. I think lifting this export ban is the place to start. It de-risks the investments of the producers, which de-risks the investments of drilling companies and consulting firms like ourselves and everyone else down the line.

And so, when the investment community sees that their investment is de-risked and has sustainability, which I think really is the conversation at hand today more than anything else, at that point in time, then we can create jobs and have direct investment into American manufacturing.

Mr. MURPHY. Okay.

Mr. Book or Smith, do you care to comment?

Mr. SMITH. With respect to small businesses, you know, we firmly believe that the development of increased refining capacity here onshore will benefit both small businesses in the areas where the refinery capacity is increased and also small businesses that live along the food chain that would potentially benefit from a lifting of the export ban.

Mr. BOOK. I would have to say that the oil price drives the bus, and investment follows the price. And with that investment comes a series of those indirect and induced jobs, many of which are supplied by small businesses.

And so what you want to do is keep the investment going. And you can do that with policy that is clear so that you can make investment decisions and count on what the future looks like. Opening up U.S. crude to the world should help keep that investment going.

Mr. MURPHY. Okay.

Mr. Dotson, can you comment on that, as well, and maybe talk about some of the recent EPA regulations, like Tier 3 and GHG

and RFS rules and if that will hurt small operators and refining companies?

Mr. DOTSON. Sure.

Just on the small-business point, I would say refining is such a capital-intensive sector that having small businesses enter that sector and compete is a very unlikely proposition. As my co-panelists have said, production, though we are seeing lots of small-business activity there. And that is booming right now. And I don't know that there is—I would actually say I am not sure that there is action necessary by Congress on that boom, because it is growing so quickly. In fact, you will read press articles about how the industry is actually having problems identifying workers to participate and they are growing so quickly.

With regard to the environmental regulations, I would say 140 million people in the United States still live in areas in which there is more air pollution than is considered healthy. And so EPA's mission in implementing the Clean Air Act is just to attempt to protect public health.

They have finalized Tier 3. That is a set of emission standards for cars and trucks, and it also requires cleaner fuels to be produced. And it is really—it is something that is great for the American people. It helps reduce illness, helps prevent asthma attacks.

And it is also good for domestic manufacturing, because the one area that the United States has a manufacturing edge is in the manufacturing of emissions controls. And they celebrated this victory. They see this as something that is good for hundreds of manufacturing jobs, because they want us to continually push for cleaner technology so they can manufacture that technology and export it abroad.

Mr. MURPHY. Okay.

Thank you.

Chairman TIPTON. Thank you, Mr. Murphy.

Mr. Book, it seems a little—and I think we can offer this to the entire panel here—it seems a little counterintuitive to say that lower prices for domestic oil are a bad thing. Could you explain to the Committee how lower domestic oil prices wouldn't reduce fuel prices?

Mr. BOOK. Happy to do so, Mr. Chairman.

As one of the other panelists pointed out, global supply and demand trends set the price of oil. And while you can actually influence global price a little bit by adding to supply, most of what happens here in terms of the prices that we receive for gasoline at the pump, which is where consumers meet the oil industry face-to-face, that is determined by the global price, which has a lot to do with other things.

What happens here is that folks, like the folks to my left and right, are making investments, and they are making investments, again, based on the environment that the oil price suggests. So if our oil price is for some reason artificially constrained from reaching global prices and is lower, firms will make that investment elsewhere.

And that doesn't happen necessarily right away, nor is it obviously going to happen when prices are as high as they are now. But bring Libya back on line. Solve some of the problems in the

world, and the global price falls. And that differential will really make a difference.

Chairman TIPTON. I think we tried setting prices in the Nixon administration. That didn't work out too well for us as a country at that time.

Any other comments in regards to that?

Mr. SMITH. Not to sound like a broken record here, but another issue that does impact gasoline prices specifically is refining capacity. And that is one of the areas that we have literally built our business plan around.

And I might mention, we are not the only kids on the block. There are a number of other companies that have similar business plans for developing additional refining capacity onshore. And as goes increased refining capacity will go lowered or stabilized gasoline prices at the pump.

Chairman TIPTON. Now, when we are talking about microrefinery that you were looking at, Mr. Smith, does that have the potential to lower fuel prices? Propane is a big deal in our part of the world out west.

Mr. SMITH. Yes, sir. Two components to the answer to that question.

In our specific case, we are building the microrefineries to address local and regional diesel demand. The diesel prices in the region are extremely high compared to the other parts of the country. One of the reasons for that is they are hauling the crude oil to the coasts, refining it, and then hauling it back. The closest refinery to the Williston Basin would be in Denver, 600 miles away, and most of them are in the 1,200- to 1,700-mile distance in terms of your supply chain for diesel. Gasoline would follow, as well. And so, while we are primarily producing for the local and regional market, others are in other markets and would affect that.

The second part of the answer is the natural-gas-stripping facilities specifically provide for an increased locally produced supply of light gases, specifically propanes, butanes, that can then be fractured into their various components and delivered more locally to the market, thereby driving down propane prices.

I also live in the mountain west, where propane is extremely expensive. And we feel that the closer to the consumer that you can place the refining processes, the better for the consumer, the better for prices.

Chairman TIPTON. Now, I do want to follow up a little bit on the refining end of this. You know, I remember, 1972, I think, we had the first Earth Day. The projections were we were going to run out of all of our fossil fuels I think by the 1990s, at that particular point. I think we have had some great testimony that the technologies have improved.

Mr. Blong, I embrace what you were saying. People that live there and work there, I have talked to people with dirt under their fingernails that work under these rigs, happen to love their—you are holding up your hand—you know, that actually love their families and love where they live and want to be able to do it right.

But we haven't seen a major refinery built in this country now for—is it 40 years? Is that correct?

Mr. SMITH. 1976 was the last major. And the MD Resources refinery outside of Dickinson that will open at the end of this year, the beginning of next, will be the first greenfield startup refinery in nearly 40 years, sir. And we are hoping to be among the next after that.

Chairman TIPTON. What, kind of, inhibited developing a new technology to be able to do it better? Was it government regulations?

Mr. SMITH. It is not so much a technology inhibition, sir, as it has been the really draconian lowering of the level of emissions allowed by the EPA down to a 100—the cutoff is 100 tons per year of any gas or emission deemed to be a regulatable gas.

And at 100 tons per year, the guys with the fat brains can calculate backwards, and they have determined that you cannot have a feedstock input to a refinery in excess of 20,000 barrels per day without exceeding that 100-ton threshold. Raising that threshold would greatly increase the odds of having larger refineries built.

Mr. DOTSON. Mr. Chairman, can I just add that, while it is true that we haven't had major development of a new refinery, we have had consistent additions to capacity at existing refineries. So we have seen a great consolidation in the refining sector. In the last 14 years, we have added 1.4 million barrels per day of refining capacity. Today, we have almost 18 million barrels a day of refining capacity, which is at an all-time high. So we——

Chairman TIPTON. But that was geared towards not a light, sweet crude, but a heavy crude?

Mr. DOTSON. A lot of the recent investments have tended to focus on heavier crudes.

Chairman TIPTON. Right. Okay.

I would like to follow up on Ranking Member Murphy's question, because it is about small business. And, heartening to me to hear about 12 employees, wanting to be able to expand, the average $76,000 a year in wages that you are able to pay the folks.

What is the potential impact on domestic fuel prices of this limited decision that we just saw come out of the Department of Commerce when it comes to completely lifting the de facto ban on oil exports?

Mr. BOOK. I mean, the decision out of the Department of Commerce is not at all clear. But if it is just a subset of a subset of our crude, the impact on prices is probably imperceptible. The impact of a wholesale lifting of the current policy could be meaningful. It depends on how much crude ends up being induced by the opportunity to come to market.

But if you think of it, sort of, in a static sense, that every million barrels per day is roughly 10 bucks off the global price of oil, you can start to feel 10 to 15 cents at the pump when you get into that range.

Mr. BLONG. With respect to the job creation by a de facto lifting of the ban, we feel like that it is perhaps more sentimentally driven, which will ultimately drive the economics of the issue. But investors and operating companies, producers have to have some reassurance that there is incentive for them to continue to innovate and continue to deploy capital to develop our Nation's resources so that folks like us can create jobs alongside of them in cooperation.

Chairman TIPTON. Okay. Thank you.

They have just called votes, but I do have one final question I would like to ask Mr. Book.

Could you explain some of the tradeoffs involved in lifting the ban on crude-oil exports? And would the economic benefits of this decision be a net plus for the economy and for small businesses?

Mr. BOOK. In general, if you increase the upstream investment, you are going to benefit all businesses across the country. There is a number of very well-documented studies that show how it reaches outside the oil patch, but there were comments by this panel this morning that do the same thing.

In terms of the tradeoffs, there are currently, yes, some refiners that are benefiting from an artificially discounted crude-oil price, and they would be probably somewhat undercut in their current profits if that price were to go up. But it is my testimony that that price could go up for other reasons, even without the exports.

And even if that price went up, they would still have two principal advantages. One, they would be able to buy the crude net of transportation costs here in the U.S., which might give them some advantage based on their proximity to the crude. And, second, they have low-cost natural gas as a processed fuel, which, in the fractions of a cent that make or break you in the refining business, is a very big deal. We have significantly cheaper natural gas and are likely to continue to have it for many years to come.

Chairman TIPTON. And I think there is certainly something to be said for domestic energy security, given what we are seeing going on in the Middle East right now in particular, to be able to make sure that we have those resources to be able to create our jobs here locally and make sure we keep the lights on and the heat on during the winter months.

Gentlemen, I would like to thank you all once again for taking the time to be able to be here and appearing before this Committee. You have all provided valuable insight into how decisions in Washington affect small businesses operating in the real world.

The shale oil and gas production revolution does hold promise to transform our economy and energy security. And, at the same time, we should be mindful that they are one part of a broader, comprehensive, all-of-the-above strategy that includes utilization of all of our Nation's available resources, including coal, hydropower, nuclear, and renewables.

Certainly want to be able to recognize, we just had the 70th anniversary, that we recognized on D Day, the efforts that you have made with half of your employees, Mr. Blong, in terms of being veterans, come out with some great skills. And certainly I think it is an appropriate thing for us to maybe have some legislation to make sure that we give access to those jobs for our veterans that are coming out of our service. So thank you for that.

I would like to ask unanimous consent that Members and the public have 5 legislative days to submit comments and materials into the hearing record.

Hearing none, so ordered.

The hearing is now adjourned. And thank you.

[Whereupon, at 11:08 a.m., the Subcommittee was adjourned.]

# A P P E N D I X

**TESTIMONY OF**

**RUSSELL SMITH, EXECUTIVE VICE PRESIDENT**

**QUANTUM ENERGY**

**BEFORE THE**

**HOUSE COMMITTEE ON SMALL BUSINESS**

**SUBCOMMITTEE ON AGRICULTURE,
ENERGY AND TRADE**

**ON**

**"THE NEW DOMESTIC ENERGY PARADIGM:
DOWNSTREAM CHALLENGES
FOR SMALL ENERGY BUSINESSES"**

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**June 26, 2014**

**INTRODUCTION**

Chairman Tipton, Ranking Member Murphy and members of the House Subcommittee on Agriculture, Energy and Trade of the House Committee on Small Business, I thank you for the opportunity to testify today to discuss the economic impact of federal policies on domestic crude oil production by small energy businesses.

My name is Russell Smith. I serve as Executive Vice President for QUANTUM ENERGY, INC., a development stage publicly traded diversified holding company with an emphasis in oil field development trading under the stock symbol "QEGY" on the OTC.PK with offices in Williston, North Dakota in the heart of the Bakken shale oil field. Quantum is currently finalizing options to purchase real estate sites for refinery construction in the Bakken region.

If there is a bottom line message in my testimony today, it is that government regulations have a very real impact on our business and our business planning for the future. Perhaps most important is that uncertainty about overall federal policy toward crude oil refining and market availability has an indisputable impact on how all investors view business opportunities in this sector.

Additionally, it is important that Congress fully examine the impacts of any action that places additional requirements or restrictions on innovations such as the type of facilities that Quantum is proposing for the Bakken region.

**ABOUT QUANTUM ENERGY**

QUANTUM ENERGY, INC. is a development stage publicly traded diversified holding company with an emphasis in oil field development trading under the stock symbol "QEGY" on the OTC.PK with offices in Williston, North Dakota in the heart of the Bakken shale oil field. Quantum, as I mentioned above is working to develop land holdings in the Bakken as it finalizes the process of exercising options to purchase real estate sites for refinery construction.

Phase One (1) of our development plan involves the construction of five (5) 21st Century Energy Centers consisting of (one each) 20,000 barrel per day capacity Micro Refinery, 100,000 barrel per day Natural Gas Liquid (NGL) stripping facility and an as yet to be determined NGL separation capacity to provide for local / regional propane production to assist in the remedy of the very acute challenge for low and middle income families in the Northern Mountain West and Upper Midwest in meeting the high costs of home heating and other propane related costs. Additionally, as mentioned below, the regional demand for effectively priced locally / regionally produced diesel drives a significant portion of our business plan.

**NEED FOR NEW REFINING CAPACITY IN BAKKEN**

There are other activities currently underway in North Dakota, including the new Dakota Prairie Refinery, the second refinery in the state of North Dakota, which broke ground in March 2013. The new refinery will process crude oil to produce diesel, as well as other hydrocarbons. Dakota Prairie Refinery is located two miles west of Dickinson City in Stark County, ND. It will be the first greenfield refinery project in the US since the 1970s. The refinery will be built and operated by Dakota Prairie Refining, a joint venture between Montana Dakota Utilities' ("MDU") Resources subsidiary and Calumet Specialty Products. The construction of the $300m refinery is slated for completion in late 2014.

The refinery will process 20,000 barrels of Bakken crude oil per day. The crude for the refinery will be supplied via a nearby pipeline, as well as tanker trucks. The Dakota Prairie Refinery will operate as a topping plant. It will convert around one third of the crude oil into diesel fuel. The rest will be further processed in other Calumet refineries. The diesel output of the refinery will be marketed in the Bakken region. The refinery will produce approximately 7,000 barrels of diesel per day, which will reduce the amount of diesel imported into North Dakota.

Bismarck-based Westcon is the general contractor for constructing the Dakota Prairie refinery. Texas-based Ventech Engineering (the manufacturer of stabilizing or "gas-stripping" equipment, among other crude processing equipment) is providing the primary equipment, as well as the refinery technology for the plant.

North Dakota's current diesel demand per day is approximately 55,000 barrels, with half of the state's diesel fuel imported. The diesel consumption in the state rose by 51% between 2007 and 2012. Demand is expected to grow to 75,000 barrels per day within 12-18 months, if not sooner. North Dakota, however, has just one refinery currently, the Tesoro refinery in Mandan, which has a processing capacity of 58,000 barrels of crude oil per day. This refinery produces approximately 28,000 barrels per day of diesel, meeting about 1/3 of the 18 month regional demand. Much of the crude oil produced in North Dakota is sent to other markets through pipeline, rail and truck.

A refinery near Trenton in north-west North Dakota has also been planned apart from Dakota Prairie. The $200 million Trenton refinery owned by Dakota Oil Processing is likely to break ground in 2014. The 20,000 barrel-per-day Trenton plant will mainly produce light gas oil.

Quantum Energy plans to construct initially five similar, if not exact replicas of the Dakota Prairie Refinery, which will produce another 7,000 barrels of diesel per day at each facility. This will go a long way toward satisfying the thirst for diesel in the region. Quantum plans to build their refineries as close to or on some of the existing 14 transload facilities sites. The natural gas stripping operations would be sized to meet the demand on each site.

**LEGISLATIVE HISTORY OF CRUDE OIL EXPORT BAN**

Mr. Chairman, let me summarize our understanding of the legislative history (original legislation; Bureau of Industry and Security's implementing regulations; pending legislation) as well as recent news and commentary on efforts to lift the ban or to circumvent it for purposes of exporting the domestic sweet, light crude that is currently being produced in the Bakken region.

**Current Legislation**

Section 7(d) of the Export Administration Act of 1979 (EAA) placed restrictions on the export of crude oil. Although the EAA expired on March 30, 1984, the export controls under the EAA were extended under presidential declaration of national emergency.[1] Specific limitations on crude oil exports are contained in §28(u) of the Mineral Leasing Act of 1920, as amended (MLA)[2] [30 U.S.C. §185(u)], and §103(b) of the Energy Policy and Conservation Act of 1975, as amended (EPCA)[3] [42 U.S.C. §6212(b)], both of which subject the covered exports to the restrictions of the EAA. See Appendix for the text of these limitations. Additional export restrictions on specific reserves under the Outer Continental Shelf Lands Act and the Naval Petroleum Reserves Production Act are not covered in this memorandum.

Section 7(d) applies on its face to domestically-produced crude transported by pipeline over ROW granted under § 203 of the Trans-Alaska Pipeline Authorization Act, but the subsection is made applicable to other crude oil under the MLA and EPCA. The limitations under §7(d)(1) may only be waived if the President makes specified findings concerning: lack of negative impact on U.S. oil supply, lowering of refiners' acquisition costs of imported crude, ability to terminate contracts based on threats to U.S. crude oil supplies, clear need to protect national interest, and in accordance with the EAA. In addition, the findings must be presented to Congress and approved by joint resolution within 60 days of submission.

Section 103(b) prohibits crude oil exports unless such exports are exempted by regulation. Crude oil is not a defined term under the statute.[4] The President is authorized to exempt from export prohibition "such crude oil or natural gas exports which he determines to be consistent with the national interest and the purposes of [chapter 77]." Exemptions may be based on "the purpose for

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[1] ENERGY POLICY AND CONSERVATION ACT, Public Law 94–163, as Amended

[As Amended Through P.L. 113–67, Enacted December 26, 2013], complied by the House Office of Legislative Counsel, Jan. 14, 2014, p. 8, fn 1, http://legcounsel.house.gov/Comps/EPCA.pdf.

[2] Mineral Leasing Act of 1920, as amended, re-transcribed 8/9/07, http://www.blm.gov/pgdata/etc/medialib/blm/ut/vernal_fo/lands___minerals.Par.6287.File.dat/MineralLeasingAct1920.pdf. The relevant provision is codified at 30 U.S.C. 185(u), http://www.gpo.gov/fdsys/pkg/USCODE-2012-title30/pdf/USCODE-2012-title30-chap3A-subchapI-sec185.pdf.

[3] ENERGY POLICY AND CONSERVATION ACT, Public Law 94–163, as Amended

[As Amended Through P.L. 113–67, Enacted December 26, 2013], complied by the House Office of Legislative Counsel, Jan. 14, 2014, http://legcounsel.house.gov/Comps/EPCA.pdf.

[4] The only relevant term defined under the EPCA is "petroleum product," defined as "crude oil, residual fuel oil, or any refined petroleum product (including any natural liquid and any natural gas liquid product)." 42 U.S.C. §6202(3).

export, class of seller or purchaser, country of destination, or any other reasonable classification or basis as the President determines to be appropriate and consistent with the national interest and the purposes of [chapter 77]."

Section 28(u) requires that export license only be granted for crude oil subject to the EAA under §28 if the President makes an express finding that such exports will not diminish the total U.S. quantity or quality of petroleum, are in the national interest, and are in accord with the provisions of the EAA.

**Implementing Regulations**

Statutory restrictions on the general export of crude oil are implemented through the Short Supply Controls under the Export Administration regulations, administered by the Commerce Departments' Bureau of Industry and Security (BIS).[5] The regulations contain exceptions to the general ban on export licenses for crude oil, most of which would not apply to domestic LTO. However, the exception for exports to Canada for crude that is refined or used in Canada could be used for such crude, and in fact is apparently is being so used.[6]

Section 754.2, *Crude oil*, defines "crude oil" as follows:

> ... a mixture of hydrocarbons that existed in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities and which has not been processed through a crude oil distillation tower. Included are reconstituted crude petroleum, and lease condensate and liquid hydrocarbons produced from tar sands, gilsonite, and oil shale. Drip gases are also included, but topped crude oil, residual oil, and other finished and unfinished oils are excluded.

The licensing policy under the regulation already contains several exceptions that were added pursuant to presidential findings. In addition, §754.2(b)(2) provides that BIS will review other applications to export crude oil on a case-by-case basis and generally will approve such applications if the agency determines the proposed export is consistent with the national interest and with the purposes of the EPCA. While under BIS license policy the agency will consider all applications for approval, the regulation specifies that under the case-by-case review procedure, the agency will generally determine that exports that are part of an overall transaction including three specified elements are in the national interest and consistent with the purposes of the EPCA.[7]

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[5] 15 CFR Part. 754—Short Supply Controls, http://www.gpo.gov/fdsys/pkg/CFR-2012-title15-vol2/pdf/CFR-2012-title15-vol2-part754.pdf.

[6] Lorne Stockman, *Should It Stay or Should It Go? The Case Against U.S. Crude Oil Exports*, OIL CHANGE INTERNATIONAL, October 2013, pp. 23-24. http://priceofoil.org/content/uploads/2013/10/OCI_Stay_or_Go_FINAL.pdf.

[7] In order to come within the description of transactions that "will be among those that BIS will determine to be in the national interest and consistent with the purposes of EPCA," the export must be part of an overall transaction:

> (A) That will result directly in the importation into the United States of an equal or greater quantity and an equal or better quality of crude oil or of a quantity and quality of petroleum products listed in Supplement No. 1 to this part that is not less than the quantity and quality of

Currently there is disagreement over administrative authority to allow crude oil exports, with Senator Murkowski arguing that such authority exists and should be exercised,[8] and Representative Markey (D-MA) and Senator Menendez (D-NJ) arguing that the Commerce Department does not have independent authority to authorize exports and that the President should not do so.[9] Senator Murkowski cites several examples of previous presidential findings of national interest to create exceptions to the export ban under §754.2. Rep. Markey and Senator Menendez take the position that §103 of the EPCA requires a presidential finding that a particular type of export is consistent with the national interest and purposes of the EPCA, and that approval of new crude exports would not be consistent with those purposes, as it would increase reliance on foreign oil. They also note that a finding that "for compelling economic or technological reasons that are beyond the control of the applicant, the crude oil cannot reasonably be marketed in the United States" is not in and of itself authority for BIS to approve crude exports.

In addition, it has been suggested that a change in the classification of field condensate could allow it to be exported.[10]

**Pending Legislation**

On March 24, 2014, Representative Bridenstine (R-OK) introduced H.R. 4286, the American Energy Renaissance Act of 2014, which would, *inter alia*, repeal the above statutory restrictions, declare without force or effect the EAA and implementing regulation concerning the crude oil export ban, and direct BIS to grant licenses to export crude oil except in certain circumstances. As of June 18, 2014, the bill had 13 cosponsors (not counting a cosponsor who had withdrawn)[11] and had been referred to the Committees on Natural Resources, Transportation and

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commodities that would be derived from the refining of the crude oil for which an export license is sought;

(B) That will take place only under contracts that may be terminated if the petroleum supplies of the United States are interrupted or seriously

threatened; **and** (emphasis added)

(C) In which the applicant can demonstrate that, for compelling economic or technological reasons that are beyond the control of the applicant, the crude oil cannot reasonably be marketed in the United States.

[8] Jennifer A. Dlouhy, *Senator calls for end to 'antiquated' ban on exporting US crude*, FuelFix/CH2MHill Oil and Gas, Jan. 7, 2014, http://fuelfix.com/blog/2014/01/07/senator-launches-dc-debate-over-exporting-us-crude-live/; Past is Precedent: Executive Power to Authorize Crude Oil Exports, Mar. 3, 2014, http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=c78fdaf5-04ae-4586-b4d1-6562bb9cdae0

[9] Markey, Menendez Lay Out Legal Case against Crude Oil Exports to President Obama, Jan. 30, 2014, http://www.markey.senate.gov/news/press-releases/markey-menendez-lay-out-legal-case-against-crude-oil-exports-to-president-obama. The letter is available at http://www.markey.senate.gov/imo/media/doc/2014-1-30_Obama_oil_exports.pdf.

[10] Jennifer A. Dlouhy, *Oil glut stirs debate over US crude exports*, FuelFix/CH2MHill Oil and Gas, Jan. 5, 2014, http://fuelfix.com/blog/2014/01/05/us-oil-glut-stirs-up-political-dilemma/?cmpid=eefl.

[11] Rep. Paul Cook (R-CA), Rep. Ted Yoho (R-FL), Rep. Culberson (R-TX), Rep. Rice (R-SC), Rep. Jordan (R-OH), Rep. Stockman (R-TX), Rep. Huelskamp (R-KS), Rep. Gohmert (R-TX), Rep. Roe (R-TN), Rep. Farenthold (R-TX), Rep. Broun (R-GA), Rep. Duncan (R-SC), and Rep. Aderholt (R-AL). Rep. Cramer (R-ND) withdrew his sponsorship.

Infrastructure, Energy and Commerce, Agriculture, Judiciary, and Foreign Affairs, and from those on to relevant subcommittees.

On March 27, 2014, Senator Cruz (R-TX) introduced, S. 2170, the companion bill to H.R. 4286. As of June 18, 2014, S. 2170 has one co-sponsor, Senator Lee (R-UT) and had been referred to the Committee on Energy and Natural Resources.

On April 1, 2014, Rep. McCaul (R-TX) introduced H.R. 4349, the Crude Oil Export Act, which would repeal the above statutory restrictions and declare without force or effect the EAA and implementing regulation concerning the crude oil export ban. H.R. 4349 is identical to §1003 of H.R. 4286, with the addition of a provision authorizing the President to impose an export ban of not more than 90 days during a period of national emergency, subject to the Congressional Review Act. As of June 18, 2014, the bill had 6 cosponsors[12] and had been referred to the Committees on Foreign Affairs, Natural Resources, and Energy and Commerce, and from those on to relevant subcommittees.

In addition to the legislation that has been introduced this year, Senator Murkowski has expressed support for updating the export law, and Senator Landrieu has indicated openness to changing the law "if the scientific data shows we should," adding that she thinks it has. The Secretary of Energy has also stated that the export ban should be revisited.[13]

**LIFTING THE BAN**

A number of stakeholders and commentators have expressed support for lifting the ban, or at least revisiting it.[14] The arguments for lifting the ban[15] are that: it may not be economical to refine LTO[16] because of the lack of domestic refineries able to handle that type of crude; allowing exports will lower gas prices in the U.S.;[17] the ban has not achieved the goals of the 1975 legislation;[18] and lifting the ban will not necessarily increase reliance on imported oil.[19]

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[12] Rep. Culberson (R-TX), Rep. Westmoreland (R-GA), Rep. Farenthold (R-TX), Rep. Cotton (R-AR), Rep. Duncan (R-SC), and Rep. Stewart (R-UT).

[13] Valerie Volcovici, *Key senator urges end to ban on U.S. crude oil exports*, REUTERS, Jan. 7, 2014, http://www.reuters.com/article/2014/01/07/us-usa-energy-exports-idUSBREA060PC20140107.

[14] Valerie Volcovici, *Key senator urges end to ban on U.S. crude oil exports*, REUTERS, Jan. 7, 2014, http://www.reuters.com/article/2014/01/07/us-usa-energy-exports-idUSBREA060PC20140107.

[15] *See generally, US Crude Oil Export Decision: Assessing the impact of the export ban and free trade on the US economy*, IHS Energy / IHS Economics Report, 2014. Download available at http://www.ihs.com/info/0514/crude-oil.aspx (Contact information must be submitted to HIS).

[16] Valerie Volcovici, *Key senator urges end to ban on U.S. crude oil exports*, REUTERS, Jan. 7, 2014, http://www.reuters.com/article/2014/01/07/us-usa-energy-exports-idUSBREA060PC20140107.

[17] Neil Hume, *Bringing shale benefits to the US driver*, FINANCIAL TIMES, Dec. 11, 2013, http://www.ft.com/intl/cms/s/0/6506397a-61b3-11e3-aa02-00144feabdc0.html?siteedition=uk#axzz34wIbtcbp; Stephen P.A. Brown, Charles Mason, Alan Krupnick, and Jan Mares, *Crude Behavior: How Lifting the Export Ban Reduces Gasoline Prices in the United States*, Resources for the Future, Issue Brief 14-03-REV, February 2014; Revised March 2014, http://www.rff.org/RFF/Documents/RFF-IB-14-03-REV.pdf.

[18] Blake Clayton, *The Case for Allowing U.S. Crude Oil Exports*, Council on Foreign Relations, July 2013, http://www.cfr.org/oil/case-allowing-us-crude-oil-exports/p31005;

The American Petroleum Institute sponsored a report that claims wide-ranging benefits from lifting the ban.[20] Lifting the restrictions would benefit production of Bakken shale oil.[21] Opponents to lifting the ban argue (variously) that: doing so could raise prices;[22] the crude is needed domestically for energy security purposes; increasing fossil fuel production would be harmful;[23] and U.S. refineries can in fact handle the new production of light crude.[24] Some refiners—notably Valero—oppose lifting the ban,[25] presumably because it is more profitable for them to have it in place. It appears that lifting the ban would not have a uniform impact on gasoline prices in the U.S. because different regions are dependent on different sources of crude that would be affected differently by lifting the ban.[26]

**CONDENSATE SPLITTERS**

According to the Congressional Research Service, condensates are likely to be considered crude oil for export purposes.[27] However, it appears that even lightly processed condensate is not considered to be crude oil subject to the export ban.[28] A number of companies, regardless of their position on the export ban, are taking advantage of this distinction. Kinder Morgan is building a

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[19] Deborah Gordon, *The Complexities of U.S. Oil Exports*, THE NATIONAL INTEREST, Mar. 20, 2014, http://nationalinterest.org/commentary/the-complexities-us-oil-exports-10081.

[20] ICF International, EnSys Energy, *The Impacts of U.S. Crude Oil Exports on Domestic Crude Production, GDP, Employment, Trade, and Consumer Costs*, March 31, 2014, p. 5, http://www.api.org/news-and-media/news/newsitems/2014/mar-2014/~/media/Files/Policy/LNG-Exports/LNG-primer/API-Crude-Exports-Study-by-ICF-3-31-2014.pdf.

[21] Emily Aasand, *Lifting export restrictions on US crude benefits Bakken*, THE BAKKEN MAGAZINE, June 3, 2014, http://www.thebakken.com/articles/665/lifting-export-restrictions-on-us-crude-benefits-bakken.

[22] Brad Plumer, *U.S. oil exports have been banned for 40 years. Is it time for that to change?*, THE WASHINGTON POST, Jan. 8, 2014, http://www.washingtonpost.com/blogs/wonkblog/wp/2014/01/08/u-s-oil-exports-have-been-banned-for-40-years-is-it-time-for-that-to-change/

[23] *E.g.*, Lorne Stockman, *Should It Stay or Should It Go? The Case Against U.S. Crude Oil Exports*, OIL CHANGE INTERNATIONAL, October 2013, http://priceofoil.org/content/uploads/2013/10/OCI_Stay_or_Go_FINAL.pdf.

[24] Lorne Stockman, *Should It Stay or Should It Go? The Case Against U.S. Crude Oil Exports*, OIL CHANGE INTERNATIONAL, October 2013, p. 29. http://priceofoil.org/content/uploads/2013/10/OCI_Stay_or_Go_FINAL.pdf.

[25] Valerie Volcovici, *Key senator urges end to ban on U.S. crude oil exports*, REUTERS, Jan. 7, 2014, http://www.reuters.com/article/2014/01/07/us-usa-energy-exports-idUSBREA060PC20140107. Marathon oil and ConocoPhilips may also support keeping the export ban. *See* Lorne Stockman, *Should It Stay or Should It Go? The Case Against U.S. Crude Oil Exports*, Oil Change International, October 2013, pp. 29, 31-33. http://priceofoil.org/content/uploads/2013/10/OCI_Stay_or_Go_FINAL.pdf.

[26] Brad Plumer, *U.S. oil exports have been banned for 40 years. Is it time for that to change?*, THE WASHINGTON POST, Jan. 8, 2014, http://www.washingtonpost.com/blogs/wonkblog/wp/2014/01/08/u-s-oil-exports-have-been-banned-for-40-years-is-it-time-for-that-to-change/

[27] Adam Vann, *Applicability of Federal Export Requirements to Natural Gas Liquids and Condensate*, Congressional Research Service, Jan. 6, 2014, http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=3e18847c-cf43-48f6-ad3a-f8f896a5cc5c.

[28] Bradley Olson and Mike Lee, *Crude Export Ban No Match for Lightest U.S. Shale Oil*, BLOOMBERG, Feb. 26, 2013, http://www.bloomberg.com/news/2013-02-26/crude-export-ban-no-match-for-lightest-u-s-shale-oil-energy.html; Kristen Hays and Terry Wade, *Magellan sees heavy demand for U.S. Gulf condensate splitters*, Nov. 21, 2013, http://www.reuters.com/article/2013/11/21/us-magellan-ceo-idUSBRE9AK11120131121.

new splitter refinery in Houston that will process LTO just enough for the resulting product to not be covered by the export ban. BP has contracted for at least 80% of the capacity of the plant over a 10-year period. Bloomberg reports that other companies are planning to build similar facilities.[29] For example, Phillips 66 plans to build a condensate splitter at an existing refinery in Texas, allowing it to process condensate into exportable petroleum products.[30] Valero Energy, despite its opposition to lifting the export ban, is also building such facilities. As of May, at least 8 companies had announced plans to build such facilities. The FT report notes, however, that the profitability of the splitter facilities depends on the export ban remaining in place.[31]

**CONCLUSION**

Mr. Chairman, in conclusion, let me summarize two key points of my testimony before this committee:

In the absence of lifting the export ban, we would very much support the clarification of definitions surrounding NGL stripped Crudes as meeting the definition of refined Crudes for the purposes of lawful Crude Oil Exports.

If the Congress wishes to further explore the impacts of the export ban for crude oil, we would be very interested to participate in that discussion and welcome the opportunity to express in detail the significant cost implications associated with this issue.

Mr. Chairman, thank you again for the opportunity to appear here today on behalf of Quantum Energy. I would be pleased to answer questions now or in the future.

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[29] Alex Nussbaum and Bradley Olson, *BP Splitter Refinery Seen Skirting U.S. Oil Export Ban*, BLOOMBERG, Mar. 6, 2014, http://www.bloomberg.com/news/2014-03-06/bp-splitter-refinery-seen-skirting-u-s-oil-export-ban.html.

[30] *Phillips 66 says exporting U.S. oil to Canada*, REUTERS, Apr. 11, 2014, http://www.reuters.com/article/2014/04/11/usa-exports-oil-idUSL2N0N30UM20140411

[31] Gregory Meyer and Ed Crooks, *US oil industry finds way around export ban*, FINANCIAL TIMES, June 9, 2014, http://www.ft.com/intl/cms/s/0/04079398-e9a4-11e3-99ed-00144feabdc0.html#axzz356LLzcPX.

**Appendix A—Statutory Limitations on Crude Oil Exports**

The Export Administration Act of 1979 imposed controls on the export of crude oil, which controls were maintained pursuant to the International Emergency Economic Powers Act (50 U.S.C. §1701 et seq.). Two statutes subject relevant crude oil exports to those controls: The Mineral Leasing Act of 1920, as amended by the Trans-Alaska Pipeline Authorization Act, Public Law 93-153, Nov. 16, 1973; and the Energy Policy and Conservation Act of 1975, as amended. The text of the relevant provisions is set forth below.

**Section 7 of the Export Administration Act of 1979 (50 U.S.C. App. 2406)**
(d) Domestically Produced Crude Oil.—(1) Notwithstanding any other provision of this Act and notwithstanding subsection (u) of section 28 of the Mineral Leasing Act of 1920 (30 U.S.C. 185), no domestically produced crude oil transported by pipeline over right-of-way granted pursuant to section 203 of the Trans-Alaska Pipeline Authorization Act (43 U.S.C. 1652) (except any such crude oil which (A) is exported to an adjacent foreign country to be refined and consumed therein in exchange for the same quantity of crude oil being exported from that country to the United States; such exchange must result through convenience or increased efficiency of transportation in lower prices for consumers of petroleum products in the United States as described in paragraph (2)(A)(ii) of this subsection, (B) is temporarily exported for convenience or increased efficiency of transportation across parts of an adjacent foreign country and reenters the United States, or (C) is transported to Canada, to be consumed therein, in amounts not to exceed an annual average of 50,000 barrels per day, in addition to exports under subparagraphs (A) and (B), except that any ocean transportation of such oil shall be by vessels documented under section 12106 of title 46, United States Code) may be exported from the United States, or any of its territories and possessions, subject to paragraph (2) of this subsection.
(2) Crude oil subject to the prohibition contained in paragraph (1) may be exported only if—
(A) the President so recommends to the Congress after making and publishing express findings that exports of such crude oil, including exchanges—
(i) will not diminish the total quantity or quality of petroleum refined within, stored within, or legally committed to be transported to and sold within the United States;
(ii) will, within 3 months following the initiation of such exports or exchanges, result in (I) acquisition costs to the refiners which purchase the imported crude oil being lower than the acquisition costs such refiners would have to pay for the domestically produced oil in the absence of such an export or exchange, and (II) not less than 75 percent of such savings in costs being reflected in wholesale and retail prices of products refined from such imported crude oil;
(iii) will be made only pursuant to contracts which may be terminated if the crude oil suppliers of the United States are interrupted, threatened, or diminished;
(iv) are clearly necessary to protect the national interest; and
(v) are in accordance with the provisions of this Act; and
(B) the President includes such findings in his recommendation to the Congress and the Congress, within 60 days after receiving that recommendation, agrees to a joint resolution which approves such exports on the basis of those findings, and which is thereafter enacted into law.
(3) Notwithstanding any other provision of this section or any other provision of law, including subsection (u) of section 28 of the Mineral Leasing Act of 1920, the President may export oil to any country pursuant to a bilateral international oil supply agreement entered into by the United

States with such nation before June 25, 1979, or to any country pursuant to the International Emergency Oil Sharing Plan of the International Energy Agency.

**Mineral Leasing Act of 1920: 30 U.S.C. §185(u), Limitations on export**
Any domestically produced crude oil transported by pipeline over rights-of-way granted pursuant to this section, except such crude oil which is either exchanged in similar quantity for convenience or increased efficiency of transportation with persons or the government of an adjacent foreign state, or which is temporarily exported for convenience or increased efficiency of transportation across parts of an adjacent foreign state and reenters the United States, **shall be subject to all of the limitations and licensing requirements of the Export Administration Act of 1979 (50 U.S.C. App. 2401 and following)** and, in addition, **before any crude oil subject to this section may be exported under the limitations and licensing requirements and penalty and enforcement provisions of the Export Administration Act of 1979 the President must make and publish an express finding that such exports will not diminish the total quantity or quality of petroleum available to the United States, and are in the national interest and are in accord with the provisions of the Export Administration Act of 1979**: Provided, That the President shall submit reports to the Congress containing findings made under this section, and after the date of receipt of such report Congress shall have a period of sixty calendar days, thirty days of which Congress must have been in session, to consider whether exports under the terms of this section are in the national interest. If the Congress within this time period passes a concurrent resolution of disapproval stating disagreement with the President's finding concerning the national interest, further exports made pursuant to the aforementioned Presidential findings shall cease.
(emphasis added)

**Energy Policy and Conservation Act: 42 U.S.C. §6212, Domestic use of energy supplies and related materials and equipment**
(a) Export restrictions. The President may, by rule, under such terms and conditions as he determines to be appropriate and necessary to carry out the purposes of this chapter, restrict exports of—
(1) coal, petroleum products, natural gas, or petrochemical feedstocks, and
(2) supplies of materials or equipment which he determines to be necessary (A) to maintain or further exploration, production, refining, or transportation of energy supplies, or (B) for the construction or maintenance of energy facilities within the United States.
(b) Exemptions.
(1) The President shall exercise the authority provided for in subsection (a) of this section to promulgate a rule prohibiting the export of crude oil and natural gas produced in the United States, except that the President may, pursuant to paragraph (2), exempt from such prohibition such crude oil or natural gas exports which he determines to be consistent with the national interest and the purposes of this chapter.
(2) Exemptions from any rule prohibiting crude oil or natural gas exports shall be included in such rule or provided for in an amendment thereto and may be based on the purpose for export, class of seller or purchaser, country of destination, or any other reasonable classification or basis as the President determines to be appropriate and consistent with the national interest and the purposes of this chapter.

(c) Implementing restrictions. **In order to implement any rule promulgated under subsection (a) of this section, the President may request and, if so, the Secretary of Commerce shall, pursuant to the procedures established by the Export Administration Act of 1979** [50 U.S.C. App. 2401 et seq.] (but without regard to the phrase "and to reduce the serious inflationary impact of foreign demand" in section 3(2)(C) of such Act [50 U.S.C. App. 2402(2)(C)]), **impose such restrictions as specified in any rule under subsection (a) of this section on exports of coal, petroleum products, natural gas, or petrochemical feedstocks, and such supplies of materials and equipment.**

(d) Restrictions and national interest. Any finding by the President pursuant to subsection (a) or (b) of this section and any action taken by the Secretary of Commerce pursuant thereto shall take into account the national interest as related to the need to leave uninterrupted or unimpaired—

(1) exchanges in similar quantity for convenience or increased efficiency of transportation with persons or the government of a foreign state,

(2) temporary exports for convenience or increased efficiency of transportation across parts of an adjacent foreign state which exports reenter the United States, and

(3) the historical trading relations of the United States with Canada and Mexico.

(e) Waiver of notice and comment period.

(1) The provisions of subchapter II of chapter 5 of title 5 shall apply with respect to the promulgation of any rule pursuant to this section, except that the President may waive the requirement pertaining to the notice of proposed rulemaking or period for comment only if he finds that compliance with such requirements may seriously impair his ability to impose effective and timely prohibitions on exports.

(2) In the event such notice and comment period are waived with respect to a rule promulgated under this section, the President shall afford interested persons an opportunity to comment on any such rule at the earliest practicable date thereafter.

(3) If the President determines to request the Secretary of Commerce to impose specified restrictions as provided for in subsection (c) of this section, the enforcement and penalty provisions of the Export Administration Act of 1969 shall apply, in lieu of this chapter, to any violation of such restrictions.

**Testimony of Kevin Book**
**Managing Director**
**ClearView Energy Partners, LLC**

**Before the**
**U.S. House of Representatives**
**Committee on Small Business**
**Subcommittee on Agriculture, Energy and Trade**

**June 26, 2014**

Good morning Chairman Tipton, Ranking Member Murphy and distinguished Members of this Committee. Thank you for inviting me to contribute to your important discussion today regarding downstream challenges for small energy businesses. My name is Kevin Book and I head the research team at ClearView Energy Partners, LLC, an independent firm headquartered here in Washington D.C. that provides macro-level analyses to institutional investors and corporate strategic planners.

Mr. Chairman, I sit before you today with full recognition of the awesome challenge you and your colleagues face in reconsidering four decades of energy policy that was based on scarcity psychology so that our nation can best accommodate the rapid growth of new energy supply. Moreover, I appreciate the considerable emotional context and deep history that surrounds any discussion of whether and how to liberalize U.S. crude oil exports. It is no small thing to tackle U.S. oil policy – an issue that many Americans are likely to associate with energy insecurity – in an effort to maximize economic opportunity, and I am grateful for your efforts.

My testimony today suggests that even as many Americans celebrate the renewed production of light, sweet crude oil, current production trends may be creating an unstable equilibrium. Domestic crude supply appears poised to outgrow its available outlets under current export policy, creating uncertainty for upstream and downstream investments. Producers may soon see deeper discounts relative to global prices, while refiners must consider whether to commit capital to new infrastructure predicated in large part on these feedstock discounts. In my view, moving as quickly as possible towards a clear and durable policy decision regarding crude oil exports appears to in the interest of all parties.

## Supply and Demand Are On the Move

Production of unconventional crude from shale and other tight formations ("shale oil") has been growing incredibly fast. On a trailing, twelve-month (TTM) average basis through March 2014, Energy Information Administration (EIA) statistics from the six regions the agency tracks in its *Drilling Productivity Report* (DPR) show 2.435 MM bbl/d[1] of incremental crude oil production relative to the CY2009 average[2].

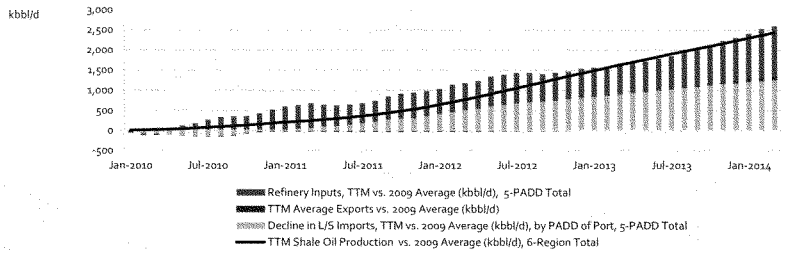
[1] This analysis employs a TTM average to smooth out seasonality, but backward-looking statistics have a tendency to understate late-breaking changes. On an absolute basis, six-region production in March 2014 was 2.859 MM bbl/d higher than it was in March 2009, according to EIA data.

[2] There are two reasons why 2009 presents itself as a useful baseline for comparisons. First, crude oil price benchmarks collapsed in the wake of the 2008 financial crisis, reaching lows in December of that year. This makes 2009 something of a "starting point" as global supply, demand and price climbed back to a *new normal*. Second, averaging EIA monthly data for U.S. field production of crude oil on a TTM basis, December 2008 also represented the "turning point" where long-declining production began to grow, making 2009 the first full calendar year of a *new era*.

Demand for shale oil has grown fast, too. Newfound U.S. volumes have gone to three principal outlets: (1) increased refinery utilization; (2) substitution for imported light, sweet crudes; and (3) exports to Canada. On a TTM average basis through March 2014, our firm's analysis of EIA data shows that U.S. refinery inputs increased 1.244 MM bbl/d and imports of light, sweet crude[3] decreased by 1.255 MM bbl/d relative to the CY2009 average. On a TTM average basis through March 2014, data from the International Trade Commission (ITC) at the Department of Commerce imply that exports to Canada increased by about 89 kbbl/d relative to the CY2009 average.

Figure 1 presents incremental shale oil supply (black line), incremental refinery inputs (dark blue bars), import substitution (light blue bars) and incremental exports to Canada (burgundy bars).

Figure 1 – Shale Oil, Refinery Utilization, Import Substitution and Exports to Canada (1/2010 – 3/2014 vs. CY2009), kbbl/d




*Source: ClearView Energy Partners, LLC using EIA and ITC data*

## An Unstable Equilibrium

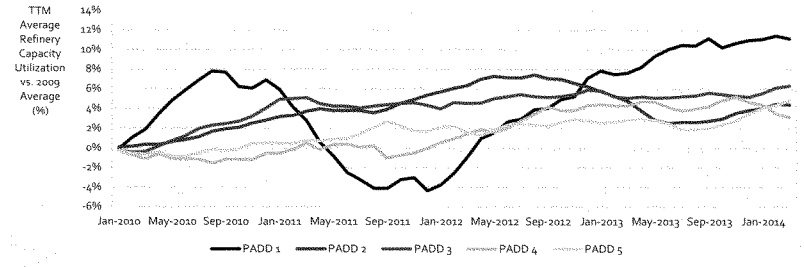
By all appearances, Figure 1 would suggest that supply and demand seem relatively balanced, but this conclusion deserves several *caveats.*

First, the six producing regions EIA tracks in the DPR represent most – but not *all* – of the incremental supply coming onstream. Including volumes from growing shale oil production in other regions – as well as incremental conventional and offshore production – would raise the black line a little higher above the colored bars, implying greater supply relative to demand (although not all of this production is light and sweet).

Second, petroleum refining is a manufacturing process that requires a certain amount of downtime to ensure safety and optimal performance. Notwithstanding questions of a mismatch between crude quality and refinery complexity, this limits the extent to which existing capacity can absorb incremental crude volumes without capacity expansions. Figure 2 presents incremental TTM average refinery capacity utilization in each of the five U.S. PADDs *vis-à-vis* the CY2009 average. Bottom line: refiners have already ramped up their throughput considerably.

[3] For the purposes of this this analysis, which relies on EIA's monthly, company-level import data, "light, sweet" crude is defined as having an API gravity greater than or equal to 31.2 degrees and a sulfur content less than or equal to 0.5%.

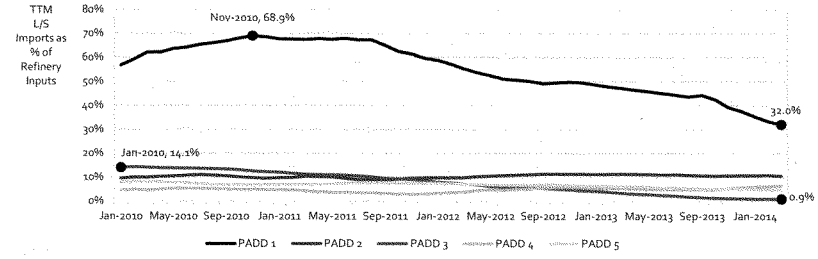
Figure 2 – Running Harder Already: Incremental Refinery Capacity Utilization (1/2010 – 3/2014 TTM vs. CY2009)




*Source: ClearView Energy Partners, LLC using EIA data*

Third, as Figure 3 shows, domestic production has already replaced nearly all of the volumes of light, sweet crude previously imported into the East Coast (PADD 1) and Gulf of Mexico (PADD 3), the U.S. regions that best lend themselves to import substitution[4]. In PADD 1, TTM light, sweet imports as a share of refinery inputs fell from about 69% in November 2010 to about 32% in March 2014. In PADD 3, light sweet imports as a share of refinery inputs fell from about 14% in January 2010 to less than 1% in March 2014. These trailing averages in Figure 3 somewhat understate circumstances on the ground. For example, in March 2014, the U.S. imported 223 kbbl/d of light, sweet crude into PADD 1 and only 16 kbbl/d into PADD 3, compared to CY2009 averages of 682 kbbl/d and 1.073 MM bbl/d, respectively.

Figure 3 – Light, Sweet Imports by Destination PADD as % of Refinery Inputs, TTM Average, 1/2010 – 3/2014



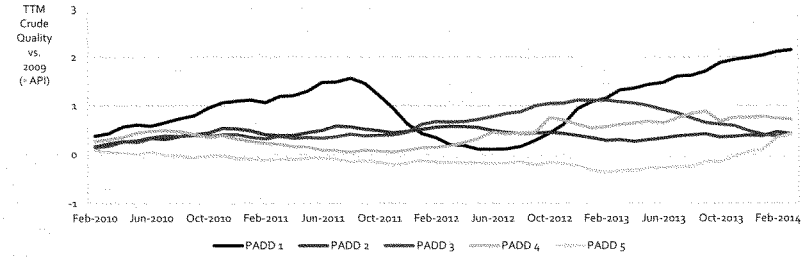

*Source: ClearView Energy Partners, LLC using EIA data*

Fourth, during the course of the last two decades, much of the U.S. refinery fleet was upgraded to process heavy, sour crude. These "high complexity" refineries can take advantage of lower quality feedstock that generally prices at a discount to light, sweet crude. This feedstock advantage – in tandem with low-cost natural gas as a source of process energy – has historically enabled many high-complexity refiners to generate better refining margins than overseas

[4] The Petroleum Administration for Defense Districts (PADDs), created during World War II for gasoline rationing purposes, divided the country into five regions. Government and industry analysts continue to reference these regions in their analyses today. PADDs 1, 3 and 5 directly receive crude from the open seas, and PADDs 3 and 5 have historically received greater volumes of light, sweet crude imports (imports into PADD 5 have increasingly replaced medium and heavy, sour Californian and Alaskan crude.)

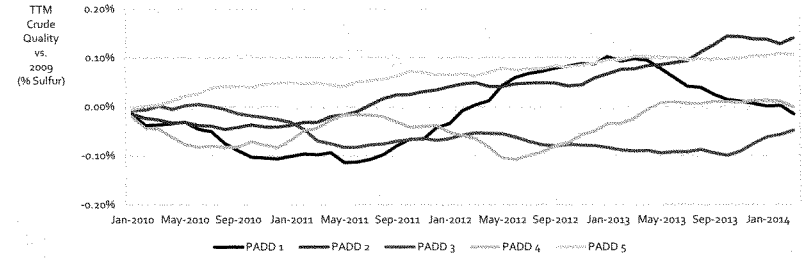
competitors. Moreover, many of the heavier crudes for which these refineries are configured tend to yield a thicker "cut" of the middle distillates (i.e., diesel fuel, kerosene and kerosene-type jet fuel) that often earn a premium relative to other products (i.e., gasoline, for which U.S. demand appears likely to trend flat-to-down for the next decade). In short, as the U.S. crude mix gets lighter and sweeter (Figures 4 and 5), U.S. producers must offer the nation's newly upgraded refiners discounts to encourage greater acquisition of a less suitable feedstock.

Figure 4 – Getting Lighter? EIA Weighted Average API Gravity by PADD (1/2010 - 3/2014 TTM Average vs. CY2009)




*Source: ClearView Energy Partners, LLC using EIA data*

Figure 5 – Getting Sweeter? EIA Weighted Average Sulfur Content by PADD (1/2010 – 3/2014 TTM Average vs. CY2009)




*Source: ClearView Energy Partners, LLC using EIA data*

Fifth, and perhaps most importantly, the EIA, the International Energy Agency (IEA) and many private forecasters (including my firm) expect U.S. crude production in general – and shale oil production in particular – to continue growing in the years ahead, likely exhausting import substitution here in the U.S. (and, eventually, in Canada) and outgrowing the ability of U.S. and Canadian refineries to increase their runs without expansions and/or modifications that require non-maintenance capital expenditures.

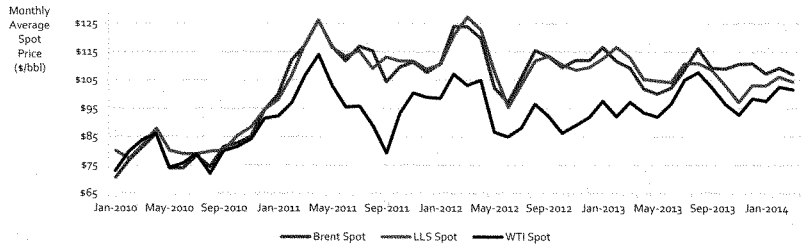
## The Prospect of "Saturation"

Taken together with current U.S. policies largely prohibiting the export of crude oil, these *caveats* create the prospect that the U.S. could soon become "saturated" with light, sweet crude. The Light Louisiana Sweet (LLS) benchmark may provide an early indication of approaching saturation. LLS crude is comparable to the Brent benchmark (the light, sweet standard that forms the basis for the pricing of two-thirds of the world's oil).

Until recently, the LLS price (which is set in the U.S. Gulf Coast) tended to trade largely in line with the Brent price (which is set in the North Sea), reflecting similarity between the two. Last fall, however, LLS prices plummeted dramatically. This may be explained by atypical refinery outages during the "turnaround" (maintenance) season.

The price collapse may also have provided markets with a sign that the supply of light, sweet crude could be getting ahead of U.S. refiners' demand for that oil, especially in PADD 3. To this point, LLS prices (blue line in Figure 6) never fully converged back to Brent (red line).

Figure 6 – Early Indications of Saturation? Brent vs. WTI and Louisiana Light Sweet (Monthly $/bbl), 1/2010 – 3/2014




*Source: ClearView Energy Partners, LLC using Bloomberg and EIA data*

Enduringly high global crude oil prices have encouraged ongoing U.S. production, but widening discounts to global prices still have potential to discourage new upstream investment. Unlike ultra-deepwater projects that cost hundreds of millions of dollars and may take anywhere from two to five years to bring onstream, shale oil wells are characterized by (relatively) granular investment ($5-15 MM apiece) and rapid turnaround (from days to weeks, rather than years). Most producers plan their drilling programs six to twelve months ahead, but the smaller investment and faster completion of shale wells theoretically offers them the ability to change their drilling plans in the event that saturation leads to a sustained, atypical discount.

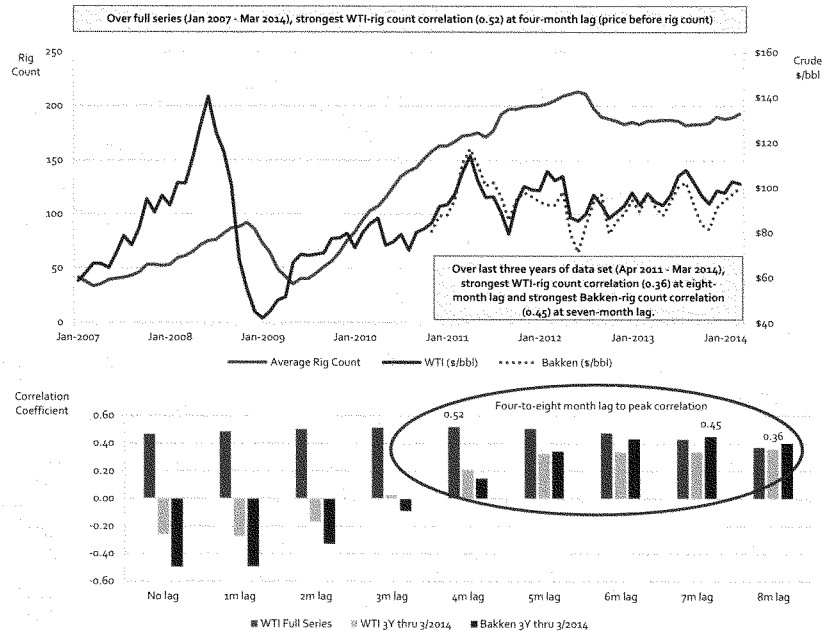
## "Skid Marks"

Unconventional crude oil production from shale and other tight formations is of recent vintage, and global crude prices have been relatively stable during the last three years. As a result, recent history provides few good examples of this sort of price-driven drilling slowdown. Figure 7 offers an imperfect proxy by examining correlations between crude prices and rig counts[5] in the Bakken compiled by the North Dakota Petroleum Commission (NDPC) between January 2007 and March 2014.

[5] Rig counts may be an imperfect proxy for activity levels because producers have achieved greater productivity per rig as they have traversed their shale oil learning curves.

Over the full data series, the strongest rig count-price correlation with WTI (0.52) occurs with a four-month lag (rig count after price). During the three years through March 2014, the strongest rig count-price correlations occur for the Bakken benchmark (0.45) with a seven-month lag, and for WTI (0.36) with an eight month-lag. This suggests somewhere between four and eight months of "skid marks" between a price collapse and a production slowdown, an implication that intuitively comports to the granularity of shale well investment.

Figure 7 – Bakken Data Suggest Four-to-Eight Months of "Skid Marks" before (Some) Drill Bits Stop Turning




*Source: ClearView Energy Partners, LLC using Bloomberg, EIA and NDPC data*

**Jobs Multipliers Can Work in Reverse**

The five states with the greatest shale oil production growth relative to CY2009 also demonstrated estimable employment and tax revenue gains, as presented in Figure 8.

Figure 8 – States with Significant Production Gains Also Saw Employment and Tax Revenue Benefits

| State | Change in Production (T4Q Avg., 4Q2012 vs. 4Q2009), kBBL/D | Change in Production (T4Q Avg., 4Q2013 vs. 4Q2009), kBBL/D | Change in Unemployment Rate (T4Q Average, 4Q2012 vs. 4Q2009), % | Change in Unemployment Rate (T4Q Average, 4Q2013 vs. 4Q2009), % | Change in Tax Revenues (T4Q Average, 4Q2012 vs. 4Q2009), % | Change in Tax Revenues (T4Q Average, 4Q2013 vs. 4Q2009), % |
|---|---|---|---|---|---|---|
| TX | 479 | 1,463 | -0.6% | -1.2% | 25.2% | 33.6% |
| ND | 252 | 640 | -1.1% | -1.2% | 96.8% | 170.9% |
| OK | 37 | 123 | -1.3% | -1.2% | 22.9% | 24.7% |
| NM | 36 | 105 | 0.2% | 0.0% | 24.5% | 19.8% |
| CO | 31 | 93 | -0.3% | -1.3% | 29.2% | 39.1% |

*Source: ClearView Energy Partners, LLC using BLS, Census and EIA data*

Generally speaking, energy production is characterized by relatively low labor intensity in contrast to other sectors of the economy. Some researchers credit an underlying jobs "multiplier" for production-related economic upside, meaning that states don't just realize direct economic benefits from upstream production activities, but also benefits from the activities indirectly associated with production as well as the jobs "induced" by new income[6].

Put another way, oil and gas production jobs may have disproportionate economic impact because of this multiplier, and it may be worth considering the extent to which a jobs multiplier could also work in reverse. In that vein, if saturation leads to a production slowdown, the undesirable economic impacts that result could reach well outside the oil patch.

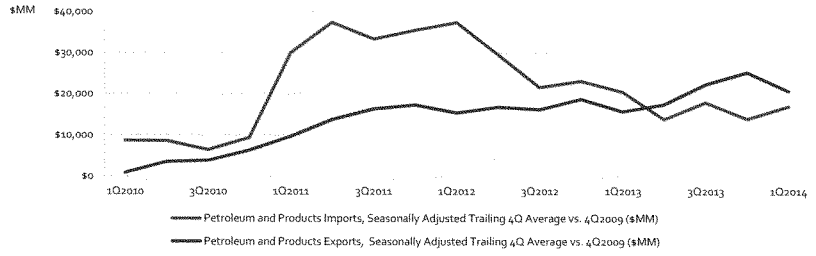
In the last year, articles appearing in the news media have framed the discussion of whether and how to liberalize U.S. crude oil exports as a question of allocating economic "rents" between upstream producers and downstream refiners. Indeed, current U.S. crude oil export prohibitions tend to favor refiners – especially low complexity refiners that rely on light, sweet crudes – by providing them with discounted feedstock relative to their global competitors (refined products may be exported essentially without limitation).

As Figure 9 demonstrates, on a trailing, four-quarter (T4Q) average basis compared to CY2009, petroleum and products exports through 1Q2014 were responsible for roughly $20 billion per quarter in incremental trade benefits. On the other side of the national energy balance sheet, a reduction in petroleum and products imports – which reflects import substitution and increased domestic refining activity – accounted for trade benefits of equivalent scale since 2Q2011. Taken together, this implies that importing less petroleum of all kinds and exporting more refined products appears to be responsible for roughly $40 billion per quarter in combined trade benefit[7].

[6] See Larson, J., R. Fullenbaum, R. Slucher et al. *America's New Energy Future: The Unconventional Oil and Gas Revolution and the US Economy,* Volume 1. IHS/IHS CERA/IHS Global Insight: October 2012, pp. 26-35. Volume 2 of the IHS study, released in December 2012, suggests that significant economic benefits also inhere to states without unconventional production activities, as well.

[7] This $40 billion corresponds to the sum of the $20.675 billion in incremental petroleum and products exports since CY2009 and the difference between 2Q2011 petroleum and products imports ($37.321 billion) and 1Q2014 petroleum and products imports ($16.926 billion), representing a beneficial reduction of $20.394 billion (all figures quoted are on a seasonally adjusted basis).

Figure 9 – Balance of Trade Benefits on Both Sides: Trailing 4Q Averages vs. 4Q2009 ($MM)




*Source: ClearView Energy Partners, LLC using BEA data*

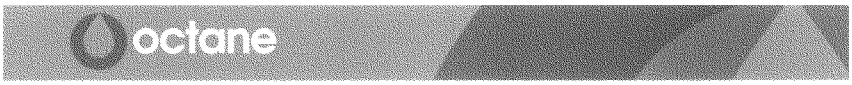
## Conclusion

It may be tempting to extrapolate from the *status quo* and conclude that continuing current policies might perpetuate the downstream economic benefits observed to date, particularly if U.S. refiners add capacity to take advantage of discounted feedstock. As of this month, companies have announced between 450 and 700 kbbl/d of refinery capacity expansions and new projects[8] in the U.S. (depending on one's definition of capacity) to process light, sweet crude and condensates from unconventional production.

On the other hand, the *status quo* may not hold for several reasons, even without liberalized crude oil exports. First, saturation could lead producers to pare back upstream investment, particularly if global crude prices trend downward, leading to tighter supply and incrementally higher feedstock costs for U.S. refiners. Second, significant downstream capacity expansions could exert upward pressure on feedstock costs from the demand side, too. However they come about, higher feedstock costs could weaken the business case for capacity expansions and new facility construction. That said, U.S. refiners appear likely to continue to enjoy lower process energy costs even if feedstock costs rise, contributing to ongoing competitive advantage (every $1/MMBtu in natural gas price discount relative to overseas prices can lower processing costs by between $0.25 and $0.50 per barrel).

Mr. Chairman, this concludes my prepared testimony. I will look forward to any questions at the appropriate time.

[8] See Meyer, G. and E. Crooks. "U.S. oil industry finds way around export ban." *Financial Times.* June 9, 2014. See also Friedman, N. "Condensate about to have its moment." *Wall Street Journal.* June 5, 2014.




**Statement by Mr. Jared Blong**
**Chief Executive Officer/President**
**Octane Energy, LLC**
**House Small Business Subcommittee on Agriculture, Energy and Trade**
**June 26, 2014**

Chairman Tipton, Ranking Member Murphy and members of the Subcommittee, my name is Jared Blong. I serve as the Chief Executive Officer and President of Octane Energy, a Midland, Texas-based small business that provides oil field services support to oil and gas exploration companies. It's an honor to address you today on the critical subject of crude oil exports.

Octane Energy is truly a small business. The company was founded in 2013 in response to the energy renaissance our country is experiencing. Projected sales this fiscal year are $3.5 million. Octane has 12 staff, of which, 50% are veterans of the American forces and we hope to double in size over the next 12 months. Octane currently provides project management on 8 oil and gas rigs for 7 operators.

Today, I have the privilege of speaking to you not as a representative of a special interest group or research firm, but instead from the perspective of a small business owner from the heartland of the American energy industry. And while we will cite a number of independent studies that have recently been conducted and that are available to the public on this topic – I can offer you something that I believe is even more valuable -- perspective and experience from a small business owner who could very well succeed or fail based on the policies you adopt.

Today, America is undergoing a resurgence in oil and natural gas production. Consider the following: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people driven.technologically advanced.

- **The US has now surpassed Saudi Arabia and Russia as the world's largest producer of oil and natural gas**, according to the US Energy Information Administration.[i] In just one year, US oil output jumped by 1 million barrels per day—the largest rate of increase in US history.[ii]

- **US oil production has increased to more than 10 percent of the world's total**[iii], driving renewed investment in the refining sector. As a result, the US is now a net exporter of refined petroleum products for the first time in over 60 years.[iv]

- **By every measure, the US is less reliant on foreign sources of energy than ever before**: total US net imports of energy declined 19% from 2012 to 2013, hitting the lowest level in more than 20 years, according to the US Energy Information Administration.[v]

While some may think that this growth can be attributed exclusively to the "majors" – that is, the larger, independent or integrated oil and gas companies -- let me suggest that the vast majority of the nearly 10 million Americans who work in the energy sector are small business entrepreneurs like me, dedicated to conservation, innovation, efficiency and stewardship -- and our contributions are and will continue to be, instrumental to America's energy future. According to the Financial Times, "The Shale Revolution...has been the energy industry's equivalent of the dotcom revolution, with Texas and Oklahoma standing in for Silicon Valley, and Exxon as IBM." The companies at the leading edge of this revolution range in size from companies like Octane to companies like Concho Resources or Pioneer Natural Resources, two of the Permian Basin's largest independent producers. In fact, in the Permian Basin, only one of the top 8 most active producers, which only represent 42% of the basin's market from a rig activity perspective, is considered a major.

Our company, Octane Energy, is an oil field service provider and we are on the front lines of the energy resurgence. As technology continues to advance and new supplies of crude oil are discovered or rediscovered, as in the case of the Permian Basin where we are headquartered, I see firsthand how this renaissance in oil and natural gas has positively impacted jobs, how it has created greater sustainability in a historically cyclical business, and how it is helping to achieve energy security for our country.



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But I also see unnecessary hurdles that could limit the opportunities for US businesses. For instance, the 1970s-era policy banning oil exports—a remnant of a price controls system that ended in 1981—is creating growing market distortions and needs to be revisited in light of rising US oil production and the expanded domestic resource potential. This policy prevents our small business and others from growing as we otherwise could, prevents us from creating jobs as we otherwise could, and most importantly prevents our country from being energy secure as it otherwise could. Let me explain how:

First, I should state that my business, like so many other small businesses involved with the energy industry, is directly impacted by the rig count – that is, by the number of rigs that are actively drilling for oil and gas in the United States. When more rigs are drilling here in the United States (i.e. when the rig count goes up) so too does the number of people that I can employ, as a general rule. In addition to simply adding numbers to our team of people, the quality of jobs is also notable. For Octane's consulting practice, we can conceivably add up to 4 Well Site Leaders per rig at a typical remuneration of $220,000 per year per team member. We are also in the process of establishing a drilling company. Based on our rig design and management philosophy, we will require up to 25 employees per rig, with an average annual pay of $76,000 per employee. Many of these folks we seek to employ are American veterans who possess small unit leadership skills and an intrinsic appreciation for teamwork, process, sweat, and rigid operating procedures that are crucial to exceeding mission objectives in the energy industry. Lifting the ban on oil exports would ensure the sustainability of these well-paying jobs in our company and other companies in the industry. The same goes for catering companies that feed rig hands, for steel manufacturers that make drill pipe, for technology companies that make wireline downhole sensors, and for countless other businesses that take part in energy exploration and production.


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octane

Creating a sustainable increased rig count is directly tied to lifting the export ban and will facilitate Octane Energy's direct investment in the manufacturing of an American rig fleet which will create secondary and tertiary sustained job growth. Increased rig construction will contribute to growth from the financial/investment sector, all the way through the pipeline of the energy sector and into transportation and manufacturing, with lasting systemic effect for our economy. And ultimately, as we create jobs and grow businesses, we create additional tax revenue, as cited in the IHS study. Construction of an Octane Rig will create jobs in New York for the production of shale shakers, Ohio for the manufacture of mud pumps, and various locations in Texas for drill pipe, automation and iron, just to name a few.

Current US policy is artificially suppressing that very rig count and thereby suppressing US jobs, manufacturing investment, tax revenue as well as oil and gas production – by a lot as it turns out. In fact, a recent study by IHS CERA found that if the ban is not lifted, US oil output will be 3 million barrels per day (B/D) lower[vi]. The reason is that, if the ban remains in place, domestic oil will sell at an increasing discount, reducing the amount of investment in new production by nearly $750 billion according to IHS. Reduced investment means fewer rigs, fewer rigs means fewer rig hands, fewer oilfield service companies such as Octane, and fewer people employed at well-paying jobs. How many fewer jobs? A recent study from ICF International found that the US could forego creating up to 300,000 jobs by the year 2020, if it leaves its outdated export ban in place.[vii] IHS estimates that if the US lifts the crude export ban, the increased economic activity resulting from the rise in rig count, and subsequently crude production, would support an average of 394,000 additional US jobs over the 2016-2030 period, with highs of 811,000 additional jobs supported in 2017 and a peak of 964,000 additional jobs in 2018.


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Now, not only do these studies find that jobs in the energy sector would be impacted, but these studies (as well as others not funded by the oil industry) each predict that lifting the crude export ban is likely to lower gasoline prices for US consumers. IHS states: "By boosting global supplies, the elimination of the ban will result in lower global oil prices. Since US gasoline is priced off global gasoline prices, not domestic crude prices, the reduction will flow back into lower prices at the pump—reducing the gasoline price 8 cents a gallon. The savings for motorists is $265 billion over the 2016-2030 period."

The widely-respected environmental think tank Resources For the Future (RFF) agreed in a separate, non-industry funded study which found that the price of gasoline will likely fall by three to seven cents per gallon if the crude export ban were lifted.[viii] So the question must be asked why the domestic export of crude oil, which trades in a free market on a global basis, should continue to fall under restrictions in the United States. Especially when experts from across the spectrum agree that both American consumers and American small businesses will benefit from the lifting of the export ban.

I believe, as many do, that America has entered a new era of energy stewardship. In years past, we were limited in the production of oil and natural gas simply because we didn't have the know-how to produce more. But through technological breakthroughs in precision drilling and completions techniques, we can develop resources previously thought unreachable, unattainable and uneconomic. And we can do so while maintaining the highest degree of environmental stewardship, safety and community compassion. Bottom line: the United States energy industry is consistently producing more oil and natural gas per well than ever before.



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The fact is, America now counts its oil and natural gas supply in centuries. This renaissance in U.S. energy production is in contrast to the popular belief of just 10 years ago that our nation was running out of oil and natural gas. In fact, that outlook then drove the U.S. refining industry to invest tens of billions of dollars to retool refineries to process heavy, high-sulfur bitumen and oil sands from South America, Canada and Saudi Arabia, because the prominent thought was that we would run out of the type of oil native to the United States. We now find ourselves in a much different position, due to the shale revolution, and have more light, sweet American crude than we can refine with the current infrastructure of our refineries.

Today, not only have new drilling and completions techniques increased America's supply of crude oil, but also it has enabled us to produce a higher quality crude oil than we are importing. Primarily the oil produced through new horizontal drilling is light, tight, low-sulfur crude, making it the best quality in the world. Because of the high quality of the crude in American geological formations, we could be bringing a premium price on the global market. But, because of the crude export ban, the global market is not available to us for trade. This particular crude slate is helping to reinvigorate the manufacturing and petrochemical industry in America. We need to make sure we do not disadvantage this high quality crude with refining capacity, wherever it may be located in the world.

Many people believe that today, the U.S. does not export petroleum products. Nothing could be further from the truth. Major oil companies are exporting refined petroleum products like gasoline and diesel with no limitations because they own their own refineries. Why shouldn't all U.S. oil producers be allowed to do the same, regardless of where the refinery is located?



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Over the years, some have argued granting U.S. crude oil producers free access to world markets would drive up the cost of gasoline and other petroleum products for American consumers. The opposite is actually true. By imposing trade restrictions on a single segment of the energy industry, namely domestically produced crude (WTI), our government is arbitrarily discounting American raw material to for U.S. refineries – many of which are foreign-owned – because of a simple mismatch of supply and demand. American energy producers are sending more crude to the refinery than can be accommodated, thereby driving down the price of domestically produced crude (WTI), which should lower gasoline prices at the pump—except our gasoline and refined product prices are set globally and not on a domestic basis. Refineries are buying American crude at a discounted rate, relative to the global market, but then selling refined petroleum products at a higher, globally traded rate. The increased net gains of the refineries are not trickling back to energy producers and service companies, or even to the American consumer.

America's energy renaissance is in jeopardy. In my opinion, these outdated crude export restrictions have prevented domestic oil exploration and production from achieving its full potential – slowing job growth, restricting supply, and negatively affecting global refined product balances, which sends the wrong message to our trading partners around the world. The shale revolution has led to an excess supply of light crude oil in the United States. However, US refineries are better suited to process heavy crude oil, while refineries in other countries are better suited to process light crude oil. The ban on US crude oil exports creates an inefficient distribution of crude oil among refineries in the Western Hemisphere and elsewhere in the world. I'm not the only one who believes this. The study I cited above by Resources for the Future states: "*Lifting the ban on US crude oil exports would allow for a more efficient distribution of crude oil among refineries in the Western Hemisphere and elsewhere in the*



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*world. A better allocation of refinery activity will result in more gasoline production, which will lower gasoline prices."*[x]

The true benefit to the American consumer will be competition for the refining of gasoline. Indeed, crude oil is no different than any other commodity, product, or service demanded by consumers. Lower prices are only brought about by increased supply, greater competition amongst sellers, weaker demand, or improved efficiency in the manufacturing and distribution process. When governments attempt to legislate lower prices through regulations, no matter how well-meaning the laws may be when introduced, market distortions and unintended consequences inevitably result; supply and competition among producers is rendered short of potential, and the consumer ends up paying higher prices at the gas pump and in their monthly energy bills.

America is at a crossroads. Do we cap oil production or allow exports? Lifting export restrictions will strengthen our domestic oil industry, a critical component of our economy whose impact reaches far beyond the American consumer. At a time when unemployment sits at nearly 7% and first quarter 2014 GDP is in negative territory, the energy sector has added jobs for millions of Americans – both directly and indirectly through energy service and equipment companies. In fact, the unemployment rate in the Permian Basin is currently 2.3% and has been below 4% for the last half decade. It has also served as a job multiplier for our nation's growing chemical and manufacturing industries. Another recent IHS report[x] issued in September 2013 on unconventional oil and gas – or oil and gas produced by horizontal drilling – found that:


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- Employment attributed to unconventional oil and gas and petrochemical activity currently supports more than 2.1 million jobs. IHS projects it to grow to 3.3 million jobs by 2020 and 3.9 million jobs by 2025.
- In 2012, the unconventional oil and gas and petrochemical industries contributed nearly $284 billion to GDP. IHS projects this to grow to $468 billion in 2020 and $533 billion by 2025.
- Unconventional energy increased U.S. household disposable income by $1,200 in 2012. IHS projects the contribution to increase to $2,000 per household in 2015 and $3,500 per household in 2025.
- Unconventional energy activity and employment contributed more than $74 billion in *government revenues in 2012 and is projected to increase to $138 billion per year in* 2025.

By supporting the export of domestically produced crude, U.S. lawmakers can add to these totals in the form of increased jobs, GDP and tax revenues not to mention helping to put veterans to work as they return from battle and transition to civilian life.

Beyond its economic benefits, supporting domestic oil production is vital for our national security. Indeed, the growth in domestic oil production over the past several years has contributed to a significant drop in U.S. reliance on imported oil. But national security and oil exports are not mutually exclusive; in fact, they go hand-in-hand. Authorizing oil exports would promote investment in additional energy resource and infrastructure development at home, enabling our nation to better control its own destiny. Lifting the export ban on crude actually helps protect US consumers from the roller-coaster of price shocks and geopolitically driven supply disruptions. Exporting US crude strengthens our allies and


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diminishes the "Oil Weapon" that is brandished by oil-rich oligarchies around the globe. Additionally, exporting US crude allows the United States to finally reverse 40 years of wealth transfer to OPEC by selling our domestically produced premium product on the global market.

We find ourselves at an impasse. Technological advances have increased production, such that we can now produce more oil, faster than ever before through the same well. In the drilling industry, we are rapidly reaching a time when there will be an economic cap on the rig count. By that, I mean that it will be economically unfeasible to employ more rigs in the very near future because we will easily surpass our nation's ability to refine the increased oil per well. For my company's part, a limit on rig count will severely limit the number of people we can employ and will thereby affect the broader scope of employment in the U.S. energy sector. A lift of the ban on oil exports would allow a natural economic response and an increased rig count in the US because we produce light, sweet crude which could easily find a refinery on the global market.

As we currently stand, the infrastructure of domestic refineries are tooled to take heavier crude from elsewhere in the world and turn it into high-quality fuels for domestic and international use. The cost of adapting the infrastructure of these domestic refineries is so prohibitive that we cannot foresee an economic response to refining increased quantities of light, sweet crude. As small business people in the heartland of America's energy industry, we rely on you as lawmakers to pursue lifting the ban on the export of crude oil from the United States, in an effort to avert this potential mismatch between the supplies of oil produced and the capacity of the refining sector.


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I ask you to consider the course for our energy future. I think that there is a simple method. We know what we have. We know how far we have come. We must now decide how to get from here to the future. The world has changed since the OPEC oil embargo and enactment of federal regulations in the 1970s. Today, I ask you to take a stand for a fundamental principle -- that the role of government is to enable its people and to remove unnecessary roadblocks that stand in the way of our national security and prosperity.

No person can travel across our country without being deeply stirred by the innovation and ingenuity of the American people – qualities that are the hallmark of America's energy resurgence. As we enter this new chapter -- it is clear that the future is bright. I do not say that all problems are solved. Far from it. But I do believe that we must stand together as faithful and wise stewards of our abundant natural resources and imagine greatly if we are to fulfil our common inheritance. The United States is our common bond and our emphasis must be not on rivalry or conflict but on cooperation, trust and a shared vision of the future.

Thank you for considering my views.

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[1] U.S. Energy Information Administration, Today in Energy: US Expected to be largest producer of petroleum and natural gas hydrocarbons in 2013, June 20, 2014. *"The U.S. Energy Information Administration estimates that the*



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*United States will be the world's top producer of petroleum and natural gas hydrocarbons in 2013, surpassing Russia and Saudi Arabia. For the United States and Russia, total petroleum and natural gas hydrocarbon production, in energy content terms, is almost evenly split between petroleum and natural gas. Saudi Arabia's production, on the other hand, heavily favors petroleum."*

[ii] U.S. Energy Information Administration, Today in Energy: U.S. crude oil production growth contributes to global oil price stability in 2013, http://www.eia.gov/todayinenergy/detail.cfm?id=14531, January 9, 2014.

[iii] U.S. Energy Information Administration, Today in Energy: Tight oil-driven production growth reduces need for U.S. oil imports, http://www.eia.gov/todayinenergy/detail.cfm?id=15731&src=Analysis-b1, April 7, 2014.

[iv] U.S. Energy Information Administration, Today in Energy: Tight oil production pushes U.S. crude supply to over 10% of world total, http://www.eia.gov/todayinenergy/detail.cfm?id=15571, March 26, 2014.

[v]Elizabeth Rosenberg, "Energy Rush: Shale Production and U.S. National Security" Report of the Unconventional Energy and U.S. National Security Task Force, co-chaired by Ambassador Paula J. Dobriansky, Governor Bill Richardson and Senator John Warner (Center for New American Security; Washington, D.C.; February 2014) http://www.cnas.org/sites/default/files/publications-pdf/CNAS_EnergyBoom_Rosenberg_0.pdf, p. 6.

[vi]U.S. Energy Information Administration, Today in Energy: Net energy imports in 2013 lowest in more than 20 years, http://www.eia.gov/todayinenergy/detail.cfm?id=15671, April 2, 2014.

[vii]IHS, "US Crude Oil Export Decision: Assessing the impact of the export ban and free trade on the US economy" (IHS, May 2014), KF-1, http://press.ihs.com/press-release/energy-power/lifting-export-restrictions-us-crude-oil-would-lower-gasoline-prices-an-0 . *"Lifting the export ban and allowing free trade will, in our base case, increase US production— from 8.2 million B/D currently to 11.2 million B/D—and add investment of nearly $750 billion. The "unconventional" revolution in oil and gas has also been one of the major contributors to the US economic recovery, estimated by IHS to have added nearly 1% to our GDP in each of the past two years."*

[viii]ICF International, "The Impacts of U.S. Crude Oil Exports on Domestic Crude Production, GDP, Employment, Trade, and Consumer Costs" (ICF International, May 31, 3014) http://www.api.org/news-and-media/news/newsitems/2014/mar-2014/~/media/Files/Policy/LNG-Exports/LNG-primer/API-Crude-Exports-Study-by-ICF-3-31-2014.pdf

[ix]Brown *et al.*, Resources For the Future, "Issue Brief: Crude Behavior: How Lifting the Export Ban Reduces Gasoline Prices in the United States" http://www.rff.org/RFF/Documents/RFF-IB-14-03-REV.pdf

[x] *Ibid.*

[x] IHS, *"America's New Energy Future: The Unconventional Oil and Gas Revolution and the Economy—Volume 3: A Manufacturing Renaissance."* (IHS, September 2013) http://press.ihs.com/press-release/economics/us-unconventional-oil-and-gas-revolution-increase-disposable-income-more-270#sthash.KHcPqcmb.dpuf

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**Greg Dotson**
Vice President for Energy Policy
Center for American Progress

Testimony on
"The New Domestic Energy Paradigm: Downstream Challenges for Small Energy Businesses"

Committee on Small Business
Subcommittee on Agriculture, Energy and Trade

2361 Rayburn House Office Building
June 26, 2014

Chairman Tipton, Ranking Member Murphy, and members of the Subcommittee, my name is Greg Dotson. I am the Vice President for Energy Policy at the Center for American Progress. Thank you for the opportunity to testify today regarding the future of the oil industry.

Visit any town in America and you can see that oil is a critical source of energy. Oil fuels over 90% of our transportation systems in the U.S.

Oil is necessarily a key focus of our national energy policy. International oil markets frame our relationships in the world. Retail gasoline prices are a kitchen table issue for American families.

For decades, oil in the U.S. had been characterized by ever-increasing demand and declining domestic production. We were relying more and more on imported oil.

But this has changed in recent years. Since 2008, we've experienced a transformation in our oil sector. The Obama Administration issued strong standards for new cars and trucks to curb their carbon pollution and increase their fuel economy. The result is that increasingly efficient vehicles are being brought to market. And our oil consumption is no longer on the rise. In fact, major automakers are now bringing some models to market that use little or no gasoline whatsoever.

And new technology and policy have unlocked additional oil supply. North Dakota is producing more oil than previously understood to be possible because of advances in drilling technology. Heavier and dirtier forms of oil, such as the Canadian tar sands, are also being brought to market. North America is awash in oil for the time being.

And the oil sector is thriving. Production is up. Profits are high. The sector enjoys a favorable tax structure and regulatory climate.

But this new oil supply doesn't ease the challenge of our nation's dependence on oil. Global demand for oil is still on the rise. And supply disruptions in far flung areas of the world still impact the prices we pay here. Just look at how events in Iraq have affected the global oil price.

The new supply doesn't diminish the need for important public health protections that ensure that American families don't suffer the adverse impacts associated with pollution.

New supplies of oil also complicate our response to climate change. The planet must use less oil in the future – not more – if we are going to address the serious threat of climate change and avoid the most serious impacts.

**Our Dependence on Oil and Efforts to Promote Energy Independence**

In the early 1950's, less than 10% of the oil we used was imported. By the 1970's, our imports had increased, nearing 50% at one point. After oil price shocks ravaged our economy, there was a drop off in imports for a few years. But as oil production declined in Texas and Alaska, we were importing over 50% of our oil by 2001. Our oil imports peaked at 60% in 2005.

Fortunately, bipartisan agreement has helped turn the tide on our oil dependence.

In 2006, President George W. Bush, stated in his State of the Union address that the U.S. was "addicted to oil." In 2007, Congress sent him the Energy Independence and Security Act to increase automobile efficiency and to expand the Renewable Fuels Standard, a policy explicitly aimed at increasing the use of alternatives to oil. President Bush signed EISA into law on December 19, 2007.

President Obama took the ball even further down the field. The Obama Administration finalized vehicle standards that will make cars and light trucks go twice as far on a gallon of gas and save families more than $1.7 trillion in fuel costs in 2025. We'll save as much oil as we currently import from Saudi Arabia and Venezuela combined. Oil consumption in the United States has fallen as vehicles have become more fuel efficient. The Energy Department predicts that this trend will continue in the coming years.

In fact, EPA is currently working to cut pollution from medium and heavy duty vehicles by setting carbon pollution tailpipe standards. These standards would have the effect of reducing oil consumption by up to one million barrels per day by 2035. They build off the already successful first round of efficiency standards, which are projected to save 530 million barrels of oil while reducing greenhouse gas emissions by 270 million metric tons. These savings translate to $50 billion in fuel cost savings for vehicle owners and operators on 2014-2018 model year trucks. This could save an individual truck operator a net $73,000 in fuel costs over the lifetime of a model 2018 truck. Further, these greater efficiency standards will improve air quality and yield health benefits estimated between $1.3 billion to $4.2 billion by 2030

At the same time, advances in technology have dramatically increased oil production in shale formations, especially in North Dakota and Texas.

As a result, the Energy Information Administration predicts that the United States will import just 29% of the oil it consumes in 2014. That's the lowest level since 1985 and a dramatic and swift decline from the peak of 60% in 2005.

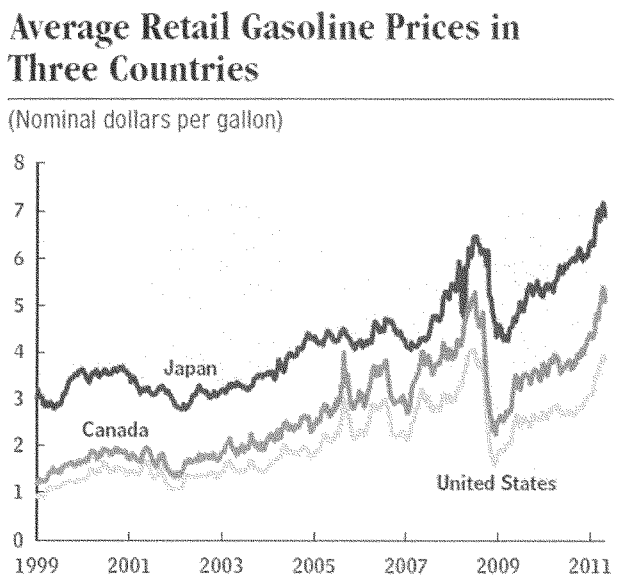
But this decrease in oil imports has not solved our energy problems.

**The United States is vulnerable to oil price shocks.**

Even though the United States has increased its domestic oil production, that doesn't mean the country is immune from oil price shocks. Oil is a global commodity, and, absent unique regional market conditions, prices are generally set by the world market.

For years, we've heard arguments that greater domestic oil production can shield the United States from price shocks associated with the global oil market. However, these arguments do not stand up to examination.

Experiences in other countries show that price spikes are not prevented or mitigated by higher levels of domestic oil production nor guaranteed supplies of imports. The nonpartisan Congressional Budget Office examined gasoline prices in Canada, the United States, and Japan over the last decade. CBO found that gasoline prices in those countries rose and fell in tandem with the world market, even though Japan produced almost no oil, Canada was a net oil exporter, and the United States produced less than half of its oil. More domestic supply did not protect Canadian consumers from price shocks.




Source: Congressional Budget Office, Energy Security in the United States (May 2012)

CBO has stated that even if the United States were to develop additional resources, this process could take years, and oil producers around the globe would likely respond by constraining their development, dampening the effects of increased production on prices. CBO stated that "increasing production of oil in the United States might not increase the world's oil supply substantially or lower the price of oil significantly."

An AP analysis examined 36 years of oil production and price data. Similarly the analysis found no statistical correlation between monthly, inflation adjusted gasoline prices and U.S. oil production.

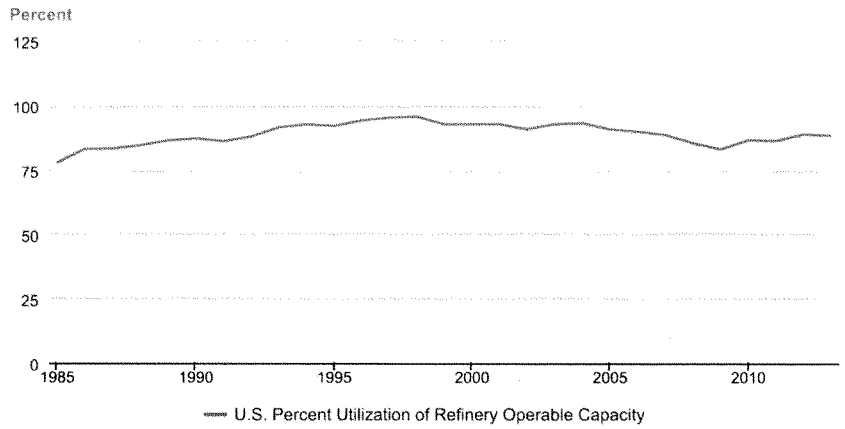
That's why we need to reduce our dependence on oil overall, not just oil from other countries. The less oil we use as a nation, the less impact we will feel from international disruptions in oil markets.

**The oil sector has relied upon a market-based approach to develop infrastructure.**

In the United States, unlike some other nations, investments in oil infrastructure, such as pipelines and refineries, are market decisions. The oil industry brings capital to bear based upon market conditions and projections. When one set of market participants come to Congress and argues for government intervention to benefit them at the expense of other market participants, Congress should be cautious and carefully evaluate whether this market intervention would be in the public interest.

According to EIA, refinery utilization is within historic norms. In fact, there is more excess refinery capacity than there was 15 or 20 years ago. This capacity may not be optimized in all cases for light, tight oil, such as the oil produced in North Dakota, but one might want to ask why a U.S. refinery would invest in optimization for this type of oil when there are aggressive efforts to bypass the U.S. refining industry all together by proposing to lift the ban on crude oil exports. If a refiner were to invest to optimize its ability to refine light, tight oil and the crude oil export ban was subsequently lifted, that refiner could face stranded investments.

**U.S. Percent Utilization of Refinery Operable Capacity**




eia Source: U.S. Energy Information Administration

**Producing oil without adequate infrastructure is resulting in wasteful practices.**

Some argue that the government should adopt policies to increase the rate of domestic crude oil production. However, there is strong evidence that the rush to produce oil is wasting substantial quantities or valuable natural resources. Encouraging even faster development will only exacerbate this waste.

As oil production in the Bakken Shale has increased, so have natural gas byproducts. This has caused the proportion of nonmarketed natural gas to steadily increase, and now averages 0.31 billion cubic feet per day, almost twice as much as in 2011 (0.16 Bcf/d). Most of this nonmarketed gas is flared. It's simply burned to no productive use whatsoever.

Between 2008 and 2012, North Dakota accounted for one-half of one percent of total gross natural gas withdrawals in the United States, but 22% of all natural gas flared or vented in the United States. In March 2014, 33% of natural gas produced was flared. In April 30% was flared.

This is a loss for the country and government policies shouldn't encourage it. It's just common sense. We shouldn't be wasting our natural resources.

**Increased oil supply does not diminish the need to protect public health from pollution.**

More than 149 million Americans suffer from unhealthy levels of air pollution. It should go without saying that the increase in oil production does not diminish the need to address this serious problem and protect public health from pollution.

Fortunately, the U.S. Environmental Protection Agency is taking action. For example, on March 3, 2014, the EPA announced Tier 3 standards to strengthen tailpipe standards for cars and trucks and to reduce the sulfur content of gasoline. These standards will reduce $NO_x$ emissions by 10% in 2018 and 25% by 2030. These standards are estimated to generate between $6.7 and $19 billion in annual health benefits and prevent up to 2,000 premature deaths annually, at a cost of approximately $1.5 billion through 2030.

Furthermore, the EPA has taken steps to accommodate the concerns of small refiners, delaying the start date for sulfur control requirements for approximately 30 small refineries until 2030. This gives refiners producing less than 75,000 barrels per day six years of flexibility to meet the new standards.

**Rising levels of oil consumption make it more difficult to address climate change.**

Just because it is possible to get growing quantities of oil out of the ground, doesn't mean we should. The more oil we burn, the more carbon pollution we emit. And there are some wild places that are too historical, irreplaceable, or economically valuable to drill.

Numerous reports have sounded the alarm on climate change. The National Climate Assessment, released in May 2014, is one of the most-recent and most-thorough scientific evaluations of the climate change threat. The assessment was produced by a team of more than 300 experts guided by a 60-member Federal Advisory Committee. The report was extensively reviewed by the public and scientists, including federal agencies and a panel of the National Academy of Sciences. The National Assessment states that:

> Climate change, once considered an issue for a distant future, has moved firmly into the present. Corn producers in Iowa, oyster growers in Washington State, and maple syrup producers in Vermont are all observing climate-related changes that are outside of recent experience. So, too, are coastal planners in Florida, water managers in the arid Southwest, city dwellers from Phoenix to New York, and Native Peoples on tribal lands from Louisiana to Alaska. This National Climate Assessment concludes that the evidence of human-induced climate change continues to strengthen and that impacts are increasing across the country.

The report concludes however that the future severity of climate change is yet to be determined:

> The amount of future climate change, however, will still largely be determined by choices society makes about emissions. Lower emissions of heat-trapping gases and particles mean less future warming and less-severe impacts; higher emissions mean more warming and more severe impacts.

The Center for American Progress urges Congress to take this scientific assessment seriously. We are experiencing the impacts of climate change today. Our children will experience more significant impacts of climate change tomorrow. Every ton of avoidable carbon pollution emitted today is a missed opportunity to provide our children and grandchildren with a brighter future.

The world's top climate scientists have warned over and over—we can only emit so much carbon pollution before the world faces irreversible and potentially catastrophic impacts from climate change. That's why we must continue to reduce our dependence on all oil, no matter the source.



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