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21ST CENTURY ENERGY MARKETS: HOW THE CHANGING DYNAMICS OF WORLD ENERGY MARKETS IMPACT OUR ECONOMY AND ENERGY SECURITY

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND POWER

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTEENTH CONGRESS

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21ST CENTURY ENERGY MARKETS: HOW THE CHANGING DYNAMICS OF WORLD ENERGY MARKETS IMPACT OUR ECONOMY AND ENERGY SECURITY

TUESDAY, MARCH 3, 2015

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENERGY AND POWER,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 1:31 p.m., in room 2123, Rayburn House Office Building, Hon. Ed Whitfield (chairman of the subcommittee) presiding.

Members present: Representatives Whitfield, Olson, Barton, Shimkus, Pitts, Latta, Harper, McKinley, Pompeo, Kinzinger, Griffith, Johnson, Ellmers, Flores, Mullin, Hudson, Upton (ex officio), McNerney, Tonko, Green, Castor, Sarbanes, Welch, Loebsack, and Pallone (ex officio).

Staff present: Nick Abraham, Legislative Clerk; Charlotte Baker, Deputy Communications Director; Leighton Brown, Press Assistant; Allison Busbee, Policy Coordinator, Energy and Power; Tom Hassenboehler, Chief Counsel, Energy and Power; Brandon Mooney, Professional Staff Member, Energy and Power; Tim Pataki, Professional Staff Member; Chris Sarley, Policy Coordinator, Environment and the Economy; Christine Brennan, Democratic Press Secretary; Jeff Carroll, Democratic Staff Director; Michael Goo, Democratic Chief Counsel, Energy and the Environment; Caitlin Haberman, Democratic Professional Staff Member; Meredith Jones, Democratic Director of Outreach and Member Services; Rick Kessler, Democratic Senior Advisor and Staff Director for Energy and the Environment; and Timothy Robinson, Democratic Chief Counsel.

Mr. WHITFIELD. I would like to call the hearing to order this afternoon and certainly want to thank our panel of witnesses. We look forward to your testimony and your insights. And also we will appreciate the opportunity to ask you questions after you finish your opening statement.

OPENING STATEMENT OF HON. ED WHITFIELD, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF KENTUCKY

Today's hearing is entitled "21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact Our

Economy and Energy Security." And I would like to recognize myself for a 5-minute opening statement.

When it comes to energy markets, the transformation over the last decade has been dramatic. In fact, several longstanding energy trends have completely reversed themselves. America has gone from declining oil and natural gas production to unprecedented increases that now make us the world's largest energy producer and a potential exporter.

As a result, fears about rising import dependence and skyrocketing energy prices have been replaced with surging domestic supplies that are driving down prices so low, in fact, that they are now discouraging additional drilling in the U.S.

The downstream changes have been every bit as dramatic. Domestic refineries, a number of which were optimized to handle imported crude, now have the option of transitioning to use more North American oil. And for manufacturers, the offshoring trend has stalled and, in fact, some of the manufacturing capacity that has been forced overseas by competitive pressures is now returning to America because of low energy prices. And North America's new energy supplies have necessitated a major infrastructure build-out in order to deliver this energy to the consumers and businesses that need it.

The changes also have significant geopolitical implications. Many of our energy-importing allies were resigned to growing dependence on OPEC and other unfriendly exporters, like Russia, but now they see America as a potential new source of reliable and affordable energy supplies. As a result, America has the opportunity to influence the geopolitical situation of these countries that used to dominate global energy markets and assert our own influence instead.

There is no question that America's oil and natural gas boom has been very good news for America, but that is not to say that it doesn't bring new concerns. We have simply traded one set of challenges for another. Unfortunately, our energy policy is largely based on old laws rooted in assumptions of scarcity and may no longer be up to the task of addressing these new challenges and taking full advantage of emerging opportunities.

So with these changing times, we think it is essential that we visit these laws, look at new opportunities, and whether or not it is in the best interest of America to bring about these changes or not. So today we are going to continue that discussion by exploring current and evolving energy markets. We hope to be able to better assess where we are and what new policies may be needed. Our existing energy policy was not created overnight, nor will any changes to it happen overnight. This will be a thorough and deliberative process and one in which all affected parties will be heard.

[The prepared statement of Mr. Whitfield follows:]

PREPARED STATEMENT OF HON. ED WHITFIELD

Today's hearing is entitled, "21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact our Economy and Energy Security." I welcome this diverse and knowledgeable panel to discuss these issues.

When it comes to energy markets, the transformation over the last decade has been dramatic. In fact, several longstanding energy trends have completely reversed themselves. America has gone from declining oil and natural gas production to unprecedented increases that now make us the world's largest energy producer and a

potential exporter. As a result, fears about rising import dependence and skyrocketing energy prices have been replaced with surging domestic supplies that are driving down prices—so low in fact that they are now discouraging additional drilling in the U.S.

The downstream changes have been every bit as dramatic. Domestic refineries, a number of which were optimized to handle imported crude, now have the option of transitioning to use more North American oil. And for manufacturers, the offshoring trend has stalled, and in fact some of the manufacturing capacity that had been forced overseas by competitive pressures is now returning to the U.S. because of the low energy prices. And North America's new energy supplies have necessitated a major infrastructure buildout in order to deliver this energy to the consumers and businesses that need it.

The changes also have significant geopolitical implications. Many of our energy-importing allies were resigned to growing dependence on OPEC and other unfriendly exporters like Russia, but now they see America as a potential new source of reliable and affordable energy supplies. As a result, America has the opportunity to fight back against the geopolitical influence of the countries that used to dominate global energy markets, and exert our own influence instead.

There is no question that the America's oil and natural gas boom has been very good news for America, but that is not to say that it doesn't bring new concerns—we have simply traded one set of challenges for another. Unfortunately, our energy policy is largely based on old laws rooted in assumptions of scarcity, and may no longer be up to the task of addressing these new challenges and taking full advantage of emerging opportunities.

We explored one such landmark law, the 1975 Energy Policy and Conservation Act, in a hearing last December. At the hearing, we learned more about the energy policy context under which this 40-year-old statute was enacted, and how its provisions may no longer be relevant.

Today, we continue the discussion by further exploring current and evolving energy market dynamics. We hope to be able to better assess where we are and what new policies may be needed. Our existing energy policy was not created overnight, nor will any changes to it happen overnight. This will be a thorough and deliberative process, and one in which all affected parties will be heard.

Mr. WHITFIELD. Thank you very much. I yield back the balance of my time. And I recognize the gentleman from California, Mr. McNerney, for 5 minutes.

OPENING STATEMENT OF HON. JERRY MCNERNEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. MCNERNEY. I want to thank Chairman Whitfield and Ranking Member Rush for holding this hearing. Oil markets are changing rapidly. We have reduced oil and gasoline prices, increased domestic oil production. At the same time we have seen oil prices plummet from $100 a barrel to under $50 a barrel, and this has led to great savings for the American consumers.

But we have learned in California that prices at the pump don't always track the price of crude. For example, in my State we have seen the steepest increase in gasoline prices in history. It went from 20 cents a gallon overnight in San Francisco and Los Angeles last Thursday to Friday, and prices in Sacramento rose over 40 cents per gallon in 1 week.

So soaring wholesale gas costs are prompting higher retail prices at service stations and State refineries are switching over to pricier seasonal blends, while at the same time refinery problems have effectively lowered capacity.

Given that we are experiencing these spikes at a time the rest of the Nation is enjoying lower gasoline prices, I think it is important to mention the dangers of depending on just one source of fuel for our transportation needs.

We should consider carefully the potential problems that could arise if we decide to alter our approach to managing crude oil resources. When we talk about exporting crude oil, we are mainly taking about the light sweet crude that comes from tight shale formations. To extract this resource requires a tremendous supply of another very precious resource, especially in California, namely, water. In my State, in my region, we know all too well how important water conservation is and how dwindling water resources can really harm our economy and our way of life.

I am concerned that until we develop new, more efficient, and environmentally protective ways to use and conserve water in hydraulic fracturing, we will be wasting an endangered resource mainly to ship another resource abroad for the financial gain of a few. I think we need to carefully weigh the safety of our drinking water and irrigation supplies before we begin to extract crude and bypass U.S. refineries in order for producers to obtain slightly higher prices abroad.

Low oil prices, combined with additional domestic production, decreases our reliance on foreign oil, which often comes to us from unstable regions of the world. I believe a major factor in this equation should be on supporting and enhancing our efforts at conservation.

And this brings me back to the hazards of being dependent on one source of fuel for our transportation needs. It is time we diversify our fuel sources. We have made great strides in improving our fuel economy in the last 5 years. It is time to start improving our fuel options. We should be looking more toward plug-in hybrids, fully electric vehicles, natural gas, and even hydrogen-based transportation.

I know that in recent years a barrel of crude oil produced in the United States has sold for less than a barrel of crude oil in the world market. I am interested to hear both sides of the debate on how allowing export of U.S. crude will affect both the global and the U.S. oil and gasoline markets, and equally important, how regional markets in the U.S. could be affected.

We should also consider whether rushing into short-term production of as much oil as possible is the best strategy for our long-term national security. In the wake of the 1973 oil embargo, we created the Strategic Petroleum Reserve so that in the event of a worldwide unrest we would have petroleum to continue operating and to protect our national security. We should consider whether our oil fields in North Dakota and Texas might serve a similar purpose in the future.

Finally, I want to consider the threat of climate change and how increased production, refining, and export of the new American oil fuels will impact the Earth's future climate.

Mr. Chairman, I look forward to hearing the witnesses, and I yield back.

Mr. WHITFIELD. Thank you very much.

At this time I recognize the chairman of the full committee, Mr. Upton, for 5 minutes.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. Well, thank you, Mr. Chairman.

Energy markets are changing, and they are changing for the better. America is producing more while using and importing less, and the energy boom is translating into a jobs boom, and that is not a bad thing, not just in energy production, but also energy infrastructure and manufacturing.

The combination of increased domestic oil supplies and decreased demand not only strengthens our energy security, but it also presents new opportunities for energy diplomacy. The days of energy-exporting aggressors like Russia exerting uncontested geopolitical influence may be numbered now that America is emerging as an energy superpower.

And while the overall effects of our domestic energy abundance are overwhelmingly positive, yes, they do create some challenges and complications when viewed under the lens of our existing Federal energy policy. For example, the recent drop in oil prices has been great news for consumers in Michigan and across the country who are finally getting a break at the gas pump after several years of prices above $3 and $4 a gallon. But at the same time, current prices pose a challenge for producers, their employees, and their communities in which they live, and in fact some energy workers, thousands of them, have already lost their jobs.

Couple these changes with a new global petroleum landscape of enduring complexity and emerging volatility, it only further reinforces the point that the time to examine these issues is now.

Clearly, the changes in energy markets affect different parties in different ways, and Congress needs to be aware of all of the impacts before considering any modifications to energy policy. That is why we took a very careful and deliberate approach on the issue of natural gas exports in the last Congress. For more than a year before we proposed legislation to expedite LNG export approvals, we thoroughly studied the potential impacts on natural gas producers and on users like manufacturers and consumers. We acted only after listening to all the interested parties and concluding that LNG exports would be beneficial for the economy and a net jobs creator, and we passed it in a bipartisan way.

We also heard from many foreign policy experts and embassy officials about LNG exports and concluded that they promised significant geopolitical benefits. And I would note that with Russia once again threatening to cut off Ukrainian natural gas supplies, I believe that enactment of our LNG bill can't come soon enough.

When it comes to revisiting the 40-year-old restrictions on oil exports, we will take the same deliberative approach. We recognize that the export of oil and other liquid hydrocarbons presents different issues than natural gas. That is why we again are undertaking a thorough review and will consider all the perspectives, including producers, refiners, and consumers.

That is the purpose of today's hearing and why we are soliciting public comments on changing energy markets. If we choose to change the law on exports of oil and other liquids, it will only happen after an open review of the current policy. Our energy abundance has greatly changed energy markets and presents a wonder-

ful number of new opportunities, and we will consider carefully our approach to all of them.

[The prepared statement of Mr. Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON

Energy markets are changing, and they're changing for the better. America is producing more while using and importing less, and the energy boom is translating into a jobs boom—not just in energy production but also energy infrastructure and manufacturing.

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America's energy abundance has greatly changed energy markets and presents a number of new opportunities, and we will carefully consider our approach to all of them.

Mr. UPTON. And I yield to the chairman emeritus of the full committee, Mr. Barton.

Mr. BARTON. Thank you, Mr. Chairman.

First of all, I want to compliment you on the statement that you just made. I appreciate what you said about deliberative process and keeping an open mind and having hearings like this so that we can get all the facts.

The United States is probably the most blessed Nation in the world in terms of energy resources. Some of the people at the table before us have helped to develop those resources. Others have helped to conserve them and make sure that they are produced in an environmentally safe fashion.

As we go forward in this Congress, we need to work together, hopefully in a bipartisan fashion, to craft an energy policy that is acceptable to all sides and is acceptable to this great country. We have a tremendous opportunity in the world markets today because of our abundance of energy and the way we are producing it in an environmentally efficient fashion, and I look forward to hearing the testimony of the witnesses, Mr. Chairman.

And I will yield 30 seconds to anybody who—Mr. Flores, if he wants it, or Mr. Johnson. Anybody?

Then, Mr. Chairman, I yield back.

Mr. WHITFIELD. Gentleman yields back.

Some of the members are leaving because we do have one vote on the House floor, but before that I would like to recognize the gentleman from New Jersey, Mr. Pallone, ranking member, for a 5-minute opening statement.

OPENING STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. Thank you, Chairman Whitfield.

Our energy picture is rapidly evolving. Worldwide crude oil prices are at their lowest level in 5 years. U.S. gas prices have been hovering around $2 per gallon and domestic oil production has increased dramatically in recent years, while the growth of demand has slowed noticeably. And all this is good news for consumers in the near term.

These changes reflect in part the all-of-the-above energy strategy that this administration has pursued, ranging from additional exploration and production of fossil fuels to development of alternative energy sources and increased fuel efficiency standards for our cars and trucks. The administration has also recently taken steps to facilitate the export of liquefied natural gas and other petroleum products.

The current low oil prices benefit us all in many ways. Overall, low oil prices increase our GDP and decrease the amount Americans spend on energy, particularly at the pump. EIA projects that U.S. households will spend about $750 less in 2015 than in 2014 and about $450 less in 2016 than in 2014, and the increase in U.S. production is meant to decrease imported oil with significant geopolitical implications. For the first time in decades, we have some ability to be partial price makers rather than price takers.

However, these conditions are but a snapshot in time and there are many factors that could change the energy picture dramatically in the future. Lower oil prices can impact the economics of additional domestic production. Geopolitical instability can adversely affect our allies and our Nation. Crude oil prices can fluctuate based on global and domestic market forces. Although it is possible that we experience sustained low oil prices, it is also possible that oil prices and gasoline prices will rise over time.

Last December this subcommittee held hearings on the decades-old crude oil export ban. I believe it is entirely fair to consider the merits of a policy that was enacted in the wake of the 1973 oil embargo. This is a very different world than it was in 1973, but I do not believe a clear picture has yet emerged as to what policies we

should pursue. Therefore, while this is a topic worthy of our examination, we need to act carefully and act based on fact. That is the essence of good policy and of regular order, which I will continue to insist on before we take legislative action.

Last year the administration issued guidance that certain petroleum condensates could be exported without the typical restrictions reserved for crude oil exports. While these rulings remain controversial, it is clear that the administration retains the authority to authorize crude oil exports in specific circumstances, and some companies have already started to export petroleum condensates, but the extent of such exports remains uncharted.

If we are to consider a more wholesale listing of the ban on exports, there are numerous questions that need to be answered.

First, how would lifting the ban affect the short- and long-term price of crude oil, and, therefore, the price of gasoline? I don't believe there is a consensus on that point.

Second, how would such a change affect both our refinery capacity and the balance of jobs. Refinery capacity is a critical element of our infrastructure and can be an important source of middle-class jobs. In fact, both parties have long bemoaned the lack of new refineries in this country.

How would exporting crude oil instead of refining and exporting finished petroleum products affect potential job growth in the years ahead? Is the rush to export crude oil beneficial to small refineries, as well as to large, integrated oil companies?

And, finally, what are the environmental and climate impacts of lifting the export ban? In 1973 we did not yet have the Trans-Alaska Pipeline or widespread use of horizontal drilling techniques, we did not have large-scale domestic oil production in North Dakota, and we had not yet tapped into the oil and gas from other shale plays. But we also had not experienced the Exxon Valdez or the BP Deepwater Horizon oil spills. The term fracking was not in the common vernacular. Oil and gas pipelines weren't sprouting up in backyards, parks, and farmland the way they are today. And most importantly, the concentration of CO2 in our atmosphere had not yet topped 400 parts per million.

In today's world it is no longer wise to consider energy policy as distinct from environmental policy. They are linked. Each is a facet of the other. Increasing crude oil exports means increasing domestic production of crude oil with attendant impacts on climate change, on public and worker safety, on property owners, and on protection of our above- and below-ground water supplies. Too often we eagerly embrace short-term profits and benefits without understanding the costs of our actions. We should not make such a mistake again here. Instead, we should take the long view to ensure we fully understand the enduring consequences of our actions and choose the cleanest and most sustainable path forward, and that is the essence of commonsense energy policy.

So thank you, Mr. Chairman. I look forward to hearing from the witnesses, I guess when we return from the vote. Thank you.

Mr. WHITFIELD. Mr. Pallone, thank you very much.

And I want to apologize to our panel of witnesses once again. We think we only have one vote. There may be a second vote. But we have a five-star cafeteria downstairs, and it is open until 2:30. But

we hope to be back here by 15 or 20 after 2 at the latest. So thank you all for your patience, and we look forward to your testimony as soon as we come back.

They told me to tell you to stay close. So don't go too far. So we will adjourn until that time.

[Recess.]

Mr. WHITFIELD. Call the hearing back to order. Rather than introduce all the witnesses at once, I am going to simply introduce you and then recognize you for your opening statement.

Our first witness will be Adam Sieminski, who is the Administrator, United States Energy Information Administration. Certainly no stranger to testifying before the Energy and Commerce Committee.

So, Mr. Sieminski, you are recognized for 5 minutes.

STATEMENTS OF ADAM SIEMINSKI, ADMINISTRATOR, ENERGY INFORMATION ADMINISTRATION, DEPARTMENT OF ENERGY; SCOTT D. SHEFFIELD, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, PIONEER NATURAL RESOURCES COMPANY; CHARLES T. DREVNA, PRESIDENT, AMERICAN FUEL & PETROCHEMICAL MANUFACTURERS; JOHN KINGSTON, PRESIDENT, MCGRAW HILL FINANCIAL GLOBAL INSTITUTE; AMY MYERS JAFFE, EXECUTIVE DIRECTOR, ENERGY AND SUSTAINABILITY, UNIVERSITY OF CALIFORNIA, DAVIS; BRAD MARKELL, EXECUTIVE DIRECTOR, AFL–CIO INDUSTRIAL UNION COUNCIL; AND GRAEME BURNETT, SENIOR VICE PRESIDENT FOR FUEL OPTIMIZATION, DELTA AIRLINES, AND CHAIRMAN OF THE BOARD, MONROE ENERGY

STATEMENT OF ADAM SIEMINSKI

Mr. SIEMINSKI. Chairman Whitfield, Mr. McNerney, and members of the subcommittee, thank you for the opportunity to be here today to address changing dynamics in the world energy markets. The Energy Information Administration is the statistical and analytical agency with the Department of Energy. By law, EIA's data analyses are independent of approval by any other Federal office or employee, so the views expressed here today should not be construed as representing those of the Department of Energy or any other Federal agency. My testimony focuses on EIA's oil market outlook and its economic implications and it draws heavily on our short-term energy outlook. I want to talk a little bit about prices, demand, and the overall outlook.

Since the middle of last year, the global supply of oil has exceeded global consumption, leading to growth in oil inventories and a major decline in prices. In January, the monthly average price for West Texas Intermediate crude was $47 a barrel—that was kind of down towards the bottom or at least the most recent bottom—down from an average of $106 a barrel in June of 2014. Prices turned up in February with WTI, West Texas Intermediate, and Brent, respectively, averaging $51 and $58 a barrel. The recent rise likely reflects some optimism regarding the pace of market rebalancing, including lower rig counts, drilling, and capital expenditures on the supply side, and some positive news on the global economy that impacts demand.

Global supply of crude oil and other liquids grew more than 2 million barrel per day in 2014, 75 percent of that from the United States alone. In 2015 and 2016 EIA sees non-OPEC supply continuing to grow under our price forecast, but more slowly. Lower costs should help support activity in the lower 48 State shale oil plays that have contributed to the majority of the recent U.S. oil production growth.

The trend of slow decline in Alaskan production is expected to continue, while Federal offshore production, especially in the Gulf of Mexico where development projects have long lead times, grows due to projects recently brought online and startups that are scheduled for 2015 and 2016. Net, in 2016, we still see U.S. production rising close to the historic high in 1970.

EIA expects economic growth to drive a pickup in global consumption through 2016, led by China and the non-OECD Asian countries. Consumption in Japan, Europe, and Russia, on the other hand, is expected to continue to decline. The rest of the OECD countries, led by the United States, is expected to grow modestly, and lower oil prices should add to demand growth.

Recent prices of futures and options contracts suggest an unusually high level of price uncertainty with the implied 95 percent confidence interval for market expectations for WTI prices at the end of this year ranging from $32 to $108 a barrel. Mr. Chairman, I remember back in December when I was here, one of the members said, "That is a really big range you are talking about," and I said, "Yes, it is." And that is what the market is saying, that is what investors are saying. There is a huge amount of uncertainty, and I think during the opening remarks some of those uncertainties were mentioned: geopolitical events, what is happening with the economy, and so on. Absent further sanctions or unplanned disruptions, EIA's average price forecast for this year is $55 a barrel and for next year about $71 a barrel.

Now, there is some good news, and the good news is that consumers are receiving a direct benefit from lower oil prices. U.S. regular gasoline retail prices, which were $3.36 a gallon average in 2014, are now more than $1 below that. The average household is expected to spend $750 less for gasoline this year than in 2014. If that household has more than one vehicle or if you live in an area where you are on oil heat or propane heat, you will even be saving more.

Mr. Chairman, I want to take the last few seconds and just mention some of the things that we are doing at EIA that I know members here in this committee have been very interested in.

EIA has undertaken a huge effort to improve the quality and timeliness of our data and analyses. We just launched a monthly survey to improve estimates of both the volume and quality of oil production, that should help with this question of oil exports, related to which we are working with the producing States through the Groundwater Protection Council, which is developing a national database of well-level data.

Next month, EIA plans to begin publishing monthly information on movement of crude oil by rail, another important topic. We have also begun working with our counterparts in Canada and Mexico

on validating cross-border flows of energy, improved infrastructure mapping, and energy trade.

Recognizing the growing connection between the U.S. and global energy markets, we are redeploying resources to extend our international data analysis capabilities. And one key focus area is global oil demand growth, that has significant implications for future oil prices, and petroleum product and crude oil exports. Another is world supply and demand for natural gas, which we will determine the extent of opportunities for the United States given everything that is happening with LNG and LNG exports.

Mr. Chairman, I want to thank you again for the opportunity to testify here, and I will look forward to the rest of the day.

[The prepared statement of Mr. Sieminski follows:]

STATEMENT OF ADAM SIEMINSKI

ADMINISTRATOR

ENERGY INFORMATION ADMINISTRATION

U.S. DEPARTMENT OF ENERGY

Before the

COMMITTEE ON ENERGY AND COMMERCE

U. S. HOUSE OF REPRESENTATIVES

MARCH 3, 2015

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to appear before you today as you consider how the changing dynamics of world energy impact our economy and energy security.

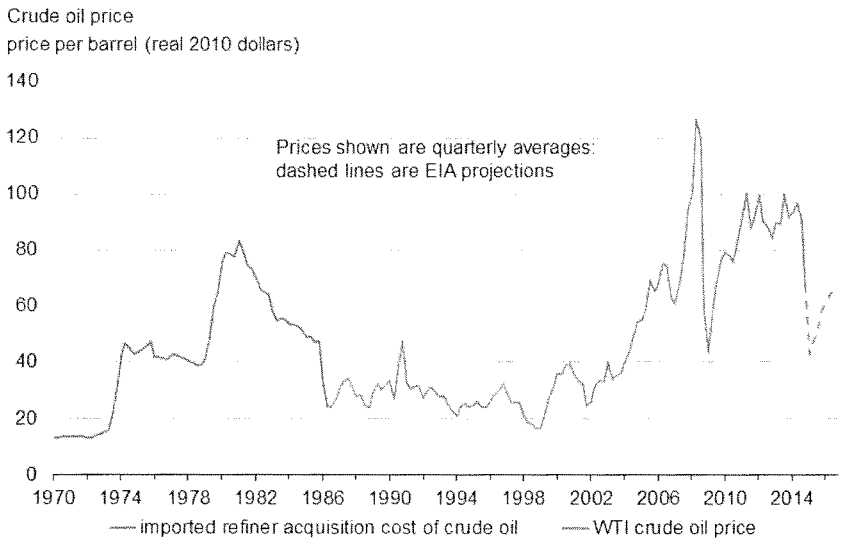
The U.S. Energy Information Administration (EIA) is the statistical and analytical agency within the U.S. Department of Energy. EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding regarding energy and its interaction with the economy and the environment. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government, so the views expressed herein should not be construed as representing those of the Department of Energy or any other Federal agency.

As requested, my testimony focuses on EIA's oil market outlook, including supply, consumption, prices and the relationship between energy market developments and the economy, drawing on information from EIA's most recent Short-Term Energy Outlook (STEO) and our other data and analysis products.

OIL PRICES

Since the middle of last year, the global supply of crude oil and petroleum products has exceeded consumption, leading to growth in global oil inventories. From their 2014 high point in June, prices fell as the worst fears of the impact of the so-called Islamic State on Iraq's oil production failed to materialize, U.S. production continued to grow robustly, and significant Libyan supplies unexpectedly returned to the market for several months starting in late summer. At the same time, global oil demand growth and expectations for future demand growth were reduced as data from key markets, including China, showed economic growth coming in below consensus expectations at the start of 2014. EIA estimates that commercial oil inventories held by countries in the Organization for

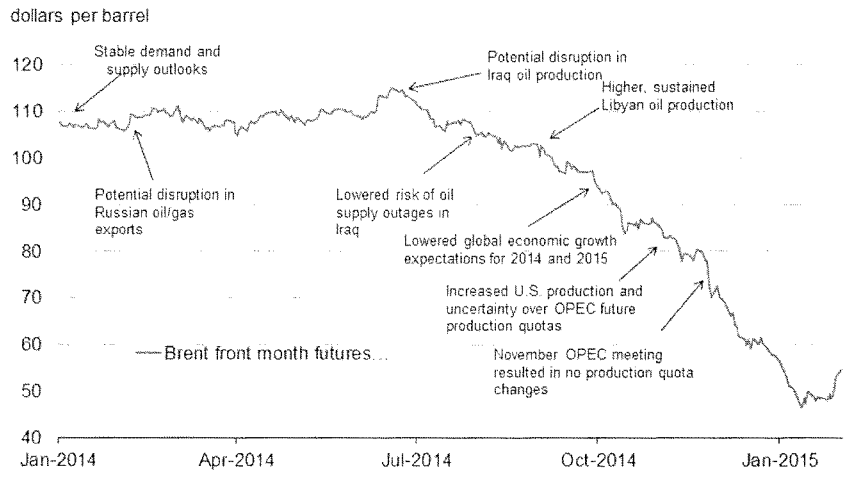
Economic Cooperation and Development (OECD) at the end of January were 203 million barrels (8%) higher than the same time last year, the largest year-over-year increase in at least the last three decades. Put in historical context, this recent inflexion point in oil markets is not the first. The global oil market has experienced a number of significant upward and downward price movements over the last 40 years.



Sources: U.S. Energy Information Administration, Thomson Reuters

By January 2015, the monthly average West Texas Intermediate (WTI) crude oil spot price had fallen from a peak monthly average of $106 per barrel (/b) in June to an average of $47/b, and North Sea Brent crude oil had fallen to $48/b, the lowest levels of these benchmark crudes since early 2009. Prices rebounded in February, with Brent and WTI prices averaging $58/b and $51/b respectively,

reflecting a significant widening of the spread between Brent and WTI as U.S. crude oil inventories have rapidly increased. The recent rise likely reflects some optimism regarding the pace of global market rebalancing, including lower rig counts and capital expenditures on the supply side, and some recent positive news on the global demand side.



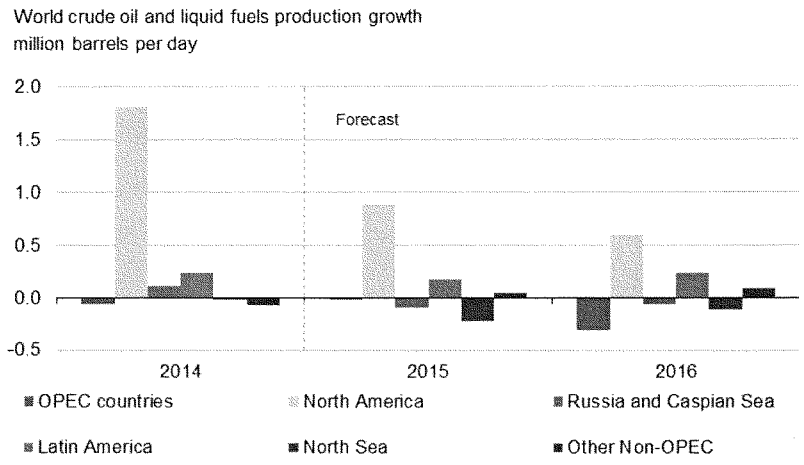
Source: EIA, Bloomberg

Recent values of futures and options contracts suggest very high uncertainty in the price outlook – the implied 95% confidence interval for market expectations for WTI prices in December 2015 calculated for the current STEO ranges from $32/b to $108/b. In the absence of further sanctions or unplanned disruptions, EIA's STEO forecast for WTI prices averages $55/b in 2015, down from the average price of $93/b in 2014. The forecast price decline reflects an expected average global inventory build of 600,000 barrels per day (b/d) in 2015, peaking at over 1.1 million b/d during the second quarter. EIA's WTI price forecast averages $71/b in 2016. In EIA's forecast, the discount of WTI to Brent averages $3/b in 2015 and $4/b in 2016.

GLOBAL OIL SUPPLY

Global supply of crude oil and other liquids grew 2.1 million b/d in 2014 despite unchanged total production from member countries of the Organization of the Petroleum Exporting Countries (OPEC). The United States was the main contributor to global supply growth, adding 1.6 million b/d including 1.2 million b/d of increased crude oil supply.

In 2015 and 2016, non-OPEC supply continues to grow under EIA's price forecast, but more slowly than in recent years, with year-over year growth averaging 0.8 million b/d annually. The slower growth in non-OPEC supply is largely attributable to slower production growth in the United States, Canada, and South America.



Source: EIA, Short-Term Energy Outlook, February 2015

Year-over-year supply growth figures may not reflect the most current trends at times when oil production growth is changing rapidly. While U.S. production of crude oil (not all liquids) averaged an estimated 8.6 million b/d for all of 2014, production in December 2014 was significantly higher at 9.1 million b/d. EIA's forecast for U.S. crude oil production averages 9.3 million b/d in 2015, with average production rising to 9.5 million b/d in 2016 given EIA's price forecast, which is close to the highest annual production in U.S. history of 9.6 million b/d in 1970.

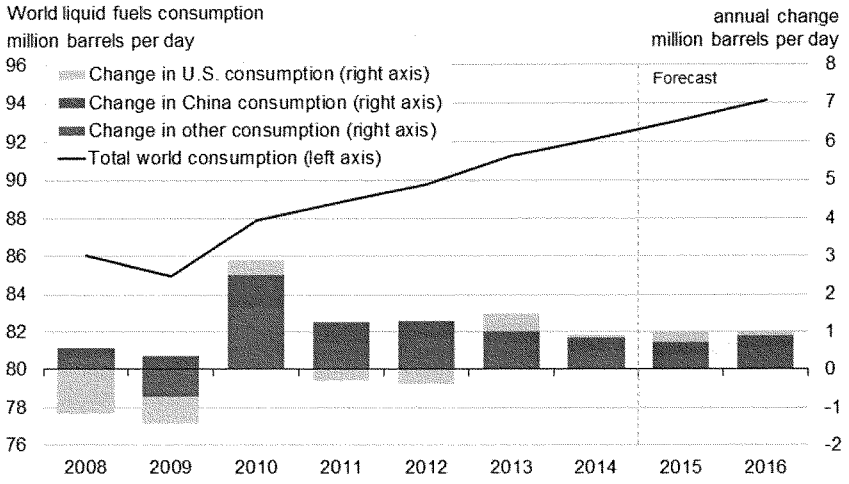
EIA expects onshore drilling activity to decline in 2015 as a result of less-attractive economic returns in some areas of both emerging and mature oil production regions. Many companies will redirect investment away from marginal exploration. However, projected oil prices remain high enough to support some continuing development drilling activity in the Bakken, Eagle Ford, Niobrara, and Permian Basin, which contribute the majority of U.S. oil production growth. EIA expects 2015 production will continue to grow in the second quarter, then decline in the third quarter. With projected WTI crude oil prices rising in the second half of 2015, drilling activity is expected to increase again as companies take advantage of lower costs for both leasing acreage and drilling and completion services. Projected production for the federal offshore region and Alaska, which rise and fall respectively in both 2015 and 2016, are less sensitive to short-term price movements than onshore production in the Lower 48 states.

EIA estimates that OPEC crude oil production averaged 30.1 million b/d in 2014, unchanged from the previous year. Crude oil production declines in Libya, Angola, Algeria, and Kuwait more than offset production growth in Iraq and Iran. EIA expects OPEC crude oil production to fall by 0.1 million b/d in 2015, and to fall by 0.4 million b/d in 2016. Iraq is the largest contributor to OPEC production growth over the forecast period, but its growth is expected to be offset by production declines from other OPEC producers.

Unplanned OPEC crude oil supply disruptions averaged 2.4 million b/d in 2014, 0.6 million b/d higher than in 2013 and contributed to higher crude oil prices during the first half of 2014. Libya and Iraq accounted for almost all of the growth in OPEC disruptions. Changes in the level of unplanned outages, either up or down, could still affect crude oil prices going forward.

GLOBAL OIL CONSUMPTION

EIA estimates that global oil consumption grew by 0.9 million b/d in 2014, averaging 92.1 million b/d for the year. EIA expects consumption to grow 1.0 million b/d in both 2015 and 2016. Projected global oil-consumption-weighted real gross domestic product (GDP), which increased by an estimated 2.7% in 2014, is projected to grow by 2.8% in 2015 and by 3.2% in 2016.



Source: EIA, Short-Term Energy Outlook, February 2015

Non-OECD Asia accounts for more than 50% of forecast oil consumption growth over the next two years. Chinese oil consumption, the main source of the growth, is projected to increase in 2015 and

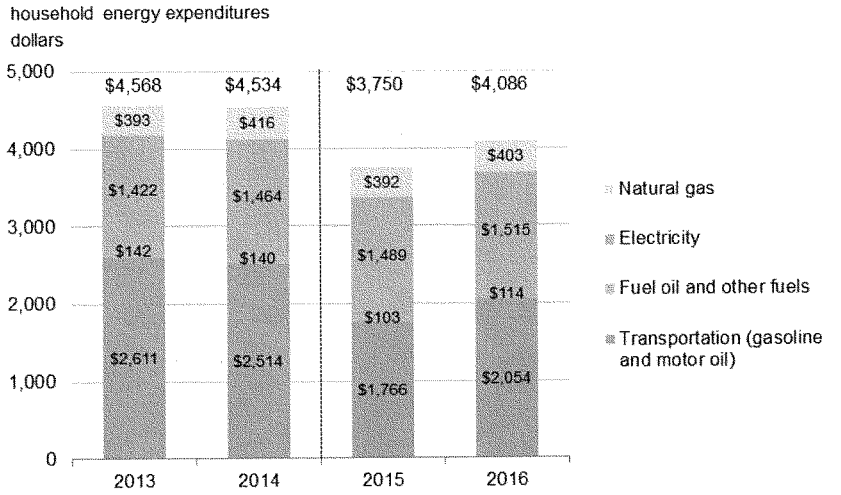
2016, but at a lower rate than in 2014. Projected declines in Russia's oil consumption because of its economic downturn also contribute to lower non-OECD consumption growth over the forecast period compared with 2014.

OECD consumption, which fell by 0.3 million b/d in 2014, is expected to rise modestly in 2015 before declining slightly in 2016. The United States is the leading contributor to projected OECD consumption growth, with U.S. consumption increasing by 0.3 million b/d in 2015 and by 0.1 million b/d in 2016. Demand in Japan and Europe is expected to continue declining over the next two years, albeit at a lesser rate than in 2014.

THE ECONOMY AND CONSUMERS

EIA's energy forecast reflects a U.S. economic growth outlook for 2015-16 that is somewhat stronger than the 2013-14 experience. Energy expenditures as a share of GDP are forecast at 6.2% in 2015, their lowest level since 2002, reflecting both lower oil prices and ongoing increases in energy efficiency.

Consumers are receiving a direct benefit from lower oil prices. EIA expects U.S. regular gasoline retail prices, which averaged $3.36/gal in 2014, to average $2.33/gal in 2015. Based on gasoline expenditures reported in the Consumer Expenditure Survey (CES), the average household is now expected to spend about $750 less for gasoline in 2015 than in 2014 because of lower prices. Many households that have more than one vehicle and/or have higher than average miles traveled will save substantially more than the average value reported for all households, which includes the 13% of all households that do not own or lease even one vehicle.



Sources: 2013 expenditures and income from BLS Consumer Expenditure Survey. The average household in the BLS survey (called a consuming unit) averages 2.5 people and 1.3 income earners. Expenditures for 2014-16 based on average prices from EIA Short-Term Energy Outlook, February 2015

Consumers who heat with propane or heating oil, which together are used as the primary heating fuel in about 11% of American homes, are also likely to see significant cost savings compared to last winter during the current (2014-15) winter. The expenditure savings for fuel oil and other fuels for the average household in the expenditures figure reflect the average savings of all households; the savings for households actually using those fuels are roughly 10 times larger.

INITIATIVES TO IMPROVE ENERGY INFORMATION

I would like to share with the Subcommittee information on a number of important initiatives EIA is pursuing related to the timeliness and detail of oil market data. These efforts are particularly important given the need for policymakers, industry, and the public to closely track rapidly changing developments. EIA just launched its first-ever monthly survey to collect oil production data directly

from operators. In addition to providing a better estimate of the volume of monthly production, this survey will include information on the quality of oil being produced. EIA had previously obtained production data from the states, which have varying lags and gaps in their own data collection programs and had almost no access to data on oil quality, an important consideration in discussions regarding the possible relaxation of current limitations on U.S. crude oil exports. EIA is also providing technical assistance to oil and natural gas producing states through the Groundwater Protection Council (GWPC), which is developing a unified national database of well-level data.

Later this month, EIA plans to begin publishing monthly information on the movement of crude oil by rail, which has grown dramatically in recent years. We are also working with our counterparts from Canada and Mexico on validating data on cross border flows of energy by all modes, improved infrastructure mapping and outlooks for traded energy. This trilateral effort was started with the signing of a Memorandum of Understanding (MOU) by Secretary Moniz and his counterparts from Canada and Mexico. Collectively, these efforts support EIA's commitment to provide timely, accurate, and relevant information at a time when there are many new developments in the sector.

LINKAGES BETWEEN U.S. AND GLOBAL ENERGY MARKETS

As we work to keep up with rapidly changing energy markets, one set of questions we face involves the relevance of international energy markets to the United States as our oil and natural gas production surges, and our net dependence on energy imports declines. Despite these trends, the connectedness of the United States to global energy markets is actually increasing in some important respects.

Notwithstanding declining U.S. net oil imports, producers in the countries of the Persian Gulf region, who hold very large reserves of easy-to-develop oil, will continue to play a central role in oil markets.

Developments in that region and decisions made by producers affecting both production levels and the development of their resources have a direct effect on oil prices that in turn affect producers and consumers everywhere, including the United States. Global interconnections are also readily apparent on the demand side of oil markets. The United States, already the world's largest exporter of petroleum products, has a keen interest how overseas demand for various petroleum products will evolve. More broadly, future trends in global oil demand largely hinge on the rate of consumption growth in the Middle East and non-OECD Asia, including but not limited to China and India. Demand as well as supply will be a key influence on future oil prices, with outcomes having direct implications for both U.S. producers and consumers.

Natural gas markets are also increasingly interconnected. Not long ago, the North American natural gas market, dominated by the United States, was largely isolated from other global regions. The advent of shale gas, which greatly increases the U.S. resource base, could allow the United States to be a significant exporter of liquefied natural gas. The extent to which this actually happens will depend significantly on natural gas demand, supply, and price conditions throughout the world, as well as on future oil prices, given competition among fuels and the use of oil-linked price contracts. Provided that market conditions favor investment in liquefaction capacity to support higher levels of U.S. LNG exports, decisions by policymakers regarding the approval of proposed projects will also come into play.

Faced with the rising connection between U.S. and global energy markets, EIA's efforts to analyze developments in U.S. energy markets increasingly hinges on our ability to understand their linkage to developments outside our borders. In the face of this challenge, we are redeploying some resources to improve our international data and analysis capabilities.

Thank you again for the opportunity to testify before the Committee.

Mr. WHITFIELD. Thank you very much, Mr. Sieminski.

Our next witness is Mr. Scott Sheffield, who is the chairman and chief executive officer of Pioneer Natural Resources.

And, Mr. Sheffield, you are recognized for 5 minutes, and the red lights will come on when the time is up. So thank you.

STATEMENT OF SCOTT D. SHEFFIELD

Mr. SHEFFIELD. Thank you, Mr. Chairman. Chairman Whitfield, Mr. McNerney, committee members, it is great being here today. I represent Pioneer Natural Resources and its 4,000 employees. We are one of the most active independents in the U.S. I have 40 years experience as a petroleum engineer, 30 years as CEO of Pioneer.

What is interesting today, listening to Netanyahu's speech, what brought home to me is that I was raised in Tehran, Iran. That was the big topic today. I spent over 10 years traveling to Tunisia as we had an office in North Africa. What hasn't changed in the last 40 years, the world is very still very dependent upon Middle Eastern and North African crude.

What has changed in the U.S. is this piece of rock—which I left one at your table—is that we have actually found six world-class oil fields. This represents the Wolfcamp field in west Texas. It is now the U.S.' largest oil field that we have found, over 75 billion barrels. We used to get 50 barrels a day out of this. Now we are getting over 2,000 barrels a day out of this rock with new technology.

The shale revolution has been a game-changer for this country. We now are the largest liquids producer in the world, surpassing Saudi Arabia and Russia. We have almost doubled production from 5 million barrels a day to 9.3 million barrels a day since 2008, reduced imports from 60 percent to 30 percent in a very short timeframe. We have been the largest job creator in the country for over the last 6 years.

Also, we have reduced the trade deficit. Our industry $200 billion annually. A combination of less imports, but we are refining and sending out over 4 million barrels a day of refined products. In addition, one-third gasoline that we refine is being exported.

This is my fifth downturn in my career since 1981. We have seen over 900 rigs drop from a high of 2,000, almost 50 percent, we have seen 50 billion of CAPEX reductions by the industry over the last 2 months going into 2015, industry layoffs of over 50,000 workers and continuing, leading to flattening to declining production going into 2016 at current prices. The strategy of OPEC is to preserve and grow market share. I can promise you, OPEC loves the export ban being in place in the U.S.

Let me explain how oil is traded and how it works. For my entire career sweet crude internationally, sweet crude domestically traded at the same price. Over the last 3 years we have seen a big variance of $10 to $15 per barrel in those prices. Today it is $11 a barrel in those prices.

There is no benefit for consumers. Consumers are paying world gasoline prices. Through studies that Adam has done at EIA and other independent studies, that has been proven, that the U.S. Consumer is paying a world gasoline price based on international oil prices.

Allowing U.S. crude to be sold overseas would increase global supply, causing gasoline prices to decline. So, for instance, if you lifted the ban today, we put 300,000 barrels a day on the market, it would compete with OPEC, it would lower the price of the international crude. The domestic price would move toward it, like it has over the last 30, 40 years.

Removing the crude ban allows U.S. Producers to compete. Just a $10 swing in price makes a difference of this country growing or declining $2 million barrels a day. A great example, Pioneer was the first company to export processed condensate last summer through a Commerce Department confirmation. We are actually realizing $8 a barrel higher price by exporting to Europe, Japan, South Korea. We are taking that cashflow, drilling more wells, more production, more jobs in this country.

With the ban lifted, U.S. remains the largest producer, lowers gasoline cost, adds U.S. jobs, increases Government revenues, and what is most important, is selling oil to our allies in Europe, Japan, South Korea, reducing dependence, their dependence on Iran and Russia.

It is important to act now. If you lifted the ban today, I can promise you Pioneer would add more rigs today, more jobs, more U.S. investment, and the other 7,000 independents in this country would do the same.

Thank you very much.

[The prepared statement of Mr. Sheffield follows:]

PIONEER
NATURAL RESOURCES

Before the Subcommittee on Energy and Power

Committee on Energy and Commerce

U.S. House of Representatives

Hearing on "21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact our Economy and Energy Security"

Testimony of Scott D. Sheffield

Chairman and Chief Executive Officer

Pioneer Natural Resources Company

March 3, 2015

Chairman Whitfield, Ranking Member Rush, and distinguished Members of the Subcommittee: Thank you for the opportunity to appear before the Subcommittee today. The subject of this hearing is particularly timely and of utmost importance to assessing the impact of current developments in the oil and gas industry on the health of the U.S. economy and U.S. energy security.

I offer you my perspective today as a petroleum engineer with more than 40 years of experience, including over 30 years as Chief Executive Officer of Pioneer Natural Resources Company and its predecessor company.

Pioneer is a leading independent exploration and production (E&P) company headquartered in Dallas, Texas. Our company is the third most active operator in the United States, based on

footage drilled. We employ approximately 4,000 very hardworking and talented people. I am pleased to say that number is up from about 1,400 in 2005, when Pioneer reinvented itself from a global exploration company to a shale producer with its sole focus on onshore U.S. opportunities. I am especially proud that Pioneer has been responsible for investing over $20 billion directly in the United States since the beginning of 2005. A large portion of this investment was funded by the sale of *all of our international assets* over the same period. We have more than doubled our U.S. workforce in the past five years, while being recognized repeatedly as a top place to work. We also have created thousands more high-paying jobs through our contractors, suppliers, construction workers, truck drivers and others who are actively involved in the supply chain.

Key Points

I will provide more detailed observations below. First, here are the key points that I wish to leave you with today:

- **The shale oil and gas revolution has revitalized domestic energy production, substantially boosted the Nation's employment and overall economy, and strengthened U.S. energy security. Growing U.S. production has increased global competition and reduced energy prices and, therefore, gasoline prices as well. These advances are now at risk because of the out-of-date ban on exporting crude oil produced in our country.**
- **Surging U.S. production and weak global demand have driven the E&P industry into a downturn. Price cycles come with the territory and we will navigate this downturn as we have in the past. Producers of domestic oil are especially**

disadvantaged compared to foreign producers, however, because they cannot receive global prices.

- **Historically, U.S. oil prices have been in line with international prices. In recent years, however, U.S. oil has sold at substantially lower prices than international levels, in part because of the export ban.**
- **Prices for U.S. crude oil continue to weaken, compared to international prices. A massive buildup of oil is occurring in the United States, surpassing the volumes that domestic refiners are interested in buying. Storage of domestic crude oil is at an 80-year seasonal high — over 434 million barrels — and storage capacity is running out. This is symptomatic of the combination of the export ban and the limited appetite for light tight oil among the only customers we can access. Absent the ban, U.S. producers could be selling their crude oil abroad and driving global crude prices lower by increasing global supply.**

- **Shale oil production requires significant reinvestment of capital to sustain growth. Therefore, in order to effectively compete and reinvest capital in domestic resources, U.S. shale oil producers must not be disadvantaged vis-à-vis their competitors that sell into the broader world market. This means that U.S. producers of crude oil must have access to the export markets, just like U.S. refiners that produce gasoline or farmers who produce grains.**
  - **If current trends continue and the export ban is not lifted, U.S. shale oil production will flatten or decline by disproportionate volumes versus our**

overseas competitors, diminishing the profound benefits of the shale revolution.

- **The strategy of OPEC countries is clear: to downsize U.S. production, reduce global supply and increase OPEC's market share, which will ultimately lead to higher international prices. Regrettably, the ban on U.S. exports unwittingly enables the OPEC strategy. If U.S. producers are forced to downsize further due to a protracted downturn exacerbated by the export ban, it could take the industry many years to restore growth. Loss of critical mass in the U.S. oil and gas sector equates to a loss of energy security for the United States.**

- **Every recent economic study, including a study by the U.S. Energy Information Administration (EIA), has demonstrated that U.S. gasoline prices are primarily linked to international crude oil prices, not domestic crude oil prices. Allowing U.S. crude oil to be sold overseas would increase global supply, which is why the clear and growing consensus of knowledgeable analysts is that lifting the export ban would *cause gasoline prices to decline.* The export ban, therefore, denies U.S. consumers the full economic benefit of the U.S. energy revolution. Removing crude oil export constraints would also help keep a lid on rising global prices when demand recovers, by letting U.S. producers meet the rising demand.**
- **The crude oil export ban was adopted 40 years ago to address circumstances that long ago disappeared — most notably, U.S. domestic price controls, which were removed in 1981. Today, the ban acts only to bar U.S. companies from competing on equal footing in the very global market that sets the prices driving their business.**

- **This out-of-date policy hurts U.S. consumers, harms job creation and perversely undercuts U.S. energy security and critical foreign policy goals.**
- **The export ban will discourage investment in U.S. oil production, especially in this highly competitive environment. A market-based policy would encourage continued development of resources in the United States, rather than abroad.**

In virtually every other aspect of American commerce, the U.S. government rightly acts aggressively to remove foreign barriers to international market access by U.S. exporters. Here, the market is the global market, and the barrier is the self-imposed ban that prohibits U.S. oil producers from competing in it. In contrast, all other energy commodities are exportable — gasoline, petrochemicals and other products refined from oil, coal, LNG and natural gas. The government should treat crude oil similarly, allowing its sale to trading partner customers abroad. An unwillingness to level the playing field for U.S. producers will contribute to a deeper and longer industry retrenchment, eventually leading to declining U.S. production, a loss of jobs and tax revenues, and a return to increased reliance on foreign sources of crude oil.

The Shale Revolution

As recently as 2005, the United States depended on imports of foreign energy sources for more than half of our oil and natural gas needs, and experts generally predicted that our dependence would only rise in the future. A decade later, the U.S. energy landscape has been transformed by the shale oil and natural gas revolution within our borders. This U.S. energy renaissance is appropriately called the "Age of Energy Abundance".

Several developments have made this possible: (1) the realization that the source rock for the oil and natural gas in conventional reservoirs could itself be developed; (2) the game-changing advancements in science, technology, and engineering — in particular, horizontal drilling and hydraulic fracturing using state of the art three and four dimensional seismic mapping and drilling rigs that can bore more than 10,000 feet with pinpoint accuracy; (3) access to hydrocarbon resources under private ownership, with a stable and predictable legal environment; (4) a robust energy service sector and significant investment in midstream oil and gas transportation and infrastructure; and (5) strong commodity prices. Independent, entrepreneurial companies — many of which are small businesses — have lead the way, drilling the vast majority of shale wells.

The result? Global and domestic energy markets have been transformed, hundreds of thousands of high-paying jobs have been created in the United States, and billions of dollars have been reinvested here that would otherwise have been invested abroad. Indeed, the redirection of investment by Pioneer and other companies from foreign E&P operations to the United States, and the attraction of billions of new foreign investment into the U.S. oil and gas industry, may be the greatest "in-sourcing" story of recent decades.[1]

[1] The U.S. Department of Commerce estimates that the foreign direct investment position in the petroleum refining and extraction sector grew at a compounded annual growth rate of nearly 60% from 2008 - 2012, far outdistancing the growth rates in nearly every other sector. Foreign Direct Investment in the United States: Drivers of U.S. Economic Competiveness, December 31, 2013. These data, of course, do not include the vast redeployment of capital into U.S. E&P activities by Pioneer and many other companies.

The re-emergence of the United States as a major oil producer is remarkable:

- The United States has now surpassed Saudi Arabia and Russia as the world's largest producer of petroleum and natural gas hydrocarbons. In each of 2013 and 2014, U.S. oil output jumped by 1 million barrels per day,[2] providing most of the world's oil production growth.
- Globally, the supply of oil has become far less concentrated, with OPEC's share of production declining from 53% in 1973 to about 35% today as U.S. production surged.
- United States reliance on foreign energy has dropped sharply, thanks mainly to the shale oil and gas boom: Total U.S. net imports of energy declined 19% from 2012 to 2013, hitting the lowest level in more than 20 years.[3]
- The U.S. annual average level of crude oil production fell from 9.6 million barrels per day in 1970 to 5 million barrels per day in 2008. Since then, driven principally by shale development, production has rebounded to over 9 million barrels per day. Production in January 2015 of 9.2 million barrels per day is 80 percent higher than 2008 production, and U.S. crude oil production could more than double by the mid-2030s.[4]
- As recently noted by the U.S. Department of Commerce, the U.S. petroleum deficit – the percentage of the total trade deficit attributed to petroleum products – is at its lowest point in 10 years.[5] 2014 was also a record year for petroleum product exports, accounting for nearly 10 percent ($146 billion) of total U.S. exports.

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[2] U.S. Field Production of Crude Oil, Energy Information Administration, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS2&f=M (last visited February 27, 2015).
[3] Net energy imports in 2013 lowest in more than 20 years, Energy Information Administration, April 2, 2014, http://www.eia.gov/todayinenergy/detail.cfm?id=15671 (last visited February 27, 2015).
[4] US Crude Oil Export Decision: Assessing the Impact of the Export Ban and Free Trade on the US Economy, IHS Energy, May 29, 2014.
[5] Annual Trade Highlights, 2014 Press Highlights, United States Census Bureau, http://www.census.gov/foreign-trade/statistics/highlights/annual.html (last visited February 27, 2015).

- The availability of low-cost natural gas has reduced greenhouse emissions by allowing cleaner fuels to have a greater share of our power generation mix.

These are all remarkable accomplishments, especially considering that not long ago our country faced a significant and rising dependence on foreign sources of oil.

Today, major U.S. oil producing areas that were declining or not yet discovered at the beginning of the 21st century — the Permian Basin and the Eagle Ford Shale and Bakken Plays — stand as some of the largest and most prolific oil basins in the world.[6] The unconventional type of oil largely produced in these areas is called "Light Tight Oil" (LTO). LTO has a higher API gravity (40° and above) than oil typically extracted from conventional or deep-water sources. It is "tight" because it is extracted from dense rock formations.

A substantial amount of associated natural gas is produced from shale oil wells. According to the EIA, more than 60% of new U.S. wells produce both oil and gas,[7] contributing a third of the growth of new U.S. natural gas supplies.[8] This contribution to the surge in affordable domestic natural gas supplies is enabling a U.S. manufacturing renaissance.

The domestic oil and gas industry has been a major growth engine of the U.S. economy, one of the few bright spots during the recent long recession, providing American consumers with a wide

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[6] *See* Appendix A.
[7] Outlook for North American Natural Gas, EIA, http://www.eia.gov/pressroom/presentations/sieminski_11112014.pdf (November 11, 2014).
[8] Scott Disavino and Barani Krishnan, Low oil prices threaten to curb 'associated' gas output growth, Reuters, November 4, 2014, *available at* http://www.reuters.com/article/2014/11/05/us-energy-natgas-shale-idUSKBN0IP03D20141105.

array of benefits – from higher wages to lower heating bills and gasoline prices. In recent years, state and local governments have enjoyed significantly increased revenues to support public services through enhanced local employment, a broader tax base and higher royalty payments associated with the increased production of the oil industry.

The industry has created hundreds of thousands of good-paying jobs, directly and indirectly among the countless suppliers of equipment, goods and services used by U.S. oil and gas producers, including construction contractors, construction equipment manufacturers and dealers, logistics companies, well services providers, professionals such as engineering and architectural firms, and providers of materials and supplies such as sand, cement, trucks and steel pipe.[9] Shale energy activities support over half a million supply chain jobs,[10] and have been one of the most important drivers of the U.S. manufacturing sector's robust performance over the last five years.[11]

Current Conditions

Over the past eight months, we have experienced a dramatic drop in U.S. and global oil prices. Until last June, despite the significant increase in U.S. shale oil production, North American oil prices had been fairly stable for many years, which encouraged significant capital investment.

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[9] *See, e.g.*, Bureau of Labor Statistics, U.S. Department of Labor, The Economics Daily, Employment changes in the oil and natural gas industry, by state on the Internet at http://www.bls.gov/opub/ted/2014/ted_20140404.htm (last visited February 27, 2015); The Shale Gas and Tight Oil Boom: U.S. States' Economic Gains and Vulnerabilities, Council on Foreign Relations, October 2013, http://www.cfr.org/united-states/shale-gas-tight-oil-boom-us-states-economic-gains-vulnerabilities/p31568 (last visited February 27, 2015); Oil and gas industry employment growing much faster than total private sector employment, Energy Information Administration, August 8, 2013, http://www.eia.gov/todayinenergy/detail.cfm?id=12451 (last visited February 27, 2015).

[10] Supplying the Unconventional Revolution: Sizing the unconventional oil and gas supply chain, IHS Economics, September 2014, p.1.

[11] Thomas J. Duesterberg et al., Lifting The Crude Oil Export Ban: The Impact on U.S. Manufacturing, Aspen Institute (October 2014), p.2.

Generally speaking, the growth in U.S. oil production reduced oil imports, while offsetting supply disruptions globally, particularly from Libya and Iran. Indeed, experts have noted that the U.S.-led nuclear sanctions targeting Iran would not have succeeded but for the vastly increased U.S. production.[12] Surging U.S. oil production helped prevent oil prices from rising sharply, and likely averted another global recession.

During the second half of 2014, however, as United States production continued to surge, worldwide demand was sluggish, reflecting the decline in China's growth rate, the lingering recession in Europe, and weaker economic performance in other regions. The combination of these factors resulted in worldwide oversupply of crude oil and oil price weakness. These conditions intensified late in the year, when the market reacted negatively to OPEC's decision to maintain production quotas at current levels to preserve market share.

Other than U.S. production, crude oil is traded in a global market, where the key global benchmark price is based on the price of Brent, a crude oil blend drawn from a dozen or so fields in the North Sea. West Texas Intermediate (WTI) is the primary benchmark price for crude oil sold in the United States. For more than two decades prior to 2011, Brent and WTI prices moved in tandem, with WTI consistently priced higher, reflecting the transportation cost differential. This difference between Brent and WTI prices at any particular point in time is called "the spread."

[12] *See* Remarks by Thomas E. Donilon, Center on Global Energy Policy, School of International and Public Affairs, Columbia University, January 21, 2015.

Since 2011, however, the spread has heavily favored Brent pricing. For example, in 2013, the impact of supply from Canada into the United States and transportation bottlenecks caused the Brent/WTI spread to blow out to as high as $23 per barrel in the country's key oil transportation hub in Cushing, Oklahoma.[13] Pipeline expansion provided some relief to these bottlenecks, which temporarily reduced the spread between Brent and WTI. However, due to the constraint imposed by the export ban, the spread has recently begun to widen again to an ominous gap, especially at current price levels. The growing spread is a clear signal that U.S. LTO production is not being absorbed effectively in the U.S. market.

Prices declined significantly for both Brent and WTI in 2014. From its high of $115 per barrel in June 2014, the price of Brent fell to $45 per barrel on January 13, 2015. But where Brent has recovered to over $60 per barrel, the U.S.-based WTI index has remained under pressure below $50 per barrel. Experts believe the spread will widen dramatically in the future as the crude oil export ban leads to a glut of trapped LTO. Again, U.S. consumers will not benefit from that glut by seeing lower gasoline prices—those prices are based on Brent oil prices. Instead, cash flow constrained producers will be forced to reduce drilling activity even more, which will reduce domestic production and leave consumers and the country worse off.

At Pioneer, we have made tough decisions to respond to the downturn. We have reduced capital spending, operating costs, and general and administrative expenses. We have reduced our rig activity to 16 horizontal rigs drilling, from a high of over 30 in 2014. Rigs have been stacked in our operating areas. We expect to reduce our capital spending in 2015 by over 45% to about $1.85 billion, down from $3.6 billion in 2014.

[13] *See* Appendix B.

Other companies are replicating our actions; based on the publicly available information illustrated on Appendix C, U.S. public E&P companies intend to reduce their capital expenditures by 35% in 2015 over 2014, a spending decrease of $50 billion. The result will be dramatically lower spending in the oil and gas sector, which translates directly into lower employment, wages, and taxes related to our industry, including suppliers, throughout the country.[14]

As discussed above, a substantial amount of natural gas is produced from shale oil wells. As drilling slows and existing wells decline steeply, natural gas growth from shale oil production will slow, undercutting the benefits of low cost fuel for the nascent U.S. manufacturing renaissance and other industries dependent on affordable, plentiful natural gas.

Impacts Specific to U.S. Shale Producers

The need to respond to price cycles effectively and promptly is always in the minds of operators in the oil and gas industry. We are adjusting to the current environment in pragmatic ways. It is nonetheless important to understand certain particular aspects of U.S. shale oil production in order to appreciate fully the potentially serious adverse impact of the current downturn on the broader U.S. economy, and the one step that the government should take to help moderate that impact.

[14] For example, U.S. Steel Corporation recently announced the layoff of nearly 2,000 workers in its tubular operations in Texas and Alabama. U.S. Steel Corporation, press release, January 26, 2015, https://www.ussteel.com/uss/portal/home/newsroom/pressreleases (last visited February 27, 2015).

(a) The Need for Sustained Investment

Shale development is capital intensive and requires a continuous reinvestment of cash flow and borrowing to maintain and increase production. In fact, most shale producers, like Pioneer, will reinvest all their cash flow from sales of oil and gas into capital for new wells. As reflected in the decisions that Pioneer has made, this reality of shale development and production compels operators, facing the prospect of sustained low prices, quickly to reduce their capital spending on development activities. The falling revenues from the combination of declining production and lower prices rapidly constrict an operator's ability to fund new drilling activities.

Not surprisingly, the current domestic rig count is down by 39 percent, or 842 rigs idled, from its peak in October 2014,[15] and is continuing to decline. In January 2015 alone, over 20,000 job cuts were attributed to the decline in oil prices and the number of job losses, both within our industry and in the many industries that depend on the E&P sector, will dramatically rise if current market conditions persist.[16]

[15] RigData.
[16] *E.g.*, *see* 2015 January Job Cut Report: 40% of 53,041 Cuts Due to Falling Oil Prices, http://www.challengergray.com/press/press-releases/2015-january-job-cut-report-40-53041-cuts-due-falling-oil-prices, (last visited February 27, 2015).

(b) The Impacts of the Crude Oil Export Ban

The magnitude of the price drop since mid-2014 has led directly to decisions to reduce drilling activity and eliminate jobs, as we are seeing throughout the industry today. Those actions are a natural consequence of market conditions. But another, non-market factor is exacerbating the impact of the price decline: The 1970s-era crude oil export ban, which artificially constricts the potential range of customers for U.S. production and ensures that U.S. producers receive a government-suppressed price in the domestic market. This artificial market distortion is evidenced by the relationship between U.S. gasoline prices and international and domestic crude oil prices, represented by Brent and WTI, respectively. As the EIA has shown, Brent crude oil prices are more important than WTI crude oil prices as a determinant of U.S. gasoline prices in all parts of the country, including the Midwest. What that means is that consumers do not see any benefit from these government-suppressed domestic crude prices when they pay for gasoline. The only impact is to place U.S. producers at a competitive disadvantage with their foreign counterparts.

I expect that there will be sustained downward pressure on U.S. WTI oil prices. Several factors contribute to my assessment:

- Despite large curtailments in new drilling, production growth will continue during the first half of 2015 because wells already under development will be completed and placed on production, continuing the oversupply trapped in the United States.
- Shale oil producers can slow activity rapidly in the face of adverse market developments, which will eventually result in lower production. In contrast, Canadian oil sands

production will continue to come online and to find its way to the United States, where U.S. Gulf Coast refineries have revamped to accommodate the heavy Canadian crude. In addition, recent pipeline and rail expansions will facilitate movements of Canadian crude to the Cushing, Oklahoma hub, where it competes with U.S. production, including for storage.

- According to EIA, U.S. commercial crude oil stocks increased 8.8 million barrels, to a total of 434 million barrels, in the week ending February 20,[17] with U.S. refiners operating at 87.4% of utilization capacity.[18] In short, storage capacity is being filled to the brim — reaching an 80-year seasonal high.[19]

As long as the spread between Brent and WTI prices remains at high levels, U.S. shale producers will be capital constrained from resuming drilling activities at former levels. The graph at Appendix E to my testimony shows the potential consequences to production at various price points. As shown on the table, the respected analytical firm PIRA projects that shale oil production may tail off rapidly and significantly in coming years, with every $10 per barrel difference in price resulting in the loss of two million barrels per day of production after six years. With the spread between Brent and WTI now more than $10 per barrel and projected to rise, removing the export ban could make the difference between growing or shrinking production in U.S. For example, if U.S. producers received Brent prices today, this would increase production in the U.S. by as much as two million barrels per day.

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[17] Weekly U.S. Ending Stocks excluding SPR of Crude Oil, Energy Information Administration, http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WCESTUS1&f=W (last visited February 27, 2015).
[18] *See* Weekly Inputs & Utilization, Energy Information Administration, February 13, 2015, http://www.eia.gov/dnav/pet/pet_pnp_wiup_dcu_nus_w.htm (last visited February 27, 2015).
[19] Market Prices and Uncertainty Report, Energy Information Administration, February 2015, http://www.eia.gov/forecasts/steo/uncertainty/ (last visited February 27, 2015). *See* Appendix D.

Disparity between Crude Oil and other Hydrocarbons and Refined Products

Among hydrocarbon resources, only crude oil remains effectively banned from export. Indeed, crude oil is one of only three commodities restricted for export under regulations that limit exports of products in "short supply"; the other two are unprocessed western red cedar, and horses shipped by sea for slaughter.[20]

While current law restricts access by domestic oil producers to global markets, U.S. oil refiners and petrochemical manufacturers are free to sell refined petroleum products, including gasoline, diesel fuel and petrochemicals, on a global market. With the benefit of a surplus of low-cost U.S. feedstock and cheap energy from abundant natural gas, U.S. refiners and petrochemical companies have increased product exports into world markets, where they are highly competitive.[21]

As U.S. shale oil production has increased, U.S. refiners have enjoyed a growing abundance of supply, especially with traditional imports augmented by increasing Canadian supplies. Canadian producers are free to export oil to the United States, and can readily obtain a U.S. license to re-export the oil to other countries. Yet, the U.S. government denies U.S. producers — which use exactly the same U.S. transportation network and compete with Canadian crude for sales to U.S. refiners — the same market freedom.

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[20] 15 CFR Part 754; §§754.4, 754.5.

[21] Don't Stop The Party - Why Gulf Coast Refiners Keep on Dancing After Crude Price Collapse, RBN Energy LLC, February 22, 2015, https://rbnenergy.com/don-t-stop-the-party-why-gulf-coast-refiners-keep-on-dancing-after-crude-price-collapse (last visited February 27, 2015); "Sign, Sign, Everywhere a Sign" - Hints of Domestic Demand Growth Bring Back Good Memories for U.S. Refiners, Turner, Mason & Company, February 24, 2015, http://www.turnermason.com/blog/2015/02/24/sign-sign-everywhere-a-sign/ (last visited February 27, 2015).

The Benefits of Removing the Crude Oil Export Ban

As Secretary of Energy Moniz recently noted, the EIA has found that the domestic price of gasoline is determined more by the price of Brent, not WTI.[22] It follows that if U.S. crude oil could be marketed globally, the additional supply would tend to reduce the global price, and hence the price of petroleum products both in the United States and abroad. Every economic analysis over the past year of which I am aware has reached the same conclusion.[23]

Over the past five years, the U.S. shale revolution was the primary source for global oil supply growth, which allowed the U.S. to reduce oil imports, while offsetting production disruptions globally. Had U.S. production not increased during this period, the world price of oil would have been much higher.[24] However, as a result of the substantial decrease in 2015 budgeted capital expenditures by cash-strapped U.S. producers and the steep decline of shale oil wells, U.S. shale oil production will likely begin to flatten or decline later in 2015 and if conditions persist, continue to decline for the foreseeable future. The impact of this decline will be magnified by the probable impacts of announced cancellation, curtailment or postponement of major price-sensitive development projects around the world and the ever-increasing risk of supply

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[22] Testimony of Hon. Ernest Moniz, Secretary of the U.S. Department of Energy, before the Senate Committee on Energy and Natural Resources, February 12, 2014, http://www.energy.senate.gov/public/index.cfm/hearings-and-business-meetings?ID=5568eb52-fca5-409a-b037-c8e85cc657ec (last visited February 27, 2015).

[23] *See, e.g.*, Crude Behavior: How Lifting the Export Ban Reduces Gasoline Prices in the United States, Resources for the Future, February 2014; The Impacts of U.S. Crude Oil Exports on Domestic Crude Production, GDP, Employment, Trade, and Consumer Costs, ICF International, March 31, 2014; US Crude Oil Export Decision: Assessing the Impact of the Export Ban and Free Trade on the US Economy, IHS Energy, May 29, 2014; Changing Markets: Economic Opportunities from Lifting the U.S. Ban on Crude Oil Exports, Brookings Institution, September 2014; Changing Crude Oil Markets: Allowing Exports Could Reduce Consumer Fuel Prices, and the Size of the Strategic Reserves Should be Reexamined, United States Government Accountability Office, September 2014; The Economic and Budgetary Effects of Producing Oil and Natural Gas From Shale, Congressional Budget Office, December 2014.

[24] Thomas J. Duesterberg et al., Lifting The Crude Oil Export Ban: The Impact on U.S. Manufacturing, Aspen Institute (October 2014), p. 5.

disruptions in the Middle East and other producing areas. As a result, based on forecasted demand growth, excess global production capacity could be exhausted in as little as two years, resulting in sharply higher prices. OPEC countries clearly have determined that U.S. shale will now be the new "swing" production that must be the first to cut back in order for the world to maintain supply-demand balance. The strategy of OPEC countries is clear: to downsize U.S. production, reduce global supply and increase OPEC's market share, which will ultimately lead to higher prices. If U.S. producers are forced to downsize further due to a protracted downturn caused by the export ban, it could take the industry many years to restore production growth. Loss of critical mass in the U.S. oil and gas sector equates to loss of energy security for the United States.

Pioneer's experience with its export of processed condensate offers a small scale example of the benefits of lifting the export ban. Last year, Pioneer determined that under existing law and regulations, condensate processed through a distillation unit at its South Texas Eagle Ford Shale facilities is classified under the export regulations as a petroleum product, not crude oil. At Pioneer's request and following factual inquiry and analysis, the Commerce Department's Bureau of Industry and Security confirmed this interpretation through a standard "commodity classification" process. Since the second half of 2014, Pioneer has been exporting processed condensate to Asia and Europe at significantly improved pricing compared to condensate sales in the United States, where demand is limited. As a result, we recognize improvements to the anticipated cash flows from drilling Eagle Ford Shale wells, which translates into more activity, more spending and more jobs. These sales certainly have not diminished the vast amount of crude oil available to U.S. refiners at low prices.

As the facts in this testimony show, government policy in the form of the crude oil export ban has direct and adverse consequences for U.S. oil production, and, therefore, is a real threat to the new energy abundance that has blessed the United States during the past five years. I firmly believe that it is profoundly in the economic and national security interests of the United States to remove the ban.

I am not alone in my judgment. Virtually every economist, industry analyst, national security and foreign policy expert, and editorial board that has opined on the subject during the past 18 months has reached this same conclusion.[25] The full range of policy arguments for removing the ban are beyond the scope of my remarks today, but taken alone and together, they are compelling.[26] I particularly concur with the numerous foreign policy and national security experts who have called for the ban to be lifted as a way for the United States to enhance our national security by providing a stable, alternative source of supply for our friends and allies. It simply is indefensible to demand that these countries reduce or eliminate their crude oil purchases from Iran, for example, while refusing to sell them U.S. oil.

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[25] *E.g.*, Dr. Lawrence Summers, Keynote Address at the Brookings Institution's "Changing Markets: Economic Opportunities from Lifting the Ban on Crude Oil Exports," (September 9, 2014); Remarks by Thomas E. Donilon, Center on Global Energy Policy, School of International and Public Affairs, Columbia University, January 21, 2015; Michele Flournoy and Richard Fontaine, The Steps A Divided Government Can Take to Protect National Interests, Washington Post, January 16, 2015; Oil Export Myths: Lifting the Ban will Increase U.S. Supply and Energy Security, Wall Street Journal, January 16, 2015.

[26] *See, e.g.*, The Impacts of U.S. Crude Oil Exports on Domestic Crude Production, GDP, Employment, Trade, and Consumer Costs, ICF International, March 31, 2014; US Crude Oil Export Decision: Assessing the Impact of the Export Ban and Free Trade on the US Economy, IHS Energy, May 29, 2014; Changing Markets: Economic Opportunities from Lifting the U.S. Ban on Crude Oil Exports, Brookings Institution, September 2014; Navigating The U.S. Oil Export Debate, Columbia University Center on Global Energy Policy, January 2015; Time to Lift the Ban on Crude Oil Exports, The Heritage Foundation, May 15, 2014; The Case for Allowing Crude Oil Exports, Policy Innovation Memorandum No. 34, Council on Foreign Relations, July 2013.

Let me summarize, from my perspective, the clear benefits of removing the ban on exports of U.S.-produced crude oil. This action would result in:

- Lower gasoline prices throughout the United States
- More high-paying American jobs
- Lower world oil prices
- Increased world oil supplies
- Decreased volatility of world oil prices
- Enhancing our national security and strengthening our allies
- Lower net crude oil imports into the United States
- Greater investment in crude oil production in the United States rather than abroad

I know of no real dispute about these potential benefits, nor of any credible argument that the U.S. economy or energy security require that the ban stay in place.

Conclusion

America's independent oil and gas producers are second to none in their innovation and efficiency. On equal terms of engagement, we can compete successfully with all foreign producers. But the terms are not equal: Government policy is effectively tying one hand behind our backs.

Across the political and policy spectrum, there is near consensus among those who have looked at the issue: U.S. restrictions on the export of crude oil are a self-defeating anachronism that harms consumers, the economy, and vital U.S. national security interests. There is no defensible

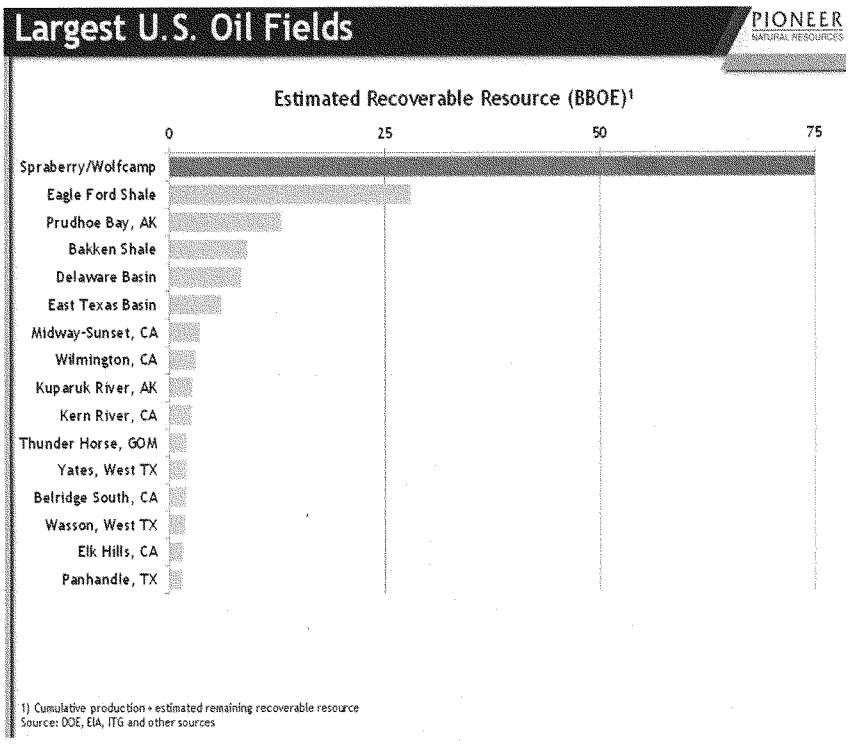
reason to maintain the ban. As former Secretary of the Treasury, and Chair of the National Economic Council, Dr. Lawrence Summers stated:

> "I believe that the question of whether the United States should have a substantially more permissive policy with respect to the export of crude oil and with respect to the export of natural gas is easy. The answer is affirmative. The merits are as clear as the merits with respect to any significant public policy issue that I have ever encountered."[27]

Removing the ban is an action on which members of both political parties can and should readily agree. I urge the members of this Committee to take the lead in forging that path.

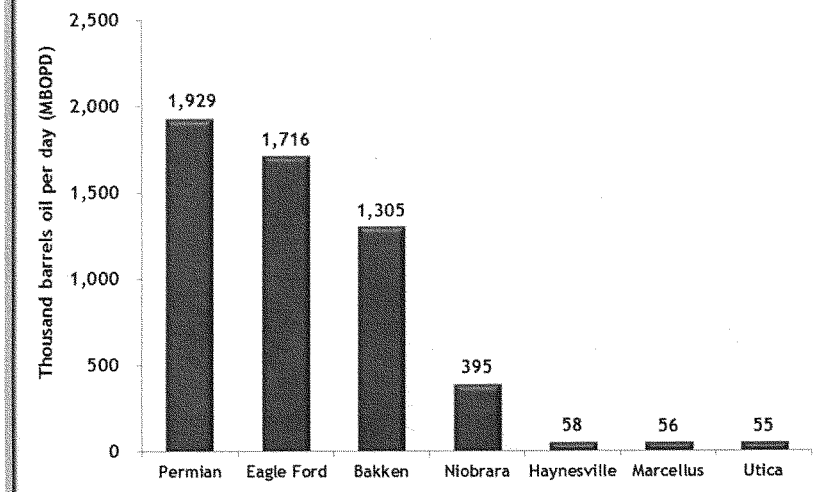
[27] Dr. Lawrence Summers, Keynote Address at the Brookings Institution's "Changing Markets: Economic Opportunities from Lifting the Ban on Crude Oil Exports," (September 9, 2014).

Appendix A


Largest U.S. Oil Fields
PIONEER
NATURAL RESOURCES
Estimated Recoverable Resource (BBOE)[1]
0
25
50
75
Spraberry/Wolfcamp
Eagle Ford Shale
Prudhoe Bay, AK
Bakken Shale
Delaware Basin
East Texas Basin
Midway-Sunset, CA
Wilmington, CA
Kuparuk River, AK
Kern River, CA
Thunder Horse, GOM
Yates, West TX
Belridge South, CA
Wasson, West TX
Elk Hills, CA
Panhandle, TX
1) Cumulative production + estimated remaining recoverable resource
Source: DOE, EIA, ITG and other sources

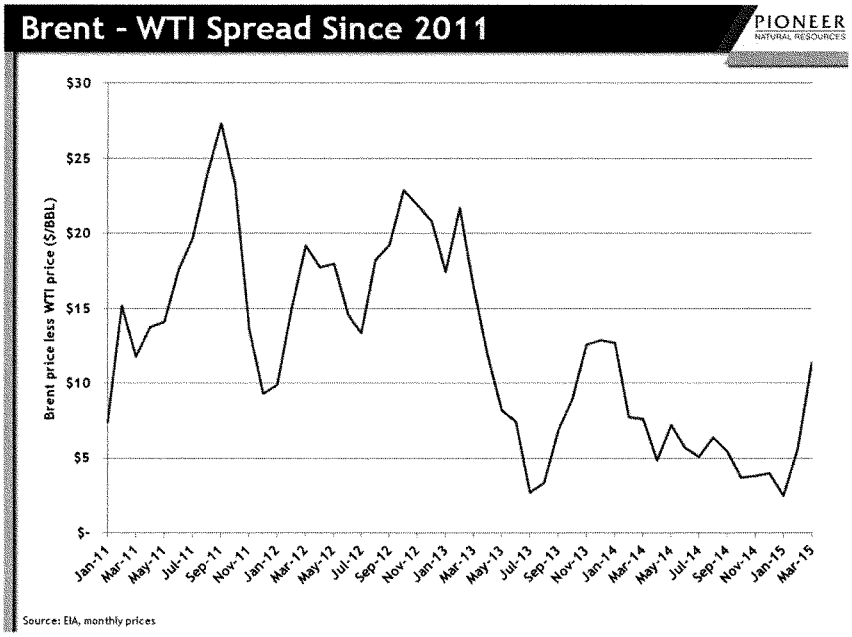
U.S. Light Tight Oil Production: Selected Regions

PIONEER NATURAL RESOURCES

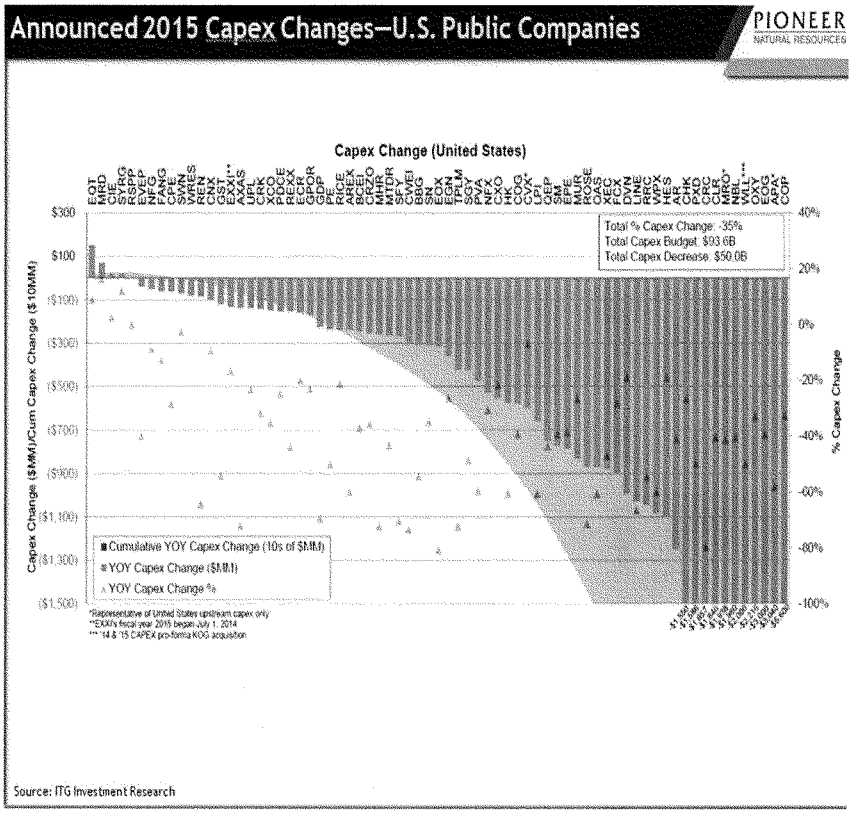


Source: EIA, February 2015 Drilling Productivity Report

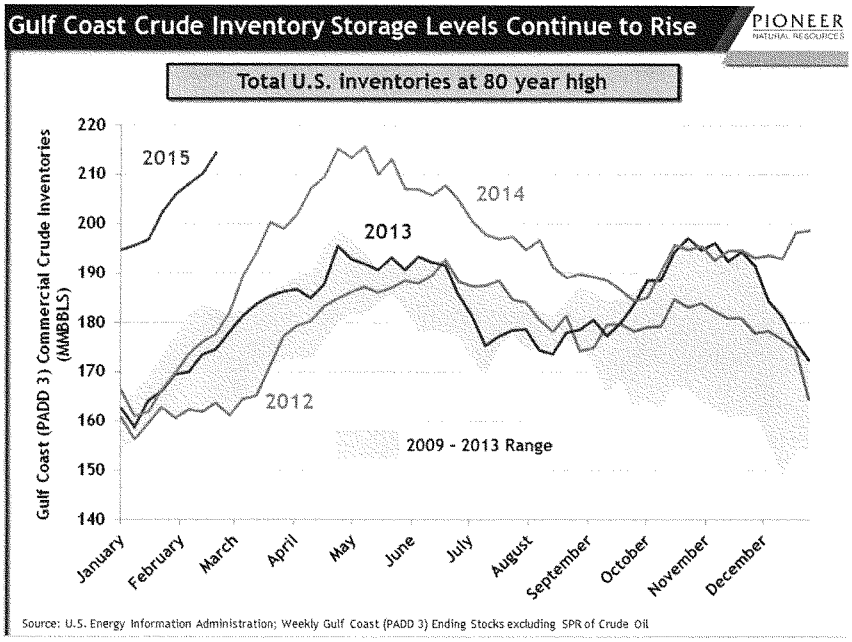
Appendix B


Brent - WTI Spread Since 2011
PIONEER
NATURAL RESOURCES
Brent price less WTI price ($/BBL)
$30
$25
$20
$15
$10
$5
$-
Jan-11
Mar-11
May-11
Jul-11
Sep-11
Nov-11
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
May-13
Jul-13
Sep-13
Nov-13
Jan-14
Mar-14
May-14
Jul-14
Sep-14
Nov-14
Jan-15
Mar-15
Source: EIA, monthly prices

Appendix C

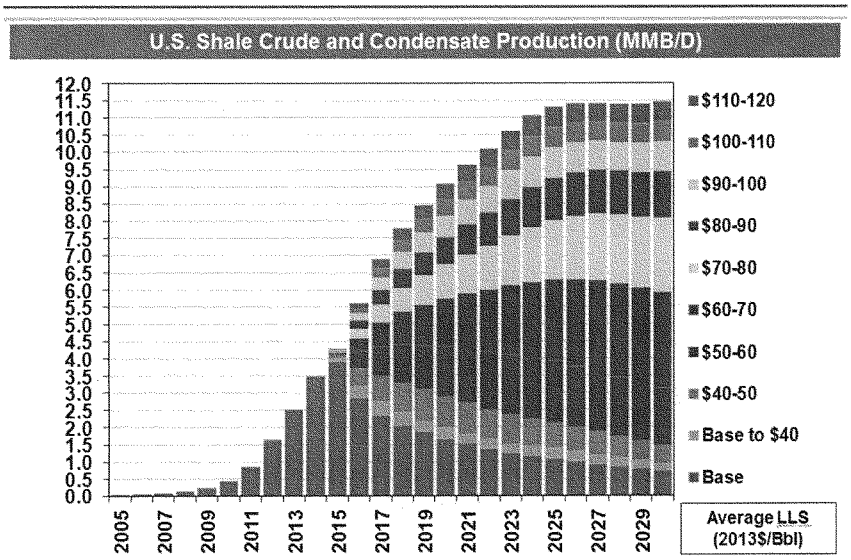

Announced 2015 Capex Changes–U.S. Public Companies
PIONEER
NATURAL RESOURCES
Capex Change (United States)
Total % Capex Change: -35%
Total Capex Budget: $93.6B
Total Capex Decrease: $50.0B
Capex Change ($MM)/Cum Capex Change ($10MM)
% Capex Change
Cumulative YOY Capex Change (10s of $MM)
YOY Capex Change ($MM)
YOY Capex Change %
*Representative of United States upstream capex only
**EXXI's fiscal year 2015 began July 1, 2014
***'14 & '15 CAPEX pro-forma KOG acquisition
Source: ITG Investment Research

Appendix D


Gulf Coast Crude Inventory Storage Levels Continue to Rise
PIONEER
NATURAL RESOURCES
Total U.S. inventories at 80 year high
Gulf Coast (PADD 3) Commercial Crude Inventories (MMBBLS)
220
210
200
190
180
170
160
150
140
2015
2014
2013
2012
2009 - 2013 Range
January
February
March
April
May
June
July
August
September
October
November
December
Source: U.S. Energy Information Administration; Weekly Gulf Coast (PADD 3) Ending Stocks excluding SPR of Crude Oil

Appendix E

U.S. Shale Oil Forecast Sensitivity to Oil Price



Mr. WHITFIELD. Thank you, Mr. Sheffield.

At this time, I would like to introduce Mr. Charles Drevna, who is the president of the American Fuel and Petrochemical Manufacturers.

Welcome, and you are recognized for 5 minutes.

STATEMENT OF CHARLES T. DREVNA

Mr. DREVNA. Chairman Whitfield, Mr. McNerney, and members of committee, thanks for the opportunity to provide AFPM's view on trends in today's energy markets.

I want to leave you with a couple of key messages today. First, I think we can all agree it is incredible that the U.S. is at a point where we are able to have a real conversation about lifting the crude export ban. Seems like just yesterday when the committee was hearing testimony from a trove of peak oil alarmists, and I was cautioning against market-interfering and counterproductive initiatives, including the RFS.

Now, 7 years later, over the same time, we are producing more than 70 percent of our oil and it is projected to go higher. Imports are down, 66 percent to about 45 percent. But when you take out Canada and Mexico from that equation, we are down to around 20 percent of imports. This is nothing but great news for our economy and the consumers, with the noted exception that 7 years later the assumptions used to promote the RFS have been proven invalid and the RFS continues to inhibit free markets and consumer choice.

Takes me to my second key message. The distribution and refining systems are undergoing significant and rapid changes. These changes are happening for the most part because new production is not connected to the refinery delivery infrastructure that existed prior to the shale oil boom. As a result, upstream producers, midstream distributors, and refiners are rapidly adapting existing infrastructure while investing in new infrastructure, whether via pipeline or rail.

Changing market dynamics have also impacted the economics of many refineries, including those along the east coast that were literally days away from closure. The ability of these refiners to utilize Bakken crude is a great example of this revitalized energy industry.

The refining industry is also undergoing more significant change. The U.S. is home to the largest and most advanced refining complex in the world. That is a fact that should give all concerned with economic growth and national security an enormous amount of comfort. We produce about 20 percent of the world's fuel and since 2009 we have been a net exporter of petroleum products. With new domestic supplies coming on, the industry is undergoing even more changes to accommodate this vital resource.

Leads me to my third message. You may have been led to erroneously believe that refiners are unable to process the light crude being produced. I am here today to categorically state that the refining industry is well equipped to handle all the increased production expected to come online in the coming years. Refiners already have significantly reduced imports, increased utilization rates,

changed their crude mix, and invested in additional refining modifications to utilize more light crude.

For example, Turner Mason estimates that if the economics continue to be favorable, an additional 900,000 barrels per day of capacity is possible with existing capacity and the investments already planned. This would ensure refiners have the capacity to use all new crude for at least the next several years.

Of course, an adverse regulatory regime and changing market dynamics could render this bright future moot. Whether it is market-distorting legislation and regulations, the manufacturing renaissance-destroying ozone NAAQS, or others in a litany of uneconomic and conflicting regulations, U.S. refiners continually face uncertainty in the way global competition doesn't. As gasoline demand continues to drop in the coming decades, refiners will be increasingly dependent on export markets, which means competing penny by penny, gallon by gallon with global competitors who are subject to a very separate set of rules.

I mention all this to set up my final point, which is that after AFPM believes that the right energy policy for America is based in free markets, which lower cost and increased benefits to consumers. As a result, AFPM does not necessarily oppose lifting the crude export ban. However, AFPM strong believes that a holistic energy policy that addresses other anti-free market policies at the same time is essential. Going back to what Chairman Upton stated, we have to get this thing right in a holistic approach, not do it piecemeal in a vacuum. We have done that for too long in this country on energy policy, such as it is.

For instance, with the restrictive Jones Act shipping requirement in place and the world without the crude export ban, it would be cheaper to ship a barrel of crude from Houston to a European refiner than it would be to ship it to the Monroe facility. This makes zero sense.

As Congress debates lifting the ban, I urge you not to make the mistakes of the past by narrowly focusing on one issue and leaving it in a wake of unintended consequences in the market. We have time to gather the facts and develop a more holistic approach.

Thank you. I would be happy to answer any of your questions.

[The prepared statement of Mr. Drevna follows:]



WRITTEN STATEMENT OF

AMERICAN FUEL & PETROCHEMICAL MANUFACTURERS

AS SUBMITTED TO THE

SUBCOMMITTEE ON ENERGY AND POWER

Committee on Energy and Commerce
United States House of Representatives

on

"21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact our Economy and Energy Security"

March 3, 2015

AFPM Testimony Summary
Hearing before the Subcommittee on Energy and Power: 21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact our Economy and Energy Security
March 3, 2015

The United States is in the midst of an energy boom that few predicted even a few years ago. As we now know; however, innovation and entrepreneurship in the energy sector have reversed that trend and the mere fact that Congress is holding this hearing is evidence that previous paradigms are no longer relevant. Led by new technology, U.S. crude oil production increased an incredible 72 percent increase since 2008 and is projected to increase further in the coming years. Of course, these projections are also based on assumptions about future conditions. Issues such as prices, geology, regulatory uncertainty, and technology uncertainties will all impact future production.

The energy renaissance is spurring significant changes in U.S. distribution and refining. Much of the new production is not connected to the refinery delivery infrastructure that existed prior to this tight oil boom. In many cases, required movements represent a reversal of historical flow patterns. As a result, upstream producers, midstream distributors, and refiners are rapidly adapting existing infrastructure while investing in new infrastructure. The rapidly shifting distribution infrastructure has also changed the competitive positions of our refineries.

The U.S. is also home to the world's largest and most advanced refining industry. Our members are the world's leader in refinery throughput and account for more than 20 percent of global fuel manufacturing. The boon in U.S. crude oil production has been a significant factor in keeping U.S. refineries competitive in an increasingly competitive global market.

AFPM is aware there are ongoing questions about whether U.S. refiners are capable of handling new U.S. production. The questions are driven by a key misconception that the existing refining configurations are ill-suited to absorb more light sweet crude. In reality, however, the refining industry is dynamic and is constantly shifting crude slates to maximize efficiency and to meet consumer demand. The facts show that U.S. refiners have plenty of room to accommodate new, domestic supplies of light crude oil, with room to spare.

Refiners have already started to adapt to increased domestic production by reducing imports, increasing utilization, changing the crude mix, and investing in additional refinery changes. The U.S. has reduced crude oil imports from outside North America from 46 percent in 2007 to 23 percent in 2014. Given favorable economics, refineries along the Gulf Coast will continue to back out imports further and invest in equipment to process more light-ends. In fact, this investment is already occurring. However, changing dynamics in domestic and global markets for crude oil and petroleum products, combined with the regulatory environment, create an increasingly uncertain future for many U.S. refineries.

The enormous growth in U.S. crude oil production has naturally led to questions about whether it is time for the U.S. to readdress the crude oil export ban. AFPM believes that the free market should drive all energy policy and does not oppose lifting the ban. However, the refining industry also believes that a more holistic energy strategy is needed to ensure all barriers to free and functioning markets are addressed. Enacting this type of comprehensive energy policy will avoid the mistakes of the past, which have bred a balkanized and conflicting set of priorities and policies that ultimately disadvantage U.S. consumers.

The American Fuel & Petrochemical Manufacturers (AFPM) is a national trade association representing more than 400 companies that encompass virtually all U.S. refining and petrochemical manufacturing capacity. AFPM appreciates the opportunity to share its view on the impacts of the rapidly changing energy markets on the U.S. economy, jobs, and consumers. AFPM's testimony will briefly discuss the state of the global energy markets, regulatory environment, and the refining industry's view on the potential impacts of policy changes.

Changing Energy Picture

Production

The United States is in the midst of an energy boom that few predicted even a few years ago. For decades, U.S. crude production declined and the national energy conversation was too often characterized by fears of scarcity. In reaction to the 1973 OPEC oil embargo, the United States enacted the Energy and Policy Conservation Act of 1975 (EPCA). As originally enacted, EPCA prohibited the export of both crude oil and petroleum products. Through a series of Executive Orders in the 1980's and 1990's, the ban on petroleum products exports and exports to Canada were both eased or lifted, but there was little reason to have a conversation about exporting U.S. crude that most thought was on the permanent decline. More recently, the 2005 Energy Policy Act and the 2007 Energy Independence and Security Act both reflected the scarcity mindset and gave rise to some of the most significant challenges refiners face today.

As we now know; however, innovation and entrepreneurship in the energy sector have reversed that trend, and the mere fact that Congress is holding this hearing is evidence that previous paradigms are no longer relevant. Led by new technology, U.S. crude oil production, particularly in North Dakota and Texas, averaged more than 8.6 million barrels per day (mbpd)

in 2014, an incredible 72 percent increase since production bottomed out at 5 mbpd in 2008. EIA projects that an additional 900,000 bpd of domestic production could come online by 2016. Of course, these projections are also based on assumptions about future conditions. Issues such as prices, geology, regulatory uncertainty, transportation logistics, and technology uncertainties will all impact future production.

When one broadens the lens and considers North America energy production, the picture becomes even brighter. In addition to new production in the U.S., Canada is expected to increase production by 500,000 bpd by 2016 for total new production of 4.2 mbpd. The types of crude are also different, with new Canadian production generally classified as heavy and the vast majority of new U.S. production classified as light. Diversity in crude slates can help ensure that refiners can access different properties to meet demand for different fuel mixes and other products.

Distribution

The energy renaissance is spurring significant changes in U.S. distribution. First and foremost, much of the new production is not connected to the refinery delivery infrastructure that existed prior to this tight oil boom. In many cases, new crude movements represent a reversal of historical flow patterns. As a result, upstream producers, midstream distributors, and refiners are rapidly adapting existing infrastructure while investing in new infrastructure. For example, some pipeline capacity is being adapted by converting natural gas pipelines to crude pipelines. Other pipelines are in planning or construction phases, including the southern leg of Keystone.

However, because our pipeline infrastructure is primarily developed from south to north, moving new supplies east and west has presented a challenge. The industry has responded with significant new investments in rail offloading facilities and terminals at coastal refineries, as well as new and improved tank cars to ensure crude oil can arrive to its destination safely and efficiently. In fact, AFPM members have invested more than $4 billion on new and safer tank cars in just the past few years. As pipeline infrastructure continues to come online, some such as the North Dakota Pipeline Authority expect rail shipments from the Bakken to level off as pipelines and new small refineries are built in the Williston Basin.

The rapidly shifting distribution infrastructure has also changed the competitive positions of our refineries. For instance, historically Gulf Coast refiners ran more imported crude oil and mid-western refiners imported crude by pipeline from the Gulf. Now, mid-continent refiners are gaining access to reliable and affordable Canadian crude and close-by U.S. crude oil. Similarly, several east coast refiners are now sourcing a much higher percentage of their crude oil domestically rather than continuing the same levels of crude imports. Consider that several refineries in and around Philadelphia, PA nearly closed their doors permanently in 2012. However, those refineries were able to start acquiring U.S.-produced crude from the Bakken region and are still operating today, supporting thousands of jobs in Delaware Valley.

Refining

In addition to climbing the list of major crude oil producers, the U.S. is also home to the world's largest and most advanced refining industry. In total, our members produce more than 15 mbpd of finished petroleum products—primarily gasoline and diesel—making the U.S. the world's leader in refinery throughput and accounting for more than 20 percent of global fuel

manufacturing. Since 2009, U.S. refineries have been able to run at very high utilization rates to meet the needs of the domestic market, while also becoming a net exporter of finished petroleum products, led by diesel exports to Europe and South America. The boon in U.S. crude oil production has been a significant factor in keeping U.S. refineries competitive in an increasingly competitive global market.

AFPM is aware there are ongoing questions about whether U.S. refiners are even capable of handling new U.S. production. The questions are driven by a key misconception that the existing refining configurations are ill-suited to absorb more light sweet crude, which is the primary type of crude being produced from tight formations in the Bakken and Eagle Ford. In reality, however, U.S. refiners have plenty of room to accommodate new, domestic supplies of light crude oil, with additional capacity to further grow U.S. production. The refining industry is constantly shifting crude slates to maximize efficiency and to meet consumer demand.

During the 1980s many refineries—particularly along the Gulf Coast—made investments in order to process heavy, high-sulfur crudes from growing production in nearby areas such as Mexico and Venezuela. Similarly, albeit more recently, some mid-continent refiners have added additional capacity to handle heavier oils from Canada. However, these investments do not preclude those refiners from processing additional light crude oil. Refiners typically run different types of crude oil with different qualities through their processing units. In fact, refiners have already started to adapt to increased domestic production by reducing imports, increasing utilization, changing the crude mix, and investing in additional refinery changes.

First, the domestic crude boom has helped reduce U.S. crude oil imports from 66 percent of U.S. refinery inputs in 2007 to about 45 percent of refinery inputs in 2014. When one removes Canadian and Mexican crude imports, the U.S. has reduced crude oil imports from outside North America from 46 percent in 2007 to 23 percent in 2014. Given favorable economics, refineries along the Gulf Coast will continue to reduce imports and invest in equipment to process more light-ends. In fact, this investment is already occurring. Turner Mason estimates that with limited additional investments, the U.S. has 400 thousand bpd in additional capacity to process domestic production. Further, Turner Mason estimates that if announced investments are included and favorable economics continue, an additional 500,000 bpd of additional refining capacity is possible for a total of 900,000 bpd. This capacity is more than enough to handle the projected 720,000 bpd of lower 48 domestic crude oil production growth that the Energy Information Administration (EIA) anticipates between now and 2016. Over the long-term, if the high-resource cases materialize and the U.S. continues to increase production, a glut of light, high-naphtha crude could occur. However, the precise nature of future production is highly uncertain. One needs to look no further back than the government and industry projections of production in the last decade to show that what we predict today may not reflect reality.

As an example of this uncertainty, it is worth noting one of the more significant shifts in the U.S. energy market is the decline in the U.S. demand for gasoline. In particular, the Energy Information Administration's 2014 projection for gasoline demand in 2030 is almost 43 percent lower than what the agency foresaw in its 2007 Annual Energy Outlook. U.S. demand for distillates such as diesel and home heating oil is slated to rise, but distillate represents a much

lower share of U.S. fuel consumption than gasoline. The decline in gasoline demand is due to a number of factors, including increased vehicle efficiency and changes in consumer behavior.

As a result, U.S. refineries are increasingly utilizing international markets. For example, U.S. export of distillate to Western Europe and Latin America grew by more than 500 percent between 2000 and 2014. Refined product exports allow U.S. refineries to add value to crude oil and maintain the infrastructure that ensures the U.S. has the ability to produce as much product as it consumes. However, international markets are not stagnant and are quickly adapting. Other nations have been expanding their refining capacity and compete with U.S. for global market share. For instance, Saudi Arabia expanded its refining capacity nearly 19 percent between 2012 and 2013. Likewise, Brazil and China have increased refining capacity by 4.6 and 5.6 percent respectively. Much of this investment is being driven by growing demand in non-OECD countries, which account for nearly all the new growth in petroleum product demand. The U.S. is well-positioned to capture international market share provided U.S. policy is structured to allow refineries to effectively compete globally. Unfortunately, U.S. refineries are also the target of increasingly onerous and conflicting regulations.

Regulatory Challenges

The companies operating refineries in the U.S. compete intensely with each other and with global competitors for every gallon sold. It is widely known that consumers make decisions on where to buy gasoline based on as little as one penny per gallon difference. This competition at the corner gas station reverberates up the supply chain. Changing dynamics in the domestic and global markets for crude oil and petroleum products, combined with the regulatory environment, create an increasingly uncertain future for many U.S. refineries.

Leading the list is the Renewable Fuel Standard (RFS), which at its core is the federal government telling consumers that they must use certain types of biofuels in their vehicles. The ethanol volumes mandated by the RFS have risen to the point where they are no longer compatible with existing cars and infrastructure—triggering significant volatility in the market for compliance credits. Those credits, known as Renewable Identification Numbers (RINs) – in the case of corn ethanol these are called D6 RINs - peaked at $1.46 per gallon in 2013 and averaged around $0.50 in 2014. Last week RINs were trading at around $0.72 per gallon. The RFS can limit the supply of gasoline and diesel to the United States based on the amount of renewable fuels consumed in U.S. transportation fuel. In particular, obligated parties can only supply as much gasoline and diesel fuel as they have RINs to meet the RFS obligation that such fuel incurs.

In addition to industry-specific regulations like the RFS, the refining industry also faces government mandated environmental requirements that often conflict with one another. For instance, the proposed ozone NAAQS standard will drive large areas of the country into non-attainment, which will essentially halt any new construction projects and make it harder for refineries to invest in upgrades. A NERA report released just last week estimates that the low end of the proposed ozone NAAQS standard will increase industrial power costs, reduce refining sector output by 0.8 percent, and cause an average annual loss of 1.4 million job equivalents. Last year, EPA finalized its Tier 3 fuel regulations to reduce the sulfur content in fuel, which will require expensive new equipment that will consume more energy and increase greenhouse gas emissions from refineries. Taken together, the U.S. regulatory environment is virtually

unparalleled compared to global competitors, creating a challenge for trade-exposed industries such as refining.

Finally, in addition to reduced demand, increased competition, and environmental regulations, U.S. refiners seeking to ship crude oil between U.S. ports must comply with the Jones Act. The Jones Act, enacted in the wake of World War I, requires shipments moved between U.S. ports to use vessels that are U.S. built and flagged, U.S. majority-owned, and crewed by at least 75 percent U.S. citizens. As a result, it is significantly more expensive to use a Jones Act vessel than it is to ship internationally. In the context of lifting the crude oil export ban, it would be significantly cheaper to ship a barrel of crude from the U.S. gulf coast to Europe, than it would be to simply ship the barrel of crude to an east coast refiner solely because of the Jones Act requirement. European refiners export gasoline to the northeast, competing directly with U.S. refiners in that region. Lifting the export ban without addressing this dynamic would put U.S. refiners at a competitive disadvantage to their European counterparts and seriously hamper the ability of these U.S. manufacturers to compete globally.

Conclusion and Crude Oil Exports in Context

The enormous growth in U.S. crude oil production has naturally led to questions about whether it is time for the U.S. to readdress portions of EPCA, and in particular the crude oil export ban. AFPM believes that the free market should drive all energy policy, and does not oppose lifting the ban. However, the refining industry also believes that a more holistic energy strategy is needed to ensure all barriers to free and functioning markets are addressed. In particular, allowing the export of crude oil without addressing other policies, including the RFS

and the Jones Act, will create disparate regional impacts and could disadvantage some domestic refiners against global competition.

Policymakers should be aware of these issues, seek to mitigate those possibilities, and endeavor to understand the full, fact-based picture as they make decisions of such major import. For example, there is no evidence that the U.S. is currently on the verge of hitting a "refining wall" where it risks shutting in U.S. crude oil production. The refining industry is also investing billions of dollars to handle new domestic production.

Again, AFPM does not oppose lifting the crude oil export ban, but urges Congress to base decisions on the facts while readdressing a suite of anti-free market policies contemporaneously. Enacting this type of comprehensive energy policy will avoid the mistakes of the past, which have bred a balkanized and conflicting set of priorities and policies that ultimately disadvantage U.S. consumers.

As always, AFPM looks forward to working with the Congress to develop an approach to energy policy that will ensure that domestic refiners are able to compete in the global marketplace and minimize economic disruptions.

Mr. WHITFIELD. Thank you, Mr. Drevna.

Our next witness is John Kingston, who is the president of McGraw Hill Financial Global Institute.

Great to see you again, and you are recognized for 5 minutes.

STATEMENT OF JOHN KINGSTON

Mr. KINGSTON. Thank you. Chairman Whitfield, Congressman McNerney, and members of the subcommittee, good afternoon and thank you for inviting me to share the views of the McGraw Hill Financial Global Institute. I am the newly appointed president of the institute.

We are McGraw Hill Financial's thought leadership platform. MHFI provides independent benchmarks, credit ratings, portfolio and enterprise risk solutions and analytics, and is home to some of the most iconic brands in U.S. finance, economics, and business, including Standard & Poor's Rating Service, S&P Capital IQ, S&P Dow Jones Indices, Platts, and J.D. Power.

Prior to being appointed president of the institute, I spent more than 29 years with Platts, the MHFI brand that provides the energy industry with independent news, analysis, and benchmark price assessments that are used as the basis for billions in energy commerce throughout the globe. I hope to provide you with helpful insight from all of our brands, as well as additional unique insights from the institute.

Over the last 30 years, oil prices have seen several booms and busts. However, the price slide of recent months is like no other. In 1998–1999 the boom-bust cycle could be attributed mostly to the Asian financial crisis and the collapse in demand from that region. The price collapse of 1985–1986 bears more resemblance to the current cycle. Key producers like Saudi Arabia were determined to recapture market share against a backdrop of some increases in supply and some cuts in demand. Despite the similarities, the mid-1980s did not feature the enormous North American-generated increases in supply that we are witnessing today.

While the Saudis and their Gulf allies are determined to hang on to market share this time, this is not the immediate reason for the price to climb. Instead, it is the growing imbalance between supply and demand that finally combined this year to send the market plunging. It would have happened earlier had there not been so much disruption of international supply lines due to various political reasons.

Once Libya came back toward 1 million barrel per day in June and July, that tenuous balance could hold no more. It is interesting to note that since that surge out of Libya, that country's output has fallen back significantly, yet the price remains at depressed levels. So while there are global factors contributing to the drop in oil prices, none compare to the scale of what the U.S. shale revolution has done in just a few short years.

It is important to note that the amount of capacity in the world that is on the sidelines because of political issues is enormous. One recent estimate put it at about 4.5 million barrels a day. It starts with small countries like South Sudan and Syria, and it rises up to averages close to a million barrels a day in Iran due to sanctions and Libya due to civil war. And this does not even take into ac-

count where political mismanagement of a country's industry can and sometimes has given it a productive capacity far less than what it should be. Venezuela is obviously in this category. If there was any sort of significant move toward peace in these areas, since the cost of production in most of those regions are all significantly less than the U.S., oil prices would come under even greater pressure.

The price slide has raised repeated questions just about how cost competitive the U.S. industry can be in the lower price environment and also raises the question of the competitiveness of U.S. crude exports should they be allowed. It is safe to assume that some, if not all refiners around the world probably have some models about how U.S. crudes would perform in their facilities if exports were allowed.

The rise in U.S. crude exports to Canada, mostly via rail, indicates that Canadian refiners at least are finding U.S. crudes to be attractive. If they weren't, those export numbers would be falling, not rising.

So as to how U.S. crudes will do battle in an international market if export bans were lifted, all we can say is we will see. And I have some numbers to talk about later.

I will now turn my focus to the impact the current pricing environment is having on U.S. producers. Based on earning calls, MHFI's subsidiary S&P Ratings is seeing a 35 percent CAPEX expenditure cut this year. Those numbers go up to 50 percent in some cases, down to 10 percent for the major producers. And many are running capital expenditure budgets that just hold on to maintenance levels.

This year S&P does not expect the price impact on companies to translate to significant debt defaults, although reducing CAPEX certainly affects the employment market. The oil and gas sector has been aggressively adding jobs during the economic recovery. During that period job growth for the oil and gas industry was 39 percent, as opposed to the 8 percent growth in the U.S. job market overall. However, the industry showed job losses of 2,000 in January, and regions that are heavily reliant on the energy sector could see a greater negative impact on employment.

While the regional impact of oil prices will differ, in the near-term low oil prices are a boon, though, for the overall economy. According to S&P's U.S. economist, savings could tally up to $87.6 billion for the national economy. That is $1,000 for the average household in 2015 alone.

Out in the State capitals, operating budgets appear safe in the short term. In the long term, however, given a long-term secular slide in oil prices, States will need to react by altering their fiscal management. No two States are alike, even ones with similarly sized oil-producing industries. Therefore, many questions need to be answered, such as what oil price and production level did the State assume in their budget.

I am glad to provide more information on any of these issues discussed here today or any others offered by MHFI in the question-and-answer session or any time in the future. Thank you.

[The prepared statement of Mr. Kingston follows:]

Summary
Testimony of John Kingston
President, McGraw Hill Financial Institute
House of Representatives Energy & Commerce Committee Subcommittee on Energy & Power
"21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact our Economy and Energy Security"
March 3, 2015

Supply and Demand Explains Recent Drop In Oil Prices

- Unlike past boom-bust cycles, the current slide in oil prices is mainly attributable to the growing imbalance between supply and demand. One recent estimate put the amount of capacity on the sidelines is 4.5 million barrels per day. The natural gas boom has been an important factor in price drops in the U.S. as it has made natural gas prices more competitive with other forms of energy.

Impact Of Oil Prices On The Industry

- S&P Ratings Services (S&P) is seeing, on average, a 35 percent reduction in capital expenditures (CAPEX) from exploration and production (E&P) companies. Halfway through the first quarter of 2015, S&P Ratings Services has downgraded 26 oil and gas companies—the largest number of oil and gas downgrades over a single quarter since 1999, when 28 were downgraded. A majority of these companies are based in the U.S. Without a meaningful pricing rebound in 2016, we could see increasing issuer defaults.

Impact On Jobs And The Economy

- It's important to note that the oil and gas sector represents 200,000 U.S. jobs, or 0.14 percent of the 140 million jobs in the U.S. economy. That being said,

jobs losses in the oil and gas extraction industry reached 2,000 for the month of January. Regions that are heavily reliant on the energy sector could see a negative impact on employment and local economies.

- In the near term, low oil prices are a boon for the U.S. economy, according to a recent report by S&P U.S. Chief Economist Beth Ann Bovino and her colleague, U.S. economist Satyam Panday. A $50 drop in the price of oil translates to a $240 million decline in oil imports every day, S&P estimates. This results in savings of about $87.6 billion of savings annually.
- Gasoline prices have fallen $1 per gallon. Considering that the typical American household buys more than 1,000 gallons of gasoline each year that means each household has an extra $1,000 to spend. If all of this were spent the "gas dividend" would be up to two-thirds of a percentage point of GDP.

Testimony of John Kingston

President, McGraw Hill Financial Global Institute

Before the

U.S. House of Representatives

Energy & Commerce Committee

Subcommittee on Energy & Power

Hearing on: 21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Affect our Economy and Energy Security

March 3, 2015

Chairman Whitfield, Ranking Member Rush, and members of the Subcommittee, good afternoon and thank you for inviting me to share the views of the McGraw Hill Financial Global Institute (The Institute).

My name is John Kingston, and I am the newly-appointed President of The Institute, as well as the company's Director of Market Insights. The Institute is McGraw Hill Financial's (MHFI) thought-leadership platform.

MHFI provides independent benchmarks, credit ratings, portfolio and enterprise risk solutions, and analytics, and is home to some of the most iconic brands in U.S. finance, economics, and business, including Standard & Poor's Ratings Services, S&P Capital IQ, S&P Dow Jones Indices, Platts, and J.D. Power.

From the Industrial Revolution to the Digital Revolution and beyond, our core values – fairness, integrity, and transparency – have remained constant. This commitment ensures we best help individuals, markets, and countries grow and prosper by meeting critical needs for data and insight.

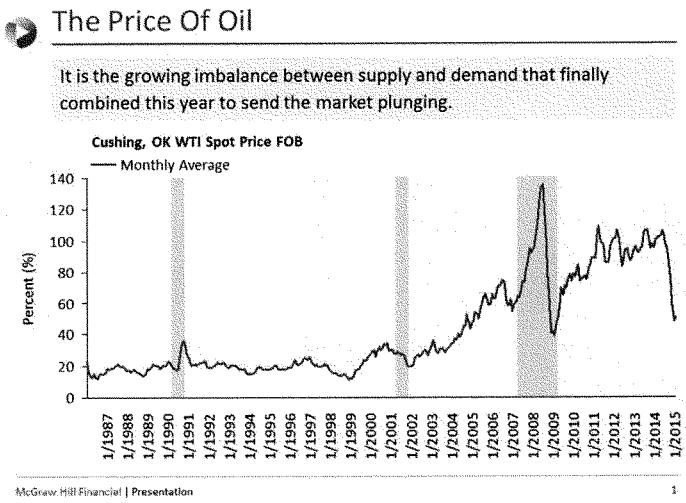
Prior to being appointed President of the Institute, I spent more than 29 years with Platts, the MHFI brand that provides the energy industry with independent news, analysis, and

benchmark price assessments that are used as the basis for billions of dollars in energy commerce throughout the globe.

Today, I hope to provide you with helpful insights from all of our brands, as well as additional unique insights from my role as Director of The Institute. Thank you for having me.

Over the last 30 years, oil prices have seen several booms and busts. However, the price slide of recent months is like no other. In 1998-99 the boom bust cycle could be attributed mostly to the Asian financial crisis and a collapse in demand from that region. The price collapse of 1985-86 bears more resemblance to the current cycle. Key producers like Saudi Arabia were determined to recapture market share against a backdrop of some increases in supply and some cuts in demand. Despite the similarities, the mid 80s did not feature the enormous North American-generated increases in supply and slide in prices we are witnessing today. I'll discuss that more shortly.

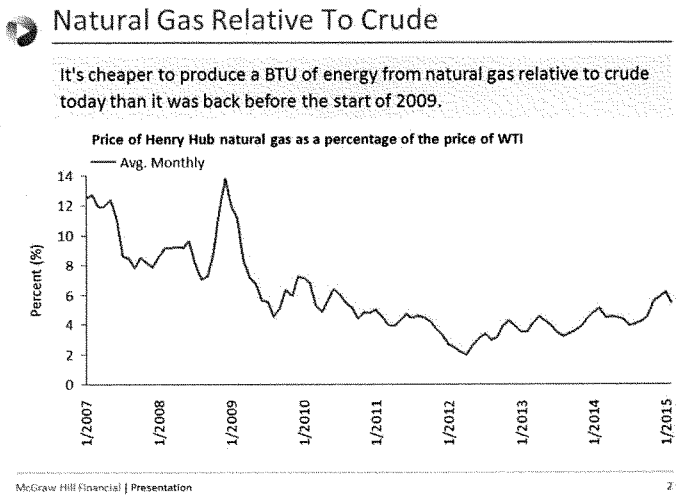
While the Saudis and their Gulf allies are determined to hang on to market share this time, this is not the immediate reason for the price decline. Instead, it is the growing imbalance between supply and demand that finally combined this year to send the market plunging (Exhibit 1). It would have happened earlier had there not been so much disruption of international supply lines due to various political reasons. Once Libya came back toward 1 million barrels per day (b/d) in June and July, that tenuous balance could hold no more. It's interesting to note that since the surge out of Libya that country's output has fallen back significantly, yet the price remains at depressed levels.



The amount of capacity that is on the sidelines because of political issues is staggering. One recent estimate put it at 4.5 million b/d. It starts with small countries like the South Sudan and Syria, and rises up to outages close to 1 million b/d in Iran (due to sanctions) and Libya (due to civil war). And this does not even take into account that political mismanagement of a country's industry can and sometimes has given it a productive capacity far less than what it should be (Venezuela is in this category). If there was any sort of significant move toward quiet in these areas, since the costs of production in most of those regions are all significantly less than in the U.S., oil prices would come under even greater pressure.[i]

That said, while there are global factors contributing to the drop in oil prices, none compare to the scale of what the U.S. shale revolution has done in just a few short years. About this time six years ago – during the financial crisis and following the collapse of oil prices from their mid-2008 run at $150 per barrel – the price of crude began a slow rise that continued for five years. But it was not concurrent with a rise in U.S. natural gas prices. The price of U.S.

oil and natural gas has never had a 1:1 correlation, but they historically tended to trend together. Lately they have not (Exhibit 2).

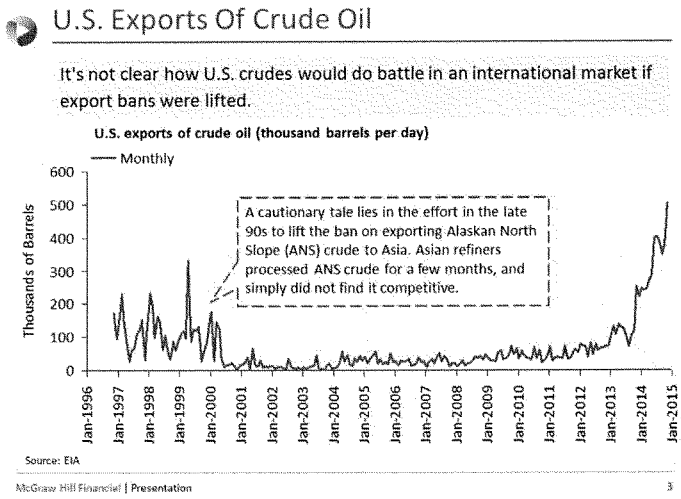


The shale boom that first led to a surge of natural gas supplies had begun to yield new flows, but because of the need to transport natural gas by pipeline these supplies essentially became stranded in the North American market. This slowly but inexorably led to rising U.S. competitiveness for a bevy of industries that use natural gas as a feedstock, from fertilizers to chemicals to smaller niche products that brought manufacturing back to the U.S. after a long absence. Direct reduced iron, a steelmaking feedstock, is a small but near perfect example of this. Indirectly, it slowed increases in the price of gas-generated electricity, but also slowed increases in coal-generated electricity prices, as gas became a competitive fuel against coal use. Other countries' natural gas prices were directly or indirectly linked to oil prices, making the U.S. prices the most competitive in the world.

When talking about U.S. competitiveness on energy, it's important not to forget that natural gas is what gives the U.S. an enormous edge. Because it's a pipeline-delivered product, it is only slightly part of a global market. Liquid Natural Gas (LNG) shipments are not enough to tie it fully to other markets. So you first had natural gas break away from its loose correlation with oil back in 2009, and, even with the fall in oil recently, that relationship remains at a level that makes natural gas consumption in the U.S. far more competitive than gas consumption in the rest of the world.

Most important to note today is the duration of this revolution: six years and counting. In terms of economic transformation, six years is just a warm-up. The changes in the U.S. resulting from these added flows have just begun.

As far as how U.S. crudes would fare abroad if they were allowed to be exported, it's safe to say that some refiners probably have models, but they aren't widely distributed. The rise in U.S. crude oil exports to Canada, mostly via rail, indicates that Canadian refiners are finding U.S. crudes to be attractive. If they weren't, export numbers would be falling, not rising.
But a cautionary tale lies in the effort in the late 90s to lift the ban on exporting Alaskan North Slope (ANS) crude to Asia. That battle went on for several years, and, finally, the ban was lifted. Asian refiners processed ANS crude for a few months, and simply did not find it competitive. So if you look at the export data, you see this surge in exports that last for a few months, and then it drops back toward zero (Exhibit 3). So, as to how U.S. crudes would do battle in an international market if export bans were lifted, all we can say is: we'll see.



Ultimately, a free market finds the best locations for any commodity to be consumed. So if a ban is lifted and U.S. crude doesn't go anywhere, that's probably a signal from the market that the rest of the world is better off consuming non-U.S. crudes. But the fact that the crude can be exported will help make a more competitive market. It's always out there as, at least, a potential source of supply.

Just a few weeks ago, MHFI President and CEO Doug Peterson gave a speech at nearby Georgetown University's Law School on how the state of U.S. infrastructure is badly in need of repair. He also discussed infrastructure's linkages to the economy and, specifically, the energy sector. He stated, "Infrastructure makes energy development possible and provides the tools necessary for its extraction, transportation, and transformation. Infrastructure moves people, fosters urbanization, and catalyzes development through roads, rail, airports, and water transportation. Infrastructure provides a logistical framework for purchased goods to reach their

consumer. Infrastructure connects people and provides the broadband, satellite, and internet support system for our world to function at the highly-efficient rate that it currently does."

I stress this because there is current discussion about the additional need for infrastructure, in order to keep production levels high enough to sustain a competitive environment.

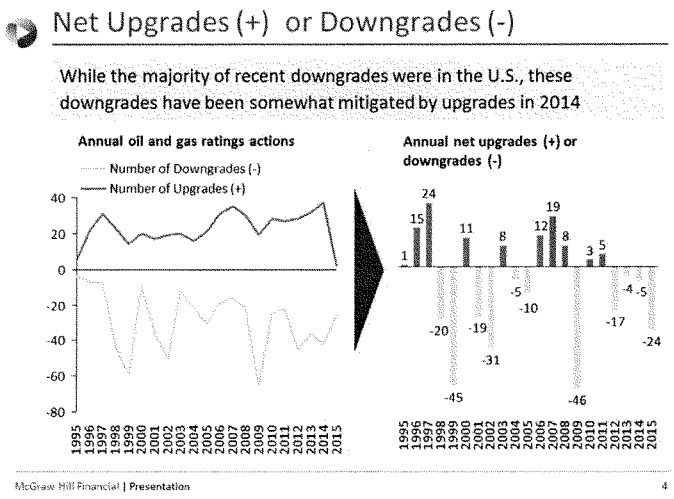
I'll now turn my focus to the impact the current pricing environment is having domestically.

In regards to U.S. producers, and based on earnings calls, MHFI subsidiary S&P Ratings Services (S&P) is seeing, on average, a 35 percent reduction in capital expenditures (CAPEX) from exploration and production (E&P) companies. Ranges have gone as high as 50 percent reductions for firms with lower credit quality to as low as 10 percent for the major producers. Many are targeting running CAPEX at maintenance production levels.[ii]

In the E&P space, S&P is particularly concerned about liquidity for 'B' rated issuers. Note that companies rated lower than a BBB- are what S&P refers to as speculative grade as opposed to those rated higher than BBB, which are referred to as investment grade.[iii] These speculative-rated issuers rely on reserve-based borrowing credit facilities, which have borrowing limits determined by commercial bank's price decks and reserves to fund CAPEX.

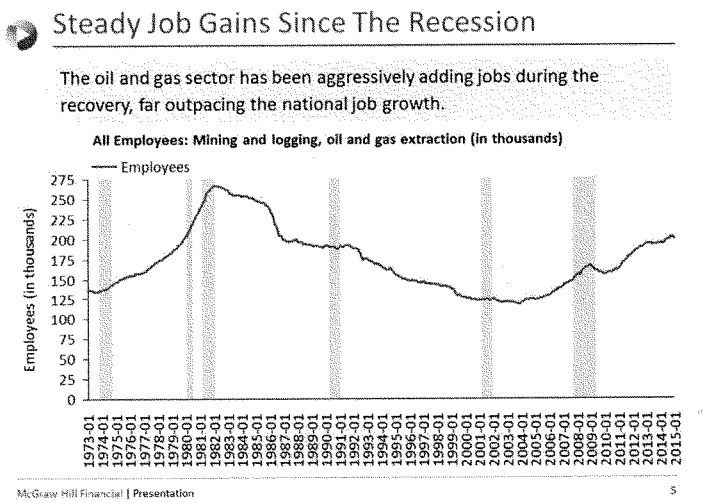
Halfway through the first quarter in 2015 (as of mid-February) S&P has downgraded 26 oil and gas companies – the largest number of oil and gas downgrades over a single quarter since 1999 when 28 were downgraded.[iv] Additionally, a majority of these downgrades were in the U.S.

While speculative grade companies will bear the brunt of oil price volatility, it should be noted that a majority of the recent U.S. downgrades are somewhat mitigated by the number of relatively recent upgrades that occurred across the sector (Exhibit 4). For instance, upgrades in the U.S. reached a 2014 high in the fourth quarter.



In order to preserve liquidity, many companies are hunkering down and reducing CAPEX to maintenance levels (keeping production flat) and many have hedges in place for 2015 and long-dated maturity schedules. However, with decline curves so steep, producers inevitably will be forced to reinvest to replenish depleting reserves and production, most likely requiring capital market access. Without a meaningful rebound in pricing in 2016, we could see increasing issuer defaults.

In 2015, as I have stated, S&P does not expect the price impact on companies to translate to significant defaults, although reducing CAPEX certainly affects the employment market. The oil and gas sector has been aggressively adding jobs during the economic recovery (Exhibit 5). Job growth for the oil and gas industry was 39 percent as opposed to the 8 percent growth for the U.S. overall.

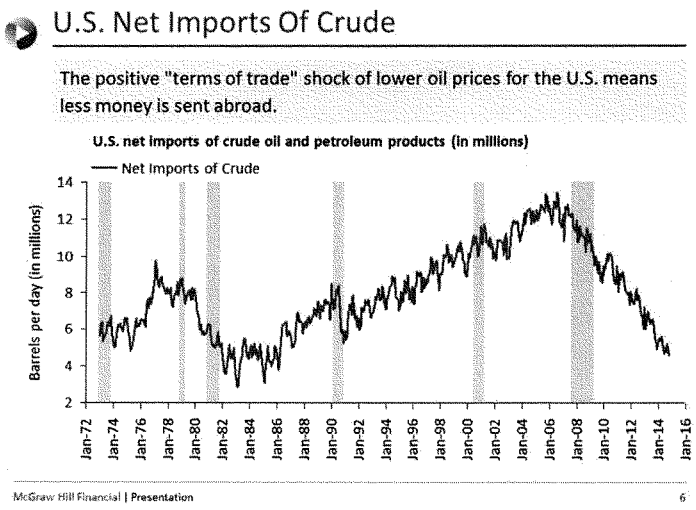


That said, the oil and gas extraction industry showed job losses of 2,000 for the month of January. This was the highest monthly loss since the recession. Moreover, regions that are heavily reliant on the energy sector could see a greater negative impact on employment and their surrounding economies. The recent Challenger report showed a spike in layoffs in January, which were predominately concentrated in the state of Texas. According to the employer survey, over 40 percent of job cuts were attributed to the change in the price of oil.

However, the oil and gas sector, by itself, only represents 200,000 U.S. jobs. This is just 0.14 percent of the 140 million jobs in the U.S. economy. Energy capital expenditures of $183 billion equal roughly just 1 percent of the U.S.'s $17.6 trillion GDP. And while the impact of oil prices will differ based on a region's concentration, and the oil and gas industry's supply chain, low oil prices, in the near term, is a boon for the overall economy, according to a recent report by S&P's U.S. Chief Economist Beth Ann Bovino and her colleague U.S. economist Satyam Panday.[v]

According to the report, the recent decline in oil prices is a result of a combination of supply and demand shocks but weighted slightly higher on the supply side. The key is that the U.S. is not leading the demand shock, rather, it's a foreign one. See, when there's a positive supply shock, as there is today, it leads to a transfer of income from oil exporters to oil importers. Demand shocks, on the other hand, tend to lead to weaker effects.
While the outlook for domestic demand in the U.S. is expected to remain solid, the opposite is expected for foreign demand.

Because the U.S. is still a net importer of oil (Exhibit 6), part of each dollar spent on petroleum is sent abroad and doesn't contribute to domestic production, employment, or U.S. GDP. The positive "terms of trade" shock of lower oil prices in the U.S. means that less money is sent abroad and therefore stays within the economy. It then becomes available for consumption and production, which supports domestic jobs and GDP.



While the magnitude of this positive "terms of trade" shock is lower today than it was several years ago – the U.S. has cut its oil import levels by more than half – it is still a net positive. S&P estimates that a $50 drop in the price of oil calculates to a $240 million decline in oil imports every day. This translates to about $87.6 billion of savings per year. The overall impact to the economy, however, will depend on how much of these savings will be spent versus parked in the bank.

The typical American households buys more than 1,000 gallons of gas each year and, since last year, gas prices have fallen $1 per gallon. Therefore, households would have at least an extra $1,000 to put toward other expenses or pay down existing debt this year. If all of this were spent, the "gas dividend" would be up to two-thirds of a percentage point of GDP all else being equal.

To add, gasoline expenditures make up a higher proportion of disposable income for lower-income households. Therefore, falling energy prices disproportionately raise real incomes for a large majority of Americans. The "gas dividend" would most likely be spent, given this dynamic.

Although time will tell, the large decline in gasoline prices appears to have raised consumer confidence. Both the University of Michigan Consumer Sentiment and Conference Board Consumer Confidence indices have risen sharply in the past few months. This is additional rationale for why a majority of the savings would lead to household consumption rather than savings.

For sectors and industries outside of energy, the lower energy prices reduce the cost of doing business, all else being equal. For example, the transportation, petrochemicals, agricultural, and manufacturing sectors are major beneficiaries. Many of the leading investment indicators that are so closely tied to perceptions from manufacturing and non-manufacturing (excluding energy) manger surveys support this view and expect a pick-up in business investment.

Recently, S&P looked at state budgets and their dependencies on the energy industry.[vi] While some states are heavily reliant on the industry from an employment perspective, many of their budgets are not. In the short term, at least, state operating budgets appear safe. In the long term, however, given a long-term secular slide in oil prices, states will have to react by altering their fiscal management. No two states are alike; even ones with similarly size oil producing industries. Therefore, many questions need to be answered, primarily:

- What oil price and production level did the state assume in its budget?
- How much does the state's operating budget rely on oil-related tax revenue?
- Did the state use prior period of high oil prices to accumulate reserves?

Lastly, I'd like to quickly touch on an issue out in California that our Platts brand is following.[vii] I do this purely to provide the subcommittee members helpful information. An ongoing labor strike and an explosion at a major California facility may compel U.S. West Coast refiners to seek a Jones Act waiver from the Obama administration.[viii] While the application process is confidential, government sources said that no company has formally applied for a Jones Act waiver. But market and legal sources said ExxonMobil is considering such a request amid climbing prices and supply shortages. The Jones Act, enacted as the Merchant Marine Act of 1920, requires all vessels shipping cargo between two U.S. locations to be U.S.-built, majority U.S.-owned, and have at least 75 percent of the crew be U.S. citizens. Jones Act vessels are more expensive than non-Jones Act vessels, however, and are in short supply, making it difficult to move gasoline and other products to California from other U.S. ports. Obviously, this could lead to a gasoline shortage, and we're already seeing prices rise in Los Angeles, making it the most expensive form of gasoline of its type in the country. While commercial reasons alone may not be enough reason for a Jones Act waiver, a short-term waiver, similar to the temporary waivers that were provided during hurricanes Katrina, Rita, and Sandy, may be justified.

Analyzing all the impacts of oil prices is a monumental task, but I'm proud to say that MHFI, through its brands, has done a remarkable job of collecting and disseminating data and insights.

In fact, oil markets can be very opaque. We are committed to bringing more transparency to these markets, particularly through the work our Platts business does with our market on close price assessment process. The work of all of the MHFI brands brings more data and information to investors and market participants globally so they can understand commodity markets and make informed decisions.

I'm glad to provide more information on any of the issues discussed here today, or any others offered by MHFI, in the question and answer session or any time in the future.

Thank you.

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[i] Tom Watters, "Standard & Poor's Publishes Revised Oil And Gas Price Assumptions," S&P Ratings Services, 1/9/2015

[ii] Watters

[iii] http://www.standardandpoors.com/ratings/definitions-and-faqs/en/us

[iv] Diane Vazza, "Taking Stock Of The Oil And Gas Sector After The Recent Downgrades," S&P Ratings Services, 2/19/2015

[v] Beth Ann Bovino, "The Sharp Drop In Crude-Oil Prices Is A Net Plus For The U.S. Economy," S&P Ratings Services, 2/13/2015

[vi] Gabriel Petek, "How Might The Oil Price Plunge Affect U.S. States' Credit Quality?" S&P Ratings Services, 1/27/2015

[vii] U.S. Refiners May Seek Jones Act Waiver Amid Strike, Torrance Explosion," Platts, 2/26/2015

[viii] Ibid

Mr. WHITFIELD. Thanks, Mr. Kingston.

At this time I recognize Ms. Amy Jaffe, who is executive director of the Energy and Sustainability Program at the University of California, Davis.

And you are recognized for 5 minutes.

STATEMENT OF AMY MYERS JAFFE

Ms. JAFFE. Thank you very much, Chairman Whitfield and Representative McNerney, for this excellent opportunity to address the committee. I look forward to our discussions. I am going to focus my remarks on the geopolitical aspects of the questions at hand.

But before I turn to that, I just wanted to make the point, also in the geopolitical context, that markets react to stimulus. So we had a very high oil price artificially imposed into the market by OPEC. That created opportunities for companies like Mr. Sheffield's companies to pursue unconventional resources, more expensive resources. As a result, we are having this boom in the United States. Over time we learn by doing so the cost of producing the expensive oil comes down.

That put OPEC back in a bind, right? So they thought they had the upper hand, Russia thought it had the upper hand, Iran thought it had the upper hand, and all of a sudden the market responded.

So now we are at a juncture where Saudi Arabia had an opportunity. The markets responding, they have to come up with a strategy, they have to decide what strategy to come up with, and they have a unique opportunity to row the boat in the same direction as the United States and use a lower oil price to put geopolitical pressure on countries like Russia and Iran to come to the peace table and have negotiations on serious conflicts we are seeing in the Middle East and elsewhere. And I do believe that our allies in the Gulf Cooperation Council had those goals in mind when they set the policy to create a market share war in the market.

We now have an opportunity as the United States to leverage that opportunity and to lead from the front. And we know from watching what is happened in the markets when OPEC tried to hold the price up and we have other kinds of barriers into the market that it is like the little boy with his finger in the dike. You can put your finger in the dike in one place, but if there is pressure from the water there will be a crack somewhere else and the water will pour out somewhere else. That is sort of how the export ban is, right?

We now have 430 million barrels of oil, close to historic highs, sitting in storage in the U.S. southwest. At Cushing, Oklahoma, alone we have 49 million barrels. That is near the record high in history in the United States of 42 million barrels, right? So to say that the refining industry feels like over the next 3 years they will be able to refine those barrels, that doesn't help us now. We have this giant stockpile of oil that is sitting with no place to go.

And that is a market inefficiency. And we need to think about the way that markets balance. Refineries have accidents, and when we have a refinery accident all the crude oil that was going to go through that refinery has to go somewhere else or it has to sit in storage. We had put the ban in place at a time when there was no

futures market, there was no hedging, there was no transparent pricing, right? We are in a totally different market today and we need to think about the inefficiencies that we create.

We are exporting gasoline. And we import gasoline, so we are a major participant in the global market for gasoline. The idea that somehow holding something in, like having our finger in one part of the dike, is going to product consumers from the global trends in gasoline is ridiculous because we are both an importer and an exporter, so all our gasoline prices are subject to international market prices.

We just had a refinery accident in California. The pressure that that puts on the California market comes. And if we are exporting gasoline from California, then that contributes to the supply balance in the State, right? We cannot pretend that exports of gasoline don't affect the price of gasoline but our crude import costs do. That is sort of a ridiculous way of thinking about a market.

So my point to you is, for the United States to hoard our oil, for oil to be trapped now in inventory unnecessarily, I mean, companies are scrambling around trying to find another tank, and U.S. prices are depressed by $10 a barrel compared to the international market. So we really need to think forwardly about whether our export and import policies are consistent with our desire to help our allies, Europe and in Asia, to be able to remain independent of the energy weapon and the kinds of things we see today in the market coming from Russia and other countries, and we need to reconsider all of our policies for trade and energy in that context.

Thank you very much.

[The prepared statement of Ms. Jaffe follows:]

Before the Subcommittee on Energy and Power

Committee on Energy and Commerce

U.S. House of Representatives

Hearing on "21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact our Economy and Energy Security"

Testimony of Amy Myers Jaffe

Executive Director, Energy and Sustainability

University of California, Davis

March 3, 2015

Chairman Whitfield, Ranking Member Rush, and distinguished Members of the Subcommittee: Thank you for the opportunity to appear before the Subcommittee today. The subject of this hearing is particularly timely in light of the changing circumstances in the international oil market and the new kinds of risks that are emerging from oil price volatility. The United States has been afforded a huge opportunity to improve both its position relative to economic exposure to world energy market volatility and its geopolitical influence in the past few years, but we are by no means out of the woods when it comes to energy security. I am honored to discuss with you today this important topic and specifically, to outline the geopolitical elements to today's oil market situation and their implications for the United States.

The decision by the Organization of Petroleum Exporting Countries (OPEC) to reverse itself to favor market share over prices is a complex one. It is not at all clear to me, regardless of the media hype to that effect, that OPEC members are targeting U.S. unconventional oil and gas production. While it is true that rising U.S. oil production was what put OPEC under pressure in

the first place, the decision by key member states such as Saudi Arabia, Kuwait, the United Arab Emirates and Qatar, to allow oil markets to remain oversupplied is driven mainly by broader geopolitical concerns, many of which coincide with those of the United States. These include increasing the pressure on Iran and Russia to come to the bargaining table and settle existing conflicts (eg, Syria, Iraq and Iran's nuclear aspirations) through compromise and diplomacy. Saudi Arabia also has strong unique geopolitical and national security interests to maintain its position as a major supplier of oil and thereby an important ally to the United States. In 2014, U.S. crude imports from Saudi Arabia has lost about 440,000 b/d of market share, with exports to the U.S. dropping to 894,000 b/d starting last summer, their lowest level since 2009, according to US Energy Information Administration (EIA) data. Much of the Saudi oil was replaced by shipments from Canada whose exports to the U.S. jumped to 2.956 million b/d, up roughly 340,000 b/d from a year earlier 2013.

The combination of the stronger U.S. oil and gas sector, and an aggressive Saudi oil policy, appears to be having some of the desired effects. Iran's top leaders have in recent weeks implied that compromise could be elemental to P5+1 talks while Russia is facing increased financial pressure. Saudi Arabia and other Arab Gulf countries have amassed large floating oil stocks that serve as a deterrent to increased adventurism by either Tehran or Moscow, though it remains unclear if an end game with diffused conflicts will actually emerge. The United States has hampered its potentially enhanced international stature by keeping its own oil surplus sheathed. US tight oil could be a greater benefit to U.S. allies and free markets, were the Congress to lift the 40 year old export ban.

America's Global Leadership Role

The United States can do much more to use its advantageous energy position to enhance its global leadership role. Our current policies of limiting natural gas exports and banning crude oil exports must be considered in the context of the U.S. international leadership role and not just in the confines of U.S. domestic political priorities. In the global context, hoarding energy supplies inside our borders sends the message to other countries that they too should be hoarding their energy. Such attitudes were precisely what worsened the economic damage to the global economy during the 1979 oil crisis. The United States is bound by our membership in the International Energy Agency (IEA) emergency stockpile system to share our energy in times of emergency or major disruption, so it seems all the more ludicrous that our hoarding of supplies will be limited to periods where energy supply is sufficient.

It is not the case that hoarding energy supplies inside our borders helps lower prices to consumers. The United States is both an importer from and exporter of gasoline to the international market. As such, U.S. gasoline prices are generally speaking tied to global market trends. Analysis by the U.S. Department of Energy, among others, has shown that the export ban is not lowering gasoline prices here in the U.S.

The current consequence of the U.S. oil export ban is the accumulation of historically high, surplus crude oil inventories that is depressing U.S. crude oil prices relative to global markets. Stocks at oil trading hub Cushing, Oklahoma, are near their historical high of 52 million barrels, causing a substantial discount (over $1.50) between the current price and prices for future months. Left untreated, the shortage of available tankage could mean the United States will sacrifice some of the projected future oil production increase of 500,000 b/d to 800,000 b/d expected to materialize over the rest of 2015 by the U.S. Energy Information Administration (EIA) and major financial institutions such as Citi. The crude oil containment problem could be

easily solved by allowing exports, a policy that could assist allies such as Mexico and Europe who are eager to have access to U.S. condensates and tight oil. Such energy trade strengthens our ties to important allies and trading partners and thereby enhances American power and influence.

The United States needs to lead from the front when it comes to energy geopolitics. Open trade and investment in energy is important to vital U.S. interests. Artificial restrictions on energy flows can be a source of international conflict as we can already see from events in Eastern Europe and the Middle East. Moreover, the United States has a direct interest in preventing energy from being used as a strategic weapon or as a spoil of war in civil conflict between competing militias or sectarian groups. A formalized national security assessment needs to be a more transparent metric for decision making on energy infrastructure and trade policy, similar to the manner in which environmental assessments are performed. Our international diplomacy should be addressing energy pro-actively. By leading the charge of new energy technologies and energy exports, the United States has the ability to fashion a global energy world that is more secure, freer of geopolitical strings and lower in carbon emissions. We should not shirk that responsibility to save a few pennies on the energy bill of some subset of the U.S. manufacturing sector which will be increasingly competitive given its geographic proximity to abundant, new U.S. energy resources and access to innovative technologies like the industrial internet.

Seeds of Future Instability

The global oil market still faces key sources of instability for supply. With low oil prices, Venezuela's economic problems have raised the risk of a severe political crisis. Lacking access to adequate finance, Venezuela's oil industry will have difficulty maintaining oil output levels in the face of steep natural decline rates at its fields. State oil firm PDVSA's lack of funds has

prompted a slowdown in progress for new Orinoco Belt heavy oil projects and upgrading units for existing production are said to be in disrepair. The country, which faces the possibility of a sovereign default on its massive debt, suffers from an inflation rate of 60% and the population is suffering from acute shortages of basic foodstuffs and medicines. Venezuela has debt repayment of about $11 billion to $12 billion annually and relies heavily on oil exports as its source of revenue. With Parliamentary elections technically due to take place later this year, the Maduro government has turned to violent repression to damp down civil unrest, recently arresting popular opposition leader Antonio Ledezma, mayor of Caracas, on a charge of conspiracy.

Russia has so far avoided a similar kind of crisis as the falling ruble reduced the costs of doing business in the Russian energy sector, but eventually Russian output could also face financial hurdles as major Russian companies like Rosneft and Novatek face collapsing profits and are unable to raise external capital. Falling energy price and plunging sales to Europe have also hit Russian gas giant Gazprom's revenue, potentially depriving Russia of $6 billion in revenues to the Federal budget this year alone. Average Russian natural gas prices to Europe are expected to fall by a third this year and sales to some key European clients are down by half as the slow economy, energy efficiency efforts, diversification to alternative supplies and a mild winter have eaten into Gazprom's sales. Gazprom revenues usually contribute a fifth of Russia's federal budget. In the past, sales to Europe have accounted for more than half of Gazprom's revenues.

Iraqi and Libyan production is also under threat from the warfare raging in those countries where various parties are vying to control oil assets. Dangerously, the Islamic State (ISIS) temporarily gained control of Iraq North Oil Company's 35,000 b/d Khabbaz oil field near Kirkuk. The battle was significant because Kirkuk is an important Iraqi oil production region whose political status has been highly contested. The Kirkuk oil fields came under the control of the KRG military in

July 2014, and Iraqi central government forces are currently joining the fight there against ISIS, but the region's territorial status remains contested. The fields around Kirkuk are producing 400,000 to 500,000 b/d currently and could contribute to a large increase in the country's future oil production.

ISIS continued strategy to try to grab oil fields for its possible "statehood" underscores a grave danger for the region and a source of instability to global oil supply. If existing national borders and authorities are not considered permanent or authoritative, regional oil facilities will become both strategic assets and spoils of war in not only the greater battle for Syria and Iraq but potentially in the struggle for geopolitical power across the entire region. This turn of events is a serious challenge to stability across the Middle East and for the global oil market. My research with econometrician Mahmoud El-Gamal shows that oil facilities damaged during wartime can dramatically reduce access to oil from a country for years, if not decades.[1]

The concern that oil will drive military actions across the Middle East cannot be overstated. IS, led by former military leaders from Saddam Hussein's brutal regime, clearly understand the importance of oil assets and revenues during wartime, given their history of the 8 year war with Iran and battle for Kuwait. ISIS "oil related" threat in the region has not been lost on other regional powers. Troops are already lining the Saudi northern border, and Iran has positioned troops to protect Iraq's southern oil fields at a time when Basrah's local leaders have been threatening to hold a referendum on whether to become a semi-autonomous region like the KRG.

Increasing Importance of US Energy Diplomacy

[1] El-Gamal, Mahmoud Amin and Amy Myers Jaffe (2013) Oil Demand, Supply and Medium Term Price Prospects: A Wavelets-Based Analysis. Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-RR-13-10

All this is to say that the United States should be pursuing its energy diplomacy more pro-actively. Militias in the Middle East and Africa have learned that they can undermine the authority of existing political leadership in the region by overtaking oil facilities. A prime example of this is Libya where what might have been a successful transitioning government fell into disarray as rebel factions grabbed or turned off key oil installations or denied access to export ports and terminals.

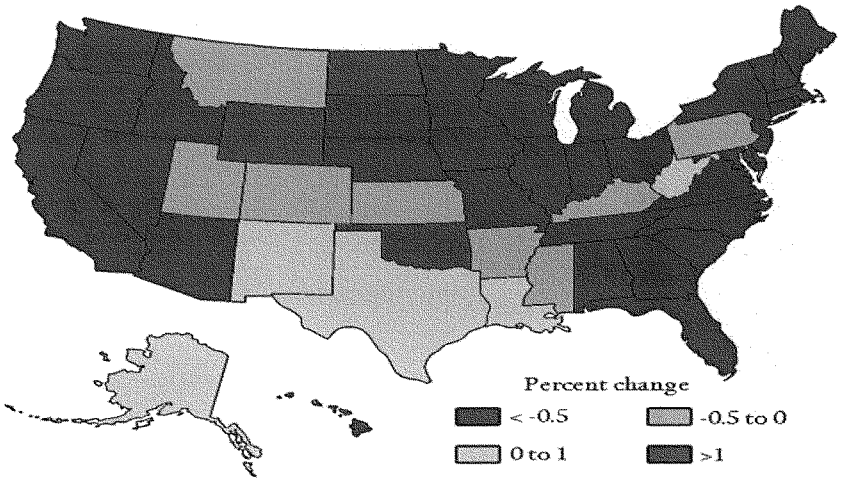
The United States should be following up military action with intensive diplomacy geared to help emerging political leaders to better negotiate about equitable systems and institutions for the distribution of oil wealth in the region. The United States should be elevating oil and gas revenue sharing conflict diplomacy to the highest levels. If the U.S. is going to be successful engaging diplomatically in the Middle East, it needs to take a leadership role in the difficult task of helping leaders forge lasting domestic political pacts on how to share oil revenue equitably and to minimize official corruption in countries that are or could be torn by civil war or sectarian violence. That NATO and the United States have not clearly taken this challenge seriously enough is demonstrated in Libya where what started as a promising beginning for a newly elected Libyan government has ended in violent civil conflict driven in part by lack of agreement over regional oil revenue sharing. The failure to implement effectively such oil conflict diplomacy has crippled U.S. efforts to stabilize countries such as Iraq and Libya.

US Energy Policy: Build on Success

The United States has substantially lowered its oil imports but we are still attached to the global oil market and subject to the risks facing it. Overall, the U.S. economy still benefits from lower oil prices, analysis from the U.S. Federal Reserve Bank shows. It would take a four-fold increase

from today's level, for example, before an oil price fall would do more harm than good to Pennsylvania's economy.

ECONOMIC IMPACT OF RISING OIL PRICES PER STATE



Source: Yucel, Brown (2014)

As U.S. Energy Information Administration (EIA) analysts *Shirley Neff and Margaret Coleman* show in the lead analysis article in a newly published Special Issue of Energy Strategy Reviews on "U.S. Energy Independence: Present and Emerging Issues", U.S. demand-side management policies are finally paying off, with U.S. oil consumption falling almost 10 percent between 2005 and 2013 and expected to find deeper reductions in the coming decades. U.S. oil demand is expected to decline by more than 20 to 30 percent in the next twenty years, *Neff and Coleman*

argue, demonstrating the importance of well-designed transportation policies. There is no question that technological innovation and new investment strategies by U.S. independent oil companies are bringing about a renaissance in U.S. domestic oil and gas production, creating a prolific U.S. energy supply outlook. But without government intervention to curb our appetite for oil, this rising production might have done little more than meet increases in incremental demand— putting us back in the deep dependency of prior decades and with OPEC and Russia in the driver's seat.

It is important to note that the dramatic rise in U.S. energy production comes in the form of both oil and gas and renewable energy. In effect, the country has hit the jackpot on both fossil fuels and clean technology simultaneously, leaving us in an enviable position where cheap and ample energy supply is driving economic growth and wealth creation. The U.S. has added more than 500,000 jobs in the oil, gas and clean tech sectors in the past five years, contributing to a boom often likened to a second industrial revolution. Renewable energy production in the United States has been steadily on the rise, with over 17,000 megawatts (MW) of solar, wind and geothermal capacity currently under construction. The U.S. Energy Information Administration estimates that that renewable energy will represent one-third of all new electricity generation added to the national grid over the next three years. Installed U.S. solar energy capacity increased 418 percent between 2010 and 2014 to 12,057 MW.

Policy makers might also want to consider ways to lock in the benefits of a healthy U.S. clean tech and domestic natural gas sector from the negative fallout from the OPEC price war.

One way to help U.S. natural gas producers beat OPEC would be to nurture natural gas as a fuel for the U.S. heavy-duty trucking fleet. While launching a national network for liquefied natural gas (LNG) fueled trucks might be difficult and expensive, an initial small-scale natural gas transportation network for heavy trucking could be launched in key U.S. regions situated near high-volume travel corridors, according to a new study published by the Institute of Transportation Studies at the University of California Davis and Rice University. The study highlights how California, the Great Lakes and the mid-Atlantic are well positioned to serve as pilot networks due to their proximity to trucking corridors. The U.S. Department of Energy tried a corridor approach to biofuels use in the 1990s, but natural gas is likely to have more compelling economics. Such a network could enable a faster transition to renewable natural gas, biogas and waste-to-energy pathways — though it would require significant policy intervention to reap climate change benefits. Utilizing natural gas for heavy trucking would also improve energy security and weather-related resiliency by diversifying the geographic fuel supply, while potentially improving U.S. economic competitiveness by lowering costs along national freight supply chains. But stricter efficiency standards for LNG-fueled heavy-duty trucks and stronger regulations of methane leakage along the natural gas supply chain are needed for natural gas to advance low-carbon-fuel goals. To date, the long-haul trucking industry has favored less-expensive spark ignition (SI) engine technology that has lower levels of climate performance.

Moving forward on clean tech, California holds lessons for the wider U.S., including concerns that carbon regulation will create economic inefficiencies and kill economic growth. California's economy has been growing by about 4 percent a year and will soon be the 7th largest economy in the world, overtaking Brazil. Its policies serve as a starting point for demonstrating viable, market responsive climate policy approaches, by stimulating innovations and investments in low-

carbon technologies and behaviors. California policy, for example, has stimulated investments in and sales of plug-in electric vehicles (PEV) and is driving other energy innovations such as smart grid technology, big data logistics efficiency software and distributed generation technologies. To date, over a third of U.S. PEV sales are in California, even though the state accounts for only 12 percent of the population.

Mr. WHITFIELD. Thank you, Ms. Jaffe, very much.

At this time I would like to recognize Mr. Brad Markell, who is the executive director of the AFL–CIO Industrial Union Council.

Mr. MARKELL. It is a mouthful.

Mr. WHITFIELD. Welcome. And you are recognized for 5 minutes.

STATEMENT OF BRAD MARKELL

Mr. MARKELL. Chairman Whitfield, Mr. McNerney, and members of the subcommittee, thank you for inviting the AFL–CIO to share its views on the important topic of 21st century energy markets.

Growing domestic oil production is providing the United States with significant economic boost and a significant reduction in our dependence on foreign oil. In July 2014, the AFL–CIO Executive Council unanimously passed a policy statement opposing lifting the existing restrictions on crude oil exports, which I reference in my written statement.

Our view is clear: Easing restrictions on crude oil exports threatens the long-run health of the refinery sector and the high quality jobs it provides. Simply put, if we lift the ban on crude oil exports, we will export both our oil and the jobs and economic activity associated with refining that oil. The threat of these job losses is concentrated in the Gulf of Mexico States.

I want to raise a key point, one that I haven't heard discussed. If the export restrictions are lifted, the amount of oil exported will over time far exceed the amount needed to balance the current refinery capacity that is optimized for medium and heavy oil. Refinery workers and their communities would be subject to the same offshoring trends that have devastated domestic manufacturing, from textiles, to apparel, footwear, autos, steel, electronics, and on and on.

And the jobs that could be lost are very good jobs. According to the 2012 Economic Census, the average job in the refining sector paid over $100,000 per year, supported by over $1.8 million in value added per employee. These are exactly the kind of jobs we should be striving to keep in the United States.

Some of these jobs are threatened by the recent Department of Commerce clarification of its policies regarding processed condensate, which may have already effectively breached the export restrictions, without a single hearing, public notice, or public comment. It seems clear that lots of very minimally processed oil will be exported.

Much of the discussion on oil exports focuses on the mismatch in refinery capacity, and in this static view of the industry the easiest fix for the problem is to reduce imports of light crude oil and then export any remaining domestic light crude unprocessed.

Rather than export domestically produced light crude oil that refineries are not optimized to process, there is another solution, one that emphasizes investment in America and expanding employment opportunity for American workers. In 2014, McKinsey examined the implications of increased domestic production of light, tight oil on refineries under scenarios where the crude oil export ban is not lifted. McKinsey believes that, quote, "The continued growth of light, tight oil in North America has the potential to

drive a fundamental restructuring of the downstream industry in North America and beyond."

Domestic production of oil is projected to remain above 8 million barrels a day through at least 2035. The question is not whether this oil will be produced, but where it will be refined. It should be refined in the U.S. so we can reap the full bounty of jobs, economic activity, and the energy security that our increased production of crude oil makes possible.

As the American Petroleum Institute put it in 2011 when making the case for domestic refining, quote, "Because the refining industry operates on a global basis, America faces the choice of either manufacturing these products at home or importing them from other countries."

The position of the AFL–CIO is premised on the belief that in the end markets win out. Economically exploitable fossil fuels do not stay in the ground, they are produced when the price is high enough. The simple question before us is, where do we want oil produced in the United States to be refined and made into products? Would we prefer that billions be invested in the U.S. or overseas? Would we prefer to create management, engineering, craft occupation and production employment in the U.S. or overseas?

For the AFL–CIO, the choice is clear: We are unabashedly for creating as many American jobs as we can from the increased domestic production of oil. That means keeping the current crude oil export restrictions in place, not sending crude oil and the jobs it creates overseas.

Thank for your time and I look forward to any questions.

[The prepared statement of Mr. Markell follows:]

STATEMENT OF BRAD MARKELL

EXECUTIVE DIRECTOR

AFL-CIO INDUSTRIAL UNION COUNCIL

Before the

COMMITTEE ON ENERGY AND COMMERCE

SUBCOMMITTEE ON ENERGY AND POWER

U.S. HOUSE OF REPRESENTATIVES

MARCH 3, 2015

Chairman Whitfield, Ranking member Rush, and Members of the Subcommittee, thank you for inviting the AFL-CIO to share its views on the important topic of 21st Century Energy Markets. The AFL-CIO is the largest labor federation in the nation, consisting of 56 unions with 12.5 million members.

Growing domestic oil production is providing the Unites States with a significant economic boost and a significant reduction in our dependence on foreign oil. The petroleum refining business is an economic powerhouse, as detailed data from the Census Bureau make clear, and as the American Petroleum Institute has documented over the years.

In July 2014, the AFL-CIO Executive Council unanimously passed a policy statement opposing lifting the existing restrictions on crude oil exports, titled "America Should Exploit the Advantages of Domestic Oil Production, Not Give Them Away[i]."

I want to spend most of my time today making sure the committee understands our views on the economic importance of the refining industry, and why it would be a bad idea for the United States to lift or significantly modify the existing restrictions on the export of crude oil

Gas Prices Likely not Affected

First, while the attention given to the effect easing restrictions on the export of crude oil would have on domestic gasoline prices is understandable, a focus on this question to

the exclusion of other issues is not helpful in understanding which path the U.S. should choose.

The price of gasoline is set on the international market, and as the October 2014 Energy Information Agency report "What Drives U.S. Gasoline Prices?" says, the price of gasoline in the U.S. is best explained by the price of Brent crude oil. That report has seven key observations, including these three[ii]:

- Gasoline is a globally traded commodity and, as a result, prices and changes in prices are highly correlated across global spot markets.

- Brent crude oil prices are more important than WTI crude oil prices as a determinant of U.S. gasoline prices in all four regions studied, including the Midwest.

- The effect that a relaxation of current limitations on U.S. crude oil exports would have on U.S. gasoline prices would likely depend on its effect on international crude oil prices, such as Brent, rather than its effect on domestic crude prices.

The Economic Importance of the Refining Sector

The refining sector is an economic powerhouse, and easing restrictions on crude oil exports threatens the long-run health of the sector and the high-quality jobs it provides. The threat of these job losses is concentrated in the Gulf of Mexico states.

Simply put, if we lift the ban on crude oil exports, we will export both our oil and the jobs and economic activity associated with refining that oil. Over time, with no restrictions on the export of crude oil, the refinery sector will have meaningful incentives to increase operations outside the United States to lower both labor and environmental compliance costs. The U.S. would lose some of the jobs it has now, and fail to create jobs to process increased domestic light oil production volumes.

And the jobs that could be lost are very good jobs. According to the 2012 Economic Census performed by the Census Bureau, the average job in the refining sector paid over $100,000 per year, supported by $1.8 million in value-added per employee.[iii]

According to the Economic Census, while the industry paid its employees $9.7 billion in total compensation, it also spent $8.9 billion on professional services, repair and maintenance services, and leased employees. The industry is a significant employer of workers in building and construction trades occupations.

In 2012, refineries made over $15 billion in capital investments. Their importance to our economy goes beyond the numbers, as the American Petroleum Institute put it in 2011, when it was making the case for domestic refining:

> "The United States will depend on refining petroleum-based products for much of its energy needs for decades to come. And, domestic refineries are competing directly with petroleum product imports. Because the refining industry operates

> on a global basis, America faces the choice of either manufacturing these products at home or importing them from other countries.
>
> U.S. refinery closures would result in domestic job losses and lower government revenue in the form of taxes. It would also result in a greater reliance on foreign refineries, such as those being developed in the Middle East and India.[iv]"

Additionally, the output of U.S. refineries is critical to U.S. petrochemical manufacturing, with a large part of U.S. refinery output integrated with follow-on petrochemical manufacturing. If the U.S. refining capacity declines over time, the petrochemical industry would also likely decline, compounding the economic damage from allowing crude oil exports.

Market Instability Increases Policy Risk

This is a particularly bad time to be considering changes to crude oil export restrictions. The oil market is in the throes of a drastic realignment that we do not entirely understand, and there is a great deal of uncertainty about the short-term resolution. EIA Administrator Sieminski recently pointed out that the market-implied 95% confidence band for WTI is extremely wide - $35 to $100 per barrel in 2015 and 2016.

The amount of tight oil produced in the United States is dependent on the market price of West Texas Intermediate oil. It is unwise to consider major policy changes until the

world oil market stabilizes and we understand with greater certainty how much oil can be economically produced in the United States.

It will also take some time to sort out the effects of the Department of Commerce's "clarification" of its policies regarding processed condensate. Significant exports of condensate are possible, and reports of both condensate exports and investments in condensate splitters are in the press[v].

Condensate exports of course represent volumes that could otherwise have been processed further into completed fuels in the United States, with all the same economic benefits of job creation and supply-chain spending as the rest of the refinery sector.

The Refining Sector can Retool to Use More Light Oil

Much of the discussion of oil exports focuses on the mismatch in refinery capacity, with U.S. refineries configured to handle more heavy oil and lacking capacity optimized for light oil. In this static view of the industry, the easiest fix for the "problem" is to reduce imports of light crude oil, and then export any remaining domestic light crude oil unprocessed.

Indeed, according to EIA's oil import tracking tool, imports of light oil to the U.S. Gulf Coast region have declined from 1.7 million barrels a day in 2009 to just 0.26 million barrels a day in 2014 – an 85% decline[vi].

Rather than export the domestically produced light crude oil that U.S. refineries are not optimized to process, there is another solution, one that emphasizes investment in America, and expanding employment for American workers.

In 2014, McKinsey examined the implications of increased domestic production of light, tight oil (LTO) on refiners, under scenarios where the crude oil export ban is not lifted.[vii] McKinsey believes that "...the continued growth of LTO in North America has the potential to drive a fundamental restructuring of the downstream industry in North America and beyond."

The report's 2020 scenario says that Gulf Coast refineries could see their light tight oil inputs increase to around 50% of all crude used, backing out imported crude oil. This will require refiners to remove bottlenecks in the light-ends part of their distillation units, or to add new distillation capacity optimized for light tight oil.

Domestic production of oil is projected to remain above 8 million barrels a day through at least 2035; the question is not whether this oil will be produced, but where it will be refined. It should be refined in the U.S. so we can reap the full bounty of jobs, economic activity and energy security that our increased production of crude oil makes possible.

Increasing Insecurity in Oil-Producing Regions Should Counsel Caution

Political and military tensions in the Middle East are worse than they have been in decades. No one can say with any confidence what the situation will be in five or ten

years. After some success in increasing oil production, Libya is again the scene of turmoil and terrorism. Nigeria faces an extremely precarious political situation and a brutal armed insurgency. Venezuela is in a political and economic crisis. The situation regarding Russia's international relationships remains fluid and troubling.

Taken as a whole, the ongoing instability in nations crucial to the international supply of crude oil threatens the energy security and economic prosperity of the United States. After our success in reducing our dependence on imported oil, the last thing we should consider is throwing away that success by lifting the restrictions on crude oil exports.

Exporting crude oil when the U.S. will be a net petroleum importer for the foreseeable future, and when foreign sources of oil are facing considerable instability would be an ill-advised and shortsighted choice – and make no mistake, the American public knows that this is a choice that will be made here in Washington D.C.

The Best Use of Abundant Domestic Crude Oil is to Transform It into High Value Added Products that can be Sold around the World.

The position of the AFL-CIO is premised on the belief that in the end, markets win out. Economically exploitable fossil fuels do not stay in the ground, they are produced when the price is high enough.

Just as the refining sector made significant investments to handle more heavy oil, so too will investments be made to handle more light oil feedstock efficiently.

The simple question before us is where do we want oil produced in the United States to be refined and made into products? Would we prefer that billions be invested in the U.S., or overseas? Would we prefer to expand the domestic petrochemical capacity that feeds so many of our basic industries, or would we prefer that it too go off shore as the feedstock it depends on is exported?

When we refine domestic crude oil, we create high-quality jobs that the United States desperately needs. The jobs that could be created would be concentrated in areas where the refining and petrochemical industry are already situated – primarily in Gulf Coast States. If we allow exports of crude oil, that is where, especially over the long run, jobs will be lost.

For the AFL-CIO, the choice is clear. We are unabashedly for creating as many American jobs as possible from the increased domestic production of oil. That means keeping the current crude oil export restrictions in place, not sending crude oil, and the jobs it creates, overseas.

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[i] http://www.aflcio.org/About/Exec-Council/EC-Statements/America-Should-Exploit-the-Advantages-of-Domestic-Oil-Production-Not-Give-Them-Away

[ii] http://www.eia.gov/analysis/studies/gasoline/pdf/gasolinepricestudy.pdf

[iii] http://www.census.gov/econ/isp/sampler.php?naicscode=32411&naicslevel=5

[iv] http://www.api.org/~/media/files/oil-and-natural-gas/refining/api_case_for_us_refining_summary.pdf

[v] http://www.maritime-executive.com/article/bp-exports-super-light-crude-from-texas
http://ir.marathonpetroleum.com/phoenix.zhtml?c=246631&p=irol-newsArticle_pf&ID=1879930
http://www.reuters.com/article/2014/12/08/phillips66-condensate-splitter-idUSL1N0TS24420141208
http://www.kindermorgan.com/projects/condensate

[vi] http://www.eia.gov/todayinenergy/detail.cfm?id=19931

[vii] http://www.mckinsey.com/~/media/mckinsey/dotcom/client_service/oil%20and%20gas/pdfs/797317%20implications%20of%20light%20tight%20oil%20growth.ashx

Mr. WHITFIELD. Thank you, Mr. Markell.

At this time I would like to recognize as our final witness Dr. Graeme Burnett, senior vice president for fuel optimization at Delta Airlines and also chairman of the board of Monroe Energy.

So, Dr. Burnett, you are recognized for 5 minutes.

STATEMENT OF GRAEME BURNETT

Dr. BURNETT. Thank you. Good afternoon, Chairman Whitfield, Ranking Member McNerney, and members of the committee. Thank you for inviting me to testify before you today. I would ask that my full remarks be included in the record.

I have been involved in the refining industry in locations around the globe for over 30 years. I am currently the senior vice president for fuel optimization at Delta Airlines, and in this position I manage Delta's jet fuel supply, as well as serve as chairman of the board of Monroe Energy, the company that owns and operates Delta's refinery in Trainer, Pennsylvania. Delta Airlines purchased and restarted the idled Trainer refinery in 2012 in order to manage our largest expense, jet fuel, and has created over 400 jobs.

We, like other airlines, participate in oil markets on a daily basis. So we believe that as an end user of crude oil and as a refiner we are uniquely positioned to comment on the longstanding crude export law. We strongly believe the current law remains a critically important policy that provides significant benefits to American consumers.

As a result of increased domestic production, the U.S. is importing less crude, which means that we are already directly impacting the global supply-demand picture without the need for exports and prices have tumbled as a result.

The EIA has projected the average American household will spend about $750 less on gasoline in 2015 compared to the prior year, in addition to equally significant savings on home heating oil. Estimates have suggested that the total windfall to American consumers could top $230 billion in 2015. These savings go straight back into American consumers' pockets, allowing them to use those savings on goods and services, thus stimulating the economy.

On the other hand, the oil and gas production sector is still less than 1 percent of GDP. Compare that with consumer spending, which is 68.5 percent of GDP. Current crude oil export policy has broad-based economic value.

So the question arises, why would any policymaker want to risk jeopardizing the current consumer benefits we are experiencing and institute a policy that would benefit only a narrow sector of the economy? Oil producers want to export crude to get higher prices. Producers claim that U.S. refineries cannot absorb new U.S. production, and that is simply a myth. Energy experts Baker O'Brien have conclusively demonstrated that the U.S. refining industry has been investing to absorb all the projected increase of domestic production through the end of the decade, resulting in lower fuel prices, creating jobs at home, and increasing energy security.

Let's not forget the U.S. continues to import 33 percent of its crude oil needs from outside of North America. Unlike LNG, there is no real excess requiring export as it can all be used at home. Should Congress eliminate restrictions on crude oil exports, law-

makers also risk endangering energy security because repeal of current law would mean refineries in Europe could buy U.S. crude at a lower cost than refineries located on the east cost. Lower freight rates enable them to refine the crude and send products back to the northeast at a lower cost, leading to closure of domestic refining capacity.

Energy security is not just about producing enough crude oil for the Nation's needs. Energy security is about maintaining the domestic refining capability to transform that feedstock into the products we consume here in America. Put simply, lifting the ban will benefit European refinery workers at the expense of thousands of American jobs while endangering U.S. refining capacity that is critical to our national security.

OPEC is a cartel and the global crude oil market is not a free market. Crude oil price is ultimately controlled by a few oil-producing states. Exporting crude oil will not reduce OPEC's power, which represents about 60 percent of the total petroleum traded worldwide. Saudi Arabia's decision last year not to cut production and allow prices to crash clearly demonstrates that they are the controlling factor for crude price.

Furthermore, it is imperative to remember that public opinion overwhelmingly supports leaving the crude oil export law in place. Polls in New Hampshire and nationwide are showing that large majorities of voters across party lines oppose exporting more U.S. Oil to foreign countries.

So Delta's position is clear: There is no imperative to lift the ban. If export restrictions are lifted, feedstock costs will rise, U.S. Refining capacities will be reduced, jobs will be lost, and the consumer will pay higher prices at the pump. It is better for America to maintain present law and export the refined products. Our Nation's economic and security interests are best served by allowing American refiners to add value to crude oil here and become less reliant on foreign crude oil from unstable and unfriendly countries.

Thank you for this opportunity to testify before the committee. I look forward to answering any member questions.

[The prepared statement of Dr. Burnett follows:]

Summary of the Prepared Testimony of Dr. Graeme Burnett, Senior Vice President, Delta Air Lines
Chairman of the Board, Monroe Energy

The established crude oil export law remains a critically important policy that should remain in place.

1) As a result of increased domestic production, we are importing less which means that we are impacting the global supply/demand picture, and crude prices have tumbled as a result *without the need for exports.*

2) Refineries have passed along the cost savings from lower-priced inputs on to consumers, a savings of about $3 per barrel. Barclays calculated annual consumer savings of more than $9.5 billion in 2013, and projected $9.6 billion in savings for 2014. Barclays added that the benefit to the U.S. economy is probably even greater than the reported savings as a result of the multiplier effect.

3) When oil prices fall, the benefit to consumers outweighs any loss to producers. Investment in oil and gas production is still less than 1 percent of gross domestic product. That pales next to consumer spending, which is 68.5 percent of G.D.P. Hence, current crude oil export policy has *broad-based* economic value.

4) Should Congress eliminate restrictions on crude oil exports, lawmakers risk not only hurting the U.S. consumer, but also, and more importantly, endangering energy security. Energy security is not just about producing enough feedstock – that is, crude oil - for the nation's needs, but also about maintaining the domestic capability to transform that feedstock into the products we consume here in America. Losing American refining capacity would take us further away from energy security.

5) Repeal of current law would mean domestic crude oil producers will have the ability to ship oil to refineries in Europe at a lower cost compared to delivering the same oil to refineries located on the East Coast of the United States. This would render domestic refineries, particularly in the Northeast, unable to compete with foreign refineries.

6) U.S. refineries have the capacity to handle the increased domestic production, while displacing imports, keeping jobs here in the U.S. and simultaneously benefiting American consumers.

7) As a result of OPEC's influence, the crude oil market is not a true "free market."

8) The general public opinion overwhelmingly supports leaving the crude oil export law in place.

Prepared Testimony of Dr. Graeme Burnett, Senior Vice President, Delta Air Lines
Chairman of the Board, Monroe Energy

House Energy and Commerce Committee
Subcommittee on Energy and Power
Hearing: "21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact Our Economy and Energy Security"
March 3, 2015

Good afternoon: Chairman Whitfield, Ranking Member Rush, and Members of the Committee. Thank you for inviting me to testify before you today.

My name is Dr. Graeme Burnett. I have been involved in the refining and petrochemical industry for over 30 years. Before joining Delta Air Lines, I worked in various capacities in Texas and across the globe, including the Middle East, Asia, Europe and South America for one of the top 5 international oil companies. I am currently the Senior Vice President for Fuel Optimization at Delta Air Lines. In this position, I manage Delta's jet fuel supply as well as serve as Chairman of the Board of Monroe Energy, the company that owns and operates Delta's refinery in Trainer, Pennsylvania.

As some of you may know, Delta purchased the Trainer refinery from Phillips 66 back in 2012. The acquisition of the Trainer refinery was an innovative approach to managing our largest expense—jet fuel. Delta's purchase of the Trainer facility has not only helped manage our fuel costs, but has also created over 400 jobs at the once-shuttered Trainer facility.

Delta Air Lines, like other airlines, participates in oil markets on a daily basis. The price of jet fuel contributes to the price of an airplane ticket, influences the types of aircraft we purchase, and helps determine the routes we serve. Because of these factors, we are uniquely situated – both as an end user of crude oil and as a refiner – to comment on the longstanding crude oil export law and the current debate over whether to repeal it.

We strongly believe the established crude oil export law remains a critically important policy that provides significant benefits to American consumers.

As a result of increased domestic production, the simple fact that we are importing less means that we are impacting the global supply/demand picture, and crude prices have tumbled as a result *without the need for exports*. Last summer, as a result of domestic oil production, U.S. refineries were running at record-high levels. Those refineries passed along the cost savings from lower-priced inputs on to consumers, a savings of about $3 per barrel, as a report from Barclays Equity Research has affirmed. Barclays calculated annual consumer savings of more than $9.5 billion in 2013, and projected $9.6 billion in savings for 2014. Barclays added that the benefit to the U.S. economy is probably even greater than the reported savings as a result of the multiplier effect.

The impact of lower fuel prices upon consumers and the economy cannot be overstated.

My fellow panelist, Adam Sieminski of the U.S. Energy Information Administration, noted in a recent speech that the EIA has projected the average American household will spend about $750 less on gasoline in 2015 compared to the prior year. Taken together with lower home heating oil costs, some American households stand to save as much as $1500 this year from lower fuel costs. As reported in *The Washington Post* at the end of 2014, across the country, American motorists saved $630 million on gasoline compared with what they were paying at the beginning of last summer. The article further estimated the total windfall to the American consumer could top $230 billion in 2015.

These savings on fuel go straight back into American consumers' pockets, allowing them to use that savings in more productive ways, such as on goods and services, whether that's groceries, clothing, household goods, and on and on. That consumer activity stimulates the economy broadly.

Reports from Goldman Sachs and the American Enterprise Institute have characterized lower fuel prices as equivalent to an enormous, broad-based tax cut, worth billions to consumers. As Dean Maki, chief United States economist at Barclays, notes, when oil prices fall, the benefit to consumers outweighs any loss to producers. Investment in oil and gas production is still less than 1 percent of gross domestic product. That pales next to consumer spending, which is 68.5 percent of G.D.P. Hence, current crude oil export policy has *broad-based* economic value.

So the question arises: Why would any policymaker want to risk jeopardizing the current consumer benefits we are experiencing and institute a policy that would benefit only a narrow sector of the economy?

Should Congress eliminate restrictions on crude oil exports, lawmakers risk not only hurting the U.S. consumer, but also, and more importantly, endangering energy security. Energy security is not just about producing enough feedstock – that is, crude oil - for the nation's needs, but also about maintaining the domestic capability to transform that feedstock into the products we consume here in America. Losing American refining capacity would take us further away from energy security.

Repeal of current law would mean domestic crude oil producers will have the ability to ship oil to refineries in Europe at a lower cost compared to delivering the same oil to refineries located on the East Coast of the United States. This would render domestic refineries, particularly in the Northeast, unable to compete with foreign refineries. **Put simply, lifting the ban will benefit European refinery workers at the expense of thousands of American jobs while endangering U.S. refining capacity that is critical to our national security.**

Oil producers want to export crude for one reason only: to get higher prices. Current law lowers the price to producers only if (a) they can't get the crude to market because of logistics constraints or (b) the refineries are unable to process it.

In response to the logistics issue, there is a plethora of pipeline projects either completed or in progress.

The claim by some producers that U.S. refineries cannot absorb this new production is a myth. In fact, there is no need to send U.S. crude abroad because refiners here in the United States have the capacity to handle the increased domestic production. An analysis done last year by energy experts Baker & O'Brien conclusively demonstrated that the U.S. refining industry will invest in capacity to absorb an additional 3.1 to 4.3 million barrels per day of domestic oil. This estimate exceeds the Energy Information Administration's highest forecast for incremental oil production for the remainder of this decade.

In the meantime, U.S. refiners are expanding domestic crude processing capacity, while displacing imports and simultaneously benefiting American consumers. This ability to adapt to changing market dynamics is lowering fuel prices, creating jobs at home and increasing energy security.

Despite the increase in domestic crude production, the U.S. continues to import 33 percent of its crude oil needs from outside of North America. Unlike LNG, there is no real "excess" requiring export.

Another myth I wish to dispel is that allowing exports will reduce OPEC's influence. It is important to remember a very key point: the crude oil market is not a true "free market." The long-term, well-documented level of control over crude oil markets exhibited by national oil companies and the OPEC cartel virtually eliminates any claim that such markets are free or open.

With its market power, OPEC alone effectively influences 35 percent of crude oil production and supplies worldwide, impacting pricing through quotas and other controls, including access to crude oil. Saudi Arabia's decision not to cut production and allow prices to crash, in order to maintain market

share and reduce non-OPEC production, such as U.S. shale oil, clearly demonstrates that they are the controlling factor for crude price. Furthermore, a recent publication by BP shows that OPEC will ride out the threat from U.S. shale and ultimately raise its market share over the next two decades.

Refining American oil at home allows Americans to create petroleum products such as jet fuel, gasoline, and home heating oil at lower costs while simultaneously reducing the nation's dependence on foreign oil. If the law on crude oil exports is repealed, crude oil will be shifted out of a competitive market into a less competitive global market controlled by a few oil-producing states. Common sense dictates that this will cause prices of oil products to rise and negatively impact U.S. consumers' pocketbooks.

Delta's position is clear: there is no imperative to repeal the law regulating the export of crude oil. If export restrictions are lifted, feedstock cost will rise, U.S. refining capacity will be reduced, jobs will be lost, and the consumer will pay higher prices at the pump. It's better for America to maintain present law and export the refined products.

Finally, as this Committee continues to gather information on the impact of crude oil export restrictions, it is imperative to remember that the general public opinion overwhelmingly supports leaving the crude oil export law in place.

Monroe Energy is a member of a group called The CRUDE Coalition - Consumers and Refiners United for Domestic Energy. Last year, CRUDE engaged the University of New Hampshire Survey Center to poll voters in New Hampshire on their opinions regarding U.S. crude oil export policy. The survey results were overwhelmingly in favor of keeping the current export law. Key survey points:

• Two thirds of New Hampshire voters believe the U.S. is importing too much oil from foreign countries, with 86% agreeing that the U.S. should reduce the amount of oil imports from the Middle East and other countries before exporting domestic crude.

• 85% of Granite Staters agree the U.S. should limit exports of crude oil if doing so keeps gasoline prices from rising in the US.

• 78% of New Hampshire voters want the government to be certain about the impact of crude oil exports on gasoline prices before the current law is changed.

The results of the New Hampshire survey clearly demonstrate that voters want energy independence and a reduction of crude oil imports before policymakers even consider allowing crude oil exports.

And other independent polls confirm our findings. For example, in December, Hart Research released a nationwide poll showing that large majorities of voters across party lines oppose exporting more U.S. oil to foreign countries.

Keeping U.S. crude oil in America benefits Americans in the broadest way possible, impacting both families and businesses. The current export restrictions have helped keep prices for petroleum products lower than they otherwise would have been. And the law has ensured a robust refining sector and helped preserve refining expertise here in this country. Our nation's economic and security interests are best served by allowing American refiners to add value to crude oil here and becoming less reliant on higher-cost foreign crude from unstable places like Libya, Nigeria, Venezuela and the Middle East.

As they say in the medical profession, "first do no harm" – the burden of proof lies with those who would seek to alter a longstanding pillar of our nation's energy security policy.

Thank you for this opportunity to testify before the Committee. I look forward to answering any Member questions.

Mr. WHITFIELD. Well, Dr. Burnett, thank you.

And thank all of you for your statements. We appreciate it very much.

As I said in the beginning, this is sort of an informational-type hearing because we want to focus more thoroughly on this issue of the pros and cons of lifting the export of crude oil ban.

Let me just ask a generic question here. First of all, how many other countries in the world that produced a significant amount of crude oil prohibit the export of it? Are there some countries that do prohibit the export of their crude oil?

Mr. KINGSTON. None that I know of, though Russia will have an export tax that sometimes they will really ratchet up if they want to keep the oil in-house. They would just raise that tax so high that it becomes uneconomic to try to send it anywhere else.

Mr. WHITFIELD. OK. OK. So I know that we are exporting a significant amount of refined products, gasoline, diesel fuel, condensates, and so forth. And do any of you feel like that because we are doing that that it is putting pressure or causing gasoline prices to go up? Gasoline prices have been going down, and we are, I guess, exporting a large amount of gasoline products today and diesel.

Did you want to make a comment on that, Mr. Drevna?

Mr. DREVNA. I appreciate it, Mr. Chairman.

I think it is fraught with peril when you start talking about what prices are going to do. Whether crude oil or product prices, as Mr. Sheffield said, prices are based upon the international market.

What we have been able to show by taking a crude oil product, refining it here in the United States, and exporting it is a couple of things. It shows we are globally competitive, it shows we can keep jobs here, and keep those refineries running at optimal levels. That is the benefit of the exports. Without being able to export a finished product—mostly diesel too, some gasoline, but mostly diesel—we are able to keep those refineries up and running, and that is a national security thing.

If I may say one other thing, sir, I think what we don't need to have this devolve into is an upstream versus downstream kind of debate. We are all in this together. And the only thing that we are asking is that, whatever you do, you look at the whole picture and just not one time perhaps when there is some, because of some contango going on in the markets, that we have an overflow of stored crude.

So let's take our time, take a breath, and look at this think going forward and not just one snapshot in time. Thank you.

Ms. JAFFE. I would like to also address that question. It is obviously a ridiculous thing to say, but because we are exporting gasoline it doesn't affect the price. Obviously, if we banned gasoline exports we would get gasoline buildup in storage and that would depress the price of gasoline. And we have a particular problem in the State of California, for example. In different refining areas in the southwest maybe there is a little bit more flexibility, but in California where there aren't a lot of pipelines to bring refined products, whenever we have a refining accident or problem it immediately hits consumers in the State. And there are difficulties because you can't necessarily be cost effective to bring ships around

because of the Jones Act and so forth. Those things actually are affecting California refiners exactly today.

And I don't know what the statistics are for how much gasoline is being exported from California, but I can tell you that when Chevron had their Richmond accident, and when it caused this sudden burst in gasoline prices that were very difficult for average Californians, the industry was still exporting from California diesel fuel and gasoline.

So it is a market, and I think that is sort of what was the point of my remarks, which is that if we are going to talk about a market dynamic we have to look exactly, I agree with Mr. Drevna, we have to look across the entire market. But it is not clear to me why we would have a restriction on crude oil but not a restriction on products. I mean, it seems to me that we believe in free trade or we don't believe in free trade, and I am not sure why we are picking one product over another.

Mr. KINGSTON. I want to kind of bring those two statements together. Mr. Drevna talked about refineries, they are better off operating at a high level. And then what Amy said was that, yes, if you export, if you stop the exports you would have a gigantic buildup of gasoline and it will push the price of gasoline down. The problem is it would also push down the economics of running those refineries.

So at a certain point you can't make the refineries run. So if you have some kind of restriction that floods the market and you don't have demand to meet, and demand is not going to rise that fast, you are going to have terrible economics and you are going to have refineries start to cut down.

This is why we all benefit from letting these refineries run at the highest level they can. If that means that they are going to export some, that is great. You know, in this country we have had minimal growth in gasoline consumption, minimal growth really in energy consumption, and there have been some year-to-year comparisons where we are down for the year. That is kind of a good thing. I think almost everybody agrees that unless it is being brought about by a weak economy, that is generally a good thing, it is a function of efficiency, et cetera.

So you have got this world-class refining sector. If you want it to run, if want to create the jobs that the gentleman from the AFL–CIO talks about, let 'em rip. Let this great refining sector run at a high level. And if that means exports, so be it.

Mr. WHITFIELD. Well, my time has expired. At this time I recognize the gentleman from California, Mr. McNerney, for 5 minutes.

Mr. MCNERNEY. Thank you, Mr. Chairman.

I thank the witnesses for your statements. I appreciate Mr. Drevna's comment about looking at the big picture and taking our time to make the decision correctly to benefit our country the most.

I want to sort of paint a broad picture here. For opening up exports I see two big benefits. One is geopolitical. We can help Ukraine and the Baltic countries and a lot of the countries that are having problems because of their suppliers. Another benefit is it is going to create jobs in drilling, it is going to create profits for companies. Those are significant benefits.

On the other hand, my concerns are right now the domestic prices are pretty low for natural gas and for petroleum, and that gives our manufactures a real leg up. And I see a manufacturing renaissance, an opportunity for a manufacturing renaissance in this country. So I don't want to give that away. I mean, we have the potential to create millions of jobs in manufacturing with a current price differential that gives our country an opportunity to create those manufacturing jobs.

The other concern I have is environmental groundwater contamination, a big problem potentially in California where the groundwater is so valuable. And also climate change. I mean, encouraging more production, encouraging more consumption, it is going to create more greenhouse gas, it is going to put us farther down that dangerous path.

So that is sort of a broad brush. Does anyone want to comment on my observations here? Mr. Sheffield.

Mr. SHEFFIELD. Yes, Mr. McNerney, a couple on the water side. We are having droughts out of west Texas too, just like California. We started focusing on brackish water zones, we are going below the water table out in west Texas. We found a lot of water that we can use from the brackish standpoint. We have also signed major agreements with the cities of Odessa and we are working on Midland to use effluent water. Our goal is to use no fresh water after a period of time of about 5 years.

On the environmental issues, we are going all out to install vapor recovery units to capture all the methane. We are working with EDF at Fred Krupp. I visit him all the time in regard to looking at ways to again capture all methane at the sites when we frack wells and so on. So the industry is going all out on both methane emissions and also using other sources of water besides fresh water.

Mr. MCNERNEY. Well, I appreciate that, and I think most of the players are willing to go down that path. They are willing to make the extra investment. There may be a couple of bad players out there, and it is going to be up to the way that we regulate that market to make sure that the bad players don't do much damage and hurt the reputation of the industry as a whole.

So that is something I hope to work with my colleagues on in the future to make sure that we do that.

Mr. KINGSTON. I would like to address the gasoline price. You know, this is not just theoretical. We had a Brent-WTI spread that for years and years WTI was over Brent. And then as the boom got going in the U.S. and crude stocks built up, not just in Cushing but everywhere, that price plummeted, and I think at its widest WTI was $27 below Brent.

There was no evidence at all that that lowered the price of gasoline in the U.S., because as numerous commentators, including the recent Brookings Institute study have shown, the price of gasoline in the U.S., because the U.S. is a gasoline importer and an exporter, as a result of that we are tied to the world market. The world market is therefore ultimately tied to the price of Brent crude oil.

Mr. MCNERNEY. So there is no differential between American gas prices and the world gas prices? There is a differential——

Mr. SHEFFIELD. Ultimately, on a spot wholesale level, I mean, yes, there is a difference, but ultimately if one gets too cheap to the other they will just gather it up and export it to the other place. So they stay within a range. But the crude price, because a lot of that crude was stranded at Cushing, dropped significantly below the price of Brent and the price of gasoline did not follow.

If the case is to be made that keeping a large supply of crude here in the U.S. lowers gasoline prices, it would have happened. It is not just theoretical. We had the experiment. Nobody set out to have the experiment, but we had it, and there was no evidence at all that that kept the price of gasoline in check.

Mr. MCNERNEY. Mr. Markell.

Ms. JAFFE. Let me just add one thing about our relationship with the Europeans.

Mr. MCNERNEY. Well, I recognized Mr. Markell first.

Mr. MARKELL. So this focus on gas prices is something I wish we could get off the table. It is important. I own two SUVs, I am very concerned about gas prices. But it is very clear that U.S. gas prices are set internationally based on those spot markets. There is a small swing from market to market and as the gap gets too wide then it closes. From my point of view, it kind of takes the focus off the jobs and economic angle that I think we are not paying enough attention to.

So there is a lot of talk about gasoline prices. To me, the question is settled. U.S. gas prices are set on the international market and whether we export crude or don't export crude, that is going to be the truth in the future as well.

Mr. MCNERNEY. I have run out of time.

Mr. OLSON [presiding]. The Chair now recognizes himself for 5 minutes of questions. Welcome to our experts.

December 22 of 1975, Gerald Ford signed the law that created the export ban we are talking about today. To show you the change in America that has happened since that time, that very next day he signed a bill to try to make our country adopt the metric system of measurement. The metric system. That world has been turned upside down and our energy world has been turned upside down since that time.

We have seen a boom in oil production that means some parts of America are seeing some tremendous benefits, places like my own State of Texas and North Dakota. Energy means amazing opportunities for these small towns. But we have also seen the impacts on the global economy. Our reliance on foreign oil is slipping away faster and faster and faster, more than we could ever have dreamed 5 years ago. This benefits our trade balance, our energy security, and our economic growth. These are huge benefits and they are real.

Growing supply has slashed the price of oil. That is great for Americans at home because the price is so low at the pump, but for my hometown of Houston this has meant good people have lost thousands and thousands of good-paying American jobs. It is a simple fact that fewer rigs are working and less money is being invested.

Market forces and global politics are hitting my hometown hard, but this town, Washington, is adding to the trouble. In this envi-

ronment we shouldn't be making it harder to drill. And that is why it is time we fix pipeline permitting. Energy means nothing if we can't get it to the markets. And further, the Endangered Species Act should be a protection, not a weapon. And we should be more open to safe offshore development. And we need to keep our rules on our refineries reasonable. And that is why I am an unspoken critic of the ethanol mandates.

Lastly, today I agree that is important to consider the ban on most crude exports, but exported oil won't be a cure-all. But free trade is very important and no law should be above scrutiny, and this committee is at a very point in this early conversation.

My first question is for every panelist. I hear from the oil producers that their oil is trapped. They say its unfairly marked down compared to global prices. I hear from refiners who say the opposite. They argue there is plenty of capacity and they are expanding every day to take more and more American crude.

Which statement, one of three, best sums up your views about these two opposing views? Number one, we have enough refining capacity to absorb light oil. We are there. Number two, we have more light oil than can be refined reasonably or absorbed currently. And number three, we have the right amounts of oil and capacity in our refineries, but not enough pipelines to get from A to B.

So three choices. Mr. Sieminski, you are first, sir, one, two, or three, with some comments if you want to.

Mr. SIEMINSKI. Chairman Olson, thank you. Well, I think your number three, that we don't have enough pipelines, I think that was the case for oil from Cushing, Oklahoma, 3 or 4 years ago. But the infrastructure to bring oil south from Cushing to the Gulf Coast I think is now in a lot better shape. So that leaves me with one or two.

I would say, sir, that it is a combination. I think that the capacity to refine the crude oil is probably there, but not at an equal price between Brent and WTI. So in other words, if the West Texas Intermediate price is discounted enough, then refiners would be happy to take a lot of it.

Mr. OLSON. I am sorry, sir, my time is up.

One-point-five for you, Mr. Sheffield, one, two or three, please. I am pretty sure you are probably going to be a one, you have the capacity.

Mr. SHEFFIELD. Yes, I think what we are not hearing from the refiners is the economic penalty. They invested $85 billion to redo their refineries because they all thought light sweet crude was declining and we would never find it again. It was all going to be heavy crude from Canada, heavy crude from Mexico, heavy crude from Venezuela. They invested $85 billion. So to refine light sweet crude, they have to charge an economic penalty.

Secondly, they are keeping the $10. They are not passing on the $5 of it back to the producers to create jobs or $5 back to the American consumer. So I think it is obvious for me.

Also, I left out a key point, you brought up pipelines, is that what is interesting about the law in 1975 is that Canada—I love Canada, we had an office there—Canadian producers, they can use our storage, they can use our refiners, and they can apply for a license to export their crude oil.

Mr. OLSON. And I have used my time as the chairman overly. So I will yield back the balance of my time and give my time now to Mr. Barton—or are we going to go—I am sorry. Oh. Gene. I am sorry.

Mr. Green from Texas is recognized.

Mr. GREEN. Well, I think it is appropriate that you have four Texans left over while we have that one vote on the House floor. So Congressman Flores and Joe Barton and I.

I want to thank the Chair for doing the hearing today and thank our witnesses.

We are here to discuss an important issue in the district I represent. Because I have at any given time—our district lines change in Texas all the time. I have had five refineries in my district, from Exxon in Baytown to Valero in the City of Houston. And so this is a balancing act.

I am looking at our refineries now having the best margins that they have had that I can remember, and the price of gas is reasonable, $2.15 a gallon, $2.10, in Houston. But I also have a whole bunch of jobs that come from the Baker Hughes, the Halliburtons, and everyone else who are actually so—and I understand the problem. We are trying to balance it. We want the refinery margins, but we also want to keep those folks working in the oil patch. And so that is where the balance come from.

And, if we can, we will see how it works. But, Administrator Sieminski, it is good to see you again, and thank you for the good work you all do.

You mentioned that EIA is composing a study that would discuss crude oil in exports. Where are you at on that study?

Mr. SIEMINSKI. Congressman, we have done this study on what drives gasoline prices, and I think you heard a number of people talk about the results of that. Gasoline in the U.S. seems to be set more in the international market rather than elsewhere. We are looking at options for petroleum refineries to process additional light sweet crude oil. We will have that study out in about a month.

We have also a study underway to look at the implications of increased crude oil exports on the refining system, in general, and we will have that out, I think, sometime in April.

We also published an oil import tracking tool that makes it easier to see some of the changes that have taken place down in Texas and Louisiana.

So I would say over the course of the next 6 to 8 weeks we will have—we will have two or three more big studies out.

Mr. GREEN. Well, Congress doesn't move that fast. I think we will probably be able to see those studies before they do.

Mr. Sheffield, first of all, thank you and Pioneer for some of the things you are doing because it makes it easier—when I drive through Eagle Ford, I hate to see the flaring for lots of reasons, environmentally, but, also, I know somebody is not getting paid for that product that they are producing. And we have pipeline issues and transmission issues there.

What does the world condensate market look like for U.S. exporters? I know the Department of Commerce is doing that. Is that kind of a safety valve for what we need? Because we have a current

procedure for exporting condensate. Are we having some success in that?

Mr. SHEFFIELD. Yes. We are exporting 20,000 barrels a day now at Pioneer of condensate, and it is going to Japan, South Korea, and Europe. They need it.

About 8 weeks ago there were some articles written about that the market is closed. That is because, for a period of about a week, the international sweet price and the domestic sweet price narrowed to about $2 for just a period of 2 or 3 days, and now it is widened back. And that will allow—most experts are thinking that we can export about 200,000 barrels a day out of the Eagle Ford.

Several other companies have been approved to be able to go and export their process condensate. And so that process will continue. And it will probably—it helps us for about 6 months on this inventory so that the biggest issue is the sweet crude from the Bakken sweet crude from Colorado in the Niobrara and the sweet crude from the Permian Basin.

Mr. GREEN. OK. How long does it take Department of Commerce to review Pioneer's application to export the condensate, the regulatory delay, and the timeframe?

Mr. SHEFFIELD. Yes. It took a few weeks.

Mr. GREEN. That's amazing. We are waiting for exporting on LNG for years.

Mr. SHEFFIELD. Obviously, we were very pleased.

Mr. BARTON [presiding]. Keystone proposal. Let's——

Mr. GREEN. Oh, yes. Well, and I know there was some testimony about—I actually have two of the huge tanks that Keystone has built in Channelview, Texas. And you are right about getting the Cushing crude oil down there, but we still need it to come from Canada across the border.

But the export numbers you are talking about, 20,000 and up to 200,000—you know, the five refineries off and on I have represented because I am real familiar with them—they all have been retooled in the 1990s to do the heavier crude—Venezuela, Mexico—and we don't have small refineries in our area. In fact, all of them have been expanded over the years.

We probably have the smallest, about 200,000, 250,000 barrels a day. And I remind people even from TransCanada, if that is a 750,000-barrel-per-day, we use over a million just in East Harris County to do it.

Charlie.

Mr. DREVNA. Thanks, Congressman.

I would like to make a comment about the retooling and the billions of dollars that we invested, which is true. But I think there is another myth out there circulating that, you know, the only thing those refiners do is just suck up all the heavy crude and that is all they use. They use a mix.

And we are pretty good at what we do, just like Mr. Sheffield's company is really good at what they do. We have—you know, we use light crude, we use middle grade, and we use heavy. And we can take more—more light by backing out the middle, backing out some heavy.

So it is not one of those all-or-nothing kind of things. Like I say, we have been doing this for a long time, and we can take the extra crude.

And given what Adam Sieminski was talking about, I disagree somewhat that—"OK. Well, we are OK. We have got some pipelines going, and we are good and we can go home." No. We were pretty good going north and south. We found out that we weren't. We are awful going east and west, and probably always will be awful for a long—you know, for a long time.

Mr. BARTON. The gentleman's time is expired.

Mr. GREEN. I am out of time. But, Ms. Jaffe, it is always good to have you before our committee. I like to have a Texan from out in California.

Mr. BARTON. The Chair is going to recognize himself for 5 minutes because I actually think it is my turn. So I am going to do that. We are doing the Pony Express. Yes. You know, we have a vote on. So we are going to vote coming back and changing the chairmanship.

Mr. Sieminski, could you tell the subcommittee how many barrels per day of refined products we export and how many barrels a day of refined products we import?

Mr. SIEMINSKI. Well, I could get the exact numbers for you for the record, Congressman, but the total amount of exports is now up to 3 ½, 4 million barrels a day of products.

[The information follows:]

> When excluding crude oil, the United States exports 3,834 thousand barrels per day and imports 1,884 thousand barrels per day of refined products. The United States is a net exporter of refined products by 1,950 thousand barrels per day.
>
> This data is based on 2014 monthly averages. EIA usually considers all refined products that are not crude oil, as opposed to just looking at Finished Petroleum Products. Furthermore, HGLs (Hydrocarbon gas liquid) and other liquids are included in the aforementioned refined products data.

Mr. BARTON. But is it fair to say we are exporting more than we are importing?

Mr. SIEMINSKI. We are a net exporter of products.

Mr. BARTON. Net exporter.

Mr. SIEMINSKI. That is correct. By a small amount.

Mr. BARTON. OK. Thank you, sir.

So if we were to eliminate the ability to export refined products, that would not be a good thing?

Mr. SIEMINSKI. I think Mr. Drevna said that refiners are actually benefiting through capacity, and Mr. Kingston—that having the ability to export products actually allows you to run your domestic refinery system efficiently.

Mr. BARTON. Better. Yes.

Mr. SIEMINSKI. Yes. And that actually works to the advantage——

Mr. BARTON. We are for exports of refined products.

Mr. SIEMINSKI. That is correct.

Mr. BARTON. Now, Mr. Sheffield, I need—I mean, you all know this, but I am the sponsor of the bill to repeal the ban on crude oil exports. So I am pro crude oil exports. I think you all know that, but I guess in full disclosure.

You testified, Mr. Sheffield, that, if all companies—all producers were allowed to either sell in the domestic market or sell in the world market crude oil, that while you would get a slight increase in your price domestically, the overall world price would at least be pressured to go down because you would be competing against the Russians and the OPEC nations in the world market and, since U.S. production is going up, that would overall bring the world price down—or tend to bring the world price down. Is that correct?

Mr. SHEFFIELD. Exactly. Anytime you put more supply in the international market, especially at this point in time, you are going to bring the international price down.

Mr. BARTON. So it may be counterintuitive to some, but if we allow crude oil exports, at least over time we are going to stabilize world prices and probably bring them down because we are increasing U.S. domestic crude oil production. Is that correct?

Mr. SHEFFIELD. Exactly. And lower gasoline prices for the American consumer.

Mr. BARTON. Mr. Drevna, you and I know each other real well. I was very gratified to hear your testimony that your association is not automatically opposed to the repeal of the ban on crude oil exports.

What would need to be done to expedite that? You had some qualifications, and I just want you to be able to put those on the record.

Mr. DREVNA. Absolutely, Congressman.

When you look at—as I said earlier, if you look at just lifting the ban on the exports of crude oil in a vacuum, there are a lot of other tangential things that must be looked at so we don't try to solve one problem and create two or three others. And chief among them is the Jones Act.

Now, I know everyone is going to say you can't repeal the Jones Act. Well, you can't even talk about it. Well, I think it is time we talk about it.

Mr. BARTON. Well, we can talk about it.

Mr. DREVNA. Yes. In the context of the crude oil—you know, we have had four or five refineries—some shut down, but we have three or four or five others that were—I mean, days—I am literally days away from shutting down on the East Coast. Bakken crude—getting that Bakken crude there saved them.

So what all I am saying is, you know, for 40—ever since we had this thing in 1975 and the Arab oil embargoes, we have been having an energy policy here in the country that sort of goes—it lurches from crisis to crisis, and we never look at anything holistically.

Mr. BARTON. So you just want to look at the whole picture.

Mr. DREVNA. Look at the whole picture and see what it does to the total economics. If the price of crude goes up somewhat and it is still OK, fine. But——

Mr. BARTON. I have got 30 seconds. I want to go to Dr. Burnett—I am sorry, not Mr. Burnett.

Delta is the Delta Airlines. Correct?

Dr. BURNETT. Correct.

Mr. BARTON. But does the parent company own the Delta refinery or are you a subsidiary of the——

Dr. BURNETT. Yes. Monroe Energy is a wholly owned subsidiary of Delta Airlines.

Mr. BARTON. OK. Now, does Delta Airlines use the total production of the Delta refinery?

Dr. BURNETT. The way it works is that all refineries produce gasoline, diesel, as well as jet fuel. So we use the jet fuel directly into the New York Harbor to our airport hubs there.

Mr. BARTON. But some of your refinery capacity results in refined products that you sell to others, and probably some of that is overseas. Now, I don't know that.

Dr. BURNETT. No. What we do is we actually swap with Phillips 66 in traffic euro. We swap the gasoline and diesel for jet fuel in other locations. So we have a virtual jet refinery of about 170 barrels a day.

Mr. BARTON. Your refinery would oppose us restricting your refined products to only going to Delta. Correct?

Dr. BURNETT. Correct.

Mr. BARTON. I just want that on the record.

And my time has expired.

Mr. McNerney, have you asked questions already?

Mr. MCNERNEY. Yes, I have.

Mr. BARTON. You have.

Then we are going to go to—no, sir. I just—I remember that you have to go minority, majority. That is all.

The Chair recognizes the distinguished gentleman from Illinois, Mr. Shimkus, for 5 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman.

Great hearing. It is a great discussion. And, of course, a lot of us have been talking about this. And I do believe—and I have mentioned this even in the last couple Congresses—you put more crude oil on the world market, world market price should go down. Pricing would be from Brent versus a captive West Texas intermediary anymore.

I think the political concern is what Mr. Sieminski and I talked about on California prices. If we do this, but then some other variable raises the gasoline prices, not a supply and demand debate, but, politically, people are going to say, "See what you did. You exported the crude oil and gas prices went out."

It is very hard for politicians to be able to—without a 5-second sound byte, to be able to explain the macro- and the microeconomic issues that we are involved with. So that is probably why we are not going as fast on this as we are doing with LNG issues, which makes a—it is an easier argument.

I want to talk just quickly—because Mr. Drevna opened the discussion on the Jones Act. The Coast Guard Admiral Paul Zukunft recently said—and I will just take one of the quotes—"I think at the end of the day it would put our entire U.S. fleet in jeopardy where our fleet of roughly 80-plus international U.S.-flagged vessels will rapidly go to zero. And then there is a time of crisis. Who are we going to charter to carry out our logistics? Very difficult if we don't have U.S.-flagged ships."

And, you know, we are having this big internal Homeland Security debate right now—I think the bill probably just passed—and national security issues. U.S.-flagged vessels on our inland water-

way systems is a have-to. We are just not going to have—especially in the inland waterway systems, which my district borders the Mississippi, it borders the Ohio, it borders the Wabash. Just the national security implications of that I think is difficult to do.

So does anyone disagree with that analysis? Charlie.

Mr. DREVNA. No. I don't disagree, Congressman. You have to realize, though, what we are talking about from the refining sector is solely the international fleet. You know, and we are free-marketers.

Mr. SHIMKUS. Yes. But you are talking maybe from New Orleans or Texas to New England—to the New England coast.

Mr. DREVNA. Right.

Mr. SHIMKUS. Saying that that is international, but it is really national.

Mr. DREVNA. Well, but we have international ships coming in and out of there every day.

Mr. SHIMKUS. But they are not going from U.S. port to U.S. port.

Mr. DREVNA. Exactly.

Mr. SHIMKUS. I mean, we are—so, anyway, I think it is a very difficult proposition.

Ms. Jaffe, I have been involved—I am headed to Lithuania next week for the 25th anniversary. I deal with Eastern European issues. That is why the LNG—I am going to go visit the LNG terminal.

Talk through the international security implications for our allies, first of all, who are held hostage by extortionists who are not our friends, and, also, the—and so I got it confused.

Because in that we put more competitive crude oil on the market, what does that do to our enemies and their ability to do the things that they are doing?Can you talk to that a little bit.

Ms. JAFFE. Yes. So I think you raise a very interesting, important point. All of the oil that has been disrupted recently—Libyan oil where we now have ISIS attacking near the Kirkuk oil field—that would—when Iraq oil gets disrupted or Libya's oil gets disrupted now, that hurts the supplies going to Europe. That gives Russia a tighter stranglehold on the supplies that they provide to Europe.

So our goal, as their ally and as a world leader and as a believer in free markets, should be not only to make sure that we have enough oil here in the United States, but, also, that we are leading from the front on making sure that powers like the Russians or Iran are not able to use oil and gas as a geopolitical lever, as a weapon.

Mr. SHIMKUS. And the import terminals in, like, Europe as a whole, there is more crude oil import locations than what you would have on LNG east to west. Is that safe to say?

Ms. JAFFE. You know, I mean, Europe is a market. I mean, I think the interesting thing about the LNG export question—I mean, that seems obvious because we have this fear that the Russians would cut off natural gas supply to Europe. That would be——

Mr. SHIMKUS. Not a fear. A truth.

Ms. JAFFE. Yes. Absolutely.

So my point to you is, but on the crude oil side, Europe has actually lost their supplies from Libya. And I think the President a year, 2 years ago correctly released supplies from the Strategic Petroleum Reserve to loosen up the light crude market at the time we were importing still because we want to help out our allies from Europe and we don't want to see Europe having shortages.

So, ultimately, we have to concern ourselves. We need to look at, if there is a refinery on the east coast of the United States whose economics are questionable, you know, is that how we are going to run our foreign policy. We are going to have our foreign policy be orientated to keep one refinery open in the United States because we have these allies.

And during Rita and Katrina—I will speak as a Texan for a moment—you know, Europe lent us the gasoline that we needed to be able to reevacuate people and bring them back and forth safely to Texas, you know. And we are now telling them that we don't want to provide them with any supply because there might be a competitive advantage for one refiner? That doesn't make sense.

Dr. BURNETT. I would like to respond somewhat to that because supply disruptions in Libya and elsewhere do affect the price of crude oil, but there is plenty of crude oil supply available in the world. That is why we have a low price today. The issue for our friends and allies in Eastern Europe and elsewhere is LNG and product availability, not crude oil.

Mr. WHITFIELD [presiding]. The gentleman's time is expired.

At this time I recognize the—who is next on the list? The gentleman from Iowa, Mr. Loebsack, is recognized for 5 minutes.

Mr. LOEBSACK. Thank you, Mr. Chair.

Sorry that we have had to run back and forth. I think whoever is in charge of this institution wants to make sure we get our 10,000 steps in today. And so I really appreciate—and I haven't been able to listen to all of the testimony. I apologize. Just back and forth. A lot of meetings in the process, too. I have a lot of questions on this, as you might imagine.

I do want to start out with Ms. Jaffe, if I could. First of all, I got my PhD at UC Davis. So I am glad you are there. But it was in political science. And the West Village, you know, is quite an undertaking, being a net zero energy undertaking, and I commend UC Davis for doing that. And I don't know if you have—you must have some role in that. I know that you are in the graduate college of management. But thank you for being here today.

And I kind of want to explore maybe with not just you this whole geopolitical thing that Congressman Shimkus brought up and others.

First of all, which specific countries are we talking about that we can help if we are allowed to do so? Which countries?

Ms. JAFFE. Well, I think that, ultimately, we are in a global market. Right? But when we have disruptions, the disruptions—and we are not out of the woods with international disruptions.

The militias that are funded by ISIS have made a decision that they are going to try to capture as many oil fields as possible inside Syria and Iraq. You know, the response towards that has been, you know, not 100 percent effective.

We have the civil war in Libya which is disrupting exports. You could have a civil war, as we know, from watching events around the Middle East and in Africa. There is many different places where oil supply can get disrupted.

Mr. LOEBSACK. But what——

Ms. JAFFE. And the people that it is hurting is—that is why the price of Brent crude, which is the global marker——

Mr. LOEBSACK. Right.

Ms. JAFFE [continuing]. Is now $10 higher than our prices here in the United States. Because those are the countries—Europe and those are the countries that are losing their supply.

Mr. LOEBSACK. But are we talking about specifically Ukraine or—I mean, where are we talking about where we can help folks so that they are not being extorted by Russia and whatever—you know, the arguments that are being made on that.

Ms. JAFFE. I think it is any country in Europe that has a refinery. I mean, it is the whole continent. And it also affects availability of supply to Asia as well.

Mr. LOEBSACK. So how does that—I mean, how do we then, practically speaking, put into effect that kind of a policy other than lifting the ban? How does it happen, then, that we can help those countries? Because we never really hear sort of specifically how that works.

Ms. JAFFE. Well, we have several different tools.

First of all, we now have this surge in light crude oil production in the United States. We have light crude oil sitting in the Strategic Petroleum Reserve. There is no——

Mr. LOEBSACK. I am sorry. But I just want to be more specific. Maybe somebody here can be specific.

How does that oil then get to where we want it to go? You know, how does that happen if we have a policy that lifts the——

Ms. JAFFE. Well, we have to lift the export ban to be able to be an effective player in the global market.

Mr. LOEBSACK. Right.

That enables that to happen. But how does it happen specifically?

Mr. KINGSTON. Well, I would like to point something out. It is entirely possible that you could lift the export ban and nothing happens.

Mr. LOEBSACK. Right.

Mr. KINGSTON. But that doesn't mean that it is an empty gesture.

Mr. LOEBSACK. Right.

Mr. KINGSTON. I think back to the fight in the late 1990s over the lifting of the ban on exporting Alaskan crude, and there was a lot of effort put into this Congress to get that to be lifted. BP spent a lot of money. At Platts, we wrote a lot of stories on it, and they lifted it. And they made a lot of effort at selling—and after about 3, 4 months, the Asian refiners said, "You know what? We don't really like this stuff. It doesn't work that well."

Mr. LOEBSACK. I mean, because things are happening in the Ukraine that might not allow for this actually to happen. It depends upon the situation.

Mr. KINGSTON. But there is really a kind of a positive thing to it. Mr. Drevna mentioned Turner Mason before. They are a very highly respected engineering consulting firm, and we have a partnership with them for many years. And every day we publish refinery yields and netbacks and refining margins.

And if you look at the domestic crudes, they are consistently the biggest winners in refining margins and not just because of the low price.

Mr. LOEBSACK. Right.

Mr. KINGSTON. So it is entirely possible that the export ban could be lifted and still the refineries in the U.S., which have certainly a big advantage in transportation costs and a big advantage in fuel costs because they are using cheaper natural gas to run it as opposed to oil in another part of the world—they are just the winners in this battle.

But the fact that the possibility of exporting it is there tends to keep things in check. So the advantages that you would get from, let's say, maybe keeping a lid on the Brent price, which affects gasoline price—that advantage still exists and, meanwhile, the refineries are still operating. So the jobs that the AFL–CIO is concerned about, they still exist, too. So the refineries can still win this battle even if the export ban is lifted.

Mr. LOEBSACK. Yes. I will just tell you for the record that the concern I have—and you can say it is irrational that this is nothing like what it was prior to 1973 and 1974. But go back—we had a Drain America First policy. We all remember that before the crisis back in the 1970s, the first crisis.

And just for the record, I have a lot of concerns that we not get into a situation like that. I know it is completely different in many ways. We have more sources of oil here domestically and around the world, that sort of thing, and we didn't even have North Sea oil back then. But I still have a real concern about that. I just want you folks to be aware of that from a national security perspective. I think we have to be thinking about that.

I do want to ask Mr. Drevna and Dr. Burnett about oil prices going down now, understanding how markets work. Obviously, we know that oil prices aren't going to stay at the current level forever.

So what strides is the industry taking towards future energy investments instead of asking for us to lift exports in terms of expanded drilling operations, et cetera? What are you doing to prepare for future spikes? I guess that is the question.

Mr. DREVNA. Well, from the refining side, you know, we are continuing to upgrade. We are continuing to—not a technical term—we are continually changing the valves and making sure we can use the abundance of supply that we have here in the country today.

So that is why I say it—but are we there yet? We are getting there very closely, again, because of what we talked about earlier, you know, the—unfortunately, the midstream distribution center was not built in this country to handle what we have today.

It is going to take time for us to get caught up, but not that much time. So, you know, we are putting lot of money and a lot

of effort into upgrading the refinery so they can use the light sweet crude.

One last thing I would mention. We talk about the upstream folks winning, the refining folks winning. This is not a win/lose game. We should be talking about what is best for America and the American consumer and whatis best for energy and national security. Then everybody wins.

Mr. LOEBSACK. Thank you.

And thank you, Mr. Chair.

Mr. WHITFIELD. At this time I recognize the gentleman from Texas, Mr. Flores, for 5 minutes.

Mr. FLORES. Thank you. Had an equipment malfunction.

Chairman Whitfield, thank you for holding today's hearing on this timely issue.

Several major studies over the last year, including CBO, Brookings and Columbia University, all agree on a key issue: American consumers and households will benefit if we repeal the outdated ban on crude oil exports.

Some have countered that, if we lift the ban, OPEC will simply respond by cutting production, stabilize the price in their favor. I think clearly that the most recent actions by OPEC rebut that assertion, and I don't think it is appropriate to try to reassert it at this point in time.

Also, we have seen in recent months OPEC wants to keep market share by maintaining production even in a low-price environment, and they hope to undercut U.S. shale producers, thereby reducing the incentive to reinvest in a business.

The Brookings Institution, along with respected economic consulting firm NERA, looked at different OPEC scenarios, cuts of production and maintaining current production levels.

And here is what they concluded: "The benefits of lifting the ban depend on the energy market conditions and how other oil suppliers, especially OPEC, respond."

And then they go on and say—the key phrase they said is, "What is most important is our finding that in all of these modeling scenarios there are positive gains for U.S. households."

And so the shale revolution in the United States has fundamentally altered the global energy picture, and I think we owe it to hard-working American families and the consumers to facilitate the continuing improvements that we are seeing in this market.

Columbia University also reached a similar conclusion, stating, "While in the past market observers have generally assumed OPEC will offset a large share of non-OPEC production to defend prices, current OPEC behavior in response to the U.S. Shale boom casts doubts on the cartel's ability or desire to offset non-OPEC supply."

Mr. Sheffield, like you, I went through five of these downturns. I had counted four, but you are right. I recounted after you said five. It is five.

Mr. Kingston, my first question is for you. What is your view of OPEC's potential reaction if we were to lift the ban on crude exports?

Mr. KINGSTON. Well, I think you said it in your answer.

OPEC is certainly not going to change its policy now, which is to hold on to market share, just because the export ban is lifted,

particularly, as I mentioned earlier, I don't think you can necessarily count on how much oil is going to go out the door.

I think certainly, as Mr. Sheffield pointed out, you know, the light condensate doesn't have a great market in the U.S. So that would continue to flow. But that doesn't look like that needs a change. The Commerce Department has clarified that.

So if you are talking about, you know, crude out of the gulf coast or whatever, how much would OPEC cut, it doesn't change really the global supply-and-demand balance.

Mr. FLORES. Thank you. And try to keep your answers short because I have several questions for each of you.

Would you agree that opening new markets for U.S. Oil producers would be good for both the U.S. and our allies, regardless of what OPEC does? I think you answered that affirmatively. So yes.

Mr. KINGSTON. Yes. I would agree with that.

Mr. FLORES. Mr. Burnett, given that the U.S. Shale revolution and OPEC's recent response to keep market share, on what basis can you assert unequivocally that OPEC will respond by cutting production if U.S. Crude oil can be bought and sold in the global marketplace?

Dr. BURNETT. Historically, Saudi Arabia and OPEC have cut production to maintain market prices.

Mr. FLORES. But they haven't this time.

Let me move on to the next question.

You make more products than just jet fuel. Right?

Dr. BURNETT. Yes.

Mr. FLORES. You refine the full distillation scheme. So do you export any jet fuel?

Dr. BURNETT. We do not export jet fuel.

Mr. FLORES. OK. Do you export any other refined products?

Dr. BURNETT. We occasionally export some diesel and some gasoline, but it is mostly swapped for jet fuel in other locations.

Mr. FLORES. Would it be appropriate to stop you from exporting those other refined products?

Dr. BURNETT. I am sorry?

Mr. FLORES. Would it be appropriate to stop you from exporting any of those other refined products?

Dr. BURNETT. Of course not.

Mr. FLORES. OK.

Dr. BURNETT. It is a free market. Products are in a free market.

Mr. FLORES. If we said that you could no longer sell those refined products and you were forced to sell them only in the U.S., what would happen to pump prices?

Dr. BURNETT. What would happen if refineries are not allowed to export gasoline or diesel is that you would start cutting back refineries and closing refineries.

Mr. FLORES. OK.

Mr. Sheffield——

Dr. BURNETT. So, ultimately, the prices will go back up.

Mr. FLORES. That is perfect. That goes right to where I want you to go.

Mr. Sheffield, if we keep the ban on crude oil and keep prices depressed, what does that do to reinvestment in the upstream industry?

Mr. SHEFFIELD. I think you will see the drop of 900 rigs go to a drop another 1,000 rigs. It will lead to significantly declining production, and this country will be importing 60 percent, 70 percent, 80 percent of our oil from the Middle East.

Mr. FLORES. And so, Ms. Jaffe, if that happens, who gets hurt?

Ms. JAFFE. All I can say, sir, is I am in the same direction as you. In either case, when you ban and try to do something to twist the market around, the consumer is the one that gets hurt.

Mr. FLORES. That is exactly where I am going.

So does anybody disagree with me that, if you put—well, I am out of time—if you put artificial constraints on the market of any kind, whether it is upstream, downstream, midstream, or anywhere else, you hurt the American consumer and hard-working families who have been crushed under this economy for the last 6 years?

Thank you. I yield back.

Mr. WHITFIELD. Gentleman yields back.

At this time I recognize the gentleman from New York, Mr. Tonko, for 5 minutes.

Mr. TONKO. Thank you, Mr. Chair.

I don't think there is any doubt that there are competing private interests at stake as we attempt to answer the question of whether or to what extent we should allow exports of domestically produced crude oil. The real question is whether it is in the national interest and the public interest, for that matter, to do so.

Even with new drilling technologies, the United States has lower proven reserves and higher production costs than many other oil-producing countries and we still use a lot of petroleum products.

Mr. Sieminski indicates in his testimony that—and I quote—"The implied 95 percent confidence interval for West Texas intermediate crude oil calculated for the current short-term energy outlook ranges between $32 per barrel to $108 per barrel."

Now, there is no insult intended here for the Energy Information Agency. That doesn't seem very helpful. Basically, EIA is saying that, "We have no idea what the price per barrel is going to be."

So, Dr. Burnett and Mr. Drevna, how do you or your member companies make investment decisions in the face of this price volatility? Does the price matter less than other factors? Perhaps is demand for specific refined products the controlling dynamic? Just how do you make those decisions?

Mr. DREVNA. Sir, you make them on what you think the demand is going to be. The refiners are somewhat different than our friends and colleagues in the upstream segment. We operate on demand. You know, if the price of crude is here or here or somewhere in the middle, it is going to depend on what the demand is and what we see that demand.

As Mr. Sieminski will tell you, since a theory back in 2007, when we connected two dots and drew the demand through the roof, that has collapsed over the years. So we have had to scramble. We have had to do some different things. So it all depends on what we call that spread.

So we make decisions based on what we think the demand is going to be, what we think the regulations are—or what they are, and what we can do to adjust that spread to, A, provide the product, B, pay our employees, C, keep the equipment going, and, D, make a profit.

Mr. TONKO. Thank you.

Dr. Burnett.

Dr. BURNETT. Yes. What we do is we look at the fundamentals, supply-demand balance, to set what we expect the crude oil price to be over a longer term. Refinery investments are done over many years.

So we have to try and take a forward position on what the crude oil price is going to be based on fundamentals and then, as Mr. Drevna said, look at the demand side of products and try to get an estimate of what those differentials or what we call cracks are and look at the economics of each project based on those assumptions.

Mr. TONKO. Does the fact that we have an export ban increase or reduce the uncertainty that you will see a return on refinery investment?

Dr. BURNETT. I think what the industry needs is certainty on what the legislative outlook is going to be. The problem is uncertainty.

Mr. TONKO. And Mr. Drevna?

Mr. DREVNA. Yes. I mean, we do, as most industries in this country do, a really good job of handling economic uncertainty. What we don't do a good job and can't do a good job is handling regulatory and legislative uncertainty because that just creates paralysis.

Mr. TONKO. So some order of predictability as to what that operating climate is is important?

Mr. DREVNA. Absolutely. Because, as Dr. Burnett mentioned, these investments aren't made on a 2- or 3-year basis or on an election-cycle basis. They are made on a long-term basis.

Mr. TONKO. And if a low oil price sends a signal to slow production of domestic oil, what is the problem with doing that from a national perspective? Anyone?

Mr. SHEFFIELD. We actually gave an exhibit to our testimony that we filed the last Friday by PIRA, and it shows a wide range of prices, from $40 up to about $100, and the effect of $10 swinges.

And $10 swings is the difference between 2-million-barrel-a-day loss in this country or a 2-million-barrel-a-day gain. So it is a great chart to look at that is filed in our testimony.

Mr. TONKO. Does anyone else have a comment on any of that? Dr. Burnett?

Dr. BURNETT. Yes. I think that I need to go back and say that, if you lift the ban right now, the effect on the global supply and demand really is a zero-sum gain because you export more, but you will be importing more.

So the issue is: Whenis the demand cycle going to pick up enough to support prices and enable domestic production to increase again?

And so we are looking at—you have to look the world growth and GDP over the next few years to make that determination.

Mr. TONKO. Thank you so much.

I see my time is up. So I will yield back. Thank you, Mr. Chair.

Mr. OLSON [presiding]. Gentleman yields back.

The Chair recognizes the gentleman from Ohio, Mr. Johnson, for 5 minutes.

Mr. JOHNSON. Thank you, Mr. Chairman. You caught me off guard there for a second. Let me move my chair.

Well, thank you, gentlemen, for joining us today.

Mr. Chairman, before I get started with my questions, I would like to ask that a letter from the Ohio Oil and Gas Association expressing their members' support for lifting the crude export ban be submitted for the record.

Mr. OLSON. Without objection, so submitted.

[The information appears at the conclusion of the hearing.]

Mr. JOHNSON. Gentlemen, as you know, I live in energy-rich eastern and southeastern Ohio. You have all heard of the Marcellus and the Utica shale. You can't turn a corner there without seeing the renaissance in energy production.

As you know, we passed a bill here in the House dealing with streamlining and quickening the liquid natural gas export permitting process.

I would like to hear from each of you. What are the most significant differences, both pro and con, domestic and geopolitical, to LNG exports versus crude exports?

The folks back at home, where we have a wealth of that resource, both of them, would like to know. And we will just start down at the end.

Sir, if you would like to take a first crack at it.

Mr. SIEMINSKI. Sure. Probably the most important thing in looking at the future prospects for LNG exports is what the price of oil is going to be because, internationally, the reason the U.S. can export LNG into the global markets is we had a big spread between the U.S. price of natural gas and the world price of natural gas because, in most places outside of the United States, natural gas prices are tied contractually to oil prices.

So as oil prices came down or have come down, that is actually going to put some pressure on the idea of exporting LNG from the U.S. So it would make it less profitable to do that.

Mr. JOHNSON. OK.

Mr. SHEFFIELD. Yes, Mr. Johnson. We both have ample supplies of natural gas. We have too much of it in this country now. We have a 150-, 200-year supply of natural gas, and we have got a long supply now, finding over 100 billion barrels of recoverable oil in several key fields, in addition to liquid-rich plays in the Utica and the Marcellus, which is where people are focused.

We need to lift the ban on oil. We need to be able to export it and expedite LNG so there is plenty. Europe needs it. The rest of the world—Japan, South Korea—they all need it.

How can you ask Japan and South Korea not to take Iranian crude when we will not export them oil? Europe is taking 40 percent of their needs from Russia oil. They need exports from the U.S. in addition to LNG.

Mr. JOHNSON. OK. Thank you.

Sir.

Mr. DREVNA. Congressman, it is interesting because, you know, when you look at the LNG, you know, we have an abundance. We

have more than we need. And, you know, this body did the right thing in passing the legislation to export it.

We are still in that "maybe we are here, maybe we are there" stage. Mr. Sheffield mentioned we have got a lot. But do we have a lot right now? And how long would that last?

You have to look at the oil export. And, again, I am not saying we shouldn't export. I am saying just look at everything in total.

The world supply, you know, is a big barrel and everybody takes what they want. The more we produce here, the less we have to export. That will have an impact on prices, just like the shale boom has already had an impact on global prices.

Imagine what prices would be today—and I am not the, you know, fortune teller—but imagine what prices would be today if we hadn't had the entrepreneurs like Mr. Sheffield and his company to get this stuff to market. With all the stuff that is going on in the global market, we would still be 40, 50, 60 percent. So we have had an impact on global prices.

Mr. JOHNSON. OK.

Mr. DREVNA. One thing we are saying is let's do it the right way.

Mr. JOHNSON. OK. Mr. Kingston.

Mr. KINGSTON. Two things.

One area where I see the big difference is that allowing crude exports would affect an international benchmark, Brent, to which we are tied, because our gasoline market is ultimately tied to Brent. It would work to probably push down the Brent price. Therefore, there is a benefit to us.

In the case of LNG, you are not going to be pushing down—you would be pushing down an international benchmark that doesn't affect us. As Mr. Sieminski noted, there are other prices out there. They would be affected. Our Henry Hub price would probably rise.

But I think where it is a benefit to the U.S. is I get very concerned about the problem of stranded gas, where the U.S. just simply has so much gas that you start to see a rollback in production, you start to see wells shut in, you start to see workers go somewhere else. And you just need that safety valve to make sure that industry can keep running.

Mr. JOHNSON. OK. Ms. Jaffe.

Ms. JAFFE. So I agree with what Mr. Kingston said, but I would add the following thing. And I respect the other panelists who have made this point. We are really arguing about who gets the margin. Right?

We are not really arguing about, if you put a lot of gasoline in the market, that eventually lowers the price that refiners in other locations can pay for crude oil and eventually brings the price down. So, either way, when you are having oil exit the United States in any form, it will eventually bring the price down.

So we are arguing about who gets the margin. And what I would say to you—and, you know, it would take a careful study—is that, if a refinery operates at 88 percent of capacity or 85 percent of capacity, that doesn't affect how many people get employed there. If Mr. Sheffield lays off 100 rigs, a lot of people lose their jobs.

Mr. JOHNSON. Ms. Jaffe, I am sorry to cut you off, but I know I am out of time.

Mr. Chairman, can Mr. Markell and Dr. Burnett respond to this? Can you indulge me?

Mr. OLSON. Without objection.

Mr. JOHNSON. Mr. Markell.

Mr. MARKELL. So the big difference is that, in crude oil, there is a lot of downstream processing and a lot of jobs. And, with all due respect, it is not just about the margins. It is about who gets the paycheck, how much overtime they get and, ultimately, how many people are employed.

With LNG, there is minimal downstream processing, minimal downstream jobs. We are not importing it. And, from our point of view, we are looking for a price that is somewhere in the middle where we can keep the manufacturing competitiveness that we have. But certainly we have got a lot of stranded gas, and we need to find a way to build the pipelines to get it out.

Mr. JOHNSON. Thanks, Mr. Markell.

Dr. Burnett.

Dr. BURNETT. I think there are two major differences between crude and LNG. One is, as you heard, LNG is a real excess in the U.S. Crude oil is not. We are still importing 33 percent.

The other major difference is that LNG is sold into an absolutely free open market. Crude is still controlled by OPEC, whether you like it or not. They still can impact the price up or down. So there are two major differences.

Mr. JOHNSON. OK. Thank you.

Thank you, gentlemen.

I yield back.

Mr. OLSON. The gentleman's time is expired.

The Chair recognizes the gentleman from Oklahoma, Mr. Mullin, for 5 minutes.

Mr. MULLIN. Thank you, Mr. Chairman.

And I would like to thank, you know, our panel that is in front of us today because this is a very important topic. It is something that probably we should have discussed a few years back. But for Congress' point of view, we are right on time.

I want to talk to Mr. Burnett for just a second. I am kind of confused here why you would be so worried about our crude oil exports when, apparently, you are not too worried about exporting gas and diesel.

When we are talking about you thinking the prices are going to go up, we haven't seen that happen while your company, I am assuming, as you said a while ago when Mr. Flores was talking to you, that you export oil and diesel. Don't you?

Dr. BURNETT. OK. The issue is that, if you lift the export ban, you are going to enable European refiners who are currently struggling to have a more sustained life and you——

Mr. MULLIN. So can your company not compete with them?

Dr. BURNETT. And the problem is that we cannot compete with them because they can buy their U.S. crude oil cheaper than I can in Trainer. They can then refine it and send it back to the Northeast cheaper than we can make it because of freight rates. So they can put us out of business.

Mr. MULLIN. Well, we are not hearing that from the other refineries. I mean, your other companies—there is other refineries that actually support this.

So I am saying that your company can't compete with them?

Dr. BURNETT. The people that are supporting this are probably integrated oil companies. All of the independent merchant refiners like ours are part of the crude coalition, are against crude exports.

Mr. MULLIN. Are you not buying that same crude to be able to produce gasoline and diesel?

Dr. BURNETT. We are buying domestic crude——

Mr. MULLIN. Are you not bound to compete with those refineries at that time?

Dr. BURNETT. I am sorry?

Mr. MULLIN. I mean, are you not bound to compete with your oil and gas—I mean, your diesel and gasoline?

Dr. BURNETT. What you have heard, I think, repeatedly is that product prices on the Northeast are set by Brent price.

Mr. MULLIN. Sure.

Dr. BURNETT. And so the European refiners are selling gasoline and diesel at a Brent price, but they can export it to the Northeast lower than we can produce it because of freight rates.

Mr. MULLIN. Well, I guess I am just not quite wrapping my head around it just yet. Hopefully, I will because, to me, it is kind of contradicting yourself. And, I mean, I appreciate business. So the last thing I want to do is put any businesses out of business.

But you have 400 jobs, and we have roughly 350,000 jobs, using a rough figure, that supports the idea of bringing that crude oil to you to begin with. And I think your company could possibly—I am not in the business—but could compete, maybe, without have to be—and just indulge me here for a second. And I don't mean to be frank, but it almost sounds a little bit selfish.

Dr. BURNETT. We want to compete on a level playing field. By lifting the export bans without dealing with other issues, it makes us uncompetitive.

Mr. MULLIN. Well, I obviously don't know your business as well as you do, but there is other refineries that are saying they can compete with it.

Mr. Sheffield, can you enlighten me a little bit. You talked about storage capacity and the buildup, about the capacity running out. Can you expand on that.

Mr. SHEFFIELD. Yes. Cushing storage—I know Amy Jaffe said it is around 50 million barrels—is at an all-time high. There is recent pipelines installed by Enbridge called the Flanagan South, and that is bringing a lot of oil down from Canada.

So at the same time our sweet crude from our shale plays, some in Oklahoma, the School play, and, also, the Mississippi Lime play, everything, Niobrara Play, the Bakken play, they are all moving toward Cushing before it gets to the gulf coast.

So storage is at a high. I know the Plains All American CEO, Mr. Armstrong, stated that we have about 60 to 90 days of storage left at Cushing.

Gulf coast, what we called PADD 3, it is filling up, too. It is over 210 million barrels, and it could be filled up shortly also over the next several weeks.

So it is a big issue. It is what Turner Mason says: The wall is coming, and it is coming faster. And that is why we have wide crude prices today.

Mr. MULLIN. So if we were to lift exports, you would feel like there would be a little bit more stability in the markets, not necessarily being able to—I am switching gears with you and going from storage capacity to stabilizing the market with the big swing that we see right now in the prices. I mean, they will jump up $10 and they will go down $10.

Do you think, if we were to be able to control our own destiny, by having the exports out, by being able to compete and have a competitor against OPEC, would we be able to see more stability coming to the market?

Mr. SHEFFIELD. Yes. Like I said, a $10 swing, we would put more rigs to work. I know 7,000 other independents would put more rigs to work. They would do it in Oklahoma.

That would help stabilize U.S. production and actually increase it over the next several years. OPEC loves the fact that we have an export ban, I promise you. We are playing right into their strategy.

Mr. MULLIN. Thank you.

My time is out. I appreciate your time.

Thank you.

Mr. WHITFIELD [presiding]. Thank you.

At this time I recognize the gentleman from Kansas, Mr. Pompeo, for 5 minutes.

Mr. POMPEO. Great. Thank you, Mr. Chairman.

And thank you all for bearing with us today.

Mr. Burnett, you said that you want the ban on crude oil exports, but not on condensate, not on other products you produce. Right?

Dr. BURNETT. No. That is not quite what I said.

Mr. POMPEO. All right.

Dr. BURNETT. Crude oil.

Mr. POMPEO. Crude oil. Right.

Now, Delta sells airplane tickets. So should we put an export ban on not allowing foreigners to purchase airplane tickets?

Because that would help consumers, too, because American consumers would have that empty seat out there. There would be less competition for the seat. Prices would be lower. Right? Be good.

Dr. BURNETT. We want an open playing field both in refining and in airlines.

Mr. POMPEO. Right.

What you really want is you want the things you sell to be available to be sold on the marketplace at the highest price you can get and the things that you purchase to be price-controlled. That is what you are really advocating for here today.

And I have heard lots of different comments. Mr. McNerney says $50 is pretty low for crude. Mr. Drevna, you said you are not a fortune teller. I have got reports from Goldman Sachs not 24 months old that said crude is going to be at 200 bucks a barrel.

Truth is we have no idea, none of us collectively, and we shouldn't worry about that. It shouldn't trouble us that we don't know.

You know, Mr. Markell, you said we have got to keep the price in the middle. The middle of what? I mean, that is not a question. That is a rhetorical. I do have a question for you for you, though.

Mr. MARKELL. LNG. Not crude.

Mr. POMPEO. So where should we keep crude oil prices? High or low? You want middle for LNG. Where do you want crude oil prices?

Mr. MARKELL. I don't have an opinion on where crude should be.

Mr. POMPEO. Yes. None of us should have an opinion. This is the unstated joke from so much of what I have heard from the folks in——

Mr. MARKELL. It is in the boost of our economy and low oil prices is——

Mr. POMPEO. Yes. Maybe that is is right.

Goldman now thinks oil might go to 20 bucks a barrel, by the way. These are smart people who are putting their own money at risk, which is very different than us. We are putting everyone else's money at risk.

The person who has the best chance to get it right is them, and they are just wrong a lot. And that is OK. That doesn't trouble me. But we shouldn't put a set of policies in place that feign any knowledge on our part about what is really going to go on.

Let's go the other way. Mr. Sheffield, your export product is price-controlled. We have an export ban. Right? That is a price control. Would you agree? Crude?

Mr. SHEFFIELD. Crude.

Mr. POMPEO. Right? We can't export it. It is a ban. It is a price control.

Your inputs—steel, labor, all kinds of chemicals that you use—are any of those price-controlled or are you subject to market forces? Do you have to compete globally to purchase your inputs?

Mr. SHEFFIELD. It is market forces. Then what is interesting by the comments about the—from the laborers is that we have added over 2 million jobs over the last several years with this shale boom, and a lot of that is in the steel industry, too.

Mr. POMPEO. You bet.

Union employees. Right?

Mr. SHEFFIELD. Yes.

Mr. POMPEO. In the steel industry. Good union workers getting paid good salaries. Yes. No. I think that is right.

Mr. Sheffield, you had a chart, and I want to make sure I understood it. You had a chart that I think disagreed with what Mr. Markell said. He said that this oil will be produced anyway. Right?

The idea was, even if we leave the ban in place, you are going to go ahead and produce this crude. And your chart seems to suggest otherwise, and I am just trying to reconcile these two ideas.

Mr. SHEFFIELD. Yes. This is from a group, PIRA, out of New York. At roughly $50 a barrel, we will lose about 2, 2½ million barrels a day.

And so what is going to happen? They are not going to get it from us. They are going to get it from Saudi Arabia, Iran if they can, or other countries in North Africa. They are going to import it again.

Mr. POMPEO. I appreciate that.

Mr. Drevna, you said in your testimony, if we were to move forward with lifting the export ban, that your organization would want to see other anti-free market policies addressed at the same time. You mentioned RFS. You talked a little bit about the Jones Act.

I assume it is the case that, if we got to the Jones Act and we got to RFS, you would be thrilled to see the crude oil export ban lifted as well.

Mr. DREVNA. Congressman, as I said, we are basically free-marketers. As a matter of fact, if I look up and down the panel, we are probably the most free-marketers sitting here because——

Mr. POMPEO. You are not including up this direction here.

Mr. DREVNA. No. No. No. No. No. No.

No. We want a free market and a level playing field for all U.S. industries.

Mr. POMPEO. Thank you.

Mr. Chairman, I yield back.

Mr. WHITFIELD. The gentleman yields back.

At this time I recognize the gentleman from Virginia, Mr. Griffith, for 5 minutes.

Mr. GRIFFITH. Thank you, Mr. Chairman. I appreciate that very much.

In January, the Department of the Interior released a draft Offshore Leasing Plan covering 2017 to 2022, which proposed opening part of the Atlantic, including areas off the coast of Virginia, my home State.

Although I represent the mountains and the coal territory and don't have the coast, I do obviously care about what happens in Virginia very much, and they would open that up for oil and gas leasing.

Mr. Sieminski, I would have to ask: They have made it 50 miles off the shore of the coast. DOD had some concerns there, and I am just curious.

Does your organization have any idea of whether or not DODhas had problems in the Gulf of Mexico dealing with oil exploration or natural gas exploration?

Mr. SIEMINSKI. Well, I am from the Department of Energy.

Mr. GRIFFITH. I understand.

Mr. SIEMINSKI. The opening of those leases—I mean, I think that we are now seeing production rising in the Gulf of Mexico, and that is, you know, in the aftermath of the Macondo spill.

I think the issues associated with offshore leasing tend to be environmentally oriented. There are some people that are concerned about the impacts on water and the environment and, generally, climate.

Mr. GRIFFITH. And, generally, we believe, if you open up the mid-Atlantic, you would agree—or the data indicates that there is an abundant energy source out there even though we don't have any recent data——

Mr. SIEMINSKI. Yes. From time to time EIA has looked at what the resource base is around the United States, and there is a possibility that there are both oil and gas resources in the mid-Atlantic.

Mr. GRIFFITH. And the last time any real research was done was back in, I believe, about 1980, and it takes about 10 years to go

from start to finish and we are just now getting started. But we are 50 miles out, which it would be better, I think, if we were closer in. I find that interesting.

And you all wouldn't have any way of knowing this, but I voted on my first resolution as a member of the Virginia legislature in 2004, requesting that we go down this road. And am I not correct that it takes about 10 years to go from start to finish and that, if we had started in 2004 when the legislature first——

Mr. SIEMINSKI. In the offshore area, that is very typical.

Mr. GRIFFITH. And so, if we had started then, we would already be seeing both tax revenues and jobs and all kinds of things in the eastern part of the State. Wouldn't that be accurate?

Mr. SIEMINSKI. I think the first thing that would happen is we would probably end up updating all of that geologic information with modern 3D seismic technology and that kind of thing.

So the up-front part is actually spending money. Now, there are jobs associated with that. Whether the revenues come in depends on what you find and how quickly you can produce it.

Mr. GRIFFITH. There is a pretty good indication that we have got a fair amount of natural gas and at least a little bit of oil.

Even based on the older technologies, that showed up; did it not?

Mr. SIEMINSKI. Yes. I mean, we know that there is oil and gas in eastern Canada and—and those trends tend to move right down the coast.

Mr. GRIFFITH. And the Canadians are already—they have already got their straw dipped into that pool, don't they?

Mr. SIEMINSKI. That is correct.

Mr. GRIFFITH. Yes. So one might argue that the Canadians are getting fuel out of that source and selling it back. It might actually be flowing up to Canada from——

Mr. SIEMINSKI. Well, it is a pretty long way from——

Mr. GRIFFITH. I agree. I agree.

Mr. SIEMINSKI. That would be a big straw.

Mr. GRIFFITH. I just want to see my folks getting some advantage out of all this.

I will open this up for anybody who wants to take it. I think I already know the answer.

But if the United States is getting more oil and more natural gas, what impact would that have on, say, Russia, Iran, ISIS, even China? Who wants to take that?

Mr. SIEMINSKI. Well, my microphone is turned on. I usually try to avoid answering questions.

But let me comment that, when you listen to the panel here, Congressman Griffith, I think that more production on the market, regardless of its source, is going to tend to lower prices and benefit consumers.

So, you know, that is true whether it is natural gas or oil or airline tickets. I mean, the more that you can put out there, the better off consumers are.

Mr. GRIFFITH. But when a country is basing a big part of its liquidity on energy and all of a sudden a new giant rises up or gets extra strength, that, in essence, would mean that at least for the Chinese, the Russians, and maybe even ISIS, that it will negatively

impact their ability to do things that we might be opposed to. Would you not agree?

Mr. SIEMINSKI. That certainly—I mean, one of the factors that is out there—one of the—very quickly, on looking at the time, this question of why there is this wide range of views of oil prices, whether it is, you know, $20 or $30 or $100 and over, a lot of that has to do with not being able to pin down answers to many of these geopolitical questions.

Is Venezuela going to have a problem in the near term producing their 2 million barrels a day of oil? What about Iraq? And because of ISIS, what about production outages in places like Libya?

And then, on the downside, it is things like the economy in China and whether or not Libya's going to return to the market. And it is true. Nobody has the—it is not—EIA doesn't have the answers to that.

Mr. GRIFFITH. Nobody does.

Mr. SIEMINSKI. Nobody has the answers.

Mr. GRIFFITH. If I might, Mr. Chairman, indulge.

But aren't we better off if the United States is controlling more of that by having more production? Because then, if the Venezuelans do something or if there is a problem somewhere else, at least our own internal economy is not negatively impacted as much.

And aren't we in a much better position today than we were just 5 years ago? And, hopefully, we will be in an even better position 10 years from now.

Mr. SIEMINSKI. I suspect that everybody on this panel would agree with you.

Mr. GRIFFITH. And I would say to you that, when this first started, our new boom in energy, which we can continue to use, particularly if we open up the mid-Atlantic and keep looking for ways to do this—I used to feel that maybe my children wouldn't have the economy that we had.

Now I believe, if we don't screw it up here in Washington, our children and our grandchildren and our great-grandchildren can live in the United States, where we are still the number one economic Nation in the world.

With that, I yield back.

Mr. KINGSTON. Can I just say one thing? I just want to separate one country that you mentioned.

This is a benefit to China. I mean, you mentioned Russia, Iran, ISIS, this hurts. This helps China. Huge net importer.

Mr. GRIFFITH. OK.

Mr. WHITFIELD. At this time I recognize the gentleman from Mississippi, Mr. Harper, for 5 minutes.

Mr. HARPER. Thank you, Mr. Chairman.

And thanks to each of you for being here and taking time to discuss what is a very important issue.

And, if I may, Mr. Drevna, I wanted to ask you a couple of questions in the time that I have, since Mr. Griffith used up most of my time.

Mr. GRIFFITH. I am sorry.

Mr. HARPER. Hey, you needed some more time. That is it.

First of all, I want to say, you know, we appreciate each of you being present. But particularly, Mr. Drevna, I thank you that you are here to share AFPM's insight on this issue.

I would like to focus my time on your testimony. In your written statement, you noted that your organization is not opposed to lifting the ban on crude exports, but you mentioned two public policies, two areas in particular, that should be considered during this debate.

So I would like for you to elaborate a little bit more on the RFS and the Jones Act and how they are related in this debate on the crude oil export ban.

Mr. DREVNA. Thank you.

And I only get 5 minutes to elaborate on the RFS. As the chairman can attest to, it is probably not enough time.

But, in any event, if you are going to talk about a free and open market, if you are going to talk about consumer protection and consumer choice, if you are going to talk about getting the economy moving, the RFS, as I said in my written statement and my oral testimony, it is—in 7 short years, it has become an anachronism.

All the assumptions that were made back in the day where theESA 2007 was passed, where EIA had gasoline demand going through the roof, and that has plummeted some 43 percent over those years, where we have a volumetric and not a percentage basis where we have, you know, 36 billion gallons, where the thought was, "Well, we are going to eliminate or reduce foreign energy sources."

We are doing that because of companies like Mr. Sheffield's, not because we are producing ethanol. As a matter of fact, we are producing ethanol and we are exporting it and we are importing it. You know, what is the point?

The environmental benefits have shown to be, if not nil, negligible—if not negligible, negative. So it is time to look at that because it is not a free market. Let the consumer decide. Do they want more ethanol or biodiesel in their gas tank or they don't?

On the Jones Act—and, again, this is a—whose ox is going to be gored is what you have to decide if you lift the ban today without looking at the Jones Act. It will be a zero-sum gain. There will probably be some job gains on this side. There will be job losses on the other side. That is a fact.

So at least know the facts before you make the decision, and that is all we are asking. Again, we are not opposed to it, but, you know, for energy security and national security, let's do it all. Let's have all the above and not what we have now with all of the above and none of the below—or very little of the below. So that is basically what we are trying to say, Congressman.

Mr. HARPER. Thank you very much. Out of mercy, I will yield back.

Mr. WHITFIELD. The gentleman yields back. That concludes the questions.

Once again, I want to thank the panel of witnesses. We do appreciate your insights. This is an interesting question, and certainly, with the changes taking place, we want to look at it thoroughly. So we may be calling you again very soon.

We will keep the record open for 10 days. And that will adjourn today's hearing.

And thank you all very much for your participation.

[Whereupon, at 4:09 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

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* *EXECUTIVE COMMITTEE*

March 2, 2015

Congressman Ed Whitfield
Chairman, Energy and Power Subcommittee
2184 Rayburn House Office Building
Washington, D.C. 20515

To The Honorable Congressman Whitfield,

On behalf of the Ohio Oil and Gas Association and its 3,100 members involved in all aspects of the exploration, production and development of crude oil and natural gas resources within the State of Ohio, I am writing to express support for ending the ban on crude oil exports in the United States. It is my understanding this will be an issue discussed at the March 3rd hearing of the United States House Committee on Energy and Commerce entitled "21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact our Economy and Energy Security."

This ban on exportation dates back to 1975 when Congress banned the sale of crude oil in response to the Arab oil embargo. Since then, thanks to technological improvements, Ohio and the U.S. have undergone an energy renaissance and our oil and natural gas production has increased dramatically. In fact, the U.S. has surpassed both Russia and Saudi Arabia as the largest global producer of crude oil and natural gas liquids by volume.

According to IHS Energy, ending the ban would "add investment of nearly $750 billion," and potentially $995 billion in the upstream exploration and production sector. Furthermore, "the higher U.S. oil production resulting from a lifting of the ban will [...] increase GDP by $135 billion." The impact of lifting the ban on crude oil exports would be beneficial for the U.S. economy, workers, and consumers. According to ICF International: "U.S. federal, state, and local tax receipts attributable to GDP increases from expanding crude oil exports could reach $13.5 billion in 2020."

Concerns about the ability of the U.S. to produce enough oil and gas are a thing of the past. The EIA estimates that U.S. total crude oil production averaged 7.5 million barrels per day in 2013, an increase of 950,000 barrels per day from the previous year, driven largely by growth in tight oil production.

Finally, ending the ban will help protect America's energy security. Export of U.S. crude oil will increase America's energy independence by encouraging continued investment in – and development of – resources here at home, making America's new energy abundance a permanent part of the nation's energy and economic landscape. Ending the ban also provides energy security for our global allies, who will no longer need to source energy solely from volatile regions of the world.

The facts are clear – ending the ban on the exportation of crude will only benefit Ohio, the United States, and our allies. The increase in capital investment resulting from lifting the ban would permeate all levels of America's economy and provide a significant economic boost to a slowly recovering economy. I urge you and your colleagues to reconsider the ban on crude oil exports.

Sincerely,

Shawn Bennett
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cc: Congressman Bill Johnson
Congressman Robert Latta

