ENERGY AND THE RURAL ECONOMY: THE ECONOMIC IMPACT OF EXPORTING CRUDE OIL

HEARING

BEFORE THE

COMMITTEE ON AGRICULTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTEENTH CONGRESS

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ENERGY AND THE RURAL ECONOMY: THE ECONOMIC IMPACT OF EXPORTING CRUDE OIL

WEDNESDAY, JULY 8, 2015

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Committee met, pursuant to call, at 10:00 a.m., in Room 1300, Longworth House Office Building, Hon. K. Michael Conaway [Chairman of the Committee] presiding.

Members present: Representatives Conaway, Goodlatte, Lucas, King, Thompson, Gibbs, Austin Scott of Georgia, Crawford, Gibson, Hartzler, Benishek, Denham, LaMalfa, Davis, Yoho, Walorski, Allen, Bost, Rouzer, Abraham, Emmer, Moolenaar, Newhouse, Kelly, Peterson, David Scott of Georgia, Costa, Walz, McGovern, DelBene, Vela, Lujan Grisham, Kuster, Nolan, Bustos, Kirkpatrick, Aguilar, Plaskett, Adams, Graham, and Ashford.

Staff present: Carly Reedholm, Haley Graves, Jessica Carter, Josh Maxwell, Mollie Wilken, Paul Balzano, Scott C. Graves, John Konya, Anne Simmons, Evan Jurkovich, Liz Friedlander, and Nicole Scott.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

The CHAIRMAN. Good morning, everyone. We will call this full Committee hearing to order. I have asked Ted Yoho to offer up the opening prayer.

Ted.

Mr. YOHO. Thank you, Mr. Chairman.

If everybody would bow their heads.

Dear Heavenly Father, we ask you to grant us the wisdom and the knowledge, and we thank you for the many blessings that you have given us in this great country of ours. Along with that wisdom and knowledge, we ask you to give us the courage to act on that, to do what is right for this country in your name. And we say these things in our Lord's name, Jesus Christ, amen.

The CHAIRMAN. Thank you, Ted.

Good morning everyone, and welcome to today's full Committee hearing on *Energy and the Rural Economy: the Economic Impact of Exporting Crude Oil.*

The ban on crude oil exports was a 1970s effort to protect the U.S. economy and U.S. consumers, but over the past 40 years has achieved the opposite result. While it may have been well-inten-

tioned at the time of enactment, the ban on crude oil exports is an antiquated relic and it is disrupting global energy markets, reducing domestic employment, and slowing economic growth throughout our country.

We have heard repeatedly in this Committee about the importance of agricultural exports to the rural economy. The same logic applies when it comes to exporting crude oil.

After the ban was first imposed, its impact was muted by declining domestic production throughout the 1980s and 1990s, but today it is no longer a benign Washington regulation. With the revolution in shale oil production, the ban has grown teeth, and those teeth have taken a bite out of our economy, particularly our rural economy.

The majority of all development takes place in rural areas like my district, and when development slows or prices swing wildly, the health of those rural communities suffers.

Job growth and wage increases are obvious benefits of expanding activity in the oil industry, but rural communities also benefit in indirect ways as well: landowners receive lease payments, residents have more disposable income to spend at stores and restaurants, and local governments see increases in sales, property, and income tax revenues.

In fact, if the ban were lifted today, we would see close to a million jobs created over the next few years. Texas alone would see $5.21 billion in income contribution by 2020, helping to propel our economy forward.

We often hear about the strain on Americans caused by high energy prices. Nowhere is that more the case than with our farms and ranches where energy is often a very significant input cost, both in terms of fuel and in costs of inputs like fertilizer.

While the agricultural economy has dropped energy consumption nearly 30 percent since the 1970s due to innovation and improved production practices, the industry still spends nearly 18 percent of total farm income on energy inputs. Compared to their urban neighbors, rural households spend 58 percent more on fuel for transportation as a percentage of their income. Testimony we will hear today will shed light on how lifting the oil export ban will both lower and stabilize fuel cost.

The Texas Legislature recently passed with overwhelming bipartisan support Senate Concurrent Resolution 13, *Urging the United States Congress to end the ban on crude oil exports.* As many as 11 governors have written the Administration calling for an end to the ban as well. In response, I have introduced a bill to address this issue, H.R. 2369, *the Energy Supply and Distribution Act of 2015.*

Lifting the oil ban will grow our economy, it will also improve our geopolitical position, and it will lower gas prices. The oil export ban is a relic of the 1970s and should be eliminated.

We have a panel of distinguished witnesses who will share their expertise on this issue. I want to thank each of you for taking your time out of your schedules to be with us today, and I look forward to hearing your testimony.

I would also like to recognize a new Member of the Committee, Congressman Trent Kelly, who is joining us for his first full Com-

mittee hearing. Trent is down in front. Trent represents the First District of Mississippi.

Trent, welcome to the team. We are glad to have you with us.

[The prepared statement of Mr. Conaway follows:]

PREPARED STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Good morning and welcome to today's full Committee hearing, *Energy and the Rural Economy: the Economic Impact of Exporting Crude Oil.*

The ban on crude oil exports was a 1970s effort to protect the U.S. economy and U.S. consumers, but over the past 40 years it has achieved the opposite result. While it may have been well-intentioned at the time of enactment, the ban on crude oil exports is an antiquated relic and it is disrupting global energy markets, reducing domestic employment, and slowing economic growth throughout our country. We have heard repeatedly in this Committee about the importance of agricultural exports to the rural economy. The same logic applies when it comes to exporting crude oil.

After the ban was first imposed, its impact was muted by declining domestic production throughout the 1980s and 1990s. But today, it is no longer a benign Washington regulation. With the revolution in shale oil production, the ban has grown teeth and those teeth are taking a bite out of our economy, particularly our rural economy.

The majority of oil development takes place in rural areas like my district, and when development slows or prices swing wildly, the health of those rural communities suffers.

Job growth and wage increases are obvious benefits of expanding activity in the oil industry. But, rural communities also benefit in indirect ways, as well—landowners receive lease payments, residents have more disposable income to spend at stores and restaurants, and local governments see increases in sales, property, and income tax revenue.

In fact, if the ban were lifted today, we would see close to a million jobs created over the next few years. My home State of Texas alone would see $5.21 billion in income contribution by 2020, helping to propel our economy forward.

We often hear about the strain on Americans caused by high energy prices. Nowhere is that more the case than on our farms and ranches where energy is often a very significant input cost, both in terms of fuel and in the cost of inputs like fertilizer. While the agriculture industry has dropped energy consumption nearly 30% since the 1970s due to innovation and improved production practices, the industry still spends nearly 18% of total farm income on energy inputs. Compared to their urban neighbors, rural households spend 58% more on fuel for transportation as a percentage of their income. Testimony we will hear today will shed light on how lifting the oil export ban will both lower and stabilize fuel costs.

The Texas Legislature recently passed with overwhelming bipartisan support, Senate Concurrent Resolution 13, "Urging the U.S. Congress to end the ban on crude oil exports". As many as eleven governors have written the Administration calling for an end to the ban. In response, I have introduced a bill to address this issue, H.R. 2369, the *Energy Supply and Distribution Act of 2015.*

Lifting the oil export ban will grow our economy, it will also improve our geopolitical position and it will lower gas prices. The oil export ban is a relic of the 1970s and should be eliminated.

We have a panel of distinguished witnesses who will share their expertise on this issue. I thank each of you for taking time out of your schedules to be here with us today and I look forward to hearing each of your testimony.

I also would like to recognize a new Member of the Committee, Congressman Trent Kelly, who is joining us for his first hearing today. Mr. Kelly represents the First District of Mississippi.

The CHAIRMAN. With that, I yield any time the Ranking Member would like to use.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Thank you, Mr. Chairman.

I support removing restrictions on the export of crude oil from the United States, and I am a cosponsor of H.R. 702, which would do just that. This simply makes sense as current export laws are outdated and we are in a world market.

In the nearly 40 years since laws governing the export of crude oil were last visited in the United States, we have significantly increased domestic oil production, and we are now the world's largest oil producer. Studies have shown that lifting the current ban on crude oil exports would create jobs, many in rural areas.

The Agriculture Committee does not have jurisdiction over oil exports, but programs such as USDA's rural development program could help rural areas face challenges with population fluctuations and increased strain on rural resources that come from increased oil production.

I look forward to hearing from today's witnesses about the opportunities crude oil exports could provide to rural communities, and I hope that we will also be able to discuss some of the infrastructure issues that we see come up in areas like North Dakota, near my district, where they have seen a dramatic increase in oil production.

Again, I thank the chair for holding today's hearing and welcome to our witnesses.

The CHAIRMAN. I thank the Ranking Member.

The chair requests that other Members submit their opening statements for the record so that our witnesses may begin their testimony and to ensure there is ample time for questions.

I would like to welcome our witnesses at the table today, the Honorable David J. Porter, Chairman, Texas Railroad Commission of Austin, Texas. Actually Midland, Texas, but state law requires him to live there. David is a CPA like Collin and me.

I appreciate you being here this morning, David.

We also have Mr. Harold Hamm, founder, Chairman, and Chief Executive Officer of the Continental Resources, Inc., Oklahoma City.

Mr. Hamm, thank you.

We have Mr. Terry Duffy, Executive Chairman and President of CME Group of Chicago. This is the first time ever for Terry to appear before us. That is a joke. Terry is a regular visitor to this witness table.

We have Ms. Kari Cutting, Vice President, North Dakota Petroleum Council, from Bismark, North Dakota.

Kari, good to have you here this morning.

We have Mr. Jamie Webster, Senior Director, IHS, here in Washington, DC.

Jamie, thank you for coming.

And Dr. Frank Rusco, Director, Natural Resources and Environment, U.S. Government Accountability Office here in Washington, DC.

Dr. Rusco, thank you for being here as well.

David, begin your 5 minutes, and we look forward to hearing your testimony.

STATEMENT OF HON. DAVID J. PORTER, CHAIRMAN, TEXAS RAILROAD COMMISSION, AUSTIN, TX

Mr. PORTER. Chairman Conaway, Ranking Member Peterson, and Members of the Committee, for the record, I am David Porter, Chairman of the Texas Railroad Commission.

For those of you who aren't familiar with the Texas Railroad Commission, we are the state's chief energy regulator. I am one of the three statewide elected Commissioners, and we oversee everything from oil and gas to pipeline, uranium surface exploration, coal mining, natural gas, local distribution companies, and alternative gas fuels.

Thank you for holding this hearing and for the opportunity to testify today about the immediate need for Congress to lift the crude oil export ban. Crude oil exports would stir new American energy production, foster economic growth, and provide direct benefits to rural America and our nation as a whole.

The U.S. crude oil export ban is a leftover relic from another period of time. Forty years ago, the United States was in the midst of the Arab oil embargo and faced gasoline shortages across the country. Development of our shale resources has been a game-changer and presents the U.S. with the opportunity to be the world's largest producer of both oil and natural gas. The export ban is more than just an outdated policy. Keeping it in place is actually harming our economy.

In Texas, we understand and experience firsthand the link between U.S. oil and gas production and the strength of the economy. The two are inexorably linked. When oil prices recently dropped, we felt the harsh economic impacts at home. We saw thousands of hard-working men and women put out of work and rigs idled.

To put this in perspective, according to recent studies from the University of Houston and Rice University, each drilling rig represents a total of 224 jobs. These are jobs on the rigs themselves and across the supply chain and in the broader economy. With the loss of 1,072 rigs through June, you can do the math. That loss comes to roughly 240,000 jobs.

The ban is also responsible for the disparity between the U.S. pricing benchmark for crude, known as WTI, and the international benchmark, Brent. The majority of the new oil being produced from our shale formations is light sweet crude, and the U.S. refining capacity is not designated to economically handle the increased volumes of this type of crude. As a result, our oil is essentially trapped in the U.S., creating a supply glut that is driving down the price of U.S. oil. This represents billions of dollars of lost revenue that could be pumped back into the U.S. economy.

The best way to put people back to work and address the glut of light sweet crude is to allow it to be exported to the world market. Earlier this year, the Texas State Legislature passed and Governor Abbott signed a resolution asking Congress to lift the ban on crude oil. It notes the multiple benefits it would bring to Texas and the U.S.

First, lifting the export ban would increase production here at home, resulting in new American job creation, economic growth, and increased state and Federal revenue.

Second, lifting the export ban would help consumers save money at the pump. Domestic gas prices are based on the international price of oil. Lower fuel prices would be especially beneficial to farmers and rural Americans. As you are aware, agriculture is an energy-intensive industry, and rural Americans spend more money on fuel as a percentage of their income than urban residents. Lower gasoline prices will provide a significant economic boom for many of these families and small businesses.

Third, lifting the ban will enhance free trade and lower the U.S. trade deficit. The U.S. exports all types of goods and commodities. In addition, the Federal Government also allows for unlimited exports of refined products. Why should U.S. crude oil be treated any differently?

Finally, lifting the crude oil export ban will strengthen our national security and help our global allies. The increase in U.S. energy production has helped make the international sanctions against Iran successful. A recent report by Senator Murkowski points out that the U.S. Government has placed *de facto* sanctions on U.S. oil producers, and if the sanctions against Iran were lifted, Iranian oil would reach global markets that U.S. production is prohibited from accessing. Chairman Murkowski concluded: "Any deal that lifts sanctions on Iranian oil will disadvantage American companies unless we lift the antiquated ban on our own exports."

Allowing the free trade of oil would make the U.S. a true global energy leader and superpower, it would mean hundreds of thousands new jobs for Americans, thriving communities with vibrant economies, and families saving money every time they fill up the car. This is the world I want to live in and the world we can live in if Congress and the President take immediate action to lift the crude oil export ban.

Thank you again for the opportunity to speak, and I would be happy to answer any questions at the appropriate time.

[The prepared statement of Mr. Porter follows:]

PREPARED STATEMENT OF HON. DAVID J. PORTER, CHAIRMAN, TEXAS RAILROAD COMMISSION, AUSTIN, TX

Chairman Conaway, Ranking Member Peterson, and Members of the Committee:

For the record, I am David Porter, Chairman of the Texas Railroad Commission.

For those of you who aren't familiar with the Texas Railroad Commission, we are the state's chief energy regulator. I am one of three statewide elected Commissioners, and we oversee everything from oil and gas to pipelines, uranium exploration, surface coal mining, natural gas local distribution companies and alternative natural gas fuels.

Thank you for holding this hearing and for the opportunity to testify today about the immediate need for Congress to lift the crude oil export ban. Crude oil exports would spur new American energy production, foster economic growth and provide direct benefits to rural America and our nation as a whole.

The U.S. crude oil export ban is a left-over relic from another period of time. Forty years ago the United States was in the midst of the Arab oil embargo and faced gasoline shortages across the country. The crude export ban was put in place out of fear of increased dependence on foreign oil and the need to protect our dwindling domestic oil supply. The world today is a much different place and the circumstances we faced in the 1970s are no longer relevant or true today.

Technological advancements have allowed U.S. producers to tap new sources of oil and natural gas from shale formations, including from the Permian Basin and Eagle Ford in Texas. Development of our shale resources has been a game-changer and presents the U.S. with the opportunity to be the world's largest producer of both oil and natural gas.

The export ban is more than just an outdated policy. Keeping it in place is actually harming our economy.

In Texas, we understand and experience firsthand the link between U.S. oil and natural gas production and the strength of the economy. The two are inextricably linked. When oil prices recently dropped, we felt the harsh economic impacts at home. We saw thousands of hardworking men and women put out of work and rigs idled. We saw state revenues—used to support schools and infrastructure investments—decline. This impacted our state budget and the State Comptroller noted that the slowdown in oil and gas production "will dampen overall economic growth in Texas."

At the Texas Railroad Commission, we saw the number of drilling permits issued dramatically drop. In May of 2014, we issued 2,389 permits. This past May we issued only 916. This decline in wells drilled will harm our economy and the livelihood of all Texans.

To put this in perspective, according to recent studies from the *University of Houston* (*http://www.bauer.uh.edu/centers/irf/houston-updates.php*) and Rice University, each drilling rig represents a total of 224 jobs. These are jobs on the rig itself and those across the supply chain and in the broader economy. With the loss of 1072 rigs through June, you can do the math to see just how devastating the recent downturn in development has been for oil and natural gas producing states. It comes to roughly 240,000 jobs. While repealing the ban will not bring back these jobs oversight, it will certainly get some of these men and women back to work in the near term.

The ban is also responsible for the disparity between the U.S. pricing benchmark for crude known as WTI, and the international benchmark, Brent. The majority of the new oil being produced from our shale formations is light sweet crude and the U.S. refining capacity is not designed to economically handle the increased volumes of this type of crude. As a result, our oil is essentially trapped in the U.S., creating a supply glut that is driving down the price of U.S. oil. This represents billions of dollars of lost revenue that could be pumped back into the U.S. economy.

The best way to put people back to work and address the glut of light sweet crude oil is to allow it to be exported to the world market. Earlier this year, the Texas State Legislature passed and Governor Abbott signed a resolution asking Congress to lift the ban on crude exports. It notes the multiple benefits it would bring to Texas and the U.S.

First, lifting the export ban would increase production here at home, resulting in new American job creation, economic growth and increased state and Federal revenue. According to a study by ICF International, it's estimated that U.S. GDP would increase by $38.1 billion in 2020 if expanded crude exports were allowed. The same study also noted that U.S. Federal, state, and local tax receipts attributable to this GDP increase could reach $13.5 billion in 2020.

While large producing states like Texas would immediately feel the job-creating benefits, studies show that nearly every state and Congressional district would also benefit from increased oil production due to the expansive supply chain it supports. According to IHS Energy, for every energy job created in oil production, three jobs are created in the supply chain and six more in the broader economy.

Second, lifting the export ban would help consumers save money at the pump. Domestic gasoline prices are based on the international price of oil. Therefore, increasing the global supply of oil would lower international oil prices and ultimately help lower the price of domestic gasoline. According to Columbia University, domestic gasoline prices could be reduced by up to 12¢ a gallon if the ban were lifted.

Lower fuel prices would be especially beneficial to farmers and rural Americans. As you are aware, agriculture is an energy-intensive industry and rural Americans spend more money on fuel as a percentage of their income than urban residents. Lower gasoline prices would provide a significant economic boost for many of these families and small businesses.

Third, lifting the ban will enhance free trade and lower the U.S. trade deficit. The U.S. exports all types of goods and commodities, from fruits and vegetables, to cars, to computer software. In addition, the Federal Government also allows for unlimited exports of refined products, such as gasoline, diesel fuel and jet fuel. Why should U.S. crude oil be treated any differently? A study by Columbia University rightly noted that "crude export restrictions are inconsistent with the U.S. enjoying the benefits of petroleum trade and the U.S. commitment to free and open markets." Allowing U.S. crude oil exports will also help lower crude oil imports, thereby lowering the trade deficit. According to ICF International, crude oil exports could narrow the U.S. trade deficit by $22.3 billion in 2020.

Finally, lifting the crude oil export ban will strengthen our national security and help our global allies. While I'm not a foreign policy expert, I will take the advice

of those who are and encourage others to do the same. Former Defense Secretary Leon Panetta, former Defense Secretary William Cohen and former National Security Advisor Stephen Hadley all agree that our security interests around the world would be strengthened by allowing U.S. crude oil exports. The U.S. can become a stable supply source for our allies, help prevent market distortions and lower the influence of OPEC.

The Center for a New American Security (CNAS), issued a report in May on the multiple ways lifting the ban would enhance our national security, one of which is the ability it would give the U.S. to sustain and expand energy sanctions: "*The United States will be in a stronger position to impose future energy sanctions, if necessary, if it promotes free trade in energy. In so doing, policymakers would make it possible for U.S. producers to expand production more easily to substitute for global supplies unavailable due to sanctions.*"

Indeed, the increase in U.S. energy production has helped make the international sanctions against Iran successful. A recent report by U.S. Senator Lisa Murkowski's Majority staff on the Senate Energy and Natural Resources Committee points out that the U.S. Government has placed *de facto* sanctions on U.S. oil producers and if the sanctions against Iran are lifted, Iranian oil would reach global markets that U.S. production is prohibited from accessing. Chairman Murkowski concluded, "Any deal that lifts sanctions on Iranian oil will disadvantage American companies unless we lift the antiquated ban on our own oil exports." I agree.

Allowing the free trade of oil would make the U.S. a true global energy leader and super power. It would mean hundreds of thousands of new jobs for Americans, thriving communities with vibrant economies, and families saving money every time they fill up their cars. This is the world I want to live in, and the world we can live in if Congress and the President take immediate action to lift the crude oil export ban.

Thank you again for the opportunity to speak and I'd be happy to answer any questions regarding my testimony.

The CHAIRMAN. Thank you, David.

Mr. Hamm, 5 minutes.

STATEMENT OF HAROLD HAMM, FOUNDER, CHAIRMAN, AND CHIEF EXECUTIVE OFFICER, CONTINENTAL ENERGY, OKLAHOMA CITY, OK

Mr. HAMM. Chairman Conaway, Ranking Member Peterson, and Members of the Committee, my name is Harold Hamm. I serve as Chairman and Chief Executive Officer of Continental Resources, an Oklahoma City-based independent oil and gas exploration and production company. It is an honor to address you today on the critical subject of crude oil exports.

As Chairman of the Domestic Energy Producers Alliance and as CEO of the company that co-developed the first field ever drilled exclusively with horizontal drilling and a company that is the largest leaseholder and most active driller in the Bakken Play, I was in a unique position to be one of the first to see the American energy renaissance on the horizon a decade ago and accurately predicted we could become energy independent by 2020 in the U.S.

And as technology continues to advance and new supplies of crude oil are discovered, today I see firsthand what is necessary to continue all the economic benefits that come with it for our nation, for consumers, and across every sector of society, including rural America.

The American energy renaissance is the single most defining aspect on this planet today that will shape the next 50 years for America. This renaissance in energy is brought to you by the new technology, horizontal drilling. Thanks to the genius of America's independent oil and natural gas producers, the world is moving from a concept of resource scarcity toward resource abundance.

This is the modern miracle of American oil and natural gas. It is a miracle that has particularly impacted rural communities from New England to North Dakota to Nebraska. Royalty payments to more than ten million American landowners across this country have contributed greatly to the support of family farms and ranches and a way of life.

Since 2008, America has doubled its production of crude oil and natural gas liquids, and it was on track to do this again by 2025 except for one glitch that we see today, and that is the refining situation in America. It is done only in America. It wasn't OPEC growth or non-OPEC growth. It is only in North America due to horizontal drilling and the new technology that has come with it.

Today we are producing light sweet crude, which just doesn't work with the refining complex that we have. This has been complicated over the last many years, since 1988 to today, with the foreign ownership buy-in of the refining that began with Venezuela, Mexico, Canada, Saudi Arabia, and other countries that bought into the refining complex and owns about 28 percent of our refineries today. So we are down to a point with imports that we have reached a practical limit. We can't get lower than where we are at. Those folks can bring their oil here. There is not anything that we can do about that in the future.

So what we have wound up with is a refinery complex today that is ⅔ heavy sour that just won't handle the oil that we are producing in the field today. So only ⅓, or about six million barrels a day, six of the 18, is for light sweet crude that we produce. So we have had to try to get oil into that market, and basically it has been at a huge discount. In fact, that discount today, between WTI and Brent pricing, has amounted to $125 billion since 2011. So it is very drastic.

And in the meantime, of course, we are seeing exports, the refinery exports go out of this country ramping up to about 4.7 million barrels today currently that is being shipped out. And you can tell by the refinery crack spread that has gone up 500 percent that it is not being passed onto consumers today. It is not reflected, that discount in gasoline prices that is out there.

And the decline in our industry, of course, has been very drastic, lost over 1,000 rigs, and we estimate, direct and indirect jobs, something close to 500,000 jobs have been lost in this industry, and basically that has been since Thanksgiving. So it has been very drastic.

So we can turn it around. It has been estimated that lifting the ban will add one percent GDP growth. We only have two. It can add one percent. Eliminate the trade deficit, of course, de-intensify the Middle East situation we have over there, and OPEC dominance of foreign oil once and for all, reduce our European allies' dependence on Russia, and put everybody back to work. Thank you very much.

[The prepared statement of Mr. Hamm follows:]

PREPARED STATEMENT OF HAROLD HAMM, FOUNDER, CHAIRMAN, AND CHIEF EXECUTIVE OFFICER, CONTINENTAL ENERGY, OKLAHOMA CITY, OK

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, my name is Harold Hamm. I serve as Chairman and Chief Executive Officer of Con-

tinental Resources, an Oklahoma City-based independent oil and gas exploration and production company. It's an honor to address you today on the critical subject of crude oil exports. As Chairman of the Domestic Energy Producers Alliance and as CEO of the company that co-developed the first field ever drilled exclusively with horizontal drilling, and the company that is the largest leaseholder and most active driller in the Bakken Play, I was in the unique position to be one of the first to see the American Energy Renaissance on the horizon a decade ago. And as technology continues to advance and new supplies of U.S. crude oil are discovered, today I see first-hand what's necessary to continue all the economic benefits that come with it—for our nation, for consumers, and across every sector of society, including rural America.

The American Energy Renaissance is the single-most defining aspect on this planet today that will shape the next 50 years. This renaissance in energy is brought to you by the new technology of horizontal drilling. Thanks to the genius of America's independent oil and natural gas producers, the world is moving from a concept of "resource scarcity" toward "resource abundance." This is the modern miracle of American oil and natural gas. It's a miracle that has particularly impacted rural communities from New England to North Dakota to Nebraska.

Growing up as one of 13 children born to sharecroppers in Lexington, Oklahoma, I understand the impact of oil and natural gas on rural communities. In fact, oil helped me break the cycle of poverty my family had been caught up since the Great Depression. Oil has also helped today's rural families thrive during and after the Great Recession. Royalty payments to more than ten million landowners across America have contributed greatly to the support of the family farms and ranches and the rural way of life.

Continental's oil and natural gas activity is concentrated in rural areas across North Dakota and Oklahoma—both states that have historically lost their brightest young residents to jobs elsewhere. However, since the American Energy Renaissance took off in 2008, North Dakota has experienced the lowest unemployment rate and fastest growing economy in the nation. At the same time, Oklahoma has been named the second best state in the nation for recent graduates and one of the nation's top five fastest growing economies.

The benefits of the American Energy Renaissance aren't just limited to oil and gas producing states—they reach every individual American. Due to lower gasoline, home heating oil and diesel prices, unconventional energy increased annual U.S. household disposable income by $1,200 in 2012. That same year, unconventional energy contributed nearly $284 billion to GDP and more than $74 billion in government revenues.

To continue and expand all these benefits, we must change our nation's mindset from energy scarcity to abundance and end the outdated ban on U.S. crude oil exports. The Federal laws passed in the 1970s artificially controlled the supply, demand, and price of U.S. energy and brought about unintended consequences. For example, one law even banned the use of natural gas as a boiler fuel and mandated U.S. power plants switch to a less environmentally friendly alternative, coal.[1] Today America is still struggling to rectify the aftermath of this rash regulation.

In the years since the enactment of these laws, our elected officials have recognized our global energy industry has changed dramatically. Thankfully, in response to these changes, legislators have repealed or let expire nearly all post-embargo regulations save two: the Energy Policy and Conservation Act of 1975 and the Export Administration Act of 1979, which together essentially ban crude oil exports.

Today, this ban is serving as a loophole for foreign producers to maintain their grip on America even as abundant new domestic oil supplies have been discovered. Now the American Energy Renaissance is at risk due to two things—OPEC oil price manipulation and foreign conversion of U.S. refining capacity.

Thanks to OPEC's predatory pricing, more than 130,000 oil and gas workers have lost their jobs and up to 500,000 jobs have been lost in supporting industries since Thanksgiving. In addition, ⅓ of U.S. refining capacity is owned by foreign entities and nearly all of it is configured to refine their low-quality heavy sour oil. Two-thirds of total U.S. refinery capacity has been converted to process heavy sour crude from Canada, Venezuela, Mexico and Saudi Arabia instead of the premium quality light sweet crude being produced right here in the U.S. We have been forced to discount our oil into this limited domestic market, at times exceeding 20%, while the refiners sell at world market prices. As a result, refiner profits have soared 500% at no benefit to U.S. consumers or employment. In fact, America has lost $125 billion in revenue so far.

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[1] *Powerplant and Industrial Fuel Use Act of 1978* (Repealed in 1987) *http://www.eia.gov/oil_gas/natural_gas/analysis_publications/ngmajorleg/repeal.html.*

As the world has changed and other similar, post-embargo legislation has been phased out, the question has to be asked, "Why does the United States, a nation historically very supportive of free trade, continue to impose export barriers for domestic crude oil?" Some—mostly self-serving refiners—have said crude oil exports would raise gasoline prices. Curiously, the ban did not affect refined products such as gasoline and diesel, which consumers depend on. In fact, the U.S. currently exports 4.7 million barrels of refined products a day at world market prices. Because refined petroleum products are based on world prices, not domestic prices, U.S. oil exports would actually lower domestic gasoline prices, according to studies by 12 government institutions and universities including the Congressional Budget Office, Energy Information Administration and Harvard Business School.

In addition to lowering fuel prices, ending America's antiquated policies would also provide opportunities to fund infrastructure projects across rural America. The Strategic Petroleum Reserve's stock levels are currently four times greater than required. If we allow exports and sell excess SPR oil inventory, America could easily fund the Highway Bill and build desperately needed rural roads and bridges.

Congress must lift the ban on U.S. oil exports. The ban is a terrible relic of the Nixon era that today actually harms the American economy and makes domestic gasoline and diesel prices higher than they should be. The situation is now urgent. If we do not lift the ban, gasoline and diesel prices will go up and job losses will double. According to a report released just last week, Oklahoma alone could lose another 11,000 jobs by the end of the year.

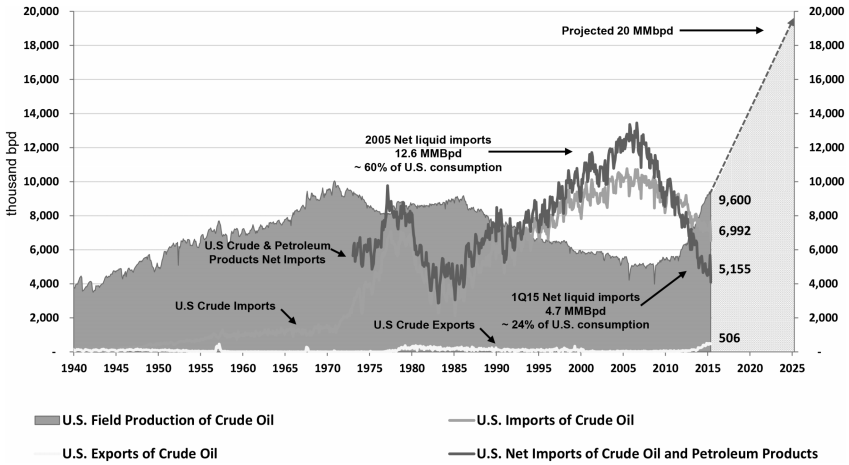
The energy renaissance is the best thing that ever happened to America. As vast new supplies have been discovered, we must ask ourselves, "What can energy mean as America changes from a mindset of scarcity to abundance?" It means foreign oil producers and dictatorial regimes have had the edge in the past. Lifting the ban on U.S. oil exports would give that edge to U.S. consumers. Exports would also create 400,000 American jobs per year and increase GDP by 1% per year. As such, America has an opportunity to once again be the growth engine of the world as we were post-WWII.

In conclusion, world energy markets have drastically changed since the 1970s. But due to the hard work and ingenuity of men and women in this country, our nation has recovered from those dark times. Now we need to focus our efforts on doing away with the reactionary crude export ban that was enacted during that era, a ban that was largely symbolic in the first place, as we had no oil to export. American consumers will benefit from lower gasoline prices at the pump, lower heating oil bills at home, and lower diesel prices for agricultural communities across the nation.

POWERPOINT PRESENTATION

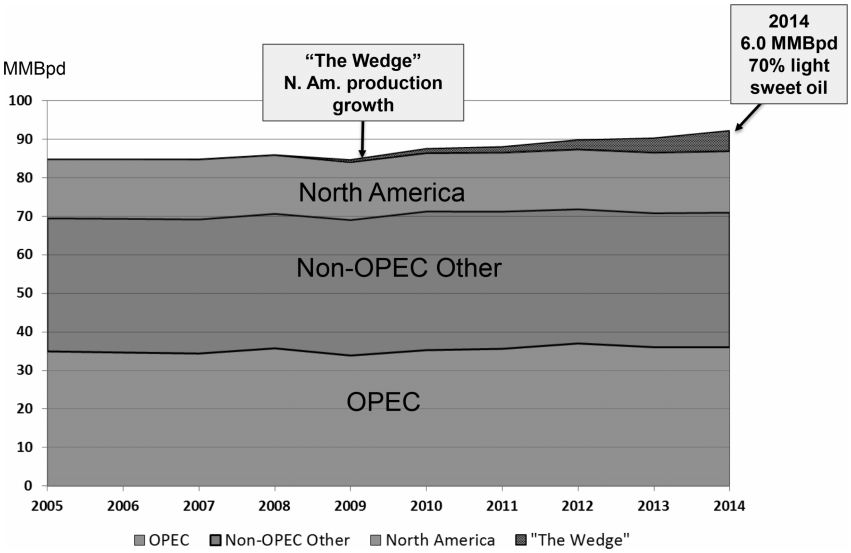
From Scarcity to Energy Abundance in America

U.S. Crude Oil Production, Imports and Exports ***vs.*** *Net Imports of Crude and Products*



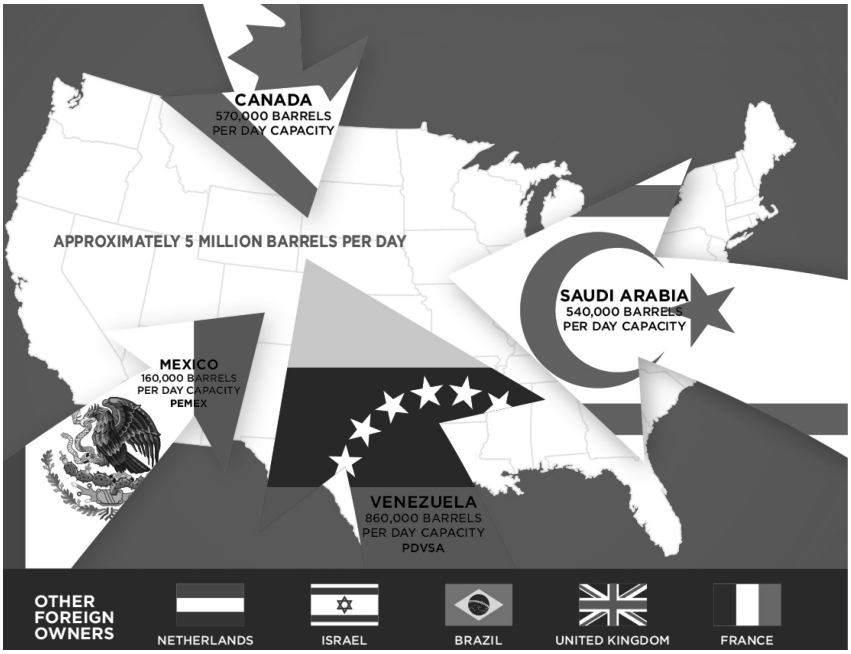
Source: EIA. Mar.–May 2015 data calculated as averages of weekly data.

World Petroleum and Other Liquids Production



Source: U.S. Energy Information Administration, March 2015 Short Term Energy Outlook.

Foreign Countries Buying Into U.S. Refining Capacity



Source: EIA foreign capacity weighted by percent ownership.

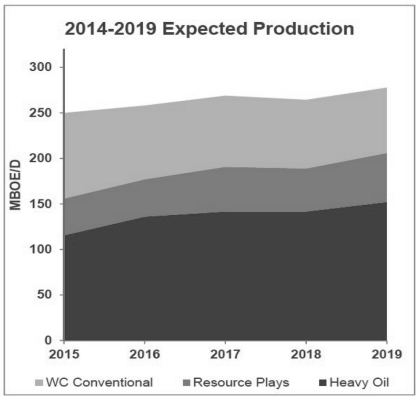
Calculated Conversion of U.S. Sweet Refineries by Canadian Heavy Sour Developers w/Preferential Processing Rights to the Exclusion of Indigenous U.S. Crude

Example: Husky Oil Purchase of the Lima, Ohio Refinery

Downstream

In Downstream, the Company worked to better position its assets with a number of cost-efficient initiatives. These included significant investments at the Lima Refinery to process heavier feedstock as the Company prepares to bring on more heavy oil thermal projects in Western Canada.

Project	Forecast Net Production Adds (BOE/D)
Near-Term (2015-2016)	
Heavy Oil Thermals Four sanctioned projects	33,500
Downstream South Sask. Gathering System expansion	N/A
Mid-Term (2017-2019)	
Heavy Oil Thermals Two identified projects	13,500
Downstream Lima Refinery Crude Flexibility project	N/A
Long-Term (2020+)	
Heavy Oil Thermals Two identified projects	20,000

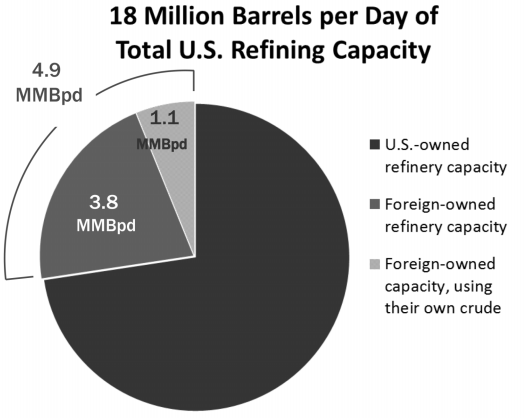


Husky Energy Investor Presentation—March 2015.

28% of U.S. Refining Capacity is Foreign-Owned

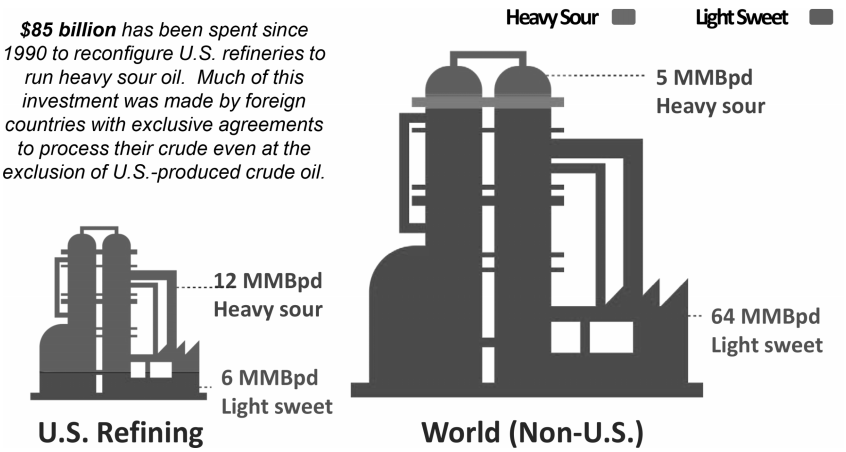
28% of U.S. Refining Capacity is Foreign-Owned

- Foreign entities have acquired significant U.S. refinery assets since the 1980s
- Foreign-owned refineries have financial agreements that allow them to exclude domestic-sourced crude
- Foreign-owned refineries currently import 1.1 MMBpd of oil from their own country (i.e., Saudi's Motiva importing Saudi crude)
- Foreign-owned refineries could source ~4.9 MMBpd of foreign crude imports, putting U.S. producers at an even greater disadvantage



The mismatch in sour vs. sweet refining capacity and the disadvantage of U.S. export laws allows foreign refiners to import their own crude, process it in U.S. refineries, and then ship refined product overseas at no advantage to U.S. consumers.

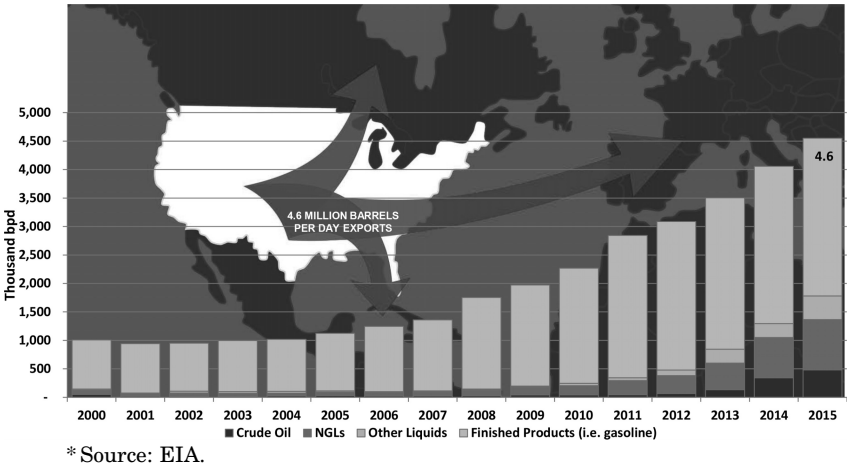
Most Light Sweet Refining Capacity Is Located Outside of the U.S. as a Result of Foreign Refinery Conversions



Source: *Oil & Gas Journal 2014 Refinery Survey* (2013 numbers).

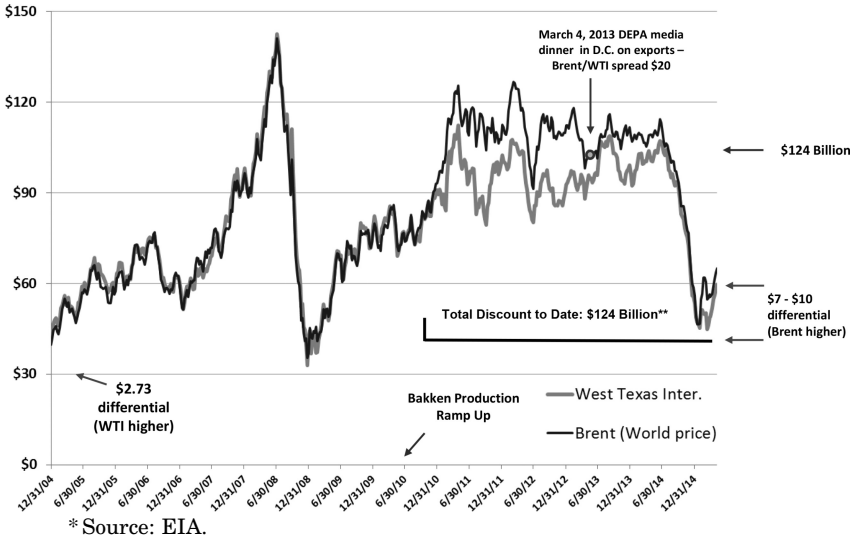
Nelson Complexity Index (NCI) is the industry standard for measuring the relative cost of constructing the components that make up a petroleum refinery. The index can range from 1 (most simple) to over 15 (most complex).

U.S. Exports of Petroleum and Refined Products



* Source: EIA.

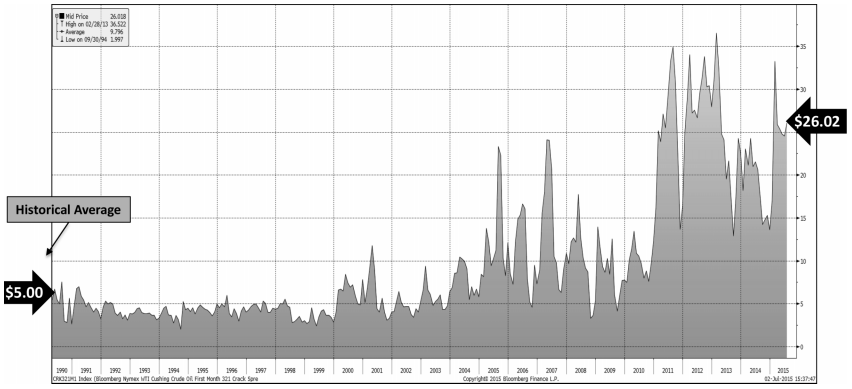
WTI *vs.* Brent Oil Price History Since 2005



*Source: EIA.

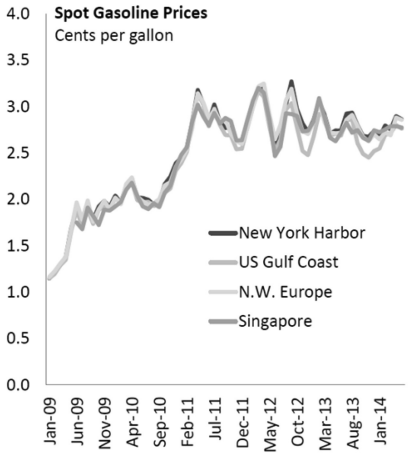
**Represents the largest policy-driven wealth transfer in U.S. industry history.

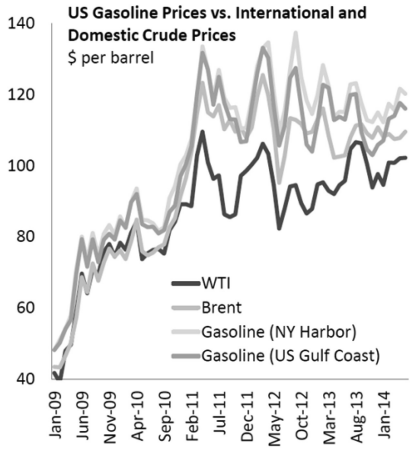
Refiner Crack Spread History Since 1990



"Crack spread" is the difference between price of a barrel of unrefined crude oil *vs.* the total value of refined products from that barrel (after "cracking"), as reported on a daily basis. Crack spreads reported daily via OPIS (Oil Price Information Service), Platts McGraw Hill Financial, and Argus Media Limited.

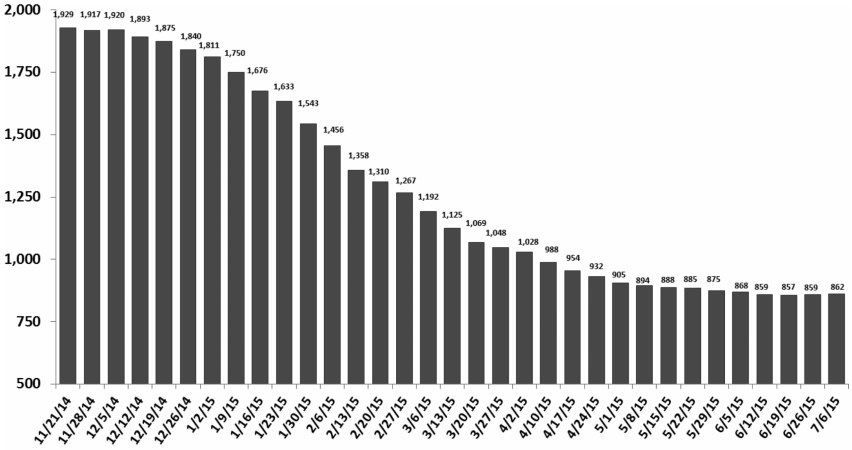
U.S. Gasoline Prices are Set in Global Product Market, So U.S. Price Does Not Pass Through to Consumers





Source: EIA, Bloomberg.

Rapid Decline of U.S. Rig Count



U.S. rig count has declined by 1,067 rigs, or 45% since mid-November*. One rig laydown equals the loss of 120 direct and indirect jobs.

*DEPA jobs estimate; rig counts from Baker-Hughes.

Re-Asserting America's Energy Leadership with Crude Oil Exports

- **Adds 1% to GDP growth.**
- **Eliminates/drastically reduces the U.S. trade deficit.**
- **De-intensifies the Middle East's strategic importance, especially Iran.**
- **Ends OPEC dominance once and for all.**
- **Reduces our European allies' dependence on Russia.**
- **Jobs – puts Americans back to work here.**
- **Lowers and stabilizes gasoline prices for U.S. consumers.**
- **Fair, free trade is consistent with American principles.**
- **American producers have been forced to take on the role of the world's swing producer, but we are cut off from exporting oil to world markets, making it impossible to accomplish.**
- **The U.S. energy renaissance is pro-environment, producing premium quality oil vs. heavy sour.**
- **Provides U.S. energy independence by 2020.**
- **America can once again be the growth engine of the world for the next 50 years as we were post-WWII.**
- **Saves American lives!**

Lower Gasoline Prices

- **Allowing U.S. exports actually corrects a market distortion. Correcting the distortion, in turn, ultimately lowers the price of global oil.** (December 2, 2014, **PACE,** *The ABC's of the Crude Oil Export Ban and Gasoline Prices*)
- **IHS Energy:** Since US gasoline is priced off global gasoline prices, not domestic crude prices, the reduction will flow back into lower prices at the pump – **reducing the gasoline price 8 cents a gallon. The savings for motorists is $265 billion over the 2016 – 2030 period.** (December 2, 2014, **PACE,** *The ABC's of the Crude Oil Export Ban and Gasoline Prices*)
- **The Congressional Budget Office, IHS Energy, ICF International, Columbia University and The Brookings Institution, among others,** have all concluded through their own independent analyses that removing the current ban on U.S. crude oil exports would result in lower gasoline prices here at home. (January 22, 2015, PACE, *Fact Check: Sens. Menedez and Markey Letter to Commerce Dept.*)
- Lifting the ban could result in an equally large reduction in refined product prices [including gasoline] due to a more relaxed OPEC response, up to 12 cents per gallon in our analysis. (January 20, 2015, **Columbia University,** *Navigating the Crude Oil Export Debate*).
- Resources for the Future: Gasoline prices decline by 1.8 to 4.6 cents per gallon on average if the crude oil export restrictions are removed. (October 20, 2014, **U.S. Government Accountability Office,** *Changing Crude Oil Markets*)
- **ICF International:** Petroleum product prices decline by 1.5 to 2.4 cents per gallon on average from 2015 – 2035 if restrictions are removed. (September 9, 2014, **Brookings Institution,** *Changing Markets Economic Opportunities from Lifting the US Ban on Crude Oil Exports*)
- **NERA:** Petroleum product prices decline by 3 cents per gallon on average from 2015 - 2035 if restrictions are lifted. (September 9, 2014, **Brookings Institution,** *Changing Markets Economic Opportunities from Lifting the US Ban on Crude Oil Exports*)
- **Rice University**: "We also find empirical support… that lifting the ban on crude oil exports **would not raise gasoline prices in the US**. Since refined products, such as gasoline, can be freely traded in the international market, the prices of refined products sold in the US are in parity relationship with international prices…. **Thus, the discounted prices of oil produced in the US are not reflected in US gasoline and refined product prices.**" (**Baker Institute for Public Policy,** March 27, 2015)

Consumer Stability

- **ICF International:** Lower gasoline prices as a result of ending the crude export ban **could save American consumers up to $5.8 billion per year, on average, over the 2015 – 2035 period.** (December 15, 2014, PACE, *Ten Key Questions about the Crude Oil Export Ban*)
- **IHS Energy:** Lifting restrictions on crude oil exports will increase real household disposable income in the forecast due to an investment-led expansion in economic activity and a lower unemployment rate. (November 2014, PACE, *Lifting the Crude Oil Export Ban Benefits US Consumers*)
- **ICF International:** Given the international nature of US petroleum product movements, 2013 US petroleum product prices were between $.29 and $.94 per gallon lower than they would have otherwise been without horizontal multi-stage hydraulic fracturing. This reduction saved US consumers an estimated $63 to $248 billion in 2013 and estimated cumulative saving of between $165 and $624 billion from 2008 to 2013. (November 2014, PACE, *Lifting the Crude Oil Export Ban Benefits US Consumers*)
- **Brookings Institution:** The welfare benefits to US households derive from higher real incomes from higher wages and lower gasoline prices. (November 2014, PACE, *Lifting the Crude Oil Export Ban Benefits US Consumers*)
- Lifting the ban will have a .4 percent change in welfare (the broadest measure of net economic benefits to US residents) inciting a positive change in the US economy across all scenarios. (September 9, 2014, **Brookings Institution,** *Changing Markets Economic Opportunities from Lifting the US Ban on Crude Oil Exports*)
- Removing the crude oil export restrictions is likely to increase domestic crude oil prices but decrease consumer fuel prices. (October 20, 2014, **U.S. Government Accountability Office,** *Changing Crude Oil Markets*)
- Repealing the ban will have **a positive effect on the consumer and the economy – including a reduction in the price at the pump for consumers;** expanded public finances through generation of additional tax revenue; a reduction in trade deficit; as well as increased GDP, job creation and overall investment. (October 20, 2014, **U.S. Government Accountability Office,** *Changing Crude Oil Markets*)

The CHAIRMAN. Mr. Hamm, thank you.

Mr. Duffy, 5 minutes.

STATEMENT OF HON. TERRENCE A. DUFFY, EXECUTIVE CHAIRMAN AND PRESIDENT, CME GROUP, CHICAGO, IL

Mr. DUFFY. Thank you, Chairman Conaway, Ranking Member Peterson, and Members of the Committee. As the Chairman said, I am Executive Chairman Terry Duffy. I am the President of CME Group. I want to thank you for holding this hearing today.

This policy that is preventing the U.S. economy from reaping the full benefits of the country's boom in oil production, is a ban on oil exports. My perspective will be a little bit different than the previous two testimonies. Mine will be more on the pricing of the product.

In the 1970s, the U.S. Government banned crude oil export in reaction to OPEC-driven oil prices, mile-long gas lines, rising inflation, the depreciating dollar, and growing trade imbalances. From the start, the ban does not appear to have provided any benefits for the rural or agricultural sector. Instead, the export ban distorted the allocation of capital between the U.S. and non-U.S. production.

Today, the factors that drove the ban have evaporated. The U.S. has experienced a resurgence in oil and natural gas production. Today, OPEC has little power to raise oil prices. Inflation is very low and has been stable for over 20 years. The interest rates are also at extreme lows. The U.S. still is a net importer of oil and refined products, but exports of refined products have been rising with the oil production boom while imports of crude oil have been falling.

During this new era of expanded U.S. oil production, the ban has led to price spreads between U.S. crude oil and other worldwide sources. Nevertheless, as pipelines were reconfigured, new ones built, and rail capacity expanded, the U.S. oil markets have managed to become more aligned with global prices. But eliminating the ban would allow prices to more reliably reflect global oil supply and demand.

There are two key benefits to the seamless integration between the U.S. and the global energy markets. First, segregating U.S. crude from the world market punishes the U.S. economy with price distortions. In order to encourage companies to invest in the production of crude oil here in the U.S., our domestic crude should be able to participate in the global market for oil.

Second, the U.S. is the global leader in financial markets. Prices for global commodities such as crude oil and refined products are discovered in the United States futures markets. Commodity markets perform best when there is a clear, transparent, and readily available supply that is used to price markets. Moreover, the U.S. is in the place where producers come to manage energy price risk. But under the oil export ban, our domestic crude oil markets have been needlessly affected.

In summary, in the U.S. we have a robust physical delivered market in West Texas Intermediate, and that should be opened up freely to the world. The export ban was protectionist when it was put into place 40 years ago. Its actual impact has been harmful to the efficiency of the markets and the price discovery process in the energy sector. Now is the time for the U.S. to repeal the ban and reassert its energy leadership through sensible policies that support our leading position in energy and financial markets.

We at the CME Group are greatly encouraged by the growing bipartisan support for bringing our energy policy up to date and place the U.S. at the center of the global crude oil trade. I urge Congress and the Administration to repeal the ban on crude oil exports and let the markets trade freely.

I want to thank you for the opportunity to appear before you today, and I look forward to answering your questions. Thank you.

[The prepared statement of Mr. Duffy follows:]

PREPARED STATEMENT OF HON. TERRENCE A. DUFFY, EXECUTIVE CHAIRMAN AND PRESIDENT, CME GROUP, CHICAGO, IL

Thank you, Chairman Conaway and Ranking Member Peterson, for holding this hearing today on a policy that is preventing the U.S. economy from reaping the full benefits of the country's boom in oil production: the ban on oil exports.

In the 1970s, the U.S. Government banned crude oil export products in reaction to OPEC driven oil prices, mile long gas lines, rising inflation, a depreciating dollar and growing trade imbalances. From the start, the ban does not appear to have provided any benefits for the rural or agricultural sector. Instead, the ban distorted the allocation of capital between U.S. and non-U.S. production.

Some 4 decades after the ban was imposed, the economic context is totally different. The U.S. has experienced resurgence in oil and natural gas production. OPEC has little to no power to raise oil prices. Indeed, oil prices have dropped sharply. Inflation is very low and has been stable for over twenty years. Interest rates are extremely low. The U.S. still is a net importer of oil and refined product, but exports of refined product have been rising with the oil production boom while imports of crude oil have been falling.

Prior to the commencement of the recent oil production boom, global oil markets had reached a balance in which there was little price difference between U.S. oil (West Texas Intermediate—WTI) and European oil (from the North Sea—Brent). Then, the rapid rise in U.S. production out-paced the ability of pipelines and railroads to get the oil to refiners and to end users. The result was a temporary widening of price spreads between U.S. and overseas oil, with the U.S. having cheaper oil. As pipelines were reconfigured, new ones built, and rail capacity expanded, over the last few years the U.S. oil markets have largely reconnected with overseas markets sufficiently to narrow price spreads and come back into a globally balanced position.

Today, the U.S. is the undisputed global leader in energy technology (exploration, extraction, *etc.*) and a major exporter of refined product. This has been achieved despite the imposition of inefficiencies onto the U.S. economy directly as a result of the ban. These inefficiencies include distortions in refining, including investment, by preventing crude production from sometimes reaching its most efficient processor, which could be outside the U.S.; distortions in logistics, including investment, by causing excessive storage and transport; and distortions in production, including investment, because crude cannot be marketed to its highest value use.

While the market for crude oil is globally integrated, the export ban segregates U.S. crude from the world market, which punishes the U.S. economy with price distortions. In order to encourage companies to invest in the production of crude oil here in the U.S., our domestic crude should be able to participate in the global free market for oil.

We support unfettered markets that can allow the U.S. more influence over the global price setting process. While the U.S. has reconnected with global markets, there are still considerable price differences between U.S. and European oil. Partly due to the export ban condition, the world today uses the European Brent benchmark that is in declining production. Here in the U.S., we have a robust physical delivered market in West Texas Intermediate (WTI), and if opened up freely to the world, it would be an even more robust tool for pricing global crude oil. Commodity markets perform better when there is a clear, transparent and readily available supply that is used to price markets. This suggests that lifting the ban on crude oil exports would enhance the use of U.S. markets for energy risk management.

Stated another way, the U.S. is the global leader in financial markets—prices for global commodities, such as crude oil and refined products, are discovered in U.S. futures markets. And the U.S. is the place where producers come to manage energy price risk. The U.S. has managed to maintain this leadership role in spite of the distortions governing the market for the product whose price U.S. markets help discover. Lifting the crude oil export ban will remove an impediment to the integrity of the price discovery process in U.S. markets. In addition, a well-balanced global market of exports and imports has the potential to reduce the impact of any one region, especially unstable ones, on the global price of oil, to the benefit of the U.S. economy and the world as well.

In conclusion, the export ban was "protectionist" in nature and intent when it was put into place over 40 years ago. Its actual impact has been harmful to the efficiency of markets and to the price discovery process in the energy sector. Moreover, energy markets have transformed significantly over the last 4 decades and, now, even the original intent of the crude oil ban no longer makes sense.

- Now is the best time for the U.S. to reassert its energy leadership.
- The way to do that is for us to have sensible policies in place that support the U.S.'s leadership position in energy technology and financial markets.
- There will be numerous benefits for the U.S. to be at the center of the global crude oil trade. And the U.S. should be allowed to participate in the global market for physical crude in order to benefit from our technology and financial leadership.

We at CME Group are greatly encouraged by the growing bipartisan support to update our energy policy to repeal this outdated ban. I applaud your leadership on this issue, Chairman Conaway and Ranking Member Peterson, and urge Congress and the Administration to repeal the ban on crude oil exports and let the market trade freely.

The CHAIRMAN. Mr. Duffy, the chair recognizes you gave us 1½ minutes back. Thank you very much.

Ms. Cutting, thank you. Your 5 minutes.

STATEMENT OF KARI BJERKE CUTTING, VICE PRESIDENT, NORTH DAKOTA PETROLEUM COUNCIL, BISMARCK, ND

Ms. CUTTING. Chairman Conaway and Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to testify today on the impact that lifting the export ban on crude oil would have on rural North Dakota, particularly the agricultural community.

The North Dakota Petroleum Council represents more than 500 member companies engaged in oil and gas activities in North Dakota, South Dakota, and the Rocky Mountain region. Our members produce 98 percent of the oil and gas produced in North Dakota, and North Dakota's largest industries are agriculture and energy.

North Dakota is the second-largest oil-producing state in the nation, reaching one million barrels of daily production in May of 2014, up from 100,000 barrels per day in 2007. Since 2005, the oil and gas industry has grown from a $3 billion industry supporting 5,000 jobs in North Dakota to a $43 billion industry supporting 65,000 direct jobs.

These benefits extend well beyond North Dakota and into our neighboring States of Minnesota, South Dakota, Montana, and even further. A recent study by Harvard Business School indicates that between 2011 and 2014 many states saw a triple-digit increase in job postings related to unconventional oil development, including North Dakota at 286 percent, Montana at 198 percent, and Minnesota at 193 percent. For every dollar spent on oil and gas development in North Dakota, another $1.50 in additional business activity is generated, sending ripple effects through our state and national economies.

If we turn back the clock a dozen years, rural North Dakota towns were shrinking and some had become ghost towns. Many businesses closed, schools consolidated, and farm auctions were very frequent. North Dakota's young people, educated in some of the finest primary, secondary, and post-secondary schools in the country were North Dakota's finest export. The cost of living, along with low commodity prices, forced most farm families to supplement their income with a second full-time job at local businesses. Their greatest fear was that they would be the generation who could no longer hang on to the land that previous generations worked so hard to keep in the family.

In 2006, horizontal drilling technology unlocked the Bakken, resulting in a surge in oil and gas production, making North Dakota equivalent to the 19th largest oil producing country, and with that development came a rural renaissance for our state. Once dying towns were blossoming and the state's population grew 23 percent since 2000.

Oil development has also helped supplement the income of many local farmers and ranchers who receive checks for pipeline right-of-ways or mineral royalties. Some landowners have sold sand and gravel from pits on their land to the industry to build well pads and to maintain the roads. The influx of money allowed them to purchase bigger and newer equipment to enhance their farming and ranching operations. Some for the first time could plan to pass the family farm or ranch on to the next generation.

The state also benefited from capital improvements and infrastructure projects. Burlington Northern Santa Fe Railway, the largest railroad in North Dakota, has invested hundreds of millions of dollars to improve the transportation infrastructure that not only benefits oil and gas, but also the movement of agricultural products to market and fertilizers to be made available at the local elevators. Some rural elevators had not had rail service for years.

This investment would never have occurred without oil and gas development.

Additionally, value-added projects such as fertilizer plants are now being constructed or planned and will soon benefit North Dakota agricultural producers. U.S. farmers rely heavily on costly imports for fertilizer supplies. We now have an opportunity to produce more fertilizers locally, close to the farms in North Dakota.

The first refinery to be built in the U.S. in 4 decades recently began operating in North Dakota. This refinery, a small refinery, targeted to the agricultural market in North Dakota produces 7,000 barrels per day of diesel fuel. There has not been a harvest in the near past where there has not been a diesel shortage for the farmers in our state.

These are just a few of the examples of how agriculture and oil can partner for rural growth, but this rural renaissance is being threatened by foreign entities and by restrictions imposed on the sale of oil abroad.

I would just add in my last few seconds that in North Dakota we have lost about 20,000 oil and gas jobs. We have over 100 drilling rigs that have been idled. And as a previous speaker had mentioned, that represents a significant number of job opportunities, businesses, and economic growth in our state.

I would like to say thank you. I don't want to go over time. So I appreciate the opportunity to testify.

[The prepared statement of Ms. Cutting follows:]

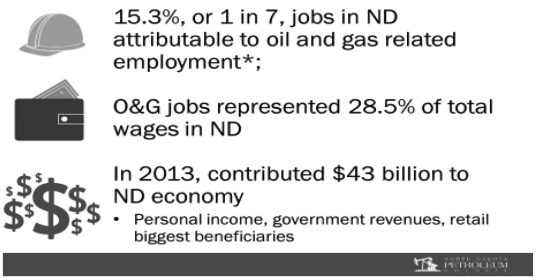
PREPARED STATEMENT OF KARI BJERKE CUTTING, VICE PRESIDENT, NORTH DAKOTA PETROLEUM COUNCIL, BISMARCK, ND

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to testify today on the impact that lifting the export ban on crude oil would have on rural North Dakota, particularly the agricultural community.

The North Dakota Petroleum Council (NDPC) represents more than 500 companies engaged in all aspects of oil and gas activities in North Dakota, South Dakota, and the Rocky Mountain region. NDPC members produce 98 percent of all oil and gas in North Dakota. North Dakota's two largest industries are agriculture and energy.

North Dakota is the second largest oil-producing state in the nation, reaching 1.0 million barrels of daily production in May 2014, up from 100,000 barrels per day in 2007. Since 2005, the oil and gas industry had grown from a $3 billion industry supporting 5,000 jobs to a $43 billion industry with 65,000 direct jobs. Today, the industry in North Dakota has more than 12,000 producing oil wells, and contributes $8–$9 million per day in oil production taxes to the state and political subdivisions.

Supporting Jobs and Economic Growth



*According to 2013 Job Service ND report.

These benefits extend well beyond North Dakota and into our neighboring states of Minnesota, South Dakota, Montana, and even farther. In fact, according to a recent study by Harvard Business School, between 2011 and 2014, many states saw a triple digit increase in job postings related to unconventional oil development, including North Dakota at 286 percent, Montana at 198 percent, and Minnesota at 193 percent. For every dollar spent on oil and gas development in North Dakota, another $1.50 in additional business activity is generated, sending ripple effects through our state and national economies.

Turning back the clock a dozen years, rural North Dakota towns were shrinking and some had become ghost towns. Many businesses closed, schools consolidated and farm auctions were frequent. North Dakota's young people, educated in some of the finest primary, secondary and post-secondary schools in the country, were North Dakota's most valuable export because suitable employment was not available at home. The cost of living, along with low commodity prices, forced most farm families to supplement their income with a second full-time job at a local business, coal mine or power plant. Their greatest fear was that they would be the generation who could no longer hang onto the land that previous generations worked so hard to keep in the family.

In 2006, horizontal drilling technology unlocked the Bakken, resulting in a surge of oil and gas production, making North Dakota equivalent to the nineteenth largest oil producing country and with development came a rural renaissance for our state. The oil and gas industry, as well as service companies, engineers, geologists and all the manufacturing and logistics that must accompany the industry brought jobs, new business opportunities, and royalties to land and mineral owners. Once dying towns blossomed and the state's population grew 23 percent since 2000. North Dakota has been ranked as one of the best states for young people because of the abundant job opportunities. This has attracted new people to the state and brought many back home to live closer to family.

Oil development has also helped supplement the incomes for many local farmers and ranchers who receive checks for pipeline right of ways or mineral royalties. Some landowners sold sand and gravel from pits on their land to the industry to build well pads and maintain roads. The influx of money allowed them to purchase bigger and newer equipment to enhance their farming and ranching operations. Some for the first time could plan to pass the family farm or ranch on to the next generation.

The state also benefited from capital improvements and infrastructure projects brought about by the oil industry. Burlington Northern Santa Fe railway, the largest railroad in North Dakota has invested hundreds of millions of dollars to improve the transportation infrastructure that not only benefits oil and gas, but also the movement of agricultural products to market and fertilizers to the local elevators. Some rural elevators had not had rail service in years. This investment would never have occurred without oil and gas development.

Additionally, value-added projects such as fertilizer plants are being constructed or planned, and will soon benefit North Dakota agricultural producers. U.S. farmers rely heavily on costly imports for fertilizer supplies. We now have an opportunity to produce more fertilizers close to the farms in North Dakota.

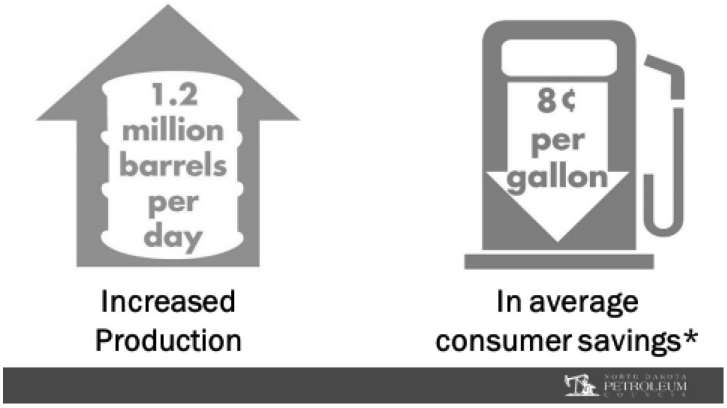
The first refinery to be built in 4 decades recently began operating in North Dakota. This small topping plant will process 20,000 barrels of Bakken crude per day to produce about 7,000 barrels per day of diesel fuel. There has not been a recent harvest where we haven't experienced a shortage of diesel fuel. This refinery is just one step forward in helping agriculture get the energy resources they need to harvest their crops. These are just a few examples of how agriculture and oil can partner for rural growth.

This rural renaissance is being threatened by foreign entities not always friendly to the United States and by restrictions imposed on the sale of oil abroad. The recent collapse of the price of oil was precipitated by OPEC's decision protect its market share by driving prices down and attempting to put American producers out of business. This tactic by our foreign oil competitors has had an impact on the U.S. industry. In North Dakota alone, 15,000–20,000 direct oil and gas, as well as many indirect employment opportunities have been lost. Across the nation this number is closer to 500,000 lost job opportunities. More than 100 drilling rigs are now sitting idle in North Dakota and production in the state has been flat for the past several months. Mineral owners are receiving smaller royalty checks, and the state of North Dakota and its citizens are receiving lower oil and gas tax revenues that fund schools, roads and infrastructure across our state.

The U.S. oil and gas industry can rise to meet many challenges through innovation and hard work, but facing export restrictions at home, places the industry at an extreme competitive disadvantage. The U.S. Government should lift the ban on

crude oil exports and allow oil produced here at home, in places like North Dakota, to reach global markets. The U.S. energy industry deserves the opportunity to compete globally; lifting the ban on crude oil exports would immediately restore our competitiveness and revive the renaissance in rural America. Not only would rural America prosper, but all U.S. citizens would benefit from lifting the ban.

U.S. Oil Exports Would Boost Production, Lower Consumer Costs



Repealing the ban would create jobs, grow our economy, help decrease gasoline prices, and improve our energy security. The Domestic Energy Producers Alliance reports that lifting the ban will add one percent to gross domestic product growth, drastically reducing the U.S. trade deficit and putting Americans back to work. A recent study by IHS found that job creation from lifting the ban would average almost 400,000 jobs in the first year and peak in 2018 at nearly one million new jobs. The Brookings Institute concluded U.S. households will benefit from lifting the export ban through higher incomes and wages and lower gasoline prices.

Economists and experts all agree that lifting the export ban will put downward pressure on U.S. gasoline prices. In a report titled "What Drives U.S. Gasoline Prices?" the U.S. Energy Information Administration (EIA) found that our gasoline prices are tied to the international price of oil, also known as Brent. Allowing U.S. oil exports would add to global supply and put downward pressure on international prices, which are precisely what determines our price at the pump. A study by Columbia University found that lifting the ban could reduce our gasoline prices by up to 12¢ per gallon. Others studies say American consumers could save up to $5.8 billion annually each year from 2015 to 2035.

***Every Major* Study Agrees**

Oil Exports Would Put Downward Pressure on U.S. Gasoline Prices

Summary of Major Economic Studies	Estimated Decline in U.S. Price per Gallon of Motor Fuels
Resources for the Future	1.7¢ to 4.5¢
IHS	8¢ average
ICF	Up to 3.8¢ (2.3¢ average)
Brookings & Nera	Up to 12¢ (9¢ average)
Aspen & MAPI	Up to 9¢
GAO	1.5¢ to 13¢
Columbia University	Up to 12¢
CBO	5¢ to 10¢

U.S. Crude Oil Export Decision: Assessing the Impact of the Export Ban and Free Trade on the U.S. Economy (IHS, May 2014).

Transportation fuels, gasoline and diesel fuel represent major fixed costs in any farming and ranching operation. Lower prices would benefit all of rural America and all American drivers. The Center for New American Security stated that new U.S. oil supplies have already helped to cap price spikes caused by global supply disruptions and to moderate oil prices for consumers.

***What* are the Economic Benefits of U.S. Crude Exports?**

By ICF International and EnSys Energy

"The Impacts of U.S. Crude Oil Exports on Domestic Crude Production, GDP, Employment, Trade, and Consumer Costs"

***Up to $5.8 billion*—Estimated reduced consumer fuel costs year 2015–2035** U.S. weighted average petroleum product prices are expected to decline as much as 2.3¢ per gallon 2015–2035 when U.S. crude exports are allowed. The greatest potential annual decline is 3.8¢ per gallon in 2017. These price decreases for gasoline, heating oil and diesel could save American consumers up to **$5.8 billion per year,** on average, over the 2015–2035 period.	***Up to 300,000 potential job*—gains in 2020** The U.S. economy could gain up to **300,000 additional jobs in 2020** when crude exports are allowed. Consumer products and services and hydrocarbon production sectors would see the largest gains.
***Up to $70 billion*—More investment by 2020** An expansion of crude exports could result in **$15–$70 billion** of additional investment in U.S. exploration, development and production of crude oil between 2015 and 2020.	***$13.5 billion*—Estimated government revenues increase in 2020** U.S. Federal, state, and local tax receipts attributable to GDP increases from expanding crude oil exports could increase up to **$13.5 billion in 2020.**
***Up to 500,000 Barrels per day*—Increase in domestic crude oil production by 2020**	***$22 billion*—Estimated reduction of trade deficit in 2020** Lifting crude oil export restrictions contributes to expanded U.S. exports. This could narrow the U.S. trade deficit by **$22 billion in 2020** through increased international trade of U.S. crude oil.

Energy abundance and domestic energy Independence are terms that are difficult to grasp after decades of discussions on peak oil and energy scarcity. Two generations of Americans have been taught to believe that the United States has no choice but to be reliant on foreign energy supplies, particularly those from the Middle East. Many Americans have been indoctrinated with an energy scarcity mentality. Ken Hersch, CEO of NBP Energy Capital Management said "the ramifications of the U.S. moving from being primarily an oil consumer to being both a producer and consumer of oil, will shape global events for the next fifty years as oil scarcity gives way to oil abundance."

Thanks to advances in technology U.S. energy potential has been unlocked and has given this nation the key to break open abundant energy reserves, lower the price of transportation fuels, create jobs and generate a robust U.S. economy.

It is time for a paradigm shift in mindset from energy scarcity to one of energy abundance that includes lifting the ban on crude oil exports. As the Harvard Business School so aptly stated in their study, unconventional energy development is "perhaps the largest single opportunity to change America's competitiveness and economic trajectory, as well as our geopolitical standing." We must seize this opportunity, and the first steps is lifting this antiquated export ban.

OPEC Dominance of Global Oil

- ***Time Magazine:*** "OPEC says that demand for oil—its oil—with rise during 2015 because the cartel is winning its price war against U.S. shale producers by driving them out of business."
- **OPEC Chief, Reuters:** "Maybe we will go to $200/barrel if there is a shortage of supply due to lack of investment."

North Dakota Petroleum Council.

The story of North Dakota oil and gas development and its impact on agriculture in our state is an amazing American story, one that is being discussed all over the world. Exporting crude oil will have a dramatic effect on our state's ability to fully develop the Bakken and realize its full benefits. Now is the time to follow North Dakota's lead and let our nation be the energy leader for the world.

Mr. Chairman, and Members of the Committee, you have before you a once in a generation opportunity to impact the economy of the United States, provide lower transportation costs to rural America and make the U.S. the global energy market leader.

Resources

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4. *Crude Behavior: How Lifting the Export Ban Reduces Gasoline Prices in the United States*—Resources For the Future, *http://bit.ly/1o0h2Ze* (*http://www.rff.org/RFF/Documents/RFF-IB-14-03-REV.pdf*).
5. *A Signal to The World: Renovating The Architecture Of U.S. Energy Exports*—U.S. Senator Lisa Murkowski, *http://1.usa.gov/1o0jb78* (*http://www.energy.senate.gov/public/index.cfm/files/serve?File~id=546d56f0-05b6-41e6-84c1-b4c4c5efa372*).
6. *US Crude Oil Export Decision: Assessing the impact of the export ban and free trade on the U.S. economy, http://bit.ly/1iwp2h2* (*https://www.ihs.com/info/0514/crude-oil.html?ocid=coe:pressrls:01*).
7. *Lift the Ban on U.S. Oil Exports,* Brookings Institution, *http://bit.ly/1pDRMe8* (*http://www.brookings.edu/research/papers/2014/01/lift-ban-us-oil-exports-boersma-ebinger*).
8. IHS: *http://press.ihs.com/press-release/energy-power/lifting-export-restrictions-us-crude-oil-would-lower-gasolineprices-an-0*.
9. ICF: *http://www.api.org/news-and-media/news/newsitems/2014/mar-2014/study-crude-exports-an-economic-win-for-us-consumers-workers*.
10. *Lifting The Crude Oil Export Ban: The Impact on U.S. Manufacturing,* Aspen Institute, *http://bit.ly/1vLyOSh* (*http://www.aspeninstitute.org/sites/default/files/content/upload/FINAL_Lifting_Crude_Oil_Export_Ban_0.pdf*).
11. *Changing Markets Economic Opportunities from Lifting the U.S. Ban on Crude Oil Exports,* Brookings Energy Security Initiative, *http://bit.ly/1vLzur1* (*http://www.brookings.edu/~/media/research/files/reports/2014/09/09%208%20facts%20about%20crude%20oil%20production/crude%20oil%20exports%20web.pdf*).
12. *What Drives U.S. Gasoline Prices?,* U.S. Energy Information Administration, *http://1.usa.gov/1pnLTVb* (*http://www.eia.gov/analysis/studies/gasoline/pdf/gasolinepricestudy.pdf*).
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14. *Navigating the U.S. Oil Export Debate*—Columbia|SIPA, *http://energypolicy.columbia.edu/sites/default/files/energy/Navigating%20the%20US%20Oil%20Export%20Debate_January%202015.pdf*.

The CHAIRMAN. Thank you, Ms. Cutting. I appreciate you being here.

Mr. Webster, 5 minutes.

STATEMENT OF JAMIE WEBSTER, SENIOR DIRECTOR, IHS, WASHINGTON, D.C.

Mr. WEBSTER. Thank you, Chairman Conaway, Ranking Member Peterson, Members of the Committee. I appreciate the opportunity to testify before you on the immense changes in the energy market, its impacts on the rural economy, and the importance of crude oil exports to maximize these benefits. I am Jamie Webster, and I appear before you in my capacity as Senior Director for IHS, where I lead the company's short-term crude oil markets team. My work

through IHS has involved me in two landmark studies on crude oil exports. We are a global consultancy that specializes in energy, capital-intensive industries, data, and analysis.

Today I want to address the recent changes in the market, North America's critical place in it, and what it means for our rural areas. I will also address the importance of eliminating the crude export ban to fully maximize what the U.S. oil boom can offer.

The catalyst for the oil price decline that started last summer was actuality the partial return of Libyan production, but it was the underlying growth in homegrown American companies, such as Mr. Hamm's, that brought U.S. oil production from 5.6 million barrels a day in 2011 to over 9.5 million barrels today that really sustained this price drop. OPEC's decision on Thanksgiving of last year to forego any sort of production cut really highlighted the big change that had happened in the market. It also, with the price decline, extended the benefits beyond just those that were receiving jobs in North Dakota and other places in the United States as well as the supply chain, but also extended these benefits with lower gasoline prices across the United States. Actually allowing the exportation of oil would actually continue this trend.

The U.S. has a liberal trade policy currently for natural gas, coal, refined products, and processed condensate. It also allows oil exports to other countries in certain very specific areas. Now, some have said and Senator Markey has recently put out a letter that stated his concerns that we would be exporting a valuable product at a time when we are importing it. But if you look at the top ten exports of the United States, you will see that we also import large values of those goods as well. America is a trading country, and you don't need to move down to zero imports before you decide to make the decision to start exporting it.

Allowing this to be exported will keep downward pressure on global prices and keep the laboratory of U.S. shale technology and production fully open for business, while supporting job growth across many industries and in places far from the oil fields. It will also help to lower the price of Brent, the benchmark price for global oil, as much as the increase in production already has.

Lowering the Brent price is the access point to lower gasoline prices, as U.S. gasoline prices are linked to the Brent world price because you can export gasoline and so it is a global fuel *versus* the WTI price, which is very much a domestic issue.

Currently, refiners are investing quite a bit to try to take advantage of this crude oil boom. However, as Mr. Hamm suggested, there is a real mismatch that those refineries have spent over $85 billion in the last 25 years to upgrade to be able to take heavy sour crude oil where we are now producing light sweet crude oil. So while they are working to reorient themselves and they will continue to do so even if we allow the exportation of crude oil, this is not something that is going to completely undermine their business.

Our report, *Unleashing the Supply Chain,* fully documents these benefits, and these include an additional $86 billion in GDP, about another 400,000 jobs annually. These are jobs that on average pay about 25 percent higher than the national average and $1.3 trillion

in Federal, state, and municipal revenue from corporate and personal taxes.

This touches states beyond just Texas and North Dakota. It also touches states like Minnesota, New York, and Massachusetts and Michigan, while also benefiting across economic activity and jobs, it is due to the interconnected nature of the U.S. supply chain.

With that, I appreciate your time, Mr. Chairman, your leadership and that of the Committee to address this critical issue. And thank you for the opportunity, and I welcome your questions at the appropriate time.

[The prepared statement of Mr. Webster follows:]

PREPARED STATEMENT OF JAMIE WEBSTER, SENIOR DIRECTOR, IHS, WASHINGTON, D.C.

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, I appreciate the opportunity to testify before you on the immense changes in the energy market, its impacts on the rural economy, and the importance of crude exports to maximize these benefits.

I appear before you in my capacity as Senior Director for IHS where I lead the company's short term crude oil markets team. My work through IHS has involved me in two landmark studies on crude oil exports.[1–2] IHS is a global consultancy that specializes in energy, capital-intensive industries, data and analysis with a worldwide presence.

Today I want to address the recent changes in the global oil market, North America's critical place in it, and what it means for our rural areas. I will also address the importance of the crude export issue to fully maximize what the U.S. oil boom can offer. particularly to rural economies.

The catalyst for the oil price decline that started last summer was the partial (and temporary) return of Libyan production. But it was the underlying growth in U.S. oil production from 5.6 million barrels a day (MMb/d) in 2011 to the current 9.2 MMb/d that sustained this price drop. OPEC's decision last November 27 to not cut production in the face of growing volumes, not just from United States shale oil, but also the Gulf of Mexico as well as Canada further hastened the price decline. OPEC's decision, reaffirmed again in June, appears to have marked the beginnings of a serious shift in how supply and demand is balanced in the global market.

The boom in U.S. production has the potential to upend the need for a formal market balancer, leading to lower oil prices for consumers, while increasing energy security for not just the U.S. but the world. This is possible not only because of the large production volumes that U.S. producers have brought to the market, but because of the character of those flows. Conventional production projects can take years to finance, plan and bring to the market. U.S. shale producers can do it in 4 months. Globally, conventional production has a decline rate of 5–6%, meaning a project will be producing that much less each year. U.S. shale production has an initial decline rate of about 50%. These two factors allow the U.S. shale system to react quickly to market signals to bring more oil onto the market, and a lack of investment when prices turn downward can quickly reduce supply. This shift from OPEC to the market-driven forces of shale oil is far from certain and far from complete and it could be reversed.

The U.S. has a liberal trade policy for natural gas, coal, refined products and processed condensate. It also allows oil exports to other countries in certain, very specific cases. Allowing U.S. producers to seek out international markets for their product will allow them to receive global prices, keeping the "laboratory" of U.S. shale technology and production fully open for business, while supporting job growth across many industries and in places far from the oil fields. It will also help to lower the price of Brent, the benchmark price for global oil, much as the increase in production already has. Lowering the Brent price is the access point to lower U.S. gasoline prices as U.S. gasoline prices are linked to the Brent world price, not the domestic WTI price.

To fully maximize U.S. savings at the pump, exports should be liberalized to ensure this dated policy does not cause an unnecessary drag on American productivity, while hampering our ability to exploit fully the national security benefits from this energy resurgence. The reasons are intertwined with the nature of the American refinery system and the price discounts that American oil producers must frequently take in order to sell their products competitively to refineries, particularly along the

Gulf Coast, which holds over half of the nation's total refining capacity. Over $85 billion has been spent in the past quarter century to reconfigure these refineries to process heavy oil imported from countries like Venezuela, Mexico and Canada. The United States contains the largest refining capacity of any country in the world, with 139 operating refineries with a combined crude oil distillation capacity of about 18 million B/D. The U.S. refining system is characterized not only by the number and size of refineries but also by a high number of world-class, high-complexity, full conversion refineries with a substantial degree of petrochemical and specialty products integration.

In this complex refining system, if the crude quality varies enough, the refineries cannot run optimally within their designed operating parameters. In the Gulf region, most refineries are configured to process heavy crude oil. When using light tight oil, Gulf refineries operate inefficiently. Refineries are now working to re-orient to take advantage of this new domestic crude, investments that will largely continue even if the export ban was lifted.

Unfinished products are the result of the current crude mismatch, which have a lower value because they require further processing to be upgraded into gasoline, jet and diesel fuels. In some cases the crude quality mismatch is large enough that a refinery will have to reduce the crude oil throughput to process additional volumes of light tight oil. As a result, there are limits to how much of the new, domestically produced light tight oil the refining system can efficiently and effectively process. To fully use light tight oil, many Gulf Coast refiners often require a price discount. Allowing crude oil exports would allow light tight oil (*i.e.,* WTI) to sell at higher world prices. In *U.S. Crude Oil Export Decision,* IHS estimates that eliminating the WTI discount would incentivize nearly $750 billion more in investment from 2016 to 2030—and increase oil production by 1.2 million B/D.

The IHS report, *Unleashing the Supply Chain,*[1] fully documents the benefits across the economy from 2016–2030, and I recommend it to the Committee Members and their staff to fully understand the benefits to your districts. For the entire U.S. the increase is stunning:

- $86 billion in additional GDP,
- about 400,000 new jobs annually, many of them in rural areas
- 25% higher pay for workers in the energy industry supply chain—an additional $158 per household, and
- $1.3 trillion in Federal, state and municipal revenue from corporate and personal taxes.

The benefits accrue across most of the United States, not just oil producing states like Texas. It also touches states like Minnesota, New York, and Massachusetts, and Michigan—with little or no oil production—also benefit substantially in terms of economic activity and jobs, owing to the interconnected nature of U.S. supply chains. The report affirms earlier research that eliminating the export ban would provide significant benefits while reducing gasoline prices by 8¢ per gallon.

Eliminating the crude oil ban proves even more important when oil prices are low and companies are laying off workers which slows the benefits to the interconnected supply chain. For example, if Brent crude (the international standard) trades in the range of $55/barrel and WTI trades in the United States at around $45/barrel, many companies will be on the margins of their new well investment breakeven point. In such a case, a small price change can have a major impact on supply because it can make or break the profitability of a significant share of tight oil producers and because it may determine whether an investment decision is made or not. Crude oil production thus drops even more sharply when prices are low and producers must take further price cuts to sell to domestic refiners if they cannot export. A $3 per barrel change in a $50 per barrel price environment can have the same effect as a $10 change in a $100 per barrel environment.

Energy flows into and out of the United States have already provided significant benefits to the region and the world. In July 2010, the United States imported 1.1 MMb/d of oil from Nigeria. Because of U.S. supply, this has shrunk to nearly nothing, while at the same time we are providing a large share of its refined products (diesel, gasoline, *etc.*) from the United States. The change in refined product flows to Nigeria reflects a broader change in U.S. flow patterns for gasoline, diesel and other important consumer fuels. Ten years ago this month, the United States net imports of refined products was over two million barrels per day. This has now reversed direction and the U.S. net export balance is over two million barrels per day of exports. U.S. refiners are some of the most advanced in the world, and with low cost inputs they have been able to further exert their global standing, providing not just U.S. consumers with valuable fuels, but consumers around the world.

So why do we have the ban, and is there any reason to modify it? Its existence is due to an anachronism that grew out of a period of scarcity in the 1970s when the United States imposed price controls on oil and banned the export of oil in order to support the price controls. In the wake of the 1973 Arab oil embargo, the Emergency Petroleum Allocation Act of 1973 allowed President Nixon to set price controls and allocate oil to end users in the United States. The Energy Policy and Conservation Act of 1975 prohibited the export of crude oil and natural gas produced in the United States, with some exceptions. The U.S. system of price controls on oil was abolished in 1981, as was, a few months later, the ban on the export of oil products. However, illogically, the ban on crude oil exports was retained even though the rationale provided by price controls had disappeared. The United States now has the fastest growing oil production in the world. Since 2008, American entrepreneurship has increased U.S. crude oil output by ~81%—4.4 million B/D principally of light tight oil, such as Eagle Ford in south Texas, Bakken in North Dakota and West Texas Intermediate (WTI). This increase is the fastest in U.S. history and exceeds the combined production gains from the rest of the world. The commercial and technical reasons for this increase in production are well documented, including the May 2014 IHS report, called *U.S. Crude Oil Export Decision.*[1] The conditions that justified the crude oil export ban in 1973 no longer apply.

I appreciate, Mr. Chairman, your leadership and that of this Committee to address these critical issues for U.S., regional and global energy security. Thank you for this opportunity to testify before your Committee. I welcome the chance to respond to your questions.

Endnotes

[1] *U.S. Crude Oil Export Decision: https://www.ihs.com/Info/0514/crude-oil.html.*
[2] *Unleashing the Supply Chain: https://www.ihs.com/Info/0315/crude-oil-supply-chain.html.*

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About IHS (*www.ihs.com*)

IHS (NYSE: IHS) is the leading source of insight, analytics and expertise in critical areas that shape today's business landscape. Businesses and governments in more than 150 countries around the globe rely on the comprehensive content, expert independent analysis and flexible delivery methods of IHS to make high-impact decisions and develop strategies with speed and confidence. IHS has been in business since 1959 and became a publicly traded company on the New York Stock Exchange in 2005. Headquartered in Englewood, Colorado, USA, IHS employs almost 9000 people in 32 countries around the world.

The CHAIRMAN. Mr. Webster, thank you.

Dr. Rusco, 5 minutes.

STATEMENT OF FRANK RUSCO, PH.D., DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, U.S. GOVERNMENT ACCOUNTABILITY OFFICE, WASHINGTON, D.C.

Dr. RUSCO. Thank you. Chairman Conaway, Ranking Member Peterson, and Members of the Committee. I am pleased to be here today to discuss GAO's report on the implications of lifting the restrictions on crude oil exports.

In a report issued September 30, 2014, we found that allowing crude oil exports from the United States could reduce consumer fuel prices and enhance energy security by increasing our strategic petroleum reserves relative to our net imports of foreign crude oil. It could also improve the U.S. balance of payments.

Specifically, according to the major empirical studies that we found and evaluated, allowing crude oil exports would remove a price penalty that some U.S. crude oils has been suffering and stimulate the production of additional oil in the United States.

Because the resulting increase in U.S. oil production would reduce global crude oil prices, most studies also predicted that con-

sumer petroleum product prices would fall because the price of crude oil is the largest cost component in producing these products.

In addition, because producing oil is a complex industrial process that inherently poses some risk to worker safety and the environment, the increase in oil production activity encouraged by removing export restrictions could also lead to incrementally more worker injuries or environmental damages such as spills as a result of rail or truck accidents.

Much of the increase in U.S. oil production has come from shale deposits and is light and sweet in nature. This has created a mismatch in the quality of oil in the United States that we produce and the heavier sour types of oil that our Gulf Coast refiners are configured to refine. Lifting the export ban should allow excess barrels of lighter oil to be exported at global prices and remove the mismatch between the quality of oil produced and the quality refiners are set up to handle.

As oil production in the United States has increased in recent years, it has created a lot of economic activity in oil-producing regions, many of these in rural America. Specifically, the largest shale oil formations cover areas including the Bakken in northwest North Dakota and eastern Montana, the Permian Basin and Eagle Ford in west and south-central Texas, respectively, Haynesville in east Texas and west Arkansas, the Niobrara in parts of Colorado, Utah, Wyoming, Kansas, and Nebraska, the Marcellus in West Virginia and west and central Pennsylvania, and the Utica in east Ohio.

Oil production is an industrial process that requires the application of complex technologies and skilled labor in the oil field and also a broad array of supporting services, including oil drilling services, pipeline operations, railroads, trucking, and housing, to name just a few.

The removal of oil export restrictions has precedent in the lifting of an export restriction on Alaskan North Slope oil in the mid-1990s. GAO issued a report in 1999 that found that lifting the export restrictions had caused North Slope oil prices to rise to parity with global prices. When that export ban was lifted, very little oil was actually shipped abroad, but it was enough to cause the price of North Slope oil to rise by about $1 per barrel. However, there was no discernible effect on consumer prices of petroleum products in the West Coast because the marginal barrels of those products were already imported from foreign sources and valued at global prices.

This increase in North Slope oil prices also made additional reserves economic to produce, so it had similar effects as are predicted in the studies we reviewed in our most recent report.

In conclusion, allowing exports of oil from the United States makes sense from the standpoint of economic efficiency. It allows the price of oil to be set by market forces and allows the efficient running of U.S. refining operations. It will likely cause consumer prices to fall or remain unchanged. And it should stimulate economic activity, particularly in the rural areas in which shale oil reserves exist.

This ends my opening statement. I am happy to answer any questions you may have. Thank you.

[The prepared statement of Dr. Rusco follows:]

PREPARED STATEMENT OF FRANK RUSCO, PH.D., DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, U.S. GOVERNMENT ACCOUNTABILITY OFFICE, WASHINGTON, D.C.

Crude Oil Export Restrictions—Studies Suggest Allowing Exports Could Reduce Consumer Fuel Prices

GAO Highlights

Highlights of GAO–15–745T (*http://www.gao.gov/products/GAO-15-745T*), a testimony before the Committee on Agriculture, House of Representatives.

Why GAO Did This Study

After decades of generally falling U.S. crude oil production, technological advances in the extraction of crude oil from shale formations have contributed to increases in U.S. production. In response to these and other market developments, some have proposed removing the 4 decade old restrictions on crude oil exports, underscoring the need to understand how allowing crude oil exports could affect crude oil prices, and the prices of consumer fuels refined from crude oil, such as gasoline and diesel.

This testimony discusses what is known about the pricing and other key potential implications of removing crude oil export restrictions. It is based on GAO's September 2014 report (GAO–14–807) (*http://www.gao.gov/products/GAO-14-807*), and information on crude oil production and prices updated in June 2015. For that report, GAO reviewed four studies issued in 2014 on crude oil exports; including two sponsored by industry and conducted by consultants, one sponsored by a research organization and conducted by consultants, and one conducted at a research organization. Market conditions have changed since these studies were conducted, underscoring some uncertainties surrounding estimates of potential implications of removing crude oil export restrictions. For its 2014 report, GAO also summarized the views of a nongeneralizable sample of 17 stakeholders including representatives of companies and interest groups with a stake in the outcome of decisions regarding crude oil export restrictions, as well as academic, industry, and other experts.

View GAO–15–745T (*http://www.gao.gov/products/GAO-15-745T*). For more information, contact Frank Rusco at (202) 512–3841 or *ruscof@gao.gov*.

What GAO Found

In September 2014, GAO reported that according to studies it reviewed and stakeholders it interviewed, removing crude oil export restrictions would likely increase domestic crude oil prices, but could decrease consumer fuel prices, although the extent of price changes are uncertain and may vary by region. The studies identified the following implications for U.S. crude oil and consumer fuel prices:

- **Crude oil prices.** The four studies GAO reviewed estimated that if crude oil export restrictions were removed, U.S. crude oil prices would increase by about $2 to $8 per barrel—bringing them closer to international prices. Prices for some U.S. crude oils have been lower than international prices—for example, one benchmark U.S. crude oil averaged $52 per barrel from January through May 2015, while a comparable international crude oil averaged $57. In addition, one study found that, when assuming low future crude oil prices overall, removing export restrictions would have no measurable effect on U.S. crude oil prices.
- **Consumer fuel prices.** The four studies suggested that U.S. prices for gasoline, diesel, and other consumer fuels follow international prices. If domestic crude oil exports caused international crude oil prices to decrease, consumer fuel prices could decrease as well. Estimates of the consumer fuel price implications in the four studies GAO reviewed ranged from a decrease of 1.5¢ to 13¢ per gallon. In addition, one study found that, when assuming low future crude oil prices, removing export restrictions would have no measurable effect on consumer fuel prices.

Some stakeholders cautioned that estimates of the price implications of removing export restrictions are subject to several uncertainties, such as the extent of U.S. crude oil production increases, and how readily U.S. refiners are able to absorb such increases. Some stakeholders further told GAO that there could be important regional differences in the price implications of removing export restrictions.

The studies GAO reviewed and the stakeholders it interviewed generally suggested that removing crude oil export restrictions may also have the following implications:

- **Crude oil production.** Removing export restrictions may increase domestic production—8 million barrels per day in April 2014—because of increasing domestic crude oil prices. Estimates ranged from an additional 130,000 to 3.3 million barrels per day on average from 2015 through 2035.
- **Environment.** Additional crude oil production may pose risks to the quality and quantity of surface groundwater sources; increase greenhouse gas and other emissions; and increase the risk of spills from crude oil transportation.
- **The economy.** Three of the studies projected that removing export restrictions would lead to additional investment in crude oil production and increases in employment. This growth in the oil sector would—in turn—have additional positive effects in the rest of the economy, including for employment and government revenues.

Chairman Conaway, Ranking Member Peterson, and Members of the Committee:

Thank you for the opportunity to discuss our work on the implications of removing crude oil export restrictions. After decades of generally falling U.S. crude oil production, technological advances in the extraction of crude oil from shale formations have contributed to increases in U.S. production. Crude oil production increased by about 74 percent from 2008 through 2014 to reach over eight million barrels per day in 2014, and production increases in 2012, 2013, and 2014 were the largest annual increases since the beginning of U.S. commercial crude oil production in 1859, according to the Energy Information Administration (EIA).[1] More recently, however, crude oil prices have declined by 40 percent, from about $100 per barrel in the summer of 2014, to about $60 in May 2015. In response to these and other market developments, some have proposed removing the 4 decade old restrictions on crude oil exports, underscoring the need to understand how allowing crude oil to be exported could affect crude oil prices, and the prices of consumer fuels refined from crude oil, such as gasoline and diesel.

My testimony discusses what is known about the pricing and other key implications of removing crude oil export restrictions. It is based on our September 2014 report that examined these and other issues,[2] and information on crude oil prices and production updated in June 2015. For the 2014 report, we reviewed four studies issued in 2014 on crude oil exports; including two sponsored by industry and conducted by consultants, one sponsored by a research organization and conducted by consultants, and one conducted at a research organization.[3] Market conditions have changed since these studies were conducted, underscoring some uncertainties surrounding estimates of potential implications of removing crude oil export restrictions. For our 2014 report, we also summarized the views of a nongeneralizable sample of 17 stakeholders including representatives of companies and interest groups with a stake in the outcome of decisions regarding crude oil export restrictions, as well as academic, industry, and other experts. Although not generalizable to all potential stakeholders, these views provide illustrative examples. More details on our scope and methodology for that work can be found in the issued report. We conducted the work on which this statement is based in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The export of domestically produced crude oil has generally been restricted since the 1970s. In particular, the Energy Policy and Conservation Act of 1975 (EPCA) led the Department of Commerce's Bureau of Industry and Security (BIS) to pro-

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[1] EIA is a statistical agency within the Department of Energy that collects, analyzes, and disseminates independent information on energy issues.

[2] GAO, *Changing Crude Oil Markets: Allowing Exports Could Reduce Consumer Fuel Prices, and the Size of the Strategic Reserves Should Be Reexamined,* GAO–14–807 (*http://www.gao.gov/products/GAO-14-807*) (Washington, D.C.: Sept. 30, 2014).

[3] Resources for the Future, *Crude Behavior: How Lifting the Export Ban Reduces Gasoline Prices in the United States* (Washington, D.C.: Resources for the Future, February 2014, revised March 2014); ICF International and EnSys Energy (ICF International), *The Impacts of U.S. Crude Oil Exports on Domestic Crude Production, GDP, Employment, Trade, and Consumer Costs* (Washington, D.C.: ICF Resources, Mar. 31, 2014); IHS, *U.S. Crude Oil Export Decision: Assessing the Impact of the Export Ban and Free Trade on the U.S. Economy* (Englewood, CO: IHS, 2014); NERA Economic Consulting, *Economic Benefits of Lifting the Crude Oil Export Ban* (Washington, D.C.: NERA Economic Consulting, Sept. 9, 2014).

mulgate regulations that require crude oil exporters to obtain a license.[4] These regulations provide that BIS will issue licenses for the following crude oil exports:

- exports from Alaska's Cook Inlet,
- exports to Canada for consumption or use therein,
- exports in connection with refining or exchange of SPR crude oil,
- exports of certain California crude oil up to twenty-five thousand barrels per day,
- exports consistent with certain international energy supply agreements,
- exports consistent with findings made by the President under certain statutes, and
- exports of foreign origin crude oil that has not been commingled with crude oil of U.S. origin.

Other than for these exceptions, BIS considers export license applications for exchanges involving crude oil on a case-by-case basis, and BIS can approve them if it determines that the proposed export is consistent with the national interest and purposes of EPCA.[5] In addition to BIS's export controls, other statutes control the export of domestically produced crude oil, depending on where it was produced and how it is transported.[6] In these cases, BIS can approve exports only if the President makes the necessary findings under applicable laws.[7] Some of the authorized exceptions, outlined above, are the result of such Presidential findings.

As we previously found, recent increases in U.S. crude oil production have lowered the cost of some domestic crude oils.[8] For example, prices for West Texas Intermediate (WTI) crude oil—a domestic crude oil used as a benchmark for pricing—were historically about the same price as Brent, an international benchmark crude oil from the North Sea between Great Britain and the European continent.[9] However, from 2011 through 2014, the price of WTI averaged $12 per barrel lower than Brent (see *Fig. 1*). In 2014, prices for these benchmark crude oils narrowed as global oil prices declined, and WTI averaged $52 from January through May 2015, while Brent averaged $57. The development of U.S. crude oil production has created some challenges for crude oil transportation infrastructure because some production has been in areas with limited linkages to refining centers. According to EIA, these infrastructure constraints have contributed to discounted prices for some domestic crude oils.

[4] 15 CFR § 754.2(a).

[5] 15 CFR § 754.2(b)(2).

[6] For example, the Mineral Leasing Act of 1920 restricts exports of domestically produced crude oil transported by pipeline over certain rights-of-way (30 U.S.C. § 185(u)); the Outer Continental Shelf Lands Act restricts exports of crude oil from the outer continental shelf (29 U.S.C. § 1354); the Naval Petroleum Reserves Production Act restricts the export of crude oil produced from the Naval Petroleum Reserves (10 U.S.C. § 7430) and Section 201 of Pub. L. No. 104–58, "Exports of Alaskan North Slope Oil," provides for exports of domestically produced crude oil transported by pipeline over rights-of-way granted pursuant to section 203 of the Trans-Alaska Pipeline Authorization Act (30 U.S.C. § 185(s)).

[7] 15 CFR § 754.2(c).

[8] GAO, *Petroleum Refining: Industry's Outlook Depends on Market Changes and Key Environmental Regulations,* GAO–14–249 (*http://www.gao.gov/products/GAO-14-249*) (Washington, D.C.: Mar. 14, 2014).

[9] Because of the large number of grades of crude oils, buyers and sellers use benchmark crude oils as a reference in pricing crude oil. A benchmark crude oil is typically an abundantly produced and frequently traded crude oil. For example, crude oils produced in North and South America are typically priced in reference to WTI.

Figure 1: Monthly West Texas Intermediate and Brent Crude Oil Prices, 2009—May 2015

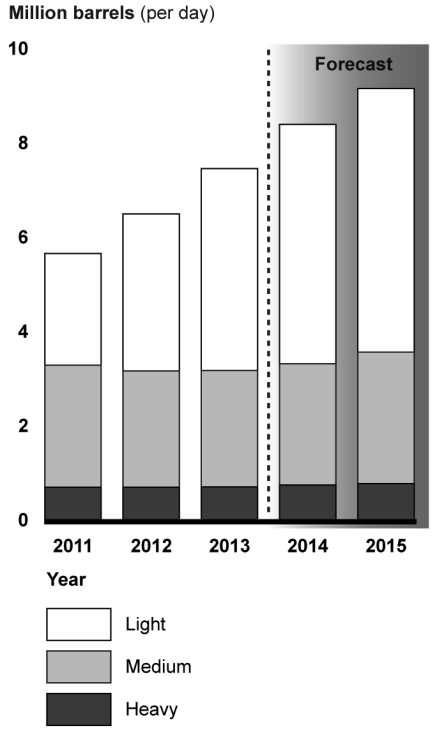
Source: GAO analysis of Energy Information Administration data. | GAO–15–745T.

Note: West Texas Intermediate is a domestic crude oil used as a benchmark for pricing, and Brent is an international benchmark from the North Sea between Great Britain and the European continent.

Much of the crude oil currently produced in the United States has characteristics that differ from historic domestic production. Crude oil is generally classified according to two parameters: density and sulfur content. Less dense crude oils are known as "light," and denser crude oils are known as "heavy." Crude oils with relatively low sulfur content are known as "sweet," and crude oils with higher sulfur content are known as "sour." As shown in *Figure 2,* according to EIA, most domestic crude oil produced over the last 5 years has tended to be light oil. Specifically, according to EIA estimates, about all of the 1.8 million barrels per day increase in production from 2011 to 2013 consisted of lighter sweet crude oils.[10]

[10] The density, or gravity of a crude oil is specified using the American Petroleum Institute (API) gravity standard, which measures the weight of crude oil in relation to water, which has an API gravity of 10°. For the purposes of this estimate, we considered light oils as those with an API gravity of 35° or above. See: Energy Information Administration, *U.S. Crude Oil Production Forecast—Analysis of Crude Types* (Washington, D.C.: May 29, 2014).

Figure 2: U.S. Crude Oil Production and Energy Information Administration Forecast of Production by Crude Oil Type, 2011–2015



Source: GAO analysis of Energy Information Administration data. | GAO–15–745T.

Note: The density, or gravity, of a crude oil is specified using the American Petroleum Institute (API) gravity standard, which measures the weight of crude oil in relation to water, which has an API gravity of 10°. Heavy crude oils include those with an API gravity of less than 27; medium includes crude oil with an API from 27 to 35; and light includes crude oil with API gravities of 35 and above.

Light crude oil differs from the crude oil that many U.S. refineries are designed to process. Refineries are configured to produce transportation fuels and other products (*e.g.,* gasoline, diesel, jet fuel, and kerosene) from specific types of crude oil. Refineries use a distillation process that separates crude oil into different fractions, or interim products, based on their boiling points, which can then be further processed into final products. Many refineries in the United States are configured to refine heavier crude oils and have therefore been able to take advantage of historically lower prices of heavier crude oils.[11] For example, in 2013, the average density of crude oil used at domestic refineries was 30.8, while nearly all of the increase in production in recent years has been lighter crude oil with a density of 35 or above.

According to EIA, additional production of light crude oil over the past several years has been absorbed into the market through several mechanisms, but the capacity of these mechanisms to absorb further increases in light crude oil production may be limited in the future for the following reasons:

- **Reduced imports of similar grade crude oils:** According to EIA, additional production of light oil in the past several years has primarily been absorbed by reducing imports of similar grade crude oils. Light crude oil imports fell from 1.7 million barrels per day in 2011 to one million barrels per day in 2013. As

[11] In general, heavier crude oils require more complex and expensive refineries to process the crude oil into usable products but have been less expensive to purchase than lighter crude oils.

a result, there may be dwindling amounts of light crude oil imports that can be reduced in the future, according to EIA.

- **Increased crude oil exports:** Crude oil exports have increased recently, from less than thirty thousand barrels per day in 2008 to 396 thousand barrels per day in June 2014. Continued increases in crude oil exports will depend, in part, on the extent of any relaxation of current export restrictions, according to EIA.
- **Increased use of light crude oils at domestic refineries:** Domestic refineries have increased the average gravity of crude oils that they refine. The average American Petroleum Institute (API) gravity of crude oil used in U.S. refineries increased from 30.2° in 2008 to 30.8° in 2013, according to EIA. Continued shifts to use additional lighter crude oils at domestic refineries can be enabled by investments to relieve constraints associated with refining lighter crude oils at refineries that were optimized to refine heavier crude oils, according to EIA.
- **Increased use of domestic refineries:** In recent years, domestic refineries have been run more intensively, allowing the use of more domestic crude oils. Utilization—a measure of how intensively refineries are used that is calculated by dividing total crude oil and other inputs used at refineries by the amount refineries can process under usual operating conditions—increased from 86 percent in 2011 to 88 percent in 2013. There may be limits to further increases in utilization of refineries that are already running at high rates, according to EIA.

Removing Crude Oil Export Restrictions Is Expected to Increase Domestic Crude Oil Prices and Could Decrease Consumer Fuel Prices

In our September 2014 report, we reported that according to the studies we reviewed and the stakeholders we interviewed, removing crude oil export restrictions would likely increase some domestic crude oil prices, but could decrease consumer fuel prices, although the extent of consumer fuel price changes are uncertain and may vary by region. As discussed earlier, increasing domestic crude oil production has resulted in lower prices of some domestic crude oils compared with international benchmark crude oils. Three of the studies we reviewed also concluded that, absent changes in crude oil export restrictions, the expected growth in crude oil production may not be fully absorbed by domestic refineries or through exports (where allowed), contributing to even wider differences in prices between some domestic and international crude oils. According to these studies, by removing the export restrictions, these domestic crude oils could be sold at prices closer to international prices, reducing the price differential and aligning the price of domestic crude oil with international benchmarks.

While the studies we reviewed and most of the stakeholders we interviewed agreed that domestic crude oil prices would increase if crude oil export restrictions were removed, stakeholders highlighted several uncertainties that could affect the extent of price increases. The studies we reviewed made assumptions about these uncertainties, and actual price implications of removing crude oil export restrictions may differ from those estimated in these studies depending on how export restrictions and market conditions evolve. Specifically, stakeholders raised the following three key uncertainties:

- **Extent of future increases in crude oil production.** According to two stakeholders, in the absence of exports, higher production of domestic light sweet crude oil would tend to increase the mismatch between such crude oils and the refining industry. This was corroborated by two of the studies. As a result, one study indicated that a greater increase in production would increase the price effects of removing crude oil export restrictions. On the other hand, lower than anticipated production of such crude oil would lower potential price effects as the additional crude oil could more easily be absorbed domestically.
- **Extent to which crude oil production increases can be absorbed.** The domestic refining industry and exports to Canada have absorbed the increases in domestic crude oil production thus far, and one stakeholder told us the domestic refining industry could provide sufficient capacity to absorb additional future crude oil production. On the other hand, some stakeholders suggested that the U.S. refining industry will not be able to keep pace with increasing U.S. light crude oil production. For example, IHS stated that refinery investments to process additional light crude oil face significant risks in the form of potentially

stranded investments if export restrictions were to change, and this could result in investments not being made as quickly as anticipated.[12]

- **Extent to which export restrictions change.** Aspects of the export restrictions could be further defined or interpreted in ways that could change the pricing dynamics of domestic crude oil markets. In 2014, for example, the Department of Commerce provided clarifications that condensate—a type of light crude oil[13]—that has been processed through a distillation tower is not considered crude oil and so not subject to export restrictions.[14] One stakeholder stated that this may lead to more condensate exports than expected.[15]

Within the context of these uncertainties, estimates of potential price effects vary in the four studies we reviewed, as shown in *Table 1.* Specifically, estimates in these studies of the increase in domestic crude oil prices due to removing crude oil export restrictions ranged from about $2 to $8 per barrel.[16] For comparison, at the beginning of June 2014, WTI was $103 per barrel, and these estimates represented two to eight percent of that price. In addition, NERA Economic Consulting found that removing export restrictions would have no measurable effect in a case that assumes a low future international oil price of $70 per barrel in 2015 rising to less than $75 by 2035.[17] According to the NERA Economic Consulting study, current production costs are close to these values, so that removing export restrictions would provide little incentive to produce more light crude oil.

Table 1: Crude Oil Price Implications of Removing Crude Oil Export Restrictions from Four Studies Issued in 2014

	Resources for the Future	ICF International	IHS	NERA Economic Consulting
U.S. crude oil price	Midwest refiner acquisition costs increase $6.68 per barrel.[a]	West Texas Intermediate crude oil prices increase $2.35 to $4.19 per barrel on average from 2015–2035.	Prices increase $7.89 per barrel on average from 2016–2030.	Prices increase $1.74 per barrel in the reference case and $5.95 per barrel in the high case on average from 2015–2035.[b]

Sources: GAO analysis of Resources for the Future, ICF International, IHS, and NERA Economic Consulting studies. | GAO–15–745T

Note: Estimates are in 2014 year dollars.

[a] Refiner acquisition costs are the costs of crude oil including transportation and other fees paid by the refiner. Such costs may be closely related to the prices of crude oil.

[b] Implications refer to the difference between the reference case and its baseline with export restrictions in place, and also the difference between the high oil and gas recovery case and its corresponding baseline. NERA Economic Consulting also found that removing crude oil export restrictions would have no measurable effect in the low world oil price case.

Regarding consumer fuel prices, such as gasoline, diesel, and jet fuel, the studies we reviewed and most of the stakeholders we interviewed suggested that consumer fuel prices could decrease as a result of removing crude oil export restrictions. A decrease in consumer fuel prices could occur because such prices tend to follow international crude oil prices rather than domestic crude oil prices, according to the studies reviewed and most of the stakeholders interviewed. If domestic crude oil exports caused international crude oil prices to decrease, consumer fuel prices could de-

[12] IHS is a firm that provides comprehensive economic and financial information on countries, regions, and industries.

[13] Specifically, the Department of Commerce's definition of crude oil includes condensates, which are light liquid hydrocarbons recovered primarily from natural gas wells.

[14] Specifically, companies often process condensate through stabilization units to reduce their volatility and prepare the condensate for transport to markets. Some stabilization units include distillation towers. In March and May 2014, the Department of Commerce issued commodity classifications to two companies that determined that condensates processed through a crude oil distillation tower, as described by the two companies requesting clarification, did not meet the definition of crude oil in BIS's regulations and thus were not subject to the export prohibitions applicable to U.S. produced crude oil. The Department of Commerce clarified the factors it will consider in determining whether a product has been "processed through a crude oil distillation tower" in December 2014.

[15] This clarification provided by the Department of Commerce occurred after the publication of the Resources for the Future, ICF International, and IHS studies and thus this was not taken into consideration in the studies. NERA Economic Consulting also did not consider the potential effect of the clarification in its study.

[16] Unless otherwise noted, dollar estimates in the rest of this report have been converted to 2014 year dollars. These are average price effects over the study time frames, and some cases in some studies projected larger price effects in the near term that declined over time.

[17] NERA Economic Consulting is a global firm of experts dedicated to applying economic, finance, and quantitative principles to complex business and legal challenges.

crease as well.[18] *Table 2* shows that the estimates of the price effects on consumer fuels varied in the four studies we reviewed. Price estimates ranged from a decrease of 1.5 to 13¢ per gallon. These estimates represented 0.4 to 3.4 percent of the average U.S. retail gasoline price at the beginning of June 2014. In addition, NERA Economic Consulting found that removing export restrictions would have no measurable effect on consumer fuel prices when assuming a low future world crude oil price.

Table 2: Consumer Fuel Price Implications of Removing Crude Oil Export Restrictions from Four Studies Issued in 2014

	Resources for the Future	ICF International	IHS	NERA Economic Consulting[a]
U.S. consumer fuel prices	Gasoline prices would decline by 1.8¢ to 4.6¢ per gallon on average.	Petroleum product prices would decline by 1.5¢ to 2.4¢ per gallon on average from 2015–2035.	Gasoline prices would decline by 9¢ to 13¢ per gallon on average from 2016–2030.	Petroleum product prices would decline by 3¢ per gallon on average from 2015–2035 in the reference case and 11¢ per gallon in the high case. Gasoline prices would decline by 3¢ per gallon in the reference case and 10¢ per gallon in the high case. Fuel prices would not be affected in a low world oil price case.

Sources: GAO analysis of Resources for the Future, ICF International, IHS, and NERA Economic Consulting studies. | GAO–15–745T

Note: Dollar estimates are in 2014 year dollars.

[a] Implications refer to the difference between the reference case and its baseline with export restrictions in place, and the difference between the high oil and gas recovery case and its corresponding baseline.

Price Effects of Allowing Alaskan North Slope Crude Oil Exports

In 1995, Congress removed the restrictions on the export of Alaskan North Slope crude oil. From the time the restrictions were removed until 2004, about 2.7 percent of Alaskan North Slope crude oil was exported; however, no Alaskan North Slope crude oil has been exported since 2004.The experience of allowing Alaskan North Slope crude oil exports may illustrate some of the potential effects of removing crude oil export restrictions nationally. In 1999, we reviewed the effects of allowing Alaskan North Slope crude oil exports and concluded that:[a]

- lifting the export ban raised the relative prices of Alaskan North Slope and comparable California crude oils by between $0.98 and $1.30 per barrel;[b]
- some refiners' costs increased commensurate with the increase in crude oil prices; and
- consumer fuel prices for gasoline, diesel, and jet fuel did not increase.

The effect of removing the export restrictions for Alaskan North Slope oil is not completely understood due to data limitations and the difficulty of separating the effects of removing the export restrictions from other market changes that occurred at the same time.

Source: GAO. | GAO–15–745T.

[a] GAO, *Alaskan North Slope Oil: Limited Effects of Lifting Export Ban on Oil and Shipping Industries and Consumers,* GAO/RCED–99–191 (*http://www.gao.gov/products/GAO/RCED-99-191*) (Washington, D.C., July 1, 1999).

[b] These estimates have not been adjusted for inflation.

The effect of removing crude oil export restrictions on domestic consumer fuel prices depends on several uncertainties, as we discussed in our September 2014 re-

[18] Resources for the Future also estimates a decrease in consumer fuel prices but this decrease is as a result of increased refinery efficiency (even with an estimated slight increase in the international crude oil price).

port.[19] First, it would depend on the extent to which domestic *versus* international crude oil prices determine the domestic price of consumer fuels. A 2014 research study examining the relationship between domestic crude oil and gasoline prices concluded that low domestic crude oil prices in the Midwest during 2011 did not result in lower gasoline prices in that region.[20] This research supports the assumption made in the four studies we reviewed that to some extent higher prices of some domestic crude oils as a result of removing crude oil export restrictions would not be passed on to consumer fuel prices. However, some stakeholders told us that this may not always be the case and that more recent or detailed data could show that lower prices for some domestic crude oils have influenced consumer fuel prices.

Second, two of the stakeholders we interviewed suggested that there could be important regional differences in consumer fuel price implications and that prices could increase in some regions—particularly the Midwest and the Northeast—due to changing transportation costs and potential refinery closures. For example, these two stakeholders told us that because of requirements to use more expensive U.S.-built, -owned, and -operated ships to move crude oil between U.S. ports, allowing exports could enable some domestic crude oil producers to ship U.S. crude oil for less cost to refineries in foreign countries.[21] Specifically, representatives of one refiner told us that, if export restrictions were removed, they could ship oil to their refineries in Europe at a lower cost than delivering the same oil to a refinery on the U.S. East Coast. According to another stakeholder, this could negatively affect the ability of some domestic refineries to compete with foreign refineries. Additionally, because refineries are currently benefiting from low domestic crude oil prices, some studies and stakeholders noted that refinery margins could be reduced if removing export restrictions increased domestic crude oil prices. As a result, some refineries could face an increased risk of closure, especially those located in the Northeast. However, according to one stakeholder, domestic refiners still have a significant cost advantage in the form of less expensive natural gas, which is an important energy source for many refineries. For this and other reasons, one stakeholder told us they did not anticipate refinery closures as a result of removing export restrictions.

Removing Crude Oil Export Restrictions Is Expected To Increase Domestic Production and Have Other Implications

The studies we reviewed for our September 2014 report,[22] generally suggested that removing crude oil export restrictions may increase domestic crude oil production and may affect the environment and the economy:

- **Crude oil production.** Removing crude oil export restrictions may increase domestic crude oil production. Even with current crude oil export restrictions, given various scenarios, EIA projected that domestic production will continue to increase through 2020.[23] If export restrictions were removed, according to the four studies we reviewed, the increased prices of domestic crude oil are projected to lead to further increases in crude oil production. Projections of this increase varied in the studies we reviewed—from a low of an additional 130,000 barrels per day on average from 2015 through 2035, according to the ICF International study, to a high of an additional 3.3 million barrels per day on average from 2015 through 2035 in NERA Economic Consulting's study.[24] This is equivalent to 1.5 percent to almost 40 percent of production in April 2014.
- **Environment.** Two of the studies we reviewed stated that the increased crude oil production that could result from removing the restrictions on crude oil exports may affect the environment. Most stakeholders we interviewed echoed this

[19] GAO–14–807 (*http://www.gao.gov/products/GAO-14-807*).

[20] See Severin Borenstein and Ryan Kellogg, "The Incidence of an Oil Glut: Who Benefits from Cheap Crude Oil in the Midwest?" *The Energy Journal 35,* no. 1 (2014).

[21] The Merchant Marine Act of 1920, also known as the Jones Act, in general, requires that any vessel (including barges) operating between two U.S. ports be U.S.-built, -owned, and -operated.

[22] GAO–14–807 (*http://www.gao.gov/products/GAO-14-807*).

[23] See EIA, *Annual Energy Outlook 2015,* DOE/EIA–0383 (2015) (Washington, D.C.: April 2015).

[24] In addition, Resources for the Future estimated that oil production in Canada and in the Midwest United States would gradually increase if the restrictions were lifted by about 84,000 barrels per day. Resources for the Future estimated production elsewhere in the United States and the rest of the world would increase by 54,000 barrels per day for a total increase in world production of 138,000 additional barrels per day. IHS projected an additional 1.2 to 2.3 million barrels per day of crude oil production from 2016 through 2030.

statement. This is consistent with what we found in a September 2012 report.[25] In that 2012 report we found that crude oil development may pose certain inherent environmental and public health risks. However, the extent of the risk is unknown, in part, because the severity of adverse effects depends on various location- and process-specific factors, including the location of future shale oil and gas development and the rate at which it occurs. It also depends on geology, climate, business practices, and regulatory and enforcement activities. The stakeholders who raised concerns about the effect of removing the restrictions on crude oil exports on the environment identified risks including those related to the quality and quantity of surface and groundwater sources; increases in greenhouse gas and other air emissions, and increases in the risk of spills from crude oil transportation.

- **The economy.** The four studies we reviewed suggested that removing crude oil export restrictions would increase the size of the economy. Three of the studies projected that removing export restrictions would lead to additional investment in crude oil production and increases in employment. This growth in the oil sector would—in turn—have additional positive effects in the rest of the economy.[26] For example, NERA Economic Consulting's study projected an average of 230,000 to 380,000 workers would be removed from unemployment through 2020 if export restrictions were eliminated in 2015.[27] These employment benefits would largely disappear if export restrictions were not removed until 2020 because by then the economy would have returned to full employment. Two of the studies we reviewed suggested that removing export restrictions would increase government revenues, although the estimates of the increase vary. One study estimated that total government revenue would increase by a combined $1.4 trillion in additional revenue from 2016 through 2030, and another study estimated that U.S. Federal, state, and local tax receipts combined with royalties from drilling on Federal lands could increase by an annual average of $3.9 to $5.7 billion from 2015 through 2035.

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, this completes my prepared statement. I would be pleased to answer any questions that you may have at this time.

GAO Contact and Staff Acknowledgments

If you or your staff members have any questions concerning this testimony, please contact me at (202) 512–3841 or *ruscof@gao.gov*. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Other individuals who made key contributions include Christine Kehr (Assistant Director), Quindi Franco, Alison O'Neill, and Kiki Theodoropoulos.

The CHAIRMAN. I thank the witnesses for their testimony this morning. I have a couple of things to do before we get started on questions.

Representative Joe Barton just stopped by. Joe has long championed lifting the oil export ban and is one of those strong voices. He stopped by to say thank you for having this hearing and highlighting that.

I would be remiss if I didn't call the audience's attention to the portrait behind me. We have had a shifting of the portraits. The former Chairman, Frank Lucas, is now ensconced looking over our shoulder, and we have Mr. Goodlatte looking over the shoulders of the Democrats to make sure they keep things going on. But any-

[25] GAO, *Oil and Gas: Information on Shale Resources, Development, and Environmental and Public Health Risks,* GAO–12–732 (*http://www.gao.gov/products/GAO-12-732*) (Washington, D.C.: Sept. 5, 2012).

[26] Growth in one sector of the economy can result in economy-wide growth through follow-on effects. For example, researchers at the Federal Reserve Bank of Dallas found that oil development in the Eagle Ford region of South Texas has had profound effects on jobs, income, and spending in the region with effects beyond those in the oil sector alone. See: Gilmer, Robert W., Raúl Hernandez, and Keith Phillips, "Oil Boom in Eagle Ford Shale Brings New Wealth to South Texas," *Southwest Economy* (Federal Reserve Bank of Dallas: Second Quarter, 2012).

[27] According to the NERA study, because of the increase in economic growth triggered by investment in more production capacity and infrastructure, there will be a corresponding acceleration of the rate at which the economy moves toward full employment.

way, we did shift the portraits around, and Frank's 6 years as the Chairman is recognized as such.

The chair will remind Members that they will be recognized for questioning in the order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding. I recognize myself for 5 minutes.

Mr. Porter, Mr. Hamm, would you talk to us a bit about why it is important to continue to drill? Even though we have production levels to a certain level, why is it that we need new production, we need new drilling in order to both maintain and increase production levels? Either one.

Mr. Porter?

Mr. PORTER. Well, as you are well aware, Mr. Chairman, an oil well is a naturally depleting asset. As time goes by, you produce less and have less oil. So we must continue to drill to keep the supply up there at a level, as well as increase it. Also, if you don't have the activity, you start losing the infrastructure, the talented people and the infrastructure that is needed to keep the industry healthy.

The CHAIRMAN. Mr. Hamm, any other comments about the need to continue to drill?

Mr. HAMM. Yes. I agree that basically it comes down to one thing, that we can't export, we can't develop the resource here in America, and that is kind of where, in a nutshell, that we have gotten to. Certainly, if we lift this ban on exports and we are able to export this material to refineries that need it, there is estimated to be about 3.2 million barrels of refining capacity that severely needs this product that we have in America today.

The CHAIRMAN. Mr. Hamm, would you talk to us about the actual roughnecks and pulling unit hands and roustabouts, can you give us kind of a brief description of the education levels and kind of the salaries and compensation they get when they are fully employed?

Mr. HAMM. Well, it is good. We call them middle class jobs, but it is certainly upper middle class jobs.

Historically, we thought kind of roughnecks as being tough people out there, but a lot of these jobs today, with the technology that we have, we have people doing the directional work, running computers, everything, these are very high-paid, good jobs that draw $150,000 a year working out there, truck drivers in North Dakota, $80,000 to $100,000. So they are good middle class, upper middle class jobs.

The CHAIRMAN. Ms. Cutting, can you talk to us a bit about both the impact that the rapid increase in the employment had in North Dakota, and also what has happened with school districts that had plans on trying to rebuild schools and making other improvements, but with this whipsaw in oil prices, what has the impact been on local communities? How are they dealing with the rapid change?

Ms. CUTTING. Certainly. The oil and gas industry in North Dakota provides $8 million to $9 million per day in oil production and extraction taxes to the State of North Dakota and political subdivisions. And of course this money is used to build schools and roads and infrastructure. That is a very big impact in that regard.

Population-wise, we have seen a lot of our young people that were previously exported because there were no jobs to come back home and be close to their family. Population growth in North Dakota, the 2000 Census had North Dakota population around 600,000; 23 percent growth puts us at about 730,000 to 740,000 citizens. So that is a pretty significant influx of population on our state.

Of course, that led to housing infrastructure being built, restaurant infrastructure, every sort of service that that type of population increase leads to. So you saw a lot of growth in every type of company and business opportunity across the state, as well as manufacturing, transportation.

The CHAIRMAN. All right. Thank you.

Mr. Peterson, for 5 minutes.

Mr. PETERSON. Thank you, Mr. Chairman.

I guess I am trying to understand here a little better. Maybe, Mr. Hamm, you could explain. I understand what OPEC is doing. They are trying to run you guys out of business with their cartel. I get that. But this foreign conversion of refining, how long has that been going on? When did that start?

Mr. HAMM. Yes, this began when Venezuela came in and bought CITGO, which was a division of Cities Service Oil Company headquartered in Tulsa, Oklahoma. And they had heavy sour crude out of the Orinoco Belt that they wanted to put in this market.

And so they came in, bought CITGO and the retail outlets that went with it, and basically changed the refinery, transformed it to handle the heavy sour crude from what was indigenous sweet here in America, change it over to heavy sour, started bringing the oil in, and basically claimed that market through those retail outlets.

And that worked well for them. And so Pemex had the same thing going on with Mayan crude, came into Deer Park, bought a refinery there in Houston, changed that over, did the same thing. So that business plan took off——

Mr. PETERSON. When did this happen? What is the timeframe?

Mr. HAMM. The timeframe, that was 1988 when CITGO was sold to Venezuela. And so it has come forward from then, but really, really got going strong here after 2000.

Mr. PETERSON. I think North Dakota is building a refinery now or bought one.

Mr. HAMM. Yes. It is the first little refinery built up there. We call them topping plants, 20,000 barrel a day, basically taking diesel out of the crude stream.

Mr. PETERSON. So the oil out of the Bakken, or this light sweet, where is that going to go? If we lifted the ban, where would it go? Where would it be refined?

Mr. HAMM. Well, it certainly would have to go to those refineries that could handle it. For instance, South Korea. That is a partner of ours, our company. We have a joint venture with them, a natural gas operation in western Oklahoma. But I can't sell them oil. The closest movement would be to the West Coast and on to South Korea. But they have to buy their oil from Iran and Russia due to this ban.

Mr. PETERSON. So we have been having trouble, as you know. Minnesota has been causing trouble on getting this pipeline built

out in North Dakota to Lake Superior. How much of an issue is that, the bottleneck of not getting the pipelines in place and overloading the train system and so forth, how much of a problem is that in this whole situation?

Mr. HAMM. Well, the delay in building XL really caused a huge problem, just the fact that it was on the books and it stalled a lot of other people from building pipelines because they thought that was coming, and with that one on the books it——

Mr. PETERSON. The Bakken wasn't going to go on the XL anyway, though, was it?

Mr. HAMM. It was. We have a ramp, on-ramp to XL for 335,000 barrels agreed to with them, with TransCanada, as they came by the Bakken.

Mr. PETERSON. Wouldn't the majority of it go on the Embridge Line if that got built?

Mr. HAMM. Yes.

Mr. PETERSON. Yes.

Mr. HAMM. A lot of it would go on the Embridge Line, yes.

Mr. PETERSON. I don't understand why it is so difficult to build a refinery, and why can't the Bakken oil get to a refinery? What is the issue with people not building refineries to do your——

Mr. HAMM. Well, the last one that was tried, the people gave up after 7 years of permitting. It is just almost impossible through EPA to build one. Like I say, the last guy gave up after 7 years: 1975 was the last refinery built in America.

Mr. PETERSON. And so it is not a lack of demand. It is a lack of just not being able to get through the bureaucracy. That is the problem.

Mr. HAMM. Yes. Grassroots refinery would be very difficult.

Mr. PETERSON. Thank you.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Chairman.

Mr. Lucas, for 5 minutes, Chairman Lucas.

Mr. LUCAS. Thank you, Mr. Chairman. And thank you for the kind words earlier. I do live, in spite of the appearance on the wall there, absolutely.

Mr. Hamm, for 25+ years you and I have worked the hallways together either here or at the state capital back home, so we go back a long ways. Let's touch for just a moment the direct impact that your industry has, because you are the producer guy at the table, on farmers and ranchers out there.

Number one, if you think there is potential, you will go into the field and do a seismograph. You will pay a surface owner for the right to take a look. If something viable is there, then you will come back and you will pay the mineral owners for the leasing privileges of potentially drilling, correct?

Mr. HAMM. That is correct.

Mr. LUCAS. If you determine that you proceed forward, you will hire a drilling contractor to actually drill the well, surface damages will be paid to the landowner, water will be purchased.

If it is successful, then you will hire a completion company to come in and do the things that are necessary to make the well produce. You will then turn around and hire a pipeline company,

if it is successful, to pay the surface owner right-of-way for a pipeline to be laid, hopefully made out of steel from the United States.

At every step of the way, as a private industry, you are not a part of the government, you are paying everyone for the privilege of enabling them to receive their royalty payments and consumers to receive their products. So you are adding to the economy in every step of the way, correct, sir?

Mr. HAMM. Yes. Yes, every step.

Mr. LUCAS. Now, that said, several comments here about the nature of the oil market. We on this Agriculture Committee, of course, represent an industry where day-to-day production agriculture, since the founding of the country, we have never been able to consume everything we have produced. We have always had to sell into the world markets. If we couldn't sell, then we couldn't function.

But prior to 1960, approximately, and basically from this stage forward, isn't the energy industry kind of like agriculture, we can't consume everything we can produce at home?

Mr. HAMM. Yes, we are just like agriculture. We call our self farmers, in fact, and developers. So we are just like agriculture. This export ban would be just like your wheat that you are growing out there. If you couldn't export that wheat, say there was a ban on export and only flour could be exported, you would have a middleman that would take a big chunk out.

Mr. LUCAS. So isn't it fair to say, Harold, that many of your, "competitors," from a production perspective, are foreign companies that are government-owned, that take advantage of every policy mistake we have in this country to their own gain?

Mr. HAMM. Yes.

Mr. LUCAS. The political ban on exports in the 1970s being a policy mistake, I would opine.

Mr. HAMM. Yes.

Mr. LUCAS. So this is really a big issue that affects not just your industry, but every consumer here at home, and for that matter around the world.

Mr. HAMM. This ban made us especially vulnerable when OPEC decided to open the valves and flood the market here, glut the market again. But we were especially vulnerable because of this export ban.

Mr. LUCAS. Mr. Duffy, you are part of an industry that becomes ever more competitive, ever more international in nature by the moment. Discuss for a moment, if we were to do what I would define as the rational thing and drop this ban from the 1970s, how long would it take for the markets to readjust and what would you believe the net effect to be?

Mr. DUFFY. As it relates to the pricing of the product, how long it would take?

Mr. LUCAS. Yes.

Mr. DUFFY. I think we would get an immediate reaction if in fact this ban was lifted. The markets always like to anticipate down the road anyway, so they will look at this, try to look at the supply numbers, and then everybody always tries to figure out what is the demand, which is the $60 billion question. We don't know what demand is going to be.

What is completely interesting here is that if this really adds one percent to the GDP the way Mr. Hamm said, that is the most compelling thing that this Congress should understand, and you should echo that through the halls of Congress, because that is really compelling.

But as far as the pricing of the product, sir, it would absolutely be a greater sample. It goes to the products that we trade, which are agriculture and energy and metals and everything else. But when we watch our farmers export the grain products they do today, if they did not do so, I assure you they would not be able to put a crop in the field because they would be upside down with their input cost each and every year if they didn't have the ability to export. That is what is critically important. Oil is no different.

Mr. LUCAS. Is it fair to say, Harold, that if we don't get our act together, the trends since the 1970s of more and more of the world production and refining capacity going into foreign hands, is that just going to continue?

Mr. HAMM. It is. And one thing I would like to add to that last question there on how long it would take to change it around. We exported till 1975. The infrastructure is there. You don't have to build a lot. The ships are there, the market is there, the ship channels are there, the pipelines are there. So you just go to work with it. It is almost instantaneous putting this country back to work. It can happen really quickly.

Mr. LUCAS. My time has expired. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Mr. Aguilar, 5 minutes.

Mr. AGUILAR. Thank you, Mr. Chairman.

Mr. Webster, you talked a little bit about the supply chain within this discussion, and that is what Mr. Peterson was also discussing. In Quebec and in North Dakota, we have experienced derailments in transporting oil from Bakken. Many were forced to evacuate their homes for safety purposes, and in Quebec, people died. Some argued that the explosions were due to the unstable nature of the oil extracted.

Can you talk about the risks both to the environment and the communities, both rural and urban, through which the oil is transported in difference to—and maybe Chairman Porter can talk about this—the system that is in place in Texas and Oklahoma from an infrastructure perspective that is very different?

Mr. WEBSTER. Thank you for your question, Congressman. I will try to answer that, but I am a oil markets guy, not an environmental risk guy.

One, I would say, and I imagine Mr. Hamm would agree with me, is that it is better to move by pipeline. It is usually a little bit cheaper. It doesn't give you as much flexibility. There have been accidents, but as you can see, there are actually a number of accidents that do take place on rail, not just on the oil side.

But, if you look in terms of what the benefits are for the supply chain, it extends well beyond just where the rail is. So you have companies that produce tubulars, materials, frack sand, all of these sorts of things that are moved around the U.S. quite a bit. So I know I didn't quite answer your question, but, yes.

Dr. Rusco.

Dr. RUSCO. Yes, as with any industrial process, there are environmental and safety risks. And so we have seen that as the shale revolution has occurred, you will see incidents of that sort of thing. There are regulations in place to monitor and evaluate that and mitigate those, but those sort of things are inevitable with industrial processes.

The one thing that I will say in relation to lifting the export ban, it removes a piece of uncertainty that could allow the building of additional infrastructure that might mitigate this further in terms of pipeline development.

The other thing that I will say about that is that the Department of Transportation has currently reevaluated sort of rail safety and is requiring changes to both the treatment of the oil, which is more volatile, the shale oil is more volatile than some of the heavier oils that are produced elsewhere in the country, and they are taking steps to require different railcars that can handle that kind of volatility. And also some of the higher ends of that are being pulled off before shipment.

Mr. AGUILAR. Thank you.

Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Gibbs, for 5 minutes.

Mr. GIBBS. Thank you, Mr. Chairman. Thank you for holding this very timely and important hearing. I think it is very interesting, listening to the testimony about the impact, the economic impact, the positive impact, job creation. We have seen that in Ohio at the Utica shale play. It has just been tremendous, just like it has been in the Bakkens and Eagle Fork.

And I personally want to thank Mr. Hamm for his innovation and developing the horizontal drilling technology, because that is what has brought this all about. And it is this sector, this energy sector that has actually helped this economy recover from 2008–2009, in spite of all the bad policies coming out of this town where we are choking a lot of businesses with all the heavy-handed regulations and other policies. But it is this sector and it is horizontal drilling that has done that.

But I want to talk a little bit about the price differential between the WTI and the Brent. I have been looking at the contract. It is $6 to $10 a barrel, which at some points can be, what, more than ten percent, depending on the price of oil.

What do you see—maybe Mr. Webster might want to respond or Mr. Hamm—the ban is lifted, the impact of oil being exported from the United States, how many barrels that is, how many X amount number of barrels that is on that $6 to $10 differential, how much do you think that the spread narrows on a barrel price?

Mr. WEBSTER. Thank you for your question. So our view is that the spread would narrow to the point where it took care of normal transportation and quality differences. So you are talking about $3 to $4.

That differential that you have seen in the last couple of years, that tends to be quite volatile because it depends on when refineries go into turnaround or maintenance season, which is when they are not taking the crude quite as much, and that is when you

start to see that quite wide discount and the higher stocks that you have, going forward.

So while there would still be a discount, it is a, *normal discount* that you would expect because you have still got to ship it all the way down to the Gulf Coast.

Mr. GIBBS. I have one—I won't mention a name—but I have one American refiner that is against lifting the ban, and they are making investments to handle the light-type shale oil. And, obviously, I thought it was interesting to hear your testimony about how price of refined products is based on the world market price, that is helpful.

But do you see an impact? Because they seem to think that they are going to be impacted and they won't be able to continue their investment that they are making if the ban is lifted.

Mr. WEBSTER. We have looked at this, and there is no question that refiners are making quite substantial investments. Our estimate is if you don't lift the ban, between now and 2030, you would see an additional $3 billion in investment in the United States due to the refining. But that is at the expense of $746 billion that you would get from the upstream and from the supply chain.

So while there is a benefit on the refining side, it is much more substantial in terms of both, across a greater swath of the U.S. The refiners will still have an advantage because relative to the rest of the world, they are still a world class refining system. They are still going to be able to take in natural gas as one of their feedstock, so they have an advantage over a lot of other refiners around the world. So maybe that advantage will shrink if you no longer get our discounted crude, but it is still a substantial——

Mr. GIBBS. Go ahead, Mr. Duffy.

Mr. DUFFY. Can I just add to that? Because, from a market perspective, that is a really interesting question. So if you look at the price of oil in its peak, when it hit roughly $134.50 a barrel, the spread between West Texas and Brent was at its widest. When the recent downturn in the market as U.S. explorers went in and got more oil out of the ground, like Mr. Hamm and his folks have done, you started to see that spread narrow. That spread is about $3.50 today, or as of last night. So as the market continues to go down from pressure from more production, and hence if you were to export this product, I believe that spread could actually go inverted. And that would be a big plus for this country. And so that is why when we see the demand—with China slowing down right now, we are not seeing quite the demand we had—the *FT* article yesterday put out that there are less people producing. Of course, there are less people producing because the input costs are much lower now than they were before.

Mr. GIBBS. Mr. Webster, our local refineries would also pick up some benefit on transportation costs getting the oil here from over. The impact is just tremendous by lifting the ban, as has been stated today. It is something that needs to get done. And everybody will benefit in the long run.

So I yield back my time. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman yields back.

Ms. Plaskett, 5 minutes.

Ms. PLASKETT. Thank you, Mr. Chairman. Good morning, everyone. Thank you so much for your testimony and this information. This is actually a very important topic for the district that I represent, the U.S. Virgin Islands, which at one point had one of the largest oil refineries in the Western Hemisphere.

However, Mr. Hamm, when you talked about a refinery and oil being a lifter of an economy, particularly in a rural area, I understand that. And I understand how people can have jobs that they didn't normally have, and families can enter the middle class and become stronger.

And Ms. Cutting, you talked about the drain and the leaving that occurs when these jobs are lost. In our own economy, we had on the island of St. Croix, where the refinery was, a population of about no more than 60,000 people, the direct job loss of 2,000 individuals when a refinery that was partly owned by Hovensa and the Venezuelan Government, of course, decided that it would close because the Venezuelan Government would not reduce the cost of the crude that was being refined on the island. And it didn't become economically viable anymore to refine that type of crude. On our economy, we lost about 20 percent of our revenues in the territories in that timeframe. And that will continue on our islands until something occurs to bring this production or something like it back on.

The thing that is important to me is, Mr. Webster, when you talk about retrofitting and the cost of retrofitting. It would be an important thing for our economy and for the territory to be able to move on to a different type of crude, to possibly be able to refine the light sweet crude that you are discussing. But could you explain to us what some of the costs of retrofitting would be from a territory such as ours and a rural community that is not able to give the incentives to a private company that owns that to be able to do it?

Mr. WEBSTER. Certainly. Thank you for your question, Congresswoman. It obviously depends on the size of the refinery and all that. But I would say in the range of a couple of hundred million dollars would be what would be required. The problem is that often once you have already made the investments to be able to take on heavy sour crude, there are elements of that that essentially end up becoming kind of stranded capital. So even if you retool, you will still always have that capacity that is there that is kind of sitting idle.

Ms. PLASKETT. So a refinery that was probably one of the largest in the Western Hemisphere, you are talking maybe several hundred million dollars?

Mr. WEBSTER. Yes.

Ms. PLASKETT. To be able to retrofit that to come back on line? And that is the issue that we have, that we own the submerged lands, but we have land that is owned by private companies and particularly the Venezuelan Government that is not even willing to come to the table at times to talk to producers about coming back. And plus, as was already mentioned already, we have the specter of EPA hanging over us in the territory. Because although we want to maintain our greatest resource, which is our Sun and our sand, we also want to be able to have people be able to eat and to have employment. And so that balance is something that we are fighting

against, which our neighbors in the other Caribbean don't have to follow the rules of EPA and can do things in Trinidad, and some of the other places where this is being refined don't have the restrictions that we have on our island. So for rural areas that the retrofitting becomes too costly, what is the next best thing for those economies to do when you have this type of infrastructure sitting in an area?

Mr. Webster, do you have any idea or examples of what has been done?

Mr. WEBSTER. That is a very tough question because if you have a refiner that is geared for heavy sour crude and is not viable at this point, you can shift it to light sweet to try to take in some of that from the U.S., but it is a difficult question.

Ms. PLASKETT. Well, I guess my warning to everyone is beware having an economy that is based on one industry.

Thank you, Mr. Chairman.

The CHAIRMAN. The gentlelady yields back.

Mr. Austin Scott, for 5 minutes.

Mr. AUSTIN SCOTT of Georgia. Thank you, Mr. Chairman.

And I want to talk about the benefits of this to other parts of the country as well as those that would traditionally think of it. I represent the Eighth District in Georgia. And we have the Kaolin Belt. And we through the Kaolin that we mine are an important part of this because the ceramic beads that come out of that Kaolin Belt are used to produce the proppants for fracking. And we have significant industries in my district specifically that benefit from this.

And, Ms. Cutting, you talked a little bit about the other industries outside of what we would naturally think of as the oil and gas companies. Could you speak a little further to how lifting this crude oil ban would help industries throughout the country that maybe people might not realize where those materials come from?

Ms. CUTTING. Absolutely. There are many places in the country where proppant is brought in, sand, gravel. We know there is sand and gravel that come from Minnesota, very many places in North Dakota. But there isn't enough sand and gravel in North Dakota to get the job done. So that is being imported in our state from surrounding states. Manufacturing, pipelines, tanks, all of the equipment that goes into a well site and all of the parts of processing of the crude oil and the natural gas, I mean, this is just a huge amount of work and manufacturing and jobs that are created across the country.

I think that there are some studies—I am not sure which gentleman here from the analytical groups could address this—but I know that there are studies out there that talk about the impact on all 50 states from conventional and unconventional oil and gas. And so Mr. Webster perhaps might be able to address that with more detail or Mr. Hamm.

Mr. AUSTIN SCOTT of Georgia. Mr. Webster was next in line. And if he could just explain also how other states tend to benefit substantially in terms of jobs from this potential legislation.

Mr. WEBSTER. Certainly. Thanks for the question, Congressman. Our analysis, and we did, as I stated, we did a report, *Unleashing the Supply Chain,* which actually delves into what the impact is not just at the state level but also at the Congressional level. And

what we found is that this boom in unconventional production, both oil and gas, one, Federal Reserve Chairman, former Federal Reserve Chairman Ben Bernanke at our CERA Week last year stated that this is one of the most beneficial developments that happened since the Great Recession. And while 50 states benefit from this and almost every Congressional district ends up getting some benefit from this, even places that don't necessarily want to allow fracking. And these are jobs that pay, on average, 25 percent more than the average job out there.

Mr. AUSTIN SCOTT of Georgia. Mr. Hamm, you said that it has been 40 years since a refinery was built in the United States. Is that right?

Mr. HAMM. Yes. The last one was built in 1975, 1976.

Mr. AUSTIN SCOTT of Georgia. And Gerald Ford was President then. That has been a long time. And if we could get through the permitting process, if we could give refiners the ability to—or investors the ability to build refineries in the United States, how many additional refineries would you estimate would be built?

Mr. HAMM. Well, there have been several expansions of existing refineries over time. A lot of the upgrades that have gone on to handle all this heavy sour have been like $85 billion put in in the last 20 years. So there has been a lot of expansion of existing refineries. To answer your question how much additional would be built, obviously, we need sweet crude refineries built. But the time to build one, permit and build it, I mean we are talking 10 year timeframe or something close to that probably. So it is difficult to estimate when that could be done and how it could be done. But it would definitely help. Lifting those regs would certainly open the door.

Mr. AUSTIN SCOTT of Georgia. It seems to me from a strategic standpoint it would be good also to build refineries in different locations, the East Coast, for example, so that when we get these big storms in the Gulf of Mexico and certain other areas where so much of our petroleum is refined, and those refineries have to shut down because of those storms, that if we had refineries in other areas that might not be impacted by that same weather event, that that might help the United States.

With that, Mr. Chairman, I am over my time so I don't yield anything back.

The CHAIRMAN. The gentleman's time has expired.

Mr. David Scott, for 5 minutes.

Mr. DAVID SCOTT of Georgia. Thank you, Mr. Chairman.

First of all, let me say that I support lifting the ban on crude oil exports. And it is for this reason: Our nation is at a very, very critical time. And it is very important for us to be the leader, the leader of the world, maintain that position. And in order to do that, we have to be number one, have the strongest financial and economic system. We have to have the strongest and number one agriculture and energy system, and we have to have the strongest number one military and national security system. And this issue we are faced with today dovetails and intersects with all three of these, our national security, our agriculture and energy, and our financial and economic system, the hundreds of thousands of jobs that this will bring too.

But it is our leadership in the world that is on issue today with this issue. Now, Mr. Duffy, you touched upon that issue of leadership. If I read your testimony, you said that there is a critical need to manage energy price risk. And you said that the United States is the leader for which producers come to manage their risk. And I thought that to be a very, very meaningful, profound statement that goes to the heart of my concern. But I want to ask you, how has the United States been able to be the leader, given the current ban? I think that requires an answer. How have we been able to do that if we have had the ban?

Mr. DUFFY. Mr. Scott, thank you for the question. I think it is very important. One of the greatest assets this country has is its financial services system. The world sugar that is produced today is not grown in the United States of America; it is grown outside the United States of America. Yet the price of the world's sugar is discovered in New York City, not in Brazil. That goes to show you the power of the financial services industry that we have here in the United States. Other products, like grains and that, we set the prices for the world products for so many different asset classes, especially in energy, which are critical to the people of the United States and the rest of the world. If you can then do the same thing for oil, we are already setting the price for it today, but we are not getting the sample because, as has been said earlier, we are paying for it at the pump without using our oil. And I think that is very damaging to our society.

So if we could have our oil be part of the refined products and be reflected in the price that the people are paying at the gas pumps, it is no different than what they do at the grocery line. So that is a very important part. And, again, it is the strong financial services system that we have, hence what is going on in Greece, hence what is going on in China right now. It is not happening in the United States because of the system that we have built here over hundreds of years.

Mr. DAVID SCOTT of Georgia. So we are the leader with the ban.

Mr. DUFFY. We are, no question, the leader in financial services and in setting of price.

Mr. DAVID SCOTT of Georgia. Okay. So how different would our markets look if the ban is lifted? What would that do in sustaining our world leadership?

Mr. DUFFY. I think what it would do, it would create investment into these refined products that Mr. Hamm was talking about earlier, which is critically important. If we haven't built a refinery in 40 years because of EPA rules or whatever, but because they are set up for other grades, if we can have people invest in this, knowing that they can export this product outside the United States and not invest in something that is land locked within the 50 states of the United States, it is a very intriguing investment. That is the leadership role that I am speaking about. That is what we need to do. Just like we do with every other product that we have in our country today.

Mr. DAVID SCOTT of Georgia. Okay. Now, given the fact also, and I looked at some statistics here, and we had the ban in, but in the 1980s, we still exported 287 barrels of crude oil per day, and today we are importing 401,000 barrels of crude oil per day. So I guess

my point is that we have a ban, and we don't have a ban. I mean, we are doing that now. And there are those that don't want to lift this ban, and they could very well use this argument that, hey, with the ban they are still producing 400,000 barrels a day.

Mr. DUFFY. We are producing 9.4 million barrels a day. Our current consumption today is around 19.4 million barrels a day. I think those numbers are relatively accurate. And no one is saying that if you are producing nine million barrels a day, you export nine million barrels a day. No different than we export all of our wheat, corn, or soybeans. We are part of the world market; be a part of the world price. That is the argument that we are saying.

The problem the refiners are saying is they are set up to refine a different crude, and they don't want to have the expense of going in to refining their own product that is produced right here in the United States of America.

Mr. DAVID SCOTT of Georgia. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

Mr. Crawford, of Arkansas, for 5 minutes.

Mr. CRAWFORD. Thank you, Mr. Chairman.

I have a big steel industry in my district. And a lot of that is dedicated OCTG products.

Ms. Cutting, you are shaking your head. And what has taken place in North Dakota has impacted our steel industry as the downturn took place. I also have the dumping issues, where we see other products entering the market dumped onto the market. So that is having a negative impact at home. And I represent one of the counties in my district is the number two steel producing county in the nation.

So, Mr. Webster, if you could, do you have any data that sort of shows the relationship between the steel industry and the oil industry and what some of those ancillary effects are to an industry like the steel industry?

Mr. WEBSTER. I apologize, Congressman, I don't have that right in front of me. But our report does dig into and has a fact sheet actually specifically on the steel industry. And you are exactly right, which is this is something that has benefited around not just your district but every place that steel is manufactured as it goes across the United States in order for it to be used in a variety of different ways across the supply chain. One thing I would say is that allowing the repeal of the ban, what it does is it eliminates this policy discount.

It won't necessarily—it is not going to bring us back to $100 oil, which I would say anybody on the consumer side doesn't necessarily want, but it does eliminate that ban to benefit people in your district to the maximum extent that you can from your seat.

Mr. CRAWFORD. Thank you. I have heard several different comments about how fast the industry can respond if, for example, if the ban were lifted.

Mr. Hamm, in your estimation, if the ban was lifted tomorrow, number one, how fast could the industry respond, and how fast would we see the benefits accrue in terms of job creation and economic impact, particularly in rural economies?

Mr. HAMM. It would be very quick. We have customers for our oil abroad that their refineries are suited for it. There are a lot of

refineries today at risk because they can't get light crude, sweet crude. That is what they are fitted for, and there are refineries that are partially shut down in the Atlantic basin, about 2.6 million barrels in the Atlantic basin alone, that need this oil. So it could happen quickly, very quickly.

Mr. CRAWFORD. My colleague from the Virgin Islands kind of referred to this a little bit as the EPA issue. If the ban were lifted tomorrow, do we still have significant work to do in terms of EPA restrictions that would impede the investment to allow for the expansion to address that market demand, or would we just immediately see the flow of product?

Mr. HAMM. Well, lifting the ban would certainly help very quickly turn that around. As far as working with the regs, EPA to build new refineries, that needs to be done. So, going forward, certainly that would be very helpful.

Mr. CRAWFORD. I support lifting the ban. I mean, we have heard a lot of testimony that indicates that is probably the right move. We have heard commentary and questions from my colleagues. My concern, though, as she referred to, the costs of retrofitting on top of the regulatory regime that you are facing, how big of an obstacle is that going to be for us to play in the global market in a significant role? Besides just price discovery, which, Mr. Duffy, you mentioned how important that is. But beyond that, to be a significant player as we are in other things, like agriculture, how much of an impediment are those regulations going to be and retrofitting costs and so on?

Mr. HAMM. Well, I see lifting the ban will let us go back to work to develop the resource here in America, which is quite significant. We don't have the infrastructure needs in our industry that you might expect because everything is pretty much in place. Other than with refineries, there are a lot of—you have to look at motive here with a lot of these refiners. If they are bringing their oil out of the tar sands of Canada here within this market, they don't have any desire to do anything, change those refineries to help us refine our product. If they are bringing their oil from Venezuela, they don't have any desire to do that. So you have to look at the foreign ownership, the amount of it, almost ⅓ is foreign owned. Plus they have a lot of joint venture arrangements made that they get their oil processed through these refineries. So you have to overcome a lot of that before—they don't have any incentive to retool those.

Mr. CRAWFORD. Mr. Duffy?

Mr. DUFFY. Can I just make one quick comment? What is important to note here is when you look at the American farmers and ranchers, what they have had to go through over the last 10 to 20 years to retrofit in order to produce the food that they have done and make the investment they have made, they have made it because in the long run, it is in their best interests. So Mr. Hamm is right, why would they want to do it? But at the same time, it is the right thing for the future, and other people have done it in the agribusinesses for many, many years.

Mr. CRAWFORD. Thank you. I appreciate it.

My time has expired.

The CHAIRMAN. The gentleman's time has expired.

Ms. Lujan Grisham, for 5 minutes.

Ms. LUJAN GRISHAM. Thank you, Mr. Chairman.

And I want to thank the panel too.

I am going to take a similar approach that my colleague from the Virgin Islands, Congresswoman Plaskett, because while I represent a district and a state, really, that has a significant productive reliance on local oil and gas industries that, quite frankly, provide the revenue and the required resources for most of New Mexico's infrastructure investment and certainly investments in our public schools, and without which we could not make those investments at all. And so I would really identify that effort and that work as bread and butter work for the state. And it is valuable, and it is important.

And, Ms. Cutting, I am drawn to the statements that you have made about seeing ghost towns literally come back. And representing such a rural and frontier state, particularly a state that also has families that quite literally have lived there for hundreds of years in these small communities, we do see that when we have the industry doing well, that those communities do well.

And New Mexico is another state, a situation where we have had one of the worst job recoveries in the country since the recession. So these are all very positive aspects when you talked about the benefits about lifting the ban. The downside, which I just want to explore and see if folks have ideas, is that when there is a boom, and today actually in several of those communities, particularly two, Hobbs and Carlsbad—they are not in my district; they are in the southeastern part of the state—what happened is school teachers can't afford to live there anymore. And we have one of the highest vacancy rates for public schools. And retirees, who I spent my career working for before coming to Congress largely advocating and supporting seniors—and again, these are families that have lived there for generations. And to your points, the panel's points, and Mr. Duffy about farmers and ranchers and the benefits. The impact that it has not only on the state but on what we offer and produce for the rest of the country is valuable and important. These people can't stay. They can't afford those farms. They can't afford those ranches.

And as my colleague identified, when things don't go well and everybody leaves, and with the oil and gas prices currently, we had sort of a boom, and then we have had producers move out. And then we have a huge gap. And those gaps are very difficult to recover from. Are there ideas, have you seen efforts in your experience where those communities have looked at ways to mitigate those production impacts by growing the economy so quick so fast that the local folks can't afford to stay there and live there? Any strategies that you would recommend that we undertake and look at in a state like mine?

Ms. CUTTING. Well, certainly. And, obviously, it is a difficult situation and requires some significant out-of-the-box thinking. Any small community that is impacted with an influx of population is all of a sudden going to find itself in a supply and demand problem with housing.

The State of North Dakota established a housing incentive fund, which allows corporations and individuals to put money into this fund that is then used for building houses that have a rent cap.

And those are specifically for policemen and teachers and those who require a continual price cap on their rent. So you are putting a hold on rent escalation.

Ms. LUJAN GRISHAM. Is there something to promote—and I didn't mean to interrupt you—that's helpful—home ownership, which is something in a state that is also looking at stability and poverty and trying to create independence for these families so that they could also own these homes in addition to being able to afford them over the long haul?

Ms. CUTTING. This particular fund provides those who donate to this fund essentially have tax credits on their North Dakota State taxes. So that is a win for the individual or the corporation that puts money in that fund. At the same time, those funds are distributed to developers, and the developer will get a reduction in the capital that is required to build that housing development. But then he has to put aside so many units for the individuals that we are talking about that struggle in a rent escalation period. But, again, as supply and demand, any time you have demand in a community——

Ms. LUJAN GRISHAM. I am going to reclaim my time. That idea is helpful, but the folks that I am in addition worried about—Mr. Chairman, and I will yield back—are those folks that are in their homes and on their property and can't afford to stay there because the property taxes have gone up, and they can't stay. But I would like to explore that further.

Thank you, Mr. Chairman.

The CHAIRMAN. The gentlelady yields back.

Mr. Davis, for 5 minutes.

Mr. DAVIS. Thank you, Mr. Chairman. I too want to thank you for calling this hearing today on a very important issue. And I agree, it is critical that we look at this issue as American oil producers look for ways to access the global market. And additionally a Member who also understands the leadership roles that our futures market plays in this particular issue.

I am glad to be joined by my friend, Mr. Duffy, and I want to start with a question for you, sir. It has been suggested by some that CME's oil futures, your oil futures contract would benefit from lifting the crude oil export ban. But based on the testimony that I have heard and your testimony, it seems to me that there would be a much more broader and more significant benefits for market participants and the market as a whole. Can you maybe expand on some of those benefits and address some of these issues that have been brought forth?

Mr. DUFFY. From our perspective, on the business side, our oil business has been up 10 to 12 percent year over year for the last 15 years. So we have had great growth, as I said to Mr. Scott earlier, from people managing their risk from all over the world coming to the markets in New York and Chicago.

I thank you for your leadership that you are doing in Illinois, sir.

But this is really an important point here because the CME won't benefit by that change if the oil ban was lifted by doing more business. So that won't be the case.

And the second part of your question was?

Mr. DAVIS. Can you expand on some the benefits of what we are looking to do by opening up more opportunities for crude exports? And what does that mean to the futures markets and those who utilize futures?

Mr. DUFFY. What it means is it gives us a greater sample from around the world in order to price the product. So the panel has done a really good job up here explaining how what is really important here is when we go pump gas at the pump for our cars. That is really what we are talking about here. And that refined product is not West Texas Intermediate. And if you can get West Texas into the flow of the world oil market, it gives a greater sample of what the gasoline that we are pumping into our cars is.

So if OPEC decides that they want to raise prices, we have explorers that, Mr. Hamm and other folks, that can come back in if they want to do that because the input costs are there to drive them back down. It is critically important from a standpoint to have a greater sample of the world market that impacts the price of gasoline because that is really what we are talking about is going to the pump once a week and filling up, no different than going to the grocery store.

Mr. DAVIS. I agree with you, Mr. Duffy, it is about the consumer and how do we lower prices so Americans can afford to continue to do what they need to do on a regular basis. It is interesting when we hear about the ability to export crude oil, I have seen some statistics that show that Illinois would be a prime beneficiary of a more robust export market for crude. Well, I am here to represent my constituents. Job creation, economic growth in Illinois, I don't think is a bad thing. So if this is a benefit to my home state, similarly to what we are hearing from Ms. Cutting in North Dakota, I would encourage more towns that I represent that would love economic development that North Dakota is experiencing.

And I know my colleague Ms. Lujan Grisham brought up some concerns about what economic growth may mean to a local property tax base. But I also want to ask you, Ms. Cutting, what is the average wage for somebody going into maybe the retail industry in your communities because of the growth in the energy sector in North Dakota?

Ms. CUTTING. Well, the wages, of course, in oil and gas are much higher than the average wage. We have all heard about the stories of McDonald's in Williston and the kind of wages they provided. So definitely higher cost of living, but also higher wages are available for businesses in North Dakota and the impacted cities. I would also like to add that one of the things I was moving into with the Congresswoman's question was that because of the oil and gas tax revenue that the North Dakota State has experienced, they have been able to reduce income taxes; they have been able to significantly reduce property taxes. That, coupled with having other sources of income for rural communities, has certainly helped maintain a cost of living that people can still exist in these smaller communities.

Mr. DAVIS. And you didn't need government to set those wages?

Ms. CUTTING. No.

Mr. DAVIS. Shocking.

Well, with that, I will yield back the last 10 seconds of my time, Mr. Chairman.

Mr. THOMPSON [presiding.] The gentleman yields back.

I am now pleased to recognize Mr. Ashford, for 5 minutes of questioning.

Mr. ASHFORD. Thank you. I am from Nebraska. And I served in the Nebraska Legislature for a number of years. And we spent the entire year working on the TransCanada pipeline issue. And we successfully came up with legislation, with the help of everyone, moving that pipeline somewhat from the original route to protect the Ogallala Aquifer. We thought that was good work. It still hasn't been built. But Nebraska legislature almost voted unanimously—only one or two votes against—to proceed with the pipeline.

Anyway, there were three issues that came up in the discussion on the floor of the legislature. We had at least one major special session dealing with this very issue. And one was the issue of none of this product is going to stay in the United States; it is going to be exported to China. That was the opposition. It is all going to China. Every drop is going to China. So this has been asked and answered. But if someone could just answer that for my constituents.

Mr. Hamm, if you would comment on that.

Mr. HAMM. Well, I commented earlier that we had arrangements for an on-ramp for Bakken oil into the pipeline. Of course, that couldn't be exported. So that would have been here in the U.S., certainly refined here and whatever.

Mr. ASHFORD. The second concern was that this is not going—if this pipeline were built—and obviously this issue is much grander than the TransCanada pipeline, but it is endemic of what we are dealing with here—is that the price of gas—and this has been mentioned many times and answered adequately—is that the gas prices would tend to go up. And all the research I have done and the answers to the questions today would indicate that is not correct, that gas prices will not go up with the lifting of the ban. And I think that has been answered. I don't know if anybody has any other comments. So I will just leave that the way it is. The third——

Mr. DUFFY. Can I comment on that?

Mr. ASHFORD. Yes, sir.

Mr. DUFFY. Because I don't want to have a misdirect here. Because gas prices could go up with the lift of the ban if demand was to increase. That is really something that we cannot ever——

Mr. ASHFORD. Sure. But it doesn't automatically.

Mr. DUFFY. Correct.

Mr. ASHFORD. It is market driven, as has been suggested.

So the third opportunity, and Congressman Davis really landed on it, in rural Nebraska, for example small town of Trenton, Nebraska, out in western Nebraska, has free and reduced lunch, 70 percent of the kids are on free and reduced lunch. Crete, Nebraska, over by Lincoln, has 50 percent free and reduced lunch. We need opportunity in rural Nebraska for well-paying jobs. It is not just about my district, Omaha, and Sarpy County; it is about my entire state. And so this idea of building a diesel refinery or refining into

diesel product is compelling. And it would create jobs in Nebraska if we could do something like that in our state.

And Mr. Webster, you were talking about diesel conversion, or were you? Or someone was. And I would like to hear maybe a little bit more about that because certainly we need diesel at a reasonable price in Nebraska for our ag economy. We could do refineries in Nebraska. How difficult is that to do? And what opportunities are there?

Mr. WEBSTER. Well, actually, it was Mr. Hamm who was talking about the refineries that were splitting off the diesel.

Mr. ASHFORD. Sorry.

Mr. HAMM. That is what has been built recently in North Dakota, was what we call a topping unit. And basically, on a pipeline stream, take product off, and particularly the distillates diesel and other products, and about 20,000 barrels a day. So you don't go through the same process for permitting that you would on a huge refinery. It is a lot simpler.

Mr. ASHFORD. It seems to me that Nebraska would benefit significantly from lifting the ban, first of all, and secondarily from exploring economic opportunities like this so towns like Trenton can get more economic development. I just feel strongly about this for our state. We are a small state population-wise but a big geographic state. And I see just nothing but positive. Yes, we have to think through the technologies. And even, I know at the UP Railroad where the railroad is—the railroad is headquartered in Omaha—doing a lot of work on technology to deal with some of the issues of transporting oil and gas.

So thank you, Mr. Chairman. I yield back.

The CHAIRMAN [presiding.] The gentleman yields back.

Mr. Yoho, for 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman.

Gentlemen, I appreciate it. Ms. Cutting, I appreciate you being here. And looking back over the years, I look at the panel, and everybody remembers the oil embargo, except you, Ms. Cutting, of the 1970s, when we had to wait in line for our gas, and we were indebted to foreign nations for our oil. I never want to go back to that. In fact, when I came up here, I heard somebody say that we don't even need a farm bill; we should import our food. And it reminded me of the oil situation. And like I said, I never want to be back into that. So what I see is getting rid of the ban will increase our exports. Increasing our exports is going to increase our production. Increased production, as Mr. Davis brought up, will bring down the price. We are all in favor of that. But, more importantly, it is the stability in the price that brings certainty to the economic market. Because I remember, in 2005—I am a veterinarian by trade, and I had three trucks on the road at the time, and they are diesel.

And every time you went to fill up, it was $200 at the pump. And that was three times a week per truck. And I remember the economic impact, not just on me but on our staff, coming into work. And so at the bottom line, at the end of the month, there was less discretionary income to spend when that husband and wife or the single mom or dad were sitting at the end of the month to write their bills, they didn't have the discretionary money. And so by

bringing the stability to the market would help not just rural America, but all of America.

And the Lord has blessed this country with so many great resources that it would be foolish for us not to take advantage of those resources.

And, Mr. Hamm, I wanted to ask something of you. You were saying that the current situation with the foreign ownership of our refineries is roughly 28 to 30 percent. Are we at refinery capacity in this country?

Mr. HAMM. We are not. Refinery capacity right now, refineries have been running about 94 percent over the last month. Of course, this is driving season and all of that. But about 94 percent. But the foreign ownership, direct foreign ownership is about 28 percent exactly. But there is a lot of throughput arrangements that have been made on top of that for upgrades to handle heavy sour crude that other countries have made as well.

Mr. YOHO. Would there be a need to increase the refinery capacity? Because if we had more production, I assume most of that is going out of the country, or is that being refined here?

Mr. HAMM. Well, as we go forward, we see the possibility to double production again by 2025 in this country would put America way out front in leadership.

Mr. YOHO. And there would be a need to go ahead and increase refinery capacity here?

Mr. HAMM. We would need to, yes.

Mr. YOHO. And on the Keystone pipeline, would any of this oil from North Dakota transit that in the Keystone pipeline if that were to be built?

Mr. HAMM. Well, yes. If it were to be built, there would be shipments on the pipeline yet. We have commitments and a lot of other companies have commitments yet.

Mr. YOHO. Do you have a feel for what percent of that oil coming through the Keystone pipeline would stay here in America domestically?

Mr. HAMM. Well, right now if everything would—under the ban, certainly it would. But, yes, there would be a good bit of it staying here I am sure.

Mr. YOHO. I sit on the Foreign Affairs Committee, and it came up that 70 percent of that oil would stay here domestically because there was a controversy that most of that would go outside. And I find that is not the truth.

Is there any downside of not lifting the ban in anybody's opinion?

Mr. HAMM. No, it is certainly a bipartisan thing. It is an American thing. I have not run across anybody. The refiners themselves agree, they were the first ones that actually asked Commerce for the ability to move oil to other refineries that they owned that was tooled for it outside the country. They were the first ones that made application.

Mr. YOHO. Does anybody else see a downside of lifting this ban? Nobody? We, as people in government—because again government is a nonentity; it is the people in it—we should do everything from a Federal standpoint to make this country stronger, more competitive. It is time that we go to the EPA and just say, "No, we need

this refinery capacity. We need to waive some rules. Let's make America strong, and put that investment in America."

And, with that, Mr. Chairman, I am going to yield back. Thank you.

The CHAIRMAN. The gentleman yields back.

Mr. Costa, for 5 minutes.

Mr. COSTA. Thank you very much, Mr. Chairman.

I know the subject of the hearing is about energy and rural economy and the impacts of lifting the ban on export of oil in America. But I would submit that in my view, the same arguments that have been made and the same merits that are involved would apply to natural gas, frankly. And it is something that also would have benefits to not only rural America but also the geopolitics, frankly, of dealing with Mr. Putin, who is using natural gas, but also other fossil fuels as political leverage is something that goes into the factor. And to the degree that we have solid markets in Europe, it helps—and Asia and elsewhere—it helps American agriculture sell our products. California exported $174 billion of product last year, and $19.4 billion of it was agricultural products.

Dr. Rusco, I have a question to you. Are you aware of any studies that have been done regarding the impact of lifting of the export ban on rail infrastructure or impacts on rail customers? Because we export a lot of our ag products on rail, and sometimes we have issues or challenges there.

Dr. RUSCO. I am not aware of any specific studies on that. It is likely that some of the rail—some of the oil that is shipped by rail now could still be shipped by rail to port for export or could continue since that infrastructure is there. But to the extent that there is additional pipelines built, it is usually cheaper to ship by pipeline.

Mr. COSTA. Okay. Dr. Rusco, are there any examples of specific port locations where the Jones Act would be a factor or where light crude could be shipped from?

Dr. RUSCO. Well, currently, most of the crude oil that is shipped around the country is either by rail or by pipeline, not very much by ship from port to port.

Mr. COSTA. Anecdotally, you hear that it would be cheaper to export the product to Europe rather than to East Coast refineries. I don't know if there is any basis of fact on that or not.

Dr. RUSCO. Yes, that is true. Shipping on Jones Act ships is more costly than on international tankers.

Mr. COSTA. Mr. Duffy and maybe Dr. Rusco and any other witnesses—by the way, Mr. Duffy, you have excellent representation here in Washington. Do you know or do you have any other opinions or options available to find workarounds as we talk about the question of exporting crude oil? And would that play a role while Congress is considering legislation on lifting the ban? What I am trying to figure out is, is there any non-legislative options that you folks are looking at?

Mr. DUFFY. No, there is not any non-legislative options that we are looking at on the ban of oil. We think that we have to lift the one from 40 years ago.

Mr. COSTA. The Jones Act. Ms. Cutting, there are a lot of ramifications in terms of the economic marketplace working when we

are talking about lifting the ban as it applies to rural America. But are there any areas specifically that have not been mentioned this morning during the hearing that you would like to put on the table?

Ms. CUTTING. I would just like to comment that this is all about markets. And whenever you have a commodity that doesn't have sufficient markets and then markets become available, for example crude oil to Europe, then you go from establishing the market to then determining how to transport that product to that market. Immediately, it has supply and demand implications and price implications. Lifting the ban is about having crude oil in this country and natural gas in this country that need additional markets.

Mr. COSTA. That is why I say, at least from my perspective, it is also applicable as it relates to the incredible gas production and potential with the Marcellus Shale, the Monterey Formation, and the Bakken. I mean, there are a lot of opportunities there. Would you agree, Mr. Hamm?

Mr. HAMM. Yes, I would.

Mr. COSTA. Nice succinct, short answer.

Mr. COSTA. All right.

The CHAIRMAN. The gentleman's time has expired.

Mr. Abraham, for 5 minutes.

Mr. ABRAHAM. I thank you, Mr. Chairman.

I thank the panel for being here. I am from northeast Louisiana. Certainly we have the Haynesville shale, but that is mostly natural gas at this point. But we have thousands upon thousands of workers that go to North Dakota, Texas, wherever you can find the production.

And, Mr. Hamm, we will call it the new roughneck. It is certainly a very highly technical job that I could not do with my educational background, very high-paying job.

And, Ms. Cutting, even our welders from Louisiana are making a little over a $100,000 in your good state. So when you shutter a well, if it is a 224 average person, as Louisianans, we want those jobs back. And certainly being in Louisiana, our ports, if we do lift the ban, would certainly be a recipient of some of that wonderful light crude going overseas. So, to Louisiana, it is a huge thing.

Ponying up on Mr. Scott's comments a little bit, it certainly to me is a national security issue. I don't want Iranian oil sold anywhere that American oil can be sold. I don't want the ban on Iranian oil lifted. So if we can stabilize national security and world markets, well, that is a twofer on anybody's game. I guess the question, Dr. Rusco, I will go to you first, I read your testimony last night, and it said that if we do lift the ban, that the revenue for the government would go up $1.4 trillion was the figure, if I remember right. Walk me through that. Just briefly, how much—that is a lot of money. How will we get to that point?

Dr. RUSCO. So some revenue, some oil is produced on Federal lands, and so the Federal Government collects royalties and rent and also leasing payments for those properties. So to the extent there is an increase in production and some of that is on Federal lands, that will increase revenue. And then if the price goes up, the royalties on the value of the oil produced, and so that would also affect revenues.

Mr. ABRAHAM. Okay. Mr. Webster, you had in your testimony somewhat of the disparity between trade policy of crude, natural gas, coal, those type—gasoline and those type of products. Would you expound a little bit on that for me, please, as far as the disparity issue?

Mr. WEBSTER. Certainly. As an oil market or energy analyst you look and see what is allowed to be exported out this country in terms of an energy base. It is essentially everything except for crude oil. And that is due to an anachronistic law that was put in place back when we were concerned about that. For the last several decades, if you had allowed the export of crude oil, you really wouldn't have seen it at all until probably the fall of 2013, when the price spread blew out to as much as $15. It is hard as an analyst to try to figure out why it is okay to export everything, to include gasoline and diesel, but that we don't on crude.

Mr. ABRAHAM. Thank you.

Mr. Chairman, I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Allen, for 5 minutes.

Mr. ALLEN. Thank you, Mr. Chairman.

And thanks to the panel for being here. I too am a small business owner, a previous owner. And one of the things that—I am new here—and I promised folks that I was going to do everything I could to get folks back to work in this country. I think that is priority one. And I really appreciate what you are proposing here to get folks back to work. A couple concerns that I have is that one of the other things that was discussed, particularly in my district and throughout this country, is a long-term vision for this country to become energy independent.

In fact, it is almost unconscionable that we have a country in South America who is in charge of a number of these refineries which is not a friend to this country. And so what is our long-term strategy to get this country energy independent? Sure, we are ready to go; this is a short-term fix. But then would you agree that we need a long-term strategy to get this country energy independent? And I would ask any of the members of the panel to comment on that.

Mr. HAMM. I think it comes about naturally. The entrepreneurship in America is just so strong. Nobody thought we could ever do what we have done with this energy renaissance, yet we did. We brought about horizontal drilling. We have a completely new reservoir that we are working with actual source beds themselves to get here. It will occur. I predicted, DEPA predicted that we would see energy independence in this country if we had been unfettered—with this old ban, if it hadn't come into place, and refinery situation that we have, it would have happened—been on track, we had been on track to do it by 2020. By 2025, we can again double production here in America. If we are left alone and government does no harm, this will happen with or without a policy in Washington.

Mr. ALLEN. The country I was referring to is Venezuela. And, of course, our relationship with that country has been—and, of course, we buy a lot of oil from other countries that fund organizations that are a security risk to this country. And in looking at,

say, where we would send immediately this sweet crude to, what nations would be refining this oil? And is it possible if we send the oil there to be refined, that we could actually buy it back and use our own oil in this country? I mean, what are the possibilities of that?

Mr. HAMM. Well, it is a fungible product. We don't need to have direct ownership or whatever. It is fungible in trade, as Mr. Duffy has explained. So we don't have to have our hands on it, so to speak. Our allies need this product. Atlantic basin and Europe, Eastern and Western Europe, and South Korea are forced to buy from Iran.

Mr. ALLEN. Obviously, we want to get folks back to work, obviously, you have to look after your bottom line. But at the same time, we need to be patriotic, and we need to be careful about who we are dealing with around the world as far as our oil and gas reserves. I mean, it is unconscionable to me that Venezuela has been able to get this foothold in this country in our oil industry.

And, with that, Mr. Chairman, I will yield back the remainder of my time.

The CHAIRMAN. The gentleman yields back.

Mr. Goodlatte, 5 minutes.

Mr. GOODLATTE. Thank you, Mr. Chairman.

I appreciate your holding this hearing.

And, gentlemen, let me start with you, Mr. Hamm. I will follow up with some of the questions that Mr. Allen asked. I am interested in knowing what the plan of the industry, if you will, is if this law were to be changed. And, first, as a start question, does this law restrict already refined gasoline right now, or can you export it now if it is refined?

Mr. HAMM. Yes, you can export refined products.

Mr. GOODLATTE. It is just crude oil, petroleum products, and natural gas liquids that are restricted right now?

Mr. HAMM. Right now you can export refined products. And crude oil, some crude oil has been exported to Canada. But if it is exported to Canada, you have to get refined products back.

Mr. GOODLATTE. Where do you anticipate most of the crude oil that might be exported would go to?

Mr. HAMM. Where would I expect that most of the crude oil if this ban is lifted——

Mr. GOODLATTE. Yes.

Mr. HAMM.—would go to? Obviously, with our allies, South Korea, people we trade with and have a great relationship with, Western Europe, South America, Eastern Europe.

Mr. GOODLATTE. What about China?

Mr. HAMM. Canada?

Mr. GOODLATTE. China?

Mr. HAMM. China? I don't see a lot of that trade happening. But, there shouldn't be any restriction on it I don't believe.

Mr. GOODLATTE. And with regard to the use of oil in the United States, what is the long-term trend for that right now? Is it going up at paces like it did 20 or 30 years ago, or my understanding is it has sort of leveled off because of more fuel-efficient vehicles, because natural gas has replaced the use of oil in some cir-

cumstances. What is the domestic market looking like for oil heading down the road?

Mr. HAMM. I don't see it changing a great deal. We have seen estimates out to 2040. Mr. Webster might be able to address this better than myself, but right now about 90 percent or 95 percent of our oil is used for transportation.

Mr. GOODLATTE. Right.

Mr. HAMM. Gasoline, diesel, jet fuel, whatever.

Mr. GOODLATTE. Do you see electric vehicles depleting the demand in the United States for petroleum products, or do you think that is not going to develop in the numbers that some people think it will?

Mr. HAMM. We have seen demand in the U.S. kind of flatten. And it has flattened.

Mr. GOODLATTE. But it would actually go down if everybody switched over to electric vehicles. We would have to figure out how to generate a lot more electricity, but that would probably not come from petroleum.

Mr. HAMM. Well, we have actually seen a lot more, of course, power plants going to natural gas——

Mr. GOODLATTE. Right.

Mr. HAMM.—in the last few years.

Mr. GOODLATTE. But not crude oil.

Mr. HAMM. Not crude oil, yes.

Mr. GOODLATTE. Mr. Webster, you have been referred to, do you want to add anything to that?

Mr. WEBSTER. Sure. I mean, we have seen U.S. demand for gasoline and other refined products has gone up. Partly this is driven by the lower gasoline prices. So AAA expected this past weekend to be the biggest driving weekend for the Fourth of July that we have had in 8 years. And part of that is attributable to the lower gasoline price, and part of that is attributable to the economic growth that we have seen here. Long term, even with the lower gasoline price, you have vehicles that are more efficient. You have a number of millennials now that don't drive cars. So you have this kind of trend to where it is going to offset each other. And so while we do still expect some slight growth in U.S. demand, it is not going to be the big game changer. It is not going to be the sort of thing that on its own is going to be able to handle the sort of scale of production that we think companies like Continental Resources and others could end up bringing out in the next several years.

Mr. GOODLATTE. And very quickly, Mr. Duffy, welcome. It is good to see you back as well. As a manager of a major market for the transactions related to sale of various sources of energy, what do you see as the trend?

Mr. DUFFY. I see what we are already seeing today, which is people are managing risk from all over the world on our products in the United States. So that won't change. What will change is that we can cap the upside of this market dramatically by lifting this ban. If you get the oil—and I am not an expert like these two are, but I have talked to many experts in the field—if you get the cost of oil—and we don't want it to go there—but at $80 a barrel, you get a lot of people back in the exploration business that will create probably up to 18, 19 million barrels by 2020 or 2018, as projected

by. So there are a lot of benefits to it. But what is most important is to get a pure sample of what the product is worth. One of the big arguments Congress has always had is we have a glut of oil, but the price is going up, so it must be the speculators, except nobody said that when oil went from $92 a barrel to $45 a barrel, it was the speculators. It was a supply-demand equation. So I do think that goes to show you the bigger the supply or the bigger the sample you have the price on, the better it is for the American consumer.

Mr. GOODLATTE. Thank you.

Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

I want to thank our witnesses today. This has been a terrific hearing. It was very informative. Crude oil is the only commodity America produces that we can't export, and yet we import unlimited quantities. I don't know of another commodity where we have unlimited imports. We use sanctions on Iran's production of crude oil and exporting crude oil as a punishment. It seems odd to me that we would continue to punish domestic producers the same way we punish Iran with respect to being able to sell their product where we want to sell it.

Lifting this crude oil ban is important. The President could lift it today with an Executive Order, and we are going to pursue it legislatively. A couple of our colleagues mentioned the geopolitical aspects. I was in a conversation with the Prime Minister of Ukraine in April and asked him flat out: If you could buy crude oil directly from the United States, would that improve your negotiating position *vis-à-vis* Putin? He lit up like a Christmas tree and said: "Absolutely, yes, we would love to buy your crude oil and your natural gas to offset the direct negative influence Vladimir Putin has with respect to all of Eastern Europe."

Markets work best when they are efficient. Mr. Duffy knows this best of anybody at the witness table. Artificial inefficiencies built into any market cause consumers to ultimately pay more than they would have otherwise. Artificial restraints, like a crude oil export ban, create inefficiencies that some folks take advantage of, to the detriment of the overall market. Eliminating these artificial inefficiencies that we are baking into our system is, in my view, something that we ought to do.

The problem we have is that there are several Members who don't represent districts that produce crude oil. Their natural reaction is, when you first mention lifting the ban, is it somehow would increase gasoline or diesel prices, and every district has someone who buys gasoline and diesel every day. We have to convince them that that is not the case. All the empirical evidence shows fuel prices would actually decrease and become more stable. Getting the 218+ votes needed to move legislation to lift this ban is important on every level. I don't see any down side to having that happen.

It creates the kind of efficiencies that we need. It also leads to better decisions made by those trying to invest, whether it is in crude oil or refineries, to make better and confident decisions that the risks they are taking relate just to supply and demand, and not to some sort of an artificial thing that we have going on at the Federal Government.

Again, I thank our witnesses for being here today.

Under the rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member.

This hearing of the Committee on Agriculture is now adjourned. Thank you all.

[Whereupon, at 12:03 p.m., the Committee was adjourned.]

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