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THE TRADE IMPLICATIONS OF U.S. ENERGY POLICY AND THE EXPORT OF LIQUEFIED NATURAL GAS (LNG)

HEARING

BEFORE THE

SUBCOMMITTEE ON TRADE

OF THE

COMMITTEE ON WAYS AND MEANS
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

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THE TRADE IMPLICATIONS OF U.S. ENERGY POLICY AND THE EXPORT OF LIQUEFIED NATURAL GAS (LNG)

WEDNESDAY, APRIL 9, 2014

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON WAYS AND MEANS,
SUBCOMMITTEE ON TRADE,
Washington, DC.

The subcommittee met, pursuant to call, at 1:33 p.m., in Room 1100, Longworth House Office Building, the Honorable Devin Nunes [chairman of the subcommittee] presiding.

[The advisory announcing the hearing follows:]

ADVISORY

FROM THE COMMITTEE ON WAYS AND MEANS

FOR IMMEDIATE RELEASE
April 2, 2014
No. TR-04

CONTACT: (202) 225-3625

Chairman Nunes Announces Hearing on the Trade Implications of U.S. Energy Policy and the Export of Liquefied Natural Gas (LNG)

House Ways and Means Trade Subcommittee Chairman Devin Nunes (R-CA) today announced that the Subcommittee will hold a hearing on the trade implications of U.S. energy policy and the export of liquefied natural gas (LNG). The hearing will focus on the opportunities and trade implications created by recent developments in the U.S. energy sector related to LNG. **The hearing will take place on Wednesday, April 9, 2014, in 1100 Longworth House Office Building, beginning at 1:15 P.M.**

In view of the limited time available to hear the witnesses, oral testimony at this hearing will be from invited witnesses only. However, any individual or organization not scheduled for an oral appearance may submit a written statement for consideration by the Committee and for inclusion in the printed record of the hearing. A list of invited witnesses will follow.

BACKGROUND:
Global energy markets and trade in energy products have undergone significant changes in the past few years, including the emergence of North America as an abundant supply source of energy. The exploration of unconventional resources has resulted in significant supply increases of natural gas and dramatically lower prices. In the last six years, U.S. reserves have increased by more than 75 percent, and U.S. natural gas prices have fallen to levels that are significantly lower than prices around the world. As a result of increased reserves, the United States has enough supply to satisfy more than 100 years of domestic needs under current demand conditions.

Given the changing energy landscape, and particularly in light of recent developments in Ukraine, many have called for reducing barriers to U.S. exports of LNG, while others have argued that reducing barriers could increase domestic prices. A recent Department of Energy (DOE) study found that overall, natural gas exports would benefit the U.S. economy and that the net economic benefits increase as the level of exports increases.

The United States has exported natural gas – largely by pipeline – since at least the 1930s. LNG was first exported from the United States in 1969 from a facility in Alaska, but operations at that

facility ceased in 2012. The export of LNG requires permitting from DOE. Permits are automatically granted unless DOE determines that exportation would "not be consistent with the public interest." Exports to Free Trade Agreement partner nations are automatically deemed to be in the public interest. To date, 31 petitions have been filed with DOE for approval to export to non-FTA partners, and 7 have been granted. Recent legislative proposals have called for deeming exports to a broader set of countries to be consistent with the public interest.

In announcing this hearing, Chairman Nunes said, **"As America ramps up its energy production and our trading partners seek to diversify their supplies, there is a renewed focus on the economic and geopolitical implications of exporting LNG. Increasing U.S. LNG exports could blunt Russia's ability to bully its neighbors, stabilize global energy supplies, and promote free trade and open markets around the world."**

FOCUS OF THE HEARING:
The focus of the hearing is on the trade implications of U.S. energy policy and the export of liquefied natural gas (LNG). The hearing focus will include: (1) the changing U.S. energy landscape and new and unconventional sources of energy; (2) the trade implications of removing barriers to U.S. LNG exports, including potential effects on the trade deficit; (3) economic implications of increased LNG exports, including creation of U.S. jobs and the effect on global supply chains and small- and medium-sized businesses; (4) geopolitical effects of increasing U.S. LNG exports; (5) issues related to energy security; and (6) the environmental impact of expanding LNG exports.

DETAILS FOR SUBMISSION OF WRITTEN COMMENTS:
Please Note: Any person(s) and/or organization(s) wishing to submit for the hearing record must follow the appropriate link on the hearing page of the Committee website and complete the informational forms. From the Committee homepage, http://waysandmeans.house.gov, select "Hearings." Select the hearing for which you would like to submit, and click on the link entitled, "Click here to provide a submission for the record." Once you have followed the online instructions, submit all requested information. ATTACH your submission as a Word document, in compliance with the formatting requirements listed below, by the close of business on Wednesday, April 23, 2014. Finally, please note that due to the change in House mail policy, the U.S. Capitol Police will refuse sealed-package deliveries to all House Office Buildings. For questions, or if you encounter technical problems, please call (202) 225-1721 or (202) 225-3625.

FORMATTING REQUIREMENTS:
The Committee relies on electronic submissions for printing the official hearing record. As always, submissions will be included in the record according to the discretion of the Committee. The Committee will not alter the content of your submission, but we reserve the right to format it according to our guidelines. Any submission provided to the Committee by a witness, any supplementary materials submitted for the printed record, and any written comments in response to a request for written comments must conform to the guidelines listed below. Any submission or supplementary item not in compliance with these guidelines will not be printed, but will be maintained in the Committee files for review and use by the Committee.

1. All submissions and supplementary materials must be provided in Word format and MUST NOT exceed a total of 10 pages, including attachments. Witnesses and submitters are advised that the Committee relies on electronic submissions for printing the official hearing record.

2. Copies of whole documents submitted as exhibit material will not be accepted for printing. Instead, exhibit material should be referenced and quoted or paraphrased. All exhibit material not meeting these specifications will be maintained in the Committee files for review and use by the Committee.

3. All submissions must include a list of all clients, persons and/or organizations on whose behalf the witness appears. A supplemental sheet must accompany each submission listing the name, company, address, telephone, and fax numbers of each witness.

The Committee seeks to make its facilities accessible to persons with disabilities. If you are in need of special accommodations, please call 202-225-1721 or 202-226-3411 TTD/TTY in advance of the event (four business days notice is requested). Questions with regard to special accommodation needs in general (including availability of Committee materials in alternative formats) may be directed to the Committee as noted above.

Note: All Committee advisories and news releases are available on the World Wide Web athttp://www.waysandmeans.house.gov/.

Chairman NUNES. Good afternoon.

I want to welcome everyone to today's hearing on the trade implications of U.S. energy policy and the export of liquefied natural gas. Today's hearing focuses on the enormous potential of the U.S. energy revolution of the past decade.

I would like to make four main points before we hear from our witnesses:

First, the exploration of unconventional energy reserves has strengthened the U.S. energy security and positioned us as a net exporter. This energy revolution has already cut U.S. dependence on foreign energy by almost half since 2005. This dramatic shift reduces our dependence on imports from unstable and unfriendly sources. At the same time, these resources are being developed in an environmentally sensitive way.

Second point. Increasing exports of LNG and building LNG export facilities will create U.S. jobs and support economic growth. Exhaustive studies by the Department of Energy show that LNG exports on net substantially benefit the U.S. economy. In fact, the studies find that the more we export, the greater the benefits. In addition, as we will hear today, the development of export facilities can also help build important domestic infrastructure and address barriers to greater domestic use of LNG.

Third, today's discussion of LNG exports is especially timely in light of Russia's recent belligerence against Ukraine. Developing the capacity to export LNG from the United States is an important component to a comprehensive U.S. geostrategic policy. While it will take time for U.S. exports to begin flowing to Europe, these exports can offset Russia energy dominance there and create competition against major state-owned enterprises, like Russia's Gazprom. U.S. exports could also encourage structural reforms and good business practices worldwide, including in Ukraine.

Fourth and final point I will make is, to take full advantage of the opportunities presented by the American energy revolution, we must address unnecessary regulatory barriers and outdated policies at the Department of Energy. Above all, we must ensure that natural gas development is not subject to unrealistic and damaging regulations that suppress production, as is the case with coal and other energy sources, and that Federal lands and waters be opened to natural gas development where appropriate.

As for LNG exports, legislation introduced by Rep. Gardner to allow U.S. exports to all WTO members would create U.S. jobs, promote our geostrategic interests, and allow the United States to compete in the lucrative market, all without negatively impacting prices or the environment.

And I should note that that legislation has passed out of the Committee today, and we hope to have it on the floor soon.

Making it easier to export LNG also sets a good example for our trading partners and promotes our broader free trade agenda.

Finally, in considering this issue, we should keep in mind that Congress is constitutionally vested with the authority over foreign trade.

I will now yield to—do you want to make an opening statement, Mr. Neal, at this time or should we wait?

Mr. NEAL. Mr. Chairman, I would prefer that, at the time he arrives, Mr. Rangel be allowed to offer an opening statement, if that is his choice.

Chairman NUNES. Sure. Yes. We will do that.

Thank you, Mr. Neal.

Today we are joined by four witnesses. First, we will hear from Matt Klaben, Vice President, General Counsel, and Secretary of Chart Industries based in Ohio, and is also testifying on behalf of the National Association of Manufacturers.

Chart Industries manufactures key components for LNG facilities and has manufacturing facilities across the United States, including in Representative Boustany's and Representative Kind's districts.

Second, we will hear from Judy Hawley, who is Chair of the Port Commissioners at the Port of Corpus Christi in Texas, which is slated to build a large LNG export facility. She has served on the Port Commission for 10 years and previously served in the Texas State House with Representative Brady.

Third will be Dan Weiss, Senior Fellow at the Center for American Progress.

Finally, we will hear from Sarah Ladislaw, Director and Senior Fellow in the Energy and Natural Security Program at CSIS.

We welcome all of you, and we look forward to your testimony.

Before recognizing the first witness, let me note that our time this afternoon is limited. We do have your testimony. If the witnesses will keep their time limit on their testimony to under 5 minutes, we would really appreciate it.

And, with that, Mr. Klaben, you are recognized for 5 minutes.

STATEMENT OF MATTHEW KLABEN, VICE PRESIDENT, GENERAL COUNSEL AND SECRETARY, CHART INDUSTRIES, INC, ON BEHALF OF NATIONAL ASSOCIATION OF MANUFACTURERS

Mr. KLABEN. Good morning. Thank you, Mr. Chairman.

My name is Matt Klaben, and I am Vice President and General Counsel and Secretary at Chart Industries.

Chart is a leading manufacturer of equipment for a wide variety of cryogenic and gas processing applications. Our equipment is used in the production, distribution, and end use of atmospheric and industrial gases, as well as natural gas itself.

We have about 3,000 employees at locations in a dozen States across the U.S., from communities in Minnesota to Texas and California to New York and in between. My colleagues make high-quality products for both domestic consumption and export to markets around the world.

Today's hearing is about the potential opportunities that exist for companies like mine and our employees and communities across the United States from LNG exports. Chart plays a vital role in the LNG supply chain, producing equipment for applications from liquefaction to end use.

For liquefaction, at facilities in places like La Crosse, Wisconsin; New Iberia, Louisiana; The Woodlands, Texas; and Tulsa, Oklahoma, we design, manufacture, and fabricate equipment such as heat exchangers, pressure vessels, and cold boxes that customers use to process and chill natural gas to produce LNG.

Continuing along the LNG supply chain in places like New Prague, Minnesota, and Canton, Georgia, we design and manufacture vacuum-inflated tanks and transportation equipment which customers use to store and deliver LNG.

Finally, we design and manufacture fuel tanks for trucks, buses, locomotives, and even ships in places like Canton and New Prague.

Chart's participation in the LNG value chain has put us in a position to create many good-paying jobs in communities across the U.S. In recent years, we have invested tens of millions of dollars to expand our facilities in various American communities for these opportunities.

Let me take a few moments to tell you about just one of those in La Crosse, Wisconsin, where we recently completed the expansion of our brazed aluminum heat exchanger manufacturing plant.

This $50 million project increases the manufacturing capacity of our heat exchangers in La Crosse by 40 percent, doubles our engineering capacity, and includes an additional brazing furnace, which is the largest of its type in the world.

Our La Crosse facility employs more than 600 people and has a rich heritage boasting more than 60 years of uninterrupted heat exchanger manufacturing. We have a 5-year contract with Machinists Union Local Lodge 2191, which continues our proud 60-year partnership with the International Association of Machinists and Aerospace Workers.

In La Crosse, as we have done in other American communities, we have laid the foundation to support job growth in anticipation of LNG opportunities continuing on their natural course without artificial barriers.

Manufacturers believe LNG exports should be governed by principles of free trade and open markets. Manufacturers also oppose barriers to exports. We call on the DOE to accelerate the decision-making process for LNG exports. This process has become a regulatory choke point, contrary to American traditions and our international obligations. Approval of pending LNG export terminals will place Chart in a position to create jobs in the U.S.

Chart designs and manufactures equipment that is needed to construct terminals in communities like La Crosse, New Iberia, The Woodlands, and New Prague. If Chart is selected to supply equipment for just one average-sized terminal, it would support hundreds of jobs at our facilities and further hundreds of jobs with our suppliers in other communities around the U.S.

Chart and its suppliers are not alone. We represent just one small part of the LNG value chain and the total work needed. Each LNG export terminal costs roughly $10 billion to construct. Each project would create thousands of jobs and generate billions of dollars in economic benefits.

Importantly, even after construction is completed, the operation of LNG export terminals could put Chart and others in a position to create many more American jobs while enhancing American energy security through the creation of needed domestic infrastructure. The ongoing economic impact of these terminals would create opportunities for us in our communities.

The U.S. has led the world in adopting international rules to prohibit export restrictions, such as WTO rules that were recently invoked to rein in restrictions on exports of rare earth materials from China.

For the U.S., the same principles must apply. We should not ourselves be in violation of these very same commitments. At Chart, last year we sold over $800 million of high-quality products from communities across the U.S. We exported over 44 percent of those American-made products to customers around the world in places as diverse as China, Europe, and Australia.

Chart benefits from the principles of free trade to support American manufacturing jobs from coast to coast and in between. Deviations from those principles, whether at home or abroad, can only hurt us in our communities as a whole.

Thank you for the opportunity to appear today. I look forward for your questions.

[The prepared statement of Mr. Klaben follows:]

TESTIMONY OF MATTHEW J. KLABEN

BEFORE THE HOUSE COMMITTEE ON WAYS AND MEANS, SUBCOMMITTEE ON TRADE

Hearing on: *"Trade Implications of U.S. Energy Policy and the Export of Liquefied Natural Gas (LNG)"*

APRIL 9, 2014

Good morning, Chairman Nunes, Ranking Member Rangel, and members of the Subcommittee on Trade. My name is Matt Klaben, and I am Vice President, General Counsel and Secretary of Chart Industries, Inc. Chart is a leading independent global manufacturer of equipment for a wide variety of cryogenic and gas processing applications. Our equipment is used in the production, storage, distribution and end-use of atmospheric and industrial gases as well as natural gas itself. Chart has about 3,000 employees at locations in a dozen states across the U.S. From communities in Minnesota to Texas, and California to New York, and in between, my colleagues make high quality products for both domestic consumption and export to markets around the world.

I appear here today on behalf of Chart and the National Association of Manufacturers (NAM), an organization in which Chart is a proud member. The NAM is the nation's largest industrial trade association, representing nearly 12,000 small, medium and large manufacturers in every industrial sector and in all 50 states. Manufacturers are major energy consumers, using one-third of the energy consumed in the United States. For manufacturers, natural gas is a

critical component of an "all-of-the-above" energy strategy that embraces all forms of domestic energy production, including oil, gas, coal, nuclear, energy efficiency, alternative fuels and renewable energy sources.

Today's hearing is about the trade implications of U.S. energy policy, in particular how the export of liquefied natural gas, or LNG, fits into our energy strategy. It is also about the potential opportunities that exist for companies like mine and our employees in communities across the United States.

Natural gas liquefaction is a manufacturing process. To convert natural gas to LNG, the gas is processed to remove impurities, like water, condensates as well as other gases, such as carbon dioxide, hydrogen sulfide and sometimes nitrogen and helium. The gas is then super-cooled in several stages until it is liquefied and ready for shipping.

Chart plays a vital role in the LNG supply chain, producing highly engineered equipment for applications from liquefaction to end use. For liquefaction, at facilities in places like La Crosse, Wisconsin, New Iberia, Louisiana, The Woodlands, Texas, and Tulsa, Oklahoma, we design, manufacture and fabricate equipment, such as heat exchangers, pressure vessels and cold boxes, that customers use to process and chill natural gas to produce LNG. Continuing along the LNG supply chain, in places like New Prague, Minnesota, Owatonna, Minnesota and Canton, Georgia, we design and manufacture vacuum-insulated tanks, trailers and other transportation and dispensing equipment, which customers use to store, transport and deliver LNG. Finally, we design and manufacture fuel tanks for trucks, buses, railroad

locomotives and even ships that use LNG as a transportation fuel in places like Canton, Georgia and New Prague, Minnesota.

Chart's participation in the LNG value chain has put us in a position to create many good-paying jobs in communities across the U.S. In recent years, we have invested tens of millions of dollars to expand our facilities in various American communities to be prepared for these opportunities. Let me take a few moments to tell you about one of those in La Crosse, Wisconsin, where we recently completed the expansion of our brazed aluminum heat exchanger manufacturing plant. This $50 million project increases the manufacturing capacity for our heat exchangers in La Crosse by 40%, doubles our engineering space and includes an additional vacuum brazing furnace, which is the largest of its type in the world. Our La Crosse facility employs more than 600 people and has a rich heritage boasting more than 60 years of uninterrupted heat exchanger manufacturing in the area. We have a five year contract with Machinist Union Local Lodge 2191, which continues our proud 60 year partnership with the International Association of Machinists and Aerospace Workers. In La Crosse, as we have done in other communities across the U.S., we have laid the foundation to support job growth, in anticipation of LNG-related opportunities continuing on their natural course, without artificial barriers.

The Department of Energy, or DOE, has received applications for 31 proposed terminals seeking to export LNG to non-free trade agreement (FTA) countries. While most of these proposed terminals have received approval to export to FTA countries, only seven have obtained approval to export to non-FTA

countries. Once built, these seven facilities are estimated to produce 12.87 billion cubic feet per day (Bcf/d), of which a significant portion would only be allowed for export to FTA countries.[1] The DOE licensing process has become a regulatory choke point for LNG export applicants; at DOE's current pace, some of the applications in the queue could be waiting until 2016 or later before they can move to the next step in the multi-year permitting process. As we look at demands growing in Europe, Asia and elsewhere, we believe this process is far too slow and contrary to our long tradition as an exporting nation and to our international obligations.

Manufacturers believe LNG exports should be governed by principles of free trade and open markets. Manufacturers also oppose bans or similar market-distorting barriers to exports of LNG or any other commodity here in the United States and around the world. For this reason, the NAM has called on the DOE to accelerate the decision making process for the remaining 24 applications in its queue. The DOE owes applicants an up-or-down decision as expeditiously as possible, so that the market may operate properly.

Approval of pending LNG export terminals would place Chart in a position to create jobs in the U.S. Chart designs and manufactures equipment that is needed to construct the export terminals in communities like La Crosse, Wisconsin, New Iberia, Louisiana, The Woodlands, Texas and New Prague, Minnesota. If Chart is selected to supply equipment for just one average-sized export terminal, it would support hundreds of jobs at Chart facilities, and further hundreds of jobs with Chart suppliers in other communities around the U.S. And

[1] http://energy.gov/fe/downloads/summary-lng-export-applications.

we do expect that we will participate in this infrastructure build-out, if it moves forward.

Chart and its suppliers are not alone—we represent just a small part of the LNG value chain and the total work needed. Each LNG export terminal costs roughly $10 billion to construct. Each project would create thousands (and in some cases tens of thousands) of jobs and generate billions of dollars in economic benefits. Manufacturers across the country would create jobs making compressors, heat exchangers, storage tanks, pipes, valves and other components of these state-of-the-art infrastructure projects.

Importantly, even after construction is completed, the operation of LNG export terminals could put Chart and other manufacturers in a position to create many more U.S. jobs, while enhancing American energy security through the creation of needed domestic infrastructure. Let me suggest a few examples. First, the demand for natural gas from these terminals would lead to production of additional natural gas liquids—valuable by-products from gas that generally are not part of natural gas liquefaction but instead are used in other manufacturing processes. Chart and other manufacturers make the equipment needed for processing these liquids and for their use in industry. In addition, we believe the construction of these terminals would promote an environment of further business investment in LNG applications, providing an opportunity for Chart and other manufacturers to create more jobs building things like domestic infrastructure for use of LNG as a transportation fuel. Finally, some of the LNG output of these terminals could serve domestic LNG fueling needs if market

conditions support it, potentially relieving domestic LNG supply shortfalls that today limit our use of this clean-burning American fuel. In the end, we expect the existence of LNG export terminals will help unlock the true potential that America's natural gas wealth holds for American manufacturing, job growth and energy security.

From our country's earliest days, the United States has recognized the importance of exporting to grow our economy. Indeed, Article I section 9 of our own Constitution banned the imposition of export taxes. The United States has also led the world in adopting international rules to prohibit countries from using export restrictions to gain an unfair competitive advantage. The NAM was pleased to see the World Trade Organization (WTO) enforce these obligations with China, which was restricting exports of raw materials and rare earths to the detriment of U.S. industries and workers.

For the United States, the same principles must apply. In December 2013, former WTO Appellate Body Chairman James Bacchus authored a report for the NAM concluding that the delay by the DOE to issue licenses to export LNG to foreign countries likely constitutes, in and of itself, a violation of our international obligations under the WTO. As a member of the WTO, the United States is bound to comply with trade rules contained in WTO agreements that we helped develop. If the United States is going to continue to lead the world in pursuing a rules-based international system, we should not ourselves be in violation of the very same commitments we ask others to respect.

With 95 percent of the world's consumers living outside of the U.S., export bans on any product, including LNG, can be expected to have far-reaching negative effects, including on domestic economic opportunities, employment and ultimately economic growth. The U.S. government's ability to convince other countries to eliminate their existing export restraints on agricultural, forestry, mineral and ferrous scrap products—just to name a few—will be seriously compromised if the U.S. imposes its own export restrictions. Even worse, as the world's largest economy and largest trading country, U.S. actions are often replicated by our trading partners to our own dismay. If the United States goes down the path of export restrictions, even more countries would quickly follow suit and could easily limit U.S. access to other key natural resources or inputs that are not readily available in the United States.

At Chart, last year we manufactured and sold over $800 million of high quality products from communities across the United States. We exported over 44% of those American-made products to customers around the world in places as diverse as China, Europe and Australia. Chart and many others across the U.S. benefit from the principles of free trade to support American manufacturing jobs from coast-to-coast and in between. Deviations from those principles, whether at home or abroad, can only hurt us and our communities as a whole.

Conclusion

With the right energy policies in place, manufacturers could experience a true resurgence. Chart is no different. Robust development of our nation's vast natural gas resources will help drive domestic manufacturing as a critical

component of a true "all-of-the-above" energy strategy. To the extent the market creates opportunities for LNG exports the government should not be standing in the way of those opportunities. We believe the market can provide equilibrium between affordable, abundant gas supplies for domestic manufacturers and opportunities for LNG exports.

Chairman NUNES. Thank you, Mr. Klaben.

At this time I would like to take a pause in the witnesses and recognize our ranking member, Mr. Rangel.

Mr. RANGEL. Thank you, Mr. Chairman.

My apologies to the members as well as to our witnesses.

I welcome the exchange on this very important subject. I think America, once again, is blessed with this boon we see in natural gas.

It is my understanding that the current law provides the President of the United States with flexibility in order to consider the public interests, but that, under existing law, it is almost automatic and that nobody that has applied for a license have had it turned down.

Having said that, and recognizing that we are trying to negotiate quite a few expansive trade agreements with the European Union as well as Asia, it just seems to me that how we handle this could be possibly a negotiating item that could be in the quiver of our U.S. trade representatives.

But I do hope, since I regret that I have heard Mr. Klaben's testimony, that the witnesses could share with me the downside of existing law as it relates to the public policy—the public interest, rather, of the United States of America and what fear is there that this President or any President would not want to export a valuable commodity, especially at a time that we have a negative trade balance. And I assume the question as to the price of liquid gas to our businesses and as well as to homeowners will be included in the testimony.

But I just want to thank you, Mr. Chairman, for giving me this opportunity. I look forward to the testimony of the distinguished witnesses.

Chairman NUNES. Thank you, Mr. Rangel.

At this time we will proceed with the presenters, and we will go to Ms. Hawley.

You are now recognized for 5 minutes.

STATEMENT OF JUDY HAWLEY, CHAIR, PORT COMMISSION, PORT OF CORPUS CHRISTI

Ms. HAWLEY. Thank you. Thank you, Chairman Nunes and Ranking Member Rangel and the Members of the Subcommittee.

It is a great honor to be in front of you today on such an important issue. My name is Judy Hawley. I am testifying before this subcommittee as Chair of the Port Commission of the Port of Corpus Christi.

I am pleased to have served in the Texas House for 8 years, served on Energy and Transportation Committees, and chaired the Southern States Energy Board for a couple of years as well.

The Port of Corpus Christi, just to orient you, is the fifth largest port in terms of tonnage in the United States. In addition, 86 percent of the port's tonnage comes from energy. That is our historical base. Historically, we have been an importer of heavy crude. But in the past year, the Port of Corpus Christi has become, as many ports have, a major exporter.

The port serves as a nexus for the input of stakeholders and interested parties ranging from our local communities to inter-

national businesses. In my 10 years on the commission, I have a bird's-eye view of the local economic impact of Federal energy policy and a broader view of how energy policy can affect local, national, and international issues.

Locally, it is hard to overestimate the economic benefits resulting from the energy exploration and development of the Eagle Ford Shale formation in Texas. In a few short years, the Eagle Ford Shale has become the largest single oil and natural gas development in the world, based on capital expenditures, creating over $61 billion in economic impact and over 116,000 full-time jobs, with an annual payroll of almost 5 billion.

But may I emphasize again that the growth in the energy sector translates to growth in jobs. Our unemployment rate in South Texas had consistently been well below the national average. It is now below the national average, and that includes the influx of new workers coming in seeking jobs. We are now at 5.5 percent unemployment, which is historic for us.

But more than just addressing the unemployment issue, we are also addressing the underemployment issue. And that has come about because of the expansion of natural gas and has come about because of the interest in LNG.

Our community colleges, our universities, and our craft training centers are ramping up at full speed to meet the demand that we have right now for qualified technicians, for welders, for environmental engineers, for petroleum engineers, and the list goes on and on.

Being able to meet the needs of the underemployed has really been a tremendous godsend out of this Eagle Ford Shale move and out of this LNG business that we are embarking upon at this point in time.

I would like to describe one particular energy project to illustrate the vast economic and job growth that can result from expanding exports of LNG.

Cheniere Energy is a company that is building a facility down on our coast, on our ship channel. They are going to take 673 acres. It is a newly expanded, newly dredged ship channel.

And their investment, as a previous speaker identified, represents about $11 billion in an investment, similar to, actually, an LNG facility that they put in Sabine Pass, Louisiana.

We are anticipating 1,800 construction jobs over a 5-year period, 3,000 jobs at the peak of construction. You know, just imagine what 3,000 new construction jobs would do in anybody's district, as an influx of capital, an influx of energy, and an influx of a trained skilled labor force. Once the project is built, it is estimated that the Corpus Christi Cheniere facility will support 8,000 jobs in the region permanently.

One LNG facility will benefit not just South Texas, but, also, the national economy. The Corpus Christi facility is projected to require over $2 billion in U.S.-sourced equipment and to have a positive impact—and this is what the chairman was alluding to, and I think this is the key point that I would like to make today—it can influence our balance of trade with exports up to almost $10 billion annually. You know, the numbers are just overwhelming when we consider what we will be able to do with that LNG.

While these economic benefits for the Nation are important, the export of LNG is important for building stronger ties with our allies abroad, freeing countries from economic oppression through threats to their national gas supplies, and supporting the use of safer and more environmentally sound natural gas over other energy sources.

As a result of preparing, really, for the last 20 years for the Panama Canal's expansion to handle larger ships, including LNG tankers, the Port of Corpus Christi is ready to support increased exports of LNG.

In the past decade, the Port of Corpus Christi has invested $25 million, leveraged with the Federal Government's investment of nearly 60 million, to deepen and extend the ship channel to accommodate those LNG exports. That investment has attracted over $22 billion in new industrial growth in our region. That investment has really transformed a formerly economically disadvantaged area.

Finally, my final comment is that the Port of Corpus Christi is a strategic military port. Having the ability to export LNG out of our facility strengthens our position. And we are very proud of the support that we give to this Nation in terms of being a strategic military port, and we think the LNG exporting strengthens that position.

Thank you very much.

[The prepared statement of Miss Hawley follows:]

PORT CORPUS CHRISTI

Statement of Judy Hawley, Chair, Port Commission for the Port of Corpus Christi Authority
For Hearing of Trade Subcommittee of the House Ways and Means Committee on
The Trade Implications of U.S. Energy Policy and the Export of Liquefied Natural Gas (LNG)

Chairman Nunes, Ranking Member Rangel, and Members of the Subcommittee:

Thank you for the honor of appearing before the subcommittee as part of this distinguished panel on such an important topic.

My name is Judy Hawley. I am testifying before this subcommittee in my capacity as Chair of the Port Commission for the Port of Corpus Christi Authority. I am also pleased to have served for eight years in the Texas legislature, including service as Vice Chair of both the Transportation and the Energy Resources Committees. I have also served as Chair of the Corpus Christi Regional Economic Development Corporation.

The Port of Corpus Christi is the 5th largest port in the United States in total tonnage. In addition, 86% of the Port's tonnage comes from energy.

One thing I have learned during my ten years of serving as a Port Commissioner is that this role provides a unique insight on economic development issues. As a public entity, our role is to serve the public good by serving as an engine that drives responsible economic development and by serving as a trustworthy steward for the Corpus Christi Ship Channel and assets of the Port.

The Port Commission serves as a nexus between the local communities that we serve and the many stakeholders in the Port's operations. These stakeholders include:

- businesses located on or near the Port's property;
- customers whose operations depend upon trade conducted through the Port;
- national and international shippers who utilize the Port's capabilities;
- area institutions of higher education that provide skilled workers essential for economic growth; and,
- local, state, and federal government agencies that work with us to build and maintain needed infrastructure while also protecting the environment.

Our responsibilities require constant consultation with the community and stakeholders while also demanding careful planning for activities many years in the future.

As a result, the Port Commission can provide both

- a bird's eye view of the local economic impact of federal energy policy, and
- a broader picture of how federal energy policy can affect national and international interests.

Locally, it is hard to overstate the economic benefits resulting from expanded domestic energy exploration and development, primarily through the ongoing development of the Eagle Ford Shale formation in Texas. This formation is the source of abundant oil and natural gas resources able to be extracted using modern energy development technologies. In a few short years Eagle Ford Shale has become the largest single oil and natural gas development in the world based upon capital expenditures.

Just last month the Center for Community and Business Research at The University of Texas at San Antonio's Institute for Economic Development issued an updated report (hereafter, the "UTSA Report") on the economic impact of Eagle Ford Shale.[1] It studied a 20-county area that was comprised of 14 counties where production is occurring and 6 related counties.

Among the findings in the UTSA Report are that economic development resulting from Eagle Ford Shale is responsible for:

- Over $61 billion in total economic impact
- 116,508 full-time jobs supported
- $4.69 billion in payroll
- $1.01 billion in total local tax revenues
- $1.24 billion in estimated local tax revenues

While all of these statistics are great news, we are especially pleased about the large number of new jobs created and supported in the South Texas region. These well-paying jobs occur across a number of sectors, not just energy and transportation, but also benefiting workers in related supporting occupations.

As a result, unemployment in the Corpus Christi is consistently well-below the national average, despite an influx of new workers pursuing employment opportunities. According to the Bureau of Labor Statistics, our unemployment rate in the Corpus Christi Metropolitan Area was 6.6% in January of 2013 and has declined to 5.5% in January of 2014.

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[1] The full report and the appendix to that report can be accessed online at:
http://ccbr.iedtexas.org/efs-economic-impact-2013
http://ccbr.iedtexas.org/efs-economic-impact-appendix-2013

Further, the jobs and economic growth that we have already experienced may just be the tip of the iceberg. Continued growth is expected for the foreseeable future. The UTSA Report projects that Eagle Ford Shale will generate an economic impact of over $89 billion in 2022 (up from $61+ billion in 2013) and over 127,000 jobs in 2022 (up from 116,000+ in 2013).

In addition, we are witnessing the early stages of related industrial developments that will have increasingly strong economic development impacts. I would like to describe one particular project to illustrate the vast economic and job growth that can result from supporting expanded exports of liquefied natural gas [LNG].

Cheniere Energy plans to build an LNG liquefaction facility on a 673-acre tract of Port industrial property at the newly-expanded La Quinta Ship Channel to support LNG exports. This project alone represents a roughly $11 billion investment.[2] Based upon a similar facility being built in Sabine Pass, Louisiana, we are anticipating an average of 1,800 construction jobs over a five year building period, with 3,000 jobs at the peak of construction. I would like each member of the subcommittee to take a moment to imagine how a project resulting in 3,000 construction jobs could boost a community.

Once the facility is built, it will provide the foundation for thousands of stable and high-paying jobs beyond the estimated 225 positions required to operate the facility. These jobs involve business activities related to the LNG business and jobs in managing the energy-producing properties and related infrastructure needed to produce the natural gas that would be liquefied and exported. It is estimated the Corpus Christi Cheniere facility will support over 8,000 permanent jobs per year.

The ability to add and support thousands of jobs during an era of chronic underemployment is an economic godsend to countless workers and their families. In addition, while much of the capital investment resulting from natural development involves pipelines and other specialized energy infrastructure, some capital improvements benefit our regional transportation infrastructure, which in turn can lead to other job-creating economic development. Also, the tax revenues generated from development and export of natural gas can support other education and economic development initiatives that can lead to increases in high-quality new jobs.

This one liquefaction facility will benefit not just South Texas, but also the national economy. Again, based upon a similar project under construction, the Corpus Christi facility will require over $2 billion in equipment from U.S. sources. It is projected to have a positive impact upon our nation's balance of trade of up to $9.5 billion annually.

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[2] Economic data on this facility comes from a report prepared by The Perryman Group, "The Anticipated Impact of Cheniere's Proposed Corpus Christi Liquefaction Facility on Business Activity in Corpus Christi Texas and the US" (April 2012).

While these economic benefits for the nation are important, there are also other benefits for Members of Congress to consider. The export of LNG is critical for building stronger ties with allies abroad, freeing countries from economic oppression through threats to their natural gas supplies, and supporting the use of safer and more environmentally-sound natural gas over other energy sources.

The Port has regularly discussed the desirability of stable and affordable natural gas as an energy source with entities from nations across the globe. In fact, the Port is the beneficiary of over $11 billion dollars of investment from large international companies locating industrial plants on Port property. These investments include:

- $700 million by voestalpine iron plant which will create 150 full time jobs in the region
- $751 million by M&G Resin which will create 220 full time jobs in the region
- $1 billion by TPCO America which will create 600-800 full time jobs in the region

We welcome and encourage these types of investment that are made possible by the abundant supply of energy products resulting from development of the Eagle Ford Shale formation. Yet most of the strong and growing demand for LNG in places such as Europe and Asia is for consumer uses and smaller business and transportation uses that will not be transferred abroad.

Current economic development benefits and job growth are a great success story. It is a serendipitous circumstance that the Eagle Ford Shale discovery happened to occur in the period leading up to expansion of the Panama Canal. This expansion will allow larger ships, including LNG tankers, to travel through the Canal.

The Port of Corpus Christi, like other ports, has been planning for the Panama Canal expansion for the past twenty years, although our original plans were based upon need for facilities to handle tankers for importing rather than exporting LNG. In the last decade, the Port of Corpus Christi has invested $25 million – leveraged with the federal government's investment of $58 million through the Corps of Engineers – to deepen and extend the ship channel to accommodate LNG exports. As mentioned previously, this investment has attracted over $11 billion in new industrial growth, creating over a thousand high-paying jobs for a previously disadvantaged area.

The private sector also has responded swiftly to take advantage of opportunities related to the new and abundant sources of natural gas and other energy-related products in Texas and elsewhere around the country. In other words, our nation's infrastructure is in relatively good shape to move forward with increased production and export to meet the growing worldwide demand for LNG.

At this point, the biggest constraint to taking advantage of this new opportunity for job growth and other economic benefits is federal energy policy. Sustaining this energy-related economic growth is contingent upon the federal government adopting policies to:

- increase the number of countries to which LNG may be exported, and
- act expeditiously on permits for LNG production and export facilities.

Such policy changes will provide a stable underpinning for domestic and foreign investments that will lead to the creation of e tens of thousands of both construction and permanent jobs, dramatic growth in exports, and billions of dollars in additional annual revenue for the U.S.

On the other hand, the huge opportunity for increased worldwide sales of LNG is hardly a secret. If the United States fails to take advantage of this opportunity, international natural gas suppliers will focus their efforts on increasing production at other worldwide sites in places such as Canada, East Africa, and Australia. Once the large infrastructure costs are undertaken to expand LNG production at those sites and long-term supply contracts are executed, the window of opportunity for the U.S. to reap the associated economic and job growth will be closed.

I would like to take a brief moment to discuss the myth that increasing LNG exports will somehow damage U.S. economic interests. This matter has been studied and concerns have been found to be erroneous.[3] Increased LNG export would have numerous economic benefits for Texas and the United States, yet are unlikely to have any significant impact upon domestic natural gas prices. In fact, attempts to restrict LNG exports and artificially depress natural gas prices could limit ongoing exploration and development, causing more damage than benefit.

In closing, I would like to mention that the Port of Corpus Christi is one of the U.S.'s 17 strategic national defense ports. We regularly take actions to facilitate U.S. national interests over the Port's narrow economics interest in terms of maintaining capacity reserved for U.S. defense needs and giving priority to shipping of military cargo over other more lucrative business opportunities.

The Port of Corpus Christi takes its responsibilities to serve this country's national security and economic security very seriously. While we are candid about the large economic benefits resulting from expanded growth of the energy sector, we also believe that federal policies supporting international energy trade benefit both South Texas and the nation. It is in the spirit of supporting our highest national interests that I have offered this testimony.

Thank you for this opportunity to testify before the Subcommittee.

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[3] *See, e.g.*, NERA Economic Consulting's "Macroeconomic Impacts of LNG Exports from the United States" (Dec. 2012) and Deloitte Market Point's "Made in America: The Economic Impact of LNG Exports from the United States" (2011).

Chairman NUNES. Thank you, Miss Hawley.

Now we recognize Mr. Weiss for 5 minutes.

STATEMENT OF DANIEL WEISS, SENIOR FELLOW, CENTER FOR AMERICAN PROGRESS

Mr. WEISS. Thank you, Chairman Nunes, Ranking Member Rangel, and members of the Trade Subcommittee. Thank you for the opportunity to testify today.

The Department of Energy must continue its public interest assessment of proposed liquefied natural gas export applications.

The following four criteria are essential to evaluate whether pending applications are in the public interest: First, assess the impact of additional LNG exports on natural gas prices and electricity costs; second, evaluate the impact of higher natural gas prices on U.S. manufacturing; third, determine the climate impacts of increased natural gas production; fourth, are there other options that can deliver natural gas cheaper, faster, and more securely?

First, the Department of Energy has already approved LNG terminals that could export approximately 18 percent of total domestic natural gas production by 2020. The Energy Information Administration forecasts that, even with a modest level of exports, the price of natural gas for domestic electricity would grow by nearly one-third by 2020. This price increase could have severe impacts on family and small business budgets.

Second, a recent study found that lower natural gas prices have fueled an additional 200,000 new manufacturing jobs. However, if more LNG exports boost natural gas prices, the industrial sector could experience nearly a one-third price increase in natural gas costs by 2020. This price rise could reduce manufacturing jobs. The nearest study commissioned by DOE determined that the expansion of LNG exports would provide net economic benefits to the U.S., but warned that, "Higher natural gas prices in 2015 can also be expected to have negative effects on output and employment."

Number three, DOE must consider climate change when evaluating additional LNG exports. The hundreds of scientists on the International Panel on Climate Change just issued yet another 10-alarm warning that, "Impacts from recent climate-related extremes, such as heat waves, droughts, floods, cyclones, and wildfires, reveal significant vulnerability and exposure of some ecosystems and many human systems to current climate variability."

Methane contributes nearly one-tenth of U.S. climate pollution. The oil and gas sector is the second largest source of domestic methane due to fugitive releases during production and leaks during distribution.

For instance, a study by Senator Ed Markey estimated that, in 2011, aging natural gas pipelines leaked large amounts of natural gas, the pollution equivalent of 6 million cars. Leaking natural gas also cost consumers at least $20 billion over the past decade.

Ranking Member Rangel recently introduced legislation that would begin to plug pipeline leaks, and this program would create jobs, save consumers money, and cut pollution.

Additionally, the Energy Information Administration predicts that further gas exports would spur additional gas production, which would lead to more methane pollution, exacerbating climate

change. The Obama administration's new methane reduction program must limit fugitive methane from fracking.

Lastly, some want to assist Ukraine by skipping reviews in the public interest review to fast-track approval of additional LNG export facilities. However, LNG exports to Ukraine require infrastructure that would take years to build.

The first export facility at Sabine Pass that Ms. Hawley talked about may not be ready until 2016, and its gas is already contracted to go to India and South Korea.

In fact, some call fast-tracking LNG exports like answering a 911 call from Ukraine. If so, the fire department won't arrive for 2 years and then it will go to a different address than the one that is making the call.

Faster, more effective assistance would be—to the Ukraine would be investments in energy efficiency, particularly since Ukraine is the second-most energy-wasteful nation.

The U.S. has already successfully invested 15 million in Ukraine for efficiency projects that save 380 million cubic meters of natural gas and cut carbon pollution equal to 150,000 cars.

Promptly and significantly expanding these efforts now that reduce gas waste is an effective way to help Ukrainians reduce their reliance on Russian gas rather than waiting at least 2 years for LNG export terminals to be completed.

The cheapest, fastest, most economically beneficial method to meet energy needs in the U.S. or Ukraine is to capture fugitive methane, make buildings more efficient, plug leaky pipes, as Mr. Rangel has proposed, and reduce other sources of energy waste.

Thank you. And I look forward to taking your questions.

[The prepared statement of Mr. Weiss follows:]

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Testimony on
"Trade Implication of U.S. Energy Policy and the Export of Liquefied Natural Gas (LNG)"

Committee on Ways and Means
Subcommittee on Trade

1100 Longworth House Office Building
April 9, 2014

Chairman Nunes, ranking member Rangel, and members of the Trade Subcommittee: thank you for the opportunity to testify on the "Trade Implications of U.S. Energy Policy and the Export of Liquefied Natural Gas (LNG)." The question has taken on greater urgency this winter due to an increase in domestic natural gas consumption, the approval of seven LNG export applications, and Russia's rattling its natural gas sabre to intimidate Ukraine.[1]

I plan to address several fundamental questions today.

- What criteria should the Department of Energy use to evaluate whether a proposed LNG export project is in the public interest?
- Are there cost-effective measures that the United States can undertake that would save natural gas, create jobs, and reduce pollution?
- Is elimination of the public interest test for LNG export facilities an effective policy to assist Ukraine or other nations threatened by potential high natural gas prices or supply reductions?

MEETING THE PUBLIC INTEREST STANDARD

In the past six years, the United States experienced a dramatic increase in natural gas production, primarily from "shale gas" generated from improvements in "hydraulic fracturing" (or fracking") and horizontal drilling.[2]

Under the Natural Gas Act, the Federal Energy Regulatory Commission (FERC) must approve a proposed LNG export or import terminal. For projects that will export gas to one of the 18 nations with a Free Trade Agreement with the U.S., the projects are automatically deemed "with the public interest."[3] These 18 nations include Canada, Mexico, and the Republic of Korea.[4]

For nations that do not have a Free Trade Agreement with the U.S., the Department of Energy (DOE) must determine whether the "proposed exportation or importation will not be consistent with the public interest," as required by Section 3(a) of the Natural Gas Act.[5] Deputy Assistant Secretary of Energy Paula Gant recently testified before the House Subcommittee on Energy and Power that

> DOE/FE [Office of Fossil Energy] has identified a range of factors that it evaluates when reviewing an application for export authorization. These factors include economic impacts, international considerations, U.S. energy security, and environmental considerations, among others.[6]

Under these criteria, DOE has approved seven LNG export applications. The Sabine Pass facility in Louisiana is the first one under construction.[7] Its completion could occur in the fourth quarter of 2015.[8]

NATIONAL INTEREST DETERMINATION

In our view, it is essential that before DOE finds that any more LNG export terminals are in the public interest, it must include the following criteria in its public interest evaluation.

- What is the impact of additional LNG exports on natural gas prices and electricity costs?
- What impact would higher natural gas prices have on U.S. manufacturing?
- Most studies predict that more LNG exports would increase shale gas production. What impact will that have on the climate?
- Can we enhance energy security with means other than drilling or fracking?

Large LNG exports possible by 2020, leading to a natural gas price hike

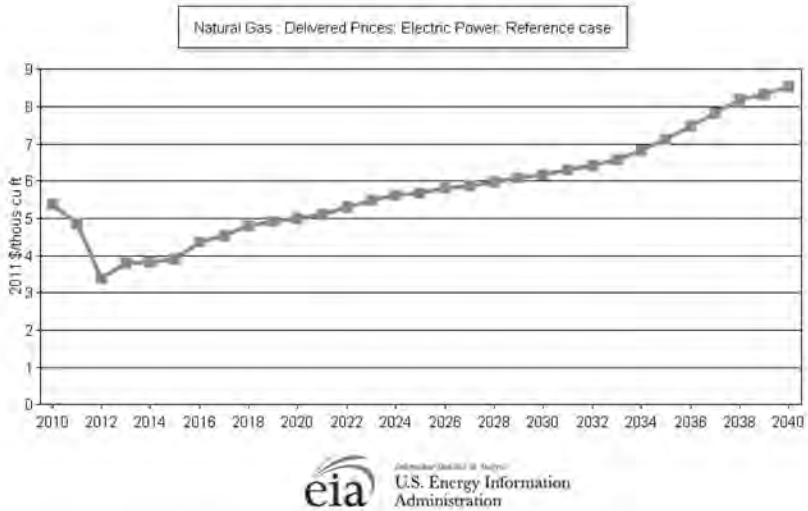
Before Congress passes legislation to accelerate or eliminate the public interest review process, it is essential to note that DOE has already approved LNG terminals that could that could export 13 billion cubic feet per day (Bcf/d) of natural gas – about 18 percent of total domestic production projected in 2020.[9] [10] The Energy Information Administration (EIA) notes that LNG exports will increase by 14-fold between 2013 and 2020 under a "business as usual" scenario.[11] There would be another four fold increase in exports between 2020 and 2030.[12]

Under these projections, the cost of natural gas for domestic electricity generation would rise by 32 percent between 2013 and 2020 according to EIA.[13] And the price would nearly double between 2013 and 2030.[14]

EIA also found that natural gas exports will increase gas prices.

> Increased natural gas exports lead to increased natural gas prices. Larger export levels lead to larger domestic price increases, while rapid increases in export levels lead to large initial price increases that moderate somewhat in a few years. Slower increases in export levels lead to more gradual price increases but eventually produce higher average prices during the decade between 2025 and 2035.[15]

A price increase could have severe impacts on family budgets. EIA reports that the typical household spent an average of nearly $2,000 – or 2.7 percent of their household income – on household energy fuels in 2012.[16] The households in the lowest fifth income bracket spent double this portion -- 6 percent -- on household fuels.[17]



Higher natural gas prices could hurt manufacturing

Lower natural gas prices have fueled the recent increase in U.S. manufacturing. *Fuel Fix*, a Hearst energy publication, reported in March that

> An ample supply of cheap natural gas has ignited a U.S. manufacturing surge projected to expand plant payrolls and drive demand for chemicals, machinery and steel through the end of the decade, according to a report released Thursday.
>
> Sinking natural gas prices…are linked to more than 196,000 new manufacturing jobs in major metropolitan areas and a $124 billion boost to sales for energy-intensive products like fabricated metals and plastics, according to a U.S. Conference of Mayors report on the nation's industrial growth.[18]

This growth is at risk if more LNG exports boost natural gas prices, as studies indicate. According to EIA, the industrial sector, which includes manufacturers that use natural gas as a feedstock, would experience a 28 percent price increase in direct natural gas costs between 2013 and 2020.[19] The price boost would be more than a 50 percent increase between 2013 and 2030.[20] LNG exports could reduce net job creation compared to using this gas for domestic manufacturing.

A study commissioned by the Dow Chemical Company – an opponent of greater LNG exports – found that a

> Comparison of the effects of the manufacturing sector using 5 Bcf/d of natural gas versus LNG terminals exporting 5 Bcf/d of natural gas…clearly shows **higher…employment related to the manufacturing investments.**
>
> This is primarily driven by the higher level of investment required to manufacture products using the natural gas than to export it. Natural gas use of 5 Bcf/d in the manufacturing sector requires more than $90 billion in investments and significant annual spending, while LNG export terminals with 5 Bcf/d of capacity would involve only $20 billion in new investment.[21]

The NERA study on LNG exports commissioned by DOE determined that the expansion of LNG exports would provide net economic benefit to the economy.

> In all of these cases, benefits that come from export expansion would more than outweigh the costs of faster increases in natural gas production and slower growth in natural gas demand, so that LNG exports have net economic benefits in spite of higher domestic natural gas prices.[22]

The study also concluded that higher natrual gas prices from LNG exports would hurt manufacturing employment. It determined that

> Higher natural gas prices in 2015 can also be expected to have negative effects on output and employment, particularly in sectors that make intensive use of natural gas.
>
> The manufacturing sector [is] dependent on natural gas as a fuel and [is] therefore vulnerable to natural gas price increases.[23]

<u>Increase in LNG exports could increase climate pollution</u>

It is irresponsible to discuss energy policies without consideration of their impact on the climate. There was another 10 alarm warning on March 30, when the Intergovernmental Panel on Climate Change (IPCC), the world's largest deliberative body of scientific study devoted to climate change, released its latest report "Impacts, Adaptation, and Vulnerability."[24] In its strongest language to date the report warns that

> Impacts from recent climate-related extremes, such as heat waves, droughts, floods, cyclones, and wildfires, reveal significant vulnerability and exposure of some ecosystems and many human systems to current climate variability.[25]

The New York Times noted that the report warned that

> "Throughout the 21st century, climate-change impacts are projected to slow down economic growth, make poverty reduction more difficult, further erode food security, and

> prolong existing and create new poverty traps, the latter particularly in urban areas and emerging hot spots of hunger," the report declared.[26]

In the United States, climate related events exact a huge human and economic toll. Examples of these costs include the scorching California drought, record floods in Colorado, and a deadly wildfire season just ahead. Nationwide, in the past three years, there were 32 extreme weather events that each caused $1 billion or more in damage.[27] Together, these events took 1,221 lives and caused nearly $210 billion in destruction.[28]

So DOE must assess the potential impact of LNG exports on the potential increase of climate pollution. It's well documented that fracking to produce shale gas generates fugitive methane, which is the main component of natural gas.[29] Methane is a potent climate pollutant, which has 86 times more warming potential than carbon dioxide pollution over a 20 year period.[30] This means that significant emissions in the near future could spur much more climate change, extreme weather, and other harmful impacts.[31] Oil and gas production is the second largest source of domestic methane pollution, responsible for nearly 30 percent of it.[32]

The administration's recently released "Climate Action Plan Strategy to Reduce Methane Emissions" noted that "methane equivalent to 127 million tons of carbon dioxide pollution was emitted from production, processing, transmission, storage, and distribution of natural gas" in 2012.[33]

If LNG exports drive an increase in natural gas production, this could also spark growth in methane pollution. This concern recently led the EPA to urge the Federal Energy Regulatory Commission (FERC) "to consider greenhouse gas impacts from increased U.S. natural gas drilling in its environmental review of a natural gas export terminal in Louisiana."[34]

DOE, too, must also assess the potential increase in methane pollution when reviewing pending LNG export terminal applications. This evaluation should factor in the *cumulative* increase in natural gas production from all of the LNG export terminals already approved, as well as the impact from the individual applicant.

The U.S. must significantly reduce its methane releases to meet the 2020 climate pollution reduction goal. Later this year, the EPA will release its methane reduction plan for the oil and gas sector, which should include cost-effective limits on this pollutant.[35] This reduction regime must be promptly implemented in the oil and gas fields to avoid further exacerbating climate change. Ignoring the potential increase in methane pollution from future LNG exports won't make climate change go away – it will only make its impacts more deadly, destructive, and expensive.

<u>Save natural gas, create jobs, cut pollution</u>

One way to reduce the threat of higher nature gas production, prices, and pollution linked to an increase in LNG exports is to make our natural gas distribution system much more efficient. A report by Sen. Ed Markey, "America Pays for Gas Leaks," estimated that the aging network of natural gas pipelines leak significant amounts of natural gas.[36] It determined that

> Gas distribution companies in 2011 reported releasing 69 billion cubic feet of natural gas to the atmosphere, almost enough to meet the state of Maine's gas needs for a year and equal to the annual carbon dioxide emissions of about six million automobiles.
>
> Gas companies have little incentive to replace these leaky pipes, which span about 91,000 miles across 46 states because they are able to pass along the cost of lost gas to consumers. Nationally, consumers paid at least $20 billion from 2000 -2011 for gas that was unaccounted for and never used according to analysis performed for this report.[37]

Fortunately, ranking member Rangel introduced legislation that would begin to plug these leaks. His bill "The Pipeline Modernization and Consumer Protection Act," H.R. 4338 would "require gas pipeline facilities to accelerate the repair rehabilitation and replacement of high-risk pipelines."[38] Companies would develop a priority list of their pipelines that pose the most risk, and adopt a cost-recovery program to pay to repair them.[39]

Rep. Rangel has another bill to create the "Pipeline Revolving Fund and Job Creation Act," H.R. 4339.[40] This bill would provide "grants to states to establish [revolving] loan funds," with each state providing 20 percent of the money in its fund.[41] It would last for ten years.

Together, these bills would begin to plug natural gas pipeline leaks, create jobs for workers to repair them, save consumers money due to less wasted gas, and cut climate pollution. Most importantly, they would identify and repair the most hazardous pipelines to reduce the likelihood of another tragic gas explosion, such as the one in Harlem last month.

Companion bills were introduced in the Senate by Sen. Ed Markey, and have broad support from organizations including the United Steelworkers, Consumers Union, New England Gas Workers Association, United Association of Plumbers and Pipefitters, and other interests.

EFFICIENCY CAN HELP UKRAINE REDUCE DEPENDENCE ON RUSSIAN GAS

Russia continues to ratchet up its threat to Ukraine, which the United States and other nations must respond to by imposing costs on Russia and assisting Ukraine. Russia hopes to exploit Ukrainian dependence on its natural gas to dominate this independent nation. In 2012, Ukraine produced only 37 percent of its own gas, and imported the remainder from Russia.[42] Even though Russia underpriced this gas, Ukraine still owes the Russian gas company Gazprom over $2 billion.[43]

The *Washington Post* recently reported that

> Many members of Congress are pressing the Obama administration to use energy as a diplomatic weapon and to speed permits for natural gas export terminals to ease Europe's and Ukraine's heavy reliance on Russian supplies.[44]

Some members introduced legislation to fast track approval of additional LNG export facilities by eliminating or truncating DOE's public interest review of proposed projects.[45]

Approval of more LNG exports could further hike natural gas prices and pollution, but do little to help Ukraine. The Sabine Pass LNG facility is nearest to completion, and its finish date is at least a year and a half away.[46] *The New York Times* notes that "half of the gas that will leave [the] facility has already been contracted by India and South Korea. The other half will go to British and Spanish companies."[47]

None of the other approved LNG terminals have even begun construction. The *Post* notes that LNG exports to Ukraine could not occur until "years from now. The earliest gas exports won't come until late 2015 or 2016, and most won't get started until 2017 through 2019."[48]

Oil executives understand that the approval, construction and operation of LNG export terminals takes time. *The Times* reported

> "L.N.G. exports are not about snapping your fingers and making them happen," said Marvin E. Odum, president of the Shell Oil Company, which has partnered with Kinder Morgan in a proposed export terminal in Georgia that is awaiting regulatory approval. "These are large business development projects that take several years of construction and several years of business development and engineering design."[49]

The Times concluded that "the United States can offer little hope for Europeans eager to diversify their gas sources as Russia occupies Crimea and may threaten other parts of eastern Ukraine."[50]

The bottom line: rushing to approve more LNG export terminals would provide no short term relief for embattled Ukraine.

There is another option that could more quickly provide some relief. Ukraine wastes huge amounts of energy. It is the second least energy efficient economy based on the consumption of fuels per unit of GDP, according to the Enerdata "Global Energy Statistical Yearbook 2013."[51]

A report by the International Energy Agency, "Ukraine 2012," described the nation as one with "high energy intensity and poor efficiency."[52] It found that

> Energy-intensive industries are crippled by ageing capital stock throughout the energy supply chain. District heating systems that supply half of the heat used in industry and space heating to some 55% of households are in dire need of refurbishment…The building stock is poor quality. Attracting investments to modernise assets and improve energy efficiency is a key challenge.[53]

Carl Pope, former chair of Sierra Club, recently proposed that the U.S. should assist Ukraine with the reduction of wasted energy rather than speed the approval of LNG terminals.

> Help Ukraine slash its outlandish waste of imported gas. Ukraine uses four times as much energy for every unit of value produced as Germany does…Becoming as efficient as Poland would effectively cut the cost of gas in Ukraine by two-thirds.[54]

The "Ukraine 2012" report recommended this approach two years ago, long before the latest threat from Russia.

> More emphasis on efficiency and demand-side measures, where the potential savings are large and could be achieved at relatively low cost – certainly in comparison with building new energy production and delivery assets – would help to reduce import dependence, mitigate the impact of rising energy prices and develop a service portion of the economy that can create jobs and stimulate growth.[55]

The U.S. Agency for International Development (USAID) launched the "Municipal Heating Reform Project," (MHR) in 2009, which is designed to accomplish these goals.[56] The project "selected 38 cities...for the implementation of project activities and energy efficiency demonstration projects."[57] There were efforts in these cities to conduct

> Municipal energy assessments, development of municipal energy plans, development of legal and technical specifications for metering equipment, implementation of energy efficient technologies, and monitoring results.[58]

By 2013 the project achieved substantial results. For instance, through 2012 "on average, the implementation of heat metering and control systems resulted in 18.7 % savings," according to an Alliance to Save Energy draft report.[59]

Engility, a USAID contractor on the MHR project, noted that it leveraged USAID's investment to achieve the following significant energy, financial, and pollution savings, including:

- 380 million cubic meters of natural gas saved;
- $225 million leveraged for energy efficiency projects;
- 676,000 tons CO2 emissions reduction;
- Independent Communal Services Regulatory Authority established;
- 25 Municipal Energy Plans with appropriate local budget support;
- 5 Regional Training Centers established;
- 34 energy efficiency/improved heating demonstration projects;
- 3,160 people (including 1,760 women) directly trained in Energy Efficiency subjects; and,
- 540,000 people directly positively affected by project EE-related activities.[60]

The MHR project was relatively inexpensive. The first three years cost a total of $15 million.[61] It received another $13.5 million in September 2013.[62] This small investment has significant benefits.

Rather than eliminate or truncate reviews of proposed LNG export facilities, the U.S. could help Ukraine launch a massive mobilization to retrofit its apartment and government buildings to slash energy waste. This could include replacement of inefficient furnaces and compressors with highly efficient American made models. This would reduce Ukrainian purchases of Russian gas,

and create jobs both in Ukraine and the U.S. And like Rep. Rangel's pipeline repair bill, these efforts would cut harmful methane emissions that worsen climate change.

CONCLUSION

The huge increase in domestic shale gas production provides many benefits to the United States, including a home grown, cleaner cheaper fuel for electricity generation, and more jobs in the oil and gas industry. We must also ensure that there are strict enforceable limits on the emission of methane and other air and water pollution produced from the production, transmission and combustion of natural gas.

Likewise, the approval of additional LNG export applications should occur only if they do not cause electricity price spikes that would harm families and business budgets, or impair the recent manufacturing renaissance. And such exports must help reduce – rather than increase – climate pollution. The cheapest, fastest, most economically beneficial method to meet energy needs in the U.S. or Ukraine is to launch massive energy efficiency programs to capture fugitive methane, plug leaky pipes, reduce building energy use, and reduce other sources of waste. This would provide much quicker assistance to Ukraine than eliminating public interest reviews of future LNG export projects.

[1] Energy Information Administration, "In the News: Natural gas consumption sets winter record, with residential/commercial sectors surpassing 50% share," Natural Gas Weekly Update, April 3, 2014, available at http://www.eia.gov/naturalgas/weekly/#jm-trends.
[2] Energy Information Administration, "Technology drives natural gas production growth from shale gas formations," Today in Energy, July 12, 2011, available at http://www.eia.gov/todayinenergy/detail.cfm?id=2170.
[3] U.S. Department of Energy, "How to Obtain Authorization to Import and/or Export Natural Gas and LNG," available at http://energy.gov/fe/services/natural-gas-regulation/how-obtain-authorization-import-andor-export-natural-gas-and-lng#LNG (last accessed April 2014).
[4] Ibid.
[5] Energy Information Administration, *Natural Gas Import/Export Regulation*, (U.S. Department of Energy, 2011), available at http://www.usea.org/sites/default/files/event-file/511/Anderson_DOE_LNG_Exports.pdf.
[6] Paula Gant, "The Department of Energy's Program Regulating Liquefied Natural Gas Export Applications," Testimony before the House Subcommittee on Energy and Power, March 25, 2014, available at http://docs.house.gov/meetings/IF/IF03/20140325/101953/HHRG-113-IF03-Wstate-GantP-20140325-U1.pdf.
[7] Edward McAllister and Ayesha Roscoe, "U.S. regulators approve Cheniere LNG export plant," Reuters, April 16, 2012, available at http://www.reuters.com/article/2012/04/16/us-cheniere-sabine-idUSBRE83F1AI20120416.
[8] Cheniere, "Sabine Liquefaction Project Schedule," available at http://www.cheniere.com/sabine_liquefaction/project_schedule.shtml (last accessed April 2014).
[9] U.S. Department of Energy, "Applications Received by DOE/FE to Export Domestically Produced LNG from the Lower-48 States (as of March 24, 2014)," available at http://www.energy.gov/sites/prod/files/2014/03/f13/Summary%20of%20LNG%20Export%20Applications.pdf.
[10] Energy Information Administration, "Natural Gas Supply, Disposition, and Prices, Reference case," available at http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2013ER&subject=8-AEO2013ER&table=13-AEO2013ER&region=0-0&cases=early2013-d102312a (last accessed April 2014).
[11] Ibid.
[12] Ibid.
[13] Ibid.
[14] Ibid.
[15] Energy Information Administration, *Effect of Increased Natural Gas Exports on Domestic Energy Markets*, (U.S. Department of Energy, January 2012), available at http://www.eia.gov/analysis/requests/fe/pdf/fe_lng.pdf
[16] Energy Information Administration, "Lower residential energy use reduces home energy expenditures as share of household income," Today in Energy, April 18, 2013, available at http://www.eia.gov/todayinenergy/detail.cfm?id=10891.
[17] Ibid.
[18] Collin Eaton, "Report: Cheap gas will fuel US manufacturing job surge through 2020," Fuel Fix, March 20, 2014, available at http://fuelfix.com/blog/2014/03/20/cheap-gas-critical-to-u-s-manufacturing-surge-through-2020/.
[19] Energy Information Administration, "Natural Gas Supply, Disposition, and Prices, Reference case,"
[20] Ibid.
[21] Ken Ditzel, Jeff Plewes, Bob Broxson, "US Manufacturing and LNG Exports: Economic Contributions to the US Economy and Impacts on US Natural Gas Prices," prepared for The Dow Chemical Company, (Washington: Charles River Associates, 2013), available at http://www.crai.com/uploadedFiles/Publications/CRA_LNG_Study_Feb2013.pdf.
[22] NERA Economic Consulting, "Macroeconomic Impacts of LNG Exports from the United States," prepared for the U.S. Department of Energy, (Washington: NERA, 2012) available at http://energy.gov/sites/prod/files/2013/04/f0/nera_lng_report.pdf.
[23] Ibid.
[24] Intergovernmental Panel on Climate Change, "Fifth Assessment Report (AR5)", available at http://www.ipcc.ch/index.htm#.U0QQ7GbD-70 (last accessed April 2014).
[25] Intergovernmental Panel on Climate Change, "IPCC WGII AR5 Summary for Policymakers," (IPCC Secretariat: Geneva, 2014) available at http://ipcc-wg2.gov/AR5/images/uploads/IPCC_WG2AR5_SPM_Approved.pdf.
[26] Justin Gillis, "Panel's Warning on Climate Risk: Worst Is Yet to Come," New York Times, March 31, 2014, available at http://www.nytimes.com/2014/04/01/science/earth/climate.html.

[27] Daniel J. Weiss and Siri Manning, "2013: Extreme Weather, Extreme Damage" Center for American Progress, March 27, 2014, available at http://www.americanprogress.org/issues/green/news/2014/03/27/86532/2013-extreme-weather-extreme-damage/.
[28] Ibid.
[29] The White House, "Climate Action Plan: Strategy to Reduce Methane Emissions," (2014), available at http://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf.
[30] Ibid.
[31] Intergovernmental Panel on Climate Change, "Anthropogenic and Natural Radiative Forcing," In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,* (Cambridge and New York: Cambridge University Press, 2013) available at http://www.climatechange2013.org/images/report/WG1AR5_Chapter08_FINAL.pdf.
[32] The White House, "Climate Action Plan: Strategy to Reduce Methane Emissions."
[33] Ibid.
[34] Jim Day, "EPA raises greenhouse issue in FERC reviews of LNG export terminals," IHS The Energy Daily, April 4, 2014, available at http://www.theenergydaily.com/publications/ed/10905.html.
[35] The White House, "Climate Action Plan: Strategy to Reduce Methane Emissions."
[36] Sen. Edward Markey, "America Pays for Gas Leaks," Report prepared for Sen. Edward Markey, August 1, 2013 available at http://www.markey.senate.gov/documents/markey_lost_gas_report.pdf.
[37] Ibid.
[38] Pipeline Modernization and Consumer Protection Act, H.R. 4388, 113th Cong., 2d sess. (March 27, 2014), available at http://beta.congress.gov/113/bills/hr4338/BILLS-113hr4338ih.pdf.
[39] Ibid.
[40] Pipeline Revolving Fund and Job Creation Act, H.R. 4339, 113th Cong., 2d sess. (March 27, 2014), available at http://beta.congress.gov/113/bills/hr4339/BILLS-113hr4339ih.pdf.
[41] Ibid.
[42] Energy Information Administration, "Ukraine," available at http://www.eia.gov/countries/country-data.cfm?fips=UP (last accessed April 2014).
[43] "Ukraine misses Gazprom's deadline to pay gas debt," BBC News, April 7, 2014, available at http://www.bbc.com/news/business-26930998.
[44] Steven Mufson, "Can U.S. natural gas rescue Ukraine from Russia?" Washington Post, March 25, 2014, available at http://www.washingtonpost.com/blogs/wonkblog/wp/2014/03/25/can-u-s-natural-gas-rescue-ukraine-from-russia/.
[45] Ayesha Rascoe, "U.S. lawmakers mull speedier gas exports to help Ukraine, Europe," Reuters, March 25, 2014, available at http://www.reuters.com/article/2014/03/25/us-usa-lng-congress-idUSBREA2O08Z20140325.
[46] Cheniere, "Sabine Liquefaction Project Schedule,"
[47] Clifford Krauss, "U.S. Gas Tantalizes Europe, but It's Not a Quick Fix," New York Times, April 7, 2014, available at http://www.nytimes.com/2014/04/08/business/energy-environment/us-gas-tantalizes-europe-but-its-not-a-quick-fix.html?_r=0.
[48] Steven Mufson, "Can U.S. natural gas rescue Ukraine from Russia?"
[49] Clifford Krauss, "U.S. Gas Tantalizes Europe, but It's Not a Quick Fix,"
[50] Ibid.
[51] Enerdata, "Energy intensity of GDP at constant purchasing power parities," Global Energy Statistical Yearbook 2013, available at http://yearbook.enerdata.net/energy-intensity-GDP-by-region.html (last accessed April 2014).
[52] International Energy Agency, "Ukraine 2012," (Paris: International Energy Agency, 2012) available at http://www.iea.org/publications/freepublications/publication/name,33305,en.html.
[53] Ibid.
[54] Carl Pope, "To Hurt Putin, Keep U.S. Gas at Home," Bloomberg View, March 17, 2014, available at http://www.bloombergview.com/articles/2014-03-17/to-hurt-putin-keep-u-s-gas-at-home.
[55] International Energy Agency, "Ukraine 2012,"
[56] "USAID Marks Four Years of Success in Improving Municipal Energy Efficiency in Ukraine," (2014), available at http://ukraine.usembassy.gov/events/usaid-heating-project.html.
[57] Ibid.
[58] Ibid.
[59] Alliance to Save Energy and the International Resource Group, "Ukraine Municipal Heat Reform Project, Energy Monitoring Report For Heating Season 2010-2011: Implementation Of Heat Metering And Weather-Based Control Systems (Draft)," prepared for USAID (2011).

[60] Engility, "Municipal Energy Reform Project (MERP) - Ukraine," available at http://www.engilitycorp.com/files/8613/8669/8425/ENERGY_-_MERP_Rev.pdf.
[61] A. Delgado and M. Evans, "Inventory of U.S.-led International Activities on Building Energy Efficiency," prepared for U.S. Department of Energy, (Richland, WA: Pacific Northwest National Laboratory, 2010) available at http://www.pnl.gov/main/publications/external/technical_reports/pnnl-19467.pdf.
[62] Engility, "Municipal Energy Reform Project (MERP) - Ukraine,"

Chairman NUNES. Thank you, Mr. Weiss.

Ms. Ladislaw is now recognized for 5 minutes.

STATEMENT OF SARAH LADISLAW, DIRECTOR AND SENIOR FELLOW, ENERGY AND NATIONAL SECURITY PROGRAM, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES

Ms. LADISLAW. Thank you.

Good afternoon, Chairman Nunes, Ranking Member Rangel, and Members of the Committee. My name is Sarah Ladislaw. I am the director of the energy program at the Center for Strategic and International Studies.

Thank you for the opportunity to testify today on the trade implications of U.S. energy policy and the exports of liquefied natural gas. It is an honor to appear before the subcommittee and address this timely topic.

I will focus my remarks this afternoon on the geopolitical impacts of the surge in U.S. natural gas production and the prospects for U.S. LNG exports to enhance global energy security.

The extraordinary pace and scale of U.S. natural gas production has managed to surprise even the most seasoned energy observers. As recently as the early 2000s, U.S. natural gas production was declining and the country was projected to grow its reliance on imports.

Today U.S. dry gas production is the highest it has ever been and the United States is projected to be a net exporter of natural gas by the end of the decade, largely thanks to the production of shale gas.

This surge in U.S. natural gas production and the resulting future LNG exports are likely to have profound impacts on the United States and for global markets. These impacts could be summarized in four broad categories: An energy policy reconsideration, competitiveness issues, perceptions of leverage, and resource optimism.

First, the ultimate impact of the unconventional gas on global markets and geopolitics depends not just on the U.S., but, also, on other policy decisions other countries make. To date, the production of shale gas has been limited mostly to the United States and, to a lesser degree, Canada.

But other countries have significant conventional and shale gas potential. Other countries are starting to explore their own shale gas resource space and evaluate investment, policy, and other logistical options for commercial production and consider what potential they have for better—what the potential for better supplied markets means for their energy strategy.

How other countries respond will have a significant impact on the extent and scope of the geopolitics of energy trade.

Second, on the domestic front, energy has been a bright spot in an otherwise uneven economic recovery. Cheap and abundant natural gas has boosted the U.S. economy, making export-oriented industries with high energy costs more competitive on the global market.

Unconventional natural gas has also created jobs and contributed to changes underway in the electric power markets and other industries, as well as helped the United States reduce greenhouse

gas emissions, along with lower demand and energy efficiency improvements.

North America is currently among the most attractive and competitive places in the world to locate and invest in energy-intensive endeavors. This boost in relative U.S. economic competitiveness is not lost on other countries with whom we are carrying out trade negotiations, many of whom exist in parts of the world with much higher natural gas prices.

Third, by taking itself out of the LNG import picture, the United States has freed up supplies of LNG and even pipeline gas from Canada to go elsewhere and traditional U.S. suppliers are increasingly servicing other markets.

This is a positive development for global gas consumers because the anticipation of extra supplies has given previously captive natural gas buyers additional leverage in negotiations for long-term supply contracts. This has been particularly true in Europe, but, also, evidenced in Asia.

Fourth, much has been said about the United States' new energy posture and the shift in mindset from one of energy scarcity to one of energy abundance. While the new U.S. production is indeed remarkable, it does not necessarily translate into an era of global energy abundance.

Perhaps a more appropriate term for the shifting global mindset is "resource optimism," the idea that more resources can be found when and if the right technology, price, and market conditions occur.

Resource optimism has a number of important implications. From a climate change standpoint, the question now becomes about how to reduce emissions in the face of a more promising future for oil and gas.

From an oil and gas producer country standpoint, the global landscape in competition for capital looks more difficult.

From a technological standpoint, there is renewed interest in how to cultivate new applications to extend the current production surge, make it safer and more sustainable, or build towards the next great technological advancement.

Finally, while the outlook for oil and natural gas production is much more optimistic, it still takes a great deal of time, large-scale investment, including infrastructure, coordination, and policy certainty to deliver resources to market. And as the United States learned with the propane shortages of this past winter, even abundant supplies don't guarantee the absence of supply disruptions and price hikes.

One final point about energy trade and foreign policy. There has been a lot of recent interest about whether or not U.S. LNG exports can or will be the source of greater foreign policy leverage or influence. It is important to recognize that the impact of unconventional gas and the future impact of U.S. LNG exports is diffuse and market driven and not easily controlled from Washington.

The decision to export gas is ultimately made and carried out by companies, though the U.S. Government does play a role in evaluating and permitting export facilities across a range of factors, and has less to do with foreign policy priorities of the government than commercial opportunities and relative prices.

In general, the question is about whether we use our new resources—natural gas, but, also, oil—for the purposes of leverage or stability. Leveraging energy trade for very specific or near-term foreign policy aims is likely to overestimate what we are able to achieve, but pursuing U.S. LNG exports can help foster our broader foreign policy goals.

LNG exports are consistent with longstanding U.S. energy and trade policies of promoting freer markets and a diversity of supply, which will, in turn, help make energy markets more competitive, diverse, and stable.

Thank you for your time and the opportunity to address the subcommittee. I look forward to your questions.

[The prepared statement of Miss Ladislaw follows:]

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Statement before the House Ways and Means Subcommittee on Trade

"TRADE IMPLICATIONS OF U.S. ENERGY POLICY AND THE EXPORT OF LIQUEFIED NATURAL GAS"

A Statement by

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Good afternoon Chairman Nunes, Ranking Member Rangel, and members of the Committee. Thank you for the opportunity to testify today on the trade implications on liquefied natural gas (LNG) exports. It is an honor to appear before the Subcommittee and address this timely topic. I would like to focus my remarks this afternoon on the geopolitical impacts of the U.S. entry into the global LNG market, and the prospects for U.S. LNG exports to enhance global energy security. For the purpose of brevity I will limit my remarks to the natural gas related impacts and not discuss the equally impressive tight oil production phenomenon in the United States.

The extraordinary pace and scale of U.S. natural gas production has managed to surprise even seasoned energy observers. As recently as 2005, U.S. natural gas production was declining. The U.S. Energy Information Administration (EIA) then projected that the United States would need to import 7.89 trillion cubic feet (tcf) of gas in 2020 (or 26 percent of total consumption in 2020) just to keep up with rising demand. In 2005, there were 32 LNG *import* applications before the Department of Energy. Today, due to the ingenuity of American industry and the right market conditions, we are faced with ample supplies of natural gas.

EIA projects that shale gas alone will account for about 40 percent of all U.S. gas production this year and that share is expected to rise to over 53 percent by 2040.[1] EIA has been consistently revising its production estimates upwards—between last year and this year, natural gas production estimates have risen 11 percent -- and currently projects that the U.S. will be a net natural gas exporter by 2018. As a consequence of the newfound resource abundance, natural gas prices in the United States have plummeted from $13 per million British thermal units (Mmbtu) in 2008 to around $4.30/Mmbtu today. Similarly the U.S. natural gas reserve numbers and technically recoverable resource base keep expanding. Today the U.S. Department of Energy has 24 applications for export to non-Free Trade Agreement countries, 7 of which have been approved.[2]

Few doubt that unconventional gas resources will continue to shape energy markets in new and important ways beyond what has already occurred, but the ultimate scope and pace of change remains unclear. It is important to keep in mind that significant uncertainty remains, especially about the production potential beyond North America. The rapid onset of this trend in North America and the unknown nature of its future elsewhere make assessing the long-term geopolitical impacts of this resource a challenging and uncertain task.

Still, amidst the uncertainty, we can say with confidence that the unconventional gas boom and resulting future LNG exports are likely to have profound impacts for the United States and for global markets. These impacts can be summarized in four broad categories: energy policy reconsideration, competitiveness issues, perceptions of leverage, and resource optimism.

First, the ultimate impact of unconventional gas on global markets and geopolitics depends not just on the U.S. but also on what policy decisions other countries make. The new technological

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[1] All unconventional gas (tight gas, shale, and coalbed methane) accounts for two-thirds of U.S. gas production this year and that share is expected to rise to over 80 percent by 2040.

[2] DOE Office of Fossil Energy LNG Export Application Summary
http://energy.gov/sites/prod/files/2014/03/f13/Summary%20of%20LNG%20Export%20Applications.pdf

applications utilized in the shale gas plays in the United States have the potential to spread beyond North America and increase gas supplies globally. A recent world hydrocarbon resource study by the EIA and Advanced Resources International estimates global shale gas resources at 7,299 tcf—an astronomical number, especially compared with estimates just a few years ago. The study notes that shale gas resources contribute an impressive 30 percent to overall known natural gas resources. Remarkably, the United States places fourth on the list of world shale gas resource holders, behind China, Argentina, and Algeria. To date, the production of shale gas has been limited mostly to the United States and to a lesser degree Canada. Other countries are starting to explore their own resource base, evaluate commercial, policy, and logistical options for commercial production, and consider what the potential for better supplied gas markets means for their energy strategy. How other countries respond will have a significant impact on the extent and scope of the geopolitics of energy trade.

Second, on the domestic front, energy in general, natural gas in particular, has been a bright spot in an otherwise uneven economic recovery. Cheap and abundant natural gas has boosted the U.S. economy, making export-oriented industries with high energy costs more competitive on the global market. Unconventional natural gas has also created thousands of jobs and contributed to the sea change underway in the electric and other industries, as well as helped the United States reduce greenhouse gas emissions (along with lower demand and energy efficiency improvements). North America is currently among the most attractive and competitive places in the world to locate energy-intensive endeavors. This boost in relative U.S. competitiveness is not lost on countries with whom we are carrying out trade negotiations, many of whom exist in parts of the world with much higher natural gas prices.

Third, by taking itself out of the LNG import picture, the United States has freed up supplies of LNG to go elsewhere—and traditional U.S. suppliers are increasingly servicing other markets. The shale gas supplies from the Marcellus alone equal the entire natural gas export capacity of Qatar, the world's second largest natural gas exporter in 2012. New natural gas production is also backing out traditional Canadian pipeline imports to the U.S., which has in turn spurred plans for several LNG export projects from Canada. This surge in production is a positive development for global gas consumers because the anticipation of extra supplies has given previously captive natural gas buyers additional leverage in negotiations for long-term gas supply contracts. This contract flexibility may be limited depending on circumstance, domestic market structures, and other market forces, but it is already apparent. For example, Russian natural gas exporter Gazprom's willingness to lower gas contract prices and loosen the oil-linked structure is often linked with the threat of additional LNG supplies to Europe from other countries—but this was one factor among many, including other market players' decisions to change their contract structure for selling gas into European markets, weak European demand, and European efforts to reform their internal energy policy related to gas and electricity markets through the EU's third energy reform package. I am not trying to diminish the role that the availability—or future availability—of U.S. LNG plays in helping shift market dynamics, but it is one factor among many. While the potential for U.S. LNG has helped Europe, the impact on Asian markets is less immediately clear.

Fourth, much has been said about the United States new energy posture and the shift in mindset from one of energy scarcity to energy abundance. While the new U.S. production is indeed remarkable, it does not necessarily translate into an era of global energy abundance. Perhaps, a more appropriate term for the shifting global mindset is *resource optimism* – the idea that more resources can be found when and if the right technology, price, and market conditions occur. Resource optimism has a number of important implications. From a climate change standpoint the question now becomes about how to reduce emissions in the face of a more promising future for oil and natural gas. From an oil and gas producer country standpoint the global landscape in competition for capital looks more difficult. From a technological standpoint there is renewed interest in how to cultivate new applications to extend the current production surge, make it safer and more sustainable, or build towards the next great advancement. Finally, while the outlook for oil and natural gas production is much more optimistic, it still takes a great deal of time, large-scale investments including infrastructure, coordination, and policy certainty to deliver resources to market. And as the United States learned with the propane shortages this past winter, even abundant supplies don't guarantee absence of supply disruptions and price spikes.[3]

One final point about energy, trade, and foreign policy. There has been a lot of recent interest about whether U.S. LNG exports can or will be a source of greater foreign policy leverage or influence. It is important to recognize that the impact of unconventional gas—and the future impact of U.S. LNG exports—is diffuse and market-driven, and not easily controlled from Washington. The decision to export gas is ultimately made and carried out by companies, though the U.S. government plays a role in permitting the export facilities, and has less to do with the foreign policy priorities of the government than commercial opportunities and relative prices. In general, the question is about whether we use our new resources—natural gas, but also oil—for purposes of leverage or stability. Leveraging energy trade for specific or near-term foreign policy aims is likely to overestimate what we are able to achieve.

Pursuing U.S. LNG exports can help foster our broader foreign policy goals, however. LNG exports are consistent with a longstanding U.S. energy and trade policies of promoting freer markets and a diversity of supply, which in turn will help make energy markets more competitive, diverse, and stable.

Thank you for your time and the opportunity to address the Subcommittee. I look forward to your questions.

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[3] Infrastructure build-out takes time and seasonal/operational issues will arise as delivery system continues to evolve.

Chairman NUNES. Thank you, Ms. Ladislaw.

At this time I will postpone my questioning and I will yield 5 minutes to the gentleman from Washington, Mr. Reichert.

Mr. REICHERT. I appreciate that, Mr. Chairman. Thank you.

Mr. Klaben, I found your testimony about the role that LNG export facilities can play in helping to address domestic infrastructure limitations and how this is related to LNG innovation particularly interesting because, in Washington State, there is a growing interest in LNG-powered vessels and there is a great potential for growth, we think, in this industry.

Could you explain, please, in more detail how the lack of liquefaction facilities is hindering the ability of the United States to develop and deploy LNG-powered vehicles and vessels that can be used in many different areas.

And then, secondly, how will growing U.S. exports of LNG help to address these domestic infrastructure limitations?

Mr. KLABEN. Yes. Thank you, Representative Reichert.

So, first, as to the question of the supply constraints in the United States on liquefied natural gas, which is simply natural gas taken to its liquid form, we have a lot of natural gas available in the United States, but we do not have a lot of liquefied natural gas available in the United States.

There is a lack of infrastructure to take this clean-burning, abundant domestic resource and use it in a variety of applications domestically, which can help environmentally, first, because natural gas gives off far less pollutants, including CO2, than other sources, like diesel.

But, further, just in terms of energy security, tapping into our natural gas resources for transportation purposes is very positive.

So today a lot of people are waiting to see whether the commitment is there in industry and among investors to make the plays to build the infrastructure, and this is slowing down the build-out of the necessary infrastructure plants that would liquify natural gas for use domestically.

We see it moving forward in some locations. For example, my company is participating today in liquefaction plants in Colorado and in Eagle Ford Shale in Texas for domestic applications.

A lot of this is actually powering drill rigs for shale gas so that they are using cleaner-burning domestic natural gas for their fuel uses instead of burning diesel, for example.

But there is—the lack of supply of the LNG is, in fact, slowing down the ability to use LNG for transportation, whether it is locomotives or vessels that—oceangoing vessels or water vessels or even trucks. High-fuel-consuming vehicles for which the only real solution, if they are going to use natural gas, is liquefied natural gas. So, yes, there is a limitation.

And the second part of your question, Representative Reichert, was how could export terminals help this domestic need.

And I think the answer to that is twofold. The export terminals really are destined primarily for—export prices for LNG generally are higher outside the United States than they are inside the United States.

We believe that market forces over time are going to lead to—if you look at the studies, the international prices are projected to come down over time as more production comes on scale.

But when the infrastructure exists, this is infrastructure on our continent, which is plugged right in here to the local gas supply that can easily be used to provide local needs as well. In fact, we see this in at least one terminal where there is suggestion about taking part of the off-take and using it for workboats in the Gulf of Mexico.

But, beyond that, this environment of investment that I talked about is really important. Investors are fickle people. This is privately funded infrastructure. When they see a commitment to LNG going forward, it helps them make more confidence to put in place their infrastructure for domestic plays as well.

And we think there is going to be a positive follow-on effect for that, which will give us more of this LNG resource for high-fuel-consuming vehicles right here in the United States.

Mr. REICHERT. I appreciate that.

Just real quickly, follow up with a more general trade question. I think the answer is obvious. Let's hear it.

About your company, I noticed in your testimony 44 percent of your products manufactured in the United States are exported to other countries.

How important is an aggressive trade liberalization agenda to your company and to your plans for expansion in the United States?

Mr. KLABEN. It is highly important. Some of that is LNG products or equipment for LNG that we are exporting to places like China.

China is one of our biggest markets for buying U.S. LNG equipment. Because they get it in China. They are using their local resources to liquefy their natural gas and use it to reduce the pollution in their country.

But we also manufacture a lot of other equipment for other markets. For example, we manufacture medical oxygen equipment. And if there is a normalization or a reduction in trade barriers going into Europe, it is a huge market for our U.S.-manufactured medical oxygen equipment.

So it is highly important to us and other U.S.-based manufacturers.

Mr. REICHERT. Thank you, Mr. Chairman.

Chairman NUNES. Thank you, Mr. Reichert.

At this time I would like to introduce the ranking member for 5 minutes.

Mr. RANGEL. Thank you, Mr. Chairman.

Is there any member of the panel that believes that the President's authority is too rigid as relates to getting licenses to export liquid gas?

Is there any reason to change the existing law as relates to the President's authority to pass on the question as to whether or not the export is consistent with our national interest?

Mr. WEISS. Mr. Rangel, I believe that the law is adequate as is, does not need to be changed. What I propose is some different or more detailed criteria that applications need to meet in terms of its

impact on price, manufacturing jobs, climate change, and is this the fastest, cheapest way to secure more natural gas.

Mr. RANGEL. Well, I agree with you.

But I am asking the panel or the people who disagree with you and believe that there should be changes in the existing law as relates to the Department of Energy.

Mr. Klaben.

Mr. KLABEN. Yes. I would be happy to comment on that, Representative Rangel.

I think whatever the law is, we need to be cautious about putting discretion in the hands of people who may exercise it in ways that aren't taking all the factors into account.

Mr. RANGEL. I don't think we are talking about people, Mr. Klaben. We are talking about the President of the United States.

Mr. KLABEN. Thank you, Representative Rangel.

So I think a system that provides for more assurance that these things will be given a fair shot up or down——

Mr. RANGEL. Let me ask you, Mr. Klaben: Have you got any evidence at all that the President's authority has prevented anyone from getting a license?

Mr. KLABEN. I——

Mr. RANGEL. No.

Mr. KLABEN. I am looking at it. From what I know, I am not an expert——

Mr. RANGEL. I am assuming the answer is "no." If you come up with a "yes," then I want to tell the administration that they misled me. So we will keep it open.

But having said that, if I were right and we are trying to work our way through it—as Mr. Weiss says, there are up and downs in everything. There are trade agreements. This is a pretty good hand that has been dealt us.

But, like any hand, it depends on who you are negotiating with, what they need, what they want, what we need. And, of course, we have to stay within the restrictions of the WTO.

But when you are negotiating, you are negotiating. Right?

So I just want to know—of course you have to be careful when you give authority to the executive branch. No one knows that better than the Congress.

But do you have any reason to believe that that authority has been abused or not used in a way that most Americans would want it used, and that is that it takes a pretty good reason to deny someone a license to export?

Mr. KLABEN. As I understand it, this is a $50 application for this license and, yet, it is taking months upon months or years to move forward. That does seem inconsistent with——

Mr. RANGEL. But you don't have anything wrong with the reg. You have wrong with the implementation, the regulatory issues, which a lot of us do.

But you are not here to change the law. Is that correct?

Mr. KLABEN. I don't know enough about the bill that has been proposed to be able to comment intelligently on it. I think things that would help it move forward more on a streamlined basis would be good for everyone.

Mr. RANGEL. I agree with you. Always—there is always room for improvement.

So everyone is happy with the President and existing regulatory law, and you hope that we make certain that it is in the interest of the people, our homeowners, our manufacturers, and our national interests. And I agree with that.

So I yield back the balance of my time.

Chairman NUNES. I thank the gentleman.

And I think the point is, Mr. Rangel, that—this is not a hearing on a bill, on legislation. But I think the issue is that there are several dozen permits that are taking a long time to get permitted. And I think that——

Mr. RANGEL. We can speed that up, as long as we are not legislating. I will join with you in all that I can do, Mr. Chairman, in making certain we expedite these applications.

Chairman NUNES. Thank you, Mr. Rangel.

With that, I will recognize Mr. Buchanan for 5 minutes.

Mr. BUCHANAN. Thank you, Mr. Chairman.

I just happened to be at a town hall yesterday and it came up about natural gas, and you hear different stories. But, you know, as our economy limps along at 2 or 3 percent, we are going backwards, in theory.

We need to find a way to move it 4 or 5 percent, in my mind, like we did in the 1990s. I think a lot of that was technology driven. My sense of it is that natural gas could be that silver bullet in terms of an opportunity going forward.

But I do want to get your thoughts on some of this in terms of the bigger picture. So let me start with you, Ms. Ladislaw.

In terms of looking at it in the bigger picture, how much, in terms of reserves, do we have in the country? I hear different numbers. I don't know there is an exact number, but I hear 100 years. Is that a possibility?

And I guess it probably depends on technology and getting at it, environmentally sensitive—getting that from an environmentally sensitive standpoint.

But what is your thought on that issue in terms of the reserves we have in the U.S.? And then maybe you can comment on Canada as well.

Ms. LADISLAW. Yes. I am going to try really hard not to get wonky on you too fast.

But, you know, reserves——

Mr. BUCHANAN. Just in general. Because I have got a few other questions. I am trying to get the big picture in 5 minutes.

Ms. LADISLAW. Yes.

The long story short, in about 5 years, we have discovered we have got a heck of a lot of gas. The best price control we have got is——

Mr. BUCHANAN. Is that 100 years? Have you heard that?

Ms. LADISLAW. Yes. If you take sort of—there is reserves, which we have got—you know, I think the number is now up to sort of 300 tcf or so. If you look at sort of total in-place resources, it is about 700.

When you look at some of the——

Mr. BUCHANAN. 700 what?

Ms. LADISLAW. 700 trillion cubic feet.

Mr. BUCHANAN. Okay.

Ms. LADISLAW. So when you look at sort of the more sort of outward-size numbers about where we could produce, what is in the ground, maybe not economic today, but could be in the future, the numbers get shocking. They are very, very high.

Mr. BUCHANAN. So let's just say there is 100 years, possibly, or somewhere in that ball park, maybe more. How big is the market potential in the U.S. and abroad? I mean, I am just trying get your sense of it. And if you can distill it down, I would appreciate it.

Ms. LADISLAW. The market potential in the United States is very large. It is really only sort of constrained by how much we are growing. Right? We are not growing as fast as a lot of other places in the world.

Mr. BUCHANAN. When you look at the U.S. and abroad, how big is that market potential? Do you have—I know you don't probably have a number—an absolute number. I am just trying to get a sense from your standpoint.

Ms. LADISLAW. Well, natural gas is one of the fastest growing fuels out there. Right?

So, for example, one of the big questions now is, if you have got all of these gas supplies and you have got China growing the way that they do, with the dependence on coal that they do have, and India and some other places around the world—the question is how much of that can be displaced by this natural gas. So——

Mr. BUCHANAN. From a competitive standpoint, in terms of other countries, in terms of trade, how many competitors do we have that are serious competitors in terms of natural gas?

Ms. LADISLAW. For consumption.

Mr. BUCHANAN. Yes.

Ms. LADISLAW. Probably a handful of regions.

Mr. BUCHANAN. Ms. Hawley, I just want to—you had a very impressive—just kind of the numbers you went through. I haven't heard those numbers. I am from Florida. We have 14 ports in Florida. So we would like to get some of that business at some point.

But let me just—what's your thoughts on it? I mean, what is your understanding how big the reserves are, how big the market is?

You touched on it, and you mainly talked about Texas. But I—it is impressive, the number of jobs. But I am just thinking in terms of the country, the opportunities there.

Ms. HAWLEY. Thank you.

Yes. I agree with your number—your outnumber. That is what we hear as well. 100 years is a pretty good benchmark. And I think that is conservative, from what we are hearing.

Your question was whom are the consumers of the——

Mr. BUCHANAN. No. I was looking at who are our competitors of our companies abroad. I mean, is this something where we have got the momentum and we could really be a dominant player in the world?

Ms. HAWLEY. Absolutely.

Mr. BUCHANAN. That is what my sense of it is. But I think it could be a huge advantage that we could have, you know, in the next decade or so.

Ms. HAWLEY. I think the timing is absolutely critical to this play. And I think you hit on an excellent point. Because right now we are underway with a number of these LNG facilities. They have invested, you know, millions and millions of dollars in getting to this point.

So they are really sitting in the catbird seat to be able to capture this export market and, being able to do that, they are already ahead of the competing countries that will be developing their own LNG.

That supports the manufacturing here in the United States. It also supports the natural gases. The LNG supports the manufacturing among our allies.

And there is an enormous price advantage right now—a little bit of a differential between Asia and Europe—in being able to export that. But that is maintained at this point in the market because we have this abundant natural gas.

So to specifically answer your question, yes, this is the moment. These are the few years. And the quicker we can expedite going through a very thorough permitting process, but making sure that we expedite it, we are there.

Mr. BUCHANAN. I guess my point, I will just say quickly, it just seems like the time is now.

Ms. HAWLEY. It is.

Mr. BUCHANAN. It is a great opportunity. It is environmentally friendlier than, you know, what is available out there today, and I think we have got a jump start on it.

I think it could make the difference in our economy growing. We need to get back to 4 and 5 percent. And I think—moving forward in a positive energy basis, I think it is a huge opportunity not just with our market, but in terms of exports.

I'm out of time.

Chairman NUNES. Gentlemen's time has expired.

Mr. BUCHANAN. I will yield back. Thanks.

Chairman NUNES. The gentlelady from Kansas is recognized for 5 minutes.

Ms. JENKINS. Thank you, Mr. Chairman. And thank you for holding this important hearing.

And thank you all for being here.

Ms. Hawley, I understand that the licensing process to build an LNG export facility is expensive and time-consuming. The one estimate I saw said it would cost up to 200- to $300 million to complete the FERC permitting process.

Could you please describe that process and how it ensures that environmental impact is carefully evaluated before construction begins.

And, finally, are there measures, perhaps, that can be taken to make this process more efficient?

Ms. HAWLEY. Thank you. Great question.

Yes. The—the permitting process is thorough. Just in—from the FERC perspective, over 40 different permits are involved in permitting one facility. The process takes years. The ones that we have

been engaged with from the port's perspective has—we have been involved with this for several years, maybe three.

And, actually, it is kind of interesting because that LNG facility 10 years ago was going to be an LNG importer, which is somewhat interesting because that is how they hit the ground in the Corpus Christi area. And the economy has changed so quickly that now they are positioning to be an LNG exporter and well along the way with their permitting.

Many, many agencies take a look at this. The community input is phenomenal. We have had hearing after hearing in the community. The stakeholders in the community, the agencies that are there, are very, very much engaged.

The Coast Guard has been enormous partner with use. The Corps of Engineers has been involved. Just from the port's perspective, we were working with our pilots in designing the ship channel as we extended it to make sure that we had the appropriate turning basins to accommodate the LNG ships.

There are so many pieces that go into making sure that it is safe, making sure that it is environmentally sound. I am just giving you just a couple of little pieces from our perspective.

The EPA weighs in on it. All of the Texas agencies weigh in. I told you about the Coast Guard. The Department of Transportation weighs in. We have so many eyes on it. That is probably the reason the process takes so long.

And one of the questions that had come up during—as I was preparing to visit with you, was about what would you recommend. How would we change this?

And the FERC process is thorough. It needs to be faster. I don't know if it is because we don't have enough employees there addressing this. Maybe we can—you can have parallel paths.

But the process is so incredibly time-consuming and frustrating for those investors who need the stability that, once they make an application, it is going to be an up or down. They can move forward or it is not going to—we had two or three other facilities that were looking at being there.

So it is a very thorough process, very time-consuming. But anything that can be done to streamline that process, expedite that process, not shortcut that process—you can do things parallel—would be a great advantage to not only the industry, but, I think, also, to our balance of trade.

Ms. JENKINS. Okay. That is helpful.

Did you have something to add?

Mr. WEISS. Yes. Thank you.

First, I would note that nearly all, if not all, of the LNG export permits have been granted under the current administration.

Second, the process is not quite as thorough as Ms. Hawley described. Because the Environmental Protection Agency asked FERC if they assessed the impact on climate change of reviewing and citing these permit applications, and FERC has not done so.

And that is pretty important, given particularly these facilities are going to be going—many in coastal areas. They may be subject to sea level rise, storm surge, other things like that.

And, lastly, the—part of the process that the current legislation, as the chairman mentioned at the beginning of the hearing, that

passed the Energy and Commerce Committee today would truncate the DOE National Interest Review, which, as I understand it, only takes about 50 days. It is the FERC part of the process that is very lengthy.

Ms. JENKINS. Ms. Hawley, does that sound correct to you?

Ms. HAWLEY. We certainly took into consideration, as you would imagine, with an $11 billion investment, being in flood plains and, you know, those issues, hurricane-proofing these facilities. So all of that has been weighed—you know, considered in the siting of this facility and in its construction, from our perspective.

And the climate change piece, I don't know about that.

Ms. JENKINS. Okay. Thank you.

I yield back.

Chairman NUNES. Thank you, Ms. Jenkins.

I will now yield 5 minutes to the gentleman from Massachusetts, Mr. Neal.

Mr. NEAL. Thank you very much, Mr. Chairman. And I want to thank you for holding the hearing. It is timely, and I hope we will be able to do a few more of these. The economics of energy supply are always challenging.

But let me speak specifically, since Mr. Buchanan gave me the opening when he talked about the bigger picture, New England. That is part of the bigger picture.

And part of the bigger picture is what happened to heating bills this year in New England. Now, granted, it was a cold winter by any standard. Some might argue it is cold in New England year-round. But there is another compelling fact, and that is what we have gotten through this year.

So let me suggest that the premise is slightly incorrect. And rather than ask the question on whether we should ship this fuel overseas, maybe we should first ask ourselves whether or not all Americans can partake in cheap natural gas. The phenomenon I would hope would be applied to all parts of America's geography.

Now, this is really a good news story. The whole energy story is transformative, if done correctly, and the opportunity here to really embrace what those of us in America have talked about now, since the gas lines of the Nixon years, energy independence, so that we might not send America's sons and daughters off to defend oil.

Instead, what we produce here in America ought to make us not only independent in terms of the economics of the situation, but more independent in terms of some of the positions we have been compelled to take.

But, in New England, the shale gas boom really has not been felt very well. And, in fact, this year, despite all the talk of energy pricing across the country, people in New England this year actually paid more than we have paid in the past.

Now, I understand oil is an international commodity, it is tough to score it in terms of markets, but not to miss the point that domestic production could alleviate some of this opportunity.

So, in New England, capacity is a question, and it may only get worse as natural gas forces other power sources to go offline.

What is interesting here is the impact that natural gas is having on nuclear development and on coal. And those, as all of us would agree, are factors in the marketplace and that opportunity.

But it is reasonable to debate—even if we hear compelling economic arguments, it is reasonable to debate this whole notion of shipping gas thousands of miles overseas to satisfy frequently geopolitical questions after we have made the argument about economic independence based upon not needing this remedy and providing cheap energy to all members of the American family.

So I give it to you, as panelists, to give me your 2 seconds on it, or 2 minutes.

Mr. WEISS. Thank you, Mr. Neal.

There have been three major studies on the impact of increased LNG exports, two by the government, one by Dow, which is an opponent of increased exports.

All three of them found that, under a level of exports of which we are going to exceed with the already-approved facilities, that there be anywhere from a 14 percent to 35 percent increase in natural gas prices.

In other words, we will be taking our gas, sending it overseas. The natural gas companies will make more money because they can get a higher price for it in Europe or even a much higher price in Asia while domestic natural gas prices will rise, which means electricity and heating prices here will rise, as well as harming manufacturing.

So that is very—something to consider, that all three of these major studies, two by the government, one independent, have all found the same thing.

Ms. LADISLAW. You know, I think that we got to keep some stuff in perspective. I mean, the United States, for better or worse, is going through a supply shock, the good parts and the bad. Right?

And so the comment I made about sort of propane shortages, heating oil and heating—and gas—and natural gas costs in the Northeast are part of the story that we are producing gas in places where we didn't think we ever would be and we are needing it in places where, you know, we don't have the infrastructure to get it there.

And so we are an energy-abundant country now not, you know, exporting any LNG, and we are experiencing some situations that raise us questions about sort of the redundancy and the ability of our infrastructure to respond.

We should cut ourselves some slack. This has happened over, like, a 5-year period of time. It is an enormous resource boom, and we are going to feel some of the adjustments from that.

The broader policy question is: What do you do to sort of take advantage of the boom? Do you try and sort of keep, you know, resources here and control prices? We used to have price controls in this country. It didn't go very well. It ends up stymieing supply. Right?

And so the question is how do you perpetuate producers to produce more of this resource, but then, also, for us to make the right infrastructure decisions and the right domestic, you know, decisions with nuclear, coal, the rest of it, to sort of meet our needs at home.

And that is a very complicated conversation for us to have. We are in a far different position than we were. We are not growing as fast. We have a very active debate on where we should be head-

ing in terms of carbon emissions. And we have got a major resource boom that the entire world is looking at and saying, "Gee, how do we replicate?"

There aren't necessarily particularly easy answers. And I think there is going to be a lot of growth pains sort of between here and there.

I would just caution to say that, you know, these sort of percentage increases in the number of—over the price of natural gas have to be taken into context. You know, a 30 percent increase on $3 gas is not very expensive gas. Right? We were paying $13 in MMBTU not too very long ago.

So I think the question is, you know: What is sort of the appropriate range of that price? And how do we allow that investment to take place?

That is a much more nuanced discussion. And I think many people in the private sector get their frustration with our process in saying, "We can't pick the prices. We were the ones building the import facilities. Remember?" So I think they are worried that we will try and over-think it. *RPTS KERR DCMN WILTSIE* [2:30 p.m.]

Chairman NUNES. I think the lady makes great points. The time of the gentleman from Massachusetts, however, has, expired, but thank you for your comments.

At this time I want to introduce the gentleman from Louisiana, Mr. Boustany, for 5 minutes.

Mr. BOUSTANY. Thank you, Mr. Chairman.

I think Ms. Ladislaw went a long way to dispelling some of the statements that Mr. Weiss made earlier. And with the two government studies, they are somewhat dated because things are moving very quickly in this whole area of the shale gas revolution and what is happening with exports.

My district is in coastal Louisiana, and all of this started there, in effect. It is the epicenter of the shale gas revolution from the expertise in doing exploration production around the country to the Henry Hub, where pricing is done, is in my district, as well as the first export facility that is under construction today, having gone through the process with plans to export in late 2015 or early 2016.

We are now on the verge of a major revolution, and this is just the very beginning. It is a new era of energy diplomacy, in effect, which is monumental, unlike anything we have seen in decades.

And part of this is going to entail North American energy integration with Canada, the United States taking a lead in this, and, hopefully, Mexico now with the new reforms coming online, which will open up shale in Mexico, as well as offshore opportunities and onshore opportunities.

Ms. LADISLAW. Okay.

Mr. BOUSTANY. This changes the entire calculation. And, as Ms. Ladislaw mentioned, the geopolitical consequences are immense.

Ms. LADISLAW. Yeah.

Mr. BOUSTANY. The economic consequences for our country are immense. But, also, at the micro-level—I will just give you some basics on this—Lake Charles, Louisiana, which is a city of about

80,000 in Southwest Louisiana, to date, $65 billion in new investment related to natural gas and growing.

I just met with somebody last week who was talking about another couple of billion dollars of potential investment. This means jobs. It means greater energy security. And it fits into our values.

If we move forward on—with exports not only of natural gas, but condensates and liquids as well as, potentially, crude, if circumstances work out, this is going to—this is a game-changer for the United States. And I think it is really important to understand both the microeconomics of this and the macroeconomics.

But there is a lot of interest going on around other countries, from Ukraine—I met with Ukrainian delegations a year ago before all this broke. They were interested in shale exploration as well as the potential for getting exports.

But this is changing the way people think about energy markets, and the impact on pricing has already occurred just because of diversi-—the potential diversification of supply.

And so I would like for Ms. Ladislaw to address that question on what does she think might happen, this suggestion that there will be convergence of pricing, depending on what happens in, you know, in Australia and other areas where there may be potential shale.

We have a time-limited opportunity for U.S. companies to take advantage of this and create U.S. jobs. Do you have a sense of what kind of time we have in this as things evolve, as they are evolving rapidly?

Ms. LADISLAW. Yes. If I can just take a bit of a different tack on the question, I mean, I think for right now the question is—I mean, we have got sort of different natural gas markets. As the gentleman before was mentioning, it is not the same as the oil markets. Right? We don't have the same kind of price convergence.

It has been a longstanding sort of tentative U.S. policy to try and have a global gas market so that we could have that—you know, the flexibility and the security that comes with that kind of system.

There is a lot of argument over whether that is possible in the near term, and there is a lot of discussion about how the real advantage that sort of U.S. LNG exports have, especially the brownfield ones where you have got a facility that was sort of ready-made to be an importer—is that there is a significant economic advantage to sort of being part of that market for the here and now.

The question sort of, you know, beyond 2016, 2020 is how—you know, how competitive will that market be and will we be able to compete in that, and I think that there is a lot of questions about that.

And I think the only really true implication of the delay in permits that we have seen so far, whether you want to change the law or not, is that it takes people longer and longer to see what the impact on market is and to make the decision about whether or not they are going to do a new, you know, LNG export project in Australia or East Africa or, you know, other places around the world.

And so I think the sort of lack of clarity on the U.S. side about, you know, how we are going to be playing in this market and, really, for people to figure out how much LNG we can actually export,

you know, what our markets are going to absorb and what the impact is, just takes the market a longer time for it to be able to resolve itself.

So we don't really know what sort of the price convergence is going to be. We assume, you know, the gas markets are fundamentally different. We have gas-on-gas competition here. They don't necessarily have as much of that in Europe, and they certainly don't have as much of that in Asia.

We hear from people in Europe and Asia that they would like to have greater linkages so that they are able to sort of progress their markets, you know, to sort of function a little bit more differently.

So I think people are looking around the world for signals from us about, you know, how we intend to play in these markets and, really, to be able to read what the market opportunities are.

Mr. BOUSTANY. All right. Thank you very much.

Chairman NUNES. Thank you, Mr. Boustany.

I will recognize the gentleman from Nebraska now, Mr. Smith, for 5 minutes.

Mr. SMITH. Thank you, Mr. Chairman.

And thank you to our witnesses here today for sharing your expertise and insight.

Obviously, there is a lot that has been discussed about infrastructure and balancing. You know, certainly I hope we can always keep the consumer in mind.

And sometimes it is unsuspecting how much, perhaps, consumers can actually benefit from, you know, more velocity in trade and various components.

But, Ms. Ladislaw, I think you have been elaborating a bit on infrastructure, if you would care to have more time to finish your previous statements, perhaps.

Ms. LADISLAW. On sort of domestic energy infrastructure or——

Mr. SMITH. Right. Well, domestically and how that can prevent disruptions. Obviously, a reserve means very little if there is a disruption in delivering that reserve to where it needs to be and how, perhaps, a broader view that might involve some export opportunities would actually help domestic infrastructure.

Ms. LADISLAW. Yeah. I think that, you know, one of the big questions is we have long looked at sort of U.S. infrastructure for moving natural gas and oil around the country as being fairly dedicated and static. Right?

And because there is so much change, you know, certainly on the oil side you are seeing, you know, oil by rail, another topic I know that everyone is talking a great deal about these days, come up just to be able to have this kind of flexibility.

I think that there is a lot of people who are thinking about, you know, if there was a lot more natural gas being produced, you would have a lot more economic reasons both to work within sort of like the transport side, whether it is, you know, seaborne transport or land-based transport, and then also, for shipping and transporting overseas, you would have lots more economic reasons to have optionality within your infrastructure system. Right?

I mean, nobody is going to pay for a pipeline that they don't necessarily need and certainly not redundancy, which is certainly helpful in a time of disruption.

But the question for, you know, all of you, as policymakers, and those of us who engage in that debate is: What kind of infrastructure is necessary to make sure that consumers have supply protection?

And so people are similarly starting to think about—you know, with our strategic petroleum reserve or the amount of gas stocks we keep on hand, whether that is adequate in today's market.

And I think, if you are still questioning, you know, whether or not we were going to be trying to produce as much of this in an economic way as possible, there is a lot of question about, you know, whether the infrastructure is going to come online to do this.

The administration, to their credit, has launched a massive 3-year study, the Quadrennial Energy Review, to look at some of these questions of energy infrastructure, and it deals with aging infrastructure, impacts from climate change and these, you know, changing market forces, which are quite a big deal.

So there has been some argument that, you know, the more that we produce, the better your ability of being able to have the options to move it around the country and do different things with it are.

I focus it from more of a global standpoint, which is, you know, when we were looking out into the future and it was imports as far as the eye could see, we argued with everybody around the world that they should be exporting and trading—freely trading and producing their resources to the best of their economic capability, and that was to shore up everybody's, you know, energy security.

I would hope that, when we are on the flip side of that equation, we still mean that. So that is——

Mr. SMITH. Okay. Mr. Weiss and then Mr. Klaben.

Mr. WEISS. Thank you.

I just want to quickly add that, in terms of the natural gas delivery infrastructure, it is aging. This one service we talked about estimates that we lose as much natural gas every year through leaks that would be enough to power the State of Maine for a year and——

Mr. SMITH. Mostly from aging infrastructure?

Mr. WEISS. Yes. Aging pipelines and leaky pipelines.

Mr. SMITH. What is the safest way to transport this energy?

Mr. WEISS. I am guessing pipelines. But there was a study by CRS when it came to oil, which is, I know, different, found that pipelines actually, on a mile basis, leaked more than rail for oil. But that was long before the oil-rail boom.

When it comes to the aging infrastructure, Mr. Rangel's bill would plug those leaks and provide much more natural gas supply now than waiting 3 years.

One last quick point. We are a——

Mr. SMITH. Very briefly.

Mr. WEISS [continuing]. Natural gas importer right now.

Mr. SMITH. Okay. Mr. Klaben.

Mr. WEISS. Thank you.

Mr. KLABEN. What I see in my business, as a participant in the infrastructure chain, first of all, there is a real benefit to building infrastructure in your country because you are building the supply chain to build that out further.

If this infrastructure is being built abroad, those supply chains—those manufacturers very often are outside the United States. If you see more U.S. manufacturers participating, this means we have the capacity to do more because we have the knowledge, we know how to solve these problems, we are solving them right here in our country. That is what building infrastructure does.

Second, I believe that the export terminals are going to lead to more—you know, it is an optimalization. And this is going to sound a little bit like what everybody says, but the market is intelligent.

If we let the market focus on where the demand is, it is going to build out the infrastructure and, I believe, over the long term, like Ms. Ladislaw said, it will figure out how to provide the right structure to the right people to avoid supply shortages.

But, again, for my company, as a participant in the infrastructure supply chain, I can see the knowledge base increase, the workforce increase, the overall ability to build more infrastructure. It is enhanced if we are building our own infrastructure right here at home.

Mr. SMITH. Thank you.

Thank you, Mr. Chairman.

Chairman NUNES. The gentleman's time is expired.

I now recognize the gentleman from Wisconsin for 5 minutes.

Mr. KIND. Thank you, Mr. Chairman. Thank you for holding what I think is a terribly important hearing, review of this incredibly important issue.

I think this committee certainly needs to delve into this in a much more extensive fashion and Members of Congress, quite frankly, to get this policy right.

Mr. Klaben, I want to personally welcome you here today and thank Chart for the commitment you have made to my hometown in La Crosse, Wisconsin. It is an incredible facility.

I have had a chance to visit on a couple of times. Great jobs and a great workforce that is supporting the growth and expansion there. So anything we can do to help, we are certainly interested.

Listen, I am one who has always been a proponent of good, fair trade policy; so, I have been wrestling with this issue and the domestic implications.

Let's be honest. I mean, the producers of natural gas, the distributors, they are looking for a higher price, and I think that is why you see a big push for the export of this product.

But we are coming off one of the worst winters in the Upper Midwest in some time. Propane prices skyrocketed, and we got hit right between the teeth, quadrupling of those prices.

I literally had homes burning in Western Wisconsin because families were burning charcoal grills in their living room to stay warm or natural gas grills to stay warm and fires were being caused because of that. And as we in the Upper Midwest delved into this issue more, two facts jumped out of me.

We are producing a heck of a lot of propane in this country, but at the same time—we are exporting a heck of a lot of propane in

this country at the same time. And we got caught with our shorts down over the winter, and it had a devastating impact for families and businesses alike.

And that is why I think it behooves us to do further economic studies of the impact of increased LNG sales into the international market. I mean, right now we are not pegged to the international market price with natural gas, unlike oil.

What are the implications if we do significantly ramp up export production in a world that is growing more thirsty for natural gas and access and the geopolitical implications of that?

Mr. Klaben, let me ask you with the time that I have. There is a huge internal fight going on with domestic manufacturers in this country over this issue and the competitive advantage that they are currently enjoying with significantly less energy costs that they are experiencing here and, as a consequence, a lot of the insourcing that we are seeing coming in.

Now, you kind of have a foot in both quarters here as far as what that means for domestic manufacturers having access to this cheaper fuel compared to our foreign competitors, but, also, the industry you are directly involved in, the potential for further growth if we do export more. I am sure you have been looking at that issue very closely. I am wondering if you can render an opinion.

Mr. KLABEN. Sure. I spent a lot of time thinking about this issue to come and testify—prepare for testifying before you today because, as a manufacturer, we both participate in the building of this infrastructure. And I have given you examples of that.

But we have a lot of other product lines where we are consuming basic materials, we are consuming energy in the United States, and we also sell equipment for natural gas vehicles and natural gas transportation in the United States, which benefits from lower prices for natural gas.

I can tell you this. It is—reading the studies that are out there, it seems, on average, that the overall benefit of additional economic activity—and we are talking activity right here in the United States—on average, as a whole, is going to be beneficial for the whole country over the small increases in price that are predicted if we export some of this gas.

Now, one thing we all need to remember is that production of natural gas is not a static thing. Today a lot of producers are shutting down their wells and just not pulling out of the ground because the prices——

Mr. KIND. Right.

Mr. KLABEN [continuing]. Are so inexpensive in the United States.

So if we do see greater international demand, it is not as if we are going to take a finite commodity in the United States and share some of that with our partners around the world. Our capacity increases as price goes up. So it is an iterative kind of equation.

So the studies I have read and, after spending a lot of time thinking about it, preparing, since we do have a leg in both camps, both producing the equipment and benefiting in the buildout, but, also, producing equipment for domestic consumption of natural gas, and we ourselves as the manufacturer and for our employees in our

various communities around the country, including up in La Crosse, just looking out for our——

Mr. KIND. And I appreciate that very honest response. I have seen it with frac sand mining in Western Wisconsin. A lot of them are shutting down now because—you know, just for the price—the market price is gone for them.

But, obviously, increase in exports will be great for the producers. But what is it going to mean ultimately for the American consumer, both residential and business? And I think we are going to need to look at that a lot closer.

One other area I think—and this is where we need to engage U.S. TRs. How much of a leverage is this in ongoing negotiations?

Because the presumption on public interest lies with FTA agreements that already exist, but not with countries that don't have that with us.

And this seems to be a tremendously powerful bargaining chip that we have with TPP, TTIP, especially, you know, with what Russia is doing.

How much of that are we willing to sacrifice or give away in the course of these trade negotiations? So I think it is a whole other area we need to look at closely.

Thank you, Mr. Chairman.

Chairman NUNES. Thank you, Mr. Kind.

Gentleman from Pennsylvania is recognized for 5 minutes.

Mr. KELLY. Thank you, Mr. Chairman.

Ms. Ladislaw, I am really interested because what Mr. Kind just talked about, what is going on in the world right now today, this is the first time, I think, we really addressed Russia as the—not so much as the 800-pound gorilla in the room, but maybe the 800-pound bear in the world.

Let me ask you—because I do believe geopolitically and the geostrategic purpose of this—we have an asset that really gives us great leverage in the world.

I have had the opportunity to travel to that part of the world and, when you talk to people and say about sanctions, "We don't want you to buy certain products from these people" and—they say, "That is fine. Can you replace what you are asking us not to buy?" Because a sanction only works if you can really work it to your advantage and say, "Fine. We can supply it."

And I was looking at the chart. The ability that we have to deliver LNG at a price that is still profitable for us and undercuts what Russia is doing—they have a stranglehold on Europe right now, and you see what they are doing. Just your thoughts on that.

Because I noticed in your testimony you talked about whether we use that as a leverage or not. I think we would be fools not to. I just look at an opportunity right now for the States—the United States—which I think is the greatest emerging economy in the world and maybe the world has ever seen because of the assets that we have and the ability to get things done.

But just—if you would, just a little bit on our—our position and how we could use that to influence our geopolitical position in the world. I just think, if America is truly going to lead again, it is going to have to lead by using the resources it has to the best of its ability. It seems to me it is a win-win for everybody out there.

Ms. LADISLAW. And I think it is a very timely question. We have been dealing a lot with this lately.

I think that the troubling thing on the Russia side, in particular—there is a lot of—I mean, the—there is a lot of reasons why using energy export as sort of an acute tool in the way that it is being suggested—and it is, quite frankly, very natural from the messaging that everybody is hearing about how much natural gas we have—is maybe not the most appropriate thing to do in sort of our relationship vis-à-vis Russia.

I, in fact, think that—if you will notice, Russia hasn't cut off gas supplies to anybody yet. And, very interestingly, I think that that is part of this longstanding narrative we have had with Russia about not doing that.

In 2006, 2009, when they did that to Ukraine, when they overpriced negotiations and put Europe in a very difficult position, we repeatedly told them that that is not how we think energy should be used within the international system. Right?

So, for example, my point is a little bit more nuanced than that, which is I think we should be exporting natural gas because it is within the current agreement of our trade obligations, quite frankly. I think the people are giving us a pass because we have basically taken some time to absorb what the heck is going on in our domestic market, and that is fine.

But our longstanding trade and energy interest—which I actually think not only helps us in this Russia situation in particular, but, also, in future situations in the Middle East, in situations that we may encounter in the future with China—is to say, "No. We don't use energy-directed trade as a foreign policy tool." We would be tempted to do so now. We may come up short. Right?

I do think, though, it has given us one very, very important upper leg that people don't talk about within the current situation with Russia in the fact that we are not talking about our imports from Russia. Early 2000s we were projected to be a new market for LNG exports for Russia. We are not that now. We are not even talking about that.

Mr. KELLY. But if you are Russia right now, they have so few things that they can actually sell to the world and that they can have any leverage with.

The one thing you have to do, you have to be able to run your factories. You have to be able to heat and light your homes. You have to be able to do all those things.

When you take that source away or when you jeopardize that source, you are at the table with an altogether different opponent.

See, I don't have any qualms about what Russia is trying to do. They will try—this guy will try to bully his way through the whole world.

Ms. LADISLAW. Uh-huh.

Mr. KELLY. And if we don't learn anything from history, we ought to learn that bullies just don't go away because we say it is the 21st Century and that is not really the way we like to play. This is a different playground.

Ms. LADISLAW. Uh-huh.

Mr. KELLY. This is where the bully dominates the playground and you have to—got to—send somebody else there that is a little

bit bigger, a little bit stronger, that is not afraid to punch them in the face and get them off the playground.

I just worry about this because I think we should use it as leverage. I think it is a card we can play. I think it builds a relationship with the rest of the world. The rest of the world looks to us for who we really are, and that is a leader——

Ms. LADISLAW. Uh-huh.

Mr. KELLY [continuing]. In the world and not somebody who thinks that somehow through negotiations or sitting down and playing nice we are going to win that. You are not going to win that battle with these folks. In fact, they interpret kindness as weakness.

Ms. LADISLAW. Yeah. If I might, just to build on that, I do think that your point about sanctions is sort of a different point. Right?

I mean, the idea that Europe, in particular, that would feel economic harm from those kinds of sanctions, is willing to take that step to stand up to the Russians is, in fact, a whole different ballgame. Right?

Whether we can compensate them through near-term natural gas supplies is sort of a logistical point that I am not sure is one that we need to——

Mr. KELLY. Well, I will tell you what. I will feel more strong with that position when I see Germany, who the rest of Europe looks to, to lead the way on that.

Because as long as they are where they are right now, I don't think our other friends out there really believe that we are as strong as we need to be or can be. So I kind of—I wonder about that.

The other thing comes down to pricing. Coming from the private sector, I have got to tell you, all my life I have listened to this. If it costs you more to get it out of the ground than what you can sell it for, probably not a good idea to keep trying to get it out of the ground.

So I like to see markets rise to wherever they can. I really do believe that is what works. That is what has always worked before. I haven't seen anything come forward yet that would change my mind, but I have got too many—too many experiences with people that work with fossils, and I have seen what we have been able to do with them.

We can put them out of business just by regulating them and putting in a position—when it comes to permitting, Mr. Weiss, I got to disagree with you.

I have friends that actually tried to get permits. The 60 days is something that maybe is a nice thing to talk about. That is just not reality. And that may come from a study that is in a drawer somewhere that is kind of dusty.

But I got to tell you, when you talk to people that make a living that way, when you talk about—to people that need to have that certainty going forward and all of a sudden you are still waiting for a permit up to 2 years, now, I don't think that is working in the best interest of those folks or the United States.

Mr. Chairman, thank you for allowing me to sit in.

Chairman NUNES. Absolutely. Thank you, Mr. Kelly.

The gentleman Mr. Larson from Connecticut, recognized for 5 minutes.

Mr. LARSON. Thank you, Mr. Chairman.

And let me add to the chorus of those who have already said thank you for this very important hearing. It's—thank you and Mr. Rangel.

I want to also thank Mr. Rangel. I had asked—and I will ask that we submit testimony by way of an article from T. Boone Pickens in Forbes magazine entitled, "Oil and Natural Gas as Weapons of War."

[The information follows: The Honorable John Larson]

Forbes

By T. Boone Pickens, Contributor

3/10/2014

Oil and Natural Gas as Weapon of War

With Russia's invasion of Crimea, the threat is greater than Vladimir Putin's ambitions, the real danger to the world is that oil and natural gas are once again being used as a weapon of war.

This isn't the first time. When Russia cut off natural gas supplies in 2009 to Ukraine and six other countries in the middle of winter, millions were left in the cold until they paid Russia's ransom in the form of higher prices. It was a stark example how vulnerable Europe had become to Russia's control over energy resources. I said at the time it should be a wake-up call to an America confronting its own foreign oil dependence issue and the national security and economic threats that come with it.

We rely on oil suppliers around the world for half of the oil we use. Our OPEC oil dependence is particularly troubling. We're caught in OPEC's web that has entangled us in wars and Middle East politics and costing thousands of American lives and trillions of tax dollars.

I launched the Pickens Plan to help America get free from dangerous oil and make sure energy could never again be used as a weapon against us. I've urged America to use our vast domestic resources to create a real alternative to OPEC oil, and natural gas is the only resource to do that. But now it seems like everyone with a microphone is calling on the United States to begin exporting natural gas to Europe to undercut Russia's power over the region.

I have nothing against exporting American natural gas – thanks to hydro-fracturing and horizontal drilling we've got more of it than anyone else in the world – but it's foolish to think we can just turn on the tap and expect Russia to melt like the Wicked Witch. Realistically, it will be early 2016 at best before any of the permitted liquefied natural gas export facilities come on line. Rome wasn't built in a day, and Russia's expansion plans can't be thwarted with our energy overnight.

Russia is the world's second-largest supplier of oil and has tremendous power over the market. While America's oil and natural gas industry has achieved stunning increases in domestic production, this has done nothing to alleviate our vulnerability to foreign oil. Russia's intrusion into Ukraine last week caused our prices to spike $3 in a single day. This dangerous dependence makes us just as vulnerable to state-sponsored energy-terrorism as Ukraine, which is why we can't liberate Europe from its dependence until we've freed ourselves first.

The fact is, the only way American can reclaim control of its foreign policy is to take advantage of our own resources. The best way to make a big difference quickly is to transition heavy-duty trucks from diesel to natural gas. That is beginning to happen. More and more trucking, delivery, and refuse and recycling companies are switching to natural gas – compressed or liquid. All up and down our Interstate highway system LNG and CNG fueling islands are sprouting up. It's a great start, but we need to do more.

We should step back, look at all our resources and build a real plan to make the highest and best use of them right here at home. Reducing our dependence on dangerous oil will do more than just make America safer and stronger, it will lower demand and hit Russia where it really hurts: In the value of

its oil and gas exports. Long-term strategic thinking and energy planning can be used to cripple foreign governments. President Reagan proved that in 1982 when he worked with Saudi Arabia and encouraged them to overproduce oil, ultimately collapsing oil prices...and Russia. It's unlikely we have that same card to play with the Saudi's today, and it would bust our domestic industry anyway. But we do have other cards to play, and natural gas as a fuel substitute for OPEC oil is the trump card.

Putin's invasion of Crimea shouldn't be fodder for the cable chat shows, it should be a rallying cry for American energy policy. It should remind us that we are blessed with enormous natural gift and we should have a plan to properly use those resources to be sure foreign oil can never again be used as a weapon of war.

Mr. LARSON. And I have become a big fan of T. Boone and part of the Pickens army that believes that natural gas—and he has been saying this for more than 7 years now—is—holds the future for this country and it is abundant, American, and it is ours.

But it seems to me, in light of what is happening in the Crimea—and his article addresses this—is that we are putting the cart before the horse and that the focus needs to be on making sure that we are doing everything that we can here in America first. We should help America first.

You heard from my colleagues from Wisconsin and Massachusetts about the severity of the winter, but Boone Pickens would go right down the line and talk about, for every diesel that we change and we got to—and we convert and incentivize through this Tax Code to be driven by natural gas, it is the equivalent of taking more than 300 cars off of the road.

That helps us in terms of carbon production. It also helps us in terms of sending a strong message to the rest of the world.

An LNG facility, at best, you are talking about 2 years down the road, and even the current ones that are in process. In order for us to have an impact on the situation in the Crimea or foreign policy, however plausible that might be and laudable as a long-term goal, the short-term goal is to get the policy right here at home.

We haven't done that through successive administrations. It was George W. Bush who said that we had this crisis and that we were going to tackle it.

We have bills currently before us that deal—and the President has in his proposal to address natural gas, to incentivize the building of these heavy-duty trucks, to incentivize the pipeline experience.

We live in an area of the world where the Algonquin line needs to be expanded and made more efficient so that New England can get the resources that it needs.

However, that requires an investment in infrastructure, but we are in a Congress where no one believes in infrastructure investment where it costs money. Well, all of this, by the way, costs money.

Now, Mr. Pickens says, "I will tell you what. You incentivize people to build the trucks. You incentivize the municipalities to be able to purchase them. And then you are right, Mr. Kelly. The private sector will help expand and build those pipelines. And the government should make sure that they are safe and secure and do it in the best possible way."

But I am interested in what you would think of Mr. Pickens' analysis of all of this. And I will start with Mr. Weiss.

Mr. WEISS. From my view—I have not seen Mr. Pickens' analysis.

But, from my view, as Mr. Kelly said, if you would like to punch Russia in the nose, the fastest, cheapest way to do that would be to help Ukraine, which is the second-most energy-wasteful country in the world only after Uzbekistan, help them become much more efficient.

We have already got a program there that has worked. Let's just invest more in it. The less gas they have to buy from Russia, the less leverage Russia has over them.

And you can wait for 3 years for an LNG terminal to be ready, and then you are going to have to force the company not to sell their gas to South Korea or India, which is where the contracts are for now, or we can go into Ukraine right now and help them make their buildings more efficient, make their factories more efficient, make their pipes more efficient, saving them money, creating jobs there, creating jobs here because they are going to use American equipment here like made by Honeywell and other American companies, and that is how you punch Russia in the nose, is reduce the demand for Russian gas rather than to wait 3 years to try and increase a competitor's supply.

Mr. LARSON. Yes, ma'am.

Ms. Hawley.

Ms. HAWLEY. Thank you.

I want to address your concerns about taking care of home. And this, again, is from a local perspective. But I think one of the speakers or one of your panel said that this has happened in 5 years, it is a revolution. And it is. And it has happened so quickly that all of us are scrambling to put the infrastructure in place to accommodate it.

And let me just give you an example just with our port. We are converting major ship docks to barge—oceangoing barge docks. We are doing everything we can to lobby to deepen the Intracoastal because that is how we get natural gas and oil to the East Coast.

You are huge market. The East Coast is an enormous market for us, but we don't have the infrastructure in place. So we have reformatted our entire ship channel to be able to accommodate getting that product to the places where it needs to go.

Our pipelines have been reversed. They were going one way. Now they are going another way. Again, all of that infrastructure piece is critical to being able to—it is a logistics problem, being able to get that stuff to where——

Mr. LARSON. We are all for infrastructure, you know.

Ms. HAWLEY. Absolutely.

Mr. LARSON. And to make that investment and to—because that puts the country back to work.

Ms. HAWLEY. But identifying where those pieces have to be put in place, that is the key to being able to distribute the natural gas or the product to where it needs to go.

Thanks.

Mr. LARSON. Agreed.

Thank you, Mr. Chairman.

Chairman NUNES. Thank you, Mr. Larson.

Ms. Hawley, I know that you didn't get a chance earlier to respond to Mr. Smith's question. Would you like a minute to do that?

Ms. HAWLEY. I know I had a great answer, but I forgot the great question.

Do you remember what you asked me?

Chairman NUNES. The question was for the entire panel, if I remember right, and you were in line to——

Mr. SMITH. Well, it was a discussion about domestic infrastructure, perhaps safest delivery.

Ms. HAWLEY. Right.

And I think, you know, pipeline was one of the pieces. We are doing a lot with rail and we are doing a lot with—obviously, with ship and barge.

So, you know, we are just scrambling to get enough pieces in place to be able to get it out—get the product out to the market. You know, it is an enormous opportunity.

But, again, converting that to LNG helps. It is just another mechanism for us—another delivery system, if you will, for us to be able to get product to market.

And I don't know if you asked this question, but I think it is important that we look at it again.

It is a market-driven system, and all of our local producers—what were our drillers, the people that are out there in the field—I think maybe you said it, Mr. Chairman.

They have really slowed down their production of natural gas in response to the market at this point in time. So we are, again, missing that opportunity because we don't have the LNG pieces and the distribution mechanisms in place.

Mr. SMITH. Well, I would add that there is concern out in the Heartland that oil is displacing grain via rail and causing some concerns there.

And so I would hope, on the infrastructure piece—and we know that grain is processed into energy as well. But we need some flexibility out there to answer the needs—not just the market—well, we know the market is consumers, and we need to keep consumers in mind.

Thank you.

Ms. HAWLEY. Well, may I just add one more thing?

I just spent last week with the folks up at BNSF—Burlington Northern Santa Fe—again addressing that very issue, how oil has surpassed—really supplanted their use, their hauling of grain, a huge problem, a huge problem, for folks in our area as well. So, again, another dynamic.

Thank you.

Mr. SMITH. Thank you.

Chairman NUNES. Thank you, Mr. Smith.

Ms. Ladislaw, have you ever seen a country that experiences economic growth and has a decrease in the consumption of energy? Do you know of any examples of that?

Ms. LADISLAW. A country experiences economic growth——

Chairman NUNES. In order to have economic growth——

Ms. LADISLAW. Uh-huh.

Chairman NUNES [continuing]. Do you have an increase or a decrease in the consumption of energy?

Ms. LADISLAW. Well, it depends over what period of time. You tend to have an increase.

Chairman NUNES. An increase.

Ms. LADISLAW. Yeah. But over time, you know, we are still increasing and the rate at which we consume energy goes down. So you become more energy efficient. But that is at the latter half of the development stage.

Chairman NUNES. Uh-huh.

Mr. Klaben, can you answer that? I know it may not be your area of the expertise, but——

Mr. KLABEN. I think the—Ms. Ladislaw is right, that as economies develop, they tend to consume energy, but as they mature, they get better at that.

And some of the things that, you know, Mr. Weiss speaks about—better investments, and new technologies, and efficiency—can result in more output, even though you are better at what you are doing.

Natural gas is a great example of that. We are moving from fuels that put out more carbon emissions to an abundant fuel, if we let the market kind of follow its own course, that emits much less carbon.

So, you know, in the U.S., I think we have gotten better in efficiency over time, and even recently we have reduced our carbon footprint back to early 1990s level, in part, through natural gas.

So I think, if you let the market pursue its own natural course, you can get economic expansion and marginal efficiencies as that expansion goes forward.

Chairman NUNES. Ms. Hawley.

Ms. HAWLEY. I would concur with both of them.

I think we are seeing that. I think we are seeing a lot more efficiency, but we are seeing greater production. So it has to do with the volume as well.

And as we increase our manufacturing facilities here, obviously, our carbon—not our carbon—our energy use is going to increase as our population increases or as our markets increase.

But, generally, I think we are getting more efficient. I think we are reducing our carbon footprint, and I think natural gas is a key piece to that.

Chairman NUNES. Mr. Weiss.

Mr. WEISS. Well, first, I think you can take, for example, California, which is like the 8th or 9th largest economy in the world. And they went on a crash diet to become more economically efficient—sorry—energy efficient over the last 30 years, and they have, and they use less energy per dollar than many other places, and, yet, the economy there has grown.

Another good example is fuel economy standards. It is projected that our fuel—our fuel use—our oil use is going to remain pretty flat over the next 10 years, at least, go up a little bit, even though our economy is projected to grow and we are going to have more people and more cars on the road.

So there is another example of economic growth occurring as we use our energy much more efficiently.

Chairman NUNES. Well, I would just add to that, Mr. Weiss, that I am from California, and there are actually two different Californias, the one where I come from and the one that does not experience economic growth.

In fact, we have had almost no growth and about 15 percent unemployment. And then I think what you are referring to is on the coast, where they have had a lot of energy savings, but it is also one of the most pleasant places on the planet in terms of a very mild climate.

So where you don't have to run your air conditioner and you don't need a lot of heating, it is fairly easy to increase your capac-

ity to consume energy. But inland, where you have high temperatures and low temperatures, it is not real beneficial.

Mr. WEISS. Well, as you know, they did market reforms about 30 years ago that are statewide, so—to help electricity rates be decoupled from profits so that utilities had an incentive to provide electricity more efficiently rather than have their profits linked to selling more electricity. And that has benefited everyone, I am guessing. I don't have any data right with me, though.

Chairman NUNES. Well, I want to thank the Ranking Member, I want to thank all the panelists today and all the members for their participation in today's hearing. And without any further comment, we will adjourn.

[Whereupon, at 3:05 p.m., the Subcommittee was adjourned.]

[Submission for the record follows:]

April 9, 2014

RE: Hearing on the Trade Implications of U.S. Energy Policy and the Export of Liquefied Natural Gas (LNG) and Pending Bills to Expedite U.S. LNG Exports

Dear Congressman Nunes and House Members,

I am licensed to practice law in California and recently served as a Visiting Assistant Law Professor at the University of Houston Law Center where I taught a course on the legal, policy and environmental aspects of global shale gas development and the role of liquefied natural gas (LNG) in global gas markets.

I have a LL.M. from Georgetown Law in International Trade and also teach a seminar on the WTO as an adjunct law professor at the University of San Francisco School of Law and am familiar with the international trade and WTO issues raised in the context of U.S. LNG exports. Prior to teaching, I was a commercial litigator in San Francisco and remain a member (inactive status) of the California Bar.

I am also the author of the most recent book on LNG entitled ENERGY FOR THE 21ST CENTURY: OPPORTUNITIES AND CHALLENGES FOR LIQUEFIED NATURAL GAS (LNG), which discusses the globalization of gas markets and the prospects for U.S. LNG exports in detail.[1]

I have previously expressed some of my views on U.S. LNG exports in a brief submitted to the U.S. Department of Energy (DOE), Office of Fossil Energy, in response to the NERA LNG Study.[2] In that brief, I analyzed the various arguments that had been raised by all parties and made the following recommendations which I believed would allow DOE to fulfill its mandate to protect the "public's interest" while processing additional LNG export applications in a reasonable and prompt manner:

1. Immediately re-start the approval process by approving a limited number of export applications in an amount not likely to have a significant impact on the domestic price of natural gas or the "public's interest."

2. Immediately develop a fair and transparent process and procedure that details how the DOE/FE will fulfill its stated obligation to "monitor the cumulative impacts" of approving additional export applications.

3. Consider phasing in the approval of projects over a certain period of time so as to minimize the potential impacts on price and/or as more information becomes known about natural gas supply, demand and potential environmental impacts of hydraulic fracturing and shale gas development.

I now submit the following comments in response to the House Ways and Means Trade Subcommittee

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[1] Susan L. Sakmar, ENERGY FOR THE 21ST CENTURY: OPPORTUNITIES AND CHALLENGES FOR LIQUEFIED NATURAL GAS (LNG) (2013), Edward Elgar (Pub.),http://www.amazon.com/Energy-21st-Century-Opportunities-Environmental/dp/1849804214/ref=sr_1_1?ie=UTF8&qid=1397033918&sr=8-1&keywords=susan+sakmar

[2] U.S. Dept. of Energy, Office of Fossil Energy, LNG EXPORT STUDY - RELATED DOCUMENTS, http://energy.gov/fe/downloads/lng-export-study-related-documents.

hearing on the Trade Implications of U.S. Energy Policy and the Export of Liquefied natural Gas (LNG). These comments are also applicable to a growing number of bills pending in the House including in particular H.R. 6, the Domestic Prosperity and Global Freedom Act, which is scheduled for markup in the Subcommittee on Energy and Power on April 8-9, 2014.[3]

For the reasons detailed below, I urge Congress not to take action on any of the pending bills. The DOE has already approved half of America's natural gas production for export so there is no compelling reason to expedite even more exports. Moreover, the pending bills would improperly waive the "public interest" determination the DOE is currently applying on a case-by-case basis to export applications, thereby defeating the key purpose of the Natural Gas Act which is to protect consumers. Lastly, none of the pending bills would serve the stated goal of sending U.S. natural gas to allies such as Ukraine, but would instead help the highest bidder for America's gas, which would likely include countries such as China and other Asian nations that pay higher prices for gas.

I. There Is No Need to Expedite LNG Exports Since the DOE Has Already Approved Over Half of Current U.S. Gas Production for Export

A. Free Trade Agreement (FTA) v. Non-FTA Countries

At the outset, it is important to note that under existing U.S. law, export applications to export to most free trade agreement (FTA) countries are deemed to be in the public interest and such applications are quickly authorized by the Department of Energy, Office of Fossil Energy (DOE/FE).[4]

Most, though not all, countries that have an FTA with the U.S. require national treatment for trade in natural gas, including Australia, Bahrain, Canada, Chile, Colombia, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Peru, Republic of Korea, Singapore and Panama.[5]

With the exception of the Republic of Korea, Chile, and Singapore, which is trying to establish an LNG trading hub, most of the FTA countries are not likely to be significant importers of LNG so the real prize for a company is the authorization to export LNG to any country, which the DOE refers to as "non-FTA" countries. Applications for export authorization to non-FTA countries involve greater scrutiny and under Section 3(a) of the Natural Gas Act (NGA), 15 U.S.C. § 717b, DOE performs a thorough public interest analysis before acting and is authorized to attach terms or conditions to orders that are necessary or appropriate to protect the public interest.

B. The DOE Has Already Approved A Significant Amount of Exports After Making A "Public Interest" Determination

Subsequent to the release of the NERA LNG Study, the DOE resumed its approval of LNG export applications to non-FTA countries (the applications for FTA approval had not been delayed by the NERA study). Consistent with the public interest requirement, the DOE continued to process the pending non-FTA application on a case-by-case basis, following the order of precedence previously established. While

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[3] House Energy & Commerce Committee, markup on H.R. 6., the Domestic Prosperity and Global Freedom Act, http://energycommerce.house.gov/markup/markup-notice-subcommittee-vote-lng-exports-bill-next-week.

[4] 15 U.S.C. § 717b (2006).

[5] For example, Costa Rica and Israel do not require national treatment for trade in natural gas. U.S. Dep't of Energy, *How to Obtain Authorization to Import and/or Export Natural Gas and LNG* (Sept. 26, 2012), http://www.fossil.energy.gov/programs/gasregulation/How_to_Obtain_Authorization_to_Import_an.html.

the DOE's case-by-case process has resulted in slower approvals than the industry would like,[6] **the DOE has in fact already approved over half of current U.S. natural gas production for export!**

As of March 24, 2014, the DOE has approved long-term applications to export over 37 Bcf/d of natural gas to FTA countries. To put this in perspective, 37 Bcf/d is 290 million metric tonnes per annum (MTPA) of LNG (using the DoE's conversion factor of 1 Bcf/d = 7.82 mtpa). This is around 50 MTPA more than was produced worldwide in 2012. **Perhaps most significant is the fact that 37 Bcf/d represents over half of current U.S. production of natural gas of approximately 70 Bcf/d.**

In terms of non-FTA approvals, the DOE crossed the psychologically significant 6 Bcf/d threshold when it approved Dominion's Cove Point Project, thereby cumulatively authorizing non-FTA exports totaling 6.4 Bcf/d. The 6 Bcf/d of non-FTA approvals was significant because most of the economic studies analyzing the impact of exports on the domestic price of natural gas have used a 6 Bcf/d minimum and 12 Bcf/d maximum.[7] In addition to Dominion (.77 Bcf/d), the non-FTA approvals are Cheniere's Sabine Pass (2.2 Bcf/d), Freeport's first application (1.4 Bcf/d), Lake Charles Exports (2.0 Bcf/d), Freeport's second application, (0.4 Bcf/d), Cameron (1.7 Bcf/d) and most recently, Jordan Cove (0.8 Bcf/d).[8]

The amount currently approved for non-FTA export totals 9.27 Bcf/d or approximately 72 MTPA, which is a massive amount of LNG.[9] To put this in perspective, the world's largest LNG exporter is Qatar, with current export capacity of 77 MTPA. Australia has numerous LNG export projects under construction and is expected to meet or exceed Qatar's LNG export capacity by the end of the decade. Even if just a fraction of the proposed U.S. LNG export capacity came to fruition, the U.S. will rival both Qatar and Australia in terms of exports.

It is my understanding that most, if not all, of the volumes authorized for the non-FTA projects have already been contracted out to buyers, or "off takers," although Cheniere's Sabine Pass project is the only project currently under construction. The significance of committed off takers should not be overlooked since this means it is likely that **ALL** of the approved non-FTA project will take final-investment-decision (FID) and move forward. The fact that all of the current non-FTA projects, with the exception of Jordan Cove, are already existing import terminals also makes it more likely that the project will move forward since these projects will be less expensive than new Greenfield projects.

A deeper understanding of the amount of supply under contract for non-FTA projects should be obtained before more exports are approved. While the larger non-FTA projects have garnered the most attention in the media, a deeper understanding of whether the numerous FTA only projects are likely to be viable

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[6] There is no dispute that the current process is less than ideal which has led to some, including myself, to suggest that a rulemaking would be appropriate. Susan L. Sakmar, What's Next for US LNG Exports – A Rulemaking?, Gastech News, http://www.gastechnews.com/lng/whats-next-for-us-lng-exports-a-rulemaking/.

[7] See, U.S. Energy Info. Admin., Effect of Increased Natural Gas Exports on Domestic Energy Markets (Jan. 2012), *available at* http://www.eia.gov/analysis/requests/fe/pdf/fe_lng.pdf, Deloitte MarketPoint LLC and the Deloitte Ctr. for Energy Solutions, *Made in America: The economic impact of LNG exports from the United States* (Dec. 2011), *available at* http://www.deloitte.com/assets/DcomUnitedStates/Local%20Assets/Documents/Energy_us_er/us_er_MadeinAmerica_LNGPaper_122011.pdf, Charles Ebinger et al., Brookings Institution Energy Security Initiative, *Liquid Markets: Assessing the Case for U.S. Exports of Liquefied Natural Gas* (May, 2012), *available at* http://www.brookings.edu/research/reports/2012/05/02-lng-exports-ebinger.

[8] Summary of LNG Export Applications, http://energy.gov/fe/downloads/summary-lng-export-applications.

[9] Most of the applicants seeking authorization to export LNG from proposed facilities to FTA countries have also filed to export LNG to non-FTA countries in the same volume from the same facility to provide optionality on the final destination country. The volumes of the application to export to FTA countries and non-FTA countries are therefore not additive.

should also be obtained. Many of these FTA only projects are seeking to ship LNG via ISO container and as a result, do not require the massive infrastructure and capital expenditures as the larger non-FTA projects. While the volumes for the FTA only projects are small on an individual basis, the cumulative volume is significant and could be a surprise to the upside in terms of exports if more go forward than realized.

II. The Pending Bills Would Improperly Waive the "Public Interest" Requirement

The political crisis in Ukraine and Russia's annexation of Crimea has prompted some members of Congress to introduce legislation under the misguided belief that U.S. LNG exports will aid our allies in Ukraine and Europe. At least five pieces of legislation have been introduced including:[10]

H.R. 6 (Gardner, R-CO), the Domestic Prosperity and Global Freedom Act, would provide for expedited approval of gas exports to World Trade Organization countries and grant without modification or delay gas export applications for which a notice has been published in the Federal Register before March 6, 2014. Read more in the press release.

S. 2083 (Udall, D-CO), the American Job Creation and Strategic Alliances LNG Act, would allow for approval of natural gas exports to World Trade Organization member countries, including Ukraine, Japan and India. Read more in the press release.

H.R. 4139 (Turner, R-OH), the American Job Creation and Strategic Alliances LNG Act, would deem as in the public interest gas exports to a World Trade Organization country.

H.R. 4155 (Poe, R-TX), the Fight Russian Energy Exploitation (FREE) Act, would deem as in the public interest gas exports to the member states of the European Union or certain former Soviet states.

S. 2088 (Markey, D-MA), the American Natural Gas Security and Consumer Protection Act would require the U.S. Department of Energy (DOE) to consider the impacts of proposed gas exports on consumers, the U.S. economy and manufacturing sectors, national security, foreign policy, and other considerations before approving additional natural gas exports to ensure that those exports are in the national interest. Read more in the press release.

With the exception of Senator Markey's bill, which notably is the only bill that seeks to protect consumers, all of these bills would effectively ***remove*** the current public interest determination requirement under the NGA.

Particular attention is warranted for H.R. 6, set for mark-up April 8-9, 2014. Section 2 of H.R. 6 would amend Section 3(c) of the NGA to include all World Trade Organization (WTO) member nations. This would have the practical effect of requiring the DOE to approve ALL export applications "without modification or delay," the standard currently applied to the applications to the FTA only countries.

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[10] Sutherland LNG Blog, March 11, 2014, http://www.lnglawblog.com/2014/03/ukraine-crisis-spawns-six-bills-on-u-s-lng-exports/

A. The "Public Interest" Test Must Be Maintained to Achieve the Primary Purpose of the Natural Gas Act – To Protect Consumers

Regulation of natural gas in the United States has experienced many years of regulatory evolution. But the primary purpose of the Natural Gas Act (NGA) has essentially remained the same for decades – "protection of consumers against exploitation at the hands of natural-gas companies."[11]

In the context of U.S. LNG exports, the protection of consumers is delegated to the DOE who has indicated that it will continue to take a "measured approach" in reviewing the pending export applications and will continue to assess the cumulative impacts of each succeeding request for export authorization on the public interest with due regard to the effect on domestic natural gas supply and demand fundamentals.

Going forward, the DOE should continue to proceed with caution in approving additional export projects for several valid reasons that the DOE has articulated:

1. The LNG Export Study, like any study based on assumptions and economic projections, is inherently limited in its predictive accuracy,

2. Applications to export significant quantities of domestically produced LNG are a new phenomena with uncertain impacts, and

3. The market for natural gas has experienced rapid reversals in the past and is again changing rapidly due to economic, technological, and regulatory developments.

In short, the DOE has correctly recognized that "***The market of the future very likely will not resemble the market of today.***"[12] As such, it is incumbent on Congress and the DOE to maintain the current public interest determination since this is the best way to ensure vigilant protection of the public's interest in times of significant market fluctuations, which seems to characterize the U.S. natural gas markets.

B. The WTO Does Not Require the Removal of the Public Interest Determination

A number of policy makers and industry representative that support unfettered LNG exports have raised the argument that DOE's adherence to the bifurcated process between FTA and non-FTA applications could give rise to a violation of the U.S.'s obligations under the WTO. It should be noted that the DOE has already rejected similar arguments in the Sabine Pass case. In its application, Sabine Pass requested the DOE to review its request to export LNG to WTO countries under the same standard of review applicable to FTA countries and specifically requested that that DOE conduct its review under the standards set froth in section 3(c) of the NGA, 15 U.S.C. 717b(c) instead of section 3(a) of the NGA, 15 U.S.C. 717b(a).[13]

In making its request, Sabine Pass contended that U.S. trade policy, as well as U.S. obligations under the WTO, required the "automatic export authorization process" applicable for export of LNG to FTA

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[11] Robert R. Nordhaus, *Producer Regulations and the Natural Gas Policy Act of 1978*, Natural Resources Journal (1979), citing Phillips Petroleum Co. v. Wisconsin, 347 U.S. 672, 689 (1954).

[12] Order No. 3324 Conditionally Granting Long-Term Multi-Contract Authorization To Export Liquefied Natural Gas By Vessel From The Lake Charles Terminal To Non-Free Trade Agreement Nations, http://energy.gov/fe/downloads/fe-docket-no-11-59-lng.

[13] Sabine Pass Application at 2-3.

Countries and therefore sought DOE/FE's immediate approval to export LNG to WTO countries.[14] In support of its argument, Sabine Pass submitted Annex 1A to the WTO Agreement and "a compendious legal memorandum" entitled "A Review of International Trade-Related Legal Obligations and Policy Considerations Governing U.S. Export Licenses for Liquefied Natural Gas" (Aug. 23, 2010).[15] Despite Sabine Pass's extensive briefing of the trade issues, the DOE found that Sabine Pass's request for review under section 3(c) was "not supported by law or policy."[16]

The DOE stated that section 3(a) of the NGA, not section 3(C) was the appropriate legal provision to decide an application to export LNG to any nation other than FTA countries. Since Sabine Pass had not pointed to any legislation authorizing or requiring a different result, the DOE had no authority to grant Sabine Pass's request for section 3(c) review.[17] On October 21, 2010, DOE issued an opinion and order denying Sabine Pass' request that their export application be reviewed under section 3(c) of the NGA and ordered that the application be reviewed under section 3(a) of the NGA, which requires the "public interest" analysis.[18]

It should also be noted that while most proponents of free trade assume that the WTO provisions would apply to trade in energy, there has, in fact, never been a formal Trade Round launched on Energy Trade. My research reveals that this is for a number of reasons including the fact that when the WTO came into being in 1995, most of the major energy exporters, such as Saudi Arabia and Russia were not members of the WTO.[19]

Moreover, not only were the key U.S. laws at issue here written when the U.S. was expected to be a major *importer* of LNG but they were also written prior to the establishment of the WTO in 1995! In light of the fact that the Policy Guidelines the DOE is obligated to follow were established in 1984, it is unlikely that any WTO issues were even contemplated, although it is possible that some issues broadly related to free trade and international trade were considered.

In addition, the WTO has repeatedly recognized that "exhaustible natural resources" are accorded different treatment under the WTO's Article XX exception for trade measures designed to protect "exhaustible natural resources." Despite the abundance of natural gas currently found in the U.S., natural gas would no doubt be considered an "exhaustible natural resource" under the WTO.

In summary, while the U.S. and its agencies should always be mindful of its obligations under international trade law, it would seem that the proper course of action in this case is the one that the DOE has already undertaken in the Sabine Pass case which is to review the pending export applications under the "public interest" test set forth in section 3(a) of the NGA and pursuant to the Policy Guidelines.

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[14] Sabine Pass Application at 23-29.

[15] Sabine Pass Liquefaction, LLC, FE Docket No. 10-111-LNG, *Opinion and Order Denying Request for Review under Section 3(c) of the Natural Gas Act*, Oct. 21, 2010, at 3, available at http://www.fossil.energy.gov/programs/gasregulation/authorizations/Orders_Issued_2010/Sabine10_111dkt.html.

[16] Opinion and Order at 6.

[17] Opinion and Order at 7.

[18] Opinion and Order at 8.

[19] Susan L. Sakmar, *Bringing Energy Trade Into the WTO: The Historical Context, Current Status, and Potential Implications for the Middle East Region*, 18 Indiana Int'l & Comp. L. Rev. 89 (2008), available at http://ssrn.com/abstract=1995896.

III. The Pending Bills Would Help China and Asia, NOT Ukraine and Europe

The pending bills were introduced with the stated goal of hastening LNG exports to Ukraine and Europe so that our allies there could reduce their dependence on Russian gas. Numerous experts and news accounts have already dispelled this misguided policy goal for a variety of reasons,[20] including the fact that Ukraine does not have an LNG import terminal,[21] export terminals in the U.S. have yet to be built, and perhaps most importantly, Europe is actually turning away LNG[22] and importing cheap U.S. coal![23]

The pending bills also seem to ignore the fact that allowing unfettered LNG exports to any WTO member might not be in the best interests of America. There are currently 159 WTO countries,[24] which include many U.S. allies but also include many countries with which the U.S. has less favorable trade relations – most notably China and Russia. The modification proposed by H.R. 6 would effectively grant China and Russia immediate access to an unrestricted amount of U.S. natural gas! While China is the most obvious beneficiary, in light of the fact that export licenses are for 20-years, it is not inconceivable that Russia might someday seek to import U.S. gas.[25]

There is already the likelihood that China will be a major beneficiary of cheap U.S. gas with reports that companies are in the process of securing export deals with China.[26] In addition, any off taker of a project that has non-FTA approval is free to send that gas any where in the world. For example, one of the off takers of Cheniere's Sabine Pass project is BG Group. BG Group is a major LNG portfolio player, which means it has LNG projects all over the world and can ship LNG to or from a great number of countries. BG Group also has a contract with China's CNOOC to supply CNOOC with LNG.[27] If desired, BG Group could simply send its gas from Sabine Pass to China. KOGAS is another off taker of Cheniere's Sabine Pass and in lieu of sending its gas to Korea, KOGAS is free to send that gas anywhere in the world.

In summary, the export of U.S. LNG is merely an arbitration opportunity for energy companies and energy traders.

As trading companies have emerged from relative obscurity to become formidable players in global energy markets, there is a growing need for policy makers to understand the full implications of who owns the natural gas production in the U.S., how it will be traded and by whom, and where America's natural gas is likely to go if unfettered LNG exports are permitted.

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[20] See, "Years Needed for LNG Exports to Blunt Russia Energy Sales," Bloomberg, March 7, 2014; "Energy security: The price of diversity," Financial Times, February 23, 2014; "An Energy Weapon vs. Russia," Council on Foreign Relations, March 5, 2014; "Help is Not on the Way," Foreign Policy, March 7, 2014.

[21] Lithuania has a new import terminal and Poland has one under construction.

[22] Spain, Europe's largest LNG importer, has actually been re-exporting record amounts of LNG to higher paying Asian Markets.

[23] EIA Today in Energy, Nov. 15, 2012, Europe and Asia are the leading destinations for U.S. coal exports in 2012, http://www.eia.gov/todayinenergy/detail.cfm?id=8790.

[24] The current list of WTO countries is available at www.wto.org.

[25] Indeed, there is a growing list of LNG exporters that are now seeking to import LNG including Egypt and Malaysia.

[26] Oleg Vukmanovic and Edward McAllister, "World buyers line up to buy U.S. natural gas," Reuters, Jan. 24, 2014, http://www.reuters.com/article/2014/01/24/us-lng-sales-idUSBREA0N0XS20140124.

[27] www.bg-group.com

It should be abundantly clear that energy companies and energy traders have every incentive to export every single drop of America's natural gas to the highest bidder. If this is the outcome, as I believe it could be if Congress passes any of the pending bills, then policy makers should be prepared to explain to American voters why this is in the "public's interest" or why they failed to miss the warning signs.[28]

Based on the foregoing comments and analysis, I urge Congress not to pass any of the pending legislation that would remove the public interest requirement and allow for unfettered LNG exports to any member of the WTO.

Respectfully submitted,

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[28] If the financial crisis of 2008 taught us anything, it is that policy makers must not ignore warning signs and must not fail to question, understand and manage evolving risks within a system essential to the well being of the American people. *Conclusions of the Financial Crisis Inquiry Commission*, http://fcic.law.stanford.edu/report.