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H.R. 6, THE DOMESTIC PROSPERITY AND GLOBAL FREEDOM ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND POWER

OF THE

COMMITTEE ON ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

SECOND SESSION

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H.R. 6, THE DOMESTIC PROSPERITY AND GLOBAL FREEDOM ACT

TUESDAY, MARCH 25, 2014

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

The subcommittee met, pursuant to call, at 1:04 p.m., in room 2123 of the Rayburn House Office Building, Hon. Ed Whitefield (chairman of the subcommittee) presiding.

Members present: Representatives Whitfield, Hall, Shimkus, Terry, Burgess, Latta, Cassidy, McKinley, Gardner, Pompeo, Kinzinger, Griffith, Barton, Upton (ex officio), Rush, McNerney, Tonko, Green, Doyle, Barrow, Christensen, Castor, and Waxman (ex officio).

Staff present: Nick Abraham, Legislative Clerk; Gary Andres, Staff Director; Charlotte Baker, Deputy Communications Director; Sean Bonyun, Communications Director; Allison Busbee, Policy Coordinator, Energy and Power; Tom Hassenboehler, Chief Counsel, Energy and Power; Jason Knox, Counsel, Energy and Power; Ben Lieberman, Counsel, Energy and Power; Brandon Mooney, Professional Staff Member; Chris Sarley, Policy Coordinator, Environment and the Economy; Jeff Baran, Democratic Senior Counsel; Alison Cassady, Democratic Senior Professional Staff Member; and Caitlin Haberman, Democratic Policy Analyst.

Mr. WHITFIELD. I would like to call the hearing to order this afternoon. The topic of the hearing this afternoon is on H.R. 6, The Domestic Prosperity and Global Freedom Act. And at this time I would recognized myself for 5 minutes opening statement.

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

And, as I said, we are excited about this hearing today. This is on the legislation introduced by our colleague Cory Gardner of Colorado. One of the subject matters that is really being discussed throughout the world today is the abundant energy supply in America, and, of course, one reason for that is the recent finds in natural gas in America. And we believe that, while we need further discussion on it, of course, that the export of liquid natural gas, not only would it be beneficial to our allies in Europe who find themselves dependent on expensive natural gas coming from Russia, but it would also be beneficial to our own economy because of the low cost of natural gas. And with the expansion of infrastructure to get

that natural gas to market, it is going to create a lot of jobs. Another benefit from the export of liquefied natural gas would, of course, be to improve our trade account deficit, which has been negative for many years.

And so, despite all of these benefits, though, the current process for approved LNG exports is very slow and unpredictable. Just yesterday the DOE did approve an application to export LNG from the Jordan Cove terminal in Coos Bay, Oregon. This marks the seventh application to be approved by DOE, but there are still over 20 applications pending. While the world waits for natural gas from America, a backlog of applications to export languishes at the Department of Energy. Now, we also understand that getting the permit approved at DOE is just the beginning. You still have to go through FERTH, the environmental process, so it is going to take a while. But this is an important development for America. We believe that it is important for the entire world.

And at this time I would like to yield the balance of my time to the author of this legislation, Cory Gardner of Colorado.

[The prepared statement of Mr. Whitfield follows:]

PREPARED STATEMENT OF HON. ED WHITFIELD

This subcommittee has spent a great deal of time analyzing the impact of the Nation's oil and natural gas boom. One recurring theme throughout our work is that Federal policy has not yet adjusted to the new reality of American energy abundance, and in fact Obama administration red tape often stands in the way of the potential benefits of the energy boom. This is clearly the case with regard to the administration's barriers to natural gas exports, which is why my friend and colleague Cory Gardner has introduced H.R. 6, the "Domestic Prosperity and Global Freedom Act," which would facilitate the export of natural gas.

According to the Energy Information Administration, America's natural gas output has been rising since 2006. EIA projects the increases to continue through 2040, and expects domestic production of natural gas to remain well above domestic demand. And at the same time that we have this natural gas surplus, many of our allies round the world urgently need additional natural gas supplies.

The case for mutually beneficial trade in liquefied natural gas (LNG) is a strong one. This was the conclusion I drew from our two hearings on energy exports, as well as our October 10, 2013 forum that invited representatives from 11 foreign governments to discuss their perspectives on U.S. LNG.

At the forum, we had the opportunity to hear from three European allies—Hungary, Lithuania, and the Czech Republic. All three face the difficulties of being reliant on Russia for natural gas. In particular, they explained that they bear the brunt of Russian economic and political pressure backed up by the threat of raising prices or even cutting off gas supplies.

Our European allies expressed a strong interest in being able to import LNG from the U.S. They stressed that even relatively modest volumes of U.S. LNG reaching the European market can greatly reduce Russia's leverage. They also noted that the mere signal that America is serious about natural gas exports would immediately strengthen their negotiating position, long before the first LNG shipment goes out. This subcommittee is grateful to Anita Orban, Hungary's Ambassador-at-Large for Energy Security, for participating in that forum and for appearing before us again today.

And I might add that our efforts to better understand the geopolitical benefits of U.S. LNG exports were underway well before the current crisis in the Ukraine erupted. But the Ukraine situation further underscores those benefits.

There is no question that American LNG exports would be great news for our allies in Europe as well as other nations around the world that want to buy our LNG. But it is also great news for our economy here at home. A study conducted for the Department of Energy concluded that LNG exports would provide net benefits for American consumers and the economy overall. A subsequent update of that study confirmed those benefits and also highlighted the net jobs created by LNG exports. I am happy to have the lead author of these studies, David Montgomery, appearing before us today.

Despite all of these benefits, the current process for approving LNG exports is very slow and unpredictable. Just yesterday, the DOE approved an application to export LNG from the Jordan Cove Terminal in Coos Bay, Oregon. This marks the 7th application to be approved by DOE, but there are still over 20 applications pending. While the world waits for natural gas from America, a backlog of applications to export languishes at the Department of Energy. H.R. 6 cuts the red tape, approves the pending applications, and provides future applicants with a much more reasonable process.

U.S. LNG exports would be an economic success story and a foreign policy success story, and would come at a time where the Nation could use a lot more of both.

[H.R. 6 follows:]

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113TH CONGRESS
2D SESSION

H. R. 6

To provide for expedited approval of exportation of natural gas to World Trade Organization countries, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 6, 2014

Mr. GARDNER (for himself, Mr. RYAN of Ohio, Mr. UPTON, Mr. SHIMKUS, Mr. WHITFIELD, Mr. BARTON, Mr. OLSON, Mrs. MCMORRIS RODGERS, Mr. GUTHRIE, Mrs. ELLMERS, Mr. GINGREY of Georgia, Mr. BURGESS, Mr. JOHNSON of Ohio, Mr. LANCE, Mr. CASSIDY, Mr. SCALISE, Mr. LATTA, Mr. GRIFFITH of Virginia, Mr. PITTS, Mr. ROGERS of Michigan, Mr. HALL, Mr. TURNER, Mr. BOUSTANY, and Mr. WOMACK) introduced the following bill; which was referred to the Committee on Energy and Commerce

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A BILL

To provide for expedited approval of exportation of natural gas to World Trade Organization countries, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the "Domestic Prosperity
5 and Global Freedom Act".

SEC. 2. AMENDMENTS.

Section 3(c) of the Natural Gas Act (15 U.S.C. 717b(c)) is amended—

(1) by inserting "(1)" before "For purposes";

(2) by striking "a nation with which there is in effect a free trade agreement requiring national treatment for trade in natural gas" and inserting "a World Trade Organization member nation"; and

(3) by adding at the end the following:

"(2) For purposes of this subsection, the term 'World Trade Organization member nation' means a country described in section 2(10) of the Uruguay Round Agreements Act (19 U.S.C. 3501(10)).".

SEC. 3. PENDING APPLICATIONS.

Any application for authorization to export natural gas under section 3 of the Natural Gas Act (15 U.S.C. 717b) for which a notice has been published in the Federal Register before March 6, 2014, shall be granted without modification or delay.

○

Mr. WHITFIELD. And at this time I would like to yield the balance of my time to the author of this legislation, Cory Gardner of Colorado.

OPENING STATEMENT OF HON. CORY GARDNER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF COLORADO

Mr. GARDNER. I thank the gentleman. Thank you, Chairman, for this hearing today on H.R. 6, The Domestic Prosperity and Global Freedom Act. I would also like to thank Representative Tim Ryan and all of the Members who have chosen to co-sponsor this legislation. This bill that I have introduced is short and straightforward. It grants approval for completed LNG export applications that are currently languishing at the Department of Energy, and would modify the standard of review for future export applications by shifting the benchmark from free trade agreement countries to World Trade Organization member countries. Rarely in Congress do we get chances to pass legislation that creates economic opportunities here at home, strengthen and help our allies around the globe, weaken our enemies, and not spend the American taxpayers' money all at the same time. Rarely do we even get to do one of those at the same time. But H.R. 6 gives us a chance to do all of these.

I want to first give praise to what has brought us to the point of even being able to discuss selling some natural gas to other countries. American ingenuity has propelled the United States to the number one natural gas producing nation in the world. The shale gas revolution has provided enormous economic benefit to our Nation. With the ability to sell some of the natural gas we produce, we can see even more economic benefit.

To paraphrase Pulitzer Prize-winning author Dr. Daniel Yergin, when he testified before this subcommittee last year, the United States is demand constrained, not supply constrained, when it comes to natural gas. In my home State of Colorado, on the western slope, the Peyonce Basin has been suffering due in part to the overabundance of natural gas supplies, which are saturating the market. Expanding the market for U.S. natural gas will encourage greater investment and new production.

H.R. 6 also offers immense geopolitical benefits. The near monopolistic control Russia has on the LNG market in Europe has given them immense power, and reforming the LNG export process would send an immediate signal to the rest of the world that would help check Russia's aggression. But for its natural gas and oil production and exports, Russia's economy is no match for our industrial know-how and ingenuity.

It is this American ingenuity that discovered there is enough natural gas to use domestically and to export to our allies around the globe. We have reached a turning point in this country that is moving towards energy independence. We no longer need to be at the mercy of nations that mean us harm. Being less dependent on foreign energy keeps our troops at home, keeps them safe, and keeps them from serving abroad. Energy produced here at home and sent overseas means we are sending energy, and not our troops.

It is a false dichotomy to say that we must choose between allowing for the sale of natural gas to other nations or keeping it here. We will have enough for both for generations to come. There are some that are opposing LNG exports who still cling to the failed notion of Nixon era price control efforts. Like the leisure suit and eight-track player, it is time to let it go. We have heard from former Senator Jay Bennett Johnston and others that history is littered with the failed policies to control prices. It is time for us to move forward.

I want to thank those that will be testifying here today, and I look forward to this debate. Thank you, Mr. Chairman. I yield back.

Mr. WHITFIELD. Gentleman yields back. At this time recognize the gentleman from Illinois, Mr. Rush, for a 5-minute opening statement.

OPENING STATEMENT OF HON. BOBBY L. RUSH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. RUSH. I want to thank you, Mr. Chairman, for holding today's hearing on the potential impacts of exporting liquefied natural gas to overseas markets, as laid out in H.R. 6. Mr. Chairman, I look forward to today's hearing of experts, stakeholders, to clarify questions I have regarding the consequences of exporting LNG, and the impact it may have on several key issues that I am concerned about, including domestic natural gas prices, the potential for jobs, the effect on our manufacturing base, as well as the impact on the U.S. trade balance.

As I understand the issue, Mr. Chairman, proponents of exporting natural gas say that doing so will lead to a net positive impact on American jobs, on the American economy, and the U.S. trade balance. Supporters also contend that exporting LNG to Japan, South Korea, Europe, and other U.S. allies will lower their natural gas prices, and provide them with leverage in negotiating with other natural gas suppliers, such as Russia. Opponents, primarily from within the U.S. manufacturing sector, disagree with those conclusions, and argue that exporting LNG will raise natural gas prices in the U.S., harm domestic manufacturing in energy intensive industries, and also hurt other natural gas consumers.

The underlying bill, H.R. 6, will amend the Natural Gas Act to increase the number of destination countries for LNG exports for which DOE is required to deem applications consistent with the public interest. Under current law, DOE is required to grant applications for LNG exports to the 20, I want to emphasize that, to the 20 countries that have free trade agreements with the U.S. However, H.R. 6 will instead require DOE to approve "without modification or delay" applications for LNG exports to all 159 members of the WTO, including all likely importers of LNG, such as China, India, Japan, and European countries. While increasing our exports of LNG may have positive impact on our economy, I believe that it is imperative that we do so in a manner that is both reasonable, that is safe, and that is truly in the public's interest, Mr. Chairman.

Mr. Chairman, today I am eager to engage our panel of witnesses to gain more insight into both the impacts of exporting LNG gen-

erally, as well as to learn more about the effects that H.R. 6 will have specifically. With an abundance of natural gas domestically, due to our technological advances, including hydraulic fracturing and horizontal drilling, it is important for the members of this subcommittee to fully understand the consequences of increasing exports, and the impact that will have on our consumers, our manufacturing base, and our economy as a whole.

So I look forward to today's witnesses on this important matter. And with that, Mr. Chairman, I yield back the balance of my time.

Mr. WHITFIELD. Thank you, Mr. Rush. And at this time I would like to recognize the chairman of the full committee, Mr. Upton, for 5 minutes.

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

Mr. UPTON. Well, thank you, Mr. Chairman. And before I start, I just want to welcome back Ranking Member Rush. I know his family has experienced some real health concerns, and you have been out of the saddle, and we really do welcome you back, so good to see you.

Three weeks ago the House overwhelmingly, rightly so, passed a billion-dollar loan guarantee aid package for Ukraine. And today the House Foreign Affairs Committee is marking up yet another package of support as Russia's aggression continues. In this committee, we would debate on a bill that would help not only Ukraine, but literally every other Eastern and Central European Country, as well as other allies in Asia, and around the world, who are dependent on Russia's natural gas. And although passage of H.R. 6, The Domestic Prosperity and Global Freedom Act, won't certainly immediately turn on the spigot of American gas to Ukrainian or Hungarian homes overnight, it will indeed send a message, the right message, and a very powerful signal.

The U.S. will be well positioned as a global energy superpower. We have the resources, the expertise, and the technology to deliver growing amounts of our domestic energy bounty to the market in the years and decades to come. Increasing exports would also result in the flow of billions of dollars into the United States economy. We can do that with this bill.

This committee has an extensive record on the issue of LNG exports, including multiple hearings, an international forum, and a comprehensive report. And with continued technological innovation and access to production, a diverse electricity portfolio that indeed keeps all fuel sources in the mix, and a commitment to new infrastructure to get surging supplies to needed areas of demand, America has the ability to deliver a natural gas supply well in excess of our domestic needs. And by putting our extra natural gas capacity to use, by entering the global marketplace, the U.S. can supplant the influence of other exporters, like Russia, while strengthening ties with our allies and trading partners around the world. Overall, U.S. natural gas exports truly offer this win-win scenario.

[The prepared statement of Mr. Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON

Three weeks ago, the House overwhelmingly passed a billion-dollar loan guarantee aid package for Ukraine, and today the House Foreign Affairs Committee is marking up another package of support as Russia's aggression continues. In this committee, we begin debate on a bill that would help not only Ukraine, but every Eastern and Central European country, as well as other allies in Asia and around the world who are dependent upon on Russian natural gas. Although passage of H.R. 6, the Domestic Prosperity and Global Freedom Act, certainly won't turn on the spigot of American gas to Ukranian or Hungarian homes overnight, it will send a clear and powerful signal. The U.S. will be well positioned as a global energy superpower. We have the resources, the expertise, and the technology to deliver growing amounts of our domestic energy bounty to the market in the years and decades to come. Increasing exports would also result in the flow of billions of dollars into the U.S. economy. We truly can do well and do good with this bill.

The committee has an extensive record on the issue of LNG exports, including multiple hearings, an international forum, and a comprehensive report. With continued technological innovation and access to production, a diverse electricity portfolio that keeps all fuel sources in the mix, and a commitment to new infrastructure to get surging supplies to needed areas of demand, America has the ability to deliver a natural gas supply well in excess of domestic needs. By putting our extra natural gas capacity to use by entering the global market, the U.S. can supplant the influence of other exporters like Russia while strengthening ties with our allies and trading partners around the world.

U.S. LNG would fight back against Russia in two ways. First, by providing more natural gas to the global market, it would reduce the price Russia can get away with charging. And second, by providing our allies in Europe with an independent source of natural gas, it would limit Russia's political leverage over these nations. It is highly unlikely that the current crisis in Ukraine will be the last time Putin tries to bully a neighboring country.

While the geopolitical benefits of LNG exports are substantial, the economic benefits alone should make H.R. 6 a no-brainer. Free trade strengthens the U.S. economy, and natural gas exports are no exception.

H.R. 6 is a net jobs creator, including the jobs constructing and running the LNG export facilities as well as the additional energy industry jobs as natural gas producers expand their output to meet the increase in demand. These benefits are on top of the indirect jobs created as the billions in export revenues work their way through the economy.

Overall, U.S. natural gas exports truly offer a win-win scenario. The U.S. has the chance to sell a product we have in abundance and other nations need, and at the same time provide a lifeline to our allies in that region for many years to come. I look forward to working with Cory Gardner and all of my colleagues to see H.R. 6 become law. Thank you.

Mr. UPTON.Yield now to Mr. Barton.

OPENING STATEMENT OF HON. JOE BARTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. BARTON. Thank you, Chairman Upton, and thank you, Chairman Whitfield, and Ranking Member Rush for hosting this hearing today. I am proud to be an original co-sponsor of H.R. 6, along with Congressman Gardner from Colorado. We do need to streamline the regulatory process for liquefied LNG exports. In the Energy Policy Act of 2005 we gave the FERC the authority to conduct the environmental review and make the final decision, but we gave the Department of Energy the authority to determine whether it was in the national interest to even go forward with that.

I want to compliment the Department of Energy on approving the latest project yesterday. I am told they did that in 35 days. These days, that is a world record lightning speed approval, and we are very appreciative of that. Unfortunately, there are still more than 20 export applications pending, and hopefully, after today's hearing, and with the passage of this piece of legislation, we

can get that process hopefully even to be a little bit more timely. In any event, I look forward to today's hearing, I appreciate the witnesses, and I yield to Mr. Shimkus the balance of the time.

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. Well, I thank my colleague. We should not underscore the importance of this legislation for freedom and democracy. The countries of Eastern Europe, and even Europe as a whole, have been, and will continue to be, to be extorted by the Russian Federation. It is a known fact. They extort on oil, they do trade, and the like. This bill is really an energy shot for freedom for these countries that are trying to get out of the Russian sphere of influence. I want to thank Cory for his effort. Cory, I know I can speak for all my friends in Eastern Europe to say thank you for this effort. It is really monumental and incredibly helpful to these countries who are looking to release themselves from the yoke of the Russian Federation, and of totalitarian regime.

I don't want to seem melodramatic. I have dealt in this area for 18 years, and this is incredibly important at this time for these former Eastern European countries, also known as the former captive countries, because they once were captive to Soviet Union. And I yield back my time.

Mr. WHITFIELD. Gentleman's time has expired. At this time I will recognize the gentleman from California, Mr. Waxman, for 5 minutes.

OPENING STATEMENT OF HON. HENRY A. WAXMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. WAXMAN. Thank you very much, Mr. Chairman. Today we are examining Congressman Gardner's bill to change the approval process for liquefied natural gas exports. I said it when we first started discussing the possibility of LNG exports, I have an open mind, but I want to talk about some of my concerns. A number of studies predicted that LNG exports would have mildly positive economic effects, and since then DOE has moved aggressively to approve LNG exports. Today they have approved seven export proposals, and they are continuing to examine other applications as well.

We need to carefully consider the impact of LNG exports on natural gas prices, and the impact of higher prices on American consumers and manufacturers. And we also need to look at the impact of LNG exports on global carbon emissions. Increasing U.S. exports would allow other countries to move from coal to natural gas, reducing their carbon emissions abroad, but LNG exports could increase U.S. carbon pollution by shifting electricity generation back to coal, and increasing fugitive methane emissions. I am not opposed to DOE's considering applications for additional LNG exports, but I want those reviews to be thorough.

I am concerned about the approach of this bill. The bill would short circuit the established review process for pending and future LNG export applications. It requires DOE to approve essentially unlimited LNG exports to all 159 World Trade Organization coun-

tries without any determination that such exports are in the public interest, or whether they would have significant adverse impacts on domestic natural gas prices, manufacturing, and jobs. DOE would have to immediately grant the 25 LNG export applications currently pending. In doing that, by the way, that would result in approved export amount of 36 billion cubic feet per day. That is almost half of all natural gas consumed daily in the United States. Unlimited LNG exports would have serious impacts on consumers and manufacturers. That is why major companies like Dow, Ocoa, and Newcourt have raised concerns about this bill.

Proponents of unlimited LNG exports contend we need to help Ukraine and our European allies resist Russian aggression. This bill will not result in LNG exports to Europe for several years, if at all. No LNG export facilities currently exist in the continental United States. The first export terminal will not begin initial operations until late 2015. Export capacity will not ramp up into other facilities until 2017 or 2018.

When the U.S. actually begins to export significant quantities of LNG 3 or 4 years from now, where will it go? Well, it won't go directly to Ukraine, because Ukraine does not have any facilities to import or re-gasify LNG. In fact, it may not even go to Europe. We send be sending a clear message to Russia its aggression will have costly consequences, but I worry whether this really has the impact we want on a foreign policy basis. Russia is a member of the World Trade Organization. This bill adds Russia to the list of countries that can receive American natural gas without any DOE review. That is a very strange way to send a signal to support our American allies in Europe.

This hearing should help us have an opportunity to think carefully about the bill, and I want to yield the balance of my time to Mr. McNerney.

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

Mr. MCNERNEY. Thank you. I am in favor of LNG exports, but I have four concerns. First of all, gas production in this country needs to be done cleanly, and that means eliminating fugitive gas, it means don't use fresh water, it means prevent well leakage to groundwater, and it means treating waste water. Until we are sure that we have national standards of some kind to make sure that that happens, I am very skeptical. Second, these large exports could impact U.S. manufacturing renaissance, and the price of natural gas generally in this country.

Third, LNG export facilities are already being approved faster than they can be built, so this isn't really needed. And as Mr. Waxman mentioned, Ukraine doesn't even have LNG import facilities. And lastly, automatic approval seems pretty extreme to me. I mean, this could encourage the worst kind of applications to be submitted, knowing that they are going to be approved no matter what. So, until those concerns are addressed, I don't think I can support this bill. Thank you. I yield back.

Mr. WHITFIELD. Gentleman's time has expired, and that concludes the opening statements. Today we have two panels of wit-

nesses, and on the first panel we have one person, and that person is Dr. Paula Gant, who is the Deputy Assistant Secretary for Oil and Natural Gas at the Department of Energy. And part of her portfolio certainly has responsibility for this area. So, Dr. Gant, we will recognize you for your 5-minute opening statement. Turn your——

STATEMENT OF PAULA GANT, DEPUTY ASSISTANT SECRETARY FOR OIL AND NATURAL GAS, OFFICE OF FOSSIL ENERGY, DEPARTMENT OF ENERGY

STATEMENT OF PAULA GANT

Ms. GANT. Thank you, Chairman Whitfield, and Ranking Members Rush and Waxman, and the members of the subcommittee. I very much appreciate the opportunity to appear before you today, and to have the opportunity to explain and answer your questions about the Department's process for regulating the export of natural gas, including liquefied natural gas, or LNG exports.

As Representative Gardner and Representative Rush have noted, we are enjoying an incredibly abundant natural gas supply, and observing the tremendous opportunities presented by that in recent years. It certainly makes my job quite a lot of fun, and these are extraordinary times for the country. There is tremendous opportunity, and we at the Department are very much focused on helping ensure that the country realizes that opportunity.

Over the last several years, domestic gas production has increased significantly, outpacing demand growth, and resulting in declining net natural gas imports. This production growth is primarily due to the use of improved drilling technologies and practices, including largely the ability to extract natural gas from shale formations. Productions from shale formations amounted for a little less than two percent of domestic natural gas production in 2000. By 2012, that had risen to 40 percent of natural gas production, quite a dramatic change.

Historically, the Department of Energy has played an important role in the development of technologies that have enabled the access to energy resources like this. Beginning in the late 1970s, public research dollars were invested in the development of hydraulic fracturing and horizontal drilling technologies that were later picked up and refined with private investment, and continued industry innovation. This has unlocked billions of dollars in economic activity associated with shale gas production.

Thanks to American ingenuity and know-how applied to this tremendously abundant natural gas resource, the U.S. is now the world's number one gas producer, and is poised to become a net exporter of gas in 2018. This is according to the Energy Information Administration. And this is an extraordinary shift in our fortunes. Our outlook is shifting from one framed by energy scarcity to one framed by energy abundance. This presents tremendous opportunity and tremendous responsibility that we get it right.

Today domestic natural gas prices are lower than international prices of delivered LNG to overseas markets. As in the United States, demand for natural gas is increasing rapidly in these other markets. Due primarily to these developments, DOE has received

a growing number of applications to export domestically produced natural gas to overseas markets in the form of LNG, or liquefied natural gas. DOE's authority to regulate natural gas arises under the Natural Gas Act, as mentioned previously. It provides two statutory standards for processing applications to export LNG from the United States.

By law, applications to export LNG to countries with which the U.S. has a free trade agreement that provides for natural treatment of trade in natural gas are deemed to be consistent with the public interest, and the secretary must grant authorization without modification or delay. As of March 24, DOE has granted 35 such applications. For applications to export liquefied natural gas to non-free trade agreement countries, the secretary must grant that authorization unless, after an opportunity for hearing, the proposed export is found not to be consistent with the public interest. In executing that requirement, DOE has established a robust process to assess the public interest, a process that provides for robust public input and transparency, and also allows a balancing of the many aspects of the public interest that must be considered, and that may potentially be affected by the export of natural gas.

While Section 3(a) of the Natural Gas Act establishes a broad public interest standard, and a presumption favoring export authorizations, the statute neither defines the public interest, nor identifies criteria that must be considered. In prior decisions, however, the Department has identified a range of factors that it evaluates when assessing the public interest, including economic impacts, international considerations, environmental impacts, security of natural gas supply, among others. To conduct this review, the Department looks at the record evidence, as presented by applicants and participants in the proceeding. Applicants and interveners are free to raise new issues or concern relevant to the public interest that may have not been address in prior cases. And, in fact, we have seen that to be the case.

To date, DOE has granted seven conditional authorizations for long term export of domestically produced lower 48 natural gas to non-FTA agreement countries. This is equivalent to 9.3 billion cubic feet a day of capacity. This includes, as was noted, the Jordan Cove Energy Project, which the Department approved yesterday. As of today, there are 24 applications pending to export LNG to non-free trade agreement countries. The Department will continue to process these applications on a case by case basis in the order of precedence that had been established and made public on DOE's Web site. During this time, as we have done previously, we will continue to monitor market developments and assess their impact in the assessment of the public interest, and consider information as it becomes available.

In conclusion, Mr. Chairman, I would like to emphasize that DOE is committed to moving this process forward as expeditiously as possible. We understand the importance of this issue and its significance, and the importance of getting our process right. Thank you, Mr. Chairman. I would be happy to answer questions.

[The prepared statement of Ms. Gant follows:]

Statement of
Paula Gant
Deputy Assistant Secretary for Oil and Natural Gas
Office of Fossil Energy
U.S. Department of Energy

Before the

Subcommittee on Energy and Power
Committee on Energy and Commerce
United States House of Representatives

The Department of Energy's Program Regulating Liquefied Natural Gas Export Applications

March 25, 2014

Thank you Chairman Whitfield, Ranking Member Rush, and members of the Subcommittee; I appreciate the opportunity to be here today to discuss the Department of Energy's (DOE) program regulating the export of liquefied natural gas (LNG), and to answer questions about H.R. 6, the "Domestic Prosperity and Global Freedom Act."

Recent Developments in LNG Exports

The boom in domestic shale gas provides unprecedented opportunities for the United States. Over the last several years, domestic natural gas production has increased significantly, outpacing consumption growth, resulting in declining natural gas and LNG imports. Production growth is primarily due to the development of improved drilling technologies, including the ability to produce natural gas trapped in shale gas geologic formations.

Historically, the DOE has played an important role in the development of technologies that have enabled the United States to expand development of our energy resources. Between 1978 and 1992, public research investments managed by the Department contributed to the development of hydraulic fracturing and extended horizontal lateral drilling technologies that spurred private sector investments and industry innovation, unlocking billions of dollars in economic activity associated with shale gas.

Today, domestic natural gas prices are lower than international prices of delivered LNG to overseas markets. As in the United States, demand for natural gas is growing rapidly in foreign markets. Due primarily to these developments, DOE has received a growing number of applications to export domestically produced natural gas to overseas markets in the form of LNG.

DOE's Statutory Authority

DOE's authority to regulate the export of natural gas arises under section 3 of the Natural Gas Act (NGA), 15 U.S.C. § 717b. This authority is vested in the Secretary of Energy and has been delegated to the Assistant Secretary for Fossil Energy.

Section 3(a) of the NGA sets forth the standard for review of most LNG export applications:

> [N]o person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the [Secretary of Energy] authorizing it to do so. The [Secretary] shall issue such order upon application, unless after opportunity for hearing, [he] finds that the proposed exportation or importation will not be consistent with the public interest. The [Secretary] may by [the Secretary's] order grant such application, in whole or part, with such modification and upon such terms and conditions as the [Secretary] may find necessary or appropriate.

Section 3(a) thus creates a rebuttable presumption that a proposed export of natural gas is in the public interest. Section 3(a) also authorizes DOE to attach terms or conditions to orders that authorizing natural gas exports the Secretary finds are necessary or appropriate to protect the public interest. Under this provision, DOE performs a thorough public interest analysis before acting.

In the Energy Policy Act of 1992, Congress introduced a new section 3(c) to the NGA. Section 3(c) created a different standard of review for applications to export natural gas, including LNG, to those countries with which the United States has in effect a free trade agreement requiring the national treatment for trade in natural gas. Section 3(c) requires such applications to be deemed consistent with the public interest, and requires such applications to be granted without modification or delay.

Free Trade Agreement (FTA) Countries

There are currently 18 countries with which the United States has in place free trade agreements that require national treatment for trade in natural gas for purposes of the Natural Gas Act. These 18 countries include: Australia, Bahrain, Canada, Chile, Colombia, the Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, Republic of Korea, and Singapore.

There also are two countries — Israel and Costa Rica — that have free trade agreements with the United States that do not require national treatment for trade in natural gas for purposes of the Natural Gas Act.

Because complete applications under section 3(c) must be granted without modification or delay and are deemed to be in the public interest, DOE does not conduct a public interest analysis of those applications.

DOE Process to Review Applications to Export LNG to non-FTA Countries

DOE's review of applications to export LNG to non-FTA countries is conducted through a public and transparent process. Upon receipt of an application, DOE issues a notice of the application in the *Federal Register*, posts the application and all subsequent pleadings and orders in the proceeding on its website, and invites interested persons to participate in the proceeding by intervening and/or filing comments or protests. Section 3(a) applicants are typically given an opportunity to respond to any such comments or protests and, after consideration of the evidence that has been introduced into the record, DOE issues an order on the application.

Under the Natural Gas Act, DOE's orders are subject to a rehearing process that can be initiated by any party to a proceeding seeking to challenge DOE's determinations. Court review is available as well after the rehearing process is exhausted.

Public Interest Criteria for NGA Section 3(a) Applications

For applications requesting authority to export LNG to countries that do not have free trade agreements requiring national treatment for trade in natural gas, DOE conducts a full public interest review. While section 3(a) of the NGA establishes a broad public interest standard and a presumption favoring export authorizations, the statute neither defines "public interest" nor identifies criteria that must be considered. In prior decisions, however, DOE/FE 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. To conduct its review, DOE/FE looks to record evidence developed in the application proceeding. Applicants and interveners are free to raise new issues or concerns relevant to the public interest that may not have been addressed in prior cases.

Jurisdiction over the LNG Commodity Export Versus the LNG Export Facility

The DOE exercises export jurisdiction over the commodity (natural gas), whereas other Federal, state, and local organizations have jurisdiction over the facilities used in the import or export of the commodity, depending on the facility location.

The Federal Energy Regulatory Commission (FERC) is responsible for authorizing the siting, construction, expansion, and operation of LNG import and export terminals pursuant to a delegation of authority from the Secretary of Energy and section 3(e) of the Natural Gas Act. FERC may approve those applications in whole or in part with such modifications and upon such terms and conditions as it finds necessary or appropriate.

The U.S. Department of Transportation's Maritime Administration (MARAD) is responsible under the Deepwater Port Act of 1974, as amended, (33 U.S.C. § 1501 *et seq.*) for the licensing system for ownership, construction, operation and decommissioning of deepwater port structures located beyond the U.S. territorial sea, including deepwater LNG export facilities.

Sabine Pass Authorization – First Long-Term LNG Export Authorization

DOE granted the first long-term application to export domestically-produced lower-48 LNG to non-FTA countries to *Sabine Pass Liquefaction, LLC*, (*Sabine Pass*) in DOE/FE Order Nos. 2961 (May 20, 2011), 2961-A (August 7, 2012), and 2961-B (January 25, 2013). The LNG export volume authorized is equivalent to 2. 2 billion cubic feet per day (Bcf/d) of natural gas for a period of 20 years. In the first of the *Sabine Pass* orders, DOE stated that it would evaluate the cumulative impact of the Sabine Pass authorization and any future authorizations for export authority when considering subsequent applications.

LNG Export Study

Following issuance of the *Sabine Pass* order, DOE undertook a two-part study of the cumulative economic impact of LNG exports. The first part of the study was conducted by the Energy Information Administration (EIA) and looked at the potential impact of additional natural gas exports on domestic energy consumption, production, and prices under several prescribed export scenarios. The second part of the study, performed by NERA Economic Consulting under contract to DOE, evaluated the macroeconomic impact of LNG exports on the U.S. economy with an emphasis on the energy sector and natural gas in particular. The NERA study was made available on December 5, 2012.

On December 11, 2012, DOE published in the *Federal Register* a Notice of Availability of the EIA and NERA studies, and inserted both parts of the study into 15 then-pending LNG export application dockets for public comment. An initial round of comments on the study ended on January 24, 2013, and reply comments were due February 25, 2013.

Comments to the LNG Study

In response to the Notice of Availability, DOE received over 188,000 initial comments and approximnately 2,700 reply comments. Proponents of LNG exports generally endorsed the results of the two-part study, particularly the conclusion of the NERA study that increasing levels of exports will generate net economic benefits for the United States. On the other hand, comments filed by opponents of LNG exports raised a number of issues, including challenges to the assumptions and economic modeling underlying the two-part study and assertions that the two-part macroeconomic study should have further examined regional, sectoral, or environmental issues.

Use of Annual Energy Outlook Projections

On December 16, 2013, EIA issued its most recent projections for 2035 in the Annual Energy Outlook 2014 Early Release Overview (AEO 2014 ER). Compared to AEO 2013 Reference Case, total natural gas consumption for 2035 is projected to increase by 4.7 Bcf/d, from 78.7 Bcf/d to 83.4 Bcf/d. However, total domestic dry gas production is projected to rise by 13 Bcf/d of natural gas, from 85.9 Bcf/d to 98.9 Bcf/d (although this increase includes Alaska natural gas

production). Projections from the AEO 2014 ER reflect net LNG exports from the United States in a volume equivalent to 9.2 Bcf/d of natural gas. Of this projected volume, 7.4 Bcf/d are exports from the lower-48 states, 0.4 Bcf/d are imports to the lower-48 states, and 2.2 Bcf/d are exports from Alaska. This estimate compares with projected net LNG imports of 0.4 Bcf/d in the lower-48 for 2035 in the AEO 2011 Reference Case. The 2035 Henry Hub price in the AEO 2014 Early Release Reference Case is $6.92/MMBtu, down from $7.31/MMBtu in the AEO 2011 Reference Case (both in 2012 dollars).

When comparing the AEO 2014 ER and AEO 2013 Reference Case, the projections indicate that market conditions would continue to accommodate increased exports of natural gas. We also note that EIA's projection in the AEO 2014 Early Release Overview reflects domestic prices of natural gas that rise due to both increased domestic demand and exports, but that these price increases will be followed by "[a] sustained increase in production ... leading to slower price growth over the rest of the projection period."

LNG Export Applications Status

Consistent with the NGA, as of March 24, 2014, DOE has approved 35 long-term applications to export lower-48 LNG to free trade agreement countries in an amount equivalent to 37.96 billion standard cubic feet per day of natural gas. In addition, DOE has two long-term applications pending to export lower-48 LNG to free trade agreement countries. No worldscale liquefaction facilities in the lower-48 currently exist, one facility is currently under construction, and my office estimates that another 26 additional worldscale facilities are proposed to be built.

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

As of March 24, 2014, DOE has granted one final and six conditional long-term authorizations to export lower-48 LNG to non-free trade agreement countries in a total amount equivalent to 9.27 billion standard cubic feet per day of natural gas from five proposed liquefaction facilities and one under construction. As of March 24, 2014, DOE had 24 applications pending to export LNG equivalent to an additional 26.59 billion standard cubic feet per day of natural gas to non-free trade agreement countries.

DOE Path Forward

The Department will continue processing the pending non-FTA LNG export applications on a case-by-case basis, following the order of precedence previously established and set forth on DOE's website. During this time, the Department will continue to monitor any market developments and assess their impact in subsequent public interest determinations as further information becomes available.

H.R. 6, the "Domestic Prosperity and Global Freedom Act":

While the Administration has taken no position on H.R. 6, I would like to provide the Committee with a description of the changes to DOE's export authorization process that H.R. 6 would make.

Section 2 of H.R. 6 would amend Section 3(c) of the NGA to include all World Trade Organization (WTO) member nations within the class of nations for which export authorizations must be granted "without modification or delay." There are 159 WTO member nations, as compared to just 18 countries with which the United States has Free Trade Agreements covering natural gas. Because the WTO includes every country that we are aware of having expressed an interest in importing U.S. LNG, the practical effect of this change would be to eliminate the need for applicants to seek NGA Section 3(a) authorizations, which require DOE's public interest review. Furthermore, Section 3 of H.R. 6, would require DOE to approve "[a]ny application for authorization to export natural gas ... for which a notice has been published in the Federal Register before March 6, 2014 ... without modification or delay." These changes would have the effect of increasing the approved LNG export volume from 9.27 bcf/day to 35.86 bcf/day without further public participation or consideration by DOE of public interest factors such as economic impacts, security of natural gas supply, and environmental impacts.

Conclusion

In conclusion Mr. Chairman, I would like to emphasize that DOE is committed to considering the export applications as expeditiously as possible. DOE understands the significance of this issue — as well as the importance of getting these decisions right.

Mr. WHITFIELD. Thank you very much, Dr. Gant. We appreciate your statement, and taking time to come over and talk about this important issue. At this time I recognize myself for 5 minutes of questions.

Of course, one of the developments with Mr. Gardner's legislation is it creates WTO countries the same as free trade agreement countries. And in your written testimony, you stated that you were concerned that H.R. 6, one of your concerns, that it would leave out public input. And I wanted to just explore that a little bit with you. When DOE made the NERA study available, that study was made available for public comment, and that was kind of the baseline for reviewing these applications.

And in yesterday's Order on the Jordan Cove project, DOE concluded that NERA's explanation of its modeling design, methodology, and results provided a sufficient basis both for the public to provide meaningful comments, and for the Department to evaluate NERA's conclusions. And also DOE concluded in this recent Order that, "We are not persuaded that using post-Annual Energy Outlook after post-2011 energy productions", you are not persuaded that anything post-2011 would have materially affected the findings of the LNG export study.

So it would appear that the DOE non-FTA filing and authorization, since it is just one permitting process, because we have to get FERC involved also, it appears to me that your concerns about public input, maybe it is not that much of a concern, because the NERA study is sort of the baseline anyway, with the comments that you all made on these recent approvals. So would you agree with me that maybe you are being too concerned about the implications of what you perceive to be the lack of public input?

Ms. GANT. Thank you, Mr. Chairman, and I agree the language in our Orders can be quite hard to read out loud sometimes. I struggle with it myself. I think there are a couple pieces to your question, and if I can take them in two? There are a number of aspects that inform our public interest determination, economic factors being some of them, as framed by the NERA analysis to a great extent, including environmental implications and geopolitical consideration. So the public interest is broader than the economic aspects of it.

As I understand the legislation, and I am not intimately familiar with it, it would remove DOE's requirement to conduct a public interest determination. And the public interest determination is the means by which we solicit public input, so it would remove the public's opportunity to provide input on our process.

The second piece of your question——

Mr. WHITFIELD. But if you had that public input in the NERA study, wouldn't that compensate for the——

Ms. GANT. The NERA study was cut out for public comment, and then it is put on the record in each of our subsequent Orders, so it applies to each of those Orders. And each of the applications, and the dockets that are established for them, must be given their own individual consideration on a case by case basis, as established by the statute. Could I answer the second part of your question, with regard to the NERA?

Mr. WHITFIELD. Yes, go ahead.

Ms. GANT. And I believe the reference you are referring to in our Order refers to the new information that has been provided. So the NERA analysis was based on the Annual Energy Outlook 2011, as released by EIA. In December, EIA released their Annual Energy Outlook 2014. They do this every year. The information provided therein, particularly with regard to the AEO 2014, demonstrates a projection for natural gas supply growth that is greatly outpacing expected natural gas demand growth. And so the finding, from our perspective, is that integrating the AEO 2014 into our analysis would not create a conclusion inconsistent with what we have already come to in 2011, which indicates that exports of natural gas generate net positive benefits for the U.S. economy.

Mr. WHITFIELD. Now, has DOE taken an official position on the Gardner legislation?

Ms. GANT. I am aware of the proposal. It has not made its way through interagency review, so I am not in a position to comment on the specifics.

Mr. WHITFIELD. My time has expired. At this time I recognize Mr. Rush for 5 minutes of questioning.

Mr. RUSH. Dr. Gant, thank you again for appearing before this subcommittee. And a lot of this—have under consideration is pretty timely now because of what is happening in Eastern Europe now. And I think that all the members of this subcommittee, in fact, all the Members of the Congress, we all stand together because we want to ensure that there are effective sanctions against Putin, and what he has done in Crimea, and we want to stop him. I don't think that there is any doubt in anybody's mind that we want to stand resolute and united, and trying to do all that we can to ensure that the democratic process is available to all those who are in Eastern Europe.

But, with that said, the question came up earlier today, or the topic came up earlier today about H.R. 6, and its having such a tremendous impact on the future of Eastern Europe. And my question to you is, if H.R. 6 was, in fact, enacted today, when is the earliest possible time that exports of LNG will have their impact on decreasing Russia's hold on the Ukraine, or on the other of our European allies, whom right now have been paying Russia for their natural gas supply? When do you see, or can you estimate, that Russia and Putin will feel the effect of the decrease of the Eastern European countries' dependence on Russian natural gas?

Ms. GANT. Thank you for that question, Ranking Member Rush. A couple of things that I think I can share that are responsive. And first I would say that we are tremendously concerned in moving to take immediate action to help our allies in Ukraine, and across Europe, and take the situation very seriously. To answer your question with regard to the legislation, again, I will just have to ask the committee to understand I haven't had a chance to really assess the legislation and what impact it would have. But what I can say is that our understanding of the way that the timeline on which projects are moving is that the earliest point at which we could export substantial volumes of liquefied natural gas from the lower 48 would be the third quarter of 2015. So, regardless of what happens with a change in legislation, because the project that has final approval is moving along in its process at FERC.

However, there are other things that we can do to help the Ukraine and our European allies. The administration is keenly aware of these, and engaged in looking for ways to provide financial and technical existence. Also, there is the possibility of reversing pipeline flows in the Ukraine, should Russia actually turn off the tap, so to speak. That hasn't happened yet, but there are efforts underway to prepare for that eventuality and reverse pipeline flows so that gas could flow from Europe into the Ukraine.

And, importantly, as has been noted before, our increase in domestic production in recent years has allowed us to significantly reduce our reliance on imported liquefied natural gas. Those cargoes that would have been destined for U.S. markets have made their way to other places on world markets. And we do know that increased supplies of natural gas on global markets, and increase diversity of those supplies, increases our energy security, and those of our allies and trading partners. So things are happening that could have a positive impact.

Mr. RUSH. But you have not been able to really look at and do your due diligence on this bill? That is understandable. But is there any way the effect of this bill, or any bill right now that would come out of the Congress on remediating the issue, or helping the Ukrainian people, it is not really certain right now any legislation that this Congress won't have an immediate effect. Is that what you are saying, in essence?

Mr. WHITFIELD. The gentleman's time has expired, but I would like you to go on and answer his question.

Ms. GANT. I would have to beg your patience that I am not in a position to opine on actions that this body might take, but I can say that we are proceeding with the guidance that you have given us, and working as expeditiously as possible.

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

Mr. BARTON. Thank you, Mr. Chairman, and I thank our witness for being here. First I am going to make a comment, and then I am going ask you some questions. Mr. Waxman referred to, and you also, I think, referred in your opening statement to the number of projects that are pending, and the amount of LNG that would be exported, if they were all to be approved. There is one minor point, they also all have to be built, and they are not all going to be built. You could approve 30 projects. My guess is you will have one or two built on the East Coast, one or two on the West Coast, and perhaps two or three on the Gulf of Mexico.

Now, I could be totally wrong about that, but the cost of these projects, and the long term financing commitment, and the uncertainty of the foreign markets, as soon as we start exporting LNG, these prices that look so lucrative overseas, they are not going to stay at $16 and NCL for 12 or $13. When people see that the U.S. is going to export to Hungary, or to Japan, or to Eastern Europe, or wherever, those prices are going to change, and there is going to be an equilibrium point. We don't know where that is, but you are not going to build 20 LNG terminals to export natural gas. That is just not going to happen.

Could you give an example, at least hypothetically, of what would not be in the national interest? I mean, so far every project

that has been reviewed has been approved, and the law is such that you have to find it is not in the national interest. If it is where we already have a trade agreement, it is an automatic, and if it is not, you do have to do this review, but so far the yeses have won every time. So what would be an example that would not be in the national interest, hypothetically?

Ms. GANT. Thank you, Congressman. We would agree that it is unlikely that all of these projects will get built, that the success of these will depend on a number of factors. These are decade old commitments. They require very sophisticated engineering and construction capacities, and very large capital commitments, and very significant steel in the ground, if you will. The guidance that we have been given in the Natural Gas Act is to conduct a public interest review. As I noted, we didn't get a lot of guidance on what that meant, so we have tried to create a process that is very transparent, and we are working our way through that process.

Considering the public interest in the criteria that we have set out, what I can tell you is that the considerations that we take into account in making that determination are all part of the public record. And given the information that is placed on the record to date in those proceedings, weighing all of that, and balancing those interests, our determination has been that——

Mr. BARTON. You——

Ms. GANT [continuing]. Export is in the public interest.

Mr. BARTON. You have talked for a minute and a half and haven't said a thing. You know, that is not an adversarial question. Let me give you a hypothetical. If Barton LNG Exports presents an application to the Department of Energy to export LNG to North Korea to help build manufacturing capability to build missiles that would then be capable of attacking the United States, would that be in the national interest?

Ms. GANT. I would imagine that quite a bit of information would be put into the public record for us to consider in that proceeding, and we would do so.

Mr. BARTON. I would hope the answer to that question would be no. I mean, well, my time is evaporating, so let me move on. Is it safe to assume that the geopolitical considerations that Mr. Rush has talked about, and Mr. Shimkus talked about, are reasons to approve LNG exports, that there is a geopolitical strategic component to the review?

Ms. GANT. Yes, sir. In all of our orders that we have approved to date, and authorizations have granted, geopolitical considerations, international considerations, are factored in. We take very seriously our Nation's commitment to free trade, and very much understand that increasing the supply and diversity of natural gas on global markets benefits our energy use security, and that of our allies.

Mr. BARTON. OK. This is my last question, and I want you to give me, in the spirit of John Dingle, who is not here, a yes-or-no answer. And I will give you a hint that these questions are designed to make your report look good, OK? Question one, isn't it true that the Department of Energy rejected the claim that the NERA study overstated the likely macro benefits from LNG exports? Yes or no?

Ms. GANT. Yes, sir.

Mr. BARTON. OK. Isn't it true that DOE observed that more natural gas is likely to be produced domestically if LNG exports are authorized than if they are prohibited?

Ms. GANT. Yes, sir.

Mr. BARTON. OK. Isn't it also true that the Department of Energy rejected the claim that there is a one for one tradeoff between gas used in manufacturing and gas diverted for export?

Ms. GANT. Yes, sir.

Mr. BARTON. OK. And isn't it also true that DOE was not persuaded that LNG exports will substantially increase the volatility of domestic natural gas prices?

Ms. GANT. Yes, sir.

Mr. BARTON. And this is my last question. Isn't it true that DOE believes that the public interest generally favors authorizing proposals to export natural gas that have been shown to lead to net benefits to the U.S. economy?

Ms. GANT. Yes, sir.

Mr. BARTON. Thank you very much.

Mr. WHITFIELD. Gentleman's time has expired. At this time recognize the gentleman from California, Mr. Waxman, for 5 minutes.

Mr. WAXMAN. Thank you, Mr. Chairman. The Department of Energy has established a process for considering applications to export LNG, if the LNG would go to a country that has a free trade agreement with the U.S., the application is quickly granted. But if the LNG is going to a country without a free trade agreement, DOE does a public interest determination. That takes some time, but DOE has granted seven of those applications so far. Dr. Gant, I would like to ask you about how the Gardner bill would change this approval process. Everyone should understand what this bill would actually do. 24 applications to export LNG to non-free trade agreement countries are currently pending before DOE. Under the Gardner bill, what would happen to those applications?

Ms. GANT. Thank you, Congressman. Again, I have had the chance to only briefly review the bill, but as I understand the basic concept, it would grant status to WTO nations like that is currently granted to FTA nations under the Natural Gas Act, and in doing so, would remove DOE's requirement to conduct a public interest determination.

Mr. WAXMAN. So they would be granted without modification or delay?

Ms. GANT. If that is what the legislation instructs.

Mr. WAXMAN. OK. It is my understanding it does. So for these applications, there would be no public interest determination, or analysis of whether the exports would have adverse impacts on domestic natural gas prices or consumers, is that right?

Ms. GANT. As my understanding of the proposal is, yes, sir.

Mr. WAXMAN. OK. Automatically granting those applications would result in the approval of a total of 36 billion cubic feet per day in LNG exports. That is equal to almost half of our total domestic consumption. Has DOE done any analysis of how this level of potential exports would impact domestic natural gas prices?

Ms. GANT. Yes, sir. My understanding is that the capacity presented in the 24 applications that have not been granted non-FTA

approval status is 36 BCF a day. The economic analysis that we have conducted to date does not consider exports at that level.

Mr. WAXMAN. OK. So these are just the pending applications? Under the Gardner bill, future applications to export LNG to any of the 159 World Trade Organization member countries, DOE would be required to just deem them in the public interest and grant them, isn't that right?

Ms. GANT. Again, not being familiar with the specifics of the legislation, if there is no public interest determination required, my understanding is, yes, the Secretary would be required to deem them——

Mr. WAXMAN. If there is no public interest——

Ms. GANT. Right.

Mr. WAXMAN [continuing]. Requirement for analysis?

Ms. GANT. Yes, sir.

Mr. WAXMAN. OK. The WTO membership includes all likely importers, and the automatic approval doesn't depend on the proposed LNG export levels. Every application to export any amount of LNG to virtually anywhere in the world would be automatically granted under this bill. Dr. Gant, that is really just unlimited LNG exports, isn't it?

Ms. GANT. My understanding is if the exports were authorized, then market forces would determine how many LNG cargoes would actually be exported from the United States.

Mr. WAXMAN. Well, as far as the Government is concerned, an application from anywhere in the world would be automatically granted under this bill. Market forces, of course, would determine another——

Ms. GANT. Yes, sir. The——

Mr. WAXMAN [continuing]. Be another factor. OK. Is there any way under this bill for DOE to ensure that the total level of LNG exports will be in the public interest, or not have significant adverse impacts on domestic natural gas prices, consumers, and manufacturers?

Ms. GANT. Our current process considers these applications on a case by case basis, and looks at the macroeconomic benefits and impacts of LNG exports. To the extent that we weren't conducting that review, we wouldn't be opining on that.

Mr. WAXMAN. And is it your understanding the Gardner bill would not require that review?

Ms. GANT. Again, I have very limited understanding.

Mr. WAXMAN. OK. I have an open mind on LNG exports, but I have concerns about this bill. Rubber stamping what I think is unlimited LNG exports without any determination that they are in the public interest could have serious unintended consequences. That is why many of the largest manufacturers in the country oppose this bill. Yield back my time, Mr. Chairman.

Mr. WHITFIELD. Gentleman yields back. At this time, recognize the gentleman from Illinois, Mr. Shimkus, for 5 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman. Let me ask, permitting doesn't mean building, is that correct?

Ms. GANT. Correct.

Mr. SHIMKUS. And I take it my colleagues didn't understand that. The markets will determine whether these get built, and a lot

of jobs for steelworkers, a lot of jobs for laborers. These LNG facilities are major construction projects, and that would be good for the economy also. I have spent 18 years as a Member of Congress, dealing with Eastern European issues. I have spent 3 years on the West German border. I have a passion for freedom and democracy in the former captive nations.

To my friend Mr. Rush, who I know shares the same thing, these countries are already seeing benefits of lower natural gas prices because of the ability to export. I want to read an article from Climate Change Science and Technology on 6 March. "Last week Lithuania took another important step towards the creation of its own liquefied natural gas terminal. The floating storage and re-gasification unit that is being built in South Korea by Hyundai Heavy Industries was put to water for initial testing, and christened by Lithuania's president. The ship should arrive in Klaipeda, the location of Lithuania's LNG terminal, by the end of the year and is planned for initial processing of LNG to start in December." My opening was just a passion plea. These countries need to free themselves from the extortion of Russian energy markets. And it is not just Eastern European. It is the Western European countries too. 50 percent of energy in Western Europe is from Russia. This is a big deal, folks.

And now let me tie it to this whole FTA/WTO debate. The key component is we don't have a free trade agreement with Europe, is that correct?

Ms. GANT. That is my understanding.

Mr. SHIMKUS. So if we want to help Europe, we have to move to the WTO format. There was another bill that I sponsored by Mike Turner, a member of the NATO Parliamentary Assembly, and that was to grant this same provision to NATO countries. And in the permutation of how legislation gets written, it was deemed an easier way to include the WTO members than to go to a defensive treaty alliance type issue.

Again, I want to make sure that I highlight, in this day and age, at this time in the world's history, with what is currently going, if you had any interest in a democratic, free Europe, whole and free, this is a big deal. The Russians extort by trade, they extort by energy. They get involved in political campaigns, legal and illegally. We are not making this up. Talk to any ambassador from an Eastern European country of Russian influence to try to destabilize their country. This is our opportunity, another way, without troops, bringing a measure of security to our European friends.

And, of course, Shimkus is ethnically Lithuanian. I am glad that they have moved on an import terminal, at great expense to them. They have already seen the benefits of being able to negotiate lower natural gas prices because of the acknowledgement that now they are going to be able to go to the world market, outside of Russia, for their energy needs.

So I want to thank you for the permits that you have already rendered. I hope that you will keep an open mind on this bill, and the WTO implications for our allies in Europe. It is a key component in this current struggle that we have. Thank you for, Mr. Chairman, a great hearing. I want to thank again Mr. Gardner.

There couldn't be a more important time to move this legislation than now. So, with that, I will yield back my time.

Mr. WHITFIELD. Gentleman yields back. At this time recognize the gentleman from California, Mr. McNerney, for 5 minutes.

Mr. MCNERNEY. Thank you, Mr. Chairman. I agree with my colleague from Illinois that natural gas is a geopolitical tool, and it would be beneficial to have LNG import to Ukraine, but Ukraine doesn't have LNG import facilities, and we are already approving LNG export facilities far faster than they can possibly be built, so I question the need for this bill. But I do have one question for Dr. Gant.

You know, with the deeming and automatic approval of LNG export facilities, that makes me worry about the quality of applications that you are going to be receiving, if that was to be enacted into law, in terms of safety, in terms of fugitive gas emissions, and all kinds of environmental problems. Is that something that would be a problem, in your mind, in your estimation?

Ms. GANT. Thank you for the question. I would just note that DOE has responsibility for considering the impact of actually exporting the natural gas molecule, while our partner agency, the Federal Energy Regulatory Commission, is responsible for the permitting and siting of the actual physical facility, and safety, and engineering quality, environmental impacts actually associated with the facility.

Mr. MCNERNEY. So those aspects are OK, as far as you are concerned?

Ms. GANT. Again, as I understand the legislation, it only addresses DOE's responsibilities.

Mr. MCNERNEY. OK. All right. That was my only question. I yield back.

Mr. WHITFIELD. Gentleman yields back. At this time we will recognize the gentleman from Nebraska, Mr. Terry, for 5——

Mr. TERRY. To follow on that line of questioning, from the day that a permit is filed with DOE, what has been the average timeline for the seven that have been granted?

Ms. GANT. Each individual application presents its own unique——

Mr. TERRY. That is why I said average——

Ms. GANT [continuing]. Individually.

Mr. TERRY [continuing]. Between the seven.

Ms. GANT. So once the comment period finished on the rulemaking, it was 3 months before we issued the first conditional authorization.

Mr. TERRY. 3 months?

Ms. GANT. And we are on an average of about a 2 month pace, give or take a week or 2——

Mr. TERRY. And that is——

Ms. GANT [continuing]. Depending on how fast we can——

Mr. TERRY. Very good. I understand that. Then what happens to the process one DOE signs off on a permit?

Ms. GANT. So the statute gives us a little bit of flexibility. An applicant can proceed in parallel at the Department of Energy and the Federal Energy Regulatory Commission. We have established a process by which those applicants that have started their pre-fil-

ing process at FERC are entered into our order in the order at which they apply to us after initiating that process, and that they proceed through our process in parallel, if you will, to the FERC application process.

However, we are a coordinating agency with the Federal Energy Regulatory Commission on the environmental impact assessment. So once we have given the conditional approval for export, then we wait until the Federal Energy Regulatory Commission has completed their environmental review, and then we consider that in our determination of a final authorization.

Mr. TERRY. OK. Now, even though you may be sped up, the reality is FERC still has to deal with it, so if there is one agency that wants to delay, for whatever political purposes, like Keystone pipeline and that, FERC can do that?

Ms. GANT. In the vast majority of the applications before us, the Federal Energy Regulatory Commission has the lead Federal agency responsibility——

Mr. TERRY. Right.

Ms. GANT [continuing]. For conducting environmental reviews of these projects.

Mr. TERRY. Couple of miscellaneous type questions here. A former member of this committee used to say that if we exported any, then that means the prices of natural gas in the United States would automatically go to the world prices on natural gas. That person always lost me on the logic. What is DOE's opinion on whether or not, if we fill up one ship with liquid natural gas and send it over to the Ukraine, or Lithuania, that that means that we will be on a world price for natural gas?

Ms. GANT. The analysis that we consider in assessing the public interest is based on the analysis conducted by EIA and NERA previously, particularly in NERA analysis across all scenarios envisioned where an export were provided for, were allowed, and taken up in global markets, we saw overall benefits to the U.S. economy. And, importantly, in the EIA's AEO 2014 that was released in December, that projects a significant increase over the forecast period in LNG exports relative to the base case used in our NERA analysis. We see an actual decrease in projected Henry Hub prices for natural gas in the U.S., so that the——

Mr. TERRY. OK.

Ms. GANT [continuing]. Baseline of 39——

Mr. TERRY. Very good. And have you been to the Balkan Fields, or the Eagleford Place?

Ms. GANT. I have not, but I imagine I will have——

Mr. TERRY. You should. The chairman and I, and a couple others, Cory, did that. Fly over at night and see how much of the natural gas is being flared off, or wasted, in my view.

Ms. GANT. Um-hum.

Mr. TERRY. And that is an extremely disappointing picture to me. So when we talk about whether or not exporting LNG is going to create a demand issue for us when we are burning off, flaring, almost a third sounds almost silly to me.

Ms. GANT. Um-hum.

Mr. TERRY. Has DOD, in your last 30 seconds, looked into how to better capture that ⅓ that is just lit off?

Ms. GANT. Yes, sir. A couple of important things, we are very focused on reducing methane emissions from natural gas and oil systems, and other sources across the economy, as part of the President's climate action plan. Specifically with regard to natural gas associated with oil production, increasingly producers are looking at gasifying their drilling sites, so moving off of diesel engines, onto natural liquefied natural gas engines, so you are looking at ways to increase the value of that fuel on site. In addition, the quadrennial energy review will provide an opportunity to look at obstacles to building gathering lines that would allow you to capture natural gas.

Mr. TERRY. It would, if you would get one.

Mr. WHITFIELD. The gentleman's time has expired. We have a vote on the House floor. We are going to try to do two more questions because Dr. Gant is going to be leaving, and we are going to be gone 50 minutes, and we are going to be coming back for the second panel. But the next on the list is Mr. Doyle. He will be recognized for 5 minutes, and then Mr. Gardner. And if you all wanted to——

Mr. DOYLE. Thank you, Mr. Chairman. Well, let me just say this. This hearing is not about whether or not we should export natural gas. We are doing that. Having said that, I have some great concerns about this bill.

Dr. Gant, you said that your average approval time is around 2 months, every 2 months you are approving a permit. And I also heard you say that, when Mr. Barton asked you, when the first permit that you approved would actually come online, you said around the third quarter of 2015, is that correct? So that is about 15 months from now. So, based on your granting permits on an average of about 2 months, you could conceivably grant another seven or eight permits before the first facility actually goes online, assuming it goes online by the third quarter of 2015. At that point we would have 15 permitted facilities to go to non-free trade agreement countries.

Now, you said that the difference between granting a permit to a non-FTA country versus an FTA country is you go through a process to see if it is in the national interest to do so. But, under Mr. Gardner's legislation, that would be waived. It would be treated just like an FTA permit, where you don't go through that process, is that correct?

Ms. GANT. As I understand.

Mr. DOYLE. So, conceivably, if somebody wanted to export natural gas to Russia, which is a WTO country, there wouldn't be a review process by DOE whether or not that was in the national interest? It would just be approved like an FTA country? Is that correct?

Ms. GANT. Correct.

Mr. DOYLE. I would say to Mr. Gardner, and people that are cosponsors of this bill, you may want to consider, based on what is going on in the world with the Russians, the Chinese, Pakistani, Turkey, how these countries are flaunting our trade laws and cleaning our manufacturers' clocks. We just came from a steel caucus hearing this morning where these same very countries that we could be sending natural gas to, without any review to see if it is

in the natural public interest, are using our trade laws to put our companies out of business.

The one edge our manufacturers have in this country is cheap energy, and we are about to take that from them too. Right now we have natural gas at $4 to $5 at MCF. They are paying $14 to $16 over there. Mr. Barton has it right. What is going to happen is our prices are going to come up a little, and their prices are going to come down a little, and we will eventually hit some sort of a leveling off period of pricing where it doesn't make any more sense to export. And the market will determine how many of these facilities actually get built, because they cost billions of dollars to build. And even if you approve 30 permits, the likelihood is nowhere near 30 facilities are going to get built.

Well, if the sweet spot ends up a $9 or $10, it then becomes the world price. Now we have lost our competitive edge, our manufacturers have, in this world market, because they no longer have the benefit of cheaper energy than their competitors overseas, whose companies still illegally subsidize their industries, and put the steel industry out of business. We lose 20, 30 companies before we get relief at the International Trade Commission.

I would just say to Mr. Gardner, and anyone else that is for this bill, let us sit down and think about the countries we want to actually do this to. Let us not open up to every WTO country. Let us talk about who our allies are, and who our partners are, and what we are trying to accomplish over in Europe and Eastern Europe, and maybe limit it to those countries. And let us make certain that if somebody can put an application in to send natural gas over to Russia right now that the review process that would be waived under your bill isn't waived. If you are not going to do that, I would suggest that you single out Russia and a few other countries not be eligible for this kind of favorable treatment.

I am not against exporting natural gas. I am for it. I am for doing it. What I hate to see happen is just like with the Keystone pipeline. You know, not an ounce of American steel in that pipeline. The Indians and the Russians provided the steel that is going to build that Keystone pipeline. We need buy America provisions in this bill. If we are going to build these export facilities, they better damn well use American steel, U.S. steel, not Russian steel, not Indian steel, making sure that our companies have a level playing field when we do this.

I am all for exporting the natural gas. I am not for giving away our competitive edge, and I am certainly not for giving cheap gas to our enemies. And this allows that to happen without any review from the Department of Energy. I don't have any questions. I yield back.

Mr. WHITFIELD. At this time recognize the gentleman from Colorado, Mr. Gardner, for 5 minutes.

Mr. GARDNER. Well, thank you, Mr. Chairman, and if the gentleman supports the exporting, I would hate to see him exporting. So I thank you for your passion that you bring to this bill, but I hope you will stay and listen to other witnesses who are testifying today who will completely rebut and refute the statements that you just made. In fact, there is testimony within today's hearing that talks about the price impact, that talks about many of those same

claims that you are making, which are refuted by the evidence and price impacts that are negligible, if at all, under this legislation.

But what we do know, of course, as the DOE witness has talked about, and I thank you for the opportunity to have you here today, is the economic impact that this would have on the United States right now. The DOE permit application, in your assumptions, you talk about the number of jobs it would create. Have any of these facilities resulted in less employment in the United States? Have any of these permits resulted in a net loss of employment to the United States?

Ms. GANT. I am not aware that those calculations have been made.

Mr. GARDNER. I mean——

Ms. GANT. I am not privy to them, if they have.

Mr. GARDNER. Does higher production of domestic energy result in more or less jobs?

Ms. GANT. The economic analysis that we base in our Orders demonstrates that greater production of natural gas has generated overall economic impacts.

Mr. GARDNER. And the gas that we are exporting is American gas, is that correct?

Ms. GANT. That is correct, sir.

Mr. GARDNER. So we are creating American jobs, yes?

Ms. GANT. Yes, sir.

Mr. GARDNER. With American energy?

Ms. GANT. That is what the economic analysis suggests.

Mr. GARDNER. And it is going overseas to displace energy that is coming from who, Russia?

Ms. GANT. It is hard to say which natural gas is being displaced, but there is no doubt that——

Mr. GARDNER. Would it displace Russian gas?

Ms. GANT. There is no doubt that we have greater supplies of natural gas——

Mr. GARDNER. Would that be a net benefit to U.S. allies?

Ms. GANT. It is definitely a net benefit.

Mr. GARDNER. And why would that be a net benefit?

Ms. GANT. Because increased supplies of gas on global markets, and diversity of those supplies, increases energy security.

Mr. GARDNER. So that means what for the United States, in terms of geopolitical situation?

Ms. GANT. We are very keenly interested and invested in the energy security of our allies and training partners.

Mr. GARDNER. So it would increase the security of our allies?

Ms. GANT. It is a key strategic interest to the United States.

Mr. GARDNER. OK. It would create American jobs?

Ms. GANT. What is it? I am sorry, I have lost track of what it——

Mr. GARDNER. We would create American jobs developing——

Ms. GANT. Increased production of natural gas has led to, yes, increased economic benefits.

Mr. GARDNER. And that would be a net benefit to the United States economy?

Ms. GANT. In our analysis to date, yes.

Mr. GARDNER. I thank the witness for her time.

Mr. WHITFIELD. I might make just one comment regarding the scenario of exporting gas to Russia, or North Korea, or wherever, and maybe Dr. Gant can answer this question, or maybe you can't, but the reason we have these hearings is to find out. But Mr. Doyle presented a pretty dire—and many of us would agree with you. We wouldn't want gas going to Russia, North Korea, some of these WTO countries.

It is my understanding that the Energy Policy Act of 1975 gave the President of the United States the authority to prohibit export of natural gas to any country if they deemed it should not be done. And I know the Gardner bill does not amend that Act, but do you know personally if what I have just said is accurate?

Ms. GANT. Mr. Chairman, if you wouldn't mind, I would rather take that question for the record——

Mr. WHITFIELD. Yes.

Ms. GANT [continuing]. Because I believe I know the answer——

Mr. WHITFIELD. OK.

Ms. GANT [continuing]. But I would rather——

Mr. WHITFIELD. All right.

Ms. GANT [continuing]. Not——

Mr. WHITFIELD. Well, if you wouldn't mind getting back in touch with our committee staff? Because it is our understanding that that is the case, that the President could intervene and prevent some of the scenarios that Mr. Doyle talked about. But we want to make sure that that is accurate. OK. That concludes the first panel, and we thank you very much for taking time to come over and give your insights on this, and we look forward to working with you as we move forward. So you are dismissed.

The second panel, we are going to cast these votes, and we are going to be back here in 50 minutes. And, as I have said before, we have world class restaurants in the Rayburn Building, so if you want to go down and get something to refresh yourself?

Mr. RUSH. They have 15 minutes to get down there.

Mr. WHITFIELD. Fifteen?

Mr. RUSH. They have got 15 minutes to get down to Rayburn. They close at 2:30.

Mr. WHITFIELD. Yes, they close at 2:30, so you better hurry. But we will be back in 50 minutes.

[Whereupon, at 2:15 p.m., the subcommittee recessed, to reconvene at 3:05 p.m. the same day.]

Mr. WHITFIELD. I would like to call the hearing back to order. And I want to apologize once again to those of you on the second panel. We appreciate your patience, and certainly do look forward to your testimony. And on the second panel today, we have Dr. Anita Orbán, who is Ambassador-at-Large for Energy Security for the government of Hungary. We have The Honorable Jim Bacchus, who is with Greenberg Trauig Law Firm. We have Mr. David Schryver, who is Executive Vice President of the American Public Gas Association, Mr. Kenneth Ditzel, who is Principal with the Charles River Associates. And we have Dr. David Montgomery, Senior Vice President for NERA Economic Consulting.

So all of you have a perspective on this issue, and we really look forward to hearing from you. So, at this time, I will recognize Dr.

Orbán for her 5 minute opening statement. And just make sure your microphone is on. Thank you.

STATEMENTS OF ANITA ORBÁN, AMBASSADOR–AT–LARGE FOR ENERGY SECURITY, MINISTRY OF FOREIGN AFFAIRS, HUNGARY; JAMES BACCHUS, CHAIR, GLOBAL PRACTICE GROUP, GREENBERG TRAUIG LLP; DAVID G. SCHRYVER, EXECUTIVE VICE PRESIDENT, AMERICAN PUBLIC GAS ASSOCIATION; KENNETH H. DITZEL, PRINCIPAL, CHARLES RIVER ASSOCIATES; AND W. DAVID MONTGOMERY, SENIOR VICE PRESIDENT, NERA ECONOMIC CONSULTING

STATEMENT OF ANITA ORBÁN

Ms. ORBÁN. Thank you, Mr. Chairman. Thank you, Chairman Whitfield, and the members of the subcommittee. I am honored to be here today to provide perspective on the importance of LNG export legalization for Central Eastern Europe. We applaud the leadership of this committee to look at the geostrategic aspect of the LNG export. On March 6 four ambassadors of the four Visegrád countries signed a letter to Speaker Boehner and Majority Leader Harry Reid to urge them to recognize the overall importance of U.S. engagement in Central Eastern Europe, and more specifically in the area of energy security. I would like to ask you, Mr. Chairman, to enter this letter into the record along with my written remarks.

Mr. Chairman, we are in the middle of the largest security crisis that Europe has seen since the end of the Cold War, and energy dependence, especially that of Ukraine and Central Eastern Europe is on everybody's mind. Energy import dependence is one of the key factors that limit the political options available to the Central Eastern European countries as U.S. allies. The popular interpretation of energy dependence, and natural gas dependence in particular, is widely associated with supply cutoffs. Supply cut may indeed happen, with unpredictable consequences for countries in the region. Yet, if used, it would seriously hurt the supplier as well, in the short term with loss of revenue, in the midterm with loss of its markets.

There is another aspect of dependency, however, which is much less discussed, and that is its price implication. It is prices that provide the best economic and political tool for the monopoly supplier. Whoever has the monopoly calls the shots. Higher prices inflict a very tangible cost on the dependent country's economy and population by stuffing the supplier's coffers, and allowing it to reap the economic grants to finance further political, economic, and military actions. Most importantly, it can be applied in a discriminatory manner. The only way to limit the monopoly supplier's ability to use the price weapon is to establish alternative supplies. Once they are in place, the monopoly supplier can no longer use the price discrimination tool freely.

For Central Eastern European countries the most important task is today to create the credible alternative options. To do that, we need to do two things. First of all, we need to enhance and ensure the capacity of the pipeline system and of the infrastructure, and we need to secure the necessary volumes of additional natural gas

import. The first is our homework. Only we can do that, to create robust energy infrastructure, to create access to alternative supply, to create access to energy terminals. It is beyond the limit of my presentation to go into details to explain how much and what we have done, but I am very happy to elaborate on them during the Q and A session.

However, Europe has been much less successful in building up the necessary volumes for alternative supply, and this has been largely out of the control of Europe. EU and U.S. sanctions against Iran, the slower than expected progress in Iraq, the upheaval in North Africa postponed, or put on hold indefinitely, potential alternative pipeline supplies. With no pipeline gas option available, the most credible alternative is to have access to the energy market. And it is pretty much only the American LNG which can create the credible volume to have a real impact in Central Eastern Europe.

The urgency of establishing the region's access to LNG means that the United States Congress has a potent tool at its disposal. By clearing the way for U.S. shale gas to reach America's Central European NATO allies, it would provide significant protection against the deployment of the energy weapon. It is simply not true that lifting the natural gas export ban today would not have an immediate effect in the region. It would. It would immediately change the business calculus for infrastructure investments, and send an extremely important message of strategic reassurance to the entire region.

Access to LNG would also assist Ukraine. During 2013, two capacities, reverse flow capacities, were opened toward Ukraine, one from the direction of Hungary, another from the direction of Poland, enabling the supply of natural gas to Ukraine on purely market terms.

Expediting LNG export is an elegant, yet very effective tool, which is relatively cheap to use. It is a historic opportunity to send a strong message of freedom to the region by simply letting the markets work. This is not a partisan issue. It is an American issue that all statesmen in this country must show leadership on.

Mr. Chairman, members of the committee, I believe that doing away with these export limitations would make economic sense, even in better times, but there is nothing like a crisis to focus the mind. As representatives of a country that Central Eastern Europe has traditionally looked to for leadership, you know well that you do not always have the luxury of choosing the time to make some of the most necessary decisions. But with the post-Cold War settlement crumbling before our eyes, if there was ever a time for your leadership, it is now. And if there was ever an issue that would do as much good at as little cost, it is the issue at hand. Thank you for your attention.

[The prepared statement of Ms. Orbán follows:]

Written Testimony of

Ambassador-at-Large for Energy Security
Dr. Anita Orbán
Ministry of Foreign Affairs, Hungary

Before the House Subcommittee on Energy and Power of the Energy & Commerce Committee of the United States House of Representatives

Geopolitical Implications of LNG Export Liberalization

March 25th, 2014

Thank you Chairman Whitfield, Ranking Member Rush, and Members of the subcommittee. I appreciate the opportunity to be here today to provide my perspective on the importance of LNG export liberalization for the Central Eastern European region. I applaud the leadership of this Committee to look at the geostrategic aspect of US natural gas exports, which along with my colleagues from the Visegrad Group (currently chaired by Hungary), the Baltics and Eastern Europe we have been long advocating.

Mr. Chairman, we are in the middle of the largest security crisis that Europe has seen since the end of the Cold War. And energy dependence, especially that of Central Eastern Europe and Ukraine, is once again on everybody's mind. With every new Russo-Ukrainian crisis, US awareness about the strategic vulnerability of our region, and the determination to mitigate it, should only grow. Energy import dependence is one of the key factors that limit the political options available to these countries as US allies and adherents of a rules-based international order. Russian ambitions in the former post-Communist space are very clear and energy security is at the heart of this.

The European Union's dependence on external energy sources is massive. Today, Europe covers over 64% of its natural gas demand from imports. Approximately four-tenth of this import, i.e. 28% of Europe's total gas consumption, comes from Russia via three different routes – the Brotherhood pipeline via Ukraine, the Yamal pipeline via Belarus and the North Stream pipeline under the Baltic Sea. 62% of Russia's natural gas exports to the EU go through the first route, i.e. via Ukraine.

The import dependence of EU member states varies widely, in the most extreme cases reaching 100% of their total gas consumption (Baltic States, Slovakia). But there is no country on the eastern side of the EU where the share of Russian gas imports is lower than 70% of its total gas import. One can contrast these figures with the situation in the United States, which in 2007, before the onset of the shale gas revolution, imported only 16% of its natural gas needs and U.S. unconventional gas explorations could make America the largest natural gas exporter by 2015.

The popular interpretation of energy dependence, and natural gas dependence, in particular, is widely associated with supply cut-offs which wouldn't be without precedent in Central Europe. Supply cut may indeed happen again with unpredictable consequences for countries along the Eastern border of the European Union, as well as for Ukraine. Yet, if used, it would seriously hurt the supplier as well: in the short term with loss of revenue, in the mid-term with loss of its markets. Supply cut-offs are so dramatic and so obviously political that they invariably trigger actions on the receiving end to ease the dependency. Moreover, one cannot cut off the supply for one country only – everybody along the pipeline route will suffer. A supply cut-off mobilizes and unites the dependent parties and results in decreasing dependency in the medium term. It is an absolute last-resort measure that ultimately undermines the very dependence that enabled it in the first place.

The best example to illustrate this point is the natural gas crisis of 2009. Then, Russia wanted to teach a lesson to Ukraine and cut off the gas going into the country. With it, Moscow discontinued the supply to most of Central Eastern Europe, as well. The crisis itself lasted for less than two weeks, but its most important impact was the ensuing cooperation and diversification efforts among the affected countries. A new approach emerged, whereby these countries connected their pipelines' North-South direction and enhanced their storage capacities, ultimately making each of them more crisis-resistant. Even more importantly, energy security came to the forefront of security considerations and became a flagship topic within the European Union. The Hungarian Visegrad Presidency also put this on top of the group's agenda for 2013-2014. Looking back, it would be hard to deny that the 2009 supply cut off was the single most important trigger event for improving the Central Eastern European region's energy security.

It is prices that provide the best economic and political tool for the monopoly supplier. Whoever has the monopoly, calls the shots: higher prices afflict a very tangible cost on the dependent country's economy and population, while stuffing the supplier's coffers and allowing it to reap the economic rents to finance further political, economic or military actions. Hiking prices can always be presented as pure business action as opposed to a foreign policy measure. Most importantly, it can be applied in a discriminatory manner. The supplier can raise the price for the non-cooperative and lower it for the friendly. Price movements, especially price discrimination, lead to asymmetrical negotiations and side-deals as opposed to transparency and, ultimately an affordable and secure energy supply for Europe.

The example of Ukraine is the most telling of all. The country currently imports about 26 billion cubic meters, or half of its consumption, of natural gas. All of its imports

come from Russia. Consequently, Moscow has been free to use price discrimination as it saw fit. Although the cost of gas grows linearly with the distance it travels, Germany pays less for the same Russian gas than any country on the route between the two. In fact, Russian gas in Germany was so much cheaper than the price paid by Ukraine that traders resold 2 billion cubic meters of this Russian-German gas to Ukraine in 2013.

In December 2013, Russia rewarded the former leaders of Ukraine with a 33% discount in natural gas prices for not signing the Association Agreement with the European Union. The new price of 268.5 dollars per thousand cubic meters is about 30% lower than the lowest price in the EU. As recent events in Ukraine have gone against the interests of Russia, Moscow is now raising the price to 400 dollars. Such a price would exact a massive toll on the already heavily indebted Ukrainian state.

The only way to limit the monopoly supplier's ability to exact damage and sow discord through the deployment of the price weapon is to establish alternative supply routes. Once they are in place, the monopoly supplier can no longer use the price discrimination tool freely, as it needs to consider how its actions affect the viability and attractiveness of alternative supply channels.

The recent deal between Gazprom and the Greek gas company DEPA is a case in point. In February this year, Gazprom agreed to a 15% price cut for Greece to be applied retroactively for about 7 months. Experts claim that Greece's LNG terminal and the recent developments in the Southern Gas Corridor, which will bring Azeri gas to Greece, among other countries, in the medium term factored into the negotiations. Simply put, the mere existence of a credible alternative supplier exerted significant downward pressure on the natural gas prices set by the dominant supplier.

We are well aware of the fact that alternative pipeline gas won't reach Europe before 2019 the earliest. Azeri gas coming in via the Southern Gas Corridor will benefit Western Europe via Italy rather than Central and South Eastern Europe. Consequently, for Central Eastern European countries, the most important task is to create a credible prospect for alternative natural gas imports.

To do that, Central Eastern Europe needs to ensure both the capacity and the volume to receive alternative gas. The first is our homework, which only we can do to build up capacities internally which allow gas-to-gas competition, create access to different supply options and create a robust internal European energy infrastructure. In Central Eastern Europe we need to overcome the dependency inherent in the traditional East-West pipeline infrastructure in the former Soviet satellite states by constructing North-South and South-North interconnectors with the aim to have a robust North-South and South-North pipeline infrastructure from the Agean to the Baltic Sea. Another important aspect is enabling the reverse flow of natural gas on these newly built, as well as older interconnections especially from the West to the East to ensure that regional markets become truly integrated.

However, Europe has been much less successful in building up the necessary volumes for alternative supply. This has been largely out of Europe's control. EU and US sanctions against Iran, the slower than expected progress in Iraq, the upheaval in North Africa postponed or put on hold indefinitely most of the potential alternative pipeline supplies. The only new supply volumes coming in from Azerbaijan as of 2019 are exactly the same quantity as the total supply from Libya which stopped entirely at the end of 2013, an annual 10 billion cubic meters.

What Central Eastern Europe and the EU in general needs right now is the additional volume of gas. The most viable option Central Eastern Europeans have today is

LNG. The LNG market has numerous advantages: many suppliers, liquidity and prices set by supply and demand with no political strings attached. Access to the LNG market would much weaken the dependence inherently present in pipeline deliveries.

Access to LNG would also assist Ukraine. During 2013, two additional capacities were opened from Hungary to Ukraine and from Poland to Ukraine, enabling the supply of natural gas to Ukraine on purely market terms. If successful, the LNG supply together with the existing and planned additional reverse flow capabilities, combined with Ukraine's own shale gas resources, could provide a reasonably sized alternative to Russian gas in Ukraine.

However, in the absence of an energy security contribution from US exports, the global supply of LNG is not at all reassuring. Among LNG exporters, terrorist and insurgent activity impacts gas operations in Yemen, Libya, Egypt, Nigeria and Algeria. Qatar has a moratorium on further exports, while in Asia, some important traditional exporters like Indonesia are now in decline. To the extent supply grows, it is locked into rigid long term contracts that can't provide flexible resilience. Without the large shale gas resources and efficient competitive markets of the United States, LNG cannot provide an adequate energy security answer.

The urgency of establishing the region's access to LNG means that the United States Congress has a potent foreign policy/energy diplomacy tool at its disposal. By clearing the way for US shale gas to reach America's Central European NATO allies would provide significant protection against the deployment of the energy/price weapon.

Today, natural gas prices in the United States are one-third to one-fourth of the gas prices in Europe, including in Central Europe. Liberalizing US LNG exports would

send a signal to market actors to kick-start the development of missing infrastructure (LNG terminals, interconnectors). These developments in turn would put an immediate downward pressure on gas prices in Central Eastern Europe well before a single American gas molecule reaches the shores of our region. Energy diplomacy is not about short term fixes, we operate with long-term investments and decades long contracts, we know that the timeframe for US gas exports is 3-7 years.

But it is simply not true that lifting the natural gas export ban today would not have an immediate effect in the region. It would immediately change the business calculus of infrastructure investments and send an extremely important message of strategic reassurance to the region which currently feels more threatened than any time since the Cold War. Even with regasification, shipping and associated costs, US gas would be regarded as an important alternative. And let's not forget that countries in our region are ready to pay a premium price for energy security.

In short, by liberalizing LNG exports, by eliminating the legal and administrative obstacles to the free trading of this vital, domestically produced commodity, the United States would provide fast and long-lasting protection for its allies against the most important dangers of natural gas dependency. Moreover, it would also enable them to act more freely in assisting Ukraine in case of an energy crisis developed there. Such a help would be in line with past US leadership in Central Eastern Europe, which many in our region have perceived to be waning in the past few years.

It is important to note that this is an elegant, yet very effective tool, which is relatively cheap to use. It incurs no threat of loss of life, not even a disruption of economic activities: it is only a removal of a self-imposed barrier. Moreover, it cannot be seen as targeting any single entity– it is only a form of help for allies, a common sense solution that helps allies and US businesses at home. It would be hard to find any

other tool so obviously at hand to the US to demonstrate leadership right now, have an immediate security impact at a relatively low cost.

Hungary, as chair of the Visegrad group (Poland, Czech Republic, Slovakia, Hungary) together with several other US allies argued for LNG export liberalization even before the Ukraine crisis started. We have reached out to members of Congress and the administration to argue that the US has a historic opportunity to send a strong message of freedom to the region by simply letting the markets work. Together with my Czech colleague, Vaclav Bartuska, we have argued that "accelerating the export licensing procedure to allow increased sales to trustworthy, reliable foreign partners should be a policy that politicians on both sides of the aisle can support." This is not a partisan issue. It is an American issue that all statesmen in this country must show leadership on. Numerous Members of Congress recognized the geopolitical importance of LNG export by introducing and co-sponsoring the different bills that proposed to lift the ban on export licensing. The situation in Ukraine only underlines how timely this issue is – but also gives it additional urgency. The US should seize the opportunity and act now.

Mr. Chairman, Members of the Committee,

I believe that doing away with these export limitations would make economic sense even in better times. But there is nothing like a crisis to focus the mind. As representatives of a country that Central Europe has traditionally looked to for leadership, you know well that you do not always have the luxury of choosing the time to make some of the most necessary decisions. But with the post-Cold War settlement crumbling before our eyes, if there was ever a time for your leadership, it

is now – and if there was ever an issue that would do as much good at as little cost, it is the issue at hand.

March 6, 2014

The Honorable John Boehner
Speaker
United States House of Representatives
Washington, D.C. 20515

Dear Speaker Boehner,

As events in Ukraine bring back the memories of the Cold War from which all of our countries suffered terribly, we are writing to highlight the overall importance of U.S. engagement in Central and Eastern Europe, and more specifically in the area of energy security and reliable supply of natural gas.

On March 4, the Prime Ministers of the Visegrad countries reiterated their strong interest in maintaining the sovereignty, independence and territorial integrity of Ukraine and called on Russia to respect its international commitments and legal obligations, including the Budapest Memorandum.

Despite significant diversification efforts, our dependence on natural gas imports from a single supplier is still anywhere between 70-100% in the region and the gas crises of 2006 and 2009 have shown that the region is more vulnerable to energy security risks than most of the European countries. It is not hard to see that energy security remains to be a critical aspect of the region's geostrategic stability and independence.

With recent infrastructural investments in Central and Eastern Europe, it became possible to build "reverse gas flows", which have allowed sending gas from Poland and Hungary to Ukraine at a cheaper price than what Ukrainians had to pay. As a result, in 2013 alone, Ukraine imported almost 2 billion cubic meters of natural gas from Poland and Hungary. Reverse flow capabilities could be further enlarged and a potential Slovak-Ukrainian direction could be added. As we know, after two months of decreased gas price, on March 4 Russia again unilaterally increased the price of gas supplied to Ukraine. Earlier today, the European Union Heads of State and Government confirmed that the EU stands ready to assist Ukraine in securing its energy supply.

Gas-to-gas competition in our region is a vital aspect of national security and a key U.S. interest in the region. It is for this reason that we now ask for your support. With the current shale gas revolution in the United States, American companies are seeking to export gas, including to Europe. But the existing bureaucratic hurdles for the approval of the export licenses to non-FTA countries like the Visegrad countries are a major hurdle. As a recent report of the House Energy and Commerce Committee highlighted, the US now has a window of opportunity to act.

The presence of US natural gas would be much welcome in Central and Eastern Europe, and Congressional action to expedite LNG exports to America's allies would come at a critically important time for the region. Energy security is not only a day-to-day issue for millions of citizens in our region, but it is one of the most important security challenges that America's allies face in Central and Eastern Europe today. Furthermore US export of LNG would not only meet the energy security challenge of the Visegrad countries but that of the wider region as well.

Yours sincerely,

György Szapáry
Ambassador of Hungary,
Chair of the Visegrád Group

Ryszard Schnepf
Ambassador of the Republic of Poland

Petr Gandalovič
Ambassador of the Czech Republic

Peter Kmec
Ambassador of the Slovak Republic

Mr. WHITFIELD. Thank you, Dr. Orbán. And at this time I will recognize the gentleman, Mr. Bacchus, for 5 minutes.

STATEMENT OF JAMES BACCHUS

Mr. BACCHUS. Thank you, Mr. Chairman, and it is always good to be back in this House. I had the privilege some time ago of representing the State of Florida in this House. Today I want to emphasize that I am here today representing no one but myself. I am speaking solely for myself. Furthermore, I am here today not to speak on issues of policy, but on issues of law, specifically on issues relating to international trade law under the WTO treaty. And I believe I have been invited here today because, when I became a former Member of the House, I went to Geneva and became one of the seven founding Judges on the appellate body of the World Trade Organization, and I served for nearly a decade there, including two terms as the Chief Judge there. I have written quite a few WTO legal opinions.

So that is why I am here today. I am here because, largely overlooked in the emerging Congressional debate so far about restricting exports of natural gas, is the possibility that such restrictions are inconsistent with the obligations of the United States to other members of the WTO under the WTO treaty. This matters, because if our restrictive energy measures are inconsistent with our treaty obligations, the United States risks losing a case in the WTO, and such a loss could cause the WTO to authorize expensive economic sanctions against us through the loss of previously granted concessions in other sectors of our international trade.

Mr. Chairman, WTO rules apply to trade in natural gas and other energy products in the same way they apply to other traded products. Some suggested that energy products are somehow separate and apart from other treated products in how WTO rules apply to them. There is no legal basis for this view. Among WTO rules that bind us in the WTO treaty are rules prohibiting bans, quotas, and other forms of quantitative restrictions on exports, unless those restrictions take the form of export taxes. Now, as all the members know, taxes on exports are prohibited by our Constitution in the United States, so energy export taxes are not an option for us. WTO rules also permit temporary restrictions on exports to prevent or relieve critical shortages of essential products, but that can hardly be said to apply to our current situation with respect to supplies of natural gas.

A number of legal concerns occur when considering the consistency of the current U.S. process for licensing exports of natural gas with WTO rules. First of all, the current U.S. process gives special treatment in licensing exports of natural gas to countries with which we have a free trade agreement. Natural gas exports to these countries are deemed to be in the public interest, and permitted without delay. In contrast, the Department of Energy has elected to subject licensing requests for LNG exports to non-FTA countries to a thorough and lengthy assessment intended to determine whether exploits of natural gas to those countries serve our public interest. In this way, applicants that ship LNG to FDA countries are preferentially given expedited review in the licensing proc-

ess, as compared to those applicants that will ship LNG to non-FTA countries.

When seen through the prism of WTO law, Mr. Chairman, these are measures affecting trade that result in discrimination between like traded products. The legal question under WTO law is whether this discrimination can be excused by an exception in WTO law that allows trade discrimination as part of a free trade agreement. But it is not at all clear that all of the FTAs of the United States fit within the definition in the WTO treaty of a free trade agreement.

Fortunately, H.R. 6, introduced by Congressman Gardner of Colorado, and currently under consideration by this committee, would eliminate this potential legal concern by providing that natural gas exports to all members of the WTO would be deemed to be in the public interest. Depending on how the Department of Energy chooses to implement H.R. 6, however, it may not, in its present form, remedy several other legal concerns arising from the current U.S. licensing process under WTO rules. I, frankly, could not tell from the testimony earlier today by the representative from the Department of Energy how precisely they view this bill, how they would change what they do if this bill is enacted, or even how they engage in their process today, nor can, really anyone else.

One remaining legal concern under WTO rules is the question of the lengthy delays in granting export licenses. H.R. 6, in its third paragraph, would provide for immediate approval of pending applications, but what about new ones? Under WTO rules, a license can clearly be a restriction on exports. And case law has defined the notion of a restriction broadly to include licensing procedures that post limitations on actions, or had a limited effect, such as by creating uncertainties, or by affecting investment plans. In one case, delays of up to 3 months in issuing export licenses were found to be inconsistent with the rules.

Now, to be sure, liquefied natural gas is, practically speaking, not just another widget. Before it can be shipped by sea, natural gas much be transformed in a careful way that requires special facilities. Some period of deliberation, and citing, and evaluating LNG facilities seems reasonable. The FERC process of environmental consideration is probably perfectly defensible under WTO rules. But what would WTO Judges be likely to say about delays in issuing export licenses that last much longer?

Mr. WHITFIELD. Mr. Bacchus, I have let you go a couple minutes over. If you would just summarize, and——

Mr. BACCHUS. Let me make one more point, Mr. Chairman, and then I will be happy to answer questions of the members on these other issues. And I congratulate the committee on asking first about our WTO obligations before enacting legislation, rather than finding out about them later in Geneva.

An additional remaining legal concern is the lack of clarify, and how the Department of Energy defines the public interest. Conceivably even lengthy delays in the licensing process could be excused under WTO rules if it could be proven by the United States that such delays are necessary to protect life or health, or are related to the conservation of exhaustible natural resources, so long as the

process is not applied in a way that results in arbitrary or unjustifiable discrimination, or disguise restriction on international trade.

Now here is my final point, Mr. Chairman, for now. If, however, in determining the public interest the DOE considers as a factor the effect the proposed exports will have on domestic producers that use natural gas in making their products and their competition with like foreign products, then these exceptions to WTO rules will not be available, and will not excuse a WTO violation caused by lengthy licensing delays.

In fact, Mr. Chairman, the United States of America has been making precisely the point that I have just made just now in a case against China in the WTO, dealing with Chinese restrictions on exports of rare earth elements. Most likely the United States will win this case. A WTO panel ruling is expected tomorrow. If we have proven the facts, we will prevail on the arguments I have just made, that are some of the same arguments that we heard earlier today.

[The prepared statement of Mr. Bacchus follows:]

Testimony

of

James Bacchus

to the

Subcommittee on Energy and Power

of the

Energy and Commerce Committee

of the

United States House of Representatives

Washington, DC

March 25, 2014

Summary – Bacchus Testimony

- Losing a WTO because US restrictions on exports of natural gas are inconsistent with WTO rules could result in expensive economic sanctions against the US in other sectors of international trade.
- WTO rules apply to trade in natural gas and other energy products.
- WTO rules prohibit quantitative restrictions on exports others than export taxes.
- The current US process for licensing NG exports raises a legal concern under WTO rules by favoring exports to countries with an FTA with the United States.
- HR 6 eliminates this legal concern under WTO rules – but does not eliminate several others.
- Lengthy delays in granting export licenses raise WTO legal issues.
- So do any efforts made in the licensing process to protect the competitive interests of US producers.
- So too do any aspects of the licensing process that grant subsidies to certain industries that have an adverse effect in the marketplace.
- The United States should comply with our treaty obligations, avoid the possibility of costly economic sanctions, and continue in the forefront in the WTO in fighting export restrictions, as in current US WTO cases against China.

As always, I am grateful for the opportunity to assist my former colleagues in the U.S. House of Representatives. Today, I am here because of some of what I have done since I chose to leave this House and became a former Member of Congress.

After deciding not to seek reelection to the House in 1994, I became, the following year, one of the seven founding Members of the Appellate Body of the then newly-established World Trade Organization. For nearly a decade, I served the United States and the other member countries of the WTO by judging the final appeals in their international trade disputes as part of WTO dispute settlement.

Twice I was elected Chairman of the Appellate Body – the chief judge for the WTO – by my six colleagues in Geneva. Together with them, I wrote many of the first and foundational legal rulings clarifying the meaning of the mutual international trade obligations of the Members of the WTO under the WTO treaty. This is why I have been asked to appear to assist you here today.

Largely overlooked so far in the emerging Congressional debate about restricting exports of natural gas is the possibility that such restrictions are inconsistent with the obligations of the

United States to other WTO Members under the WTO treaty. If our restrictive energy measures are inconsistent with our treaty obligations, the United States risks losing a case in the WTO. Such a loss could cause the WTO to authorize expensive economic sanctions against us through the loss of previously granted concessions in other sectors of our international trade.

I am no longer the chief judge for the WTO, but I hope to be helpful to you in suggesting how WTO rules relate to restrictions on natural gas exports. Although my law partner Rosa Jeong and I have done some work on some aspects of this issue for the National Association of Manufacturers, I am here today in my personal capacity, and I speak today solely for myself.

WTO rules apply to trade in natural gas and other energy products in the same way they apply to other traded products. Some have suggested that energy products are somehow separate and apart from other traded products in how WTO rules apply to them. There is no legal basis for this view. The United States has taken no reservations from our obligations under WTO rules for exports of natural gas or other energy products.

WTO rules prohibit bans, quotas, and other forms of quantitative restrictions on exports unless those restrictions take the form of export taxes. Taxes on exports are prohibited by our Constitution, so energy export taxes are not an option for the United States. WTO rules also permit temporary restrictions on exports to prevent or relieve critical shortages of essential products, but that can hardly be said to apply to our current situation with supplies of natural gas.

A number of legal concerns occur when considering the consistency of the current US process for licensing exports of natural gas with WTO rules.

First of all, the current US process gives special treatment in licensing exports of natural gas to countries with which we have a free trade agreement. Natural gas exports to these countries are deemed to be in the "public interest" and permitted without delay. In contrast, the Department of Energy has elected to subject licensing requests for LNG exports to non-FTA countries to a thorough and lengthy assessment intended to determine whether exports of natural gas to those countries serve our "public interest." In this way, applicants that will ship LNG to FTA countries are, preferentially, given expedited review in the licensing process as compared to those applicants that will ship LNG to non-FTA countries.

When seen through the prism of WTO law, these are measures affecting trade that result in discrimination between like traded products. The legal question under WTO law is whether this discrimination can be excused by an exception in WTO law that allows trade discrimination as part of a "free trade agreement." But it is not at all clear that all of the FTA's of the United States fit within the definition in the WTO treaty of a "free trade agreement."

Fortunately, HR 6, introduced by Congressman Cory Gardner of Colorado, and currently under consideration by this Committee, would eliminate this potential legal concern by providing that natural gas exports to all other Members of the WTO would be deemed to be in the "public interest." Unfortunately, HR 6 does not, in its present form, remedy several other legal concerns arising from the current US licensing process under WTO rules.

One remaining legal concern is the question of the lengthy delays in granting export licenses. Under WTO rules, a license can clearly be a restriction on exports, and case law has defined the notion of a "restriction" broadly to include licensing procedures that pose limitations on actions or have a limiting effect, such as by creating uncertainties or by affecting investment plans. In one case, delays of up to three months in issuing export licenses were found to be inconsistent with the rules.

To be sure, liquefied natural gas is, practically speaking, not just another widget. Before it can be shipped by sea, natural gas must be transformed in a careful way that requires special facilities. Some period of deliberation in siting and evaluating LNG facilities seems reasonable. But what would WTO judges be likely to say about delays in issuing export licenses that last for several years?

A second remaining legal concern is the lack of clarity in how the Department of Energy defines the "public interest." Conceivably, even lengthy delays in the licensing process could be excused under WTO rules of it could be proven by the United States that such delays are necessary to protect life or health, or are related to the conservation of exhaustible natural resources, so long as the process is not applied in a way that results in arbitrary or unjustifiable discrimination or a disguised restriction on international trade. If, however, in determining the "public interest," the DOE considers as a factor the effect the proposed exports will have on domestic producers that use natural gas when producing their products in their competition with

like foreign products, then these exceptions to WTO rules will not be available, and will not excuse a WTO violation caused by lengthy licensing delays.

A third legal remaining legal concern may arise under the WTO rules on governmental subsidies. Under WTO rules, subsidies are illegal if they are specific to certain industries and cause adverse effects in the marketplace. The questions in a WTO case would be: by restricting exports so as to reduce the domestic price of natural gas, is the United States granting a subsidy to the manufacturing firms that are the downstream users of natural gas, and, if so, does that subsidy have illegal trade effects? Here, the general exception for measures protecting life, health, and exhaustible natural resources may very well not be available to excuse such a violation of the WTO subsidy rules, even if a determination of the "public interest" excludes competitive trade concerns.

Why should you care about any of these legal concerns under the WTO treaty when crafting legislation and guiding executive agencies in the proper pursuit of their administrative processes?

I will conclude by giving you three reasons.

First, and foremost, of course, the United States of America should always comply with our international treaty obligations. If we don't, then who will?

Second, we could choose to ignore our treaty obligations as a Member of the WTO, but that could prove costly. If, in an exercise of our sovereignty, we chose not to comply with a ruling against us in the WTO, the resulting economic sanctions could cost us billions of dollars in lost trade – annually.

And lastly, and significantly, the United States has for decades, as a matter of bipartisan trade policy, opposed restrictions on exports because of the many ways such restrictions distort world trade and deny economic opportunities to the American people. In furtherance of this policy, the United States has been in the forefront in the WTO in fighting rising restrictions on exports worldwide, and is, even as we meet today, aggressively pursuing, with the bipartisan support of the Congress, not one but two major WTO cases against Chinese export restrictions, on raw materials and on rare earth elements.

The United States is rightly winning these two cases by citing many of the same WTO rules and WTO rulings I have cited today.

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James Bacchus is a former Member of Congress, from Florida, and a former Chairman of the Appellate Body of the World Trade Organization. He chairs the global practice of the Greenberg Traurig law firm.

Mr. WHITFIELD. Thank you so much, Mr. Bacchus. At this time I recognize Mr. Schryver for 5 minutes.

STATEMENT OF DAVID G. SCHRYVER

Mr. SCHRYVER. Chairman Whitfield, Ranking Member Rush, the members of the subcommittee, I appreciate this opportunity to testify before you today, and I thank the subcommittee for calling this important hearing on The Domestic Prosperity and Global Freedom Act introduced by Congressman Gardner. My name is Dave Schryver, and I am the Executive Vice President for the American Public Gas Association. APGA is a national association for publicly owned natural gas distribution systems. There are currently approximately 1,000 public gas systems located in 37 States in the U.S. Publicly owned gas systems are not-for-profit retail distribution entities owned by, and accountable to, the citizens they serve.

As a result of advances in natural gas drilling techniques, U.S. consumers have enjoyed affordable energy prices, and a manufacturing renaissance is underway. The U.S. now has a unique opportunity to implement its long declared, but never seriously pursued, policy of energy independence, and thereby to fundamentally transform key variables affecting both our national security and domestic economy.

However, APGA is concerned that the export of LNG threatens this opportunity. There have been about 30 applications filed at the Department of Energy, and the sum total of LNG that could be exported, should all these facilities go forward, would equate to nearly half of current U.S. natural gas production. This potential level of export could have serious adverse implications not only for U.S. national security, but also for domestic consumers of natural gas, and the economy as a whole.

The pursuit of energy independence requires that the United States wean itself off of imported oil, which accounts for approximately 40 percent of our domestic use. The two major consumers of foreign oil in the United States are the transportation sector and the industrial sector. By converting commercial vehicles to natural gas, the United States can take giant steps towards energy independence and reducing greenhouse gas emissions.

To accomplish this goal, natural gas in the United States must remain plentiful and reasonably priced. U.S. natural gas prices today are affordable, competitive, and relatively stable in contrast to the situation just a few years ago. This important change in gas pricing is the product of both the newly available supplies of natural gas and the fact that our natural gas market is largely limited to North America. At these prices, natural gas vehicles are price competitive with gasoline.

By contrast, the large scale export of natural gas via LNG will not only play havoc with the current supply and demand situation, enhance the price of natural gas, but will also, because the price of LNG abroad is tied to the international oil market, inevitably link the domestic price of natural gas to international oil markets, which are substantially more volatile, and less transparent than our domestic market.

APGA is not against free trade, but when important policies collide, nations must make choices. U.S. policymakers must carefully

consider and prioritize the use of domestic resources according to the national interest over both the long and short terms. Ultimately, U.S. LNG will be sold by private firms to the highest bidder without any consideration of U.S. geopolitical interest. Wherever these firms can obtain the highest price for natural gas is where the gas will be sold.

Proof of this assertion can be found in the already approved applications for export of natural gas to non-FTA countries. The seven approved applications have finalized contracts, or are negotiating contracts, to sell U.S. gas to Japan, South Korea, and India. Since the goal of profit maximization applies to all pending non-FTA export applications, any future exports will also go where the price is highest, and not where U.S. geopolitical interests may wish them to be sent. In addition, Ukraine, unlike its likely Asian competitors, currently has no LNG import facilities, and therefore no capacity to receive U.S. gas in the near future. Rather than exporting LNG, a focus should be on exporting the drilling technology that has enabled producers in this country to tap into our huge shale reserves. There are vast shale reserves in Europe, including in Ukraine, that are there for the taking.

APGA strongly believes that natural gas has a critical role to play in keeping energy prices affordable for U.S. consumers, reducing our dependence on foreign oil, reviving domestic manufacturing. No matter how well intentioned, the projected price increases of exporting LNG threatens those three objectives. In lieu of exporting our affordable premium fossil fuel, Congress should focus on adopting policies that encourage greater domestic demand for natural gas. This is a much better choice in both the short and long term to accelerate the transition from imported oil to domestic natural gas to fuel our transportation sector, revitalize our manufacturing industry, and improve our balance of trade.

We urge the committee to carefully consider the adverse impact that exporting LNG will have on millions of natural gas consumers in the U.S., who will feel the impact of higher prices resulting from exposure to the global export market. APGA thanks you for this opportunity to testify, and we look forward to working with this committee on this important issue.

[The prepared statement of Mr. Schryver follows:]

Testimony of the American Public Gas Association before the Energy and Power Subcommittee of the House Energy and Commerce Committee Hearing, "H.R. 6, The Domestic Prosperity and Global Security Act"

A Consumer Perspective

On behalf of the American Public Gas Association (APGA), thank you for the opportunity to testify at the hearing titled, "H.R. 6, The Domestic Prosperity and Global Security Act."

APGA is the national association for publicly owned natural gas distribution systems. There are approximately 1,000 public gas systems in 37 states and over 700 of these systems are APGA members. Publicly owned gas systems are not-for-profit, retail distribution entities owned by, and accountable to, the citizens they serve. They include municipal gas distribution systems, public utility districts, county districts, and other public agencies that own and operate natural gas distribution facilities in their communities. Public gas systems' primary focus is on providing safe, reliable, and affordable service to their customers. The long-term affordability of natural gas has been a focus of APGA and its members.

APGA has the privilege of representing the views of American natural gas consumers. We represent the homeowners and small businesses that rely on affordable natural gas to heat their homes, cook their meals, power their restaurants, operate small manufacturing entities, and

service businesses. The interests of these millions of Americans have often been lost in the contentious debate about liquefied natural gas (LNG) exports. Media outlets have framed the debate as oil and gas companies on one side and manufacturers on the other.[1]

However, as advocates for natural gas consumers, our position is slightly different from the manufacturing companies that have spoken out on the issue. Simply put, APGA opposes all exports of LNG from the lower 48 states. The simple economics of supply and demand, along with every study that has been conducted on the subject, whether done by the federal government or by private consulting companies, all reach one conclusion: exports will increase the price of domestic natural gas. How adverse that upward pressure on price will be, no one knows. Based on past experience though, APGA believes the experts who supported the export of propane would not have predicted the significant adverse prices homeowners paid this winter for their propane.

What this means for average consumers is that their energy bill for natural gas service, electricity, and the goods and services they purchase--all of which have the cost of energy built into their prices--will escalate. We can debate about net benefits, aggregate welfare measures, and other economic metrics, but ultimately LNG export translates into people paying more for energy and other goods and services, and consequently having less disposable income. This fact applies to businesses as well. As energy costs go up, companies are less competitive and hire fewer workers, whether they serve customers down the street or compete for customers around the globe.

[1]APGA is a proud member of America's Energy Advantage (AEA), which represents the interests of both manufacturers and natural gas consumers.

Before discussing the details of APGA's opposition to the export of LNG, there is one message that we would like Congress to focus on when thinking about this issue: it is irrefutable that consumers and businesses will pay increased prices for energy and all goods and services if LNG exports are sanctioned.

LNG Export

The Department of Energy Office of Fossil Energy (DO- FE) commissioned two studies regarding the effects of LNG exports. The first, conducted by the U.S. Energy Information Administration (EIA), studied the impact of LNG exports on domestic prices and concluded that exports will increase prices with higher volumes causing more drastic increases.[2] The second, conducted by NERA Economic Consulting, focused on the macroeconomic effects of LNG exports, which were found to be a net positive while at the same time confirming that LNG exports would raise domestic natural gas prices. This would ultimately burden the U.S. consumers who can least afford the increase and disadvantage domestic manufacturing.[3] Policymakers must consider both of these studies—and and other non-governmental studies on

[2] *Effect of Increased Natural Gas Exports on Domestic Energy Markets*, U.S. Energy Information Administration (Jan. 2012) ("EIA Export Report"). As requested by the DOE/FE, the EIA Export Report considered four scenarios: (1) 6 Bcf/d phased in at a rate of 1 Bcf/d per year (low/slow scenario); (2) 6 Bcf/d phased in at a rate of 3 Bcf/d per year (low/rapid scenario); (3) 12 Bcf/d phased in at a rate of 1 Bcf/d per year (high/slow scenario); and (4) 12 Bcf/d phased in at a rate of 3 Bcf/d per year (high/rapid scenario).

[3] *Macroeconomic Impacts of LNG Exports from the United States*, NERA Economic Consulting (Dec. 2012) ("NERA Study"). APGA understands (and applauds the fact) that the merits and demerits of the NERA Study will be assessed independently by DOE/FE in a separate proceeding (77 Fed. Reg. 73627); and hence APGA's comments here on the NERA Study are only preliminary and not intended to represent its complete assessment of the NERA Study.

the subject—and in doing so, consider the profound tradeoffs entailed by exporting away an increasingly valuable U.S. fuel resource rather than supporting its use domestically.

Increased production of natural gas in the U.S. to meet domestic demand provides the nation with an unprecedented opportunity to pursue energy independence and sustained economic growth through a manufacturing renaissance grounded in plentiful, low cost natural gas. Price increases will also jeopardize the viability of natural gas as a bridge fuel in the transition away from carbon-intensive and otherwise environmentally problematic coal-fired electric generation and inhibit efforts to foster natural gas as a major transportation fuel, which is important in weaning the U.S. from its historic and high-risk dependence on foreign oil.

Background

To date, over 30 applications have been submitted to DOE to export domestic LNG from the United States to free trade agreement (FTA) or non-FTA nations based on the promise of huge unconventional domestic gas reserves and huge profits for the few affected companies. Of those applications, six have already been approved, meaning that 8.5 Bcf/day has been approved by DOE for export to non-FTA countries. Also to date, the total export capacity applied for is 38.51Bcf/d and 35.86 Bcf/d to FTA and non-FTA nations, respectively. Total natural gas production was approximately 67 Bcf/d in the U.S. in 2013[4]; therefore, based on current data, the total applied-for export capacity, if authorized, would have the potential effect of increasing the demand for natural gas by nearly 54 percent.

[4] See: http://www.eia.gov/naturalgas/issuesandtrends/production/2013/

Policymakers in Congress and at DOE have a duty to ensure that any non-FTA application under consideration for export authority is not inconsistent with the public interest pursuant to NGA section 3(a).[5] The "public interest analysis of export applications" should be "focused on *domestic* need for natural gas," threats to domestic supply, and "other factors to the extent they are shown to be relevant."[6]

For exports of LNG to countries with which the United States has a free trade agreement, the application for export authority is automatically assumed to be in the public interest and is granted almost instantly without opportunity for the public to comment.

For exports to non-FTA countries, which are the focal point for the current export debate, DOE adopts a rebuttable presumption that exports are in the public interest. Those opposed to exports face a nearly insurmountable challenge of proving a negative; more specifically, that each individual application is not in the public interest. APGA has filed motions to intervene and protests every non-FTA application, pointing out the deleterious impacts of the applications on the nation's consumers and businesses, relying on, among other materials, the EIA Export Report and the NERA Study. But since APGA does not have the resources to conduct independent detailed market impact analyses for each application in order to prove to DOE that exports are not in the public interest, the die is cast and the export applications are granted.

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[5] 15 U.S.C. § 717b(a).

[6] *Sabine Pass Liquefaction, LLC*, Opinion and Order Denying Request for Review Under Section 3(c) of the Natural Gas Act, October 21, 2010, FE Docket No. 10-111-LNG.

APGA believes that the burden of proof should be shifted to exporting companies. Companies that seek to export the U.S.'s plentiful--but ultimately finite—reserves of a strategic commodity should have to prove to DOE that exporting LNG benefits not merely their bottom line, nor oil and gas producers, but all sectors of the economy including natural gas consumers. Surely, consideration of the public interest requires no less.

LNG Exports Will Increase Domestic Natural Gas Prices

According to the EIA Export Report, "[l]arger export levels lead to larger domestic price increases."[7] EIA also concluded that "rapid increases in export levels lead to large initial price increases," but that slower increases in export levels will "eventually produce higher average prices during the decade between 2025 and 2035."[8]

Even under the "low/slow" baseline scenario in the EIA Export Report, price impacts will reach about 14 percent.[9] Under the "low/rapid" baseline scenario, EIA projects that wellhead prices will be approximately 18 percent higher in 2016 than they otherwise would be.[10] In fact, under all of the low scenarios accounting for different economic and shale reserve conditions, EIA predicts price impacts well above 10 percent that then moderate.[11] Under the "high/rapid" scenario, EIA projects that prices will increase by 36 percent to 54 percent by 2018 depending on natural gas supplies and economic growth. It is important to note that the low/slow baseline

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7 *Id.* at 6.
8 *Id.*
9 *Id.* at 8.
10 *Id.*
11 *Id.* at 9.

assumed an export level of 6 Bcf/day, which as noted above has already been exceeded in terms of approvals, and that the high/rapid scenario assumed an export level of 12 Bcf/day, which appears imminent given recent actions by DOE.

The NERA study also concluded that the higher the volume of LNG exports, the more domestic natural gas prices will rise. Both studies underestimate potential price increases because they are based on outdated projections of domestic demand for natural gas and the questionable assumption that the demand for natural gas is sufficiently elastic to prevent significant price spikes.

Domestic Demand Underestimated

On December 16, 2013, the EIA issued the Early Release of its Annual Energy Outlook for 2014 (AEO2014). The AEO2014 projects greater increases in domestic demand for natural gas than projected in prior Annual Energy Outlooks. In particular, the AEO2014 projects greater increases in demand for natural gas from domestic industry, particularly from the bulk chemicals and metals-based durables shipments, which "grow by 3.4 percent per year from 2012-2025…as compared to 1.9 percent in AEO 2013."[12]

AEO2014 also projects greater increases in future reliance on natural gas for electric generation than projected by the EIA in previous Annual Energy Outlooks. In fact, the AEO2014 Reference case projects that by 2040 natural gas will account, "for 35 percent of total electricity generation,

[12] *AEO2014* Early Release Overview at 1.

while coal accounts for 32 percent."[13] In AEO2013, natural gas would only overtake coal in terms of the share of electric generation by 2040 under the High Oil and Gas Resource scenario and would not have done so under the Reference case.

Moreover, the shift to natural gas for electric generation will be further increased by the forthcoming implementation of the Environmental Protection Agency's (EPA) pending Mercury Air Toxic Standards (MATS), which will force the retirement of a large number of coal-fired generators.

Both studies commissioned by DOE-FE rely on projected natural gas demand from AEO2011. These outdated projections fail to account for current EIA expectations regarding future demand and tend to overestimate demand elasticity, or the ability of natural gas consumers to curtail their purchases in response to higher prices in the electric generation sector. Once a coal plant is retired due to MATS, or for any other reason, the operator of the retired plant cannot switch it back on in response to higher natural gas costs. Meanwhile, the EPA's new greenhouse gas standards for new electric generators virtually ensure that new coal plants will not be constructed to replace those that are retired.[14] Soon, electric generation companies will not only demand more gas but also rely on it more heavily for base load production, altering expectations about demand elasticity that prognosticators have relied on when assuming that natural gas prices will

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[13] *AEO2014* Early Release at 2.

[14] "Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units" 77 C.F.R. 22392 (Apr. 13, 2012).

not rise sharply due to LNG exports.[15] This same trend would also exacerbate the increases in the price of electricity caused by LNG exports that are projected by the EIA and NERA.

While demand elasticity will shrink in the electric sector, leading to sharper increases in natural gas and electricity prices than previously forecasted, manufacturers will continue to be responsive to increases in the price of natural gas—meaning that manufacturers will curtail consumption and hence production due to higher prices. Congress and the DOE need to examine what this means for the economy and the broader public interest of the nation in its consideration of this and other LNG export applications.

Effects of Higher Prices

Increases in the price of natural gas will impact the U.S. consumers who can least afford the price increase, inhibit the expansion of domestic manufacturing, and forestall the further use of natural gas as a bridge fuel away from carbon-intensive coal for generation and from foreign sourced oil for transportation. The NERA study demonstrates that the effects of LNG exports and the attendant price increases are tantamount to a "wealth transfer" from poor and middle class Americans to those with investments in the natural gas industry. The DOE-FE should examine what this wealth transfer would entail for the public interest when evaluating LNG export applications. Congress must do likewise in considering the state of LNG exports.

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[15] *See* Energy Information Administration, *Fuel Competition in Power Generation and Elasticities of Substitution* (June 2012) (general description of fuel switching and price elasticity among fuels in the power generation sector) available at http://www.eia.gov/analysis/studies/fuelelasticities/pdf/eia-fuelelasticities.pdf.

Hurts Economically Vulnerable Households

LNG exports will raise domestic natural gas prices, which will increase costs to households that rely on natural gas for heating and cooking. NERA projects that these higher costs will be offset by increases in the value of natural gas resources and related companies, which NERA assumes many Americans own through retirement savings and other investments.[16]

However, the validity of that assumption is highly questionable since according to a Pew Research survey, "53 percent of Americans say they have no money at all invested in the stock market, including retirement accounts."[17]

Furthermore, merely owning stock does not guarantee an individual will own stock in an oil and gas company or exporting company, without which an individual will not directly benefit from LNG exports. Taking the analysis a step further, even if an individual does own stock and owns oil and gas company/exporting company stock, the key question is, does that person own enough shares to offset the price increases for energy, goods, and services that will result from LNG exports. This distribution of stock ownership casts significant doubt that a majority of Americans own oil and gas/exporter stock in sufficient quantities to offset energy price increases.

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[16] *See* Markey Letter (casting doubt on the assumption that benefits to the natural gas sector will be widely enjoyed by ordinary American via retirement investments).

[17] See: http://www.pewresearch.org/fact-tank/2013/05/31/stocks-and-the-recovery-majority-of-americans-not-invested-in-the-market/

NERA does admit, however, that "[h]ouseholds with income solely from wages or government transfers," will not share in the benefits of increased profits from natural gas.[18] Therefore, the increase in natural gas prices due to exports will impact most those consumers without investments or retirement savings, those living paycheck-to-paycheck or relying on government assistance, which includes the 46.5 million people that live in poverty in the U.S.[19] Even beyond Americans who live in poverty, the majority of Americans, some 167 million people, will only incur the costs of exports and none of the benefits.

Suppresses Other Domestic Industries

The NERA study indicates that as the price of natural gas increases, the economy demands or produces fewer goods and services. This results in lower wages and capital income for consumers; under such economic conditions, consumers save less of their income for investment.

As a result, industries that rely on natural gas will experience "a reduction in overall output," mitigated by a "switch to fuels that are relatively cheaper."[20] The latter argument assumes that alternatives to natural gas are affordable and available, which is an invalid assumption for fertilizer manufacturers and many other industries.

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18 NERA Study at 8.
19 See: http://www.nclej.org/poverty-in-the-us.php
20 NERA Study at 53.

Moreover, the NERA study identified chemical manufacturing as one of the natural gas and energy intensive industries that will be among the most severely disadvantaged due to natural gas price increases caused by LNG exports.[21] According to NERA "[d]omestic industries for which natural gas is a significant component of their cost structure will experience increases in their cost of production, which will adversely impact their competitive position in a global market and harm U.S. consumers who purchase their goods."[22] Leaders in the chemical sector have voiced concern regarding LNG exports and adverse impacts on the industry caused by inflated natural gas prices.[23]

When evaluating whether export applications are consistent with the public interest, policymakers must ask not only "what will we gain from LNG exports," but also "what will we give up." A U.S. manufacturing renaissance that promises greater economic growth and job creation with positive effects rippling throughout the economy hangs in the balance. Right now, industry is poised to invest billions of dollars in new natural gas intensive facilities in the U.S. premised on the promise of low domestic natural gas prices. For example, Sasol North America, Inc. is currently considering investing in the first gas to liquids plant in the U.S., an innovative technology for producing diesel and other liquid fuels without oil, and U.S. natural gas prices are a primary consideration regarding whether the investment will go forward.[24]

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[21] NERA Study at 64.

[22] NERA Study at 13.

[23] Press Release, Dow Chemical, *DOE Report on LNG Exports Short Changes Manufacturing and U.S. Competitiveness* (Dec. 6, 2012) available at http://www.dow.com/news/press-releases/article/?id=6138

[24] Clifford Kraus, *South African Company to Build U.S. Plant to Convert Gas to Liquids*, New York Times (Dec. 3, 2012) available at: http://www.nytimes.com/2012/12/04/business/energy-environment/sasol-plans-first-gas-to-liquids-plant-in-us.html?_r=0.

Affordable natural gas prices in the U.S. provide the path forward for the manufacturing renaissance. Higher natural gas prices due to LNG exports threaten this promising return to American manufacturing, and prior economic data demonstrate that when domestic energy prices increase, the country loses manufacturing jobs, particularly in the fertilizer, plastics, chemicals, and steel industries.[25]

Rather than trading long-term manufacturing jobs for short-term natural gas-related construction jobs, the DOE-FE should pursue policies that create new manufacturing jobs and broader economic growth in the U.S. Using natural gas for manufacturing provides a value-added benefit to the economy because industry multiplies the value of every dollar it expends on natural gas for energy or as a raw material. Rather than investing in natural gas exports, which squeeze out investments from other sectors of the economy, the U.S. should pursue policies that allow industry to invest in natural gas dependent manufacturing. Energy and natural gas intensive manufacturing produces chemicals, metals, cement and other materials that may be add low-value, but create positive ripple effects up the value chain and throughout the economy.[26] Rather than exporting natural gas as a raw natural resource, the U.S. could export processed materials, such as steel, or higher value-added goods at more competitive prices, with greater benefits to the U.S. job market and GDP.

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[25] U.S. House Committee on Natural Resources Democrats, *Drill Here, Sell There, Pay More: The Painful Price of Exporting Natural Gas* (March 2012) available at http://democrats.naturalresources.house.gov/reports/drill-here-sell-there-pay-more.

[26] NERA claims that harm resulting from exports will "likely be confined to very narrow segments of industry," namely low value-added, energy intensive manufacturing. NERA Study at 67-69. NERA, however, ignores the benefits of producing materials in the U.S. that can then be used by other U.S. manufactures that are less energy intensive and higher up the value chain. For instance, if plastics are produced at competitive prices in the U.S., toy manufacturers may find it economical to "re-shore" toy manufacturing plants. Steven Mufson, *The New Boom: Shale Gas Fueling an American Industrial Revival*, Washington Post (Nov. 14, 2012).

Threaten Transition from Coal

Current low natural gas prices provide an opportunity to wean the U.S. off of carbon-intensive coal. Inflated natural gas prices due to LNG exports will decrease the viability of natural gas as a bridge fuel to a lower carbon future. Current low prices make natural gas-fired electricity generation an economically sound alternative to coal-fired generation. Sustained low prices may encourage this transition by private initiative regardless of increased environmental regulations as investors find natural gas competitive with coal. If exports inflate natural gas prices, the economics turn against cleaner burning natural gas.[27]

As discussed above, new greenhouse gas regulations will also soon force coal retirements. If natural gas prices remain low, the U.S. may be able to transition away from carbon intensive coal without causing electricity prices to increase significantly. If natural gas prices are high, however, electricity prices will spike as relatively cheap coal-fired generators are forced to retire for regulatory reasons. Spiking electricity rates will have rippling effects on the U.S. economy, especially energy intensive, cost-sensitive manufacturing.

Keeps the U.S. Dependent on Foreign Oil

Currently, the U.S. imports billions of dollars of oil from around the globe, a great deal of which is used as gasoline to fuel vehicles. The replacement of current gasoline-powered fleets with natural gas vehicles would significantly reduce U.S. dependence on foreign oil, and thereby

[27] EIA Export Report at 17.

enhance U.S. security and strategic interests and reduce our trade deficit.[28] State governments, businesses and many of APGA's members are expending substantial resources today to put the needed infrastructure in place.[29]

Automobiles are not the only modes of transportation that businesses are interested in transitioning to natural gas. A company in Canada is investing in commercial locomotives powered by LNG and teaming up with Caterpillar to employ similar technology in heavy duty equipment that currently runs on diesel.[30] If Congress and the DOE allow export applications to go through, the resulting increase in natural gas prices could undermine recent investments to expand natural gas as a transportation fuel.

Policymakers should not pursue an export policy that undermines the efficient, domestic use of a domestic fuel stock and America's first and best opportunity to move toward energy independence by decreasing reliance on foreign oil.

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[28] Cheniere and other exporters claim that their proposed exports will benefit the U.S. balance of trade, but it does not consider the benefits to the trade balance of cutting oil imports and exporting value-added goods manufactured in the U.S. with affordable natural gas.

[29] Officials are planning a series of compressed natural gas ("CNG") filling pumps at existing filling stations across the Pennsylvania US Route 6, stretching 400 miles from New York State near Milford, Pike County, Pa. in the east and through Crawford County, Pa. to the Ohio state line on the west, known as "PA Route 6 CNG Corridor;" at the same time, Chesapeake Energy is converting its vehicles in northeastern Pennsylvania to CNG and working with a local convenience-store chain and transit authority to foster further CNG integration. Eric Hrin, *Pennsylvania Looks to CNG*, The Daily Review Online (May 26, 2011) available at http://thedailyreview.com/news/pennsylvania-looks-to-cng-1.1135267; *see also*, Texas S.B. 20 (On July 15, 2011, the governor of Texas signed S.B. 20, supporting a network of natural gas-refueling stations along the Texas Triangle between Dallas/Ft. Worth, San Antonio, and Houston. The new legislation will lay a foundation for wider-scale deployment of heavy-duty, mid- and light-duty natural gas vehicles ("NGVs") in the Texas market).

[30] Rodney White, *Firm on Track to Build LNG-Fueled Locomotive*, Platts Gas Daily (Nov. 28, 2012).

U.S. and Foreign Natural Gas Prices Will Converge

Currently, there are significant disparities between domestic natural gas commodity prices and prices in some nations that rely on LNG imports. These disparities provide would-be exporters with appealing arbitrage opportunities in the short-term, but they will not last. Gas rich shale deposits are a global phenomenon, just now beginning to be tapped. Also, despite relatively low domestic natural gas prices, certain countries, such as Qatar, can produce massive quantities of natural gas at even lower prices. As other nations develop their resources and export capacity, and as U.S. natural gas prices increase due to export, international and domestic prices will converge, leaving the U.S. with higher domestic prices that thwart energy independence and that undermine the competitiveness of the manufacturing sector that relies heavily on natural gas as a process fuel.

The U.S. is at the forefront of technology in the development of shale gas reserves. A recent study by MIT concludes that the U.S. should export its technology and expertise.[31] According to MIT, the development of international unconventional natural gas reserves will create a more liquid market with less disparity between prices around the globe.[32]

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[31] MIT Energy Initiative, *The Future of Natural Gas*, at 14 (2011).

[32] *Id.*

The U.S. should follow this strategy, instead of spending billions of dollars to build facilities in order to export a commodity that will possibly be abundant worldwide before the LNG export facilities can even be completed.[33]

The U.S. has an opportunity that was unimaginable two or three years ago to significantly expand its manufacturing sector, transition away from our reliance on coal-fired electricity generation without risking price shocks, and finally make real progress towards energy independence. All of this, however, depends on relatively low and stable natural gas prices, which sharply contrasts with the history of natural gas price volatility. Congress and the DOE should not turn a blind eye and allow the same businesses that gambled and lost on projections of the need for future natural gas imports to now potentially squander our nation's future on what may well turn out to be another failed venture as natural gas production and export capacity develop throughout the world.

The Domestic Prosperity and Global Freedom Act

The Domestic Prosperity and Global Freedom Act, H.R. 6 was introduced by Representative Cory Gardner (R-Colo.) on March 6, 2014, in response to, among other things, the ongoing crisis in Ukraine. In an effort to reduce Ukraine's approximately 60 percent dependence on

[33] The U.S. should be ever mindful of the billions of dollars invested in LNG *import* facilities, which are white elephants that stand as testaments to the extent to which technology at home or abroad can undermine investments that ignore the portability of technology.

Russian natural gas,[34] this legislation would automatically approve all pending applications for LNG export from the U.S. for which a notice has been published in the Federal Register by March 6, and would grant FTA status for natural gas to all members of the World Trade Organization (WTO).

Though well intentioned, this legislation will fail to achieve its desired purpose and will have unintended consequences that harm this nation as discussed above. This legislation will not ensure that Ukraine or any other country that is heavily dependent upon Russian energy will ever receive U.S. natural gas, much less receive it in a timely fashion. This is due to the fact that U.S. LNG exports, which cannot occur until the necessary export facilities are constructed later in this decade, will be sold by private firms to the highest bidder without any consideration of U.S. geopolitical interests. Wherever these firms can obtain the highest price for natural gas exports is where the gas will be sold. Exporting firms answer to dollars, not diplomats.

Proof of this assertion can be found in the already approved applications for export of natural gas to non-FTA countries. The six approved applications have finalized contracts or are being negotiated to sell U.S. gas to Japan, South Korea, and India. Since the goal of profit maximization applies to all pending non-FTA export applications, any future exports will also go where the price is highest and not where U.S. geopolitical interests may wish them to be sent.

Even in the unlikely event that the international market for natural gas dictated that the price is highest in Ukraine, LNG exports from the U.S. would not arrive there for several years at the

[34] See: http://www.nytimes.com/2014/03/06/world/europe/us-seeks-to-reduce-ukraines-reliance-on-russia-for-natural-gas.html

earliest, which is well beyond the likely timeframe for the crisis that is currently enveloping the country. In addition, Ukraine, unlike its likely Asian competitors, currently has no LNG import facilities or plans for such, and therefore no capacity to receive U.S. gas in the near future. And the recent Russian takeover of the Crimean region on the Black Sea diminishes the likelihood that LNG import facilities will ever be built by Ukraine.

It is certain, however, that if H.R. 6 is passed, the regular order of non-FTA export consideration and evaluation of the public interest—even if cursory and currently unsatisfactory— will not occur. Instead, the process to export will be rushed with no consideration of the potential negative impacts on U.S. energy prices or on the U.S. economy.

Moreover, the price consumers pay for natural gas will increase, as has been established by every study on the impact of exports. Increased energy prices harm homeowners by reducing their disposable income, of particular concern for the poor and the elderly. Businesses will also be harmed by the increase in the price of natural gas as increased energy costs reduce their competitiveness, whether they serve their local community or consumers around the globe.

Alternative Approach

There is an approach that accomplishes Rep. Gardner's well intentioned outcome without the various downsides and risks that are associated with the proffered legislation. The United States should be exporting the drilling technology that has enabled producers in this country to tap into our huge shale reserves. There are likewise vast shale reserves in Europe, including the Ukraine,

that are there for the taking, assuming the selfsame WTO countries are willing to invest in the technology to access those reserves and also to permit drilling for shale gas reserves. There is certainly no good reason why the U.S should undertake a domestic LNG export policy that has numerous downsides for the American gas consumers when many of the very countries we are seeking to help are capable of helping themselves by accessing their own domestic shale gas reserves.

In lieu of exporting our affordable premium fossil fuel, Congress should focus on adopting policies that encourage greater domestic demand for natural gas and greater emphasis on exporting drilling technology to WTO and other countries that have the capability to access natural gas reserves. It is a much better choice, in both the short and long term, to accelerate the transition in the United States from imported oil to domestic natural gas to fuel our transportation sector, revitalize our manufacturing industry, and improve our balance of trade.

Conclusion

APGA appreciates the opportunity to testify before the House Energy and Commerce Committee's Energy and Power Subcommittee regarding this critical natural gas and public interest issue. We stand ready to work with the Committee on these and all other natural gas issues.

Mr. WHITFIELD. Thanks very much, and, Mr. Ditzel, you are recognized for 5 minutes.

STATEMENT OF KENNETH H. DITZEL

Mr. DITZEL. Mr. Chairman, and members of the subcommittee, thank you for your invitation to present testimony before the Subcommittee on Energy and Power. My name is Ken Ditzel. I am a principal at Charles River Associates, where I have authored three reports on LNG exports since February 2013. The client for these reports has been Dow Chemical. The views I express today, though, are mine, and do not necessarily reflect the views of CRA or others.

Now, Dr. Montgomery and I have conflicting views on the value of LNG exports. I first want to state that Dr. Montgomery and I have known each other for almost 10 years, and we worked together for almost seven. He is a great person, and I agree with David on many other subjects where he is given Congressional testimony, but this time is different. The reason is that LNG exports could present serious opportunity costs. Why? It is because gas-intensive manufacturing creates twice as much GDP, almost five times the permanent jobs, and eight times the construction jobs as LNG exports on an equivalent consumption basis. Also, manufacturing distributes these benefits across more States, which means more people win in more States. Finally, manufacturing has a larger trade balance impact than LNG exports. Assuming equivalent consumption, manufacturing would create a $34 billion trade benefit differential.

Given these higher benefits, we need to ask ourselves two key questions. One, is there a price point where the manufacturing renaissance will be at risk? Two, could U.S. LNG exports raise prices to this level? To answer the first question, price levels approaching almost $8 per million BTU would end the manufacturing renaissance. We saw these price levels in the mid-2000s, and the job destruction that ensued. The answer to the second question is yes. LNG exports, if left unconstrained, could raise domestic gas prices above $8 per million BTU. Why? It has to do with net back pricing. Today the U.S. net back price would be $10 per million BTU, if there were exports.

Turning to the two NERA reports, I have a number of criticisms about their assumptions, process, and results. Given DOE's reliance on the first NERA report, it is surprising that the DOE never had the report peer reviewed, as it would have uncovered a number of concerns, such as, one, the NERA report forecasted no exports in its reference cases, even though 30 BCF per day of applications were submitted at the time. Second, a lack of transparencies in results, full output data by scenario were missing on supply and demand by region in international LNG import prices. Third, resource owners win, while the rest of the economy loses. Fourth, assumptions that the LNG market is competitive. We know it is not because OPEC influences the oil prices by which LNG is indexed.

In reviewing the second NERA report, I found more concerns. One is NERA's now forecasting five BCF per day in the long term in its reference scenario, even though actual LNG export margins have slightly decreased between the timing of the two reports. The second is NERA's results are inconsistent. NERA forecasts all have

prices to be $3.44 in 2018 in its reference scenario. Backing into this price using NERA's output tables gives lower prices, which means LNG exports would be uneconomic, and would not occur in their model.

Three, NERA forecasts almost one BCF per day of exports by 2018, which is only 45 percent of the Sabine Pass capacity, yet Sabine has a take or pay contract that would put the facility near 100 percent. Also, at 45 percent, one has to wonder if Sabine is a losing proposition, which shareholders wouldn't want to hear. Fourth, NERA forecasts international gas prices to drop from $16 today to $11 by 2018. That is because NERA models the energy market as competitive, and we know it is not. The BG group, however, forecasts LNG import prices to remain close to today's levels from the next few years.

In summary, I believe the value of LNG exports is still very much in question. The process employed thus far has been opaque, and I encourage the DOE to open up the process, and reconsider the reports it relies upon for determining what is in the public interest.

[The prepared statement of Mr. Ditzel follows:]

Prepared Testimony of Kenneth H. Ditzel

Before the Subcommittee on Energy and Power
Committee on Energy and Commerce
United States House of Representatives

March 25, 2014

Mr. Chairman and Members of the Subcommittee:

Thank you for your invitation to present testimony before the Subcommittee on Energy and Power; I appreciate the opportunity to discuss my analysis on the impacts of LNG exports on domestic gas prices and the U.S. economy. I am a Principal in the energy practice at Charles River Associates (CRA), and I have authored three reports since February 2013 regarding LNG exports. The client for all three reports has been the Dow Chemical Company. The views I express today are mine and do not necessarily reflect the views of CRA or others.

The major points I will cover in my testimony include the following:

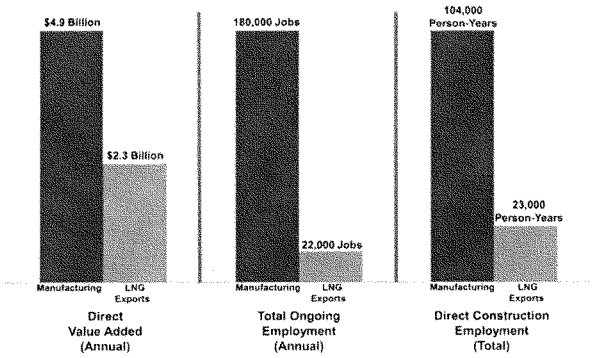
- LNG exports do create GDP growth and jobs, but manufacturing contributes more GDP, jobs, and trade benefit, assuming the same level of gas consumption
- The trade-off in benefits between LNG exports and manufacturing (along with power generation and natural gas vehicles) will occur if prices rise above ~$8/MMBtu on average
- LNG exports will introduce netback pricing to the U.S. and move us off of domestic supply curve pricing, which means we will be importing international LNG prices netted for value chain costs
- Because the LNG market is not a competitive market due to oil linked prices induced by OPEC and because the LNG market is expected to remain tight through the end of the decade, Asian LNG prices will remain high. I therefore expect the netback to the U.S. to be above $8/MMBtu
- These findings were missed by NERA due to its flawed assumptions and modeling approach
- Many of the concerns that I address today have been submitted to the DOE, yet the DOE public interest determination process continues in a manner that is opaque for both sides of this issue

My written testimony is divided into three areas: (1) A summary of the findings from my three reports, (2) Fundamental concerns with relying on the December 201 NERA Report for public interest determination, and (3) Recommendations for addressing the public interest determination going forward.

Summary of the CRA Reports' Findings

First, it is important to state that LNG exports could be beneficial to the U.S. economy. As shown in Figure 1Figure 1, LNG exports, assuming they do not cause significant gas price increases, would add to U.S. GDP (direct value added) and create jobs.

Figure 1: Economic Contributions of Manufacturing Compared to LNG Exports, 5 Bcf/d Equivalent[1]



The figure also shows that gas-intensive manufacturing creates twice (2x) as much GDP and almost five times (5x) the permanent jobs and eight times (8x) the construction jobs as LNG exports consuming a commensurate level of natural gas. Given the benefits from both LNG exports and manufacturing, the three key questions that need to be addressed are the following:

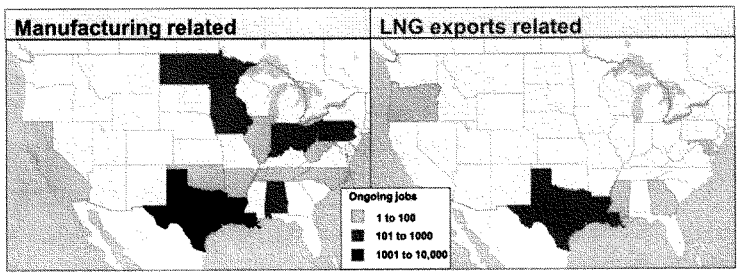
- Does U.S. manufacturing clearly deliver more economic benefits to the economy?
- Will U.S. manufacturing by at risk if domestic gas prices rise?
- Could U.S. LNG exports raise prices to a level that impacts manufacturing?

[1] The benefits shown in Figures 1 to 3 are based on the economic contributions of 5 Bcf/d of natural gas use in the manufacturing sector to the economic contributions of 5 Bcf/d of LNG exports. This level of gas consumption was chosen after analyzing a subset of announced investments in new manufacturing capacity in the United States.

The economic benefits of manufacturing relative to LNG exports

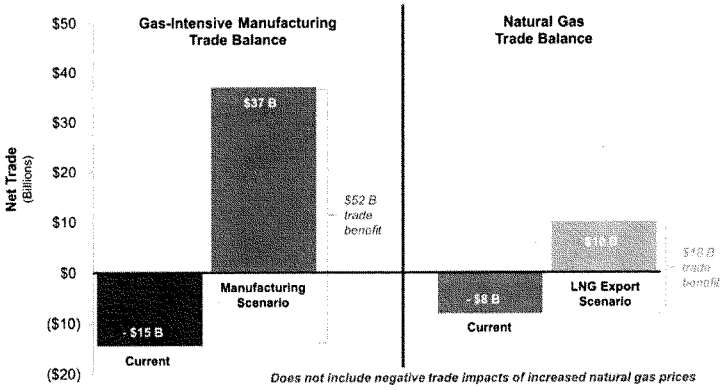
As highlighted in Figure 1, manufacturing has a bigger impact on overall GDP and job creation than LNG exports. Additionally, manufacturing distributes these benefits across more states as illustrated in Figure 2. Similar geographic dispersion occurs for construction employment. Note that a significant share of the jobs associated with manufacturing occurs in the Midwest; this is not the case for LNG exports, which benefit a small number of coastal states.

Figure 2: Geographic Distribution of Ongoing Employment, 5 Bcf/d Equivalent



Manufacturing also has a larger trade balance impact relative to LNG exports. As shown in Figure 3, manufacturing would create a $52 billion trade benefit while LNG exports (assuming a doubling in February 2013 prices) would create an $18 billion trade benefit.

Figure 3: Trade Impacts of 5 Bcf/d of Economic Activity in Manufacturing and LNG Exports

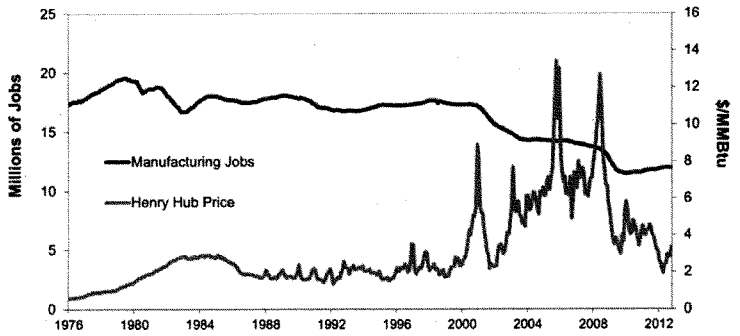


The reason why manufacturing would deliver a bigger benefit is that it generates more value added products than LNG exports. Given the larger economic contributions from manufacturing relative to LNG exports, the next question to answer is the following: at what price levels are these benefits at risk?

Price levels that will place the manufacturing renaissance at risk

From 2000 through the end of 2007, the United States experienced a 21% decline in manufacturing jobs, losing 3.6 million jobs in total. During the same period, as shown in Figure 4, Henry Hub natural gas prices increased significantly.

Figure 4: Manufacturing Jobs and Henry Hub Price Trend[2]



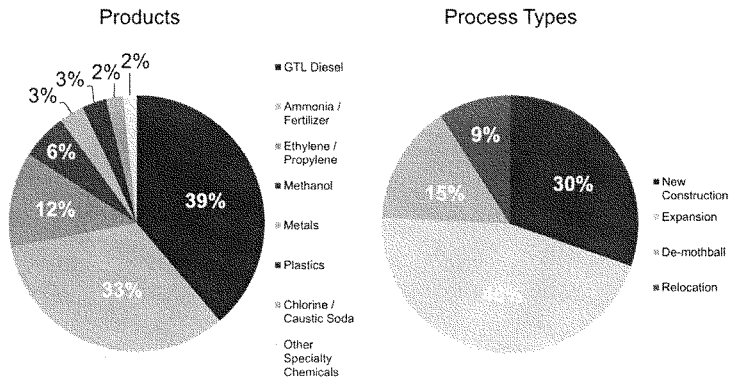
The average Henry Hub nominal natural gas price from 2000 through the end of 2007 was $5.7/MMBtu, and the annual average from 2005 through the end of 2008 was almost $8/MMBtu. These price levels are significantly higher than the eight-year period leading up to 2000 when the average Henry Hub price was $2.1/MMBtu. While correlation in Henry Hub prices and manufacturing is not necessarily evidence for causation, the anecdotal evidence from 2000 to 2007 indicate that increasing natural gas prices were a major driver of decisions to idle and shut down manufacturing plants.

The return of low natural gas prices in recent years has enabled the U.S. manufacturing industry to become more competitive internationally, which in turn has sparked the hopes of a manufacturing renaissance. The expectation of continued, favorable natural gas prices has led to announcements of more than 95 capital investments in the gas-intensive manufacturing sector, representing more than $90

[2] EIA, Bureau of Labor Statistics.

billion in new investments and thousands of new jobs. These investments will be varied across the manufacturing industry, and will be a combination of new builds, expansions, de-mothballs (re-commissioning of idled plants), and transfers of plants from overseas to the United States (relocation). Figure 5 shows the variation in products and plant type by incremental gas demand.

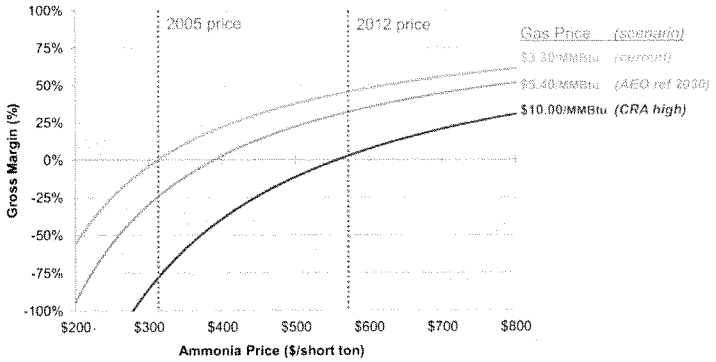
Figure 5: Plant Products Announced and Plant Types Announced, 4.8 Bcf/d[3]



I have found that the announced manufacturing investments are at risk if domestic gas prices rise above ~$8/MMBtu, similar to historical precedence. This was illustrated via a case study in the first CRA report, which showed that a typical ammonia facility would experience zero gross margins (revenues less costs of goods sold) at prices above $8/MMBtu even if ammonia prices maintained recent levels of $500-$600/ton (see Figure 6). Note that a zero gross margin results in negative profit margins after other fixed costs are considered.

[3] CRA analysis of public announcements in the gas-intensive portion of the manufacturing sector

Figure 6: Ammonia Producer Margins under Varying Ammonia Prices[4]



The ammonia case study is just one example of the impact of high gas prices on domestic manufacturing profits and sustainability. Similar impacts would be felt by other gas-intensive manufacturing if prices were to rise above $8/MMBtu.

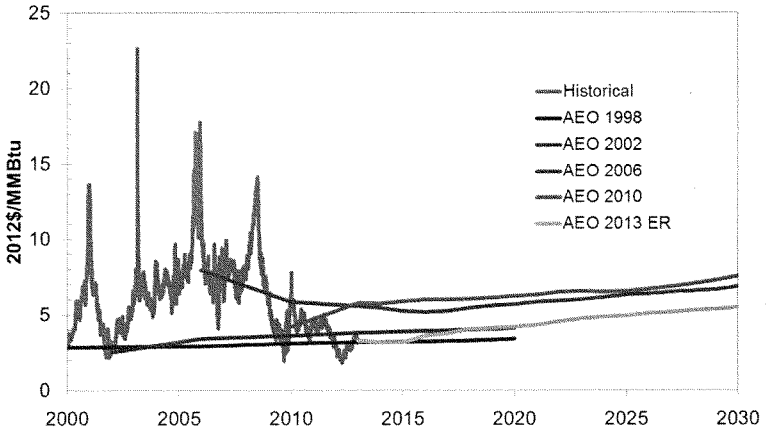
LNG exports' impact on domestic natural gas prices

The best outcome for LNG exporters and manufacturers would be for gas prices to remain low for the foreseeable future. This has appeared to be the potential promise as a result of the oil and gas sector's ingenuity and technology development that has led to the shale boom. Many forecasters, including the Energy Information Administration (EIA), forecast gas prices to remain low through 2030 even with LNG exports. In the case of EIA, the 2014 Annual Energy Outlook (AEO) Early Release (ER) forecasts gas prices to remain below $6.0/MMBtu in 2012 dollars through 2030 even though the EIA forecasts demand to increase by 23 Bcf/d (33%) in 2030 relative to its AEO 2011 forecast. The 23 Bcf/d increase includes ~9 Bcf/d of LNG exports from the U.S.

This co-existence of LNG exports and the manufacturing renaissance at low gas prices is an attractive proposition because it means that everyone wins. The problem is that this story contains two fundamental concerns. The first is that forecasters have many times said that "this time is different", but historical evidence has shown otherwise and has been challenging even for the EIA (see Figure 7).

[4] CRA Analysis; The Fertilizer Institute

Figure 7: The Accuracy of EIA Reference Case Projections versus Actual Henry Hub Spot Prices

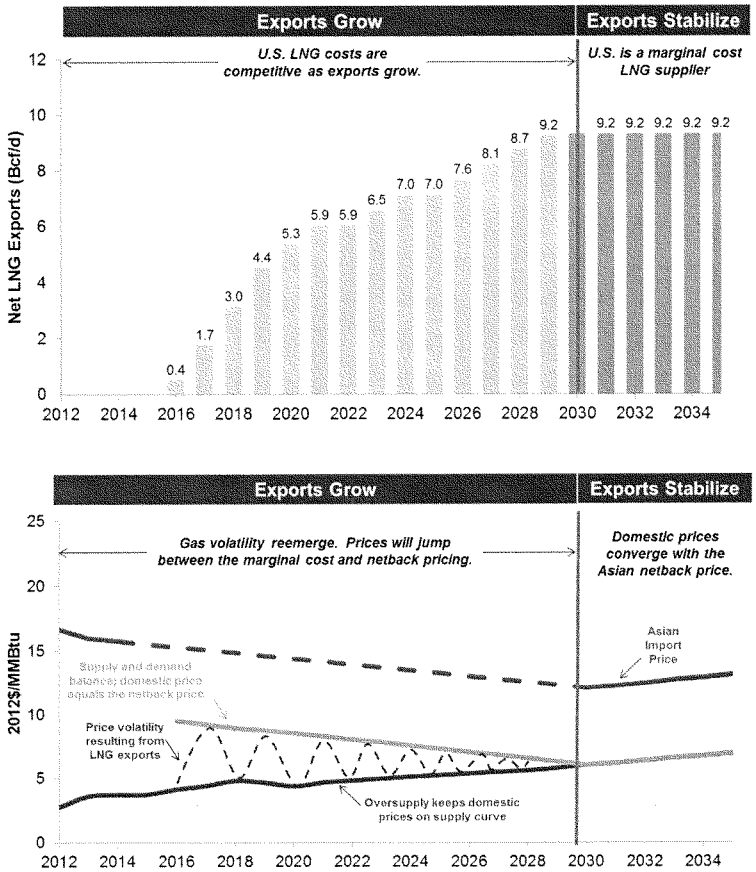


The second issue with the story is that many forecasters are using the wrong tools to project gas prices. The EIA and many others rely on the domestic supply curve to estimate the incremental price impact that exports will have on domestic gas prices. This is an invalid approach because connecting to the global natural gas market fundamentally changes how gas is priced. That is, we move away from the domestic supply and demand curves and jump onto the global gas supply and demand curves, and thus enter a new era of netback pricing. Netback pricing simply is the international price of gas less the transportation costs for getting it there, and it reflects the opportunity cost of selling gas into the global markets. Netback pricing explains what has occurred in Eastern Australia where the development of LNG export facilities has increased prices from ~$4/MMBtu to $8-9/MMBtu.

In its AEO 2014 ER release, the EIA does not address the netback pricing that would occur with the U.S. connecting with the global gas market. Instead, the EIA assumes that domestic prices will be driven by the domestic supply and demand balance inclusive of incremental demand by LNG exports. I believe EIA has missed an important factor in their natural gas price forecasting, as evinced by the Australian natural gas markets and every other globally traded commodity market. Figure 8 shows the EIA's forecasted

Henry Hub price. It also shows the AEO 2014 ER Henry Hub and LNG export forecast along with the implied Asian LNG import price and the U.S. netback price that I have derived separately.

Figure 8: AEO 2014 ER LNG Exports, Henry Hub Prices, and Implied Netback Prices



To understand this figure, one must first focus on the EIA forecasts for U.S. LNG export volumes in the top portion. The AEO 2014 ER forecast shows exports stabilizing after 2030 at 9.2 Bcf/d. For this to

occur, the forecasted Henry Hub gas price of $6.0/MMBtu in 2030 *must* converge with the netback price as this will no longer make LNG export terminal expansions economic.

When applying the approximate $6/MMBtu netback cost to the Henry Hub price, one can arrive at the 2030 Asian LNG import price implied by the AEO 2014 ER forecast, which is $12/MMBtu. Interpolating between today's price and the $12/MMBtu in 2030 yields the dotted green line in Figure 8. Subtracting the netback costs to the green color line generates the orange color line, which is the implied netback price to the U.S. The domestic gas price will reflect netback pricing when the U.S. market is balanced and will shift back to domestic supply curve pricing (i.e., the AEO 2014 ER Henry Hub forecast) during times of excess supply, which is represented by the solid blue line. The dotted red line shows the gas price volatility that will ensure when connecting our gas market with the global market. It is for illustrative purposes only.

Why would international LNG import prices decline from their current levels? The EIA does not provide much discussion on international LNG import prices in its Early Release. I have, however, developed a list of drivers that, in part or full combination, would support such a scenario. These include the following:

- Soft global GDP growth
- A global shale gas boom
- The LNG market becoming competitive and moving away from oil-linkage
- Japan restarts the majority of its nuclear facilities
- Germany abandons plans to retire its nuclear facilities

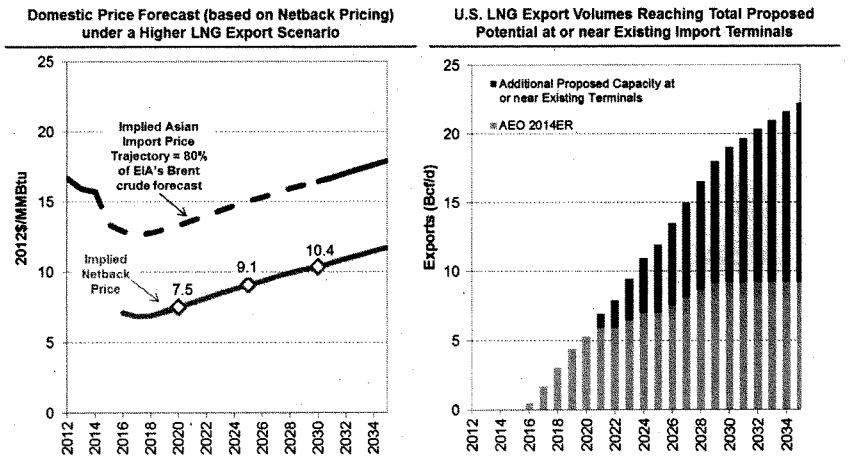
While this is a possible scenario, an equally plausible and more likely scenario is one where Asian LNG import prices remain closely linked to international oil prices, which would further drive demand for U.S. LNG exports. As I detail later in my testimony, U.S. LNG export developers, such as the BG Group, forecast market tightness until the end of the decade at least. I agree with this assessment. The drivers that would support such a scenario include those listed in Table 1.

Table 1: Summary of Drivers for International LNG Import Prices Remaining High

Driver	Rationale
Robust global GDP growth	Forecast by the World Bank and OECD indicate that global growth prospects are moving upwards over the past year as the legacy of the global financial crisis is being overcome.
The cost of developing international shale gas remains high	The geology, mineral rights, regulations, public acceptance and infrastructure may preclude shale-rich countries from becoming major producers of shale gas. High profile exits from Poland and China well costs triple those in the U.S. are indications that international shale gas may be slow to develop.
Europe backtracks on its renewable goals	Rising electricity prices in Europe due to heavy adoption of renewables have decreased the competitiveness of its industry. Easing of renewable goals would increase reliance on gas.
LNG export facilities require oil-linkage to support investment	Given their high costs, many proposed LNG export facilities will require oil-linked pricing to support the investment. Australia is an example of exports requiring oil-linkage. Mozambique is another example with no current infrastructure to support LNG exports.
Continued environmental pressures encourage coal to gas switching	Developed countries continue to emphasize de-carbonization of fuels. For example, the U.S. EPA has a number of proposals that would reduce the size of the U.S. coal fleet significantly over the next decade, switching reliance from coal to gas power most of the electric sector's generating fleet.
Natural gas vehicle market penetration	Fuel cost arbitrage enables significant switching of medium and heavy duty fleet vehicles from gasoline and diesel to natural gas over the next decade. Also, emissions control and pricing drives maritime consumption growth for near port transit because the alternatives are distillates

Under these drivers, the Asian LNG import price would maintain its relationship with international oil prices. I project that this, in turn, would result in 18+ Bcf/d of U.S. LNG exports and Henry Hub prices reaching $7.5 – $10/MMBtu between 2020 and 2030, assuming LNG exports are left unconstrained (see Figure 9).

Figure 9: Domestic Prices and LNG Export Volumes in a High LNG Export Scenario



In this scenario, the ramifications to the U.S. economy would be tremendous. The manufacturing renaissance would vanish at these price levels. In addition, economic benefits due to low-cost gas would impact other gas-intensive sectors of the economy. These include the electric sector and the transportation sector via natural gas vehicles (NGV) deployment. These impacts are described below:

- **Electric sector:** coal–to–gas switching is being led by two drivers: low natural gas prices competing with coal prices and coal plant retirements due to impending regulations. The implementation of multiple environmental regulations over the next 10 years will have a significant impact on the U.S. electric sector. Recent proposed and finalized rules from the U.S. Environmental Protection Agency (EPA) target the regulation of air quality, water quality, solid waste disposal, and greenhouse gas (GHG) emissions associated with electric power generation. Under a high export scenario, utilities will migrate to non-gas generation technologies, such as wind and nuclear, but only at higher relative costs. This will raise prices for the full spectrum of consumers.

- **NGVs:** heavy duty (freight) NGVs can be competitive with current diesel prices at $14/MMBtu delivered. While this is well above our Henry Hub natural gas price forecast in 2030, the costs of pipeline transportation and compression and liquefaction services will raise the delivered price. CRA estimates that these costs could be $3–4/MMBtu, which would put the heavy duty NGV breakeven at the $10-11/MMBtu range, making NGVs marginal under a high export scenario.

Altogether, I have found that the economy will lose at the expense of unconstrained LNG exports. In particular, the impacts will be:

- **Lower than expected GDP.** We showed that the manufacturing sector has at least double the direct value added, or GDP contribution, for a given level of natural gas use than LNG exports.
- **Less employment added.** Our analysis also showed that the investment in manufacturing for a given level of natural gas demand is significantly higher than the investment required to export the same level of natural gas. This leads to over four times the construction employment. The labor intensity of production and deep domestic supply chain for manufacturers lead to eight times the total (direct and indirect) employment of LNG exports during operations.
- **Higher trade deficit.** The announced natural gas-intensive projects have the potential to reduce the trade deficit by over $50 billion annually, compared to $18 billion for exporting the same level of natural gas as LNG. This discrepancy is important for a country focused on improving its negative trade balance.

The CRA analysis of the NERA Reports reveals that they did not properly reflect these impacts. The reason is that NERA made a number of fundamental flaws in its assumptions and its approach, which I detail in the next section of my testimony.

Fundamental Issues with the NERA Reports' Assumptions, Process, and Findings

First NERA Report

NERA has produced two reports on the economic impacts of LNG exports to the U.S. economy – the December 2012 report ("1st NERA Report"), which was conducted for the Department of Energy (DOE), and the March 2014 report ("2nd NERA Report"), which was conducted for Cheniere Energy, Inc

(Cheniere). The 1st NERA Report and the 2012 Energy Information Study ("EIA Study") are commonly referenced by the DOE as studies that support its public interest determination for non-FTA exports.

Given DOE's reliance on the 1st NERA Report, it is surprising that the DOE never had the report peer-reviewed before accepting it. A review by energy experts would have uncovered some of the same flaws in assumptions, process, and results that are detailed in the February 2013 CRA report. These include the following:

- **No exports in the reference scenarios:** NERA concluded that there would be no exports in its reference scenarios, effectively stating that it is not economically rational to export LNG even though 30+ Bcf/d of applications have been submitted to the DOE.
- **A lack of transparency:** the 1st NERA Report (and the 2nd NERA Report) provides a minimal amount of results by which one can stress test the findings. Key information that is missing, but likely would part of NERA's model, include:

  (1) Underlying assumptions that impact domestic gas demand by sector such as the degree to which proposed EPA regulations are adopted,

  (2) Projected gas demand by scenario for the U.S. power generation sector, natural gas vehicles, residential & commercial, and industrial sectors,

  (3) Gas production and consumption by year and by region by scenario,

  (4) LNG production and consumption by year and by region by scenario,

  (5) Net pipeline imports/exports by country/region and year by scenario, and

  (6) International LNG import prices by region and year by scenario
- **Resource owners win while the rest of the economy loses:** Figures 3 and 4 of the 1st NERA report show NERA's results for income, GDP, and total wage income by industry (which for all but oil and gas is reduced). As NERA states "[h]ouseholds with income solely from wages or transfers, in particular, will not participate in these [LNG export] benefits."[5]
- **Applying additional shipping cost adders:** these adders doubled the transportation cost between the U.S. and Korea/Japan, likely shutting down exports to this region in NERA's model.

[5] 1st NERA Report, page 8.

- **Lack of disaggregation of impacted manufacturing sectors:** NERA grouped gas-intensive manufacturing with a much larger subset of manufacturing. This grouping produced a weighted average representation that muted the impact of sectors highly sensitive to changes in gas prices.
- **High price elasticity of demand for Asian importers:** NERA assumed that non-U.S. countries would have the same price elasticity of demand. This does not comport with reality as evidenced by Japan and Korea, who have consistently increased demand regardless of the price.
- **No examination of domestic demand scenarios:** NERA examined high and low resource scenarios on the supply side, but it did not examine the fundamental drivers that would change domestic demand for gas outside of price, such as proposed EPA regulations that would encourage more coal to gas switching.
- **Assumption that the LNG market is competitive:** the LNG market is not a competitive market like the U.S. domestic gas market. The majority of LNG is locked up in long-term contracts that are indexed to oil. Oil prices are heavily impacted by OPEC. As a result, OPEC indirectly impacts the global LNG market. Understanding this makes it clear that the U.S. is not on a level playing field when it comes to trade in energy markets, and thus modeling it otherwise is inappropriate in a reference scenario.
- **No evaluation of whether LNG exports will increase price volatility:** NERA does not discuss whether increased volatility would result from the U.S. connecting with the global LNG market, which is one that is closely linked with oil prices.

Second NERA Report

Fifteen months after its first report, NERA released its second report on March 6, 2014. The findings on the economic impacts due to LNG exports generally were similar to the ones in the 1st NERA Report; however, the level of LNG export volumes was starkly different. For example, NERA projected zero LNG exports in its first report's Reference scenarios and 4.74 Bcf/d of U.S. LNG exports by the end of the modeling horizon in its second report's Reference scenarios. Below I focus on the flaws I have found in

the 2nd NERA Report's computations for LNG exports as well as the reasonableness of its export levels and international import prices.[6]

Flawed Computations in the 2nd NERA Report's LNG Export Decision

Both the 1st and 2nd NERA Reports provide limited input and output data from its model that can be used for auditing the precision of their results. I was, however, able to extract enough information from the Reference case results in the 2nd NERA Report to perform a basic audit. My audit showed that NERA's model should not have forecasted LNG exports in 2018 in its Reference scenarios, yet NERA shows that 0.36 Tcf or 0.99 Bcf/d of LNG is exported. My reasoning is that the "Maximum Wellhead Price for Export" that I derived from NERA's results is lower than forecasted NERA Wellhead price of $3.44/Mcf. As such, LNG exports should be uneconomic in the NERA model (see Table 2). The steps I took for this analysis were the following: (1) Begin with the NERA's "City Gate Price" forecast, (2) Subtract "Total LNG Transportation Cost", (3) Subtract "Additional LNG Shipping Cost Adders" to arrive at the "Maximum Wellhead Price for Export", and (4) Subtract the "Wellhead Price" in the "No Constraint" scenario to arrive at the Differential. A negative differential means that it is uneconomic to export LNG.

Table 2: Audit of 2nd NERA Report's Reference Scenarios with LNG Exports

	A	B	C	D=A–B–C	E	F=D– E
	City Gate Price	**Total LNG Transport Cost**	**Additional LNG Shipping Cost Adders**	**Maximum Wellhead Price for Export**	**Wellhead Price in No Constraint Scenario**	**Differential**
Africa	$2.99	N/A	N/A	N/A	N/A	N/A
Canada	$4.70	N/A	N/A	N/A	N/A	N/A
C & S America	$4.80	N/A	N/A	N/A	N/A	N/A
China/India	$9.89	$7.79	$0.00	$2.10	$3.44	($1.34)
Europe	$12.79	$6.33	$3.07	$3.39	$3.44	($0.05)
FSU	$5.95	N/A	N/A	N/A	N/A	N/A
Korea/Japan	$12.10	$6.65	$2.06	$3.39	$3.44	($0.05)
Mexico	$8.47	N/A	N/A	N/A	N/A	N/A
Middle East	$4.28	N/A	N/A	N/A	N/A	N/A
Oceania	$6.08	N/A	N/A	N/A	N/A	N/A
Sakhalin	$3.89	N/A	N/A	N/A	N/A	N/A
Southeast Asia	$3.27	N/A	N/A	N/A	N/A	N/A
U.S.	$4.46	N/A	N/A	N/A	N/A	N/A

[6] I define the NERA "Reference" scenarios as those that are the U.S. Reference scenario and the International Reference scenarios.

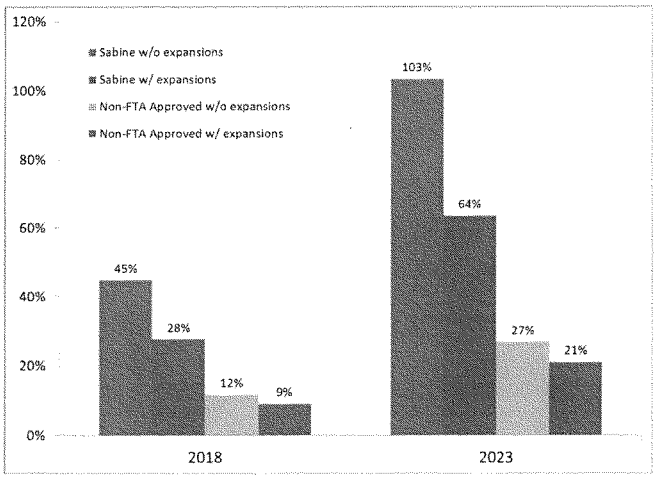
The conclusion from Table 2 above is that the NERA projected LNG exports do not align with the economic data from their results tables.

Reasonableness of LNG Export Volumes in the 2nd NERA Report

In addition to the computation flaw detailed above, the level of exports that the 2nd NERA report forecasts in 2018 and 2023 is perplexing. The reason is that NERA's projected export levels are well below U.S. export capacity that is presently under construction and financed.

Currently, there is only one U.S. LNG export terminal under construction – Sabine Pass. This facility is owned by Cheniere. In its Reference scenarios, NERA forecasts LNG exports to be 0.36 Tcf (0.99 Bcf/d) by 2018. A sanity check on the modeling results shows that NERA projects the Sabine Pass facility to be massively underutilized. For example, the Sabine Pass facility has been approved for 2.2 Bcf/d of Non-FTA exports and is waiting for an approval of 1.38 Bcf/d of additional non-FTA exports. This would be a total of 3.58 Bcf/d of non-FTA capacity. The NERA results imply that the Sabine Pass utilization rates will be 28% and 45% in the 2.2 Bcf/d and 3.58 Bcf/d Sabine Pass capacity scenarios, respectively, in 2018.

Figure 10: Implied Utilization of Under Construction and Non-FTA Approved



In addition to the Sabine Pass facility's 3.58 Bcf/d of exports, there are another 6.27 Bcf/d of LNG export facilities that are Non-FTA approved and have financial arrangements in place. These facilities – Freeport LNG, Lake Charles, Dominion Cove, and Cameron – currently plan to enter commercial operation by 2020. This 6.27 Bcf/d of additional exports does not include the 1.00 Bcf/d of expansion capacity planned at Freeport LNG. Figure 10 shows what the implied capacity utilizations of these facilities are in the NERA Reference case scenario. Because the NERA report only showed export volumes in its reports and not capacity, we do not know how NERA accounts for capacity. Nonetheless, comparing the NERA export volumes to the capacity under construction and financed with Non-FTA approval provides a way to sanity check the results. The finding is that 2nd NERA Report results do not comport with reality, which is one where LNG export owners are trying to receive approvals, permits, and enter construction as quickly as possible.

NERA's Forecasted International LNG Import Prices

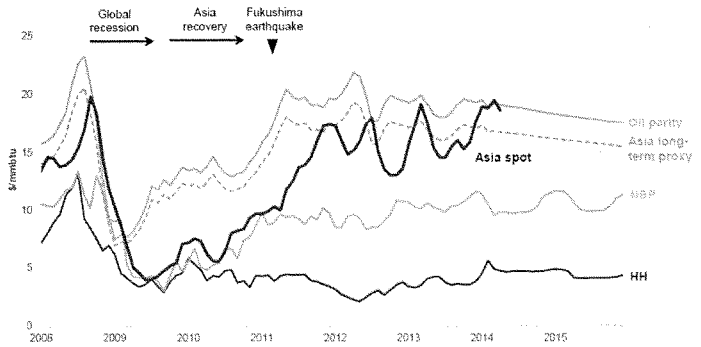
The 1st and 2nd NERA reports do not specifically provide its modeled international LNG import prices, but they do provide enough information to derive these prices for one set of scenarios – the Reference scenario. In this scenario, the 2nd NERA Report projects that Korea/Japan import prices will drop significantly from the ~$15-18.5/Mcf (in 2012 dollars) over the last few years to $10.7/Mcf (in 2012 dollars) by 2018 as shown in Table 3. The steps for arriving at the International LNG Import Prices in Table 3 were the following: (1) Begin with the NERA's "City Gate Price" forecast, (2) Subtract the "Regasification to City Gate Pipeline Cost", and (3) Subtract the "Regasification Cost" ("C") to arrive at the "2018 International LNG Import Price".

Table 3: Projected 2018 LNG Import Price for Major Markets – 2nd NERA Report ($/Mcf)

	A	B	C	D=A–B–C
	City Gate Price	Regasification to City Gate Pipeline Cost	Regasification Cost	2018 International LNG Import Price
Africa	$2.99	N/A	N/A	N/A
Canada	$4.70	N/A	N/A	N/A
C & S America	$4.80	N/A	N/A	N/A
China/India	$9.89	$1.53	$0.83	$7.53
Europe	$12.79	$1.02	$0.87	$10.90
FSU	$5.95	N/A	N/A	N/A
Korea/Japan	$12.10	$0.51	$0.86	$10.73
Mexico	$8.47	N/A	N/A	N/A
Middle East	$4.28	N/A	N/A	N/A
Oceania	$6.08	N/A	N/A	N/A
Sakhalin	$3.89	N/A	N/A	N/A
Southeast Asia	$3.27	N/A	N/A	N/A
U.S.	$4.46	N/A	N/A	N/A

The NERA projections for LNG import prices are starkly different from that of a recent report and presentation by the BG Group – a major LNG player. BG Group forecasts the Asia long-term LNG proxy to remain above $15.5/Mcf in 2012 dollars over the next few years as shown in Figure 11.

Figure 11: BG Group LNG Price Forecast[7]



Source: Platts, Heren, Petroleum Association of Japan and Bloomberg (as of Mar 6, 2014)

Note: Asia long-term proxy = 14.85% JCC + 0.50
Oil parity = JCC = Japanese average crude price

[7] "Global LNG Market Overview", Andrew Walker of the BG Group, March 18, 2014, pg. 10.

The justifications given by BG Group include the following:

> *"LNG demand will grow at 5% to 2025, twice as fast as for gas overall."*[8]
>
> *"LNG industry likely to be tight through the end of the decade"*[9]
>
> *"New supply will take longer than many envisage."*[10]
>
> *"LNG market will remain tighter, for longer than many assume"*[11]

Other notable findings from the 2nd NERA report shown in Table 3 include the following:

- 2018 LNG import prices in Europe will be slightly higher than prices in Asia
- 2018 LNG import prices for China/India will be $3.20/Mcf lower than Korea/Japan.

It also is worth noting that an incomplete set of input assumptions and model results by NERA prevented me from analyzing other markets and other models years. For example, Table 3 could not be completed for the other markets shown because NERA did not provide the pipeline and regasification costs assumptions for these markets in either report. I also was unable to construct this table for model years past 2018 because the LNG transportation costs provided by NERA were only for 2018.

Recommendations

I believe the question surrounding the value of LNG exports still needs to be decided due to the process employed and the modeling results relied upon. There are actions that can be taken quickly that will help end the uncertainty and put U.S. businesses on a path where they can make clear decisions on whether and when they want to invest in the natural gas value chain. Below are my recommendations for moving the discussion forward:

- Make transparent the public interest determination process for the American public. Are the economic benefits modeled properly? How are the national security aspects considered? How are the environmental impacts weighted? Making the process more transparent will help clarify the direction of natural gas prices, which in turn will help businesses make better decisions regarding multi-billion dollar investments that affect GDP, jobs, and trade balance.

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[8] "Global trade summary for 2013: LNG supply hiatus in full effect", BG Group, March 2014.
[9] "Global LNG Market Overview", Andrew Walker of the BG Group, March 18, 2014, pg. 14.
[10] "Global LNG Market Overview", Andrew Walker of the BG Group, March 18, 2014, pg. 15.
[11] Ibid.

- If LNG exports are determined to be in the public interest via a transparent process, consider actions to mitigate the impact of significantly higher natural gas prices and gas price volatility induced by LNG exports. An example might be to negotiate free trade agreements with non-FTA countries wanting access to our natural gas if it is deemed in the best interest of the two countries. Consumers likely will benefit from access to lower-cost goods, and U.S. businesses may become more competitive as a result. Another action might be to lower taxes for consumers as LNG-induced prices and volatility will act as a tax, which reduces consumption, a major component of GDP.
- Given the fundamental flaws in the 1st NERA report, I recommend that DOE reconsider using it as a primary reference to justify the public interest of non-FTA LNG exports. The second NERA report is equally as flawed as I have enumerated in my testimony and should not be used in the public interest determination process either.
- If the decision is to continue to assess the public interest determination on a cumulative, case-by-case basis, the DOE should consider an annual re-evaluation of the merits of LNG exports. The EIA's Annual energy Outlook currently is insufficient for this purpose since it does not consider the impacts of netback back pricing and the increased volatility that would ensue with being connected to the global gas market.

I have attached the following reports for further reference:

- The February 2014 CRA Briefing on the AEO 2014 ER
- The July 2013 CRA Briefing on the API Report
- The February 2013 CRA Report

Mr. WHITFIELD. Thank you very much. At this time, Dr. Montgomery, you are recognized for 5 minutes.

STATEMENT OF W. DAVID MONTGOMERY

Mr. MONTGOMERY. Thank you, Mr. Chairman, Ranking Member Rush, and Mr. Green, Mr. Griffith, and Mr. Gardner. I appreciate the opportunity to be here, and thought I might as well mention all of you. I led both NERA's study of the macroeconomic impacts of LNG exports that we did for the Department of Energy, and also our recent update. I have provided a copy of this report with my testimony. I would like to request that that be entered for the record. I am also speaking today for myself, not for NERA, or any other consultant there, or any of their clients. These are my opinions.

We did, as Dr. Gant mentioned, in our new study update our data to the most recent complete Energy Information Administration Annual Energy Outlook. What Mr. Ditzel refers to as our forecasts are simply what was in AEO 2011, when we did the DOE study, and 2013, in our current study. The reference case was calibrated precisely to the AEO forecast, as close as you can come. So we did the update. We also looked at higher levels of exports than we did in the previous study. We looked at the full amounts of exports that the market would take in each of the scenarios we developed. And what we found, again, was that LNG exports would provide net economic benefits to the U.S. in all the scenarios we examined, and the less the regulators restricted U.S. exports, the greater the benefits would be.

Indeed, the largest net benefits were achieved when no limit was set on LNG exports by DOE. But that didn't mean that exports are unlimited, because the market would limit them. And, put another way, there is a sweet spot, I agree, but the sweet spot is only going to be found by letting the market work to discover it. We are not going to be able to discover a sweet spot through arguments here, or through analysis. The sweet spot is the point at which the value in domestic use and the value in exports are balanced off by the market.

We also find that the benefits of LNG exports will be distributed broadly, and we looked at this more carefully than we did in the previous version. Wage growth will be slightly slower, but it is not true that it is only rich land owners in Wyoming and North Dakota that will be getting the benefits. Workers benefit from increased values of their 401(k)'s and retirement savings. Everyone benefits from a source of Government revenue that doesn't retard growth. And there is the basic point of international trade that when we increase exports, it directly reduces the cost of the other imported consumer goods that people buy. So there is an offsetting effect.

You know, there is a demand for our exports. Other LNG exports go up, buyers need dollars. Buyers go out and acquire those dollars. That drives the value of the dollar up. That drives down the price of all the other goods that we import. For consumers, that is what turns out to be a wash, and it is a very important part of understanding the trade implications.

Now, you have heard that the chemical industry will create more GDP if it were allocated the BCF of gas than the natural gas in-

dustry would create by exporting it. That is a false dichotomy, and bad economics in the bargain. The same thing could be said of every industry that uses a basic commodity, for example, grocery manufacturers, who use the same agricultural products that we export. Does this mean that we need to establish a law that creates a public interest requirement through determining whether agricultural exports are in our national interest? No. The market sorts that one out perfectly adequately.

The whole notion that chemicals, or other manufacturing industries, need Government allocations of energy to survive is false. There is just no problem for the Government to solve. The competitive advantage of U.S. manufacturing won't be taken away by exports. I would like to put up one slide here which shows what happened. This is the manufacturing renaissance. This is the effect of lower natural gas prices. The blue line shows 2005. The United States is the highest cost producer of chemicals at that point. It was really on the verge of being knocked out of business. Now we are tied with the Middle East as the lowest cost producer. We have a 60 cent a pound advantage in ethylene production over our nearest rival.

So I did a calculation. I asked, what is the maximum impact that we see from natural gas exports across all our cases? It is not this fantasy that we are going to be linked to oil prices, and suddenly jump to 10 or $12 a barrel. It is a $1 increase above what prices would otherwise be. That $1 increase in natural gas prices converts to 5 cents a pound on the cost of producing ethylene. That is out of a 60 cent advantage that we have already.

It is true, U.S. manufacturing gets a huge advantage over its rivals in countries that have to import natural gas, and we get it because our gas is so much cheaper, and that there is enough for manufacturing, and enough for the exports as well. In fact, when we looked at exports, we found that almost all of the increased gas for exports was coming from additional production. Almost none of it was coming from manufacturing. Manufacturing can afford to buy the gas because it has such an advantage. It is a false dichotomy to say it is either or.

Let me show two other slides. This one shows that there are employment impacts, and they are positive impacts. There are direct jobs that are going to be created by building LNG facilities. We show them here that they will peak before 2018, 2,000 to 40,000 jobs, depending on how fast we get on with the business of exporting LNG. That actually converts into reduced unemployment. Lot of talk about creating jobs, and putting people to work 40 years from now is nonsense. CBO, and most other forecasters, assume that once we get out of this recession, we will stay approximately at full employment. What matters is between now and 2018, because that is when CBO says we will be returning to full employment. Using a standard kind of macroeconomic theory, we looked at this and determined that we would get something up to 45,000 additional workers joined out of the unemployed and put to work at the maximum level of LNG exports that we came across.

Final chart, let me show, this would have an effect on Russia. I will leave it to others to talk about why it is our strategic advantage to do this, but what this shows is that if we do two things,

one is if we remove bureaucratic restrictions on exports, and the second is if we actually encourage the shale revolution, rather than restricting it through ham-handed regulations or unjustified fears, we can knock out five trillion cubic feet of Russian exports. It won't be because we are exporting directly to Russia, to Europe, it is because we will be going where we have transportation cost advantages to go, and others, in particular the Middle East and Africa, will be shipping their gas to Europe, and knocking Russia out of that market.

That will face Russia with two choices, and it is the choice every monopolist has to face when a competitor appears. They either have to cut back their production in order to maintain high prices, cede most of their market, or they have to take much lower prices. We project that, in the optimistic supply case that EIA has developed in 2013, we could reduce Russia's natural gas export revenues between 40 and 60 percent if we free up LNG exports. I think that is a significant hit to the Russian economy, and one that should get their attention. Thank you for your indulgence.

[The prepared statement of Mr. Montgomery follows:]

Prepared Testimony of
W. David Montgomery, Ph.D.
Submitted to the
Committee on Energy and Commerce
Subcommittee on Energy and Power
United States House of Representatives
HR6: The Domestic Prosperity and Global Freedom Act
March 25, 2014

Chairman Whitfield, Ranking Member Waxman and Members of the Subcommittee:

Summary:

NERA Economic Consulting has updated the analysis of the macroeconomic impacts of LNG exports that we conducted for the U.S. Department of Energy (DOE) in 2012. The new analysis was supported by funding from Cheniere Energy,Inc. who gave us the same freedom to conduct an objective and independent study that were given by DOE. This update uses the most recent relevant data and projections, and addresses questions about the benefits of low natural gas prices for U.S. manufacturing and the cumulative impacts of approved applications that have been raised since our 2012 study. We again find that LNG exports provide net economic benefits in all scenarios, and the more we export the greater the benefits. Compared to the 2012 report, prices are lower, LNG exports are larger and economic benefits are greater.

One of our goals has been to dispel myths about LNG exports:

- LNG exports will not cause runaway increases in natural gas prices.
- Natural gas price spikes will not become more damaging because of LNG exports.
- Natural gas will not be taken away from U.S. manufacturing or residential consumers to supply LNG exports.
- The competitive advantage of U.S. manufacturing will not be taken away, at least not by LNG exports.
- LNG exports will reduce unemployment.

- Benefits of LNG exports will be distributed broadly.
- There is no sweet spot that would justify limiting LNG exports below market-determined levels.

At the same time that freeing up LNG exports can provide these benefits to the U.S. economy, it can also provide an effective strategic response to Russian aggression. A two part strategy of removing regulatory barriers and obstacles that could limit natural gas production and encouraging LNG exports could reduce Russian revenues from natural gas exports by as much as 60% in the long term. The effect of HR6 would be immediate: Russia is now renegotiating long term natural gas contracts, and the potential competition of U.S. LNG exports over the term of those contracts will discipline their predatory pricing immediately. But the threat of potential competition will not be effective without a binding declaration that no cap will be placed on U.S. LNG exports.

Introduction:

I am honored by your invitation to testify on this very important piece of legislation. I am an economist and Senior Vice President of NERA Economic Consulting. I had the privilege of leading the study of the "Macroeconomic Impacts of U.S. LNG Exports" that was issued by the Department of Energy in December 2012 and of the update to that study, "Updated Macroeconomic Impacts of LNG Exports from the United States," that my colleagues and I have just completed. I have provided a copy of this report along with my testimony and I request that it be entered into the record. I would like to thank Cheniere Energy Inc. for their sponsorship of this update, and in particular to thank them for giving us the same freedom to conduct an objective and independent study that we were given by the U.S. Department of Energy.

Statements in this testimony represent my own opinions and conclusions and do not necessarily represent opinions of any other consultants at NERA or any of its clients. I do not speak for Cheniere Energy, Inc. or NERA, in particular, but only for myself.

Findings of the NERA 2014 Study:

We based our updated analysis on Energy Information Agency's (EIA) 2013 Annual Energy Outlook (AEO2013), in order to address claims that our original study was out of date. We again find that LNG exports provide net economic benefits in all scenarios, and the more we export the greater the benefits. Compared to our 2012 report, natural gas prices are lower, LNG exports are larger and economic benefits are greater.

We used AEO2013 in this update because the preliminary release of AEO2014 did not contain the side cases exploring high and low oil and gas resources that were needed to recapitulate the scenarios of our 2012 study. I do not expect our findings to change when we incorporate AEO 2014 scenarios, because when we jumped forward two years from AEO2011 to AEO2013 everything became more favorable to LNG exports: lower U.S. prices, higher LNG exports and greater economic benefits in every case.

In order to address concerns about the "cumulative" impact of LNG exports above levels that DOE asked us to study, our update considers additional scenarios in which we assume no constraints on LNG exports and let the market determine their level. These scenarios of LNG exports unconstrained by government policy provided the largest net benefits.

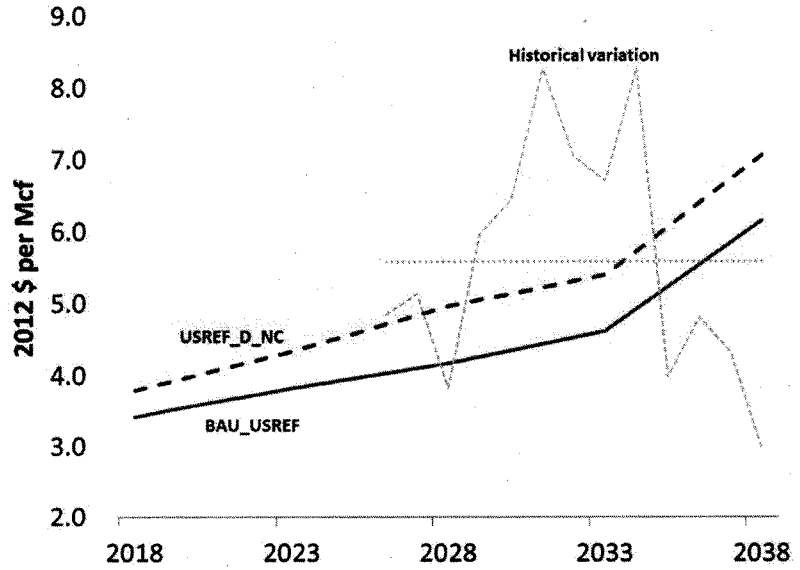
Another goal that we had in this update was to dispel some myths that are still being retold about natural gas exports, and I will turn to them now:

LNG exports will not cause runaway increases in natural gas prices. Both LNG export volumes and price impacts will be limited by the market, by rival exporters ready to undercut high prices and by price-sensitive buyers. Only if natural gas prices fall and remain below today's levels will there be high levels of exports. If regulatory ham-handedness chokes off the shale revolution, not even the currently authorized projects will be running. The U.S. could not find buyers at high prices for large volumes of LNG

exports (such as other studies have claimed), even with extraordinary global demand and supply shocks. There are too many other sellers that can beat those prices.

Exhibit 1 shows the impact of LNG exports on U.S. natural gas prices with EIA Reference Case supply assumptions and a global demand shock for unconstrained exports. The historical variation in prices around their mean from 2000 to 2013 is superimposed on projected natural gas prices and their mean from 2025 to 2038. We can see that the difference of less than $1 is dwarfed by historical variations.

Exhibit 1: Price Impacts of LNG Exports Are Dwarfed by Historical Variation

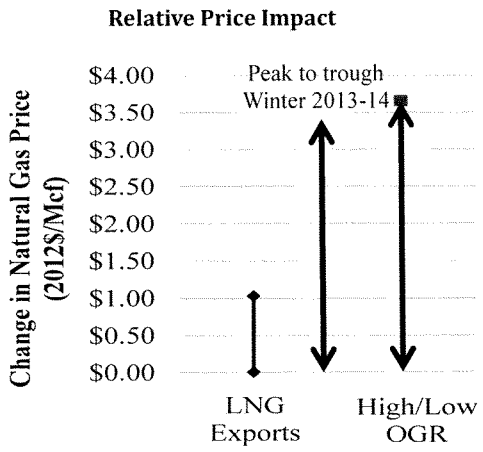


Source: NERA Analysis

Exhibit 2 shows the maximum increase in natural gas prices that we find across all scenarios, including those that assume what amounts to passage of HR6, to be about $1 per Mcf. In contrast, the difference in natural gas prices between EIA's High Oil and Gas Resource (HOGR) case and its Low Oil and Gas Resource (LOGR) case is over $3.50.

We find that prices as high as in the LOGR case would choke off LNG exports at levels less than what DOE has already authorized.

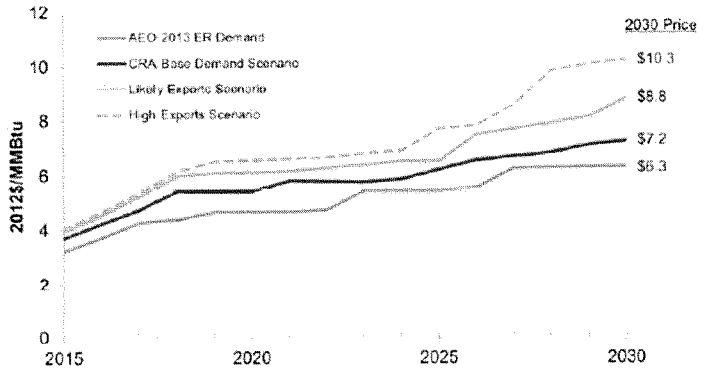
Exhibit 2: Price Impacts of LNG Exports, Limited Shale Development, and Winter Weather



You may have heard or read statements from another witness on this panel that "domestic natural gas prices could triple under a high export scenario."[1] This is a gross distortion of even the results in CRA's own analysis. I have reproduced below CRA's projected prices under different export assumptions, cut and pasted from their own report:[2]

[1] "US Manufacturing and LNG Exports: Economic Contributions to the US Economy and Impacts on US Natural Gas Prices" Ken Ditzel, Jeff Plewes, and Bob Broxson, Charles River Associates February 25, 2013 Prepared for: The Dow Chemical Company. Page 8.
[2] Ibid., Figure in Page 9 and Figure 28 Page 51.

Figure 28: Results from Demand Scenario Analysis



Source: CRA Analysis

A plain reading of the chart shows that the price in the High Exports Scenario exceeds the price in the Likely Exports Scenario by $1.50 or about 17% in 2030, and by negligible amounts through 2025. Where does the claim that prices would triple under high LNG exports come from? It comes from comparing the 2015 price to the 2030 price – ignoring the fact that the price of natural gas doubles even in the CRA Base Demand Scenario. This is just plain misleading. If NERA tolerated the same kind of rhetorical exaggeration, we could have claimed that "with high LNG exports GDP could increase by $7 trillion" by comparing GDP in 2013 to GDP in 2038 in our HOGR with unlimited exports cases. Do not pay attention to this kind of exaggeration that confuses effects of policies with unrelated underlying trends.

A further point is that if U.S. prices did reach $10.30, the level of LNG exports assumed in CRA's High Exports Scenario – or indeed any level of exports – would be unsustainable, because delivered natural gas prices from the U.S. could be beaten by virtually every other LNG exporter. This disconnect exists in CRA's analysis because their exports do not respond to domestic prices and hence are internally inconsistent.

Price spikes will not become more damaging. Returning to our own analysis, short term price spikes, as we observed last winter, have been a frequent occurrence in natural gas markets even with zero LNG exports. They are caused by unexpected weather events and problems in the pipeline system, and have always been temporary. Referring again to Exhibit 1, Henry Hub prices that rose to almost$8.00/Mcf last winter are already down to $4.50. There has always been a solution for price spikes, which is increased storage and overbuilding of the pipeline system, but neither natural gas suppliers nor their customers have found the permanent cost of this extra security worth the temporary cost of price spikes.

LNG exports actually provide a deliverability cushion for domestic consumers. Our analysis shows that when U.S. wellhead prices become as high as they were last winter, they would likely choke off LNG exports and free up that gas for use within the U.S. The additional natural gas deliverability built up to serve LNG exports would then become available to surge deliveries for domestic needs. Thus LNG exports provide a built in buffer of supply like a Strategic Petroleum Reserve.

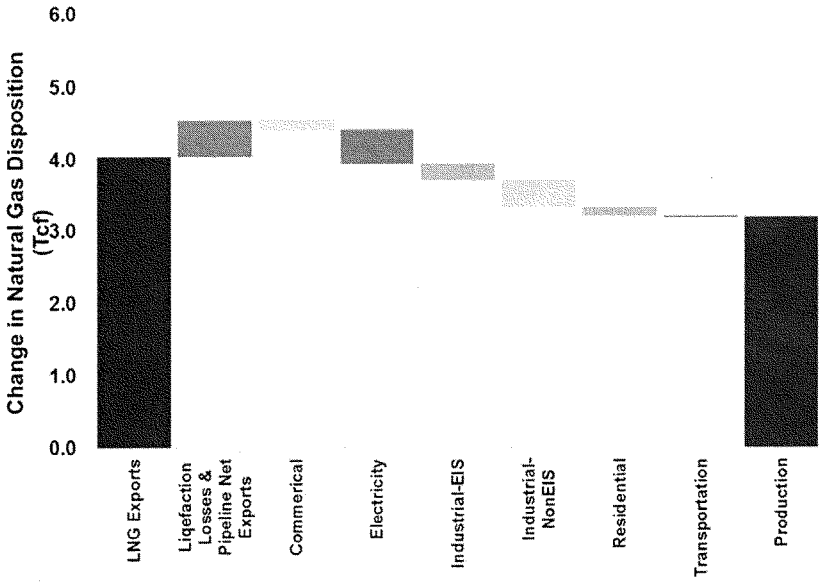
Limiting LNG exports would take away this deliverability cushion, and the disastrous consequences of past governmental attempts to allocate supplies and control prices during price spikes should be a warning against trying again. Natural gas prices were regulated through the 1970s, and the consequence was an allocation system that cut off major users – mostly industrial customers – when shortages appeared. Decisions by government regulators and politicians about who should be awarded the benefits of price-controlled gas just made things worse for everyone. There have been no such curtailments since we created an open market for natural gas in the U.S.

Natural gas will not be taken away from U.S. manufacturing or residential consumers to supply LNG exports. LNG exports occur when there is enough natural gas to satisfy needs inside and outside the U.S. We consistently find that most of the

demand for increased natural gas exports is satisfied by new production, and that demand reduction is largely confined to the electric power sector (Exhibit 3).

In the electric power sector, an increased price of natural gas as a fuel for generation would lead to a small reduction in demand, but for the most part natural gas is displaced by additional generation from nuclear, renewables, and (depending on forthcoming EPA rules) possibly coal.

Exhibit 3: Where Do LNG Exports Come From?

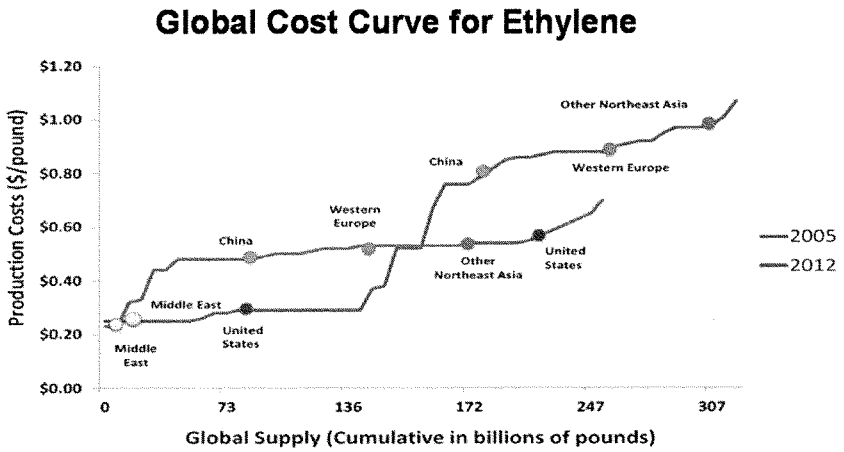


Source: NERA Analysis
2028: USREF_D_NC relative to BAU_USREF

The competitive advantage of U.S. manufacturing will not be taken away, at least not by LNG exports. Right now U.S. chemical producers enjoy about a 4 – 1 cost advantage over their rivals in Europe and Asia. Exhibit 4 from the American Chemical Council shows how the competitive position of this sector has become fundamentally

invulnerable to effects of LNG exports. For ethylene, an important bulk chemical and indicator of competitiveness used by the American Chemical Council, costs in the U.S. are about 20 cents per pound and in China and Europe over 80 cents per pound. The maximum impact that LNG exports could have on U.S. natural gas prices would raise costs in the U.S. by about 5 cents per pound – still leaving a 55 cent per pound cost advantage.

Exhibit 4: Competitive Position of U.S. Chemical Industry



Source: American Chemistry Council

A $1.00/Mcf increase in natural gas prices would raise production costs by $0.05/lb

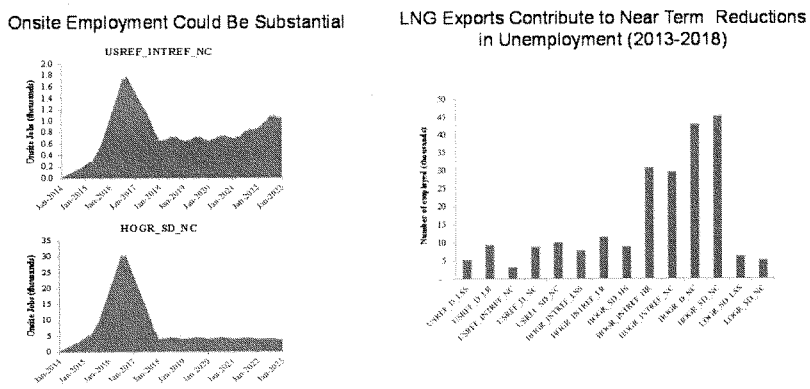
For ethylene producers, the picture is even rosier because their primary feedstock, ethane, is a natural gas liquid that is produced in large quantities along with tight gas. Ethane is so "hot" that the amount that can be mixed into natural gas in pipelines is limited, so that a glut of ethane has developed over the past two years and lowered the price of ethane relative to natural gas. And, the more LNG we export, the greater the glut of ethane will be and the greater the advantage to chemical producers.

All U.S. manufacturing continues to enjoy a cushion of low natural gas costs no matter how high LNG exports go. Any importer of natural gas from the U.S. will be paying a landed price more than twice the price that U.S. manufacturers pay – because the cost of transporting gas to Europe or Asia is about equal to the price of gas in the U.S. Adding the two together means that rivals importing gas from the U.S. will be paying double the U.S. price. As a result, we find across all sectors and in all scenarios that LNG exports alter the rate of growth in U.S. manufacturing by no more than a few hundredths of a percentage point.

And at that, natural gas will be a bargain to the countries that import from the U.S. In Asia and to a lesser extent in Europe, natural gas prices are indexed to oil prices. That makes the current price of natural gas 3 to 4 times higher in those countries than in the U.S. That is what makes the prospect of LNG exports so attractive to both buyers and sellers, and why LNG exports from the U.S. are such a threat to Russia.

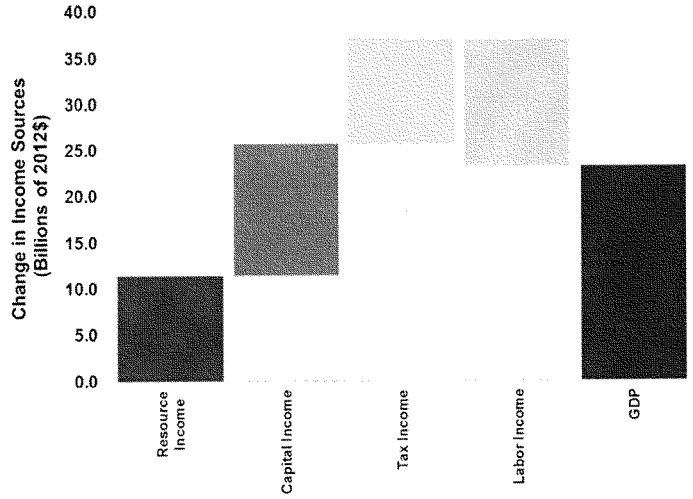
LNG exports will not cost U.S. jobs. Just the construction of liquefaction capacity sufficient to support the LNG exports projected in our study would create a peak of 2,000 to 40,000 onsite jobs, largely in the Gulf Coast region between now and 2018 (Exhibit 5). That year is important, because it is the year when CBO forecasts that the U.S. will return to a normal state of full employment. The investment in LNG export facilities and in additional natural gas exploration and production for export would take from 3,000 to 45,000 workers off the unemployment rolls during the next four years of continued softness in the labor market, and hasten the return to full employment by as much as two months. The faster projects are authorized and the sooner they begin construction, the greater the impact on unemployment will be.

Exhibit 5: Employment Impacts



Benefits of LNG exports will be distributed broadly. Employment, labor income and investment income will continue to grow no matter what level of LNG exports the market demands from the U.S. In the scenario with the highest level of LNG exports across all those we examined, GDP in 2038 will increase by about $25 billion compared to the the no export case. In terms of the components of GDP, government revenues will increase by over $10 billion, investment income by about $15 billion, and resource income by about $10 billion, and labor income will be about $15 billion less, all compared to the no export case. There is no point in turning these findings into class warfare. A considerably larger share of royalty income could accrue to the Federal government if more Federal lands were opened up for oil and gas exploration and production, and that would in turn likely reduce resource income to private landowners. The increase in investment income more than offsets a decline in wage income, and that increase plus a share of resource income will accrue to all Americans who invest and who hold their 401k plans in a reasonably diversified portfolio of stocks.

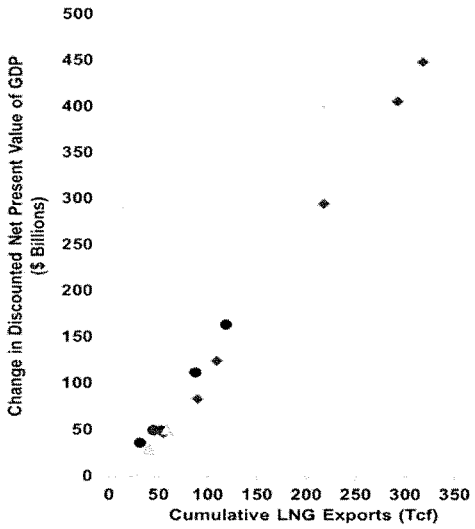
Exhibit 6: LNG Exports Lead to Higher GDP



Source: NERA Analysis
2038: USREF_D_NC relative to BAU_USREF

Finally, **we found no sweet spot** that would justify government interference with our obligations under the WTO to allow free trade in commodities like natural gas. In every scenario we investigated, higher levels of LNG exports led to larger economic benefits to the U.S. We examined a range of LNG exports in our study, including market-determined levels of LNG exports that could be expected if DOE automatically approved all applications. Even in cases where worldwide supply and demand shocks were combined with optimistic assumptions about U.S. natural gas resources to lead to LNG exports approaching one-half of total domestic supply, the U.S. gained the largest benefits by allowing unlimited LNG exports.

Exhibit 6: When the Market Decides, the More We Export, the More We Benefit



Source: NERA Analysis
Note: Colored dots represent different export scenario
Red: HOGR, Black: REF, Yellow: LOGR

Strategic Energy Policy:

Now let me turn to the subject of this hearing, HR6. LNG exports from the U.S. could reduce Russia's stranglehold on energy supplies to Europe. Immediate announcement of a policy of allowing unlimited LNG exports would signal potential competition that Russia would have to meet by offering lower prices as it renegotiates its supply contracts with Europe. The power of this signal will depend on whether it is accompanied by effective action to accelerate the shale gas revolution by avoiding or removing unreasonable regulations, costs and constraints on natural gas exploration and production.

In order to estimate the potential demand for U.S. LNG exports and the prices at which LNG exports could be sold, we analyzed supply and demand for natural gas around the world. Russia now supplies 25 % of the natural gas consumed in Europe and 60% of

Ukraine's natural gas. Russian exports are projected by EIA to increase by an additional 33 Bcf/day from current levels by 2040, making Russia the largest potential rival to the U.S. in global LNG supply. Much of this gas is now supplied by Russia under long term contracts that link natural gas prices to oil prices. As these contracts come up for renewal or renegotiation, Russia's power to extract high prices will depend greatly on the competition expected to appear in the market during that contract term.

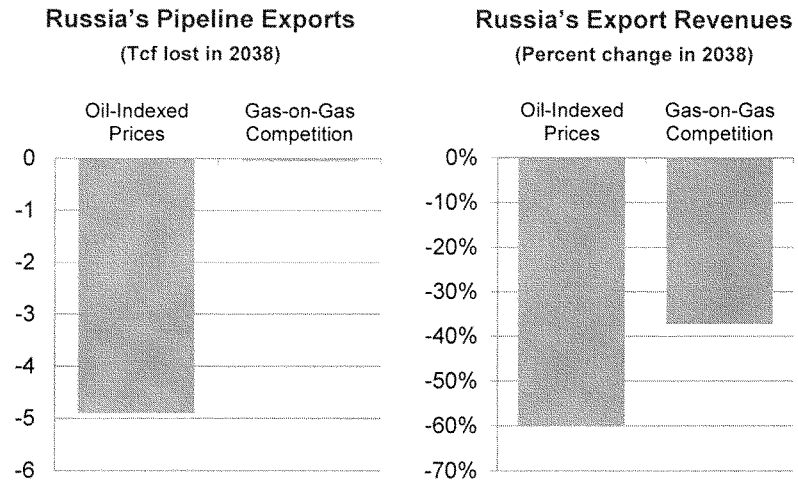
Monopolists can be restrained as effectively by potential competition as by actual production by their rivals. Eliminating any possibility of a cap on U.S. exports is necessary to create effective potential competition. The existence of a major competitor with the capacity and willingness to sell large quantities of natural gas will discipline Russia's pricing even if actual LNG exports are low. To provide such competition, it must be possible to move additional LNG exports into the market on a large enough scale to punish any Russian effort to raise prices above competitive levels with a substantial loss of market share.

Our results show that if U.S. policies encourage growth in natural gas production and remove all limits on exports, Russia would face the choice of ceding a large share of its market to the U.S. and other rivals or lowering its prices to levels determined by gas-on-gas competition. Even if it takes 5 to 10 years for U.S. LNG exports to equal a large share of Russian natural gas exports, the effect of a clear policy to encourage domestic oil and gas production and remove obstacles to LNG exports would have an immediate effect on the pricing of natural gas and Russia's revenues.

To be specific, I would like to refer to Exhibit 7. The shows the range of impacts that a policy of unlimited U.S. LNG exports could have on Russia's natural gas export revenues if shale gas resources and regulatory policy toward drilling lead to levels of production approximating the most recent EIA High Oil and Gas Resource case. Since U.S. LNG exports will affect Russian pipeline as well as LNG exports, these estimates of Russia's revenues include both pipeline and waterborne shipments. The U.S. need not be competing directly with Russia for U.S. exports to have the effect of reducing Russia's

exports and revenues. Even if U.S. exports move to Asia, they would divert LNG to Europe and thus take away Russia's sales and revenues.

Exhibit 7: Effective U.S. Competition Would Force Russia to Cut Prices or Lose Sales



Source: NERA Analysis, HOGR Case with International Demand Shock and No Export Limits

Thus, we estimate that in the next 5 years, U.S. competition could drive Russia's revenues from natural gas exports down by as much as 30%, and in the longer term could cut those revenues by as much as 60%. Since energy exports are the mainstay of the still inefficient and lagging Russian economy, this is a penalty with teeth. HR6 will not alone be sufficient to discipline Russian aggression, but it is a step in the right direction.

A likely consequence of high levels of U.S. LNG exports based on Henry Hub prices lower than today is that they could break the system of oil-linked pricing by which Russia has enriched itself at Europe's expense. This outbreak of gas-on-gas competition is a major part of the erosion of Russia's export revenues found in our results, and it would limit Russia's energy and economic power.

Gas-on-gas competition will also benefit U.S. consumers by lowering costs of manufacturing in countries that import natural gas, and thereby lowering the cost of consumer goods imported from those regions. This reduction in costs of our trade partners can only benefit the U.S. consumer, but it may be opposed by some manufacturing interests. The outbreak of gas-on-gas competition may erode further the profits of U.S. chemical producers that I discussed earlier, by bringing their rivals' costs for feedstocks down closer to U.S. levels. The competitive advantage of the U.S. will not disappear, because the U.S. as an exporter will have natural gas prices half those that importers must pay to obtain LNG plus shipping. But the profits of some of those U.S. chemical producers could be eroded, by the same events that provide U.S. consumers with the benefit of lower prices of many other imported goods and the world with a meaningful counter to Russian aggression.

Since oil, natural gas and coal markets in Europe are linked, exports of any of the three energy forms could contribute to weakening Russia's power over Europe and eroding its export revenues. By increasing coal exports to Europe, the U.S. would likely displace natural gas used for power generation in Europe and thereby allow either more rapid refilling of European storage or directly cut back needs for Russian natural gas. Crude oil exports might not directly compete with Russian supplies to Europe, but to the extent that crude oil exports make greater U.S. production possible they would shift the global supply-demand balance toward excess supply and put downward pressure globally on oil prices. This would then reduce Russia's oil export revenues. The combined loss of oil and natural gas export revenue would further weaken the Russian economy and its ability to finance military expansion, and uneconomic withholding of energy supplies to blackmail its neighbors. Much as the efforts of the Soviet Union to match U.S. military strength in the 1980s broke its centrally planned economy and led to the downfall of Communism, U.S. energy strength fostered by a strategic commitment to production and exports could ultimately break Russia's energy dominance and restrain its revanchist ambitions.

Like the victory over Communism, these changes will not occur overnight. If HR6 becomes law, the FERC process for approving export terminals will remain, and market conditions and financing will stretch out construction. The fears promoted by some that the entire 8 Bcf/day of capacity approved by DOE to date will appear overnight and suddenly drain the U.S. of natural gas are entirely unfounded. There will be an immediate effect on Russia's ability to hold up European customers for oil linked prices in long term contracts, because of the potential competition of U.S. exporters and the expectation that U.S. entry into the global market could wreck the oil-based pricing system. But it is also true that Russia's exports to Europe will not be replaced overnight, nor is countering the Russian *Anschluss* the only reason for removing limits on LNG exports.

However rapidly LNG exports actually grow over the next few years, a strategy of maximizing U.S. oil and natural gas production by removing unreasonable constraints and obstacles and of pre-authorizing exports without any quantitative cap will have a long run effect of weakening the Russian economy. The Cold War lasted for 50 years before the economic superiority of the Free World defeated Communism, and a long view is necessary to resist what appears to be resurgent Russian nationalism and territorial expansion. Fortunately, that long strategic view is in this case in line with U.S. immediate economic interests, which are served best by removing limits on LNG exports.

U.S. Natural Gas Cost Advantages Would Remain Even with Unconstrained Exports

NERA
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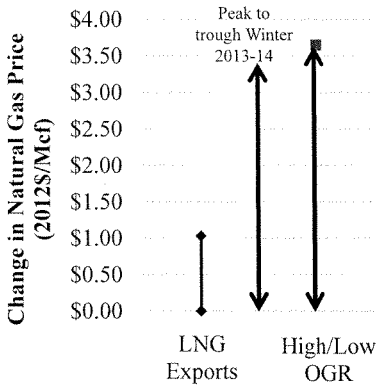
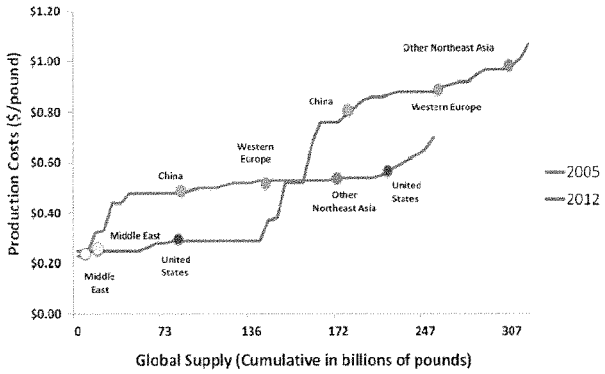
Relative Price Impact



Price spikes or obstacles to shale gas production would choke off exports

Global Cost Curve for Ethylene



Source: American Chemistry Council

A $1.00/Mcf increase in natural gas prices would raise production costs by $0.05/lb

Potential increases in natural gas prices would reduce margins, but would not change the relative attractiveness of the U.S. for investment in chemical process plants

Investment for LNG Exports Will Contribute to Reducing Unemployment

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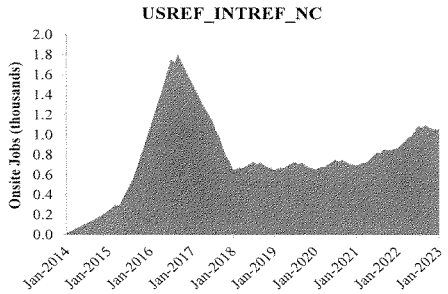
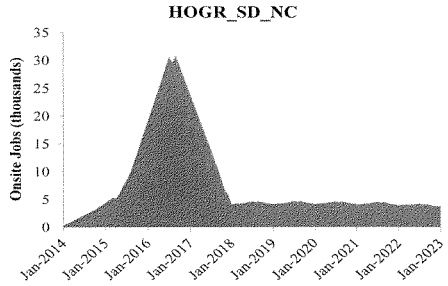
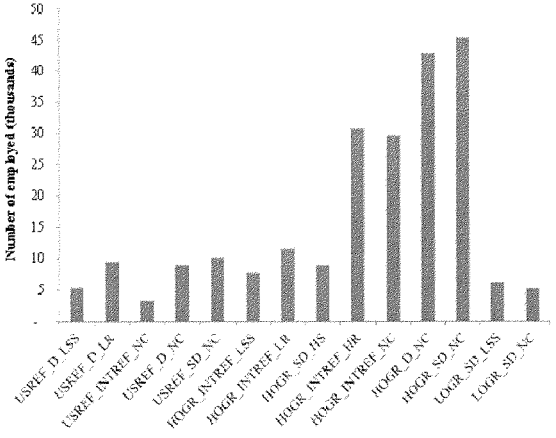
Onsite Employment Could Be Substantial





LNG Exports Contribute to Near Term Reductions in Unemployment (2013-2018)



Effective U.S. Competition Would Force Russia to Cut Prices or Lose Sales

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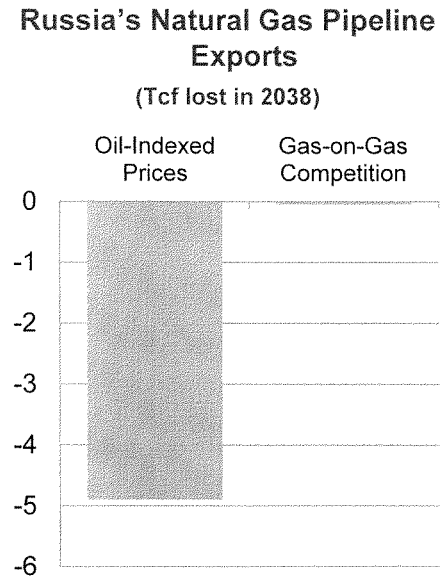
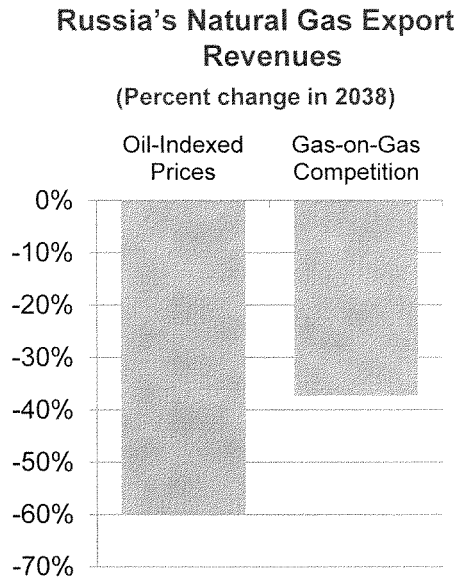
Elimination of Export Controls and Removal of Obstacles to Shale Gas Development Required for Success





Source: NERA Analysis, HOGR Case with International Demand Shock and No Export Limits

Mr. WHITFIELD. Thank you, and thank all of you for your testimony. We appreciate it very much. We know that, on this subject matter of exporting LNG, that there are a lot of different perspectives to review it from. One is the geopolitical arena, and from an economic standpoint, it sounds like, Dr. Montgomery, you believe that economically it would be a tremendous benefit for us to export natural gas. And, Mr. Ditzel, I guess it would be fair to say, from your perspective, it would be more of a negative than a positive overall.

So, I want to get back to that in just a minute, but, Dr. Orbán, you have heard the argument that because of the time that it takes to put in infrastructure to export that really there is not going to be any immediate benefit to European countries that are relying on natural gas from Russia. Would you agree with that assessment, or do you disagree with that assessment?

Ms. ORBÁN. Thank you, Chairman. I would disagree with this assessment, and let me highlight two points here. One is, if the decision is made to expedite U.S. energy to its allies, it can have two impacts. One, it is a strategic reassurance of the relationship between the European allies and your United States immediately. It sends a very important geopolitical signal at that very moment. Second, the economic impact. We have numerous cases, and in my written testimony, I also cited one case, when a future prospective alternative already had a price impact on the dominant supplier's pricing. So we believe that it would have an immediate price impact on the dominant supplier's pricing in Central Eastern Europe.

And also let me add, when we are talking about the energy industry, we are talking about decades of investment. An investment will reach its maturity in several decades. We are talking here about a couple of years, which is, in the energy industry, it is like talking about tomorrow, or the day after tomorrow. And let me also take this opportunity to highlight that it is very important for us that this issue here, what we are discussing today, is a non-partisan issue in the United States. And I would like to highlight and recognize Congressman Gardner for introducing this bill, and I would like to recognize also Ranking Member Rush for acknowledging the geopolitical aspect of this important issue.

Mr. WHITFIELD. Let me ask you, when you import natural gas from Russia by way of the Ukraine, or Belarus, or however, what is the length normally of those contracts?

Ms. ORBÁN. The current length of those contracts is 20 to 25 years. They are long term contracts.

Mr. WHITFIELD. Your microphone.

Ms. ORBÁN. Sorry. The length of those contracts is 20, 25 years. They are long term contracts, which were usually concluded in the '90s. So a lot of countries, we see their contracts are expiring in the next couple of years. If we are talking about renegotiating of the contract, or the future of the gas market in Central Eastern Europe, for all these countries, knowing that the credible option is there to buy 2018, 2019, onward, it gives an absolutely different negotiating position.

Mr. WHITFIELD. So certainly, from your perspective, this is a crucial time, with these contracts to expire?

Ms. ORBÁN. It is the time.

Mr. WHITFIELD. Yes. And where do you import gas from, other than Russia, in Hungary, for example?

Ms. ORBÁN. We are importing from Russia, as well as we have access to a hub in Baumgarten, which is in Austria, where we are able to import not on a long term basis, but on a spot basis. But if we talk about the molecules, all the molecules in the pipeline system are Russian, of course, in that part of Europe.

Mr. WHITFIELD. And most of this natural gas that you are importing, it is used for electricity, or for——

Ms. ORBÁN. It is used for heating, it is used for manufacturing, and it is used for electricity. The case of Hungary is pretty important to note that ¾ of the households use natural gas for heating. As a result, it is an extremely important social, as well as political issue, the energy security, as well as the price of gas.

Mr. WHITFIELD. And one time you had indicated that in Croatia they were in the process of building an import facility there that Hungary would benefit from. Is that the case?

Ms. ORBÁN. There is a plan to build an energy facility in Croatia. If it is built, Hungary would benefit from that immediately, as well as many other countries in the region. We inaugurated a pipeline between Croatia and Hungary in 2010, with six billion cubic meters capacity, which is a pretty big capacity, compared to the size of the market there. It is three times of the market of Croatia. It is about 60 percent of the market of Hungary. But for the LNG terminals to be built, you need the volume. You need the supply on the other end. And the LNG market currently is pretty tight. There is not really new LNG coming into the market. To get that investment feasible and up and going, you need the credible opportunity and alternative of energy entering the market.

Mr. WHITFIELD. Well, my time has expired. I wanted to discuss this difference between Mr. Montgomery and Mr. Ditzel a little bit, and also the WTO, but I am going to have to recognize Mr. Rush for 5 minutes at this point.

Mr. RUSH. It is very interesting, Mr. Chairman, I want you to know. We are seeing a resurgence in American manufacturing, and I want to make sure that we don't do anything to undermine and hinder, or hamper, this resurgence in manufacturing. But I am also quite interested in the geopolitical aspects of this, and I don't know whether or not Dr. Orbán could speak to this, but I certainly want to ask.

I grew up on the streets in Chicago, and it has been my experience that a success of a bully is that there is a chance to be a bully until you stop them from being a bully. And you stand up to a bully. You call the bully out. And so, in my own way, I look at Putin as being a bully. And if we don't do something in here, in terms of the LNG, or whatever, what can you see, or tell us, or give us an idea, where does he go next? Who is he going to bully next? Do you have any idea about that? And then I am going to get back to the matter at hand, but I just want to take the opportunity, because I think if you don't stop a bully, he is going to keep on bullying. That is the nature of a bully, until you stand up to him. So is that one of your concerns?

Ms. ORBÁN. Thank you, Mr. Rush. If I understood you correctly at the beginning of your question, you allowed me now to answer, but you said that you will still——

Mr. RUSH. OK.

Ms. ORBÁN. —ask it. I am not sure whether anybody is able to answer your question.

Mr. RUSH. All right. Well, let us go back to something maybe somebody could answer. Mr. Schryver, the American Public Gas Association has been working with Alcor, Newcore, and other major U.S. manufacturers on the issue of LNG exports. And you call have significant concerns about exporting LNG. The Industrial Energy Consumers of America is also very concerned that you all will oppose the bill before the subcommittee. So, based on your conversations with these companies, why do you think that they are so concerned about LNG exports?

Mr. SCHRYVER. From the perspective of our members, we are concerned about the price impacts first and foremost. Our members are focused on providing safe and affordable natural gas to their customers, so that is one. We are also concerned about the impact LNG export is going to have on efforts to increase our energy independence. That is number two. And lastly, you know, there has been a number of studies out there, you know, whether there is a net benefit or not. And when our members look at their natural gas customers, half the people they serve on average, you know, don't own stock, and those that do may not necessarily own stock in a natural gas production company, or a company that is going to benefit from LNG production. So, from that standpoint, they really see no benefit from LNG export.

Mr. RUSH. All right. Mr. Ditzel, I understand that Dow had commissioned some of your work on LNG export impacts?

Mr. DITZEL. Yes.

Mr. RUSH. Yes. Are Dow and other manufacturers right to be worried about the effect of LNG exports on the price of natural gas in the U.S.?

Mr. DITZEL. They absolutely do. I have enumerated in all my studies the impact of LNG exports was going to be significant. If we leave it unconstrained, we will see prices rising above $8 per million BTU. I have raised this concern many times because I have some serious questions about the quality of the NERA report. As I pointed out in my oral testimony, and also in my written testimony, there are a number of flaws where the numbers just don't add up or make sense.

And, for example, I pointed out that NERA comes to $3.44 per MCF in 2018 in its reference scenario. The problem is that when you look at their output tables and you add it all up, it comes to a number that is lower, which means you wouldn't export. So there are a number of concerns with the NERA——

Mr. RUSH. My time is running out. What about the jobs? They are—large volumes of LNG exports. How many jobs are at stake?

Mr. DITZEL. Well, when we did our analysis, and looking at the job impact, we found that there is a five time impact by manufacturing relative to LNG exports. So that is roughly 180,000 jobs that are created from manufacturing at five BCF per day, and a fifth of that with LNG exports. And it is only something that is a con-

cern if LNG prices rise, or force prices to rise above $8 per million BTU, which we think will happen.

Mr. RUSH. And Dr. Montgomery don't agree with you. He disagrees. And why do you think he is wrong about his——

Mr. DITZEL. Sure.

Mr. RUSH. —analysis?

Mr. DITZEL. He ties his reports and his analysis to the EIA reference case. And as I have shown in my slides, and in my testimony, the EIA reference case is consistently wrong, if you look back at history, and never hits any of the spot prices. So he ties it to a reference case that just, you know, that is likely to be wrong going forward. And in that case, we have analyzed the EIA analysis, and showed that the implied import price, in their analysis, was around $12 per million BTU in the long term, and that is consistent with what Dr. Montgomery uncovers in his analysis, and that is a big drop from today's prices. So his analysis thinks that the LNG exports from the U.S. are going to make a big dent.

Mr. GARDNER. Gentleman's time has expired. I am going to try to do this better than last time. I think last time I hit the mute all button. I guess I am going to try not to do that this time.

To Dr. Montgomery, I had a question for you. Recognize myself 5 minutes, I apologize. We heard a lot about price impact, and investments in various industries. If there is an overabundance of supply of natural gas in the United States, will that erode capital investment in production within the United States of natural gas?

Mr. MONTGOMERY. Yes. The investment and the, you know, exploration and production moves very directly with the price of natural gas. If we find ourselves, again, with a glut of natural gas, it could lead to collapses temporarily, as we actually probably saw a couple of years ago. You know, $2 per million BTU price of natural gas were, I think, largely driver by overextension of production on leases that had to be drilled. But it is all a matter of degree. As we see additional demand for natural gas exports coming into the market, that will bring forth production. I will let EIA defend its own record. I think that Mr. Ditzel seems to forget that every forecaster misses precise numbers. The point is that EIA has done a very good job on average of keeping up with what we are thinking with kind of current thinking about the future.

But we followed EIA's resource characterization and supply curves. And what they have concluded, and this is new in the AEO 2013, and even more so in 2014, is that we can produce a lot more natural gas without the price going up very much. That is what keeps the price of natural gas down. That is why we can get, in most cases, an additional four or five, six, eight TCF of natural gas, with less than a $1 increase in the world oil price. It is because production responds very aggressively to the new demand, and it doesn't take much of a price increase to get enough natural gas produced to satisfy all of that demand.

Mr. GARDNER. And Dr. Montgomery, Dr. Orbán, I think this question could be addressed to both of you. In your testimony, when you talk about Russia, you say monopolists can be restrained as effectively by potential competition as by actual production by their rivals. Can you please talk about that in more detail?

Mr. MONTGOMERY. Yes. We have many examples in the United States, and overseas, of companies which may be the, you know, largest incumbents in a market, but as long as they can see that there are competitors ready and waiting to come into the market, with the capacity to, you know, meet their price, or to provide supplies at competitive prices, then that is going to discipline their pricing. We call it limit pricing phenomenon. Don't price any higher than what it takes to bring somebody else into the market and take it away from you. I think that is exactly what we see with Russia.

But what is critical to it is that there not be this overhanging risk that all of a sudden an administration will decide, no, that is enough exports, and cut them off before enough exports can flow to take the market away.

Mr. GARDNER. Dr. Orbán, I want to add to that question. Have you or your government experienced any issues with Russian energy supplies, and if you could please explain that?

Ms. ORBÁN. As you know, there was a case in 2009, which received us a lot of media attention, where for less than 2 weeks the supply was stopped entirely on the Ukrainian pipeline system, which caused serious shortages in Central Eastern Europe. It affected the different countries differently. Some countries had very severe problems, like Slovakia, or Bosnia-Herzegovina, or Bulgaria. Many countries needed to shut down industries, but there were also countries that residential heating was affected. After 2009 State level, as well as the European level, they introduced numerous measures, and we built numerous new infrastructure to prepare for a potential new crisis situation to be able to assist each other based on the principle of solidarity, as well as to sustain if there is a serious crisis for a longer period.

Mr. GARDNER. And the ability for the United States to export LNG, of course, would help mitigate that as well?

Ms. ORBÁN. Absolutely. As I explained, what we need is build the internal capacity. The pipeline system and the internal infrastructure in Europe is lagging behind that of the United States. That is our homework. We are doing that. The other which we need is the extra volume to create the gas to gas competition in the market, and that is where the United States could be——

Mr. GARDNER. Mr. Ditzel, is it a fair assumption to say that the manufacturing renaissance in this country is because of the price of energy, and the abundance of energy supply in this Nation?

Mr. DITZEL. Absolutely.

Mr. GARDNER. Are you concerned that a lack of opportunities to export will impact investments within energy, and drive energy prices up because of a lack of investment in the energy sector, as wells are shut in, and production is decreased because of that issue?

Mr. DITZEL. My concern is that, with unlimited LNG exports, it will raise domestic gas prices to a point that it will end the manufacturing renaissance.

Mr. GARDNER. Dr. Montgomery, what do you say to those who say that if there is no limit, that the levels will be unlimited?

Mr. MONTGOMERY. You have a find a buyer, and the U.S. is not going to find buyers for gas at the levels that Mr. Ditzel is assuming. You simply have to look at supply and demand in the global

market, and there are far too many countries out there who could beat us by several dollars a million BTU in delivering gas if our wellhead price was $10. We can't find a scenario in which we sell gas at $10 a million BTU because nobody in the world wants it at that price.

Mr. GARDNER. Thank you, and my time has expired. Mr. Green, the gentleman from Texas, is recognized for 5 minutes.

Mr. GREEN. Thank you, Mr. Chairman, and thank both the Chair and the ranking member for having the hearing today on an issue that is really important where I come from, an industrial area in East Harris County, chemical plants, refineries, that are all benefiting from our regionalized natural gas. Our committee, in 2005, actually federalized permitting of importing LNG because we thought our chemical industry in '05, we couldn't compete with North Sea gas, and we were losing chemical jobs, as you mentioned, Mr. Montgomery. But now we are seeing expansions.

Of course, my concern is a balance between the producers needing to be certain they know their gas will have a market, because right now we are flaring a significant amount in South Texas, and I know the royalty owners would love to see that stop flaring and be able to ship it to someone. But our manufacturers need to know they have certainty of the prices not to skyrocket. And I would love to help our allies, particularly in Eastern Europe, but even if we pass the bill today, even—areas not going to export gas until next year. So even if we streamlined every permit that is in the line, it is not going to get there very quickly. And that is, again, depending on the investment that they can get.

But the American people need to know that they will continue to benefit from our natural resources that we are seeing in the renaissance. By eliminating the regulatory oversight, I am concerned that we should mostly harness the agency expertise, and we heard that earlier, streamline the decision-making, which I think is being done right now, and also define the transparency. And so that is why I am glad we are having this hearing today.

Mr. Schryver, in your testimony you state that the U.S. will give up a manufacturing renaissance promised on low prices, investing in natural gas. You cite an article in the New York Times that South African investment in a gas and liquids plant in Louisiana would cost $14 billion. Do you believe that the firm relied solely on the NERA study commissioned by the DOE to invest in that plant in Louisiana?

Mr. SCHRYVER. Do I believe the firm that is moving to Louisiana is relying solely on NERA? No. Actually, there are a number of factors. I don't want to speak for them, but I assume there are a number of factors, one of which is the low cost of natural gas we are enjoying right now.

Mr. GREEN. Well, the CEO of that South African company stated that the plant becomes economical when U.S. natural gas prices exceed $8 per million BTU. Do you believe that the companies that will invest $14 billion to build a new facility without forecasting potential natural gas increases, that it would be much less than $8?

Mr. SCHRYVER. From APGA's perspective, we are not sure ultimately how much natural gas is going to be exported, and every

study we have seen has shown that the more natural gas that is exported, the greater the price impact will be.

Mr. GREEN. Well, even in Texas we have five crackers that cost a billion dollars each, and these companies relied on NERA study, and they will invest that billion dollars without forecasting. Do you believe they would invest that billion dollars per cracker without forecasting potential price increases?

Mr. SCHRYVER. I am sure they forecasted potential price increases.

Mr. GREEN. Mr. Ditzel, how is natural gas priced in different parts of the world? Again, we are used to our U.S. pricing system, but it is priced in different ways. For example, Henry Hub, National Balancing Point, Japanese Clearing, S–Curve Oil Index, when signing contracts, how many years constitute a long term LNG contract? Could you tell us if there is a predominant natural gas pricing in the world, or is it really based on geography?

Mr. DITZEL. It is absolutely based on geography in the U.S. We have a very liquid market, with several trading hubs, primarily the Henry Hub. Europe is becoming much more liquid, with the National Balancing Point and the TTF facility. But in Asia, we see that a lot of the pricing is around oil because——

Mr. GREEN. Yes.

Mr. DITZEL [continuing]. In Japan and Korea, they do not have domestic production capabilities, so they have to look at the closest substitute to natural gas, and that is oil. And that is why you see the gas indexed to oil, because of the substitution effect.

Mr. GREEN. OK. And these contracts that have been signed already for these plants that are exporting, whether it would be Cheniere and Sabine, or, you know, Chesapeake Bay, or the one just announced in Oregon, or other ones along the Texas/Louisiana coast, aren't the average LNG contracts 16 to 20 years?

Mr. DITZEL. Many of the contracts are 20 years, and many of them are take or pay contracts, which means that you are going to take until you think it is no longer economic, and want to pay the towing charge, instead of taking the gas. So they are going to continue to take as long as prices are economic to them.

Mr. GREEN. Well, I am real familiar in Texas with take or pay, because we had some issues back in the '70s and '80s where utility companies had to make those commitments. And, by the way, most of these contracts, where is their jurisdiction if there is a legal decision? Do they have Federal courts in the United States, New York Federal Court, or is it an international court?

Mr. DITZEL. I am sorry, I am not an expert in that area, so I can't answer.

Mr. GREEN. OK. Because I know oftentimes if it is an international contract, and it is not in a U.S. court, again, having practiced law, sometimes you can get home-towned in a country that might not be as beneficial for our exporting partners. Does your analysis include any shifting in contracting from Asia, for example?

Mr. GARDNER. Gentleman from Texas, I have given you an extra 45 seconds here.

Mr. GREEN. OK. Thank you.

Mr. GARDNER. Time is expiring.

Mr. GREEN. Just some movement of contracting once we get into the export market in the United States?

Mr. DITZEL. In the analyses that I have looked at thus far, I have assumed, based on unconstrained exports from the U.S., that we would remain at about 80 percent of the Brent price, which is where prices have trended over the last few years, and there is a number of drivers to support that trend going forward, mainly because Japan is likely going to take a slow re-start to its nuclear facilities, Germany is abandoning its nuclear facilities, and as the BG Group forecasts, a major player in the LNG market, that the market in general will be tight through the end of the decade.

Mr. GREEN. Thank you, Mr. Chairman, for your patience.

Mr. GARDNER. Gentleman's time has expired. The gentleman from Virginia, Mr. Griffith, recognized for 5 minutes.

Mr. GRIFFITH. Thank you, Mr. Chairman. Let me start off by responding to some of the comments I heard earlier today about, you know, we can't do any good immediately because it will take a while to build. And I am reminded that they believe that there is a lot of natural gas, maybe some oil, off the coast of Virginia, and that in 2004, when I was a member of the Virginia House of Delegates, we begged, let us start on the research, let us get going, and the criticism then was it would take 6 to 7 years, it is not going to do any good. We are still waiting. If we had started in 2004, like we had requested, and we sent the request to the Governor to ask for the ability for him to ask for the President to give us that authority, we would already be getting natural gas, and hopefully some oil off the Virginia coast. So when I heard that argument I am reminded, you know, well, it will never happen if you don't start at some point.

Also, in response to recent questioning, although I think you answered it earlier, Dr. Orbán, you said that the time is now because not only do you need to get started if you are going to do these kinds of things, but the contracts are coming up in a few years, and if they see that a competitor is on the way, that that will affect the negotiations, and the discussions, and whether or not natural gas is used by a weapon by the Russians. Am I correct in my assessment of your previous testimony? OK. And let me let you all know that I represent an area that produces coal and natural gas.

So, Mr. Ditzel, let me ask you this. For a vibrant manufacturing sector, wouldn't we also be well advised to not strangle our coal industry by regulations? Wouldn't you agree with that as well? I assume you are pro-coal, as well as pro-natural gas usage?

Mr. DITZEL. I am not pro-coal or pro-gas. I just want to say specifically, to address your point, that for the coal industry, it is going to be hamstrung by the EPA, by MATS. We are going to see a number of retirements, and the EPA has a number of proposals ready to affect the coal industry even further on carbon pollution. And coal is a backstop for natural gas, so if there are not a lot of options, the gas prices will rise as a result, because there is no backstop to relieve the gas. And specifically in the electricity market, it is nuclear and wind, and those are expensive options.

Mr. GRIFFITH. Well, even in manufacturing of certain products, certain plastics and so forth, you could use oil, natural gas, or coal, and so we are negatively impacting the market that way. And

would you also advocate that we not export coal for that same reason, so we have a greater supply in the United States?

Mr. DITZEL. Well, to address your point about coal, and the use of coal for chemical processes, we have seen that in China, and China has put our technology in the U.S. to good use. And their chemical industry is built primarily on U.S. technology using coal, but we can't do that here in the U.S. because of a lot of the regulations associated with using coal in industry.

Mr. GRIFFITH. And I appreciate that, and we certainly don't want to hurt our manufacturing sector if we can help it, but clearly it is under assault from a number of different directions.

Dr. Montgomery, if I could ask you, previously, in some of your testimony back in April of 2013, you indicated that it looked like prices, if we exported, might rise 25, 50 cents, somewhere in that range. I think you said today it looks like it might be a dollar. Is that accurate, somewhere in that range, if we export?

Mr. MONTGOMERY. Yes. If we export, across most of the scenarios that we looked at, we either had no price increase, because it didn't turn out to be economic to export. Certainly if we had $8 gas in the United States, nobody would want to buy it overseas. That actually is the EIA low oil and gas resource case. So doesn't much matter what we do about exports in that case, nobody is going to want to buy it, and the manufacturing industry is going to be killed off, probably by our excessive regulation of natural gas. So, got to look at the scenario, but the only cases in which we found that we have high levels of exports of natural gas are ones where it is so cheap to produce that the price of gas stays lower than——

Mr. GRIFFITH. All right, and I am running out of time, so let me ask you this, because my gas folks tell me back home that we have so much natural gas in this country that we haven't even tapped into yet, that if the price remains above $4, in the $5 range, that there will be more production, which then offsets any price increase. Is that what you are basically saying, is that the production capabilities in this country are so great that there won't be an increase of any significant amount in the price because they will produce more, because they can still make a profit at four——

Mr. MONTGOMERY. Yes.

Mr. GRIFFITH [continuing]. $5, $6?

Mr. MONTGOMERY. That is exactly what I am saying, that we will see that most of the exports are satisfied by increased production. There won't be much of a price increase, and whatever price increase there is is going to be far less than the cost advantage manufacturing already has over those poor rivals who have to import the gas, and pay as much to move it to their countries, as it costs us to buy it here.

Mr. GRIFFITH. I appreciate that. And, Mr. Chairman, I yield back. I do have additional questions to submit into the record, and I assume that we will do that at the end of the hearing.

Mr. GARDNER. Absolutely will, thank you. And the gentleman from New York is recognized for 5 minutes.

Mr. TONKO. Thank you, Mr. Chair. Mr. Ditzel, in your summary you state that the concerns you have raised about finding the right level of natural gas exports were submitted to DOE, but the DOE public interest determination process, and I quote, "continues in a

manner that is opaque for both sides of the issue." Please elaborate on that statement. What would make the public interest determination more transparent?

Mr. DITZEL. Sure. I think you saw the answer by Dr. Gant earlier that it was opaque, that you couldn't get a straight answer, and it is one of the complaints on both sides. There is a lot of uncertainty around the process, and businesses would like to make decisions. What would make it more transparent would be to look at the NERA study and first do a peer review. I have peer reviewed it, I have given my comments, and mentioned many of my concerns. I think a serious peer review needs to be given again. Also, in determining the public interest, it is not just simply the economic interest. It is also the environmental interest, and it is also national security interest, and there are no criteria that are set forth that you can gauge or measure, and publicly see and understand, in any of part of the DOE process.

Mr. TONKO. Thank you. And your testimony states that you believe the NERA analysis used flawed assumptions, and the wrong modeling approach. It is my understanding that NERA relied on information and procedures used by the Energy Information Agency, or the EIA. The EIA's projections, especially projections of prices of natural gas, have often been wrong. In March 2012 EIA released a retrospective study they did of their projections from '94 through 2011, a period of 17 years. An energy policy form article summarized some of those findings of that analysis. The findings do not give me confidence that DOE's conclusion about the net economic benefits, let alone the broader public interest, is very robust.

During that 17-year period, EIA overestimated crude oil production 62 percent of the time. They overestimated natural gas production 70.8 percent of the time, and natural gas consumption 69.6 percent of the time. I would also point out that in 2003, just 11 years ago, EIA's analysis of the LNG market was anticipating we would be importing natural gas, and there were plans for a number of LNG import facilities. If DOE allows too much export, we may be creating a situation like the one we now face with propane, where, in spite of the abundant domestic production, our consumers and our domestic manufacturers are paying very high prices, and seeing no benefit from the increased domestic production.

DOE is granting export allowances for 20 years. That is a long time in a business cycle. Do we need a more flexible approach that would allow us to pull back if we have granted too much export authority, or if conditions here in our country change?

Mr. DITZEL. Well, first I want to address the EIA comments that you made in the reference case, and how consistently wrong it has been. Dr. Montgomery made a good point earlier that there are scenarios around the reference case. The problem is that you have to pick a reference case, and not just blindly choose it. You have to step back and say, is it the right reference case? The biggest issue with the EIA analysis is that they rely on a domestic supply and demand curve. So if you take the supply curve from EIA, and you layer on LNG exports, I agree you would get the prices that EIA projects.

But the problem is we leave the domestic demand and supply curve when we enter into the global market. We enter the global LNG supply and demand curve, and that is where you get netback pricing. EIA does not have a global gas trade model. They have admitted it. I have heard them say that, so their approach is invalid when you are looking at LNG exports. And on the second question, do you mind repeating it, Representative?

Mr. TONKO. Well, the second thing is if we have granted too much export authority, or if conditions in the U.S. change, should we have a more flexible approach?

Mr. DITZEL. Well, I think it would be challenging to pull back on multibillion dollar investments, and leave things stranded. But if, in a transparent process, if LNG exports are determined to be beneficial to the economy, and not opportunity costs to other parts of the economy, I think you have to put in a certain amount of consumer protections, and those would be using the gas as leverage to negotiate free trade agreements, also considering reducing taxes for those who would be affected most. Also investing in technologies, for example, advanced catalytic technologies, that would reduce our need for natural gas, and improve our efficiency. And, fourth, I think we need to reconsider some of the efforts by EPA, because we do not have the backstop in place for coal to come through and substitute for natural gas.

Mr. TONKO. Thank you very much. Mr. Chair, I have exhausted my time, so——

Mr. GARDNER. Gentleman yields back. The gentleman from West Virginia, Mr. McKinley, is recognized for 5 minutes.

Mr. MCKINLEY. Thank you, Mr. Chairman. I have been curious a little bit about the issue of if, when we export natural gas, we are going to see an increased price. And I am not an economist, I am an engineer, but I would probably like to see a little bit more statistics about that, why that would occur, because, as you know, we have been exporting 15 percent of the coal production, and we haven't seen coal prices increase as a result of that. So I am interested in the disconnect, why coal prices aren't going up, but gas prices will under the scenario.

But more importantly, the other question I have is that, under Article I, Section 9, Paragraph 5 of the Constitution, there is the prohibition about putting duties and tariffs on exports. And that has been clarified, if I might, in 1996, in the IBM Decision, in which it went on to say something to the effect that that same protection extends to services and activities closely related to the export process, so my question has to do with the permitting process.

If it takes 3 years to get a permit for natural gas, I know coal has been longer than 3 years trying to get the permit approved over in the State of Washington, in Bellingham, to put a coal terminal there, trying to prevent exporting by use of Government authority. What is the difference between imposing a tariff, but yet imposing a slow walk permitting process to prevent something from happening in an expeditious way? How can that be justified? How is that constitutional, I should say, what they are doing?

Mr. MONTGOMERY. I would like to get Mr. Bacchus to answer this, but he is a lawyer, and I notice that he is being reticent. And

I am an amateur reader of law journals, but I think I am pretty——

Mr. BACCHUS. I am just waiting to be asked a question.

Mr. MONTGOMERY. I am sorry. Then I will recede.

Mr. BACCHUS. Congressman, you raise a very good point. As we have all learned in this country in the past few years, sometimes it is hard to tell a tax from a fee, or a tax from something else that may have the effect of a tax. And it may be that, under the U.S. Constitution, there might be some issues raised by the lengthy delays in this permitting process.

As I advised the chairman at the outset, I am here today not to advise on policy, but on law, and specifically international law. And from a legal perspective, I am fascinated by this debate, because, as a matter of international law, we have long since made this decision that we are talking about today, when we signed the WTO treaty. We concluded then that it was presumably in our public interest, in agreeing to this treaty, that we would impose restrictions on exports only in some very limited exceptional circumstances permitted by that treaty. And I have heard no circumstances discussed today that fit those exceptions in that treaty.

As a matter of international law, right now, with no action whatsoever by this Congress, we have a legal obligation to export natural gas unrestricted to her country, and other countries in Central and Eastern Europe that are members of the WTO, period. The only reason that we are not doing so at this point is because they are friends of ours, and they haven't bothered to sue us in the WTO. But somebody could do so. At the same time, as I mentioned, our valiant trade negotiators and trade lawyers in the administration are, at this very moment, arguing in the WTO in not one, but two cases against China that they cannot do what these laws we are discussing, that we have in place today do. And they are winning those cases, as they rightly should.

Meantime, more than ⅓ of WTO members, under the threats of the current financial situation, are imposing more and more export restrictions. This is a form of economic nationalism and protectionism that is illegal as a matter of international law, and the United States, on a bipartisan basis, has been leading the charge against this in the WTO, and should.

Mr. MCKINLEY. Thank you. Maybe you can stop. I would like to carry on this conversation regarding the constitutionality of that. The third question I have is, do you think that this Supreme Court Decision yesterday about the Spruce Mine, allowing the EPA to retroactively withdraw a permit that they have given, could that have an impact on our LNG exports? If someone can build the facility, which could be a billion dollars or more, and the EPA withdraw that permit 2 or 3 years later, is that an appropriate gesture, or what has happened in the law that allowed that to happen?

Mr. BACCHUS. I haven't read the opinion, Congressman, so I couldn't advise you on that at this time. I will be happy to——

Mr. MCKINLEY. But you are aware of the Spruce Mine, 4 years after it had been granted, 4 years afterwards, did the EPA pull the permit that they had been granted by the Corps of Engineers? That is a chilling effect for anyone in any business, not just coal, steel. Anyone that has a water permit, they have that permit pulled, I

am concerned about what it is going to have on LNG. Thank you. Yield back my time.

Mr. GARDNER. Gentleman yields back, and we will go a couple more questions. Both Mr. Rush and I have just a few follow-up questions for you. Mr. McKinley, you are welcome to stay, if you would like, for that. But the question I have is, following up on this last question and conversation, how often has the U.S. pursued cases before the WTO regarding trade disputes with other countries? How often have we pursued trade disputes before the WTO with other countries?

Mr. BACCHUS. Very often. It is the appropriate way for resolving inevitable trade disputes with our trading partners.

Mr. GARDNER. Even if Russia is a WTO, nothing in this legislation requires trade with Russia?

Mr. BACCHUS. We have the option, if you so desire, in your proposed legislation, to carve out an exception for Russia. Russia a member of the WTO, but one of the limited exceptions I mentioned to WTO rules is for national security. If national security interests, essential national security interests, are at stake in a time of emergency in international relations, we can impose a trade restriction. So you could——

Mr. GARDNER. Mr. Bacchus, if you could cut it short real quick? Mr. Rush has one final question for Dr. Orbán real quickly. Thank you.

Mr. BACCHUS. Of course, sir.

Mr. RUSH. Thank you. I panicked, because I saw you gathering your stuff, but I have one question. So far, DOE has ran seven export applications, and my understanding is that the export terminals—export this LNG have already signed long term contracts to supply LNG to China, Japan, Korea, and India, where natural gas prices are higher than in Europe. And the question is, is there any reason to believe that LNG exported from the U.S. will go to Europe, rather than to Asia?

Ms. ORBÁN. Thank you, Ranking Member Rush. Yes, there is. Of course, the more gas on the market is the better for us. It has already indirect impact. But the Asian market's absorption capacity is also limited, obviously, and as soon as it reaches its limit in terms of price difference, the European market comes next. And don't forget that our countries are ready to pay a surplus for energy security, which is above, of course, market price. So we have every reason to believe that if either the expediting process is expedited, the process is expedited, or we have the law, then we would have a contract to supply the European market with U.S. energy.

Mr. GARDNER. Thank you, Dr. Orbán. I know you have an important meeting, as reported in the newspapers this morning, to attend, so please. Mr. Bacchus, if you would like to finish where we left off? I apologize for interrupting, but I know Dr. Orbán had a meeting. Thank you.

Mr. BACCHUS. Of course. Good job.

Mr. GARDNER. I cut you off. I don't know if you would like to continue that, and then we will be——

Mr. BACCHUS. That is all right, and I appreciate it, Mr. Chairman. As I said earlier, I think it is important that the committee consider WTO obligations before enacting legislation, rather than

learn about them afterwards. And I commend you for doing just that. Conceivably, the United States, and other members of the WTO, could impose trade restrictions, and indeed a trade embargo, on Russia, even though Russia is a member of the WTO. This need not be limited to natural gas or other energy products. It could include other products.

This would be ordinarily in violation of WTO obligations. It could be challenged by Russia and WTO dispute settlement. But if the Russians did challenge it, we would then have a defense. The defense would be under Article 21 of the GAT, which deals with national security, and is a general exception to general obligations, such as the one on not imposing restrictions on exports. This general defense has never been the subject of much jurist prudence in the WTO. One of my great accomplishments as a Judge there was that I was able to get out of Geneva alive without having to say what it meant.

But, presumably, we would have this defense. It clearly is in the GAT, and I can't imagine that a Judge using the WTO would question any country's assertion of its national security interest, nor can I imagine that they would not see a national security concern here, especially if we did not proceed alone, but proceeded along with a number of our trading partners.

Mr. GARDNER. Thank you, Mr. Bacchus. And to the panelists, thank you very much for your time here today. That concludes today's hearing. Members are reminded that they will have 10 business days to submit questions for the record and other material. Anything else?

Mr. RUSH. Mr. Chairman?

Mr. GARDNER. Yes?

Mr. RUSH. Mr. Chairman, I ask unanimous consent to place in the record a letter from the Industrial Energy Consumers of America, strongly opposing H.R. 6.

Mr. GARDNER. Without objection.

Mr. RUSH. Thank you, Mr. Chairman.

[The information follows:]

Industrial Energy Consumers of America
The Voice of the Industrial Energy Consumers

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March 24, 2014

The Honorable Ed Whitfield
Chairman
Subcommittee on Energy and Power
Committee on Energy and Commerce
2184 Rayburn House Office Building
Washington, DC 20515

The Honorable Bobby L. Rush
Ranking Member
Subcommittee on Energy and Power
Committee on Energy and Commerce
2268 Rayburn House Office Building
Washington, DC 20515

RE: H.R. 6, the "Domestic Prosperity and Global Freedom Act"

Dear Chairman Whitfield and Ranking Member Rush:

On behalf of the Industrial Energy Consumers of America (IECA), we request that this letter be submitted into the hearing record. IECA strongly opposes H.R. 6, the "Domestic Prosperity and Global Freedom Act." The legislation would have devastating impacts to the competitiveness of the manufacturing sector, investment and jobs long-term. The bill would accelerate exports of natural gas, driven by OPEC cartel LNG indexed prices[1], and drive up the price of natural gas and natural gas-fired power generation for homeowners, farmers and us in the manufacturing sector.

Congress should NOT support OPEC cartel LNG pricing by allowing unfettered exports of LNG. H.R. 6 is anti-consumer and imposes an OPEC tax on every U.S. consumer.

OUTLINE

1. **OPEC Cartel LNG Pricing.**
2. **The U.S. Department of Energy (DOE) has already approved LNG shipments to non-free trade countries equal to 15.3% of U.S. demand.**
3. **H.R. 6 does not have anything to do with the Ukrainian crisis or with helping our NATO allies.**
4. **Ukraine has more years of proven natural gas reserves than the U.S.**
5. **The public interest determination under the Natural Gas Act is critically important.**
6. **The DOE sponsored study by NERA Economic Consulting dated December 12, 2012, says the public will see higher energy costs, lower wages and a decline in manufacturing.**
7. **Congress should not support OPEC over the successful U.S. free market.**

[1] World LNG Report 2013 Edition, International Gas Union, http://www.igu.org/gas-knowhow/publications/igu-publications/IGU_world_LNG_report_2013.pdf/view

1. OPEC Cartel LNG Pricing.

Here is how it works. The OPEC cartel is both a large seller of crude oil and LNG. OPEC cleverly links the price of LNG to crude oil prices. This means that if crude oil prices rise, so does the price of LNG. It is for this reason that LNG sells in the Pacific for very high prices in the range of $15-$16 mmBtu. Clearly, the global LNG market is not a "free market." If OPEC decoupled the price from crude, the LNG price would likely fall. In contrast, the U.S. NYMEX Henry Hub price is in the mid $4.00 mmBtu range. It is these artificially high OPEC LNG prices that are driving natural gas exporters to push Congress/DOE for unfettered natural gas exports without consideration to domestic consumers – all in the name of supporting our NATO allies.

In contrast, the U.S. natural gas prices are determined by domestic supply versus demand. This is how "free markets" work.

This is a critically important contrast because the artificially high OPEC LNG price means that foreign buyers of LNG from U.S. export terminals will be willing to pay higher prices for it and "buy it away" from domestic consumers. The impact will first show up during the peak winter heating season demand and result in spiking prices for both natural gas and electricity. Longer term, as U.S. supply and demand comes into balance, and as increasingly larger volumes are exported, the prices will rise year round and permanently transform the U.S. market. OPEC's plan puts the U.S. on the pathway to substantially higher prices, the OPEC energy tax.

This is exactly what happened in Australia. Now, natural gas producers do not want to sell gas to Australian consumers unless they pay the LNG export prices. Manufacturers are leaving the country and power plants are beginning to convert from natural gas to coal.

U.S. homeowners have no idea that their future higher home heating and cooling costs will be significantly and permanently increased due to OPEC cartel prices.

2. DOE has already approved LNG shipments to non-free trade countries equal to 15.3% of U.S. demand.

The DOE has already approved six applications to export to non-free trade countries, an equivalent of a 15.3 percent increase in demand versus 2013 demand. This is a significant increase on top of growing new domestic demand.

3. H.R. 6 does not have anything to do with the Ukrainian crisis or with helping our NATO allies.

The legislation is being promoted by natural gas producing states over the interests of states that are dependent upon natural gas, the public and the manufacturing sector.

Exporting U.S. natural gas to help our Ukrainian and NATO allies is not a viable option for years to come. There are no export facilities that are ready to ship and even if they were,

their output is already under contract to be sold. Helping them to drill for natural gas is the solution.

4. Ukraine has more years of proven reserves than the U.S.

According to the U.S. Energy Information Administration (EIA), Ukraine has 39 trillion cubic feet (Tcf) of proved natural gas reserves and at a 2012 consumption rate of 1.8 Tcf, they have a 21-year supply. This compares favorably to U.S. proven reserves of 334 Tcf, or a 13-year supply at the 2013 consumption rate of 26 Tcf. The problem is that Ukraine only produces 1 Tcf of gas.

The old adage of "give a person a fish and feed him for a day or teach him to fish and feed him for a lifetime" still applies. Drilling in Ukraine would create needed jobs, economic growth and energy independence. Exporting U.S. natural gas simply makes them dependent upon us rather than Russia.

5. The public interest determination under the Natural Gas Act is important.

Years ago, Congress wisely put in place a process to review applications to export LNG under the Natural Gas Act. Applications to ship to countries with which the U.S. has a free trade agreement are automatically approved. In fact, the DOE has approved 33 of these applications. If the application requests shipments to countries that do not have a free trade agreement, it must do a "public interest determination" to determine whether the shipments are in the public's best interest. If it is, the export application is approved. The public interest determination examines whether there is a negative or positive impact on the economy, domestic consumers, manufacturers, jobs, and investment. This is an essential and appropriate safeguard.

It is important to note that countries that do not have a free trade agreement with the U.S., almost without an exception, discriminate against the importation of manufacturing products produced in the U.S. A free trade agreement assures a level playing field.

H.R. 6 replaces "free trade countries" for "WTO countries." WTO designation does not require a level playing field. Congress should support efforts to achieve a level playing field for the manufacturing sector – not undermine them.

6. DOE sponsored study: NERA Economic Consulting, December 12, 2012 says the public will see higher energy costs, lower wages and a decline in manufacturing.

According to a DOE sponsored study completed on December 12, 2012 by NERA Economic Consulting, the big winners are those who own gas resources, producers of natural gas, exporters of natural gas and foreign countries. Page 21 of the report says that the losers are the public who will see higher energy costs, lower wages and a decline in manufacturing.

7. Congress should not support OPEC over the successful U.S. free market.

Congress should take a measured approach to LNG exports and protect the American consumer from unfair OPEC price influences. We do not believe that you or the Congress should support OPEC over the successful U.S. free market.

Sincerely,

Paul N. Cicio
President

The Industrial Energy Consumers of America is a nonpartisan association of leading manufacturing companies with $1.0 trillion in annual sales, over 1,500 facilities nationwide, and with more than 1.4 million employees worldwide. It is an organization created to promote the interests of manufacturing companies through advocacy and collaboration for which the availability, use and cost of energy, power or feedstock play a significant role in their ability to compete in domestic and world markets. IECA membership represents a diverse set of industries including: chemical, plastics, steel, iron ore, aluminum, paper, food processing, fertilizer, insulation, glass, industrial gases, pharmaceutical, building products, brewing, independent oil refining, and cement.

Mr. GARDNER. That concludes today's hearing. Thank you for your participation.

[Whereupon, at 4:34 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

Statement for Congressman Gene Green
House Subcommittee on Energy and Power
"H.R. 6 – the Domestic Prosperity and Global Freedom Act"
March 25, 2014

Good afternoon.
I want to thank the Chairman, Ranking Member for holding this hearing and the witnesses for being here.

By now, most people are aware of the economic success our country is achieving thanks to domestic energy production, specifically natural gas.

Just a short while ago, we were building import facilities and today we are focused on exports.

The issue we face today is how to strike the proper balance between domestic and international factors that include:

- Geo-political
- Socio-Economic, and
- Environmental challenges and opportunities.

I am a strong supporter of domestic LNG exports and what we must do, as policymakers, is provide certainty:

- Our producers need certainty so they know their gas will have a market;
- Our manufacturers need certainty that their prices will not skyrocket;
- Our allies need certainty that U.S. gas is "on its way"; and,
- The American people need certainty that ensures they will continue to benefit from our domestic natural resources, both economically and environmentally.

But rather than eliminating regulatory oversight, we should seek to:

- Harness Agency expertise;
- Streamline decision-making processes; and,
- Define transparency.

I look forward to working with my colleagues to craft the correct policy and unleash our domestic potential.

FRED UPTON, MICHIGAN
CHAIRMAN

HENRY A. WAXMAN, CALIFORNIA
RANKING MEMBER

ONE HUNDRED THIRTEENTH CONGRESS

Congress of the United States
House of Representatives
COMMITTEE ON ENERGY AND COMMERCE
2125 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515–6115
Majority (202) 225-2927
Minority (202) 225-3641

April 30, 2014

Dr. Paula Gant
Deputy Assistant Secretary for Oil and Natural Gas
Office of Fossil Energy
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Dr. Gant:

Thank you for appearing before the Subcommittee on Energy and Power on Tuesday, March 25, 2014, to testify at the hearing on H.R. 6, the "Domestic Prosperity and Global Freedom Act."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Wednesday, May 14, 2014. Your responses should be e-mailed to the Legislative Clerk in Word format at Nick.Abraham@mail.house.gov and mailed to Nick Abraham, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, D.C. 20515.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

Ed Whitfield

Ed Whitfield
Chairman
Subcommittee on Energy and Power

cc: The Honorable Bobby L. Rush, Ranking Member,
Subcommittee on Energy and Power

Attachment

Department of Energy
Washington, DC 20585

June 30, 2014

The Honorable Ed Whitfield
Chairman
Subcommittee on Energy and Power
Committee on Energy and Commerce
U. S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On March 25, 2014, Paula Gant, Deputy Assistant Secretary for Oil and Natural Gas, Office of Fossil Energy, testified regarding H.R. 6, the "Domestic Prosperity and Global Freedom Act."

Enclosed are the answers to five questions that were submitted by Representative Gene Green. Also enclosed is an Insert that you requested to complete the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

[redacted]

Christopher E. Davis
Principal Deputy Assistant Secretary
for Congressional Affairs
Congressional and Intergovernmental Affairs

Enclosures

cc: The Honorable Bobby L. Rush, Ranking Member

Printed with soy ink on recycled paper

QUESTION FROM REPRESENTATIVE GENE GREEN

Dr. Gant, over the past few years, U.S. exports of LNG has been discussed at length.

Q1. Would you agree that there are geo-political benefits of exporting domestic natural gas?

A1. As of March, 2014, Yes. These benefits are included in the discussion of recent DOE long-term authorizations to export liquefied natural gas (LNG) to non-free trade agreement countries. For example, in the LNG export authorization to Jordan Cove Energy Project, L.P, (DOE/FE Order No. 3413, March 24, 2014), DOE stated in its findings:

We have also considered the international consequences of our decision. We review applications to export LNG to non-FTA nations under section 3(a) of the NGA. The United States' commitment to free trade is one factor bearing on that review. An efficient, transparent international market for natural gas with diverse sources of supply provides both economic and strategic benefits to the United States and our allies. Indeed, increased production of domestic natural gas has significantly reduced the need for the United States to import LNG. In global trade, LNG shipments that would have been destined to U.S. markets have been redirected to Europe and Asia, improving energy security for many of our key trading partners. To the extent U.S. exports can diversify global LNG supplies, and increase the volumes of LNG available globally, it will improve energy security for many U.S. allies and trading partners. As such, authorizing U.S. exports may advance the public interest for reasons that are distinct from and additional to the economic benefits identified in the LNG Export Study.

QUESTION FROM REPRESENTATIVE GENE GREEN

In fact, DOE states U.S. LNG exports will benefit our allies by diversifying supplies and increasing availability globally.

Q2. Would you agree that a including U.S. LNG in global supplies would offer some certainty to our allies that they have access to a stable source?

A2. As of March, 2014, Yes. See also the response to Q1.

QUESTION FROM REPRESENTATIVE GENE GREEN

DOE also states that our allies will have the flexibility when engaging with current suppliers to negotiate better terms and prices.

In DOE's Jordan Cove application, very little was written about the geo-politics of LNG and much was written defending the NERA study.

Q3. What role does the economics of an application or long-term contract destination play?

A3. As of March, 2014, the macroeconomic impact of an application to export LNG is one of many key factors considered by DOE in assessing whether a proposed export is consistent with the public interest. A conservative estimate of the macroeconomic impact of an application to export LNG was included in the 2012 NERA Economic Consulting Study, *Macroeconomic Impacts of LNG Exports from the United States*, prepared at the direction of DOE. In that study, NERA made conservative assumptions regarding the impact of LNG exports on the U.S. economy.

To date, applications have sought broad authority to export LNG to multiple countries, in many cases to any non-free trade agreement country not prohibited by U.S. law or policy. In such cases, DOE cannot assess the direct impact of a specific country of destination, but instead focuses on the international benefits of LNG exports, as detailed in the response to Q1. However, DOE does require LNG exporters to disclose to DOE the destination countries on an ongoing monthly basis.

QUESTION FROM REPRESENTATIVE GENE GREEN

Q4. Do you agree that U.S. LNG supplies offer medium-to-long term benefits?

A4. As stated in Q1: *An efficient, transparent international market for natural gas with diverse sources of supply provides both economic and strategic benefits to the United States and our allies. Indeed, increased production of domestic natural gas has significantly reduced the need for the United States to import LNG. In global trade, LNG shipments that would have been destined to U.S. markets have been redirected to Europe and Asia, improving energy security for many of our key trading partners. To the extent U.S. exports can diversify global LNG supplies, and increase the volumes of LNG available globally, it will improve energy security for many U.S. allies and trading partners.*

QUESTION FROM REPRESENTATIVE GENE GREEN

In the short-term, U.S. leadership could provide certainty to our allies across the globe.

Q5. Are there short-term solutions that DOE has identified that would benefit our allies?

A5. We take the energy security of our allies very seriously. Most immediately, the U.S. government has been working with Ukraine and our allies on its western borders to encourage them to prepare to reverse natural gas flows in some of its pipelines. DOE and other agencies are also taking steps to provide technical assistance in the areas of safely developing hydrocarbon and renewable resources, energy efficiency and energy sector reform. We will also provide technical assistance to help Central and Eastern European countries develop contingency plans for this coming winter to ensure provision of essential service in the event of an energy disruption.

1182 security.

1183 Mr. {Gardner.} So that means what for the United

1184 States, in terms of geopolitical situation?

1185 Ms. {Gant.} We are very keenly interested and invested

1186 in the energy security of our allies and training partners.

1187 Mr. {Gardner.} So it would increase the security of our

1188 allies?

1189 Ms. {Gant.} It is a key strategic interest to the

1190 United States.

1191 Mr. {Gardner.} Okay. It would create American jobs?

1192 Ms. {Gant.} What is it? I am sorry, I have lost track

1193 of what it--

1194 Mr. {Gardner.} We would create American jobs

1195 developing--

1196 Ms. {Gant.} Increased production of natural gas has led

1197 to, yes, increased economic benefits.

1198 Mr. {Gardner.} And that would be a net benefit to the

1199 United States economy?

1200 Ms. {Gant.} In our analysis to date, yes.

1201 Mr. {Gardner.} I thank the witness for her time.

1202 Mr. {Whitfield.} I might make just one comment

1203 regarding the scenario of exporting gas to Russia, or North

1204 Korea, or wherever, and maybe Dr. Gant can answer this

1205 question, or maybe you can't, but the reason we have these

1206 hearings is to find out. But Mr. Doyle presented a pretty
1207 dire--and many of us would agree with you. We wouldn't want
1208 gas going to Russia, North Korea, some of these WTO
1209 countries.
1210 It is my understanding that the Energy Policy Act of
1211 1975 gave the President of the United States the authority to
1212 prohibit export of natural gas to any country if they deemed
1213 it should not be done. And I know the Gardner bill does not
1214 amend that Act, but do you know personally if what I have
1215 just said is accurate?
1216 Ms. {Gant.} Mr. Chairman, if you wouldn't mind, I would
1217 rather take that question for the record--
1218 Mr. {Whitfield.} Yeah.
1219 Ms. {Gant.} --because I believe I know the answer--
1220 Mr. {Whitfield.} Okay.
1221 Ms. {Gant.} --but I would rather--
1222 Mr. {Whitfield.} All right.
1223 Ms. {Gant.} --not--
1224 Mr. {Whitfield.} Well, if you wouldn't mind getting
1225 back in touch with our committee staff? Because it is our
1226 understanding that that is the case, that the President could
1227 intervene and prevent some of the scenarios that Mr. Doyle
1228 talked about. But we want to make sure that that is
1229 accurate. Okay. That concludes the first panel, and we

COMMITTEE:	HOUSE ENERGY AND COMMERCE, SUBCOMMITTEE ON ENERGY AND POWER
HEARING DATE:	MARCH 25, 2014
WITNESS:	PAULA GANT PAGE: 56, LINE: 1210-1229

INSERT FOR THE RECORD

Section 103(a) of the Energy Policy and Conservation Act of 1975 (EPCA), 42 USC 6212, states that the President may, by rule, under such terms and conditions as he determines appropriate and necessary to carry out the purposes of EPCA, restrict exports of natural gas. Section 2 of EPCA, 42 USC 6201, identifies the following purposes of the statute: (1) to fulfill obligations of the United States under the international energy program; (2) to provide for the creation of a Strategic Petroleum Reserve; (3) to conserve energy supplies through energy conservation programs, and, where necessary, the regulation of certain energy uses; (4) to provide for improved energy efficiency of motor vehicles, major appliances, and certain other consumer products; (5) to provide a means for verification of energy data to assure the reliability of energy data; and (6) to conserve water by improving the water efficiency of certain plumbing products and appliances. In order to exercise the authority granted by section 103(a), therefore, it would have to be shown that the restriction on gas exports is to further these purposes of EPCA. Please note also that the authority to implement section 103(a) of EPCA has been delegated pursuant to Executive Order 11912 to the Secretary of Commerce.

FRED UPTON, MICHIGAN
CHAIRMAN

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2125 RAYBURN HOUSE OFFICE BUILDING
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April 30, 2014

Mr. Dave Schryver
Executive Vice President
American Public Gas Association
201 Massachusetts Avenue, N.E., Suite C-4
Washington, D.C. 20002

Dear Mr. Schryver:

Thank you for appearing before the Subcommittee on Energy and Power on Tuesday, March 25, 2014, to testify at the hearing on H.R. 6, the "Domestic Prosperity and Global Freedom Act."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

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Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

Ed Whitfield

Ed Whitfield
Chairman
Subcommittee on Energy and Power

cc: The Honorable Bobby L. Rush, Ranking Member,
Subcommittee on Energy and Power

Attachment

APGA Responses to QFR

The Honorable Gene Green

Mr. Schryver, in your testimony, you state that the U.S. will give up on the manufacturing renaissance premised on low prices of domestic natural gas. You cite an article in the New York Times that includes a South African investment to build a Gas-To-Liquids Plant in Louisiana. This particular plant will cost approximately $14 billion dollars.

1. Do you believe that this firm relied solely on the NERA study commissioned by DOE? The CEO of the South African company stated that the plant becomes uneconomical when U.S. natural gas prices exceed $8 dollars per million BTU.

Thank you for the question, Representative Green. APGA has no affiliation with Sasol, the South African company that you referenced, nor has anyone at APGA spoken with Sasol about its proposed gas-to-liquids plant in Louisiana. Unfortunately we have no information regarding whether Sasol "relied solely on the NERA study commissioned by DOE" to make its decision to build its facility.

The Honorable Gene Green

2. Do you believe that companies would invest $14 billion dollars to build a new facility without forecasting potential natural gas price increases?

Thank you for the question, Representative Green. Unfortunately APGA has no information regarding whether or not "companies would invest $14 billion to build a new facility without forecasting potential natural gas price increases." Based on the studies that APGA has seen, LNG export will increase the price of natural gas and the impact of the increase will be felt by residential, commercial and industrial consumers.

The Honorable Gene Green

In Texas, we are building 5 new crackers at the cost of $1 billion per unit.

3. Do you believe that these companies relied on the NERA study or would invest $1 billion dollars without forecasting potential price increases?

Thank you for the question, Representative Green. APGA unfortunately has no information regarding whether the companies that are building "5 new crackers" relied on the NERA study. However, what we do know from the NERA study and every other study forecasting the impact of large-scale export of LNG, is that if Congress chooses expedites exports as the modified version of H.R. 6 does, then the domestic price of natural gas will rise. In so doing, Congress will have imposed upon every American homeowner and business an increase in the price of natural gas that will reduce household disposable income, threaten the manufacturing renaissance, and will harm U.S. national security by making natural gas vehicles (NGVs), less economical.

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Minority (202) 225-3641

April 30, 2014

Mr. Kenneth Ditzel
Principal
Charles River Associates
1201 F St. NW, Suite 700
Washington, D.C. 20004

Dear Mr. Ditzel:

Thank you for appearing before the Subcommittee on Energy and Power on Tuesday, March 25, 2014, to testify at the hearing on H.R. 6, the "Domestic Prosperity and Global Freedom Act."

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Sincerely,

Ed Whitfield

Ed Whitfield
Chairman
Subcommittee on Energy and Power

cc: The Honorable Bobby L. Rush, Ranking Member,
Subcommittee on Energy and Power

Attachment

Memorandum

To: The Honorable H. Morgan Griffith and The Honorable Gene Green

From: Ken Ditzel

Date: May 14, 2014

cc:

Subject: Responses to Additional Questions for the Record

The Honorable H. Morgan Griffith and The Honorable Gene Green:

I appreciate the opportunity to elaborate on the testimony I submitted to the Subcommittee on Energy and Power on March 25, 2014. Below I have provided the complete text of the questions you have asked in bold and have provided responses to your questions in plain text. Please let me know if further clarification is required for any of my responses.

Sincerely,

Ken Ditzel
Principal

Charles River Associates
1201 F St., NW – Suite 700
Washington, DC 20004
[redacted]

Responses to Questions submitted by The Honorable H. Morgan Griffith

I would like to be sure that I understand your point about LNG net back pricing and the influence of crude oil linked LNG prices; including the role of OPEC in this.

In the US, natural gas prices are determined by supply and demand. What I understand you are saying is that suppliers of crude oil, including OPEC countries have linked the price of LNG to it. So that if crude oil prices go up, so does the price of LNG.

Your net back argument implies that the price of US natural gas would have to rise to about $8 per mm Btu before it would reach parity with crude oil-linked LNG prices at $15-$16.

1. Is that right? Are most of the LNG prices linked to crude oil?

U.S. Henry Hub gas prices would need to rise to $10/MMBtu before reaching parity with *current*, crude oil-linked LNG prices of $15-$16/MMBtu *in Asia on a netback basis*. I arrive at a $10/MMBtu netback price by subtracting $5-$6/MMBtu for liquefaction and shipping from the $15-$16/MMBtu for LNG spot prices in Asia.

In my February 3, 2014 presentation entitled "Evaluation of the 2014 Annual Energy Outlook Early Release: Implications for U.S. LNG Exports and Natural Gas Prices", I show on page 16 that a high U.S. export scenario would increase annual Henry Hub gas prices to ~$8/MMBtu on average (not accounting for seasonal volatility) by 2020. This assumes the EIA's 2014 Annual Energy Outlook Early Release's forecast for Brent crude and an 80% linkage of Asian LNG prices to Brent.

To answer the second part of this question, 90% of LNG is tied up in contracts with at least four years remaining on the contract, and a vast majority of LNG *that is under contract* is linked to crude oil. The LNG that is not under contract is traded at spot prices, which are dictated by regional market conditions. It is worth noting that the LNG under contract can be sold at spot too if the buyer decides it is economically rational to do so.

2. Chemical manufacturing is very important to my district and natural gas is a vital feedstock to that industry. What will unlimited natural gas exports to do domestic gas prices?

With unlimited LNG exports, U.S. gas prices will no longer be based on the current North American supply and demand situation and instead will be based on the global market for gas. This means that unlimited natural gas exports will expose the U.S. to netback pricing. I define netback pricing as the market price representing the highest willingness to pay (Asian prices) less liquefaction and shipping costs. Again, using the EIA's forecast for Brent crude prices, Asian LNG will be ~$14/MMBtu in 2020 (in current dollars), which means netback price of ~$8/MMBtu at the Henry Hub on average in 2020 (in current collars).

a. How will that impact home heating and electricity prices?

If LNG demand growth were to surprisingly slow down and/or Asian countries were to quickly develop their gas resources in an economically competitive manner, unlimited exports could almost double Henry Hub gas prices from current levels by 2020. This in turn could double the fuel cost portion of home heating bills by 2020. Because home heating bills include both fixed (e.g., infrastructure costs) charges and variable charges (e.g., fuel), the final impact on the total bill would be less than a doubling.

b. How will it impact U.S. manufacturing?

If gas prices were to double, the U.S. manufacturing renaissance would end. The reason is that coal-based manufacturing in Asia and gas-based manufacturing in the Middle East (where prices are subsidized) would be more favorable relative to U.S. gas-intensive

manufacturing. This is what occurred in the 2000s when the U.S. faced high gas prices – the industrial flight to Asia and the Middle East ensued.

c. I understand that stable and affordable gas prices are allowing energy intensive manufacturers to expand and invest in the U.S., and that the foreign companies are relocating advanced manufacturing facilities to the United States. Can you discuss this trend and the impact that unlimited exports would have?

In the February 2013 CRA report[1], I pointed out that there was more than $90 billion of planned gas-intensive manufacturing that had resulted from the stable and affordable gas prices created by the shale boom. This investment level was a conservative estimate as others have commented that the number could be much larger. These investments represent new builds, expansions of existing facilities, bringing idled facilities back on-line, and physically re-locating facilities to the U.S. from other countries. In terms of a trend, the expected growth in manufacturing is a complete reversal from the 2000s when gas-intensive manufacturing output and jobs contracted.

It is important to note that for the same amount of gas consumed, manufacturing delivers twice the GDP impact and more than eight times the number of jobs than LNG exports. The reason is that much more of the value-added stays within the U.S. With unlimited exports, these manufacturing benefits are at risk because U.S. manufacturing cannot compete at $8/MMBtu gas (in current dollars), whereas LNG exports from the U.S. can compete at $8/MMBtu once the LNG export facilities are built.

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[1] *US Manufacturing and LNG Exports: Economic Contributions to the US Economy and Impacts on US Natural Gas Prices.* Ditzel, K., Plewes, J., and Broxson, B., February 25, 2013.

Responses to Questions Submitted by The Honorable Gene Green

1. How is natural gas priced in different parts of the world?

Gas pricing in the three primary markets – North America, Europe, and Asia – varies considerably. The factors driving prices in these markets are threefold: 1) the marginal cost of supplying gas, 2) the varying degrees of gas-on-gas competition, and 3) the connection to the global gas market.

In the U.S. gas prices ($4-$5/MMBtu) are much lower than Europe (~$9/MMBtu) and Asia (~$16/MMBtu) because of favorable marginal gas well economics (due to shale), high gas-on-gas competition, and almost no connection to the world gas market with the except of some LNG imports into the Northeast.

In the European market, there is gas-on-gas competition much like the U.S.; however, marginal well economics are higher which explains why European spot gas prices are almost twice current Henry Hub price levels. Europe also has extensive pipeline connections to external regions, which fosters gas-on-gas competition. These pipeline resources are less expensive than LNG imports, which explains why Europe only uses a small percentage of its LNG import capacity.

In the Asian market, there is very little gas-on-gas competition. The largest global LNG consumers – Japan and Korea – have little to no gas production and have no pipeline access. The two largest LNG growth markets – China and India – have relatively small levels of gas production. China and India have potential to develop gas resources, but the resources currently are prohibitively expensive. Thus, refined oil products are the direct substitute for gas and drive the oil linkage.

2. When signing contracts, how many years constitute a "long-term" LNG contract?

Traditionally, LNG export contracts have been long-term and oil-indexed. Recently, major importers in Asia met to discuss a buyer's club. These countries are attempting to band together in an effort to increase negotiating power and lower prices. Also, there has been a 25% increase since 2000 in short-term, hub-priced contracts. Some economists expect more flexibility and negotiation to take place as new contracts come online and old contracts are renegotiated.

Many of the tolling agreements that have been negotiated for U.S. LNG exports have been for twenty years, which is a typical period for a "long-term" contract in the energy industry. Contract structures will vary depending on the market conditions. For example, many contracts for U.S. LNG exports have been linked to Henry Hub prices. This contracting mechanism is an attempt to stabilize prices for the LNG buyers, but it does not mean it will work once the U.S. gas market becomes interconnected with the global gas market. It is also worth noting that suppliers facing much higher investment costs than the U.S., such as Mozambique and Australia, likely will require an oil-linkage to ensure adequate return on investment as there is no liquid domestic trading hub by which to index. Therefore, the LNG oil linkage is not expected to go away any time soon.

3. **Does your analysis include any shift in contracting?**

U.S. producers have also entered into agreements by which they must meet certain criteria to ensure financing and future credit.

No, my analysis does not include any shift in contracting for U.S. gas producers. The CRA North American gas model will only add an additional well if full return on investment can be achieved. The model assumes balanced capital markets and does not account for how loose or rigid capital markets may be.

4. Does your research and analysis include any information on economic incentives or financial structures relating to U.S. natural gas producers?

Yes, my analysis does take into account tax advantages afforded to natural gas producers. These include accelerated depreciation and expensing of intangible drilling costs.

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April 30, 2014

Dr. W. David Montgomery
Senior Vice President
NERA Economic Consulting
1255 23rd Street N.W., Suite 600
Washington, D.C. 20037

Dear Mr. Montgomery:

Thank you for appearing before the Subcommittee on Energy and Power on Tuesday, March 25, 2014, to testify at the hearing on H.R. 6, the "Domestic Prosperity and Global Freedom Act."

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Sincerely,

Ed Whitfield

Ed Whitfield
Chairman
Subcommittee on Energy and Power

cc: The Honorable Bobby L. Rush, Ranking Member,
Subcommittee on Energy and Power

Attachment

Additional Questions for the Record

The Honorable H. Morgan Griffith

1. Chemical manufacturing is very important to my district and natural gas is a vital feedstock to that industry. What will unlimited natural gas exports do to domestic gas prices?

   a. How will that impact home heating and electricity prices?

   b. How will it impact U.S. manufacturing?

Answer: In the Reference cases analyzed in the recent NERA report on the Macroeconomic Impacts of LNG Exports we found that if DOE put no limits on exports, price increases would average something less than 25 cents per million BTU, or about a 4% increase over Reference Case wellhead prices of about $6 per million BTU. Delivered prices of natural gas for home heating are around $10 per million BTU in much of the country, so that the average homeowner would experience at most a 2% increase in natural gas bills. Given the inherent variability in natural gas prices from one month to the next due to weather or other factors, this would be difficult to separate out from other movements in natural gas prices.

The effect of natural gas price increases on electricity prices will vary across the country, depending on whether customers are served by utilities under traditional cost of service regulation or by so-called competitive markets in which the price of electricity moves with the price of natural gas whenever natural gas is the marginal source of generation. The effect of natural gas price increases on electricity prices in these regions will depend on their generation mix and their ratio of peak to off-peak consumption. We did not model impacts on electricity prices, but a reasonable estimate can be made by comparing the increase in natural gas prices between EIA's Reference Case and High Oil and Gas Resource Case in AEO2014 to the difference in residential electricity prices between the two scenarios. A $2 per million BTU difference in natural gas prices led to an increase of about 10% in electricity prices. Applying the same proportion to the estimated $0.25 per million BTU increase in natural gas prices attributable to unlimited exports provides an estimate of the impact of unlimited exports on electricity prices. The result is that if DOE put no limit on exports of LNG, residential electricity prices might be expected to increase by about 1.25%, again a change difficult to differentiate from normal weather related variation in bills.

In our study, price increases of this magnitude or even larger have an almost undetectable effect on the rate of growth in U.S. manufacturing. Growth in all manufacturing sectors remains robust with or without natural gas exports, and changes in the growth rates are in the undetectable range of hundredths of a percentage point.

2. I understand that stable and affordable gas prices are allowing energy intensive manufacturers to expand and invest in the U.S., and that the foreign companies are relocating advanced manufacturing facilities to the United States. Can you discuss this trend and the impact that unlimited exports would have?

Answer: The relative advantage that U.S. chemical and other manufacturers have gained over rivals in other countries that must import natural gas had clearly driven expansion of the chemicals industry and investment in chemical and related facilities. As I discussed in my testimony, U.S. manufacturing has moved from being the world's high cost producer of bulk chemicals like ethylene to being one of the lowest cost. According to the American Chemicals Council, the U.S. chemicals industry has about a 60 cent per pound advantage in the cost of producing ethylene over its next closest large rival, China. The price increases attributable to LNG

exports in our reference case would close this gap by just over a penny. Even the largest natural gas price increases we found in highly unlikely scenarios would take away only 5 out of the 60 cent advantage.

And these calculations assume that the price of the natural gas byproduct that is actually used to produce ethylene and related chemicals would move penny for penny with natural gas prices. This byproduct is a natural gas liquid called ethane, and as shale gas production has increased, the supply of ethane has increased faster than the capacity to use it. As a result, the price of ethane has fallen relative to the price of natural gas, and this contributes greatly to the attractiveness of the U.S. as a location for chemical manufacturing. Exports of LNG, by increasing production of both natural gas and ethane, would likely drive the price of ethane down further. Thus increased exports served by increased production, as we find they would be, will actually benefit U.S. chemicals producers. Canadian chemical producers recognized this years ago, and as a result have been enthusiastic supporters of Canadian LNG exports.

The competitive position of other, advanced manufacturing concerns in the U.S. is a much more complex question. The increase in output of manufacturing industries other than chemicals has coincided with the shale gas revolution and the decline in natural gas prices from their peaks, but at the same time the U.S. is recovering from the recession and an increase in manufacturing investment would be expected in a period of recovery. The share of natural gas in the cost of most U.S. manufacturing industries is relatively small—5% or less—and less in relative importance than labor costs or impacts of regulations. A change in industrial natural gas prices of 5% -- which is more than we think likely due to even unlimited exports—would increase manufacturing costs by less than ¼ of 1%, and would not have a noticeable effect on the competitive position of manufacturing in general.

Additional Questions for the Record

The Honorable Cory Gardner

1. If the federal government were to restrict in any manner or eliminate hydraulic fracturing nationwide, what would this scenario do to liquefied natural gas exports?

Answer: The Low Oil and Gas Resource case that we considered in NERA's study of the Macroeconomic Impacts of LNG Exports illustrated how restrictions on hydraulic fracturing could reduce LNG exports even if DOE automatically approves all applications. In this case, production of shale gas would be reduced by 4 tcf from the reference case with no such restrictions, and LNG exports would fall from a maximum of 1.6 tcf in the reference case in 2028 to 0.7 tcf.

We did not include a scenario in which shale gas production is reduced to zero in our study, but it is a question of great interest. We recently did a new model run to examine what would happen in the reference case if shale gas production were eliminated from 2018 onward. We found that a ban on fracking would drive LNG exports from the lower 48 states to zero. Even with no exports, the price of natural gas to consumers would be driven up by from 50% to 100% by a ban on fracking, with the more severe impacts likely if new coal-fired generation is prohibited. A ban on fracking would also have impacts on energy-intensive manufacturing sectors, in which natural gas use would fall by about 30% compared to the reference case in which fracking is allowed.