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

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SUBCOMMITTEE ON TRADE

OF THE

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

U.S. House of Representatives,
Committee on Ways and Means,
Washington, D.C.

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

Chairman Nunes. Good afternoon.

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

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

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

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

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

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

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

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

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

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

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

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

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

Thank you, Mr. Neal.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Chairman Nunes. Thank you, Mr. Klaben.

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

Mr. Rangel. Thank you, Mr. Chairman.

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

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

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

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

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

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

Chairman Nunes. Thank you, Mr. Rangel.

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

You are now recognized for 5 minutes.

Ms. Hawley. Thank you. Thank you, Chairman Nunes and Ranking Member Rangel and the members of the subcommittee.

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

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

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

The port serves as a nexus for the input of stakeholders and interested parties ranging from our local communities to international businesses. In my 10 years on the commission, I have a bird's-eye view of the local economic impact of Federal energy policy and a broader view of how energy policy can affect local, national, and international issues.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Thank you very much.

Chairman Nunes. Thank you, Miss Hawley.

Chairman Nunes. Now we recognize Mr. Weiss for 5 minutes.

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

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

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

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

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

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

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

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

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

Additionally, the Energy Information Administration predicts that further gas exports would spur additional gas production, which would lead to more methane pollution, exacerbating climate change. The Obama administration's new methane reduction program must limit fugitive methane from fracking.

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

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

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

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

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

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

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

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

Chairman Nunes. Thank you, Mr. Weiss.

Chairman Nunes. Ms. Ladislaw is now recognized for 5 minutes.

Ms. Ladislaw. Thank you.

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

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

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

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

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

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

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

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

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

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

Unconventional natural gas has also created jobs and contributed to changes underway in the electric power markets and other industries, as well as helped the United States reduce greenhouse gas emissions, along with lower demand and energy efficiency improvements.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Chairman Nunes. Thank you, Ms. Ladislaw.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mr. Reichert. I appreciate that.

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

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

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

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

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

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

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

Mr. Reichert. Thank you, Mr. Chairman.

Chairman Nunes. Thank you, Mr. Reichert.

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

Mr. Rangel. Thank you, Mr. Chairman.

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

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

Mr. Weiss. Mr. Rangel, I believe that the law is adequate as is, does not need to be changed. What I propose is some different or more detailed criteria that applications need to meet in terms of its impact on price, manufacturing jobs, climate change, and is this the fastest, cheapest way to secure more natural gas.

Mr. Rangel. Well, I agree with you.

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

Mr. Klaben.

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

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

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

Mr. Klaben. Thank you, Representative Rangel.

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

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

Mr. Klaben. I --

Mr. Rangel. No.

Mr. Klaben. I am looking at it. From what I know, I am not an expert --

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

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

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

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

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

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

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

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

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

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

Mr. Rangel. I agree with you. Always -- there is always room for improvement.

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

So I yield back the balance of my time.

Chairman Nunes. I thank the gentleman.

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

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

Chairman Nunes. Thank you, Mr. Rangel.

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

Mr. Buchanan. Thank you, Mr. Chairman.

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

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

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

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

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

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

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

But, you know, reserves --

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

Ms. Ladislaw. Yes.

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

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

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

When you look at some of the --

Mr. Buchanan. 700 what?

Ms. Ladislaw. 700 trillion cubic feet.

Mr. Buchanan. Okay.

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

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

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

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

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

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

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

Ms. Ladislaw. For consumption.

Mr. Buchanan. Yes.

Ms. Ladislaw. Probably a handful of regions.

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

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

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

Ms. Hawley. Thank you.

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

Your question was whom are the consumers of the --

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

Ms. Hawley. Absolutely.

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

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

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

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

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

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

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

Ms. Hawley. It is.

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

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

I'm out of time.

Chairman Nunes. Gentlemen's time has expired.

Mr. Buchanan. I will yield back. Thanks.

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

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

And thank you all for being here.

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

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

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

Ms. Hawley. Thank you. Great question.

Yes. The -- the permitting process is thorough. Just in -- from the FERC perspective, over 40 different permits are involved in permitting one facility. The process takes years. The ones that we have been engaged with from the port's perspective has -- we have been involved with this for several years, maybe three.

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

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

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

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

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

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

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

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

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

Ms. Jenkins. Okay. That is helpful.

Did you have something to add?

Mr. Weiss. Yes. Thank you.

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

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

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

And, lastly, the -- part of the process that the current legislation, as the chairman mentioned at the beginning of the hearing, that passed the Energy and Commerce Committee today would truncate the DOE National Interest Review, which, as I understand it, only takes about 50 days. It is the FERC part of the process that is very lengthy.

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

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

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

Ms. Jenkins. Okay. Thank you.

I yield back.

Chairman Nunes. Thank you, Ms. Jenkins.

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

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

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

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

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

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

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

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

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

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

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

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

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

Mr. Weiss. Thank you, Mr. Neal.

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

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

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

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

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

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

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

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

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

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

And that is a very complicated conversation for us to have. We are in a far different position than we were. We are not growing as fast. We have a very active debate on where we should be heading in terms of carbon emissions. And we have got a major resource boom that the entire world is looking at and saying, "Gee, how do we replicate?"

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

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

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

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

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

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

Mr. Boustany. Thank you, Mr. Chairman.

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

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

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

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

Ms. Ladislaw. Okay.

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

Ms. Ladislaw. Yeah.

Mr. Boustany. The economic consequences for our country are immense. But, also, at the micro-level -- I will just give you some basics on this -- lakes Charles, Louisiana, which is a city of about 80,000 in Southwest Louisiana, to date, $65 billion in new investment related to natural gas and growing.

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

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

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

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

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

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

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

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

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

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

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

And so I think the sort of lack of clarity on the U.S. side about, you know, how we are going to be playing in this market and, really, for people to figure out how much LNG we can actually export, you know, what our markets are going to absorb and what the impact is, just takes the market a longer time for it to be able to resolve itself.

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

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

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

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

Chairman Nunes. Thank you, Mr. Boustany.

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

Mr. Smith. Thank you, Mr. Chairman.

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

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

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

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

Ms. Ladislaw. On sort of domestic energy infrastructure or --

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

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

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

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

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

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

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

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

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

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

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

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

Mr. Smith. Okay. Mr. Weiss and then Mr. Klaben.

Mr. Weiss. Thank you.

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

Mr. Smith. Mostly from aging infrastructure?

Mr. Weiss. Yes. Aging pipelines and leaky pipelines.

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

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

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

One last quick point. We are a --

Mr. Smith. Very briefly.

Mr. Weiss. -- natural gas importer right now.

Mr. Smith. Okay. Mr. Klaben.

Mr. Weiss. Thank you.

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

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

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

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

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

Mr. Smith. Thank you.

Thank you, Mr. Chairman.

Chairman Nunes. The gentleman's time is expired.

I now recognize the gentleman from Wisconsin for 5 minutes.

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

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

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

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

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

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

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

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

We are producing a heck of a lot of propane in this country, but at the same time -- we are exporting a heck of a lot of propane in this country at the same time. And we got caught with our shorts down over the winter, and it had a devastating impact for families and businesses alike.

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

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

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

Now, you kind of have a foot in both quarters here as far as what that means for domestic manufacturers having access to this cheaper fuel compared to our foreign competitors, but, also, the industry you are

directly involved in, the potential for further growth if we do export more. I am sure you have been looking at that issue very closely. I am wondering if you can render an opinion.

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

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

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

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

Mr. Kind. Right.

Mr. Klaben. -- are so inexpensive in the United States.

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

So the studies I have read and, after spending a lot of time thinking about it, preparing, since we do have a leg in both camps, both producing the equipment and benefiting in the buildout, but, also, producing equipment for domestic consumption of natural gas, and we ourselves as the manufacturer and for our employees in our various communities around the country, including up in La Crosse, just looking out for our --

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

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

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

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

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

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

Thank you, Mr. Chairman.

Chairman Nunes. Thank you, Mr. Kind.

Gentleman from Pennsylvania is recognized for 5 minutes.

Mr. Kelly. Thank you, Mr. Chairman.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Ms. Ladislaw. Uh-huh.

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

Ms. Ladislaw. Uh-huh.

Mr. Kelly. This is where the bully dominates the playground and you have to got to send somebody else there that is a little bit bigger, a little bit stronger, that is not afraid to punch them in the face and get them off the playground.

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

Ms. Ladislaw. Uh-huh.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mr. Larson. Thank you, Mr. Chairman.

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

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

[The information follows: The Honorable John Larson]

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

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

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

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

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

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

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

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

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

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

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

Mr. Weiss. From my view -- I have not seen Mr. Pickens' analysis.

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

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

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

Mr. Larson. Yes, ma'am.

Ms. Hawley.

Ms. Hawley. Thank you.

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

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

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

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

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

Ms. Hawley. Absolutely.

Mr. Larson. And to make that investment and to -- because that puts the country back to work.

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

Thanks.

Mr. Larson. Agreed.

Thank you, Mr. Chairman.

Chairman Nunes. Thank you, Mr. Larson.

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

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

Do you remember what you asked me?

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

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

Ms. Hawley. Right.

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

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

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

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

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

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

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

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

Thank you.

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

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

Thank you.

Mr. Smith. Thank you.

Chairman Nunes. Thank you, Mr. Smith.

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

Ms. Ladislaw. A country experiences economic growth --

Chairman Nunes. In order to have economic growth --

Ms. Ladislaw. Uh-huh.

Chairman Nunes. -- do you have an increase or a decrease in the consumption of energy?

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

Chairman Nunes. An increase.

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

Chairman Nunes. Uh-huh.

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

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

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

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

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

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

Chairman Nunes. Ms. Hawley.

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

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

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

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

Chairman Nunes. Mr. Weiss.

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

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

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

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

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

So where you don't have to run your air conditioner and you don't need a lot of heating, it is fairly easy to increase your capacity to consume energy. But inland, where you have high temperatures and low temperatures, it is not real beneficial.

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

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

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

Public Submissions for the Record

Prof. Susan Sakmar