BEFORE THE STATE OF FLORIDA
FLORIDA PUBLIC SERVICE COMMISSION (FL PSC)

BETH M. GORDON,
ARLENE BELL AND FREDDIE BELL,
MIAN J. MATVEJS, and GERTRUDE C. DICKINSON

DOC. 06488-13, 10/28/2013, PAA
ORDER PSC-13-0505-PAA-EI
ON FPL'S PROPOSED
SABAL TRAIL TRANSMISSION, LLC

Petitioners/ Interested Parties,

v.

SABAL TRAIL TRANSMISSION, LLC and
FLORIDA POWER AND LIGHT,

Respondents.
_____/

PETITION FOR FORMAL EVIDENTIARY PROCEEDING BASED ON
DISPUTED ISSUES OF FACT

The undersigned parties, who have substantial interests that will be affected by the agency determination, hereby petition this agency and formally request an evidentiary administrative hearing or proceeding pursuant to Florida Administrative Code 28-106.201 and Florida Statutes Sections120.569(1) and 120.57, and states as follows:

1. Petitioners' Substantial Interests: The Petitioners are interested parties and have substantial interests in the outcome of this proceeding and of the agency's decision or action, to wit: the Petitioners are landowners, peanut farmers, cattle ranchers, sod farmers, and horse breeders, and have received notice that SABAL TRAIL

TRANSMISSION LLC (SABAL TRAIL) will take an easement, fee simple, and/or run a 36 inch pipeline through their properties..

2. The parties: The FL PSC, or FLORIDA PUBLIC SERVICE COMMISSION, is located at "Office of the Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, FL 32399-0850." Petitioner Beth Gordon is a landowner living at 13871 NE 14th Lane Williston, Levy County, Florida, who breeds horses and lives on a farm and has received notice from SABAL TRAIL that a gas pipeline will be run through her property. Petitioners Arlene Bell and Freddie Bell are landowners who farm peanuts and who raise cattle for beef for consumption by the public and who have received notice that SABAL TRAIL will run a gas pipeline through three (or more) of their farms located at 1250 NE 140 Ave Williston, Levy County, Florida; 1200 SE 60th Ave. Williston, Levy County, Florida; and parcel number 0455900000 on County Road 226 and 180th Ave., Williston, Levy County, Florida. Petitioner Mian J. Matvejs who is a sod farmer and who lives in a home in the path of the projected pipeline at 14631 East Levy Street, Levy County, Florida, and who has received notice that the pipeline will run through her property. Gertrude Dickenson is a landowner with a special auditory medical condition who has received notice that the pipeline will run through her property located in Sumter County and who lives at the address: 7963 CR 247 Lake Panasoffkee, Sumter County, FL All of the landowners are very concerned about the safety of this 36 inch methane gas pipeline, its effect upon the aquifer, the potential pollution of the aquifer and the soil with PCBS, and the likely disastrous effects upon our drinking water and agricultural industry here in Florida, given SABAL TRAIL'S parent company, SPECTRA ENERGY'S, demonstrated

history of pollution with cancer causing PCBS, explosions, lack of attention to safety, and record fines levied by the EPA on numerous occasions, in other states.

3. The first notice of this proposed pipeline came in the form of certified letters from Sabal Trail Transmission, LLC, in August of 2013, seeking to survey the Petitioners' land, which is how the Petitioners became aware of the agency's previous decision/ order on or around October of 2013. The letters did not mention the agency's previous decision, but the letters caused the landowners to research the FL-PSC order and they discovered this independently well after it was made. Affected landowners were given no notice of any FL PSC order or decision.

4. There have been no EPA or state environmental impact studies done, and there have been no safety studies done on the potential effects of or dangers posed by this huge (36") methane gas pipeline, buried 3 feet under the sand, or its compression turbine stations every hundred miles, upon Florida agriculture (the peanut crop and the cattle industry), the Florida aquifer and its high water table, or on people who will live in close proximity to the pipeline. Similarly, there have been no environmental studies done that examine the feasibility of such a pipeline given the shifting sands and sinkholes of some areas of Florida. However, we do have evidence of other SPECTRA ENERGY gas pipeline projects, discussed herein.

5. There are numerous issues of disputed material fact, namely:

   a. Whether the methane gas pipeline and its compressor stations and turbines, are safe;

   b. Whether SABAL TRAIL, owned by parent company, SPECTRA ENERGY, has complied with the requirements of Florida Statute 403.9415;

c. If in fact there has been an attempt to comply with the requirements of Florida Statute 403.9415, what efforts have been made, when they were made, and why are the existing utility rights of way not feasible;

d. There are several appropriate existing utility rights of way available for this project, making the current plan to use eminent domain unnecessary. This is a disputed issue of material fact, as SPECTRA and SABAL TRAIL have failed to consider these existing utility rights of way.

e. The Petitioner disputes that full disclosure was made by SPECTRA ENERGY and SABAL TRAIL to the FL PSC, as to its own safety record and ability to perform a safe and usable pipeline which does not pollute the Florida aquifer and the drinking water supply, the soil of the farms it plans to traverse, or potentially pollute the water used for irrigation of Florida's and Levy County's peanut farms, cattle operations, and other agricultural industries that form the basis of Levy County, and of Florida's economy. This is especially important, because the Federal Environmental Protection Agency (EPA) has reported the Texas Eastern Transmission Corp., also run by parent company SPECTRA ENERGY, has agreed to pay the largest federal fine ever for an environmental violation—a $15-million penalty for improper toxic waste operations. The record fine is part of a settlement of civil charges brought against the company for discharging highly toxic PCBs—polychlorinated biphenyls—at 89 sites along a natural gas pipeline running from Texas to New Jersey. Overall, the company is expected to spend $400 million for cleanup activities. This is the same type of pipeline proposed herein. There exists a disputed issue of material fact, to wit, whether SABAL TRAIL has disclosed this record of safety failures and EPA fines, to

the Florida Legislature, and to the Florida public Service Commission, specifically with regard to SABAL TRAIL'S ability to perform safely and competently as stated.

f. As can be seen in the attached EPA filing, Introduction to the 1981 Natural Gas Compliance Monitoring Program, *PCBs can still be used by SABAL TRAIL.* (see attached).

g. SABAL TRAIL has not addressed the issue of the yearly (or more) practice of farmers burning their fields. How would this present a safety hazard over a pipeline? SABAL TRAIL proposes to traverse at least three of Petitioner Bell's farms, which utilize prescribed burns. Furthermore there is no plan regarding the yearly and substantial forest fires in and around the Goethe State Forest, which has experienced both prescribed burns and forest fires on a regular basis. SABAL TRAIL has also not addressed the issue of numerous lime rock quarries that blast with dynamite regularly, or how that would affect this pressurized methane gas pipeline.

h. SABAL TRAIL has claimed they can safely *move* the threatened species, the Florida Gopher Tortoise (On the Florida Endangered Species list, classified as Threatened by Florida Fish and Wildlife, and currently a candidate species for possible listing under the Federal Endangered Species Act), many of which have burrows along the 100 foot wide clear-cut portion of the 600 foot pipeline easement. The ability to move these creatures is disputed: The Florida Fish and Wildlife Commission finds that it is NOT possible to safely move a tortoise and so state in their literature and on their web site. No studies have been done to determine the impact the methane pipeline and its proposed north-south 100 foot clear-cut will have upon this animal or other endangered species. The Sherman Fox Squirrel, also an endangered species, also lives

in the area of the proposed pipeline. No studies have been done to determine the impact the methane pipeline and its proposed north-south 100 foot clear-cut will have upon this animal or other endangered species. Furthermore the Eastern Indigo Snake resides in the area of the proposed pipeline and trenching activities. Eastern indigo snakes are protected by The United States Fish and Wildlife Service (FWS) and the Florida Fish and Wildlife Conservation Commission (FWC) under the Endangered Species Act and Chapter 39, Florida Administrative Code, respectively. The Eastern indigo snake has been listed as Threatened since 1971 by the state of Florida and since 1978 by the FWS. This protection makes it illegal to possess, harm, or harass Eastern indigo snakes. No studies have been done to determine the impact the methane pipeline and its proposed north-south 100 foot clear-cut will have upon this animal or other endangered species.

4. ULTIMATE FACTS ALLEGED- SPECIFIC FACTS THAT WARRANT REVERSAL OR MODIFICATION OF THE AGENCY'S PROPOSED ACTION:

a. It is undisputed that there have been no EPA or Florida DEP environmental impact studies done to access the impact of this pipeline on the various ecosystems in Florida it will affect. The undersigned landowners whose substantial interests are affected by this pipeline, and who therefore have standing to file this petition for a formal proceeding, hereby demand that this agency commission studies, or refer the issue to the Florida Department of Environmental Protection to commission studies, to access the environmental impact upon the following: the Florida Aquifer and potential for poisoning the water, the potential for soil poisoning with PCBS, the potential for catastrophic failure due to fire, blasting, and sinkhole activity, and the effect upon the

Florida Gopher Tortoise, the Sherman Fox Squirrel, the Eastern Indigo Snake, and other endangered or threatened species that live in the path of the proposed pipeline and trenching activities..

b. SPECTRA energy, SABAL TRAIL'S parent corporation, has been fined a record breaking $15,000,000 in 1989 by the EPA for a natural gas pipeline they constructed under the name of "Texas Eastern Transmission, LP. In 1981, the use of PCBs at greater than 50 ppm in a non-totally enclosed manner was prohibited by 40 CFR §761.20(a). Neither SABAL TRAIL nor its parent corporation, SPECTRA ENERGY, can guarantee, that they will construct a pipeline without cracks, corrosion, or other leakage of Methane gas, PCBS, and other contaminants. They have not explained why PCBC have leaked from, on or around their natural gas pipelines, the turbines used in the pipeline, or discussed same with the Florida legislature or with the Florida Public Service Commission. SABAL TRAIL will be constructed the same way as SPECTRA'S other pipelines, and if the same thing happens, it is likely to have a catastrophic effect not only on the individual affected landowners but may destroy the Florida Aquifer. Most of our drinking water here in North Central Florida comes from wells a mere 100 feet under the ground which are vulnerable to pollution such as has already been proven in a previous SPECTRA ENERGY gas pipeline project. Texas Eastern Transmission, LP, another of SPECTRA ENERGY'S companies just like SABAL TRAIL LLC, has completed all requirements of a 1989 federal consent decree regarding polychlorinated biphenyl (PCB) contamination at numerous sites along the firm's 9,000 mile natural gas distribution pipeline in 14 states. The decade-plus effort cost an estimated $500 million to assess 462 sites for contamination, install 707 groundwater monitoring wells, and remove and

dispose approximately 600,000 tons of contaminated soil. Also under the consent decree, Texas Eastern agreed to pay a $15 million civil penalty and oversight costs between $14-$18 million and contribute $1.1 million to the Superfund Trust Fund. Classified as a possible human carcinogen, PCB production was banned in the United States in 1977. Texas Eastern used PCBs in its compressors as a fire retardant. Over time, the PCBs and other hazardous materials leaked into the pipeline system and contaminated the existing pipeline condensate/liquid. The 1989 consent decree required soil cleanup at 57 compressor stations and 139 facility locations along the pipeline, and groundwater sampling at 76 sites. Soil cleanup was completed in 1998 and groundwater sampling in 2001. These facts alone warrant reversal of this agency's proposed action, until such time that studies are done to endure the safety of the pipeline and the competency of those who have been chosen to install it.

b. SABAL TRAIL has not addressed what the lime rock quarry blasting, that breaks windows of homes nearby the proposed pipeline, would do to its pipeline. The blasting would put the pipeline at risk of rupture and explosion every day. There have been no tests or surveys done to determine the danger, which is evident.

c. SABAL TRAIL has not addressed how it would fortify the pipeline against the inevitable sinkholes that are common in Levy County and south of Levy County in north and central Florida, or how or if it would check for sinkholes both pre- and post-installation.

d. SPECTRA ENERGY and /or/ d/b/a SABAL TRAIL TRANSMISSION, LLC, is unfit to build a 36 inch gas pipeline under 1200 PSI, through the state of Florida, given

SPECTRA'S demonstrated poor safety record, in addition to the gas pipeline pollution disaster described in paragraph 4-a above:

1. Just this last December, the Pipeline Hazardous Materials Safety Administration (PHMSA), issued SPECTRA ENERGY CEO Greg Ebel a "Final Order" and civil penalty of $134,500 related to various violations across several states. Included in this Order, the company was cited for failure regarding valve inspections. PHMSA said the company failed to follow its own Standard Operating Procedure (SOP) 5-5010, *Valve Inspection and Maintenance*, which requires annual valve inspections, but at least at intervals not exceeding 15 months, "for valves that might be required during an emergency." The Notice alleged that between 2008 and 2011, multiple valves at Spectra Energy's pipeline division (Texas Eastern) facilities in Texas, Louisiana, and Arkansas had not been partially operated as part of the annual inspections.

Why is Florida entrusting this same company with the safety of its people, its water, and its agriculture industry? This agency must seek further review of SPECTRA ENERGY and its company, SABAL TRAIL TRANSMISSION, LLC, prior to entrusting them with the safety of Florida's people, aquifer, unique animals, and agricultural industry.

2.. **SABAL TRAIL PLANS TO CONTINUE USING PCBS** which can and will leak into our environment, spreading to our water table, our peanut crop and cattle and therefore into the American stream of commerce. **PCB Contamination (PolyChlorinated Biphenyls)** – Spectra Energy acknowledges in its Form 10-K (filed with the Securities and Exchange Commission *on Feb. 27, 2012*) that *highly toxic PCBs*

remain in its pipeline system(emphasis added): "The Toxic Substances Control Act, which requires that polychlorinated biphenyl (PCB) contaminated materials be managed in accordance with a comprehensive regulatory regime. Because of the historical use of lubricating oils containing PCBs, *the internal surfaces of some of our pipeline systems are contaminated with PCBs*, and liquids and other materials removed from these pipelines must be managed in compliance with such regulations." This is located at p. 23 of SPECTRA ENERGY'S 10-K filing, under the subhead, "Environmental Matters." SPECTRA'S intended use of chemical lubricants containing PCBS here in Florida, warrants reversal pending environmental impact studies.

3. **Underground Natural Gas Reservoir Explosions** – SPECTRA ENERGY'S underground natural gas storage reservoir outside of Houston (Moss Bluff) experienced catastrophic failure in 2004 with two explosions, *6 1/2 days of fire* and two evacuations. An estimated 6 bcf of natural gas was consumed during the fire. SPECTRA and SABAL TRAIL has not demonstrated a track record of safety.

4. **"Unlawful Conduct" at Steckman Ridge**– The Pennsylvania Department of Environmental Protection (DEP) issued two Notices of Violation in 2009 for Spectra Energy's "unlawful conduct" during the first year of operation at its Steckman Ridge compressor station in Clearville (Bedford County), PA. Spectra Energy's "unlawful conduct" violated air quality and clean stream regulations of the Pennsylvania Code, according to the Pennsylvania DEP. SPECTRA and SABAL TRAIL have not demonstrated the ability to comply with other states' laws, let alone Florida environmental regulations and the decision should be reversed for this reason alone.

5. Abusive and Unethical Behavior towards Landowners– Spectra Energy has filed a 32-page report with the Federal Energy Regulatory Commission (FERC) exonerating itself regarding numerous complaints about abusive and unethical behavior toward landowners as part of its 12 billion-cubic-feet underground gas storage reservoir in Clearville, PA, known as Steckman Ridge. SPECTRA claimed, "There is no evidence of willful 'lying' by any Project Representative to landowners."

6. SPECTRA and SABAL TRAIL plan to use the *least safe* method of burying *this* pipeline here in Florida, where on other projects where safety is demanded by an educated public, they have used better, safer methods. The fact that the safer methods have been used by SPECTRA in New Jersey and New York is proof of their feasibility: A 20-mile expansion of the Company's Texas Eastern Transmission and Algonquin Gas Transmission interstate pipeline systems," would bring natural gas across the Hudson River from New Jersey to lower Manhattan, delivering the fuel to NYC and surrounding counties. The company proposing the pipeline is Spectra Energy, a spin-off of Duke Energy that proclaims to be "committed to making sustainable choices." *That* pipeline, according to SPECTRA, will "be constructed within public roadways and commercial/industrial areas and parallel to *existing utility rights-of-way*." Installation of the pipeline will use a technique called Horizontal Directional Drilling (HDD), "an efficient subsurface method of installing pipelines without using traditional trenching methods, helping to avoid any unnecessary impacts to the surface and providing an additional layer of safety due to the depth of the pipe. " Here in Florida however, SPECTRA/ SABAL TRAIL has failed to use public roadways and existing utility rights of way, ignoring the statute where it is clearly not only feasible but preferable to the

public. SPECTRA and SABAL TRAIL has therefore misrepresented the feasibility of using existing rights of way in Florida, and the violation of Florida law which requires them to use existing rights of way, warrants reversal for this reason alone.

The Petitioners are concerned and question why *Florida* was not accorded an additional layer of safety? It is not- SPECTRA and SABAL TRAIL plan on burying the pipeline 3 feet under the sand. It is feasible to give us more protection, as evidenced above. The project and the decision of this agency should be reversed until such time that this safety issue, or lack thereof, can be studied.

7. The technology does not yet exist to make this 36" pipeline, with its compression stations and turbines and PCB chemicals, carrying methane gas under 1200 psi, safe for the aquifer, Florida agriculture, or the people of Florida, in general.

8. Finally, the conclusions set forth in the Order of this Agency SPECTRA ENERGY'S goal is not to benefit the people of Florida, but to benefit and position itself to sell the natural gas in liquefied form to overseas markets-not, as it stated to this commission, to benefit the people of the state of Florida. In fact, there are two permitted and as yet to be completed plants that can liquefy the natural gas so it can be sold to the foreign market and shipped overseas. In 2011, Port Dolphin Energy, LLC received environmental permits from the State of Florida to allow construction of onsite components for its offshore LNG terminal. The unloading facility will be located 28 miles southwest of Tampa Bay. A second company, Eagle LNG Partners, the new consortium of Clean Energy, GE Ventures, GE Energy Financial Services and Ferus Natural Gas Fuels is

buying land in Jacksonville, Fla. to build a liquefied natural gas plant. These two plants are being built lockstep with the SABAL TRAIL pipeline project.

On April 25th, 2013, a United States Congress Subcommittee held a hearing on "Natural Gas Exports: Economic and Geopolitical Opportunities." (see attached) It is clear that the American natural gas companies aim to sell natural gas abroad, and soon. Neither SABAL TRAIL nor Florida Power and Light is guaranteeing that the pipeline will be used for supplying Floridians with natural gas (in fact, the pipeline is *bypassing* most Floridians whose land it will traverse) and that it will not sell the gas overseas. As such, the Commission must determine if the pipeline is in the interest of the state of Florida, to provide electricity for its citizens, or if it is in the interest of SPECTRA ENERGY to sell this fuel overseas.

RELIEF SOUGHT

1. The Petitioners wish to avoid the pollution of our Florida aquifer and soils with cancer causing chemicals, an inevitable result previously demonstrated by this company in identical projects in other states, and to continue to enjoy our farms, homes, and the unique Florida wildlife, free of the fear of catastrophic failure of the gas pipeline with inevitable loss of life. Petitioners respectfully request a formal evidentiary hearing so that these disputed facts can be presented to the commission, and also respectfully request that the FL PSC refer this matter to the Florida Department of Environmental Protection for further studies on the effects of the methane gas pipeline on the environment, specifically the water and soil, and its ultimate effect upon Florida endangered and

threatened species and agriculture given the safety and environmental record of SPECTRA ENERGY, the parent corporation of SABAL TRAIL, in the recent past in other states. Finally, Petitioners seek assurance that in fact this pipeline will primarily benefit the people of the state of Florida, and will not be used to transport natural gas for export to the foreign market.

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Petition was filed via FED-EX Overnight Delivery this 14 day of November, 2013, to the following addressee: The FL PSC, or FLORIDA PUBLIC SERVICE COMMISSION at "Office of the Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, FL 32399-0850."

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http://www.epa.gov/wastes/hazard/tsd/pcbs/pubs/cmpintro.htm
Last updated on 1/31/2013

Polychlorinated Biphenyls (PCBs)

Introduction to the 1981 Natural Gas Compliance Monitoring Program

EPA has been working to bring the natural gas pipeline sector into compliance with the environmental laws since January 1981, when PCBs were discovered in pipeline liquids in Long Island, NY. Consequently, EPA, the states and industry formed a cooperative task force to address this problem. Extensive sampling of pipeline transmission liquids revealed that 13 major natural gas transmission companies had PCB contamination greater than 50 PPM in their transmission lines. In late 1981, EPA instituted a Compliance Monitoring Program ("CMP") for the 13 companies. At that time, the use of PCBs at greater than 50 ppm constituted the use of PCBs in a non-totally enclosed manner, which was prohibited by 40 CFR §761.20(a). EPA decided that it would not bring enforcement actions against such companies for the improper use of PCBs as long as they participated in EPA's CMP and undertook measures to reduce PCBs in their pipeline systems.

The 13 CMP companies were required to comply with all other aspects of the PCB rule and other applicable laws and regulations. In other words, the 1981 CMP allowed the use of PCBs in natural gas transmission lines subject to certain conditions, including the proper disposal of PCB wastes and compliance with applicable federal and state laws. The 1981 CMP did not immunize any of the participating companies from enforcement if violations were discovered. The 1981 CMP has not prevented EPA from taking judicial or administrative enforcement actions against other participating companies, such as Texas Eastern Gas Pipeline Company, Transwestern Gas Pipeline Company, Tennessee Gas Pipeline Company, Columbia Gas Pipeline Corporation and Transcontinental Gas Pipeline Company . In addition, several states have taken enforcement actions against companies participating in the CMP.

The CMP was revised in 1996 for the ten remaining companies still participating in the program. A detailed description of the 1981 and 1996 revised CMP was sent to the Regions on December 24, 1996. Under the revised CMP, each participating company was required to submit their Annual "PCB Condensate" Compliance Monitoring Report to EPA by June 15th of each year.

Promulgation of 1998 PCB disposal amendments terminated the 1996 PCB CMP. The 1998 rule revised the use authorization for natural gas pipelines at 40 CFR Part 761.30(i) to permit the use of PCBs in natural gas pipelines at greater than 50 ppm under certain conditions.

NATURAL GAS EXPORTS: ECONOMIC AND GEOPOLITICAL OPPORTUNITIES

HEARING

BEFORE THE

SUBCOMMITTEE ON TERRORISM, NONPROLIFERATION, AND TRADE

OF THE

COMMITTEE ON FOREIGN AFFAIRS

HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

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C O N T E N T S

LETTERS, STATEMENTS, ETC., SUBMITTED FOR THE HEARING

APPENDIX

NATURAL GAS EXPORTS: ECONOMIC AND GEOPOLITICAL OPPORTUNITIES

THURSDAY, APRIL 25, 2013

House of Representatives,

Subcommittee on Terrorism, Nonproliferation, and Trade,

Committee on Foreign Affairs,

Washington, DC.

The subcommittee met, pursuant to notice, at 2:13 p.m. in room 2200, Rayburn House Office Building, Hon. Ted Poe (chairman of the subcommittee) presiding.

Mr. Poe. The subcommittee will come to order. Without objection, all members may have 5 days to submit statements, questions, extraneous materials, for the record, subject to the length limitation in the rules.

Five years ago, companies were building terminals to import natural gas at the cost of billions of dollars because analysts agreed that the United States' economy was going to need natural gas from overseas. Today, that scenario has changed 180 percent. Import terminals lie dormant. The Department of Energy has 19 applications waiting to get permission to export natural gas. Thanks to breakthroughs, the United States' natural gas reserves have climbed 72 percent since 2000 and 49 percent since 2005. The amount of natural gas that is technically recoverable in the United States is 97 times greater than all of the natural gas we consumed in 2011. In plain terms, this means we have an abundance of natural gas that we are not using. It is just sitting there, and this is really not smart

policy, or smart business.

A big reason why is the Department of Energy. The Department of Energy has not approved an application to export to a country we don't have a Free Trade Agreement with in 2 years. When the DOE says you can't export, that floods the domestic market with natural gas because producers have no place to sell it. Prices domestically have now dropped so low that it just isn't worth it for producers to even pull any more natural gas out of the ground.

So we have recoverable natural gas that is unused because the government refuses to let it be produced. Let me give you an example. There is one company that has a permit pending with the DOE for 2 years. If the DOE would give the green light, the company would immediately create 3,000 new construction jobs, 20,000 to 30,000 more jobs would also be created for exploration, drilling, and pipe laying. In all, the economy would see an infusion of $10 billion from the project alone. Jobs are important and it is important that the government understand that we should move forward with jobs in this industry.

It is not just one project; there are others like this one project that can't get started. No matter what economic study someone looks at, even those commissioned by the DOE, the result of opening up our natural gas exports is an economic gain for the United States. Real income and the GDP will all rise. More exports would be a big gain for our business sector; 91 percent of firms in the oil and gas extraction industry have fewer than 20 employees. Many family-owned small businesses really can't wait for 2 years for the Department of Energy to approve a permit. They really don't have that kind of flexibility or money. So the longer the process takes, the harder it is on mom-and-pop companies to survive.

In Europe, countries who rely on natural gas have been held hostage by the Russian energy company, Gazprom. Our friends in Poland, Hungary, and the Czech Republic know this better than anyone. Cheap U.S. natural gas exports would reduce the Russian stranglehold on the European market and give the U.S. more political clout at the expense of Russia. In the Pacific, allies like Japan and Korea pay very high prices for natural gas. They would be immediate importers of cheaper U.S. natural gas if we were allowed to sell it to them.

Perhaps more than anyone, our friends in India have been the most vocal. The current Indian Ambassador to the United States recently wrote in a Wall Street Journal op ed that U.S. natural gas exports to India, ``would provide a steady, reliable supply of clean energy that would help reduce [India's] crude oil imports from the Middle East and provide reliable energy to [India].''

Without U.S. natural gas, the Indians might have to participate in the Iran, Pakistan gas pipeline. We have given the Indians a reasonable alternative. We should use it. Liberalizing our natural gas export policy will provide certainty to allies and economic partners around the world that the United States is an advocate of free trade.

On a side note, we have the problem with the World Trade Organization. The WTO punishes countries that limit exports to keep their own domestic prices down. The U.S. has a World Trade

Organization case against China for doing exactly that with its rare-earth minerals. But here the DOE is limiting our own natural gas exports. If this policy continues, there is a possibility we could be sanctioned by the WTO and our entire trade regime could be hurt.

So the DOE should let the free market work and approve pending applications. The U.S. has the best technology and the safest technology in the world, but our competitors with their own natural resources, like China, are catching up.

The purpose of this hearing is to explore natural gas exports from the United States to other nations.

And now, I will yield to the ranking member, Mr. Sherman from California, for his opening statement.

Mr. Sherman. Thank you, Mr. Chairman. I commend you for holding these hearings. Ordinarily, people don't think natural gas is a focus of the Foreign Affairs Committee, let alone this subcommittee. But the fact is that while the Ways and Means Committee is the primary committee to deal with imports and taxation thereof, it is our committee that has primary jurisdiction over exports, export promotion, and export control. It is interesting that the private sector invested billions in building terminals to import liquefied natural gas and now wants to retool them to export. And it is clear that the price as structured now justifies that. My fear if I was an investor, and I am not, is that by the time we are ready to export, we will have already exported our fracking technology, which we are exporting now, and there will be discoveries of natural gas on the Eurasian landmass that will allow the piping of natural gas to the very people that anticipate buying our liquefied natural gas.

Whether to develop in full our natural gas resources, and whether to export natural gas brings up environmental, national security, and economic concerns. From a national security standpoint, I am particularly interested in vehicle propulsion. Vehicle propulsion is the domain of petroleum worldwide, and it is our dependence on petroleum imports and the world's dependence on petroleum imports that determines much of foreign policy around the world. Right now you can get twice as many miles per dollar with a natural gas vehicle as with a petroleum-based vehicle. If we start exporting natural gas that may change. We may need to have a huge differential between the price of natural gas and the price of gasoline in order to encourage use of natural gas to propel trucks and perhaps even cars.

On the other hand, it is in our national security interest as the chairman points out, to provide secure natural gas supplies for our allies and to prevent India from turning to Iran for a natural gas pipeline.

As to economics, there are jobs involved in developing the infrastructure to export our natural gas. There are also jobs involved in our manufacturers and our petrochemical companies having cheaper natural gas than anyone else. Many countries with a valuable export deliberately prevent the export of the raw material in order to give the processing jobs and the use of that raw material jobs to their domestic market. In addition, we are currently exporting coal. So if we start exporting natural gas, we will be burning more of our own coal,

and if we choose not to, will we simply be exporting more of our own coal?

As to the environmental side, natural gas is the best fossil fuel, which may--environmental-wise, not be a particular compliment. But to the extent that we don't develop our natural gas resources, or that we export them, will we be burning more coal? How will that count against us in the international calculations of carbon emissions, and eliminate our efforts or deter our efforts to be able to get other countries to stop exporting. I believe my time is expired, but if I can go on for a little bit longer, I hope.

Mr. Poe. The gentleman is recognized for a little bit longer.

Mr. Sherman. Okay, thank you. So, and finally on the economic side, we have consumers. The only thing my constituents will understand about these hearings after they get point and counterpoint is that their natural gas bills are lower now than they used to be and they would like to keep it that way.

We want to find out what is the expense of shipping natural gas compared to shipping coal because they are usable by the customer for the same purpose. We will want to focus on what advantages our manufacturers and petrochemical companies will have if they can pay half for natural gas what other people are paying or less than half. So it cannot be said that we are here to make sure that there are jobs in one industry without hearing what jobs might be available through another process.

With that, I think my little bit longer has been exhausted and I yield back.

Mr. Poe. I now recognize the vice chair of this subcommittee, the gentleman from Illinois, Mr. Kinzinger.

Mr. Kinzinger. Thank you, Mr. Chairman, and thank you for holding this important hearing on gas exports. Since the 1930s, we have exported natural gas via a pipeline to Canada and Mexico, and more recently, starting in 1969, the U.S. began exporting natural gas to Japan, at that time a non-free trade agreement country from the Kenai Peninsula in Alaska.

However, given this history of exporting natural gas, the Department of Energy has only granted a single permit to export liquefied natural gas to another non-FTA while approximately 20 remaining LNG export applications remain in limbo. What would approval of these 20 remaining LNG export applications mean for the American economy? I believe that the answer is somewhat simple. It means American jobs. The majority of the economic studies analyzing a wide range of scenarios found increased LNG exports would produce a net economic gain to the U.S. economy, resulting in an increase in U.S. households' real income. At a time when the economy continues to struggle, we need to support policies that encourage domestic job growth.

I do want to, however, say a note of caution. I represent an area of heavy manufacturing, and especially in the Rockford area in Illinois. We have a lot of manufacturing, and cheap energy has actually been very effective in bringing manufacturing back to the United States and making us competitive with the rest of the world. A question that I do legitimately want answered is, what will exporting natural gas do to natural gas prices here at home because I fear that a

skyrocket in domestic natural gas prices would, in fact, lead to a hurt in the manufacturing sector as energy prices skyrocket again.

But that said, the Department of Energy concludes that for every one of these market scenarios examined, net economic benefits increase as the level of LNG exports increase. And I am interested in hearing from our panel about the impact increased LNG exports will have on our national security interest around the world. LNG exports ought to support our allies, and I believe they could provide an important alternative to Middle Eastern or Russian competition that currently dominates the market.

And thank you, chairman, I yield back.

Mr. Poe. Anyone else wish to make an opening statement? Without objection, all of the witnesses' prepared statements will be made part of the record. I ask each witness to keep your presentation to 5 minutes, so that we can move along in this process and have questions and answers.

I will introduce each of the witnesses at this time, and then we will have the witnesses' opening statements.

Mr. Rob Bryngelson is the president and chief executive officer of Excelerate Energy in The Woodlands, Texas. Before helping found Excelerate Energy he worked as managing director in El Paso Corporation's Global LNG Group where he was responsible for LNG infrastructure development, supply, procurement, and downstream marketing for North America. Dr. David Montgomery is a senior vice president at NERA Economic Consulting, and helped lead the study that the DOE commissioned on the economic impact of LNG exports. Prior to NERA, Dr. Montgomery held a number of senior positions in the United States Government, including Assistance Director of the United States Congressional Budget Office, and Deputy Assistant Secretary for Policy in the U.S. Department of Energy during the Carter administration. Dr. Michael Levi is the David Rubenstein senior fellow for Energy and the Environment at the Council on Foreign Relations, and director of the CFR program on Energy Security and Climate Change. Before joining CFR, Dr. Levi was a fellow at the Brookings Institution and director of the Federation of American Scientists Strategic Security Project. Mr. David Mallino is the legislative director at the Laborers International Union of North America. He previously worked for the American Federation of Labor, Congress of Industrial Organizations, and National Environmental Education and Training Center. And Mr. Michael Ratner is a specialist in energy policy at the Congressional Research Service focusing on natural gas and all markets. His recent CRS work has addressed U.S. LNG exports and U.S. natural gas demand and prior to joining CRS, Mr. Ratner was a senior energy analyst at the Central Intelligence Agency.

Mr. Bryngelson, we will start with you. You have 5 minutes.

STATEMENT OF MR. ROB BRYNGELSON, CHIEF EXECUTIVE OFFICER, EXCELERATE ENERGY

Mr. Bryngelson. Thank you, Chairman Poe, Ranking Member Sherman, members of the subcommittee. My name is Rob Bryngelson. I am the president and CEO of Excelerate Energy. I

appreciate the opportunity to appear before the subcommittee today to share Excelerate's views on the current status of the natural gas industry relating specifically to liquefied natural gas exports, the positive impacts both to Texas and the Nation associated with LNG exports, and finally, Excelerate's views on the Department of Energy approval processing to export LNG.

I have submitted more extensive written testimony for the record, therefore, I will use this time to summarize a few key points. Excelerate Energy was established in 2003 and is based in the Woodlands, Texas. We are the world's largest provider of floating storage and regasification vessels, and are engaged in the development, construction, and operation of liquefied natural gas, transportation and regasification infrastructure worldwide.

In 2009, Excelerate initiated front-end engineering design efforts to construct the world's first floating liquefaction, storage, and offloading unit capable of taking U.S. domestically-produced natural gas and processing it into LNG for export. The project is referred to as the Lavaca Bay LNG project, and will be located in Calhoun County along the Texas Gulf Coast.

U.S. residential, commercial, and industrial consumption is not expected to increase quickly enough to offset the growth of natural gas production which has led to projections of sustained low prices in the U.S. rapid growth in U.S. natural gas production has driven gas prices to historically low levels, resulting in decreased investment by the natural gas industry, and a reduction in associated economic activity. It is our belief that exporting domestically produced LNG will meaningfully contribute to the public interest in a variety of ways including creating more jobs, greater tax revenues, and increased economic activity; introducing new competitive supplies into world gas markets leading to improved economies among America's trading partners and providing better opportunities for U.S. products and services abroad; promoting greater national security through a larger role in international energy markets; increasing production capacity that will better adjust to varying domestic demand scenarios; reducing the volatility of domestic natural gas prices; and improving the U.S. balance of payments by between $2.4 billion and $4.4 billion annually per project through the export of natural gas and the displacement of imports of other petroleum liquids.

On October 28, 2012, Excelerate filed its application with the Department of Energy for the export of LNG to non-free trade agreement countries. Excelerate remains in the queue with 18 other companies awaiting DOE approval. In its non-FTA application to DOE, Excelerate included two independent economic studies focused on the specific project area and the U.S. as a whole. The independent studies concluded that the project would have a positive impact on the region surrounding the project site comprising Calhoun and Jackson Counties as well as on Texas as a whole and the Nation.

After receiving approval from the FERC to proceed, Excelerate will begin the nearly 4-year construction process to complete Phase I of the Lavaca Bay LNG project. The construction and operation of the project will stimulate local,

regional, and national economies through job creation, increased economic activity, and tax revenues. Much of the technology, equipment, and material needed to construct the project will be obtained domestically. I have included in my written testimony specific data concerning jobs, tax revenue, and other key benefits of the project.

DOE is required to authorize exports to a foreign country unless there is a finding that such exports will not be consistent with the public interest. We concur with the DOE policy guidelines which emphasize free market principles and promote limited government involvement in Federal natural gas regulation. Previously, other issues considered in making the public interest determination have included local interests, international effects, and the environment.

Excelerate's primary concern is the timing of such non-free trade approvals. As you are aware, there are a multitude of projects around the world offering LNG supplies that are competing with the U.S.; specifically, Australia, East Africa, and the Eastern Mediterranean.

Further delays are likely to result in buyers concluding that other potential LNG sources provide greater certainty and the focus on U.S. exports will diminish. This would be a considerable economic loss for our Nation. In addition, with only authorization to sell to free trade nations, we are limiting the potential pool of potential customers. As one would expect, with a limited customer base, those volumes of natural gas liquefied and exported will see lower prices than if a more expanded pool of purchasers were available.

In conclusion, the overall outlook for domestic natural gas production is promising. Without a significant increase in U.S. residential, commercial, and industrial demand, the current rate of consumption is not enough to offset growth and production, and may contribute to artificially low prices for natural gas in the U.S. This rapid growth without increased demand is already resulting in decreased investment by the natural gas industry and a reduction in associated economic activity.

It is crucial that DOE move expeditiously to act on the pending export applications before other countries lock up customers with their own exports and the U.S. loses this opportunity.

Thank you again for allowing me the opportunity to appear before the subcommittee today, and I look forward to answering any questions that you may have.

Mr. Poe. Thank you.

[The prepared statement of Mr. Bryngelson follows:]

Mr. Poe. Dr. Montgomery, you have 5 minutes, please.

STATEMENT OF W. DAVID MONTGOMERY, PH.D., SENIOR VICE PRESIDENT, NATIONAL ECONOMIC RESEARCH ASSOCIATES

Mr. Montgomery. Thank you, Mr. Chairman. I am honored by your invitation to appear before the committee today. My name is David Montgomery, and I am the senior vice president of NERA Economic Consulting, and I would like to start by stating that I am speaking on my own behalf today.

Mr. Poe. Is your microphone on, Dr. Montgomery?

Mr. Montgomery. It is not, thank you. I am sorry. I am senior vice president of NERA Economic Consulting, and I would like to start by stating that I am speaking on my own behalf as an expert on the issues being discussed by the committee today, and not representing positions taken by my employer NERA, and I am certainly not speaking for the Department of Energy.

I would like to begin with a quick summary of the key findings of our study that we did for the Department of Energy, and I will talk about economic principles and not numbers at this point. Then I will address some of the controversies that have arisen since the study was issued, and then I would like to conclude with a few observations on geopolitical effects of LNG exports.

In the study we did for the Department of Energy, we examined a wide range of scenarios for export levels. We had

different assumptions in these scenarios about the costs and availability of natural gas in the United States, and also on levels of global demand, and the supply from competing sources in the world market. We found that in some cases the U.S. might not export gas at all, as Mr. Sherman suspected. But in those cases, allowing exports had no effect; they did no harm and did no good.

In all of the scenarios in which the U.S. did export, we found that there were net benefits to the U.S. economy from those exports. The larger the exports were, the greater the benefits were. Limiting exports never produced greater benefits in any of the scenarios we looked at than unlimited exports. This shouldn't be surprising or controversial. It is exactly what the basic principle of comparative advantage that underlies all of international trade theory says will happen. All countries are better off when they specialize in exporting what they are good at, rather, what they are better at, and importing what others are better at producing.

We wanted to be sure of our ground. We asked one of the leading trade economists in the country, Professor James Markusen at the University of Colorado, to advise us on this work and to review the study. He concurred in these conclusions as did studies that were released by the Brookings Institution, and by Rice University. They all apply essentially the same principles of international trade theory and reached the same conclusion about net benefits.

Another way of putting this is that the advent of shale gas creates a new opportunity, and it changes the nature of the United States' comparative advantage in trade. That produces some changes in patterns of imports and exports and industry outlook. But we have never found that shutting off opportunities or preventing change increases national wealth. It works the other way around.

So let me talk a little bit about prices. Since the world won't buy gas from the United States if it costs more than the natural gas that they can get from other sources, there are limits on how large the price increase caused by LNG exports could be. In most of the scenarios that we looked at, U.S. prices increased by about $0.50 and that is looking out to, say, 2025 and it is on a base forecast of $6 of what natural gas prices would go back up to even if we had no LNG exports.

In some cases, at most, we had $1 as the increase in cost that would be attributable to gas exports. In other words, with abundant gas, we can supply ourselves and export gas, and with limited supplies of gas, we can't do either. But even with the largest price increases, U.S. energy-intensive industries will still be getting natural gas for half the cost of their competitors in natural gas-importing industries. That is because the cost of moving gas from where it is produced in the United States to where it is burned in countries like Japan, Korea, China, or even Europe, just about doubles the U.S. wellhead price. So I mentioned some of the importing countries.

I can't believe that the U.S. chemicals industries, for example, is so inefficient that it can't survive if these competitors are still paying twice as much for natural gas as it is even after we are exporting natural gas. U.S. energy-intensive industries no matter what we export of LNG will still

be getting natural gas at perhaps half the cost of the competitors that we worry about, like China, Europe, and Japan.

Overall, the benefits of LNG exports that we found in our study were clear, but they weren't large. And this is instructive. The U.S. is not going to become a one-crop economy. Natural gas is not a large part of the U.S. economy. Natural gas exports won't be a large part of U.S. exports. And I think this is helpful in understanding that the U.S. is not going to become a country like a small African country that is exporting copper and is swung back and forth by commodity markets. This is one part of a large portfolio. Let me see, I am running very short on time, so let me make several other points I would like to cover.

Mr. Poe. Dr. Montgomery, if you would, summarize and then end your statement and then we will file your statement with the record. We have some questions for you, too.

Mr. Montgomery. I will, yeah. I agree with the chairman, LNG exports will help our friends and limit Russia's ability to extract higher prices. I think they will distribute to nonproliferation goals as well as energy security because of the countries like India that need the exports. I don't believe the LNG exports will increase local CO2 emissions. If the gas is burned elsewhere, it will substitute for coal and it is pretty much awash. But mainly my points is, limits will be self-defeating. Free trade areas will receive gas. Canada is a free trade area. If we have abundant gas and don't export it ourselves as LNG, it will move to Canada, and that gas will displace Canadian gas which then can be exported. We will suffer all of the costs of exporting natural gas and get none of the benefits of selling it at the high price as a nation. Thank you, Mr. Chairman, I appreciate your indulgence.

Mr. Poe. Thank you, Dr. Montgomery.

[The prepared statement of Mr. Montgomery follows:]

Mr. Poe. Dr. Levi.

STATEMENT OF MICHAEL A. LEVI, PH.D., DIRECTOR, PROGRAM ON ENERGY SECURITY AND CLIMATE CHANGE, COUNCIL ON FOREIGN RELATIONS

Mr. Levi. Chairman Poe, Ranking Member Sherman, members of the subcommittee, thank you for inviting me to speak with you about the geopolitical implications of U.S. LNG exports. As you know, in order to export LNG to countries with which the United States does not have a special Free Trade Agreement, companies must be granted permits by the Department of Energy. Approving some or all of those permits would benefit U.S. economic and security relationships. The United States has long been a promoter of open international energy markets as a way of separating commerce from diplomatic intrigue. In particular, in recent years it has challenged Chinese restrictions on exports of various raw materials at the World Trade Organization. A U.S. decision to disallow LNG exports would undermine Washington's strength when challenging Beijing and when promoting open markets more generally.

Some have gone further and argued that the United States should abolish even the current permitting process for LNG exports. Doing this, however, would remove valuable U.S. leverage in international trade negotiations. Maintaining some limited uncertainty about U.S. openness to exports, does create useful incentives for other countries to enter Free Trade Agreements with the United States.

Now, what would actually happen if the Department of Energy approved a substantial number of export permits? It is entirely possible that few or no export facilities would ultimately be built and used. Export facilities cost several billion dollars each and take years to build, and their economics only work if gas prices stay well below overseas ones. Many analysts, nonetheless, project that small but nontrivial volumes of U.S. natural gas will be exported. Those exports would give large LNG buyers, including Korea, Japan, and India, an alternative to Middle Eastern and other producers for part of their supplies. That would provide those countries some leverage in negotiations with the traditional suppliers, who have long insisted on rigid contracts that link the price of natural gas

to the price of oil and that entangled gas trade with international relations as a result.

It would also provide them with some protection from economic damage that can result from volatile prices. It is unlikely, however, that U.S. LNG exports alone will fundamentally transform the highly politicized world of natural gas trade.

The prospect of U.S. LNG exports would also help Europe maintain leverage against Russia, even if, as it appears likely, little U.S. natural gas is actually shipped to Europe. Europeans are increasingly forcing Russia to sell its natural gas on transparent market-based terms rather than through opaque politically-charged contracts. And even the possibility of U.S. exports will help sustain pressure on Russia to sell natural gas on European terms.

Now, analysts have raised two major geopolitical risks that might result from natural gas exports. Some argue that the United States will be better off using its natural gas to replace oil in its transportation system. But the best way to make that happen is not to block exports. It is to create incentives that directly encourage the use of natural gas in our cars and trucks. Similarly, efforts to promote natural gas as a lower carbon substitute for coal in power plants, while important, would be far better pursued through direct incentives to electric utilities rather than through export restrictions.

Others warn that allowing exports would link the price of U.S. natural gas to volatile world markets. Such an outcome is unlikely, though not impossible. U.S. natural gas prices will remain well below overseas ones due to the high cost of liquefying and transporting the fuel, and in addition, as long as U.S. export facilities are fully utilized, fluctuations in overseas prices will not influence the price of natural gas within the United States.

Despite the geopolitical and macroeconomic benefits of allowing exports, there remains substantial domestic opposition on other grounds. Congress would be wise to address opponents' legitimate concerns in order to maximize the odds that the country will capture the benefits of allowing exports.

Two areas are critical here: First, while the impact of exports on U.S. natural gas prices would likely be small, it could still be significant for low-income consumers. Congress can help address this by ensuring that the Low Income Home Energy Assistance Program, or LIHEAP, is fully funded.

Second, natural gas exports would boost U.S. gas production. That would be good news for the economy, but it would increase environmental risks. The prospect of exports makes it all the more important that Congress makes sure that strong rules are in place to ensure that shale gas development is done safely.

Members of the subcommittee, I thank you for the chance to speak with you today and look forward to answering any questions you have.

Mr. Poe. Thank you, Dr. Levi.

[The prepared statement of Mr. Levi follows:]

Mr. Poe. Mr. Mallino, you have 5 minutes.

STATEMENT OF MR. DAVID MALLINO JR., LEGISLATIVE DIRECTOR, LABORERS INTERNATIONAL UNION OF NORTH AMERICA.

Mr. Mallino. Thank you, Mr. Chairman. I am going to beg your indulgences for my loss of a voice. Washington, DC, pollen, and a loud, raucous rally yesterday in support of the Keystone XL Pipeline has left me a little bit wounded so I apologize, but I am going to croak through this as best I can.

Mr. Chairman, on behalf of the 500,000 members of the Labors International Union of North America, I would like to thank you and Ranking Member Sherman and the members of the subcommittee for allowing us to testify today. As you know, too many Americans are out of work. Within the construction industry, the unemployment rate reached over 27 percent in 2010, and joblessness in the sector still remains far higher than any other industry with over 1 million construction workers currently unemployed in the United States.

However, one bright spot for LIUNA members has been the growth in work hours associated with natural gas pipeline construction. As you know, the production of North America's natural gas supply has increased dramatically in recent years through the development of shale gas reserves, which is largely the result of the development of hydraulic fracturing for the extraction of natural gas. The development of these domestic reserves of natural gas has dramatically increased work opportunities for our members, and the continued development of these resources will not only lead to job creation and expanded economic opportunities for America's workers, but will also help put the United States on a path toward energy independence.

Affordable domestic natural gas supplies have the potential to be an economic game changer across many sectors of the economy. However, in order to realize the full economic benefits of the expanded U.S. gas resources, the industry must be able to find a price for its product that makes continued development profitable.

In 2012, LIUNA members worked over 11 million hours on pipeline projects under the National Pipeline Agreement, and we are just one of four crafts that are signatories to that agreement. America workers need the access to the good paying jobs, family-sustaining wages, and the kind of jobs that the oil and natural gas sector provide. In addition to the drilling operations to recover the gas, there is extensive pipeline and compressor station infrastructure required to move the gas to facilities for processing or export.

Often, in an attempt to kill new domestic energy sources, the enemies of job creation call these jobs dangerous and dirty. The fact of the matter is, construction is, in fact, a dangerous occupation, but when performed by trained workers it can be less dangerous. It is also less environmentally damaging when done by properly trained construction workers.

Opponents of the industry also try to disparage these jobs by passing a value judgment that holds these jobs to be of lesser value because by its very nature, the construction project has a completion date and therefore, that individual job will come to an end at some point. They call these jobs temporary in order to diminish the importance, and they recruit others to join with them in a course of negativity in the mistaken belief that these jobs have no real value to society.

The report issued by the Energy Information Administration, the statistical arm of the U.S. Department of Energy, predicts that shale gas production will continue to increase, while expected natural gas consumption and the industry power generational sector is to increase significantly.

In order to find a price point that makes extraction of these tight gas reserves economically feasible, gas producers must be able to move natural gas to international markets. A number of LNG facilities' liquefied natural gas terminals have been proposed for construction, which will themselves be economic engines that will create good jobs and other benefits. These are large-scale projects that cost billions of dollars to build and employ thousands of workers for several years during the principal construction.

One of these proposed LNG export terminals, the Jordan Cove Energy Project in Coos Bay, Oregon, is expected to be built under a project labor agreement which will maximize the quality of the jobs for the construction trades on that project. This PLA will ensure that the workers on this massive project will possess the highest skills and best training while ensuring that the workers receive fair wages and working conditions.

This project is expected to provide millions of work hours for the buildings trade crafts and will invest approximately $5.7 billion into the local economy. Natural gas development also produces needed government revenues at the Federal, State, and local levels. The Coos Bay Project is expected to generate $20 million in revenue for local and State governments in the first 3 years of operation, and $30 million to $40 million a year thereafter. These resources can help our State and local governments protect their communities from harmful budget cuts that have led to layoffs and the elimination of much-needed services.

I will try to wrap up. I am sorry, guys. Responsible development of our natural gas resources is essential to the United States and is going to fully maximize the economic benefits of our oil and natural gas reserves. Best industry practices based on innovation and technology, combined with a highly-trained, skilled workforce represents an important step in addressing public concern. Through our affiliation with the Building Construction Trades Department of AFL-CIO, LIUNA is a partner of the Oil and Natural Gas Labor Management Committee. This joint business and labor committee has developed a set of principles that we believe companies engaged in the extraction

and transportation of natural gas and oil should adhere to. They are in my formal submitted record. I will not read them to you.

To be clear, LIUNA is also committed to helping advance policies that reduce our greenhouse gas emissions. We believe that an aggressive, science-based approach to emissions reduction is not only necessary from the perspective of achieving a sustainable environment, but that it will, in itself, be good for our economy and for working families. However, we reject the notion that natural gas resources should be abandoned or constrained as a path toward greater sustainability. We believe that responsible development of natural gas is essential for the future economic prosperity of the United States, and we will continue to advocate for policies that foster growth in this sector.

We look forward to working with the members of the committee and other policymakers who want to see our economy recover and produce American jobs that can foster middle-class families. Once again, the laborers thank you for this opportunity to testify before you today.

Mr. Poe. Thank you, Mr. Mallino.

[The prepared statement of Mr. Mallino follows:]

Mr. Poe. Mr. Ratner.

STATEMENT OF MR. MICHAEL RATNER, SPECIALIST IN ENERGY POLICY, CONGRESSIONAL RESEARCH SERVICE

Mr. Ratner. Thank you, Chairman Poe, Ranking Member Sherman, and members of the subcommittee. My name is Michael Ratner, and I am a specialist in energy policy at the Congressional Research Service. CRS appreciates the opportunity to testify on the important issue of liquefied natural gas exports. Additionally, in accordance with our enabling statutes, CRS takes no position on any related legislation.

Prior to the advent of shale gas in 2007, the United States was viewed as a growing natural gas importer. Terminals were built in the 2000s to import LNG from overseas and prices were rising. The success of shale gas production has reversed these trends. Prices have come down since peaking in 2008, and the U.S. price for gas is lower than other regional markets. Natural gas imports are down and LNG imports terminals sit idle with many having applied for export permits. This brings us to where we are today, weighing the benefits and costs of LNG

exports. I will touch upon four components of the debate: Economic impacts, trade issues, environmental concerns, and the Department of Energy's approval process.

First, all else being equal, LNG exports should raise domestics prices because they increase total demand. However, whether LNG exports are good or bad for the economy in part depends on one's perspective. Most gas producers who have faced low domestic prices would like to export to expand their market and access higher international prices. Some large industrial consumers of natural gas argue that allowing exports will raise domestic prices and stifle the economic benefits of having a low-cost input.

For the Federal Government, LNG exports may or may not lead to a net increase in Federal revenue. Taxes paid by LNG exporters because of higher gas company profits could be offset by a decline in taxes paid by large consumers of natural gas because of higher domestic prices. Federal royalties would only increase if new natural gas production comes from Federal lands. Meanwhile, directly taxing exports raises constitutional issues. Natural gas is used for three primary purposes: Electricity generation, residential and commercial heating, and industrial processes. The specifics of each of these market segments will determine the effect of LNG exports. For example, the price of natural gas is just one component of the total cost of residential heating.

While LNG exports may raise gas prices, new supplies may reduce transit costs. In addition to current uses, there has been discussion of using natural gas as a transportation fuel. Although some progress is being made, it is more a long-term prospect because of the infrastructure and technological changes that would have to occur. Price is just one factor that companies and consumers would consider before investing in natural gas-fueled vehicles.

Second, the decision to permit or restrict LNG exports also raises trade considerations. As a member of the World Trade Organization, the United States could be subject to cases under the general agreement on tariffs' and trades' general prohibition against quantitative restraints if exports were limited. While certain exemptions from this prohibition may apply, export restrictions may put the United States in a contradictory position vis-a-vis cases that it has brought to the WTO.

Third, as shale gas came to market, it was hailed as a way to reduce emissions from dirtier fossil fuels, but environmental concerns were also raised, primarily because of the industry process known as hydraulic fracturing or fracking. Environmental groups against exports assert that additional production from shale for export implies more fracking.

Finally, to deny an LNG permit to non-Free Trade Agreement countries, DOE must determine that exports would not be in the public interest. To make its determination, DOE evaluates many factors: Domestic need, previously approved capacity, adequacy of supply, the environment, geopolitics, and energy security, among other things.

DOE commissioned two studies as part of its evaluation. One by the Energy Information Administration on price effects, and one by NERA Economic Consulting on macroeconomic impacts of LNG

exports. Both studies have received praise and criticism by various stakeholders. For example, EIA scenarios were viewed as unrealistic because of the high volumes considered, but those are now well below the level of export applications. NERA's use of data from EIA's 2011 Annual Energy Outlook was considered dated. The data did not include potential domestic industrial demand, nor did it include recent improvements in shale gas extraction. However, EIA bases its projections on existing policy, technology, and data, not possible changes in any of these.

Despite recent testimony, DOE has not laid out a clear timetable for approving pending permits, nor how it weighs each input in its decision. Some stakeholders have faulted DOE for a lack of transparency.

Thank you for the opportunity to appear before the committee. I would be happy to address any questions you may have.

Mr. Poe. Thank you, Mr. Ratner.

[The prepared statement of Mr. Ratner follows:]

Mr. Poe. I want to start the 5-minute questioning by each member. I will start with Mr. Bryngelson. How many jobs will the Lavaca Project create?

Mr. Bryngelson. During construction, it is approximately 2,500, and in long-term operation, Phase I would be about 200. Phase II would double that to about 400.

Mr. Poe. How long have you been waiting for the Department of Energy approval?

Mr. Bryngelson. We filed in October of last year.

Mr. Poe. When do you expect a decision? Do you know?

Mr. Bryngelson. We don't know. We are hopeful soon, but a lot of the project is depending on that at this point. We have no clear idea.

Mr. Poe. How much does it cost you a day or a month while you wait for that permit?

Mr. Bryngelson. Well, right now, we are moving through the permitting process, so it is not impacting our costs specifically. What is impacting us is our ability to secure customers, and that could jeopardize the whole project.

Mr. Poe. What does that mean?

Mr. Bryngelson. That means if we can't sign up non-free trade customers, we don't have customers. We don't have a project. And every day that goes by it is harder and harder to keep just the baseline spend to get permitting, which over the next year is approximately $10 million.

Mr. Poe. Let me ask you this, and all of the members of the

panel will weigh in, why does the permitting process take so long to get approved by the Department of Energy? How come it takes so long?

Mr. Bryngelson. I wish I had an answer to that question, sir.

Mr. Poe. You don't know. Dr. Montgomery? You are the expert. Do you know?

Mr. Montgomery. No, I don't know what DOE is doing.

Mr. Poe. Dr. Levi?

Mr. Levi. I trust that because this is such a new area, this country has changed from being very much a consumer into also a major energy producer, that it is taking time to analyze the cost and benefits and ins and outs, just like this committee is. But I agree that time does matter, and that there is a limited market, and different companies around the world are trying to do contracts, particularly with key buyers in Korea and Japan, and so the timing of our approvals will have consequences.

Mr. Poe. How long does it take normally to get a DOE approval for a permit?

Mr. Levi. We don't know because we have had only one experience.

Mr. Poe. And that took how long?

Mr. Levi. Anyone else know?

Mr. Poe. No one knows. Mr. Ratner, do you know?

Mr. Ratner. I would say probably about a year or so. I can't remember exactly when Cheniere applied for it. But one thing I would also add that I find interesting, I mean, everybody, for good reason, is focusing on the DOE process, but the FERC process, which also takes over a year to 2 years, people aren't complaining about in part because they know the FERC process. You know, Excelerate knows what it needs to do to apply to FERC in order to move that application along.

Mr. Poe. Can do both processes move together, or does DOE have to finish theirs before FERC starts?

Mr. Ratner. They can move together.

Mr. Poe. All right. Let me ask you this, Dr. Levi. When I was in India, I talked to the foreign minister. The only thing they wanted to talk about was getting natural gas from the United States to India. They made it really simple for me; the cost of their production and transportation in India is higher than for us to produce it in the United States, transport it, make a profit, and they still get a good deal in India.

And the question was, why aren't we exporting natural gas to India? Can you help me out with that a little bit?

Mr. Levi. Well, it will take time to build terminals and export to India, but the way you describe the economics is correct. Natural gas production in India is expensive. There are barriers to production, and so there will be incentives to export natural gas to India. It would help them reduce emissions relative to building more coal-fired capacity. That said, it is not clear to me that it will be an alternative to other sources of natural gas. India has rapidly-growing demand for energy, and it will probably try to bring in resources from wherever it can.

But there is no doubt that the more we are engaged in a positive way with them on natural gas, the more influence we

will have on the other decisions they make.

Mr. Poe. Politically, for the United States, wouldn't it help the relationship to have India look to the United States instead of look to China, or Pakistan, or somewhere else, even Russia for natural gas? Would this help us politically with this nation?

Mr. Levi. There is no doubt that being open to natural gas exports to India would help the United States politically. There is a long history in the U.S.-India relationship, as least as the Indians see it, of the United States interfering with free trade to India's detriment, and this goes back a long way in the Indian political memory.

So when we talk about trade restrictions on a commodity that India cares about, this isn't just an isolated issue, it speaks to a broader set of concerns and a broader set of trust issues with the United States. So certainly allowing those exports would help. Of course, whether natural gas went from the United States to India would be the decision of private companies based on where they thought the contracts were most attractive.

Mr. Poe. I understand there was a contract signed today with India and a Houston-based company for a 20-year contract and there is also a contract with a Maryland corporation for the same thing.

Last question. Mr. Ratner, if you could answer really quick. The WTO, we have got them sitting over here. Is the United States going to be in court if we don't fix this problem with the WTO?

Mr. Ratner. Very possibly. It will depend upon, you know, some of the countries that we discussed. I mean, the odds of Japan suing us in international court is possible, but how likely it would be, you know, remains to be seen.

Mr. Poe. I hope the Department of Energy knows that that is a possibility as well. I now will yield 5 minutes to the ranking member, Mr. Sherman from California, who is also the timekeeper.

Mr. Sherman. Of three major fossil fuels, the one that is most versatile is petroleum because you can move it from one continent to another rather cheaply. We export coal, India and China don't really care very much about whether they create twice as much carbon for every kilowatt they generate.

Mr. Ratner, why are you even talking about exporting natural gas to China and India when instead, they could purchase our coal? That has to relate to the cost of shipping. Can you provide some estimates as to what it costs to export an MCF of natural gas, that means liquefy it and move it across oceans, versus what it costs to move coal that would have the same number of BTUs? And if you don't know, just answer for the record.

Mr. Ratner. I am not sure of the cost of shipping coal. I know relative to gas, it is a lot cheaper and a lot easier than liquefying gas and putting it on a cryogenic tanker which, I mean, some of the numbers I have seen to liquefy is about $3 per thousand cubic feet, and to ship it to Asia would be about $2, or $2.50.

Mr. Sherman. So maybe $6 per MCF. I have no idea. You know, coal is heavy. It is not as dense in its energy so I have no

idea what it would cost, but I know CRS is great at research and I know you will get an answer for the record.

[Material submitted to the subcommittee by Mr. Ratner after the hearing follows:]

Mr. Sherman. We have heard from both Dr. Levi and Dr. Montgomery about economic theories. I will just point out first that while the economic theory is that free trade works perfectly, and will enhance everybody, no one has been able to explain why we have a $600 billion trade deficit. It is theoretically impossible, and economists are in the same position as those aerospace engineers who said we have got a great theory, but we can't explain how a bumblebee can fly. There is nothing the matter with the bumblebee. And the fact is that we do have a huge trade deficit.

The other thing I will point out to Dr. Levi is, you said okay, if we want to adjust for this, we could provide more funding for low-income consumers, and we could provide incentives, which would mean subsidies for natural gas vehicles. We don't have any money. So if we want both vehicles and low-income consumers to get cheap natural gas, we are going to have to keep natural gas cheap. The other way to do it from an economic perspective would be to provide an incentive for natural gas vehicles by taxing gasoline. And I see you nodding because you are an economist. If you were a political consultant, you would not be nodding.

Mr. Mallino, you talk about jobs, but what we really need are good jobs at good wages. You are looking at certain applications that have been filed. They are just the tip of the iceberg if we open this. With the ones that you are focused on, you have got project labor agreements or expect them, so those will be good jobs.

Mr. Mallino. Correct.

Mr. Sherman. But the vast majority of the focus on where to build these facilities, they are all in Right to Work States with the exception of Oregon. Can you give us an idea of what, you know, what right to work, or what I call right to work for less will mean in terms of the wages and working conditions of those who work on these projects?

Mr. Mallino. As you know, Congressman, sometimes we also refer to it as a so-called right to work because it is everything except for an actual right to work. Right to Work States generally have, and I will have to look up the specific number, but generally have a wage and benefits scale about 30 percent less than those States that are not Right to Work States. And I will get the specific numbers for you. But there have been a number of very good studies that show that in Right to Work States workers have a much lower standard of living, and wage and benefit package. We like to believe that there should be a right to prosperity, not just a right to work.

Mr. Sherman. Or at least a right to organize according to the U.N. Declaration of Human Rights.

Mr. Mallino. Right.

Mr. Sherman. Finally, I will point out, because my time is

nearly expired, that I don't think congressional action just opening this will pass by itself through the Senate, but if we marry any legislative fix to this to nationwide standards for fracking, designed to assure environmental safety, it is much more likely to pass.

I would have said also, perhaps, some revenue from an export tax, but unfortunately, the Constitution was written at a time when we were worried about the export of cotton and corn and seems to have prohibited that. I will go back to my office and try to find a loophole in what Mr. Ratner points out to be in the U.S. Constitution--not loophole, provision applicable to these modern circumstances, and I yield back.

Mr. Poe. Well said.

Mr. Levi. Can I briefly address the question of cars and trucks because I think it is important.

Mr. Poe. Okay.

Mr. Levi. Prohibiting exports and creating new incentives to get natural gas for our cars and trucks aren't alternative options for achieving the same goal. Prohibiting exports would not get a lot of natural gas into our cars and trucks. And we do have ways of encouraging natural gas use that don't require new spending on the part of government. We are already encouraging it through new corporate average fuel economy standards. We could further encourage it by modifying the advanced biofuel part of the Renewable Fuel Standard which is not being met and is repeatedly waived each year in a way that encourages the use of gas to liquid fuels.

So there are creative ways to do this without incurring additional debt or having everyone lose their congressional seats by trying to pass a gasoline tax.

Mr. Montgomery. Could I also respond, I think, to a question that was addressed to me? I think there is a general consensus among economists that we understand exactly where the trade deficit comes from. It is the observation of the twin deficits, which I, unfortunately, remember going all the way back to the 1980s and colleagues at Brookings explaining it to me, simply meant that the trade deficit comes from our huge budget deficits, that when the government borrows, the borrowing leads to a differential between what we are importing and what we are exporting.

Mr. Sherman. Let me just note for the record, when we had a budget surplus in the latter years of the Clinton administration we had a huge trade deficit, and Japan runs a much larger national deficit than we do and they have a huge trade surplus. Once again the bumblebee is flying, but the theory doesn't work.

I yield back.

Mr. Poe. I thank the ranking member. Just to follow up on the question to Mr. Mallino, in Texas until recently, until Mr. Weber took over some of my congressional area, I represented all the energy industry down in southeast Texas. My understanding is in the energy industry and Right to Work States you have a lot of union workers and you also have nonunion workers.

Mr. Mallino. We do.

Mr. Poe. I would ask Mr. Ratner, can you find out the percentage of union and nonunion workers in the energy industry

and get back with this committee.

Mr. Ratner. Sure.

[Material submitted to the subcommittee by Mr. Ratner after the hearing follows:]

Mr. Poe. All right, thank you.

Mr. Mallino. Just one. The energy sector is a good sector for the employment of union workers, there is no doubt about it. One of the reasons why we are here today is because the jobs that those energy jobs provide do give our members a number of very good, well-paying jobs.

Mr. Poe. All right. Thank you.

I am going to yield 5 minutes to the vice chairman, Mr. Kinzinger from Illinois.

Mr. Kinzinger. Thank you, Mr. Chairman.

And thank you, gentlemen, for being here.

Illinois is fighting its own issue with the area of fracking. We have, I would say, terrible leadership in the State of Illinois that is very slow to react to changing circumstances, and I think we have a real opportunity to put a lot of good folks to work in Illinois and we have a lot of laborers in my district, a lot of union members in my district that would love the opportunity to be part of this energy renaissance. If anybody in Springfield is watching, hopefully they will be motivated by this hearing.

I want to be all in on this. I lean toward favoring this. But I do have a couple of questions. And these aren't like a lot of times in this when people lead you to answers to make a point. These are actual questions I have.

When we come to a world-priced commodity on this situation, right now there is a huge disparity between obviously what we are paying for natural gas here and what it is paid for overseas. If we increase our ability to export, and over time, over the next 10 or 20 years the infrastructure is built up in a big way and we can pretty much easily get this, what is to prevent our cost of natural gas from being married up and priced on the world market and married up with what they are paying in Europe and everywhere else?

I will start with you, Dr. Montgomery.

Mr. Montgomery. What is going to prevent it is basically the cost of transportation. And we see this even in the United States where there is a difference of $1 or so between the price of gas in Texas and the price of gas in the Northeast, and that is actually changing as we have additional supplies being produced in the Northeast so that the transportation cost is narrowing.

But unless there is some huge innovation in the liquifaction technology, we have a cost of moving the gas by pipeline from the wellhead to the liquifaction facility. To recover the cost of capital, liquifaction costs several dollars a million BTU. It is expensive moving natural gas long distances by ship because of the fact that you have to use the natural gas for fuel because it is going to boil off from the ship.

But the point is, yes, there will be something like an irreducible $6 difference between the United States and the countries that it actually exports to because it takes that much to cover the cost of getting the gas from one to the other.

Now, if we had no capacity constraints, if we had enough capacity to serve all of the needs, we would find there would be some convergence, but that convergence would be so that the price in the receiving countries and the price in the exporting countries differed by no more than that amount. That is, the rents that are being sought now by developers who think, hey, I can pay all that cost plus make a couple dollars, that would be competed away.

Mr. Kinzinger. So we are limited by our capacity. And so again the concern was, though, is what if we get in 10, 20, 30 years where our capacity is----

Mr. Montgomery. Even if our capacity is unlimited it will still be necessary to pay that cost of shipping the gas.

Mr. Kinzinger. Gotcha.

Mr. Montgomery. And the prices can't get any closer than that.

Mr. Kinzinger. Did you want to?

Mr. Levi. I generally agree with what Dr. Montgomery has said. Some of those costs, if there is massive overinvestment, can ultimately be written off. Companies can go bankrupt and these facilities can still be operated. So in a situation where there was massive overinvestment you could have prices come closer together than the $6 differential. It is not zero. But that is possible. The thing that mitigates against it is that these are extremely expensive facilities, they take a very long time to build. And that gives a lot of time for them to fail.

Mr. Kinzinger. Briefly another subject is just simply on the national defense side of it. What would this do in Eastern Europe if we begin exporting natural gas. Theoretically, some of it goes to Eastern Europe. What does this do with Eastern Europe, for instance, for their relationship with us versus Russia. Does it shift that balance of power at all? I guess I will look at you, sir.

Mr. Levi. I don't think it makes an enormous direct difference. I think the bigger question in Europe is whether Europeans on their own will be able to negotiate more flexible contracts with Russia. And the prospect of U.S. exports will be there as a threat if Russia wants to try and push for more favorable terms for itself, and I think that does help us and it will be appreciated.

Mr. Kinzinger. And very briefly, Mr. Mallano--did I say it right? Mallino.

Mr. Mallino. It doesn't matter.

Mr. Kinzinger. Mallino. There you go.

Mr. Mallino. I butcher your name all the time.

Mr. Kinzinger. I know. Everybody does.

Hey, just quickly, you had mentioned jobs in other sectors as well. Can you just expand on that a little bit, what it means to your folks?

Mr. Mallino. And part of that is about finding kind of a sweet spot. I mean, we recognize that cheap gas can lead to a resurgence of manufacturing like we haven't seen, and while

that will help our brothers and sisters in the manufacturing sectors and in those unions, constructing those facilities will also help us. And we know that there are a number of projects on the books, or at least in the planning phases, hopefully they get on the books, to build some new chemical facilities and others that we look forward to participating in.

So literally finding the right price, whether that is through market or through whatever, is important because we should be able to export gas, but we also need to keep enough of it here that we can bring those jobs back. You know from your district and your State how important manufacturing jobs are. We are construction workers, but we want to see all sectors of the economy revitalized by this energy boon. We are an all-of-the-above union when it comes to energy. We don't think any type of energy should be advantaged over the others. We just want to see these jobs come back to the United States.

Mr. Kinzinger. Thank you. This was helpful.

And I yield back, Mr. Chairman.

Mr. Poe. Thank you very much.

We will now hear from Mr. Vargas from California.

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

My question is really about keeping natural gas cheap. I liked it when you talked about keeping it cheap. I liked that part of it. And that is my concern. If we get the idea to send it all overseas and we see it go up two, three, four times here, no one will think we were geniuses. No one will be thanking us for how quickly we went through this process, they will say what the hell did you guys do? Why did you double, triple, quadruple the cost of natural gas when it was so cheap? And that is my concern. So I want to ask you a little bit about that, if I could.

Now, I know gas a little bit better than natural gas. What is the price of gas, a gallon of gas in the United States, $3.60, $3.70 cents? Depends on where it is. In California it is four bucks because we have more of that EPA stuff. That is the truth. But you go to Europe, and how much is it in Belgium for a gallon of gas?

Dr. Levi or somebody who knows that?

Mr. Levi. I haven't traveled to Belgium recently. It is much more expensive because of high taxes on gasoline.

Mr. Vargas. Right. And in other places also because of transportation and other issues you have got gas that is two, three, four times as expensive, it seems, as gas here in the United States.

Mr. Levi. We are talking about natural gas now?

Mr. Vargas. No. No. No. I am talking about gasoline.

Mr. Levi. Gasoline price differences in different parts of the world are primarily due to different levels of taxation on gasoline and to some degree due to the environmental requirements, just like the difference between California and other States.

Mr. Vargas. But also production. So, for example, in Venezuela they are very cheap because that is what keeps that government afloat, right, because they have a whole bunch of it. And my concern is that right now it seems to be that we are producing a whole bunch of natural gas, and I think that that is fantastic, and I absolutely believe that we can do this

safely. I mean, I think if you have unionized labor doing it, you know, with the PLA, they always do a good job. I mean, that is just the way it is. We develop standards.

My issue is with the cost, so if you could address that a little bit more, because I think it would be a terrible mistake if we rush this thing through and all of a sudden we double it. I mean, for some States it would be fantastic, I am sure, but for my constituents, they wouldn't be so excited about that.

Mr. Montgomery. If I could just start. I think the primary determinant of the cost of natural gas is not going to be whether or not we are exporting it. It is the balance between supply and demand in the United States. And I agreed with Mr. Bryngelson, right now we have a glut of natural gas. We have more production capacity and less demand than it takes to balance the market.

And most forecasts that I look at, including the most recent ones by EIA, have the price of natural gas going up in the United States, say, roughly doubling from its lowest point over the next 10 years or so simply because of domestic supply and demand, even if we don't allow any LNG exports at all. So that is the first point. We are in a time that consumers might as well enjoy, but that it is not the way the market is going to be over the next 10 years.

If we allow LNG exports, the exports are only going to occur if we have a willing buyer overseas. And I agree with Dr. Levi that if we have built lots of excess capacity we might find that there is a big demand for our gas. But over the next 10 years we are not going to have a great deal of capacity. We are not going to come close to the 20 TCF or two-thirds of U.S. gas production for which applications are in at DOE. The most that anyone I have talked to in the industry thinks it is feasible to do would be to build maybe a quarter of that, which means we might at most be able to export 5 trillion cubic feet out of production of 25. That leads to----

Mr. Vargas. Before I think I may run out of time, let me--I like the explanation--but let me make sure everybody agrees with you.

Does anyone disagree that exporting some of this gas is not going to cause the price to go up here? Anyone disagree with that, or does everyone agree with that? Do you agree?

Mr. Bryngelson. I agree. I think it is a small enough portion of the market you won't see the effect, and you have got enough production out there that will ramp up and keep up with this. Right now prices are lower than the marginal cost to produce on a lot of the wells. You are seeing rig counts drop, production drop, and I think the market has got to equilibrate. But there is enough supply in the stack out there to meet the demand for the exports and the domestic market.

Mr. Mallino. I was just going to say, Congressman, the one concern we have based upon other fights that we have been engaged in over job creation is that we know that some of the opponents of the export of natural gas don't really care about keeping prices cheap. They want to keep prices cheap to strand the resource, so that the resource isn't developed. And that is our concern from our perspective.

Mr. Vargas. Okay.

Mr. Mallino. We believe that natural gas can revitalize the

industry, but we don't want it so cheap that it doesn't get developed.

Mr. Levi. I think there is no question that prices would be slightly higher as a result of exports. If more people want to buy the same thing, it gets more expensive. But I don't think it is plausible that it would be three or four times more expensive because that would raise U.S. natural gas prices so much that no one would want to buy it anymore. So for exports to continue and drive prices up, U.S. prices can't get too high.

Mr. Poe. The gentleman's time has expired.

Mr. Vargas. I didn't hear the little buzzer. Sorry about that.

Mr. Poe. We don't have a buzzer. It is on silent when your side is talking.

Mr. Weber, 5 minutes.

Mr. Weber. Great. All right, I have Freeport LNG and Cheniere LNG on the edge of my district, the Gulf Coast of Texas. Judge Poe used to have it. Gentleman, which other product do we tell we don't want them shipping overseas because it might drive our prices up? Is it Apple? Is it Nike? Is it Ford? Who do we tell that to?

Mr. Mallino. We actually bring Apple in from overseas.

Mr. Weber. Well, they do have some products that they might distribute from overseas. The point is whatever the company is, I don't think we restrict any of them from sending overseas, do we, because it might drive prices up?

Mr. Bryngelson. Well, here is an interesting thing to look at. You can export the natural gas liquids you take out of the gas stream without a DOE export. The methane that is left you can't export. So to me that is a very odd situation for the same gas stream.

Mr. Weber. Right. And I happen to have a little startup company in my district called Dow Chemical, and they have come out being opposed to exporting liquefied natural gas. But we did sign on a letter that we did support it.

Mr. Ratner, you made the comments that there were a lot of plants sitting around that had been set up to import natural gas that were sitting idle now and were regearing or retooling, if you will, for exporting natural gas, and they have got hundreds of millions, sometimes billions of dollars invested. We need to get this process done and over with so that those entrepreneurs, those private industries can export that gas.

And I would submit to you, and you all can argue with me if you want, we will go down the line here, that unleashing the energy industry would be a way to get more money into our economy, to get our economy refueled, no pun intended, and to get business going again. Those jobs created, they will have a multiplier effect. Talk to your chambers of commerce. They will plow money back into the economy. They will be paying taxes. In some instances many of those people will be off of the assistance rolls, so to speak.

Would any of you all argue with that? Mister, is it----

Mr. Bryngelson. Bryngelson.

Mr. Weber. Bryngelson.

Mr. Bryngelson. No, I wouldn't argue with that a bit. There is quite a bit, all the local industries, local regions will

benefit from the project.

Mr. Weber. Okay. Dr. Montgomery?

Mr. Montgomery. No, I agree completely.

Mr. Weber. We will go on. I have 2 minutes left. Dr. Levi?

Mr. Levi. Nationally there is a net benefit. Different regions will gain or lose, depending on what they do.

Mr. Weber. Is it Mallino?

Mr. Mallino. Yes, sir, we agree.

Mr. Weber. Great.

Mr. Ratner. I agree as well.

Mr. Weber. Glad to hear it. Let the record show it is unanimous.

Now, let me just say that, for Mr. Sherman's benefit, for coal, 1.07 pounds yields 1 kilowatt of energy, electricity. For natural gas, 0.00798 million cubic feet or 1,000 cubic feet yields 1 kilowatt. Residual fuel oil is 0.00184 barrels, it yields 0.8--it is 0.8 of a gallon of fuel oil. So there is your energy difference when you want to talk about where you get the most. I own an air conditioning company so we deal a lot with BTUs. When you deal with energy output and you are talking about heat content, British thermal units is the heat to raise 1 gallon of water, 1 pound per hour--1 pound of water, rather, 1 degree, 1 hour. Natural gas is a great, great fuel source, and I think you said that, Mr. Vargas, and we appreciate that.

So all in all, I think we should be moving toward exporting this, freeing them up so that our economy gets moving again. Can you give me any overriding economic reasons why we shouldn't? And I have got about 1\1/2\ minutes left.

Mr. Bryngelson. No, sir.

Mr. Weber. He is easy.

Mr. Montgomery. It is a very interesting intellectual challenge, but no, I can't.

Mr. Weber. Good.

Mr. Levi. I can't either.

Mr. Weber. Great.

Mr. Mallino. Again, we just want to make sure that there is a price point for which we have encouraged domestic manufacturing. But we believe that the export and that can be done simultaneously with each other.

Mr. Weber. Great.

Mr. Ratner. As I said in my statement, I mean, there will be winners and losers in this. And so depending upon your perspective of where you are sitting will depend upon whether or not you support it.

Mr. Weber. Okay. Thank you. I yield back 47 seconds.

Mr. Poe. I thank the gentleman.

If the witnesses would bear with us, I think we are going to have another 3 minutes a round for the remaining members if they want to stay. Mr. Vargas, if you can stay. So I have a few questions as well.

Mr. Bryngelson, you work in the energy industry. I have heard anecdotal stories that the price of gas has gotten so low that people who produce, drill for natural gas, have quit drilling for gas and they have gone back to drilling for crude oil. What is your impression of that concept? Is that happening or not?

Mr. Bryngelson. Well, exactly what I hear in the industry

is that they won't drill for dry gas. Now, some of the wet gas where they can pull the liquids, your ethanes, your propanes, your butanes and pentanes where there is more value, they will drill those, but the natural gas price now is not enough to encourage dry gas drilling.

Mr. Poe. All right. My next question is, started out talking about the Department of Energy. What shall we do to move this process along? Suggestions?

Mr. Bryngelson. Well, I am a firm believer, and we saw this with the regasification projects looking to import, that the market is going to decide on these. We have seen this in other regions. Australia is an excellent one where you have multiple projects proposed. Each one gets incrementally more expensive than the last until you get to an economic indifference point.

That is what is going to happen here. You won't have an infinite number of these plants built at the same level. Liquefaction may cost $3.00 on the first plant, it is at $3.10, $3.50 on the next, until you get to a point where the cost of liquefaction doesn't make sense and the market will say enough.

The problem is you can't predict which of these projects will go forward so you can't really pick the winners or losers. The market will ultimately decide. We saw that happen on the regasification side. Companies ended up with stranded assets that aren't being used. But those were on entrepreneurs, private industries. They didn't hit the ratepayers. Now they are trying to be reused.

So that is clearly my view on how this is going to work out and what the DOE needs to say is it is a market test.

Mr. Poe. And a political question, Mr. Levi. Back in 2009, I think it was, the Russians shut off the gas to the Ukraine. I noticed it when I was there for the 13 days. I quickly left. It got cold in January. The concept, political economics if I can use that phrase, of expanding our natural gas resources to other countries, including Europe, does that help us politically, like the Ukrainians and our relationship with the former Soviet republics?

Mr. Levi. It certainly does help us. Anything that gives consumers that we are friends or allies with more options in dealing with their traditional suppliers that use natural gas to exert political leverage helps them, and if they see us helping them, they tend to appreciate that. So I think it is a pretty straightforward equation on that front.

Again, I don't think it decisively changes things. The biggest change we have seen is that the United States is not an importer. As a result, big producers, Qatar in particular, have had surplus gas, they have dumped it on to the European market, and given our European friends and allies more options with Russia. Our entering the LNG export market would help continue that trend, but the big stimulus has already happened in a significant way.

Mr. Poe. Very briefly, Mr. Ratner.

Mr. Ratner. Sir, there are just two points I would make. One is Europe has a lot of LNG import capacity. They use it to meet their peak demand in the winter, but they don't have a lot of storage, so they can't take in the gas during the rest of the season. So it is hard for them to necessarily use LNG to counter the Russians completely.

Mr. Poe. Thank you.

Mr. Bryngelson. Mr. Chairman, would you indulge me for a second because I have a good bit of information on this. Our company was set up to find new markets for liquefied natural gas and we focused on Europe and Gazprom here. And that is one small bit of the equation. Right now we are developing projects to bring LNG into Pakistan, Egypt, Indonesia, Bahrain. We are working on building one in the Emirates. We have a project in Kuwait where we are actually bringing LNG into these countries from other sources, from Nigeria, from Trinidad. It could be the U.S.

And these aren't theoretical. These are projects that exist today. Twenty-five percent of the gas on a cold winter day that goes into Argentina flows across our ships, about the same on our largest vessel we have in Brazil. We have a project in Israel. As I said, Kuwait. We have one in the U.K., we had two in the U.S.--one we have shut down. But our list goes on from here. There are markets out there we are developing and it is other peoples' LNG.

And one of the things we try to do is to see ways we can get the U.S. behind us supporting our push for a U.S. company going in and keeping things happening. Pakistan. We would love to bring LNG there and not have the Iranian pipeline built. That could easily be U.S. LNG going in there.

So these aren't theoretical markets. These are real markets we are developing today.

Mr. Poe. Thank you.

I yield to the ranking member.

Mr. Sherman. Mr. Bryngelson, you may have misspoken if you said you were going to import natural gas to Kuwait.

Mr. Bryngelson. We have actually been importing. This is our fifth year of LNG imports.

Mr. Sherman. Of taking natural gas, and instead of piping it from Qatar you are liquefying it and then taking it over to Kuwait?

Mr. Bryngelson. In our case, for that process, we are not liquefying, but our vessels deliver regasified LNG into Kuwait.

Mr. Sherman. The idea of carting coals to Newcastle is illustrated here. It surprises me that Kuwait simply wouldn't use petroleum to meet its energy needs. They seem to have a lot of it. That is an idiosyncrasy that I just want to----

Mr. Bryngelson. Certainly. Certainly I can tell you exactly why they do it, though.

Mr. Sherman. Now, the other thing I will kind of disagree with you on is, this is conjecture, and that is you put forward the idea that the cost of liquification would go up with each new plant. It is the experience of most of us that as new technologies are developed costs go down, that the tenth plant built in the United States will be better designed and have better technology. I can't see a reason why a plant built 10 miles away from another plant is going to have higher costs when it has all the experience of the older plant.

I want to get to just nail down some numbers here. Mr. Ratner, what is the cost per MCF in Texas or the hub of natural gas. What is the price now?

Mr. Ratner. The Henry Hub right now I think is about 4-something.

Mr. Sherman. 4-something. Now, we have heard testimony here that the effect of exporting would be to increase that by between 50 cents and $1. Dr. Montgomery, Dr. Levi, I think that is consistent with your testimony. You can just nod or let me know.

Mr. Levi. At the high end.

Mr. Sherman. Okay.

Mr. Levi. I think we don't know how much capacity will be built.

Mr. Sherman. So if we are going to go back to our constituents, it is 50 cents or $1, although it is really not a quarter of the cost they are paying, because most of what they are paying is for the shipping, the billing process, the utility, et cetera.

Mr. Levi, if it was $1 per MCF, on a basis of $4, what am I going to pay extra for cooking, 10 percent more or 20 percent more?

Mr. Levi. I will be pleased to do the math and get back to you.

[The information referred to follows:]

Written Response Received from Michael A. Levi, Ph.D., to Question Asked During the Hearing by the Honorable Brad Sherman

You are correct: the ultimate impact on delivered natural gas prices would likely be 10 percent or less.

Mr. Sherman. That really is a question about what percentage of what I pay my gas company is for the gas at the Texas price and what percentage--I don't know if Mr. Ratner----

Mr. Levi. I can give you one estimate from a study that I published last year looking at what would happen to household bills if prices went up by $1, and what I found was that for the lowest 10 percent of household income earners, it would increase annual bills by about $50 a year if you combined electricity and home heating costs, and for sort of the median user it would be about $100 a year at that upper range.

Mr. Sherman. And those median users tend to live in the colder parts of America where an awful lot more natural gas is used. And I don't think it would be that high in our area. And then I think the testimony has been that the cost to liquify and ship combined is roughly $6 an MCF, is that correct? I am seeing one panelist nod.

Mr. Bryngelson. Yes.

Mr. Sherman. I see another. Okay. So basically our manufacturers would have a $6 cost advantage on a product that costs $4, so they would be paying less than half of what the rival manufacturer would pay.

Finally, and I know nobody has commented on this, when fracking technology hits the Eurasian landmass, is there going to be a lot more natural gas there so they won't need ours? Dr. Montgomery?

Mr. Montgomery. I spent the beginning part of last week at a conference that was dealing exactly with this issue, and I am not sure I would call it a consensus, but the strong opinion of geologists and production companies and oil field services companies was not likely; that China has a very different kind--I mean, you can call it shale, but shale covers a

multitude of sins--that it is a very different kind of resource than the U.S. There has only been, like, 20 wells punched there into shale to test it. And so the opinions ranged from we simply don't have any evidence that it is there to what we do know----

Mr. Sherman. That is China. Russia already creates a whole lot of natural gas. When they get our fracking technology, can they double or triple their production?

Mr. Montgomery. Russia, less clear. They apparently do have resources that are susceptible to fracking.

Mr. Sherman. Okay. I yield back my negative time.

Mr. Poe. Mr. Weber, do you have some more questions?

Mr. Weber. I do. And I am sorry, I never turned my mike off.

China, you mentioned 20 holes, Dr. Montgomery. I have heard that China is beginning to discover shale plays out in the western part of China but that they don't have infrastructure out there and it is not near their population centers. So their challenge is to be able to get that infrastructure in place and to get that natural gas to where the people can use it as quickly and as affordably as possible.

What kind of window do we have for our exporters to really get out there and seize on this market opportunity? Would you say 1 year, 2 years, 3 years, 8 years? Any guesses, Mr. Bryngelson?

Mr. Bryngelson. Well, my view on timing is not so much driven by the shale gas plays because a lot of the customers we deal with, potential customers, are looking for diversity of supply just as much as they are anything else in sourcing from the U.S. I think it is more of an issue of how quickly the other projects move along, and our biggest competitive threats are places like Mozambique and Tanzania with large finds there and the Eastern Mediterranean. So in my view this is something in the next year to 18 months this gets decided, if not before that. So we don't have a lot of time.

Mr. Montgomery. In our analysis we did not include a lot of increased demand for gas from China, so I guess in that sense we were assuming that China would in one way or another either satisfy its needs or be able to get gas more economically from elsewhere. So I am not sure that that is the market that is going to be driving the growth of U.S. exports.

Mr. Weber. You don't think it plays.

Mr. Levi. I tend to agree Japan and Korea are more likely large markets. No one is going to build a multibillion-dollar facility on an expectation that they will make money for a year or 2. If they are doing it, it is because they hope to make money over a decade or more.

Mr. Weber. Well, and supply their people with gas, obviously.

Mr. Levi. Yes. And so the focus will be on this long-term payoff. The near-term question is, can you get those Japanese and Korean contracts, because for a lot of producers that is what their bankers want to see.

Mr. Weber. That is the window.

Mr. Ratner?

Mr. Ratner. The only thing I would add regarding China, I mean, they are the only country that I have heard could rival

the U.S. as far as quantity, but getting the gas out is going to be a lot more difficult.

Mr. Weber. That is their challenge.

Mr. Ratner. Yeah. And besides the infrastructure, there is no water out in western China to frack.

Mr. Weber. All right. Thank you. I yield back.

Mr. Poe. Thank the gentleman.

Mr. Vargas from California.

Mr. Vargas. Mr. Chairman, thank you very much. Now that I get to go after my good friend from Texas, I can brag about a California company in San Diego, and that is Sempra, Sempra Energy, a very responsible company, very responsible both environmentally and I think with its workers it has done a pretty good job. And I know that they are looking at this opportunity, and I got a chance to speak to them about it.

The issue, though, that now does concern me is the math, the math part. And the reason the math concerns me is because it doesn't get really cold in California but it gets really hot, and as my friend Sherman told me, of course, we use that to fire up our electrical plants and produce energy.

So I think that is one of the things that I think we have to nail down the math to figure out how much is it going to cost us if we do export it. I mean, there seemed to be some agreement there are going to be winners and losers. I just hate to be on the losing side of things. When I was in California the Democrats were on the winning side. Here we are on the losing side. So that is why it makes a difference.

And I would like to know the math a little bit, and I hope you guys do work on that. Thank you.

Mr. Montgomery. Could I just comment on that, because we did have a lot of math in our report. And I think you are absolutely right that natural gas prices are very important for electricity prices in California. Pretty much natural gas prices California electricity. But we did take that in account, at least in the work that we were doing because we have a comprehensive model.

But I think I did a disservice in the way I wrote the report we did for DOE in talking about winners and losers in terms of consumers and producers, because it is always going to look like there is a loss if you only look at one slice of the economy whenever you are talking about a trade issue, because the benefits that we get from trade are those that come from our export earnings, but they are also because those mean that we can import more things that we can----

Mr. Vargas. You know, I am familiar with that. I went to school in Boston, I went to law school, and I got a chance to go to Worcester, and they would probably argue that some of the exports there hurt them because they had all those facilities. If you go there now there are old brick buildings with nothing in them.

Mr. Montgomery. Well, that is another case. But the point being that we need to look at a comprehensive picture. My opinion now is that the winners and losers are shareholders in companies that are going to be producing natural gas, building the infrastructure in natural gas, and the workers in those industries. The losers are largely going to be shareholders in some chemical industries and some other energy-intensive

industries. Somebody who has a Standard & Poor's 500 portfolio is going to come out ahead because quantitatively the gains on the gas side are going to be----

Mr. Vargas. Right. I know my time is probably over. But it is the $100 more per resident in California that I am concerned about.

Mr. Montgomery. Yes, but a lot of those California residents are going to be participating in their other sources of income in the gains that come from trade. That is the picture that needs to go together.

Mr. Ratner. If I could add just one quick comment to that, one thing to keep in mind, whether exports are allowed or not--well, if exports aren't allowed and the manufacturing renaissance happens, that will be an additional source of demand which will also drive domestic prices up. So there is no reason necessarily to believe that if we don't allow exports that prices are going to stay low. There have been a lot of projects that have been announced and if those get built the increase in demand will also raise prices domestically.

Mr. Vargas. Thank you, Mr. Chairman. I know I went over. Thank you, sir.

Mr. Poe. I thank the panelists for being here--your information was very valuable--and also to our committee members. So the committee is adjourned. Thank you very much.

[Whereupon, at 3:45 p.m., the subcommittee was adjourned.]

A P P E N D I X

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