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**UNITED STATES OF AMERICA
BEFORE THE
DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY**

**REPLY TO INITIAL COMMENTS TO
THE 2012 LNG EXPORT STUDY**

by

FREEPORT LNG EXPANSION, L.P. AND FLNG LIQUEFACTION, LLC

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FEBRUARY 25, 2013

UNITED STATES OF AMERICA
BEFORE THE
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REPLY TO INITIAL COMMENTS CONCERNING THE
2012 LNG EXPORT STUDY

INTRODUCTION

Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC (collectively, "FLEX") have filed four applications for long-term LNG exports from the site of its current LNG terminal. Two of those applications are for LNG exports to FTA countries. Those were approved by the Department of Energy, Fossil Energy ("DOE/FE") "without delay or limitation".¹ The other two long-term export applications are for exports to non-FTA countries.² The first application for long-term export to non-FTA countries was filed on December 17, 2010. The second was filed on December 19, 2011. Both of those applications are still pending. In December 2012, DOE/FE posted the 2012 LNG Export Study, including the macroeconomic study authored by NERA Economic Consulting for DOE/FE (the "NERA Study")³ and invited the public to file comments with DOE/FE regarding the 2012 LNG Export Study (individually, and collectively, the "Initial Comments").⁴

On January 24, 2013, FLEX filed its Initial Comments on the NERA Study, applauding the DOE/FE for its diligent and dedicated approach to fulfilling its responsibility under the Natural Gas Act ("NGA") and other relevant statutes and policy directives. FLEX also noted that although the NERA Study's methodology and input took a very conservative approach, it clearly

¹ *Order Granting Long-Term Authorization to Export Liquefied Natural Gas from Freeport LNG Terminal to Free Trade Nations*, DOE/FE Order No. 2913 (FE Docket No. 10-160-LNG), February 10, 2011, at p. 6; *Order Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Freeport LNG Terminal to Free Trade Agreement Nations*, DOE/FE Order No. 3066 (FE Docket No. 12-06-LNG), February 10, 2012, at p. 5.

² *Application of Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC for Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Countries*, DOE/FE (FE Docket No. 10-161-LNG), December 17, 2010. *Application of Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC for Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Countries*, DOE/FE (FE Docket No. 11-161 LNG); December 19, 2011.

³ *Macroeconomic Impacts of LNG Exports from the United States*, NERA Economic Consulting, transmitted Dec. 3, 2012.

⁴ Federal Register Notice, 2012 LNG Exports Study, Federal Register Vol. 77, No. 238, pp. 73627-73630.

and unequivocally affirmed that LNG exports are in the public interest.⁵

When FLEX filed its original application in 2010, it submitted an analysis and report performed by Deloitte MarketPoint analyzing the impacts of 1.5 Bcfd of LNG exports from FLEX's proposed liquefaction facility near Freeport, Texas.⁶ In preparing that original analysis, Deloitte MarketPoint utilized its World Gas Model ("WGM") to analyze prices and quantities in global markets under various market assumptions. Deloitte MarketPoint's WGM includes disaggregated representations of supplies and demands in North America, Europe, Asia and other major global markets and their linkages through global LNG trade or export pipelines. It computes prices and quantities simultaneously across multiple markets on a monthly basis over a 30-year time horizon based on rigorous adherence to established microeconomic theories. Unlike many other models that assume there is a single global objective, Deloitte MarketPoint's WGM represents self-interested decisions made by each market "agent" along each stage of the supply chain. This model more closely reflects actual market conditions since participants are motivated by different goals.⁷ In preparing these reply comments, and to assist FLEX in understanding the relative validity of some of the Initial Comments, FLEX utilized Deloitte MarketPoint's WGM to analyze various impacts of U.S. LNG exports at 8 Bcfd and 12 Bcfd using data updated since FLEX's initial application in 2010. Results of that updated analysis are included in these reply comments.

I.

THE INITIAL COMMENTS TO THE 2012 LNG EXPORT STUDY

In this Reply to Initial Comments, we are tasked with responding to over 30,000 Initial Comments filed in response to the 2012 LNG Export Study. Because of the nature of some of the comments, and the number filed, it is neither necessary nor possible to respond to those comments on an individual basis. However, in spite of the large number of comments lodged, the Initial Comments can be efficiently classified into several common themes that run through and characterize them. For instance, many of the comments are strongly supportive of the excellent work exemplified by the NERA Study, although several comments, including those of FLEX, noted that the NERA Study identified benefits that would have been even greater had it used the more recent EIA 2013 forecast, which included a higher supply estimate. Another category of initial comments seems principally aimed at delaying DOE/FE's decision on the pending export applications. Perhaps this is based on the expectation that, if those DOE/FE decisions are sufficiently delayed, the United States would lose its opportunity to export LNG to LNG suppliers from other countries. A further category of comments appears designed as an attempt to stampede DOE/FE into assisting certain other downstream manufacturing entities by substantially interfering with the operations of the free market. Still other comments urge the United States to: (1) abandon its international trade policy opposing governmental restriction on exports, including exports of raw material; and (2) abrogate its obligations under the World Trade Organization ("WTO") and its covered agreements.

Lastly, although DOE/FE specifically restricted Initial Comments to the 2012 LNG

⁵ See Initial Comments of FLEX, January 24, 2013.

⁶ Please note, the original study was performed by ALTOS, which was subsequently acquired by Deloitte.

⁷ See "Natural Gas Models: World Gas Model," Deloitte, at www.deloitte.com (more information about the World Gas Model can be obtained from Deloitte).

Export Study,⁸ some entities that fundamentally oppose the use of any of our nation's fossil fuel resources have rephrased their non-economic arguments in opposition to fossil fuels by arguing that the NERA Study did not adequately address alleged economic implications of speculative and unidentified potential environmental impacts.⁹

FLEX hereby respectfully submits its Reply to Initial Comments concerning DOE/FE's 2012 LNG Export Study.

II.

LEGAL STANDARDS AND THE 2012 LNG EXPORT STUDY

The decisional records in FLEX's two pending applications have been closed for some time. Neither the publication of the NERA Study nor the Notice inviting comments on the 2012 LNG Export Study reopened the dockets of any of the pending applications. In its Notice concerning the 2012 LNG Export Study, the DOE/FE invited both Initial and Reply Comments on the NERA Study and carefully stated: "DOE commissioned the LNG Export Study to inform DOE's decisions on applications seeking authorization to export LNG from the lower-48 states to non-free trade agreement (FTA) countries."¹⁰ In addition the Notice stated that "DOE invites comments regarding the LNG Export Study that will help to inform DOE in its public interest determinations of the authorizations sought in the 15 pending applications."¹¹

The Notice did not purport to or have the effect of opening any of the individual dockets for either the admission of new parties or adding to or detracting from the evidentiary record of the various dockets. The Notice could not, and did not modify the legal standards applicable to LNG exports to non-FTA countries, nor did it change any existing policies of the DOE in that regard.

Now that the comment periods for the 2012 LNG Export Study have concluded, DOE/FE must apply the existing legal and policy standards to its review of the pending export dockets. The legal standards that must now guide DOE/FE in its deliberations are simple, clear and well-established. Section 3 of the NGA establishes a strong presumption that LNG exports are in the public interest.¹² It requires that applications to non-FTA countries be approved by DOE/FE unless it has been affirmatively demonstrated by persuasive relevant evidence that the particular export is inconsistent with the public interest. In other words, there is no burden upon an applicant to demonstrate its proposed export is in the public interest.¹³ Opponents to a proposed

⁸ See 77 Fed. Reg. 73627-73630, *supra*.

⁹ Still other commentators try to sidetrack the process even further by addressing the strength and weaknesses of particular economic policies. However, broad debates about economic theory are beyond the scope of the present comment period.

¹⁰ See 77 Fed. Reg. 238, *supra*, p. 73627

¹¹ *Id.* at 73629.

¹² See Natural Gas Act, 15 U.S.C. § 717b(a) [Commission "shall issue" order to export natural gas upon application *unless* it finds export will not be consistent with the public interest]; § 717b(c) [export of natural gas to country with which there in in effect a free trade agreement is deemed to be in the public interest].

¹³ *Id.*, see also *Panhandle Producers and Royalty Owners Ass'n v. Economic Regulatory Admin.* (D.C. 1987) 822 F.2d 1105, 1111, wherein the court found that a presumption favoring import is consistent, "if not mandated," by section 3 of the NGA; since section 3 of the NGA does not differ between import and export, the same conclusion applies to export.

export bear the substantial burden of proof to establish, with credible and relevant evidence, that the proposed export is not consistent with the public interest.¹⁴ There is nothing in the record of FLEX's pending applications, nor in the 2012 LNG Export Study and the Initial Comments thereto, that overcomes the statutory presumption that FLEX's proposed exports are in the public interest and must be approved. The conclusion of the 2012 LNG Export Study that all levels of LNG exports produce economic benefits for the United States supports the soundness of that DOE/FE policy.

From a purely analytical standpoint, while not required, the 2012 LNG Export Study overwhelmingly demonstrates that FLEX's proposed LNG exports will produce significant economic benefits to the United States. It strongly and unequivocally affirms the statutory presumption in favor of the public interest.

In addition, it is the long-standing policy of DOE/FE to exercise its regulatory responsibilities under the NGA with minimal intrusion in the free market.¹⁵ That established policy must guide DOE/FE in its decisions on the pending applications for long-term LNG exports to non-FTA countries.

III.

THE U.S. NATURAL GAS MARKET IS DEMAND-CONSTRAINED, NOT SUPPLY-CONSTRAINED

The history of the U.S. energy industry in general, and the gas industry in particular, demonstrates that technological achievements will continue. Recent events show that the United States is experiencing sustained production rates, even with declining rig counts.¹⁶ Recent estimates for natural gas resource base range from 2,170 tcf to 2,203 tcf.¹⁷ Other analyses demonstrate an even higher natural gas resource base. For instance in recent Congressional testimony, ICF Resources stated, "The assessed remaining recoverable U.S. natural gas resource base of 3,850 trillion cubic feet (Tcf) represents about 155 years of current annual consumption.... This assessment should be viewed as conservative in that it assumes current

¹⁴ See *Order Granting Blanket Authorization to Export Liquefied Natural Gas from Alaska*, DOE/FE Opinion and Order No. 1580 (FE Docket No. 99-110-LNG), April 10, 2000, at p. 5, citing *Panhandle Producers*, *supra*, 822 F.2d at 1111, *Independent Petroleum Ass'n. v. ERA* (5th Cir. 1989) 870 F.2d 168, 172, and *Pandhandle Producers and Royalty Owners Ass'n. v. ERA* (5th Cir. 1988) 847 F.2d 1168, 1176 [finding section 3 creates a presumption in favor of approving export applications which opponents bear the burden of overcoming].

¹⁵ See Order No. 1580, *supra*, at p. 5 [finding that in evaluating export applications the Department applies the principles in Delegation Order No. 0204-111 and the Secretary's natural gas policy guidelines, "which presume the normal functioning of the competitive market will benefit the public"]; see also 49 Fed. Reg. 6684 (February 22, 1984) [finding government policy is to minimize federal control and involvement in energy markets].

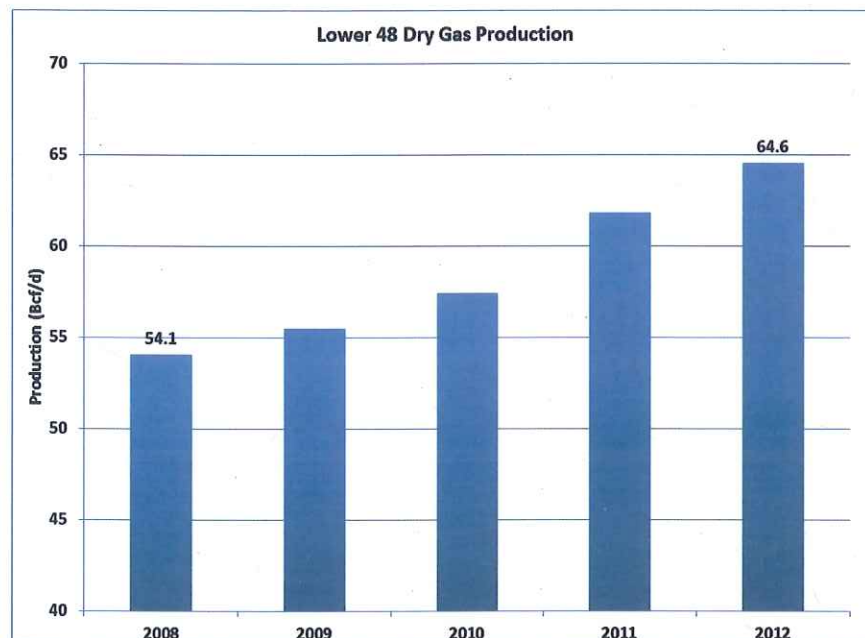
¹⁶ See "Rotary Rig Count," Baker Hughes, Inc., at http://investor.shareholder.com/bhi/rig_counts/rc_index.cfm [showing rig count in 2012 was down 232 units from previous year]; Asjylyn Loder, "American Oil Growing Most Since First Well Signals Independence," Bloomberg, Dec. 18, 2012 [domestic oil output to the highest level in 15 years].

¹⁷ Annual Energy Outlook 2012, U.S. Energy Information Administration, p. 91 [hereinafter "AEO2012"]; Press Release, "Potential Gas Committee Reports Substantial Increase in U.S. Natural Gas Resource Base," Potential Gas Committee, April 27, 2011, available at <http://potentialgas.org/press-release>.

technology and no major new plays.”¹⁸ No matter which figure is most accurate, two things are unequivocally correct: (1) no party to either of the FLEX dockets (or in any other docket) has supplied any credible evidence that the U.S. natural gas resource base is less than 2,000 Tcf; and (2) the U. S. natural gas resource base is sufficient to meet reasonably anticipated demands for 100 years or more. Furthermore, there can be no reasonable doubt that continued technological improvements will make production even more efficient in the years ahead.

As shown by the graph below, U.S. production of dry gas increased by 10.5 Bcfd from 2008 through 2012, an increase of nearly 20%. This was achieved while prices were falling to roughly one-third of the 2008 level. This increase in production volumes exceeds likely volumes of LNG exports. This demonstrates that the industry is exceptionally capable of quickly ramping up output to meet future demand.

Figure 1:



An enormous amount of capital investment has been made by the energy industry to reach this point. However, unless there is a market for the natural gas discovered and produced, the energy industry will not continue to deploy the huge capital required to sustain production levels. The basic and fundamental economic concepts of supply and demand will control. Unless there is an adequate market for U.S. natural gas, capital investments will not be made to continue to develop and produce U.S. natural gas reserves and maintain, and continue to create, the jobs associated therewith. LNG exports of domestic natural gas, conversion of coal plants to natural gas plants, and the production of chemicals, fertilizer, steel, aluminum etc., collectively provide the necessary markets for natural gas. These markets can create and sustain the jobs needed to

¹⁸ Testimony of Harry Vidas, House of Representatives Committee on Energy and Commerce, Subcommittee on Energy and Power, hearing entitled: “American Energy Security and Innovation: An Assessment of North America’s Energy Resources”, February 5, 2013.

build a strong and sustainable economy for the future. Clearly the EIA and other studies show there are sufficient natural gas reserves to meet the needs of each of these markets and enhance the public interest. Simply put, U.S. gas supply grossly exceeds U.S. domestic market needs. There is more than sufficient natural gas for all domestic needs for generations to come. We do not, in this country, have a natural gas supply crisis. We have a market crisis.

IV.

LNG EXPORTS WILL NOT SUBSTANTIALLY RAISE DOMESTIC PRICES AND CERTAINLY WILL NOT RAISE DOMESTIC PRICES TO GLOBAL LNG PRICES

The impact of demand changes on U.S. domestic natural gas prices are mitigated by a dynamic U.S. natural gas industry and abundant domestic gas resources. Surprisingly, however, there are still some who claim to be concerned that U.S. LNG exports will cause U.S. domestic natural gas prices to rise to the level of global LNG prices. These claims are without merit.

Coupled with abundant North American natural gas resources, the U.S. market's demonstrated ability to respond to market changes will mitigate the impact of demand changes, including LNG exports. It is widely accepted that additional gas reserves will be added by the time export terminals come into operation. The price impact of LNG exports will be determined by how the increase in demand changes the cost of the marginal field produced. Given the abundance of U.S. gas supplies available at similar cost levels, the change in the cost of the marginal supply will be minimal.¹⁹

Deloitte MarketPoint's WGM demonstrates that 8 Bcfd of U.S. LNG exports from 2017 to 2036 would have a price impact on average U.S. domestic natural gas prices of only about \$0.20, amounting to an impact of less than 3%. The projected price impact is somewhat higher at the Henry Hub, which is located in close proximity to most of the assumed LNG export terminals, and lower on the East Coast. Potential impacts dissipate with distance and as markets rely on sources other than those located in the Gulf region.

There have been some projections that show a spike in price when LNG exports are projected to start. That inaccuracy is likely due to an unreasonable assumption that domestic supplies will not be able to keep pace with demand growth, including LNG exports, and hence a tightening of the supply-demand balance will cause a temporary price spike. Those projections incorrectly assume a lack of anticipation on the part of producers. However, recent history has firmly demonstrated that the North American natural gas market is highly dynamic. Natural gas prices hovered around \$10 to \$12/MMBtu in 2008. Producers responded to those higher prices, the shale gas revolution was borne and prices collapsed to between \$2/MMBtu and \$3/MMBtu, settling in the vicinity of \$4/MMBtu. These events occurred within a short period. Clearly, markets react to increasing demand when they are given sufficient time and notice. Given the long and very public DOE/FE and FERC approval processes, and subsequent long construction periods for natural gas liquefaction and export facilities, natural gas producers will have plenty of time and notice to develop the incremental supply necessary to meet the incremental demand

¹⁹ See *supra*, p. 5; see also *Made in America: The Economic Impact of LNG Exports from the United States*, Deloitte MarketPoint LLC, available at http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Energy_us_er/us_er_MadeinAmerica_LNGPaper_122011.pdf.

from exports when required.

Further, as discussed in more detail below, the costs of manufacturing, transporting and re-gasifying LNG are quite significant. These cost factors will function as a natural price divide between the delivered price of U.S. exported LNG to other countries and the price of U.S. domestic natural gas. The price of domestic natural gas will be below global LNG prices by at least the costs of manufacturing, transporting and regasifying the U.S. exported LNG or exports will not occur. Estimates of LNG processing and transportation costs range from \$5 to \$7, depending upon the destination. If one hypothetically assumes domestic wholesale natural gas prices were to rise to the level of global LNG prices, then U.S. LNG, after adding the cost of processing and transportation to the domestic gas acquisition at the global LNG price, would be \$5 to \$7 above world price and U. S. LNG exports would be rendered uneconomic.

V.

ACTUAL IMPACTS ON ELECTRICITY AND NATURAL GAS PRICES ARE MINIMAL

Some of the Initial Comments filed with DOE/FE focused on alleged impacts of LNG exports on retail electricity and gas prices. First, let us start with an unbiased playing field. Any additional market entrant that utilizes natural gas might have some impact on natural gas prices depending upon a wide range of variables and assumptions. This would include, *inter alia*, additional electric generating facilities, natural gas distribution systems, coal to natural gas conversions, CNG vehicles, chemical manufacturing and non-chemical manufacturing. For instance the price at Henry Hub for natural gas does not vary by usage. There is not a separate price for steel, aluminum, glass, conversion of coal plants, retail home customers, fertilizer, plastic, manufacturing, natural gas-fired electric power plants or other uses. All production natural gas users acquire the same natural gas and pay the same price at Henry Hub. The addition of LNG to the mix will not change the pricing of natural gas anymore than the addition of new chemical manufacturing plants.

Second, the cost of the natural gas used in electricity generating facilities is only one of several components of the final cost to generate and deliver electric power to consumers. Other necessary costs include labor, facilities, cooling, transmission, distribution, taxes, mandated social programs, R&D, both generation and utility corporate overhead (including payroll, pension & health costs), and even regulatory costs. These costs are additive to the cost of natural gas, and are in no way tied to the price of natural gas. Because all of these costs ultimately contribute to the actual cost of electric power to consumers, the alleged price impacts to consumers from LNG exports have been overstated. This is true both in terms of electricity and natural gas prices. As shown in Figure 2 below, projections using Deloitte MarketPoint's WGM with FLEX's LNG export assumptions reveal that the potential impact to consumer prices on average over 20 years is fairly minimal.

Figure 2: Consumer Electricity and Gas Price Impacts

Export Volume	Wholesale Gas Consumers	Retail Gas Consumers	ERCOT Houston Power Prices (Wholesale)	ERCOT Houston Residential Power Prices
8 Bcfd	2.8%	1.6%	1.2%	0.8%
12 Bcfd	3.9%	2.2%	1.9%	1.3%

Such a modest movement in costs over the space of the many years is not likely to have a measurable impact on consumers overall.

VI.

DECISIONS MUST BE MADE OR OPPORTUNITIES WILL BE LOST

Several commentators have demanded that DOE/FE delay its pending decisions.²⁰ Such demands are misguided and poorly informed. It is generally accepted that the United States has pioneered the technological advances that have created a domestic resurgence of natural gas supplies. However, these new technologies are not the private domain of the United States. The energy industry, which includes exploration and development of natural gas with both conventional and unconventional technologies from both conventional and unconventional resources, is global in nature.²¹ The U.S. technology employed to efficiently and economically extract gas reserves from shale is now being employed outside the country. The LNG export market is also a global market. U.S. exports will compete in that global market.

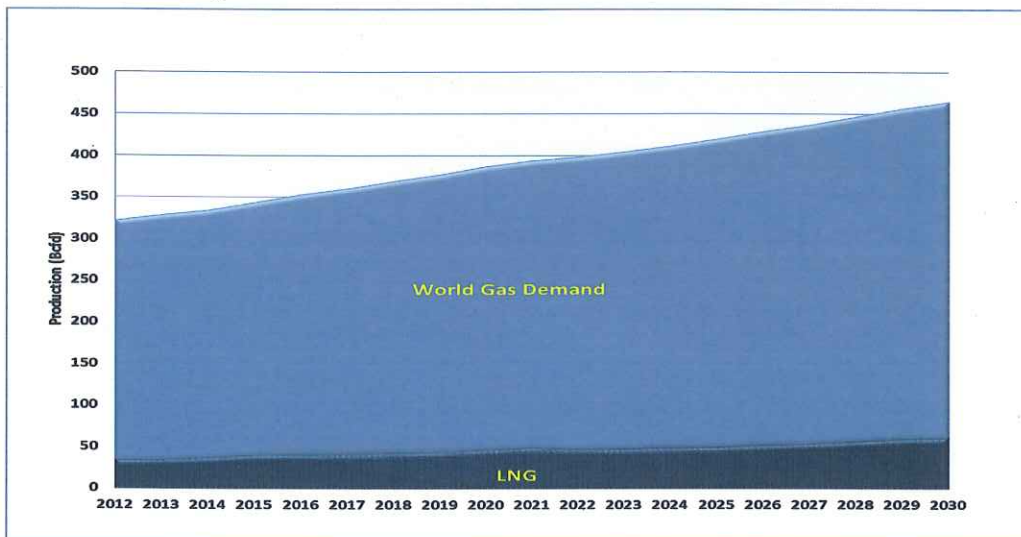
The world LNG market is well understood. Even with strong growth in global LNG supplies over the past few years, LNG comprised only about 9% of the total global gas supply in 2010.²² Deloitte MarketPoint's WGM projects that global LNG supplies will grow at a faster rate than global gas demand. As shown in Figure 3 below, by 2030 the LNG share of world gas demand will grow to about 15%, still a relatively small percentage of the total gas market. Gas is gas, whether it is delivered through a pipeline or by an LNG tanker. In the long term, all gas supplies entering a market will compete for market share.

²⁰ See, e.g., Initial Comments of the Dow Chemical Company, George J. Biltz, January 24, 2013 [requesting delay in decisions until full administrative hearing process is conducted]; Initial Comments of the Aluminum Association, Charles D. Johnson, January 29, 2013 [recommending delay in decisions for DOE/FE to re-assess and update the modeling employed in the NERA study]; Initial Comments of the Sierra Club, Craig Segall, Staff Attorney, January 24, 2013 [recommending DOE/FE delay decisions until public process is conducted].

²¹ See *International Energy Outlook 2011*, U.S. Energy Information Administration, September 19, 2011, p. 43-63.

²² "FAQs: Natural Gas," International Energy Agency, at <http://www.iea.org/aboutus/faqs/gas>.

Figure 3: World Gas Demand and LNG Production

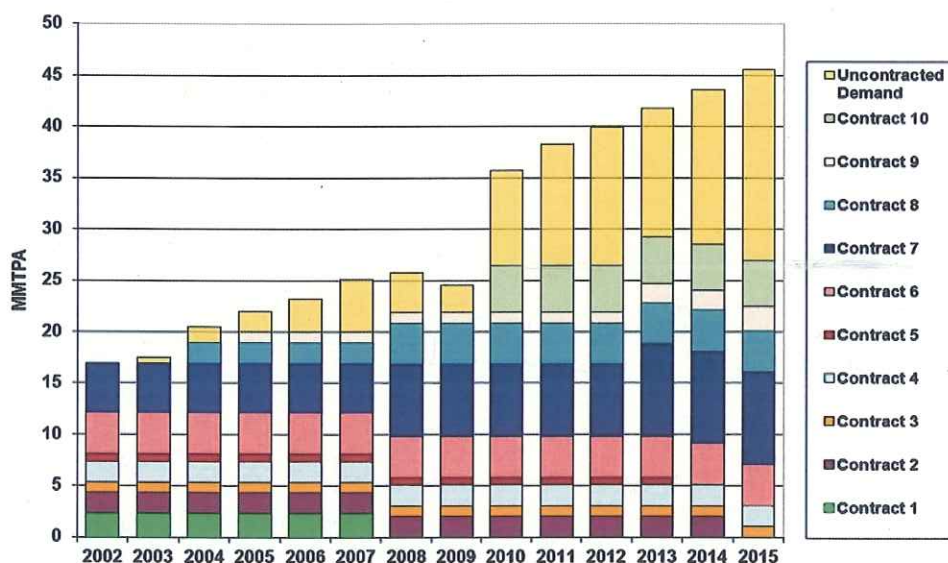


The LNG industry is fundamentally based on long-term contracts, which translates into long-term financial and supply commitments. This is reflective of the long-term needs of the importing entities and the large financial commitments required for liquefaction and re-gasification facilities. Contracts for LNG typically range from 20 to 30 years in duration with take-or-pay obligations.

Figure 4 below illustrates how buyers typically layer long-term contracts to meet projected load levels. Only demand that is not met by existing contracted supplies is contested and available for new supplies to satisfy. This is where competition occurs.

Figure 4:

LNG Supply Portfolio



The entire global market is not available to U.S. LNG exports. Only the future contested markets present opportunities for substantial benefits to the United States. When LNG buyers enter into a long-term contract to satisfy unmet, contested, demand, that demand is essentially lost for the duration of the long-term contract.

Other countries, some of whom have national policies particularly adverse or even hostile to U.S. national interests, are eager to satisfy the global demand for LNG.²³ Such countries would undoubtedly prefer that the United States not play a long-term role in meeting those international demands for LNG. Those countries are not restrained by highly developed and complex regulatory systems similar to those in the United States. Our well-established regulatory systems play an enormously important role in protecting U.S. national and public interests. Our regulatory processes bestow many valuable benefits. But they also impose substantial time delays and costs that favor foreign competitors. The protracted regulatory processes needed for LNG export approvals increase a project's development costs and therefore adversely affect a project's economics.

FLEX is not suggesting that we jettison critical regulatory safeguards. FLEX recognizes that the process leading up to this Reply Comment period, although protracted, has added significant value in affirming the benefits of LNG exports. But it is important to also recognize that unnecessary delay in processing pending LNG export applications not only adds unnecessary economic burdens to projects but may very well play into the hands of foreign entities whose best interests are served by excluding U.S. energy exports from the global market.

Some commentators urge DOE/FE to reject its long-standing policies and instead adopt a parochial view that ignores global and international implications of LNG exports. All things being equal, America's allies would prefer to enter into long-term contracts with U.S. suppliers of the natural gas they truly need, rather than commit themselves to long-term dependency on supplies from potentially hostile or less stable countries.²⁴ For example, since the Fukushima tragedy struck Japan in 2011, the Japanese government has been aggressively seeking to source U.S. LNG.²⁵ But the market does not wait. With the substantial lead time before operation and exports can occur, global LNG importers require clarification from the United States as to whether its LNG will be made available in sufficient quantities and for a sufficient period of time, or whether it will adopt an isolationist position and succumb to ill-guided domestic political pressures to retreat from the global stage. Each segment of demand has a limited window of opportunity to be captured. While the United States fails to act, windows are closing.²⁶ Further delays to complete additional and unnecessary studies (when there is already

²³ See Charles Ebinger, Kevin Massy & Govinda Avasarala, *Evaluating the Prospects for Increased Exports of Liquefied Natural Gas from the United States*, Energy Security Initiative at Brookings (January 2012) [recognizing Russia as large exporter and China as having the potential to become large exporter from shale reserves].

²⁴ See, e.g., Initial Comments of the Federation of Electric Power Companies of Japan, Shigeru Kimura, Jan. 24, 2013; Initial Comments of the Japan-U.S. Business Council, Yoshihisa Takasaki, Jan. 23, 2013; Initial Comments of the Japan Gas Association, Toshiyuki Kanisawa, Jan. 23, 2013.

²⁵ Tsuyoshi Inajima & Sally Bakewell, "Abe Will Ask Obama for Shale Exports as Japan's Gas Bill Soars," Bloomberg, Feb. 20, 2013, available at www.bloomberg.com.

²⁶ See *Evaluating the Prospects for Increased Exports of Liquefied Natural Gas from the United States*, *supra*, at pp. 21-25 [recognizing that economic advantages decrease in well-supplied gas market and that several countries, including China and India, are currently working to increase supplies].

more than sufficient, relevant and appropriate data in the decisional record) would serve no legitimate purpose.

VII.

GLOBAL ECONOMIC AND FINANCIAL REALITIES WILL RESTRAIN EXPORTS

In his recent testimony before the House subcommittee on Energy and Power, Dr. Daniel Yergin, vice chairman of IHS and founder of the IHS Cambridge Energy Research Associates, correctly identified the real dilemma facing the United States.²⁷ LNG liquefaction terminals are highly complex. They are enormously expensive. So are the associated but necessary infrastructures on both sides of an LNG terminal. Raising the needed capital in the manner and during the timeframe required is exceptionally challenging. As a practical matter, even if all pending export applications were approved today, only a fraction of those would ever be built. Yergin concluded that financial and economic realities will surely restrain the amount of LNG ultimately exported.

We witnessed a similar phenomenon a decade ago when over 50 LNG import terminals were proposed, but only a handful of terminals were ever constructed.²⁸ Global competition for financial resources will significantly constrain the outcome of the cumulative requests to export LNG. Parties seeking to export U.S. LNG will need to compete in the global market, not only to sell the LNG they manufacture, but also to finance and build the necessary facilities. All approved projects will face substantial challenges after permit approvals are obtained. The purported concerns of those who claim to fear unrestrained export of LNG have not taken a serious, or unbiased, look at the global market and how it operates; nor considered the past history of LNG projects in the United States.

In reality, global financial and economic conditions will restrain exports. As noted above in Figure 4, the global market for LNG is finite.²⁹ Because the market is dominated by long-term LNG supply contracts, new supply must be directed only to meet contested demand not satisfied by existing contracts.³⁰ It is not logical to assume that all international competition will withdraw merely because the United States authorizes LNG export. Nor is it realistic to assume that U.S. LNG exporters will be successful in capturing 100% of the contested market. Even if one unreasonably assumed that the United States could acquire 40% of a contested market of 20 Bcfd reflected in Figure 4, it would only equate to 8 Bcfd. In other words, global market conditions will impose a natural market limitation on U.S. LNG exports. DOE/FE should allow free markets to work.

²⁷ A copy of the testimony is attached.

²⁸ Clifford Kraus, "Exports of American Natural Gas May Fall Short of High Hopes," N.Y. Times, Jan. 4, 2013, available at www.nytimes.com.

²⁹ See *supra*, p. 10, figure 4.

³⁰ Mark Scott, "The Big New Push to Export America's Gas Bounty," N.Y. Times, Oct. 23, 2012 [noting that many utilities in Europe and Asia are locked into long-term contracts that could limit opportunities for new entrants from America].

VIII.
DOE/FE MUST RESIST DEMANDS TO PROVIDE GOVERNMENT "SUBSIDIES" TO
DOWNSTREAM MANUFACTURERS

It has been surprising to see historic advocates of the free market, entities with a long track record of opposing governmental intrusion in the market place and who have historically opposed government subsidies in many forms, now come before DOE/FE and seek to misuse the regulatory process for the purpose of manipulating the free market.³¹ Whatever they may call it, the end result of what they are seeking is equivalent to a subsidy for their businesses. It was therefore refreshing to see the Initial Comments filed on January 24, 2013 in this proceeding by The National Association of Manufacturers ("NAM").³² With a membership of 12,000 small and large manufacturers in all 50 states, NAM recognized that the extraction of natural gas from shale and the liquefaction of natural gas to produce LNG is fundamentally a manufacturing process. In supporting LNG exports, NAM correctly concluded that the export of LNG manufactured from U.S. domestic natural gas is an export of an American-manufactured product.

NAM's conclusions were reinforced on February 6, 2012 in a news release by the American Chemistry Council ("ACC"), representing approximately 175 member companies, which stated in part:

- As America's largest export industry, we support exports of American-made products, including liquefied natural gas (LNG).
- ACC supports the application of existing trade rules (including WTO commitments and bilateral Free Trade Agreements) to all exports, including LNG.³³

NAM and the ACC are correct.

Unfortunately, a small number of downstream manufacturers have taken a protectionist, self-interested approach to LNG exports, requesting that DOE/FE adopt policies giving preferential treatment to their forms of manufacturing. They urge DOE/FE to prohibit or severely restrict LNG exports.³⁴ In essence, those manufacturers are urging DOE/FE to adopt anti-free market, anti-competitive policies to indirectly "subsidize" them at the expense of LNG manufacturers. Such an intrusion into, and manipulation of, the free market would not be consistent with the DOE/FE's mandates under the NGA. It would certainly be inconsistent with DOE's policy of minimum regulatory intrusion into the workings of the free market.³⁵ To give into demands to restrict LNG exports for the purpose of favoring some manufacturing entities over others is improper on many levels, in addition to being inconsistent with DOE/FE's

³¹ See, e.g., Comments of Dow Chemical Company, *supra*; Comments of Aluminum Association, *supra*.

³² Initial Comments of National Association of Manufacturers, Ross Eisenberg, Jan. 24, 2013.

³³ News Release, "ACC Statement on Energy and Competitiveness," Am. Chemistry Council (Feb. 6, 2013), available at www.americanchemistry.com/Media/PressReleasesTranscripts/RelatedPDF/ACC-Statement-on-Energy-and-Competitiveness.pdf. (Copy attached.)

³⁴ See, e.g., Comments of Dow Chemical Company, *supra*; Comments of Aluminum Association, *supra*.

³⁵ See *supra* footnote 15.

mandate under the NGA and the 2005 Energy Policy Act.³⁶ To grant what amounts to a “subsidy” for these entities would be an abuse of the regulatory process and cannot be the goal of DOE/FE. To do so would also be inconsistent with recent policy statements of DOE, for instance the statement of Christopher Smith in DOE’s letter to Congressman Markey in February 2012 which state: “DOE does not...intend to use this authority as a price maintenance mechanism.”

IX.

LIMITING EXPORTS VIOLATES U.S. POLICY, TREATIES AND THE ESTABLISHED POLICY OF DOE

To restrain LNG exports in favor of downstream manufacturers is contrary to the long-standing policy of DOE/FE to not use its regulatory authority to intrude upon the free market.³⁷ This policy was reaffirmed in the recent statement of Christopher Smith, Deputy Assistant Secretary for Oil and Natural Gas, before the Senate Committee on Energy and Natural Resources, in which he stated that one of the criteria used by DOE/FE in its public interest review of export applications is “consistency with DOE’s long-standing policy of promoting competition in the marketplace through free negotiation of trade arrangements.”³⁸ That policy has been consistently been applied by DOE in many forums for decades. In fulfilling its public interest obligations, DOE is committed to determine “[w]hether the arrangement is consistent with DOE’s policy of promoting competition in the marketplace by allowing commercial parties to freely negotiate their own trade arrangements”.³⁹

The international commitments of the United States must also be considered. In his testimony before Congress, Deputy Assistant Secretary Smith also unequivocally stated that “DOE takes international obligations seriously . . . in conducting its public interest analysis.”⁴⁰ It is thus appropriate for DOE/FE to consider the LNG export applications in the context of U.S. obligations under General Agreement on Tariffs and Trade (“GATT”). GATT XI:1 provides: “No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licenses or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party or on the exportation or sale for export of any product destined for the territory of any other contracting party.”⁴¹

U.S. manufacturers agree. In its Initial Comments, NAM urges DOE/FE to adopt a pro-free market, pro-free trade policy that avoids the market distortions created by government

³⁶ See Natural Gas Act, 15 U.S.C. § 717t-2(a)(1) [directing Commission to facilitate price transparency and give due regard to integrity of gas markets and fair competition]; see also Energy Policy Act of 2005, Pub. Law 109-58, Aug. 8, 2005, at § 316.

³⁷ See *supra* footnote 15.

³⁸ The Department of Energy’s Role in Liquefied Natural Gas Export Applications: Statement of Christopher Smith, Deputy Assistant Secretary for Oil and Natural Gas, Office of Fossil Energy, U.S. Department of Energy, Before the Committee on Energy and Natural Resources, United States Senate, 112th Cong. (Nov. 8, 2011), attached as Appendix 1.

³⁹ *Order Granting Authorization to Export Liquefied Natural Gas From Alaska*, Order No. 25000 (FE Docket No. 07-021-LNG), June 3, 2008

⁴⁰ *Id.*

⁴¹ General Agreement on Tariffs and Trade 1994, Art. XI, par. 1.

intervention. NAM concludes that allowing the free market to function will strengthen manufacturing in the United States.⁴² NAM also cites the publication, *The Economic Impact of Export Restrictions* by the Organization for Economic Cooperation and Development, in discussing some of the various negative impacts of LNG export restrictions, including the distortion of trade flow and disruption of relationships with trade partners. NAM also notes that Article 1, section 9 of the U. S. Constitution demonstrates a strong policy in favor of free exports since that provision provides that “(n)o Tax or Duty shall be laid on Articles exported from any State.”⁴³ NAM’s conclusions were supported by ACC in its February 6, 2012 news release stating that the “ACC supports the application of existing trade rules (including WTO commitments and bilateral Free Trade Agreements) to all exports, including LNG.”⁴⁴ FLEX concurs.

For a considerable period of time, the United States has upheld its policy that countries should not restrain the export of natural resources. For decades, the United States has vigorously protested the Canadian forestry management policies that give Canadian lumber mills an unfair economic advantage over U.S. lumber mills.⁴⁵ U.S. support for unrestrained exports is also evidenced by the strenuous objections lodged by the United States against Chinese trade practices in a very analogous context. The Chinese have restricted exports of certain raw materials. This practice artificially drives up the cost of those raw materials in the global market and results in Chinese manufacturers being able to obtain those raw materials domestically at a lower price than their foreign competitors who must import them.⁴⁶ This is fundamentally what some opponents of LNG exports have urged DOE/FE to do in this proceeding. In the case of Chinese restrictions on exports, the World Trade Organization (“WTO”) determined that Chinese restrictions unequivocally violated the WTO’s international trade requirements.⁴⁷ The United States is a WTO member, bound by the same international trade requirements.

The above described Canadian and Chinese actions bear a disturbing resemblance to what is demanded in this proceeding by some opponents of LNG exports, including certain downstream manufacturers. Reduced to its most fundamental nature, such demands are that the United States, acting through DOE/FE, artificially restrain or limit LNG exports in order to provide some U.S. manufacturers with a cost advantage over their foreign competitors. DOE/FE should not permit its regulatory responsibilities to be subverted in a manner similar to that of the Chinese and other market manipulators.

No matter how LNG might be classified under WTO agreements, proposed artificial restrictions on LNG exports are inconsistent with the terms and spirit of WTO agreements and

⁴² See Comments of NAM, *supra*.

⁴³ U.S. Const. art. I, § 9.

⁴⁴ ACC Statement on Energy and Competitiveness, *supra*

⁴⁵ See “Indepth: Softwood Lumber Dispute,” CBC News Online, Aug. 23, 2006, at www.cbc.ca/news/background/softwood_lumber; “U.S. Claims Victory in Lumber Case Against Canada,” Reuters Canada, Feb. 26, 2009, available at <http://ca.reuters.com>.

⁴⁶ See Tom Braithwaite, Joshua Chaffin & Kathrin Hille, “US Lodges WTO Case Against China,” Financial Times, June 25, 2009, at <http://www.ft.com>.

⁴⁷ See *China – Measures Related to the Exportation of Various Raw Materials*, Dispute Settlement: Dispute DS394, World Trade Organization, at www.wto.org.

perhaps even more significantly contrary to the long-standing policy of the United States of promoting free trade. As the Peterson Institute for International Economics powerfully stated in its Initial Comments filed pursuant to the DOE/FE notice:

"If the United States nevertheless does impose restraints [on LNG exports], U.S. actions will certainly be cited in the future by other countries that decide to flout international trade rules and restrict their own exports of natural resources as a means of subsidizing downstream industrial users. What's more, it is likely that countries that are not FTA partners will either retaliate with their own natural resource restrictions or challenge U.S. policies at the WTO. It would be hypocritical and contrary to WTO rules for the United States to impose restraints on the export of LNG while permitting unfettered domestic consumption of natural gas."⁴⁸

FLEX is not suggesting that the WTO requires that the United States give all WTO members FTA status. However, to restrict or prohibit LNG exports for the purpose of giving U.S. companies a competitive advantage over their foreign competitors raises an entirely different question. Such a misguided policy would almost certainly disrupt U.S. trade relations and would likely trigger similar anti-free market measures by other countries. It would also be a violation of the long-standing policy of DOE to review applications and apply its regulatory authority to promote free trade by ensuring that proposals are: "consistent with DOE's policy of promoting competition in the marketplace by allowing commercial parties to freely negotiate their own trade arrangements."⁴⁹

X.

LNG MANUFACTURING AND TRANSPORTATION COSTS PROVIDE A SUBSTANTIAL COST ADVANTAGE TO DOWNSTREAM MANUFACTURERS

U.S. manufacturers have access to domestic pipeline systems that respond to price signals to eliminate locational price disparities. The U.S. natural gas market operates in an efficient manner by simply building pipeline capacity where it is needed. U.S. consumers expect to pay market-indexed prices plus pipeline transportation costs provided by competing pipeline operators.

Foreign consumers of U.S. LNG do not have access to the same markets and natural gas infrastructure as domestic U.S. manufacturers have. Those foreign consumers must bear considerable costs incurred to liquefy natural gas and deliver LNG. For deliveries into European markets, those additional costs are estimated to be \$5.00 to \$6.00 per MMBTU. For deliveries into Asian markets, they are even higher, at \$6.00 to \$7.00 per MMBTU. Further, when the LNG is delivered to a foreign port, there are additional costs to unload and regasify the delivered LNG. Because U.S. domestic manufacturers do not pay liquefaction, LNG shipping and regasification costs to acquire their gas, U.S. manufacturers, particularly chemical manufacturers, enter the global market with a huge built-in cost advantage over their foreign

⁴⁸ Initial Comments of the Peterson Institute for International Economics, January 27, 2013.

⁴⁹ DOE Order No. 2500, *supra*, p. 45

competitors who rely on imported LNG.

Since the imbedded costs associated with LNG exports already provide U.S. manufacturers with a substantial cost advantage, they should be able to compete in the global market without market intervention by the United States or natural gas price “subsidies” in any form.⁵⁰ When we examine the situation closely, it appears disingenuous for U.S. downstream manufacturers to claim they need the federal government to manipulate the free market in order for them to compete in the global market.

XI.

THE NERA STUDY SIGNIFICANTLY UNDERSTATES THE ECONOMIC BENEFITS OF LNG EXPORTS

As noted previously, the model used by the NERA Study is fundamentally a conservative one. For example, it presumes that there is full employment in the United States, meaning that there is no unemployment. The result is that the NERA model assumes that new jobs are filled by workers who necessarily must move from another job, or are filled as workers retire.⁵¹ This state of employment equilibrium is not realistic.

During the last decade the U.S. energy industry has invested substantially in the development of domestic energy reserves. All indications are that those investments will increase enormously over the next two decades, assuming the United States acts wisely and expeditiously approves significant LNG exports.⁵² A recent study by the Interstate Natural Gas Association of America Foundation (the “INGAA Foundation”)⁵³ concluded that midstream gas infrastructure investment alone will exceed \$200 billion by 2035.⁵⁴ Shell pointed out in its Initial Comments that the U.S. shale gas industry alone has had an extraordinarily positive impact on the U.S. economy, already supporting 600,000 jobs. That number is likely to increase by 2015 to 870,000 jobs and grow to 1.6 million jobs by 2035.⁵⁵ One consequence of recent investments is

⁵⁰ See James Melik, “The Dangers of Trade Protectionism,” BBC News, Feb. 4, 2009, at <http://news.bbc.co.uk>, demonstrating that trade protectionism is not in the overall public interest because it stifles growth and leads to worldwide job loss; see also “Protectionism Alert,” The Economist, June 30, 2012, at www.economist.com, for description of increasing protectionism around the world; see also Ken Costello, *LNG Exports: What State Utility Commissions Need to Know*, National Regulatory Research Institute Report No. 12-14, October 2012, at p. 18-19, for explanation of free trade benefits

⁵¹ See NERA Study, p. 103.

⁵² See *LNG Exports: What State Utility Commissions Need to Know*, *supra*, at p. 1 [noting Greenfield facilities cost as much as \$4 billion per billion cubic feet of export to build]; Initial Comments of Shell Oil Company, Anders Ekvall, Jan. 24, 2013, at p.4 [noting experts estimate total cost to build a single export facility to be \$10 billion]; Peter Kelly-Detwiler, “U.S. Natural Gas Exports Poised for Takeoff,” Forbes, Nov. 8, 2012, available at www.forbes.com/sites/peterdetwiler/2012/11/08/us-natural-gas-exports-poised-for-take-off [noting costs of \$1-2 billion to construct liquefaction facility, over \$200 million per tanker, and \$0.5-1 billion per receiving terminal]; see also Liam Plevin and Russell Gold, “U.S. Nears Milestone: Net Fuel Exporter,” Wall Street Journal, Nov. 30, 2011, available at <http://online.wsj.com>.

⁵³ “North American Natural Gas Midstream Infrastructure Through 2035: A Secure Energy Future”, The INGAA Foundation, Inc., June 28, 2011.

⁵⁴ See Initial Comments of INGAA, Donald F. Santa, Jan. 18, 2013.

⁵⁵ *America's New Energy Future: The Unconventional Oil and Gas Revolution and the U.S. Economy, Volume 1: National Economic Contributions*, IHS, October 2012; Initial Comments of Shell Oil, *supra*, p. 4.

that natural gas reserves in this country have risen dramatically since 2008⁵⁶ and prices have fallen dramatically from \$12 in 2008 to less than \$4 in 2012. The increased U.S. employment that the natural gas industry creates not only benefits the general economy, but also increases tax revenues at all levels of government. Future LNG exports alone will increase federal tax revenues by billions of dollars per year.⁵⁷ The NERA model assumes that all investment in natural gas exporting infrastructure will come from domestic sources.⁵⁸ However, another probable benefit of LNG exports is the enormous amount of capital needed to finance the necessary facilities. It appears likely that a substantial amount of that capital will come from foreign sources. This potential influx of foreign capital and its associated positive macroeconomic impacts are overlooked in the NERA Study.

In spite of its conservative approach, the NERA Study strongly and unequivocally supports the statutory presumption of the NGA that LNG exports are in the public interest. Even if there was not a statutory presumption of public interest under Section 3 of the NGA, the NERA Study alone would be persuasive evidence that LNG exports are in the public interest.

XII.

THE NERA STUDY PROPERLY DOES NOT ADDRESS NATIONAL DEFENSE AND OTHER ASPECTS OF THE PUBLIC INTEREST

Some Initial Comments filed with DOE/FE either objected to the NERA Study or questioned its use on the grounds that it only related to macroeconomic matters and did not include an analysis of other asserted aspects of the public interest.⁵⁹ For example, national security is an important “other” aspect of the public interest.⁶⁰ As the Abraham Group stated in its Initial Comments filed on January 17, 2013, “LNG exports can buttress US geopolitical leadership and trade, while at the same time continuing to support low domestic gas prices and a renaissance in domestic manufacturing. ... [B]y becoming an exporter, the US would fill a vital role for its allies in Europe and Asia, many of which are dangerously dependent for natural gas on foreign powers frequently hostile to US interests. Reliance on Russian gas in Ukraine and the EU would be likely to diminish, for example.”⁶¹ In addition, as Dr. Daniel Yergin testified before Congress: “For decades, the United States has made the free flow of energy supplies one of the cornerstones of foreign policy. It is a principle we have urged on many other nations. How can the United States, on one hand, say to a close ally like Japan, suffering energy shortages from Fukushima, please reduce your oil imports from Iran, and yet turn around and, on the other, say

⁵⁶ U.S. Energy Information Administration, Natural Gas, *U.S. Crude Oil, Natural Gas and NG Liquids Proved Reserves*, Aug. 1, 2012, at www.eia.gov/naturalgas/crudeoilreserves/index.cfm.

⁵⁷ Heritage Foundation publication: *U.S. Natural Gas Exports: Lift Restrictions and Empower the States*; see also Report of the National Center for Policy Analysis February 22, 2013 citing the report of the National Economic Research Association.

⁵⁸ NERA Study, p. 211.

⁵⁹ See, e.g., Comments of Dow Chemical, *supra*, at p. 7 [energy security]; Initial Comments of American Public Gas Association, Bertram Kalisch, Jan. 24, 2013 [benefits of producing materials in U.S.]; Comments of Sierra Club, *supra*, at p. 24 [environmental costs].

⁶⁰ The recent Senate Bill entitled “Expedited Approval of Exportation of Natural Gas to United States Allies” is a further recognition of those national security issues.

⁶¹ See Initial Comments of The Abraham Group, Jason Van Buren, Jan. 18, 2013.

new natural gas exports to Japan are prohibited?”⁶²

FLEX concurs that energy exports will play an important role in the context of national security, both for the United States and its allies. However, FLEX does not interpret the 2012 LNG Export Study, nor the DOE/FE Notice calling for comments, as suggesting that the public interest is confined exclusively to macroeconomic matters.⁶³ Furthermore, geopolitical/national security considerations are not susceptible to standard economic modeling. As such, it would not have been proper for the NERA Study to attempt to quantify in macroeconomic terms those additional benefits of LNG exports. Notwithstanding that the NERA Study was not commissioned to address this issue, FLEX understands that DOE/FE will not confine its decisional processes to that single factor. Nor will it ignore the presumption of public interest established by the NGA. Contrary to concerns voiced in some Initial Comments, when DOE/FE examines the subject of public interest, the process will include consideration of a broad range of factors. In testimony before Congress, Christopher Smith testified that:

“A wide range of criteria are considered as part of DOE's public interest review process, including, to the extent deemed relevant or appropriate: domestic need for the natural gas proposed for export; adequacy of domestic natural gas supply; U.S. energy security; the impact on the U.S. economy (GDP), consumers, and industry; job creation; U.S. balance of trade; international considerations; environmental considerations; consistency with DOE's long-standing policy of promoting competition in the marketplace through free negotiation of trade arrangements; and other issues raised by commenters and/or interveners deemed relevant to the proceeding.”⁶⁴ (Emphasis added.)

At a meeting with the National Association of Regulatory Commissions, Mr. Smith specifically confirmed DOE's recognition that international geo-political issues are part of DOE's public interest analysis.⁶⁵ FLEX agrees with the multitude of experts that have concluded that prohibition or undue restriction of energy exports, including LNG exports, would have a significant negative impact on our national security.⁶⁶

⁶² Testimony of Dr. Daniel Yergin, House of Representatives Committee on Energy and Commerce, Subcommittee on Energy and Power, hearing entitled: “American Energy Security and Innovation: An Assessment of North America's Energy Resources”, February 5, 2013.

⁶³ See 2012 LNG Export Study, 77 Fed. Reg. 73627-73630 (Dec. 11, 2012).

⁶⁴ Statement of Christopher Smith, Nov. 8, 2011, *supra*.

⁶⁵ Christopher Smith, “LNG: Out Through the In Door,” Presentation to NARUC Winter Committee Meetings, Feb. 7, 2012, p. 6, available at <http://www.narucmeetings.org/Presentations> [in determining public interest DOE will consider “international (geopolitical) considerations”].

⁶⁶ See, e.g., Thomas D. Willett and Mehrdad Jalalighajar, U.S. Trade Policy and National Security, 3 Cato Journal 3, 721 (Winter 1983/1984) [stating that even a “ cursory glance at the history of postwar trade restrictions, imposed by the United States in the name of national security, makes us question whether in practice a policy of complete free trade ... might not have served our security interests much better,” and “[n]ot only were U.S. trade policy approaches often inefficient or ineffective, they were often counter-productive.”]; Rep. Mike Pompeo, “Opinion: Energy Exports: The Untapped U.S. Option,” Politico, Jan. 15, 2013, available at www.politico.com [“[R]ather than

The cost to the United States of restricting LNG exports would undoubtedly be very significant, and the negative national security implications of such a restriction are another factor providing clear support to exporting domestic LNG.

XIII.

HAD NERA USED EIA'S AEO2013 PROJECTIONS, THE BENEFITS WOULD HAVE BEEN HIGHER

The NERA Study utilized 2010 EIA data.⁶⁷ Several commentators have seized upon that point and argued that the results of the NERA Study are therefore invalid. They claim that the 2012 data, or even the recent 2013 data, should be used in a new study.⁶⁸ Such an undertaking would be improper and unnecessary; improper because it would create a highly prejudicial delay that could impair the viability of some projects, and unnecessary because natural gas projections from AEO2012 (Annual Energy Outlook) are higher than the AEO2011 figures.⁶⁹ The AEO2013 Early Release Overview is somewhat more bullish than even the AEO2012 report. If higher figures had been used in the NERA Study, the identified economic benefits would only have been somewhat larger than the very significant economic benefits already shown in the 2012 LNG Export Study.⁷⁰

Projections using Deloitte MarketPoint's WGM with FLEX's LNG export assumptions show that the slightly higher demand in AEO2013, relative to AEO2010, would cause essentially no change to NERA's estimated impact of LNG exports on wholesale natural gas prices. However, more significantly, had the NERA Study used the higher supply estimates embodied in AEO2013, its estimated impact of LNG exports on U.S. prices would likely have been lower and the benefits to the U.S. higher.

Because the NERA Study affirms that LNG exports are in the public interest, returning positive economic benefits at all levels of export,⁷¹ it is not necessary to update the NERA analysis for 2013 data. The results would be almost identical, but even more positive. If the decisional process were improperly delayed to perform a new study using the 2013 data, by the time that was completed, EIA would have published new data for 2014. If the logic of the commentators seeking delay for further studies was again applied, an additional study would be required using the 2014 EIA data. This process could go on endlessly while the United States loses opportunities to achieve the benefits of LNG exports. To delay decisions on exports to

reducing our national security, exporting American energy would increase our influence with other nations. Japan and Ukraine, China and Europe would all benefit from American export – making them more reliant on trade with the United States and less reliant on energy from our strategic competitors like Iran, Russia and Venezuela.”].

⁶⁷ See NERA Study, p. 1.

⁶⁸ See, e.g., Comments of Sierra Club, *supra*, at p. 11; Comments of Dow Chemical, *supra*, at pp. 9-11.

⁶⁹ See, e.g., AEO2012, at Table 26, p. 111-112, showing projected dry gas production of 21.6 tcf in 2010 and between 23.7 and 27.9 tcf in 2012; see also AEO2011, Figure 6.1, p. 178, showing projected dry gas production of 23 tcf..

⁷⁰ NERA Study at p. 55 [exports improve well-fare for U.S. consumers], p. 56 [continued positive impacts on GDP], p. 57 [more consumption leading to more purchasing power for consumers], p. 58 [added investment in the economy], p. 58 [added income from LNG exports], p. 77 [overall net benefits to U.S.].

⁷¹ Id. at p. 76 [“macroeconomic analysis shows that there are consistent net economic benefits across all the scenarios examined and that the benefits generally become larger as the amount of exports increases”].

await a further unnecessary study is not justified and would be materially prejudicial to applicants. Furthermore, it would be contrary to the statutory responsibilities of DOE/FE.

XIV.

ALLEGED CUMULATIVE ECONOMIC/ENVIRONMENTAL EFFECTS

It is wrongly asserted by some in their Initial Comments that the NERA Study should have considered alleged future economic/environmental impact related to the future development of resources.⁷² Such comments claim that LNG exports will have negative economic impacts through imputed adverse environmental impacts. These arguments are also based on the inaccurate presumption that it is possible to determine if, what and where particular future environmental harm may occur and the related costs (net of the economic benefits associated with remediation, etc.). This is irrelevant to the macroeconomic analysis of the NERA Study. The induced environmental effect argument, on which is based the induced economic impact, was raised and unequivocally rejected on three separate occasions by FERC, the Second Circuit and DOE, respectively.⁷³ It was rejected because it is entirely speculative and unreliable and, therefore, irrelevant to the analysis. Because the underlying alleged "induced" environmental effects are speculative and irrelevant, likewise the alleged induced economic effects of those alleged environmental impacts are too speculative and irrelevant to be considered.

The baseline assertion of these comments is that resource extraction is associated with net economic damage.⁷⁴ However, history demonstrates that the opposite is true: a failure to extract and use natural resources, particularly energy, has severe negative economic consequences. An impartial look at the condition of resource-poor, impoverished nations demonstrates the fallacy of the allegation that it is resource development that causes a lack of economic development. Economic development necessarily requires a wise use and development of energy and natural resources.

XV.

CONCLUSION

The LNG export approval process begins with the NGA presumption that exports should be approved because exports are in the public interest. Nothing in the record of the FLEX

⁷² Sierra Club claims that DOE/FE's determination as to whether to approve export applications requires the preparation of a full programmatic EIS under NEPA. (Comments of Sierra Club, *supra* at p. 5, fn.9.) Aside from being incorrect, the comment is out of order here because DOE/FE has stated that comments must be limited to the economic study of exports and any comments on other issues will be ignored. This claim of the Sierra Club has been addressed already in several of the pending export dockets, as well in the Final Decision of DOE/FE in the Sabine export matter. It does not need to be addressed here. (Final Opinion and Order Granting Long-Term Authorization to Export Liquefied Natural Gas from Sabine Pass LNG Terminal to Non-Free Trade Agreement Nations, Order No. 2961-A (FE Docket No. 10-111-LNG), Aug. 7, 2012, at pp. 27-28.)

⁷³ Order Granting Section 3 Authorization, 139 FERC ¶ 61,039 (Docket No. CP11-72-000), April 16, 2012, at pp. 32-33; Coalition for Responsible Growth and Resource Conservation, Damascus Citizens for Sustainability and Sierra Club v. United States Federal Energy Regulatory Commission, 2nd Cir. Summary Order (12-556g), June 12, 2012 [FLEX previously provided DOE/FE with a copy on June 13, 2012]; See also, City of Soreacres v. Waterworth (5th Cir. 2005) 420 F.3d 440, 453; DOE Order No. 2961-A, *supra*, pp. 11-12.

⁷⁴ See Comments of Sierra Club, *supra*, p. 13.

applications has overcome that presumption. In fact, the record in these proceedings more than adequately affirms the correctness of that presumption. DOE/FE has done an excellent job of collecting relevant data, receiving broad input and fulfilling its legal and statutory requirements. Despite the claims of some commentators, any further extension of the process or additional studies is neither necessary nor appropriate. Opponents have not carried their burden of demonstrating exports are inconsistent with the public interest.

The 2012 LNG Export Study and the filed comments can assist the DOE/FE in assessing the public interest benefits, but any impartial evaluation will concur with the ultimate conclusion of the 2012 LNG Export Study that the public interest is well served by LNG exports. Further delay would be highly prejudicial to FLEX and other applicants and would be contrary to the free market policies that must guide DOE. Recently, the President expressed his continued support for our nation's long-term commitment to preserve and enhance free market fundamentals, which underpin the argument in favor of increasing exports. In his 2013 state of the union message, President Obama stated:

"Even as we protect our people, we should remember that today's world presents not only dangers, but opportunities. To boost American jobs, and level the playing field in the growing markets of Asia, we intend to complete negotiations on a Trans-Pacific Partnership. And tonight I am announcing that we will launch talks on a comprehensive Transatlantic Trade and Investment Partnership with the European Union—because trade that is free and fair across the Atlantic supports millions of good-paying American jobs."⁷⁵

The United States now has an opportunity to take a place at the global table as a major exporter of clean-burning natural gas. The United States has an opportunity to use LNG exports to support our allies. The United States is presented with a unique and valuable opportunity to export LNG from its enormous surplus of natural gas. If we act responsibly and take this opportunity, substantial benefits will accrue to the entire country, which will last for decades. But we are not the only country blessed with natural gas resources. If we do not seize this global opportunity others will. It would be tragic if this country let this enormous opportunity pass us by while we interminably study and debate. LNG projects proposed by foreign entities substantially exceed the total volume of the available contested market. If we continue to delay, other nations will fill the hole in the market. We must not permit our regulatory processes to be high jacked by special interests, for the loss of the benefits of the LNG market would not be in the public interests of the United States.

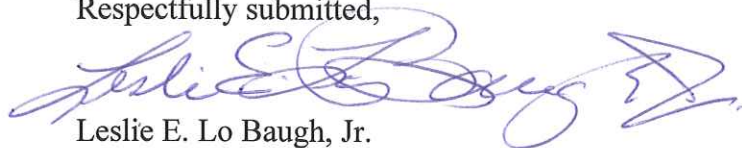
FLEX's export applications have been on hold for more than two years now. Under all applicable laws and regulations, it is certainly timely for DOE/FE to make appropriate decisions on the pending export applications. There is a time to study, a time to analyze and a time to consider relevant factors. But there is also a time to decide. Now is the time to decide. The public

⁷⁵ See "Remarks by the President in the State of the Union Address," Office of the Press Secretary, The White House, Feb. 12, 2013, at www.whitehouse.gov/the-press-office/2013/02/12/remarks-president-state-union-address.

interest requires expedition.

We respectfully request expeditious approval of the two FLEX applications to export domestic LNG long-term to non-FTA countries.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Leslie E. Lo Baugh, Jr.", with a stylized flourish at the end.

Leslie E. Lo Baugh, Jr.

Attorney for
Freeport LNG Expansion, L.P.
and
FLNG Liquefaction, LLC

February 25, 2013

Attachment 1



Statement

For Immediate Release

Feb. 6, 2013

Contact: Anne Kolton (202) 249-6500

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ACC STATEMENT ON ENERGY AND COMPETITIVENESS

WASHINGTON, D.C. (February 6, 2013) – *The following statement was issued by the American Chemistry Council:*

“The American Chemistry Council’s Executive Committee reaffirmed unanimously on Tuesday that there is a critical need for the United States to implement a market-oriented “all of the above” energy strategy. This strategy must fully develop all domestic energy resources; enable growth of our economy and of America’s manufacturing base including the chemical industry; and ensure that ill-conceived regulations do not oversubscribe any one energy source. Public policies should promote the availability of competitively priced natural gas and feedstock to support the continued growth of the chemical industry in the United States.

“The Executive Committee unanimously expressed its opposition to any new export bans or restrictions on liquefied natural gas such as a moratorium on export terminals or the prohibition on the export of natural gas produced on public lands. The Executive Committee also reaffirmed its support for free-market policies that promote the export of American-made goods, including the export of liquefied natural gas.

“Where there is not a clear consensus among the membership is on the question of whether the Natural Gas Act’s “public interest” requirement should be further defined in export permitting to non-FTA countries. The Executive Committee agreed to establish a senior level committee to further discuss this issue and determine if a consensus can be reached. This new committee is also chartered with monitoring and discussing energy-related issues that could affect the competitive position of our industry in the future, such as infrastructure development and access to energy resources.

“We are proud of the role that ACC has played in educating policymakers and the public about the historic opportunity that shale gas - and other energy sources such as improved efficiency and energy recovery - present for the U.S. economy, consumers, workers, and manufacturers as well as for the security of our nation. ACC members will continue to work together to vigorously advocate for energy and related regulatory policies at both the federal and state levels that will ensure the availability of abundant energy supplies, including natural gas, and the reliability and stability of energy markets now and in the future.”



ACC POLICY ON ENERGY AND COMPETITIVENESS

ACC supports public policies that promote the availability of competitively priced natural gas and feedstock to support the continued growth of the chemical industry in the United States. To that end, ACC supports free trade principles in the context of U.S. energy policy. Natural gas has enormous potential to renew and grow the American chemistry industry, the entire domestic manufacturing sector, and the U.S. economy at large, creating jobs and more exports of manufactured goods. America needs to couple rules-based free trade principles with an “all of the above” energy strategy to ensure we are fully developing our domestic energy resources, including natural gas, and taking full advantage of each energy source to promote sustained economic growth.

ELEMENTS OF ACC POLICY ON ENERGY AND COMPETITIVENESS

- ACC supports a market-based “all of the above” national energy policy anchored in maximizing access to competitively priced domestic energy supplies, using energy efficiently and developing a diverse set of energy sources.
- An abundant, competitively priced and reliable supply of natural gas and natural gas liquids (NGLs) has created a manufacturing renaissance in the United States. ACC supports policies that promote our industry’s competitive advantage, such as public policies and positions that encourage the responsible production of natural gas and NGLs.
- As America’s largest export industry, we support exports of American-made products, including liquefied natural gas (LNG).
- ACC supports the application of existing trade rules (including WTO commitments and bilateral Free Trade Agreements) to all exports, including LNG.
- Consistent with U.S. trade laws, we oppose imposition of any new LNG export bans or restrictions, such as those that would impose a moratorium on export terminals or prohibit exports of gas produced on public land. We support full compliance with the Natural Gas Act in the issuance of LNG export permits, including the presumption that exports to Free Trade Agreement countries are in the public interest.
- There is a lack of clear consensus among our members concerning whether the Natural Gas Act’s “public interest” requirement should be further defined in export permitting for non-FTA countries. ACC therefore will further study this issue and ways to achieve consensus.
- ACC will also continue to monitor the U.S. energy situation, including natural gas supply/demand scenarios, and their implications for global competitiveness of the industry.

www.americanchemistry.com/newsroom

The American Chemistry Council (ACC) represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people's lives better, healthier and safer. ACC is committed to improved environmental, health and safety performance through Responsible Care®, common sense advocacy



designed to address major public policy issues, and health and environmental research and product testing. The business of chemistry is a \$760 billion enterprise and a key element of the nation's economy. It is the largest exporting sector in the U.S., accounting for 12 percent of U.S. exports. Chemistry companies are among the largest investors in research and development. Safety and security have always been primary concerns of ACC members, and they have intensified their efforts, working closely with government agencies to improve security and to defend against any threat to the nation's critical infrastructure.



Attachment 2

Subcommittee on Energy and Power of the House Energy and Commerce Committee

Testimony submitted for Hearings on “America’s Energy Security and Innovation”

By Dr. Daniel Yergin¹

February 5, 2013

It is an honor to appear before the Subcommittee on Energy and Power of the House Energy and Commerce Committee, and I do want to express my appreciation for the opportunity to participate in this important hearing.

The United States is in the midst of the “unconventional revolution in oil and gas” that, it becomes increasingly apparent, goes beyond energy itself. Today, the industry supports 1.7m jobs – a considerable accomplishment given the relative newness of the technology. That number could rise to 3 million by 2020. In 2012, this revolution added \$62 billion to federal and state government revenues, a number that we project could rise to about \$113 billion by 2020.² It is helping to stimulate a manufacturing renaissance in the United States, improving the competitive position of the United States in the global economy, and beginning to affect global geopolitics. This revolution has also engendered two debates -- about the environmental impact of shale gas development and about the role of U.S. energy exports. All this sets the framework for the Subcommittee’s hearings.

¹ Dr. Daniel Yergin is Vice Chairman of IHS and founder of IHS Cambridge Energy Research Associates. He is author of *The Quest: Energy, Security, and the Remaking of the Modern World* and received the Pulitzer Prize for his book *The Prize*. He serves on the U.S. Secretary of Energy Advisory Board.

² IHS, *America’s New Energy Future: the Unconventional Oil and Gas Revolution and the United States Economy*, vol. 1 *National Economic Contributions* (October 2012) and vol. 2, *State Economic Contributions* (December 2012).

Owing to the scale and impact of shale gas and tight oil, it is appropriate to describe their development as the most important energy innovation so far of the 21st century. That is said with recognition of the major technological advances in wind and solar since 2000; but, as is described in *The Quest*, those advances are part of the “rebirth of renewables”. As actual innovations, solar and wind emerged in the 1970s and 1980s.³

The unconventional revolution has unfolded pretty fast. This Committee has held many important hearings on energy over the decades. Yet it is striking to think back to the hearings of even just half a decade ago, during the turmoil of 2008, when it was widely assumed that a permanent era of energy shortage was at hand.

How different things look today. Shale gas has risen from two percent of domestic production a decade ago to 37 percent of supply, and prices have dropped dramatically. U.S. oil output, instead of continuing its long decline, has increased dramatically – by about 38 percent since 2008.⁴ Just the increase since 2008 is equivalent to the entire output of Nigeria, the seventh-largest producing country in OPEC.

People talk about the potential geopolitical impact of the shale gas and tight oil. That impact is already here. It is sobering to consider that, without this increase in oil output based on the same technologies as shale gas, the sanctions on Iranian oil exports might well have failed.

Where did the unconventional revolution come from?

This development is a story of entrepreneurship and innovation. Although hydraulic fracturing dates back to the late 1940s, it took from the early 1980s to the end of the 1990s, in the face of much skepticism and disappointment, to establish that natural gas could be economically extracted from shale rock using

³ Daniel Yergin, *The Quest: Energy, Security, and the Making of the Modern World* (New York: Penguin Books, 2012), updated edition, chapters 27, 29-30.

⁴ Energy Information Administration

that technology. By 2003, it was successfully yoked with another technology, horizontal drilling, to provide proof of concept.⁵

Still, the dominant conviction for the next few years was that the United States was going to become increasingly short of natural gas and would become a large importer of liquefied natural gas (LNG). Only in 2008 was it observed that U.S. natural gas production was going up, instead of down. Many more companies entered into shale gas development, and the pace of effort intensified. Since then, output has grown rapidly, indeed well beyond the capacity of the current market to absorb it. It was not until the autumn of 2009 that the shale revolution became apparent to the policy community. And it was only around 2010 that producers began to shift from focusing on gas production to producing oil and liquids-rich natural gas using the same techniques.

What is the economic impact of the unconventional oil and gas revolution?

While various states had begun to home in on the economic development aspects of shale gas and tight oil, it was only in about 2011 that its significance for the national economy started to come into focus. So far, this unconventional revolution is supporting 1.7 million jobs – direct, indirect, and induced. It is notable that, owing to the long supply chains, the job impacts are being felt across the United States, including in states with no shale gas or tight oil activity. For instance, New York State, with a ban presently in effect on shale gas development, nevertheless has benefitted with 44,000 jobs. Illinois, debating how to go forward, already registers 39,000 jobs.⁶

The total revenues flowing to governments from unconventional amounted to \$62 billion last year. Companies are now committing or planning investments that in total appear to go into the hundreds of billions of dollars. A large number of chemical companies, for instance, have announced plans to build or expand facilities in North America – with capital expenditures totaling close to

⁵ Yergin, *The Quest*, chapter 16, "The Natural Gas Revolution".

⁶ IHS, *America's New Energy Future*, vol. 2, *State Economic Contributions*, p. 14

\$100 billion.⁷ Will all be built? Time will tell. But what is striking is that, half a decade ago, these companies would have scoffed if they had been told that they would be investing back into the United States. The investments are coming both from U.S. based companies, which are “on-shoring” in response to lower energy costs, and from foreign companies. Many other kinds of manufacturing firms are also investing and expanding based upon this growing business.

The unconventional revolution was one of the major topics at the World Economic Forum two weeks ago in Switzerland. European business leaders and some European policymakers are realizing that United States’ new energy situation greatly improves its competitive position vis a vis a Europe that desperately needs new jobs. When I was in China for the Chinese publication of *The Quest*, I repeatedly encountered discussions about how shale gas could change the global competitive playing field to the advantage of the United States.

How to assess the environmental aspects?

The most notable impact is in terms of CO₂ emissions. U.S. carbon dioxide emissions from energy consumption are down 13 percent since 2007.⁸ The economic downturn is part of the story. But the most significant part is the result of natural gas supplanting coal in electric generation at a rapid rate.

Hydraulic fracturing has been used since the late 1940s, as already indicated. However, it has only been recently applied at this scale and with this degree of intensity in regions that are more densely populated and that are not accustomed to oil and gas development. Understandably, the environmental impacts need to be carefully assessed and monitored, and the public needs to be confident about these impacts.

In March, 2011, President Obama spoke about how “recent innovations have given us the opportunity to tap” large reserves of natural gas –

⁷ IHS, *Energy and the New Global Industrial Landscape: a Tectonic Shift?* (January 2013), p. 2

⁸ EIA, *Monthly Energy Review*, January 2013, Table 12.1

“perhaps a century’s worth of reserves.” But he added that the public needs to be assured that it is being produced safely.⁹ As a consequence, a subcommittee to the Secretary of Energy’s Advisory Board was established to examine the environmental questions. I served on that committee under Chairman John Deutch of MIT.¹⁰ Our work identified three major environmental issues – water, local air pollution, and community impact. Each, the subcommittee concluded, needs to be managed with great attention and can be managed through best practices in operations and regulation, continuing technological innovation, and community engagement.¹¹ We see continuing effort going into these endeavors – with, for instance, recycling of water and new approaches to waste water treatment.

One observation that came out of that study is what seems to be a mismatch between perceptions of regulation and actual regulation. Drilling is a highly-regulated activity, but it is mostly regulated at the state level. We identified the need to continue to support, with what amounts to very small funding, the activities of STRONGER – State Review of Oil and Natural Gas Environmental Regulations – a collaborative benchmarking and standard-setting organization that evaluates and promotes continuing improvement of regulatory activities among the states.¹²

⁹ “Remarks by the President on America’s Energy Security,” March 30, 2011, <http://www.whitehouse.gov/the-press-office/2011/03/30/remarks-president-americas-energy-security>

¹⁰ Other members of the Subcommittee included Professor Stephen Holditch, chairman of the department of petroleum engineering at Texas A&M University; Fred Krupp, president of the Environmental Defense Fund; Kathleen McGinty, chairman of the Council on Environmental Quality in the Clinton Administration and former Secretary of the Pennsylvania Department of Environmental Protection; and Susan Tierney, former assistant secretary of energy in the Clinton Administration and former Secretary of Environmental Affairs and the Chair of the Water Resources Board for the State of Massachusetts and managing principal of the Analysis Group.

¹¹ Secretary of Energy Advisory Board, *Shale Gas Subcommittee 90-Day Report*, August 18, 2011.

¹² For STRONGER, <http://www.strongerinc.org/>

What does the unconventional revolution mean for US imports and exports of oil and gas?

U.S. imports and exports of energy have been a major issue for almost seventy years in the United States. Until the end of the last decade, it seemed that the main question about oil imports was how fast they would increase as a share of total consumption; and, for gas, how large the exports would become. This unconventional revolution has turned around the direction of imports. . U.S.net imports of oil have declined from a peak of 60 percent in 2005 to about 40 percent today. That is the consequence of surging tight oil production, and reduced demand, owing to both greater efficiency and the weak economy. Moreover, the flow of imports has changed. Canada now supplies about 27percent of total U.S. imports.

Net imports of crude will continue to decline. But the United States will continue to remain a net importer for some time. Our import levels are still higher than they were at the time of the first oil crisis, in the 1970s. However, we will see the Western Hemisphere, and North America in particular, moving towards greater self sufficiency. At the same time, the very large, technically-advanced refining complex on the Gulf Coast -- along with the shifting domestic product demand -- will put the United States in the position to continue to expand exports of refined products.

What, of course, gets most attention now is the potential for liquefied natural gas (LNG) exports. This needs to be looked at in terms of overall U.S. supply and global competition. Our view is that, owing to the very large resource base, the market in the U.S. is demand-constrained, rather than supply-constrained. Larger markets -- whether they be in electric power, industrial consumption, transportation, or exports -- are required to maintain the investment flow into the development of the resources.

Many LNG projects for the United States have been announced. These would be expensive facilities to build -- \$10 billion or more. Only a handful, in our view, are likely to end up being financed and built. The reason is both cost and the scale of global competition. Currently, 95 million tons of new annual capacity

around the world are either under construction or have been committed, which is equivalent to fully a third of existing capacity. Capacity in the U.S. that might be coming into a market late in this decade or early in the next will have to compete with new supply from existing exporters, such as Australia, and the new sources, such as off-shore East Africa and the Eastern Mediterranean. Moreover, western Canada is likely to become a major exporter of LNG to the main markets in Asia. This competition will create a global market offset on how many projects are actually built.

While markets and economics will eventually determine the realistic scale of U.S. exports, one also has to take into account wider considerations in assessing policy regarding future LNG exports. For decades, the United States has made the free flow of energy supplies one of the cornerstones of foreign policy. It is a principle we have urged on many other nations. How can the United States, on one hand, say to a close ally like Japan, suffering energy shortages from Fukushima, please reduce your oil imports from Iran, and yet turn around and, on the other, say new natural gas exports to Japan are prohibited?

What is the geopolitical impact of the unconventional energy revolution in the United States?

This question has moved to the front of international discussion. Last Friday, at the venerable Munich Security Conference, a forum for leading defense and security officials from around the world, this was one of the main topics of discussion. This kind of question was never on that agenda before.

One immediate impact has already been cited. Tighter sanctions on Iran have succeeded in taking half of Iran's oil exports out of the market, even as global demand for oil continues to expand. The increase in Saudi output was part of the formula. But also of great importance has been the growth in U.S. supply – at a rate higher than generally anticipated.

Certainly expanded domestic supply will add to resilience to shocks and add to the security cushion. Moreover, prudent expansion of U.S. energy exports will

add an additional dimension to U.S. influence in the world. However, there will remain only one global oil market, and a major disruption anywhere would affect the entire market. The question as to how the unconventional revolution will affect U.S. involvement in the Middle East is moving to the fore. Current net U.S. imports from the Persian Gulf are equivalent to eight percent of total consumption, as it is. Even if that number goes down, the nature of U.S. interests in the region go well beyond direct oil imports to the importance of the region for the global economy and global security.

Conclusion

Altogether, the unconventional oil and gas revolution has already had major impact in multiple dimensions. Its significance will continue to grow as it continues to unfold. These hearings provide a very timely opportunity for assessing that impact and significance in its many dimensions, and I am pleased to respond to the committee's questions.
