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Senate Committee on Energy and Natural Resources

Hearing on
S. 33, "LNG Permitting Certainty and Transparency Act"

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Testimony of
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Chairman Murkowski, Ranking Member Cantwell, and Members of the Committee, thank you for the opportunity to testify before you on S. 33, the "LNG Permitting Certainty and Transparency Act." My name is Paul Cicio and I am the President of the Industrial Energy Consumers of America (IECA). IECA represents energy-intensive trade-exposed (EITE) industries on energy and environmental issues. IECA companies are some of the largest consumers of natural gas and electricity in the U.S.

A. INTRODUCTION

IECA member company revenues exceed $1.0 trillion in annual sales, they operate over 2,900 facilities nationwide, and have more than 1.4 million employees worldwide. IECA membership represents a diverse set of industries including: chemical, plastics, steel, iron ore, aluminum, paper, food processing, fertilizer, insulation, glass, industrial gases, pharmaceutical, building products, brewing, independent oil refining, and cement.

IECA has supported legislation by several of members of this Committee to increase production and U.S. natural resources, and we have supported diversity and reliability of energy supply in the power sector with sensitivity to environmental concerns. IECA has also supported transparency and oversight of energy markets and is a champion for industrial energy efficiency and use of cogeneration of power and waste energy to power.

IECA has a high level of respect for this committee, its members, and its importance in steering sound energy policy to ensure affordable and reliable energy for U.S. consumers and economic development and job creation.

B. LINKAGES OF ENERGY COSTS TO MANUFACTURING JOBS

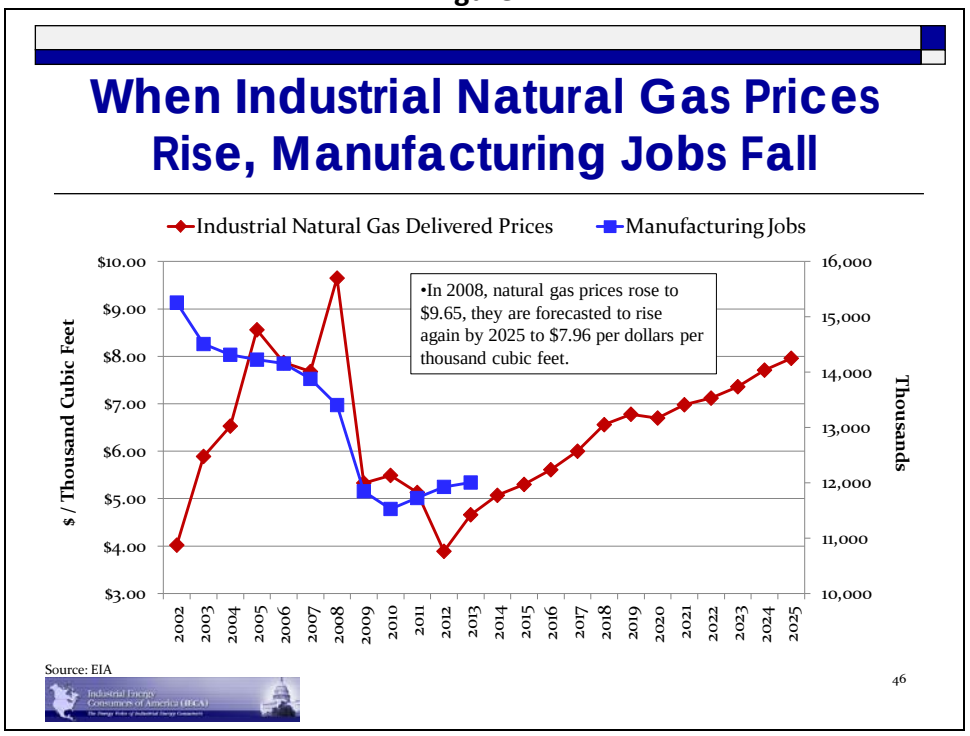
In 2013, EITE industries accounted for about 41 percent of all manufacturing jobs. EITE industries regularly account for about three quarters of all energy consumed by the U.S. manufacturing sector[1], which itself accounts for more than a quarter of U.S. energy consumption[2]. Yet, despite this energy intensity, GHG emissions by U.S. manufacturers are 22.4% below levels set in 1973, and far lower than GHG emissions of our competitors in many non-FTA countries who would benefit by gaining access to the affordable U.S. natural gas produced near our factories.

The price of natural gas is critical to us. From 1999 to 2008, natural gas prices rose over 209 percent (see figure 1), significantly contributing to the loss of 3.9 million good paying manufacturing jobs, and the closing of tens of thousands of facilities[3]. There are direct linkages between energy prices, manufacturing jobs, and the health of the U.S. economy. The above stated concerns are further elaborated in the August 2014 Oil and Gas Journal article entitled,

[1] EIA data: In 2010, EITE industries consumed 75.1% of all of the natural gas and 72.7% of all of the electricity used by US manufacturers.
[2] EIA data: In 2013, the manufacturing sector consumed 28.7% of all of the natural gas and 25.9% of all of the electricity used in the US.
[3] Bureau of Labor Statistics.

"Why Manufacturers Oppose Unfettered LNG Exports"[4]. Critics of this data have cited lower Chinese labor as the reason for job losses. IECA's response is that EITE industries' major costs are energy and capital costs, not labor costs.

Figure 1

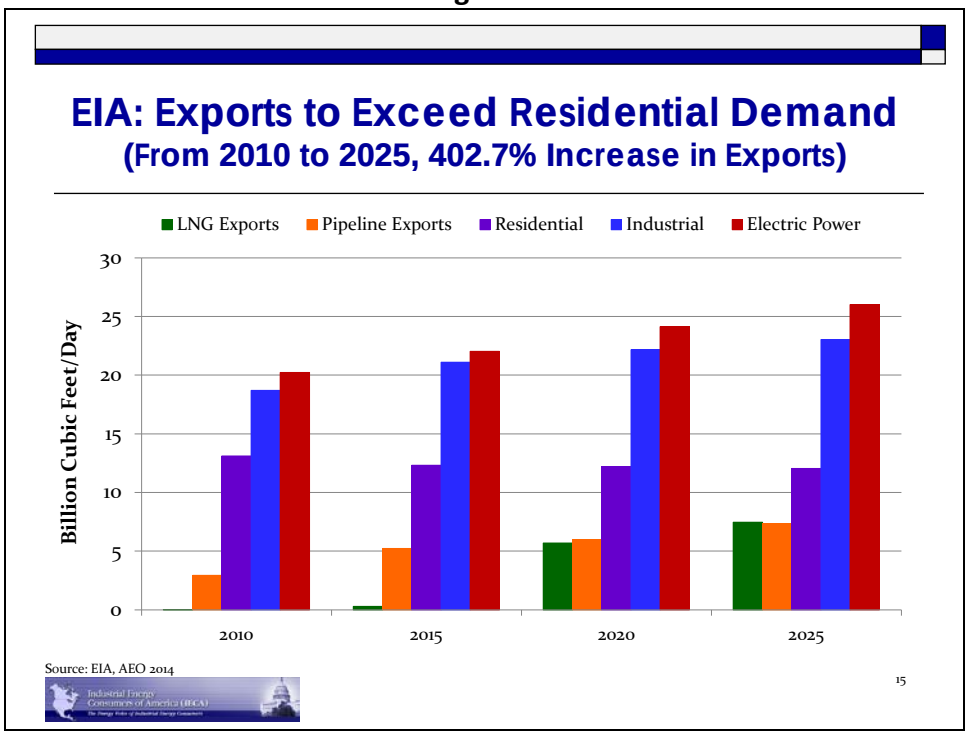


The linkages of the cost of natural gas to manufacturing's health are also brightly illustrated today in Australia, where steady increases in LNG export volumes have tripled the price of Australian natural gas for their consumers. Manufacturing facilities are shutting down[5] and power generators are converting from natural gas to coal.[6] Policy makers in Australia failed to look at the long-term implications of exports of LNG, and failed to put in place policies that would protect their domestic consumers. Now, it is too late. The U.S. is on track to make the same mistake.

The AEO 2014 reference case provides an illustration of the significant growth of pipeline exports to Mexico and forecasted LNG exports. The LNG portion is but a small fraction of the total LNG export volume that has already been either approved or conditionally approved by the DOE. Figure 2 indicates that total exports will increase 402.7 percent by 2025 and will exceed that of the residential sector.

[4] http://pipelineandgasjournal.com/why-manufacturers-oppose-unfettered-lng-exports.
[5] "AFR: Energy, not labour, behind high costs" by Paul Howes, Australian Workers' Union, March 4, 2014, http://www.afr.com/p/opinion/high_costs_due_to_energy_not_labour_fNuuZKaA8DXgSt4ZE9Y69N.
[6] "Australia Going Back to Coal Has Lesson on U.S. LNG Exports," Clyde Russell, Reuters, February 10, 2014, http://www.reuters.com/article/2014/02/10/column-russell-gas-australiaidUSL3N0LF04A20140210.

Figure 2



C. THE NATURAL GAS ACT (NGA) IS DESIGNED TO BALANCE LNG EXPORTS AND CONSUMER PROTECTIONS IF POLICYMAKERS WILL REQUIRE DOE TO FULLY IMPLEMENT ITS RESPONSIBILITIES. UNFORTUNATELY, DOE'S IMPLEMENTATION PUTS THE ECONOMY, JOBS, CONSUMERS AND WAGE DISPARITY AT INCREASING RISK LONG-TERM

The U.S. has the benefit of the NGA which provides policy that is designed to accommodate LNG exports, while preserving affordable prices and job creation. Unfortunately, the DOE has failed to properly implement both the letter and the spirit of the NGA. And, Congressional policymakers have failed in their oversight of the NGA to require the DOE to embrace their responsibilities in behalf of the nation and, importantly, the consumer.

Specifically, IECA urges the following:

1. Sound energy policy decisions require a "long-term" focus because it is impossible to forecast the future and, because so much is at stake and that consumers do not have an alternative. The NERA report (See Figure 12) explicitly makes clear that LNG exports creates winners and losers. The losers are "households with income solely from wages or transfers." And, investment and indirect tax income declines.

2. Energy policy should maximize "permanent" long-term job creation for the U.S. economy, not just the oil and gas industry. Using natural gas in the manufacturing sector will increase 8 times more permanent jobs than exporting it. The top seven LNG export applications combined, will only create 1,890 permanent jobs. Increasing natural gas prices to parity with global LNG prices long-term removes the U.S. economic advantage.

3. Fully comply with both the letter and spirit of the Natural Gas Act. Require the DOE to define "public interest" for purposes of implementing the required public interest determination for review of LNG export applications for non-free trade countries. The "public interest" is NOT the same as the "national interest." *The public interest is that which produces the most good for the most people.* It is NOT a gross economic net benefit calculation such as that used by the DOE.

4. Require the DOE to refrain from using 30-year old, 1984 guidelines for LNG "imports" to inform LNG "export" decision-making.

5. Require the DOE to condition any approval of LNG export applications to protect the consumer, as provided under the NGA. Require the DOE to condition each LNG export application such that, in the event that natural gas prices rise to levels that negatively impact the economy and manufacturing jobs, that the DOE will act to slow export volume as a remedy. *(Some Senators believe that we have unlimited quantities of low cost natural gas and that high prices will never happen. If you believe this to be the case, you should support this provision with the belief that DOE will never have to trigger the conditional provision.)*

6. Be mindful to long-term "natural gas price affordability" realities. According to the EIA, using AEO 2014 2025 demand, the U.S. has 9.6 years of proven reserves and only 49 years of technically recoverable resources in the lower 48. "Technically" recoverable does not mean that it is "economically" recoverable. Despite increases in gas production productivity, there is reason to be wary that substantially higher natural gas prices are necessary to continue to produce year-over-year increased production to meet both U.S. and export demand long-term. The majority of IECA member companies believe that substantially higher natural gas prices will be required in future years to increase year-over-year production increases.

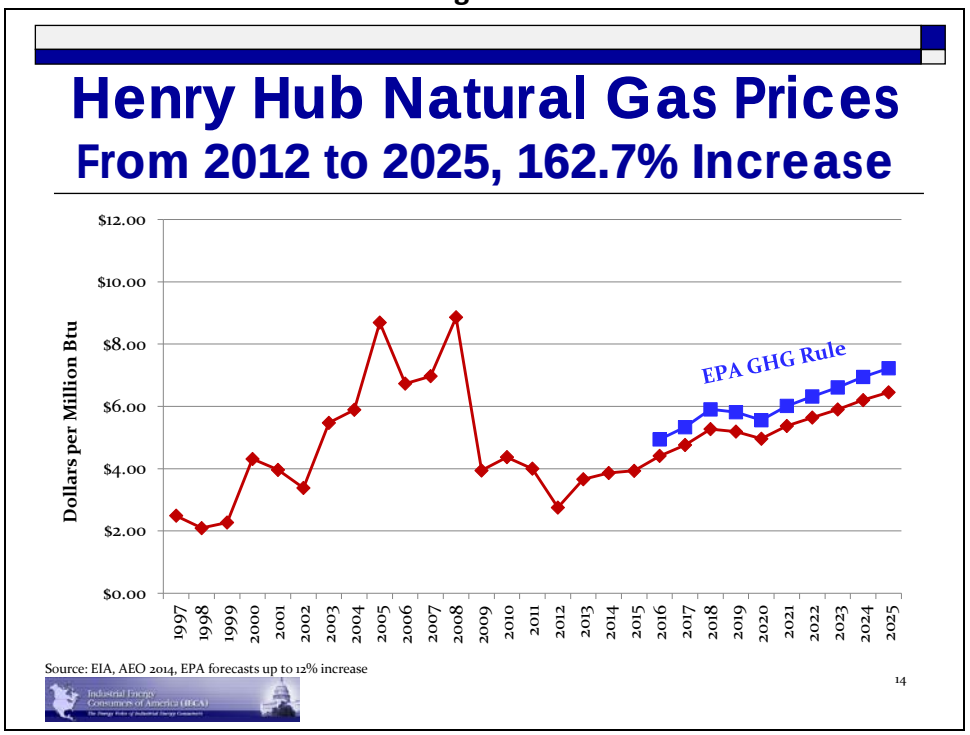
7. All LNG export studies to inform public policymaking decisions should use information only from economic models that have been peer-reviewed. The NERA model was not peer-reviewed.

8. Public policymakers should emphasize LNG exports from Alaska, not the lower 48, where most of the U.S. demand and long-term risks resides.

D. NATURAL GAS AND ELECTRICITY PRICES ARE ALREADY FORECASTED TO RISE SIGNIFICANTLY EVEN BEFORE ALL OF THE NINE APPROVED OR CONDITIONALLY APPROVED LNG EXPORT TERMINALS ARE OPERATING

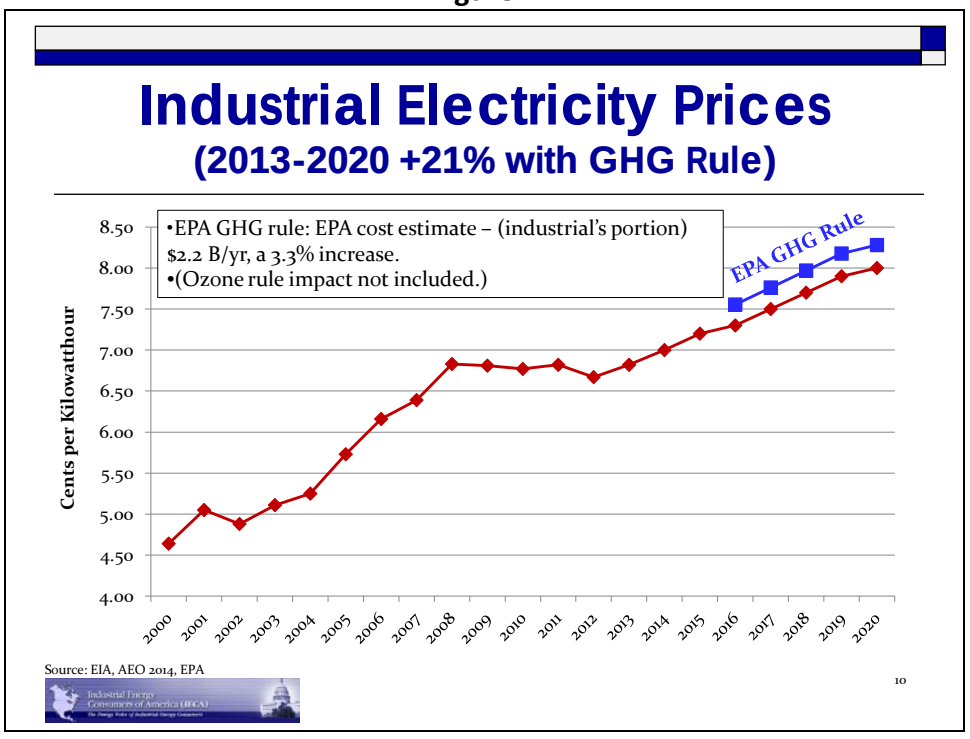
U.S. natural gas demand is at record levels and is forecasted to accelerate due to industrial, power generation and pipeline exports to Mexico. LNG exports are additive. We have included EPA's estimated cost of the Clean Power Plan. When added to the AEO 2014 reference case, the Henry Hub benchmark is expected to increase 162.7 percent in 2025 from 2012.

Figure 3



Electricity prices are also rapidly increasing (see figure 4) due to the combination of coal-fired electric generation plant retirement, and the cost of compliance to environmental regulations. IECA has added EPA's estimated cost of the Clean Power Plan to the AEO 2014 reference case. Together, the reference case suggests that prices will increase 21 percent by 2025 as compared to 2013.

Figure 4



Of increasing concern to industrials is the overreliance on natural gas for power generation. As natural gas prices increase, it will have a dual impact to manufacturing competitiveness. Figure 5 below illustrates how the cost of electricity increases as the price of natural gas rises from $4.00 per million Btu to $7.00 per million Btu, as compared to coal.

Figure 5

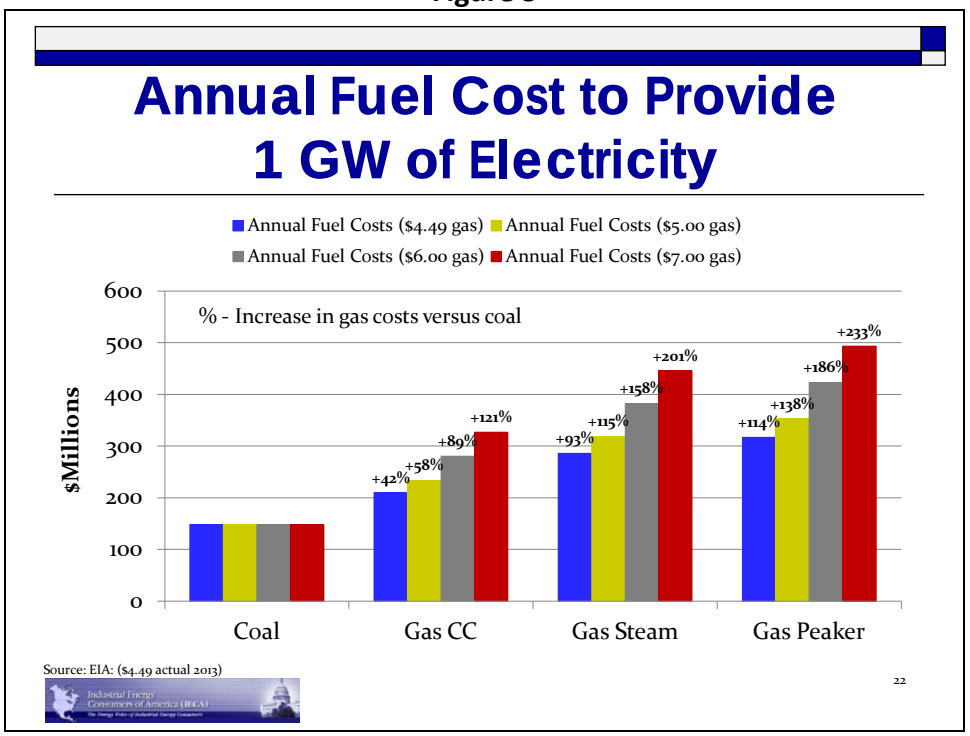
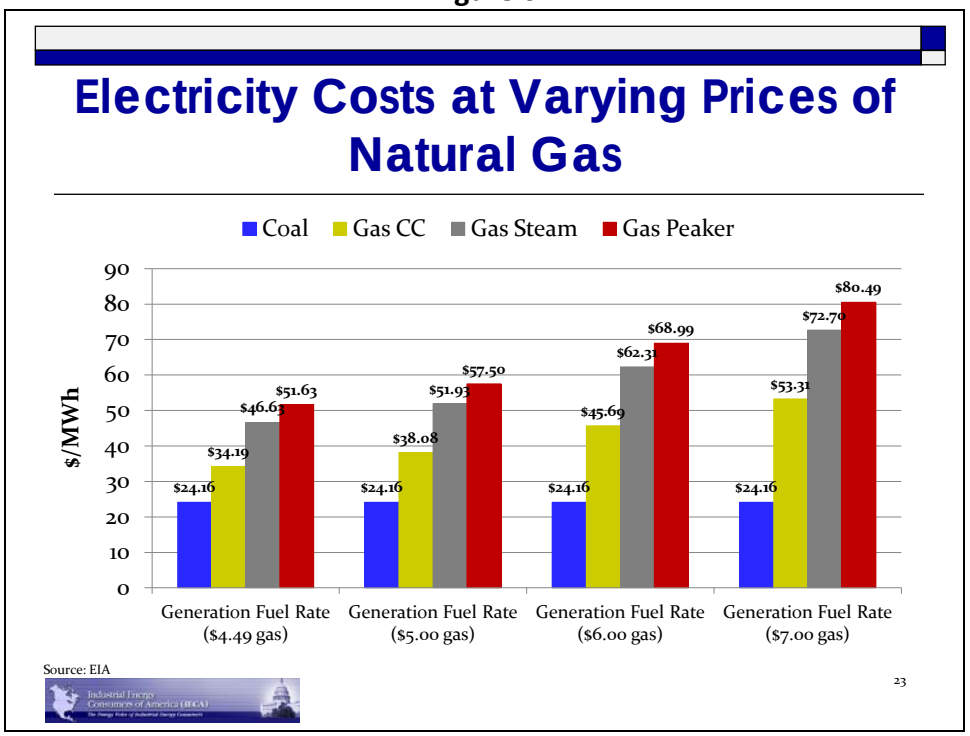


Figure 6



E. IECA OPPOSES S.33, THE "LNG PERMITTING CERTAINTY AND TRANSPARENCY ACT"

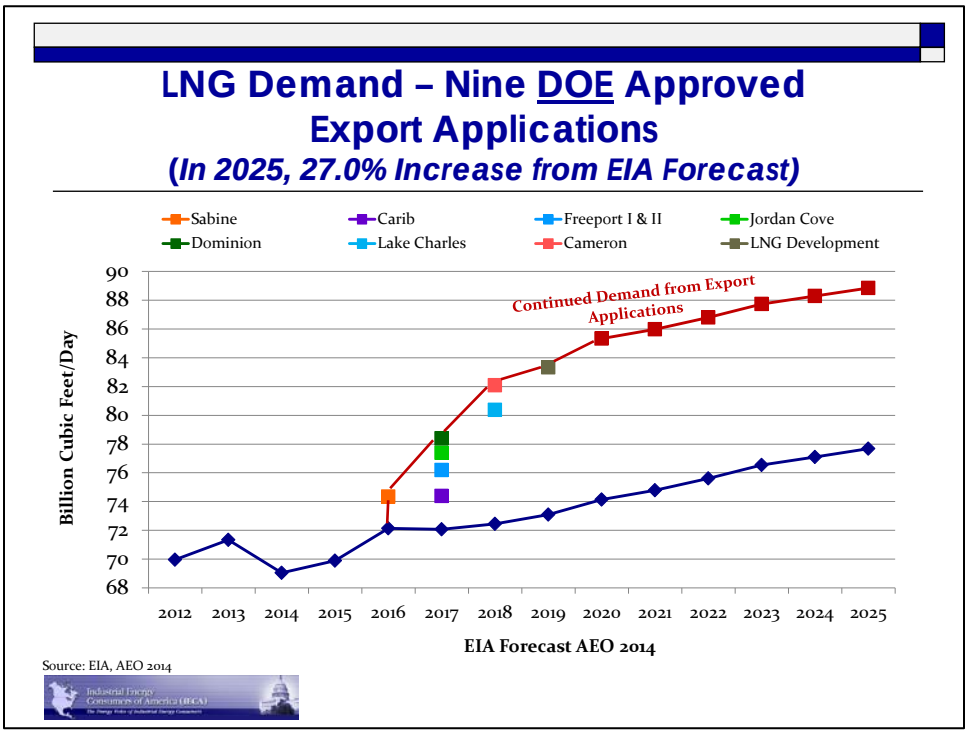
1. S. 33 short circuits the public interest determination and consumer protections.

IECA opposes S.33, the "LNG Permitting Certainty and Transparency Act." The Act requires a 45-day decision deadline that short circuits the thoughtful intent of the NGA and the public interest determination, which could in turn negatively impact 72 million natural gas consumers[7] and 145 million users of electricity,[8] and the price they will pay for heating and cooling in the future.

2. The DOE has already either approved or conditionally approved a significant increase in LNG exports that by themselves, could pose a long-term economic threat to jobs and wages.

The DOE has already either approved or conditionally approved LNG exports to non-free trade countries equal to the largest LNG exporter in the world, Qatar. This is troublesome because, unlike the U.S., Qatar does not have a significant manufacturing sector that is price sensitive. The volume from these nine facilities would increase demand by 27 percent by 2025 (see figure 7.)

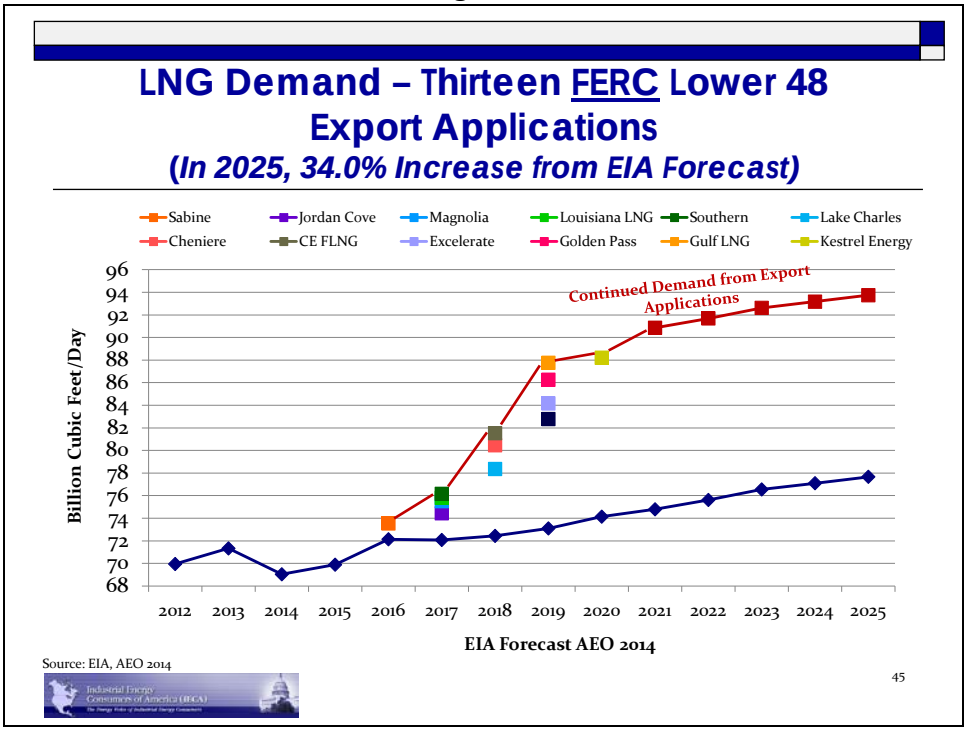
Figure 7



There are also a total of thirteen applications that are seeking environmental permit approval at the Federal Energy Regulatory Commission (FERC). These facilities would increase demand about 34 percent by 2025 (see figure 8)

[7] EIA.
[8] EIA.

Figure 8



Lastly, the DOE has also approved 40 LNG export applications to "free trade" countries equal to 40.2 bcf/day. Using EIA 2014 demand, this means that DOE has already approved shipments which could increase demand by 54.7 percent. The point is, a significant amount of LNG export applications have already been approved.

3. LNG exports are not a permanent job creator.

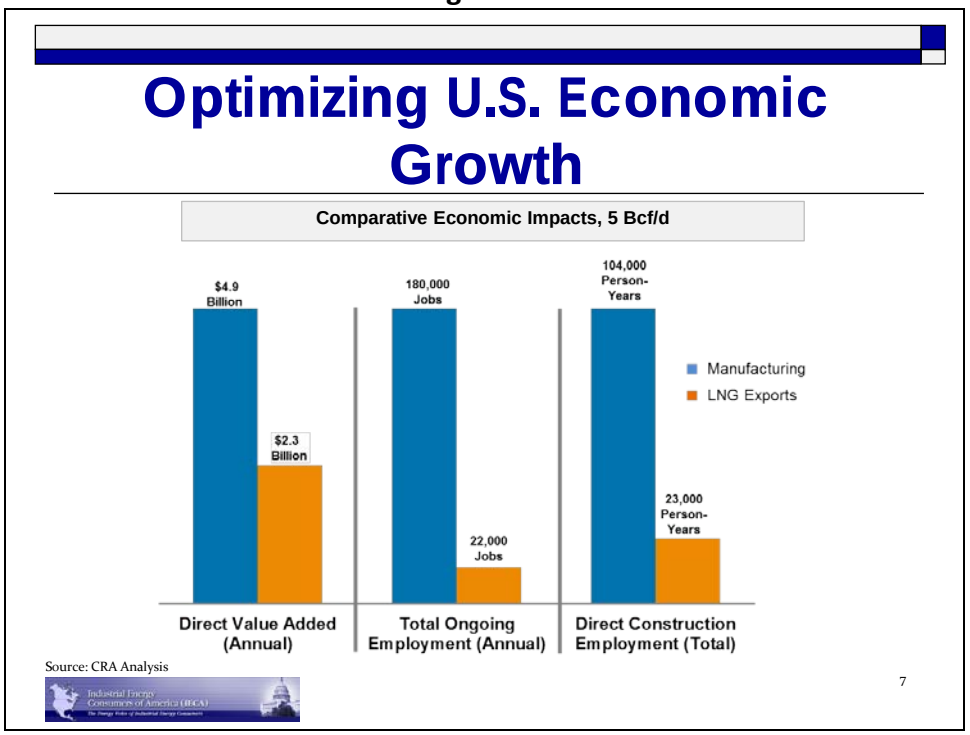
Each LNG export facility creates 2,000 to 3,000 construction jobs. But, after the facility is in operation, very few permanent jobs are created. Figure 9 below captures seven LNG export facilities and the number of reported permanent jobs, as reported on their website.

Figure 9

Export Facility	Permanent Jobs
Sabine Pass Liquefaction	580
Freeport LNG Expansion and FLNG Liquefaction	300
Lake Charles Exports	250
Dominion Cove Point	175
Jordan Cove Energy	150
Cameron LNG	185
Gulf Coast LNG Export	250

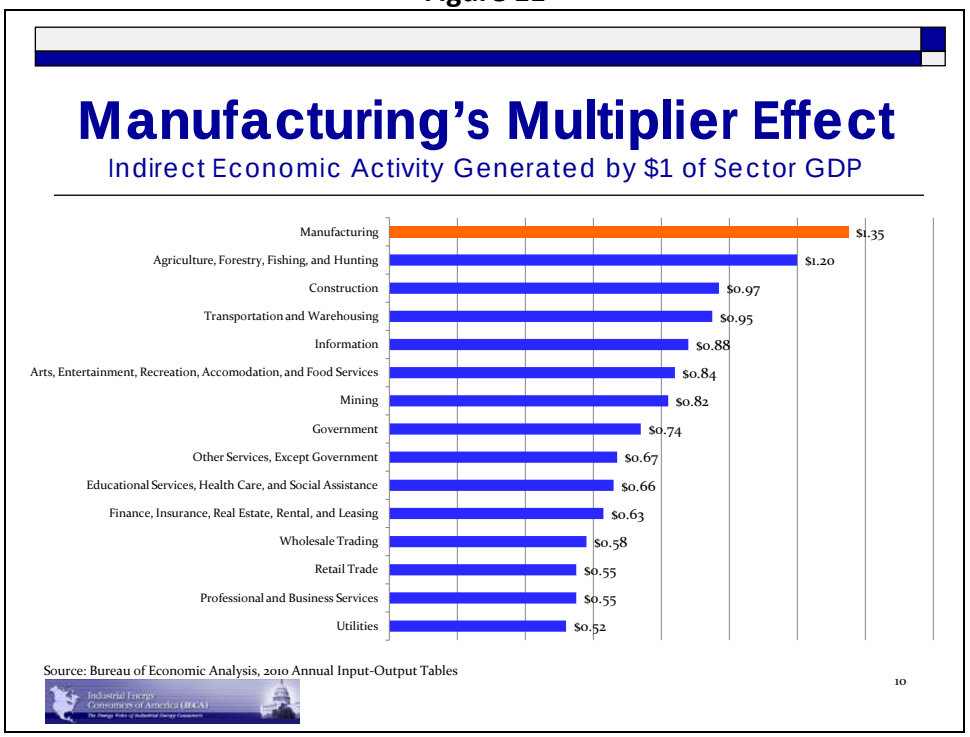
The Charles River Associates 2013 study illustrates the stark comparison in job creation between LNG exports and manufacturing (see figure 10). Using natural gas in manufacturing can create eight times as many jobs as exporting it, twice the value added and eight times as many construction jobs.

Figure 10



Consistent with the above, the National Association of Manufacturers (NAM) has concluded that the manufacturing sector generates the most economic activity for the money as compared to all other sectors. Unfettered LNG exports are inconsistent with long-term manufacturing job creation.

Figure 11



F. DOE MUST COMPLY WITH THE NATURAL GAS ACT

The DOE is not fully complying with the NGA and it is clear that they are failing to honor its spirit. The NGA Section 3 governs LNG exports (and imports):

> "… no person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it to do so. The Commission shall issue such order upon application, unless, after opportunity for hearing, it finds that the proposed exportation or importation will not be consistent with the public interest. The Commission may by its order grant such application, in whole or in part, with such modification and upon such terms and conditions as the Commission may find necessary or appropriate, and may from time to time, after opportunity for hearing, and for good cause shown, make such supplemental order in the premises as it may find necessary or appropriate."[9]

This language contains four essential elements that DOE has not yet completed: the definition of "public interest"; use policy guidance designed for exports; analytical methods free of bias; and a commitment to a process of ongoing monitoring and adjustment.

1. Definition of Public Interest

The definition of "public interest" is at the core of this entire discussion. Yet, we cannot find where DOE has articulated any such definition. More concerning is that the Government Accountability Office (GAO) reached the same conclusion in a September 2014 report.[10] The GAO finds that neither the Natural Gas Act, nor the DOE, has defined "public interest" (page 10). Given the centrality of this term to the public policy decision of approving or not approving LNG export applications, this is a glaring omission if not a legal issue. If the DOE has not defined "public interest," how is it that they can make informed decisions on behalf of the over 72 million[11] consumers of natural gas and 145 million[12] consumers of electricity? Without a definition of the "public interest," how does the DOE determine when the export volume from the next LNG export application, and the resulting increase in natural gas and electricity prices, or a slowdown in manufacturing job creation and investment, justifies a "disapproval" of the LNG export application? Without a definition of public interest, how much public hardship has to be inflicted before the DOE denies the next application?

While DOE has not articulated a definition for public interest, it has cited the results of a December 2012 study, using a model that was not peer-reviewed, by NERA Economic Consulting (NERA Study)[13] to support their finding that LNG Exports is not inconsistent with the

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[9] 15 U.S. Code § 717b - Exportation or importation of natural gas (a) mandatory authorization order.
[10] "Federal Approval Process for Liquefied Natural Gas Exports," Government Accountability Office, http://www.gao.gov/assets/670/666177.pdf
[11] http://www.eia.gov/dnav/ng/ng_cons_num_dcu_nus_a.htm
[12] http://www.eia.gov/electricity/sales_revenue_price/pdf/table1.pdf
[13] "Macroeconomic Impacts of LNG Export from the United States" NERA Economic Consulting, December 3, 2012, http://energy.gov/sites/prod/files/2013/04/f0/nera_lng_report.pdf

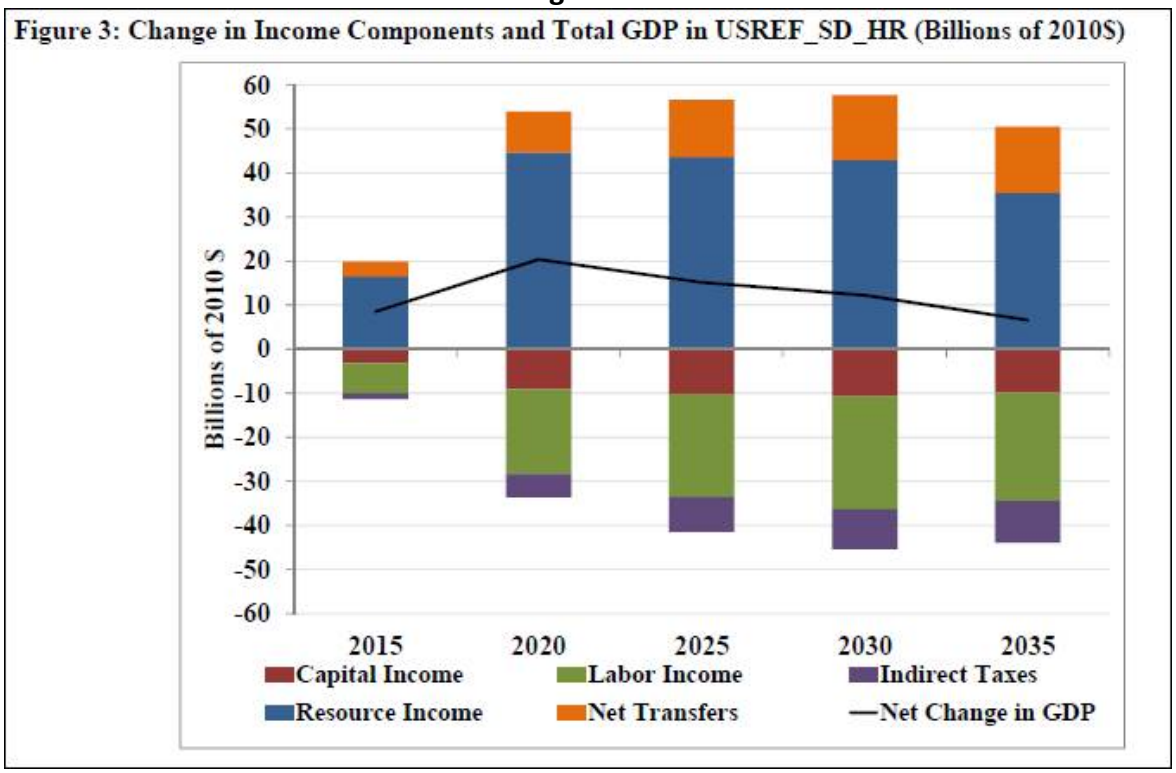
public interest. Actually, the NERA Study says that "US economic welfare consistently increases as the volume of natural gas exports increased.[14]" However, further review of this NERA Study reveals that this is a deeply flawed proxy for a definition of public interest. The NERA study goes on to describe how its metric of economic welfare is nothing more than the aggregated GDP, and that the small increase in GDP is the result of a windfall for a small group of resource owners and export terminal owners being just large enough to offset the losses in lower incomes and higher energy prices inflicted upon the remaining bulk of the population.

The NERA Study discusses a positive macroeconomic impact in one section, but it describes how the export of natural gas would cause shifts in income in the next[15]. The NERA study describes how "[h]ouseholds with income solely from wages or transfers, in particular, will not participate in these benefits.[16]" The NERA study further explains how "[h]igher natural gas prices … can also be expected to have negative effects on output and employment, particularly in sectors that make intensive use of natural gas." In other words, the vast majority of households will transfer income and wealth to a small number of resource owners, as LNG exports place EITE industries at a particular global disadvantage. Figure 12, copied from the NERA report, clearly illustrates this point of winners and losers. The losers, below the horizontal line, are impacted by a consistent loss of capital income, labor income and indirect taxes. Above the line are the winners, those who own natural gas resources and benefit from net transfers.

Even more startling is the meager so-called "net economic gain" under any of the scenarios. NERA projects only a net $10 billion net economic gain in 2015, a $20 billion net gain in 2020 that then declines from there going forward. Given the size of the $16.7 trillion U.S. economy, a $20 billion gain is less than one hour of GDP work, an insignificant economic gain. What this very small economic gain does not account for is the increased probability of risk to the economy long-term. Long-term, LNG exports can only increase economic risk, not decrease economic risk.

[14] Ibid, page 6.
[15] Ibid, pages 6-8.
[16] Ibid, page 8.

Figure 12



In an atmosphere in which we place so much focus on the harmful impact of a highly skewed income distribution, this measure of positive impact is particularly troubling, and this direct attack on U.S. manufacturing jobs is unacceptable. There were several other serious flaws that DOE chose to gloss over, including the use of out-of-date information on EITE industries that downplayed the impact to these industries, and also incorrect assumptions on the economics of LNG exports.

Compliance with this part of the NGA requires a workable definition of public interest faithful to the intent of Congress, consistent with our country's traditions and applicable to how the country uses natural gas and recognizing that exporting LNG is a choice. We suggest starting with the simple concepts pioneered by Justice Brandeis that are in use today by asserting that *the public interest is that which produces the most good for the most people*. To connect this concept to the specific questions raised by LNG export to non-FTA countries we suggest considerations including:

- the value added to the U.S. economy by exporting a raw material (LNG) vs. the value added by exporting a finished manufactured good that uses the natural gas;
- the impact on net permanent U.S. jobs by producing and exporting natural gas (and importing manufactured goods) vs. producing and exporting manufactured goods;
- establish risk factors that guide decision making. Give recognition to the reality that unlike other products, consumers do not have a substitute thus the need to place a value on human safety, comfort and impacts to families, low income citizens, jobs and economic growth.
- the GHG emissions of U.S. EITE industries compared to the GHG emissions of comparable industries in non-FTA countries; and

- the efficiency losses and extra GHG releases inherent in producing a good with energy that must be liquefied, transported and then re-gasified before it can be used vs. using the natural gas in manufacturing operations closer to where it is produced.

More could be done to complete the definition of public interest, but the point is clear. The DOE has failed in its duties to this part of the NGA. The macroeconomic proxy for public interest employed by DOE is literally the antithesis of what Americans actually mean by the term. How can the ongoing national discussion on income distribution accommodate government actions that it admits skews income and wealth from the many to the few? And how can public policymakers say they value manufacturing jobs, yet fail to complete a fair evaluation of the trade-offs of LNG exports to domestic jobs.

2. Policy Guidance Designed for Exports

The NGA requirement for "an opportunity for a hearing" demands a process that is relevant to the questions posed. The previously cited GAO report says that the DOE has based its decision making guidance for LNG exports on a rulemaking it developed in 1984 for LNG imports.[17] In using the policy guidance from a vastly different time for an activity in which the risks and benefits are reversed, the DOE is failing to comply with the spirit of the NGA.

In 1984, natural gas played a relatively small role in the U.S. economy. Even as recently as 2002, "LNG imports accounted for only 1% of total U.S. gas consumption."[18] Thirty years later, and as a direct consequence of deliberate policy decisions[19], it is difficult to identify a source of energy that is more widely relied upon. As cited above, natural gas is a major input to U.S. manufacturing for fuel, feedstock and electricity generation, particularly in EITE industries. Projecting into the future, natural gas will play an increasingly important role in residential, transportation, and power generation applications.

The differences between LNG imports and exports are as stark as they sound. Natural gas imports increase supply and either lower price, make more use possible, or both. Imports reduce consumer risk. Imported natural gas competes with domestic production and, in some cases, can even result in some fuel substitution (e.g. gas replaces coal in power generation). On the other hand, exports reduce supply and force the allocation of a finite resource. In the case of LNG exports, this is a particular challenge because in nearly all of the applications for which natural gas is used, there are few, if any, viable substitutes. Evolution of both physical infrastructure and regulation have so limited the energy choices of industrial users, particularly the EITE industries, that they are either unable to switch from natural gas or can do so only at

[17] "Federal Approval Process for Liquefied Natural Gas Exports," Government Accountability Office, http://www.gao.gov/assets/670/666177.pdf (page 11).

[18] "Liquefied Natural Gas (LNG) Import Terminals: Siting, Safety and Regulation" Congressional Research Service (CRS) Report for Congress, January 28, 2004

[19] "Congress could try to reduce the need for new LNG terminals by acting to curb growth in U.S. LNG demand, or growth in natural gas demand overall. For example, Congress could change public and industrial incentives for conservation, switching to other fuels, or developing renewable energy supplies. But other fuels like coal and nuclear power pose their own hazards to communities and the environment, so their expansion may not be preferable to additional LNG infrastructure." "Liquefied Natural Gas (LNG) Import Terminals: Siting, Safety and Regulation" Congressional Research Service (CRS) Report for Congress, January 28, 2004.

great expense. In the case of power generation, for example, the EPA's Clean Power Plan rule explicitly requires dramatically increased dependence on natural gas.

Policy guidance based upon considerations applicable to LNG imports in 1984 is not relevant to exports in 2014, and even less relevant to exports in 2020 or 2025. It is past time for DOE to conduct a rulemaking that identifies the considerations relevant to exporting natural gas now and in the future, and base its policy on those. How else could DOE decide on whether or not an application to export LNG is consistent with the public interest and be credible?

3. Analytical Methods Free of Bias

The NGA requirement for "an opportunity for a hearing" also demands reliance upon analytical methods that are free of bias. The DOE has based its public interest determinations – flawed as they are – on forecasts produced by the EIA. These EIA's models and methods are inappropriate for these purposes because they include three distinct sources of bias against industrial customers that significantly alter decisions for which they are used.

The EIA models are based upon regression analyses calibrated with data not more recent than 2010 – a time most notable for the worst U.S. manufacturing slowdown in the recent past. Predictions from any model calibrated with this data would include a bias that severely understates the gas demand for industrial customers, particularly EITE industries, and likewise severely understates the impact of LNG export on available supply and price.

Even if the EIA models used recent data, the practice of using a regression model based in the past to extrapolate assumed relationships in the future becomes increasingly questionable as the forecast horizon lengthens. As may be observed from the performance of past EIA forecasts, predictions of industrial demand, price and other results beyond about five years are prone to significant error. In a more subtle way, this practice also limits what may be realized in the future by confining it to how things interacted in the past.

However, even if the EIA models used recent data and limited the horizon of their forecasts, they would still be inappropriate to guide decisions on LNG exports. The EIA models use a top-down approach to estimate industrial demand as a 'fill' or means to balance larger equations. It is doubtful that these equations accurately model how industrial demand will interact with a myriad of factors that did not exist in 2010 or earlier. Because the EIA models treat industrial demand as something to be wedged into a number of undefined and external technical factors, they are completely divorced from the new industrial projects and accompanying energy demand that have been announced and are being built[20]. This is perhaps the most significant bias limiting what we might expect from future U.S. manufacturing.

Rather than a regression model calibrated with outdated relationships that estimate a variable as critical to the process as industrial demand as only a top-down 'fill', DOE should explicitly

[20] Paul Cicio Testimony: Hearing on "America's Onshore Energy Resources: Creating Jobs, Securing America, and Lowering Prices" in the House Subcommittee on Energy and Mineral Resources, March 14, 2013, http://www.ieca-us.com/wp-content/uploads/03.14.13_Cicio-Testimony1.pdf.

include the measurable demand expected from scheduled manufacturing projects, gas-fired power generation units and other new sources of demand just as it postulates future levels of LNG export, including potential demand from pending EPA regulations. DOE could accomplish this by using one or more of the readily available models that estimate future industrial demand from the bottom-up by capturing the data on large production projects already in the public (e.g. PIRA, Charles River Associates).

4. Process of Ongoing Monitoring and Adjustment

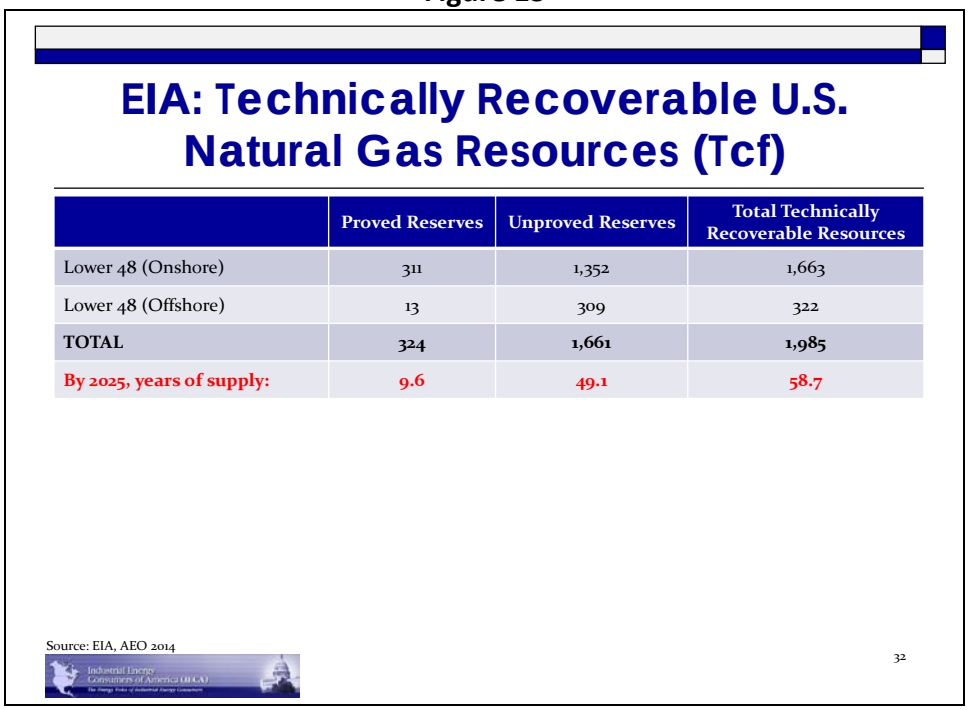
The NGA specifically anticipates that adjustments to LNG exports would also be in the public interest when it states that the DOE "…and may from time to time, after opportunity for hearing, and for good cause shown, make such supplemental order in the premises as it may find necessary or appropriate."[21] Contrary to the NGA, the DOE does not plan to make any such adjustments. Rather, the DOE has stated that once it issues an Order regarding LNG exports, it will not alter them. In fact, by stating that it would make such an adjustment only under *"extraordinary circumstances"*[22] DOE creates an obstacle to the exercise of its authority that is not in the law. Consequently, these DOE orders on LNG export will be fixed for decades.

Advocates of unfettered LNG exports cite forecasts of natural gas supply that seem endless and claim that no amount of LNG export could drive significant challenges to supply or price. They claim that the U.S. suddenly has access to a 100-year supply of natural gas. (By the way, these are the same people who urged immediate passage of the Energy Policy Act of 2005 because the need to *import* LNG was rising to the level of a national emergency.[23] [24]) On the other hand, those opposing any LNG export point to studies supporting their conclusions. A forward look at U.S. resources raises serious doubt as to whether or not the U.S. does have a significant supply at affordable prices. Factually, the EIA 2025 demand data indicates that the U.S. has only 9.6 years of proven reserves and only 49 years of technically recoverable resources in the lower 48 states. (Figure 13) "Technically" recoverable does not mean that they are "economically" recoverable. The natural gas industry Potential Gas Committee 2013 report makes clear that 74 percent of our technically recoverable resources available in the lower 48 are from "uncertain" resource estimates (see figure 13).

[21] 15 U.S. Code § 717b - Exportation or importation of natural gas (a) mandatory authorization order.
[22] DOE Letter to Senator Lisa Murkowski, October 17, 2013.
[23] "While LNG has historically made up a small part of U.S. natural gas supplies, rising gas prices, current price volatility, and the possibility of domestic shortages are sharply increasing LNG demand. To meet this demand, energy companies have proposed building dozens of new LNG import terminals throughout the coastal United States." "Liquefied Natural Gas (LNG) Import Terminals: Siting, Safety and Regulation", Congressional Research Service (CRS) Report for Congress, January 28, 2004
[24] "In recent testimony before Congress, the Federal Reserve Chairman (Greenspan) called for a sharp increase in LNG imports to help avert a potential barrier to the U.S. economic recovery. According to the Chairman's testimony: "... high gas prices projected in the American distant futures market have made us a potential very large importer...Access to world natural gas supplies will require a major expansion of LNG terminal import capacity."3 If current natural gas trends continue, industry analysts predict that LNG imports could increase to 20% of total U.S. gas supply by 2020." "Liquefied Natural Gas (LNG) Import Terminals: Siting, Safety and Regulation", Congressional Research Service (CRS) Report for Congress, January 28, 2004.

Recently completed studies by the University of Texas[25] [26] [27] [28], David Hughes[29] and the Oxford Institute[30] and several others, raise legitimate questions about the ability to increase production without significantly higher prices. Certainly, prices that are well beyond what consumers, especially manufacturers' view as affordable. The first two studies illustrate that the EIA overestimates the resource base for the four largest natural gas fields between 30 to 36 percent. These studies are reason enough to put a hold on any final LNG export approval.

Figure 13



	Proved Reserves	Unproved Reserves	Total Technically Recoverable Resources
Lower 48 (Onshore)	311	1,352	1,663
Lower 48 (Offshore)	13	309	322
TOTAL	**324**	**1,661**	**1,985**
By 2025, years of supply:	**9.6**	**49.1**	**58.7**

[25] Browning, J., Tinker S. W., Ikonnikova, S., Gülen, G., et al. 2013b. Barnett shale model -1: Study develops decline analysis, geologic parameters for reserves, production forecast. Oil & Gas Journal, 08/05/2013, Volume 111, Issue 8.

[26] Browning, J., Tinker S. W., Ikonnikova, S., Gülen, G., et al. 2013c. Barnett shale model -2 (Conclusion): Barnett study determines full-field reserves, production forecast. Oil & Gas Journal, 09/02/2013, Volume 111, Issue 9.

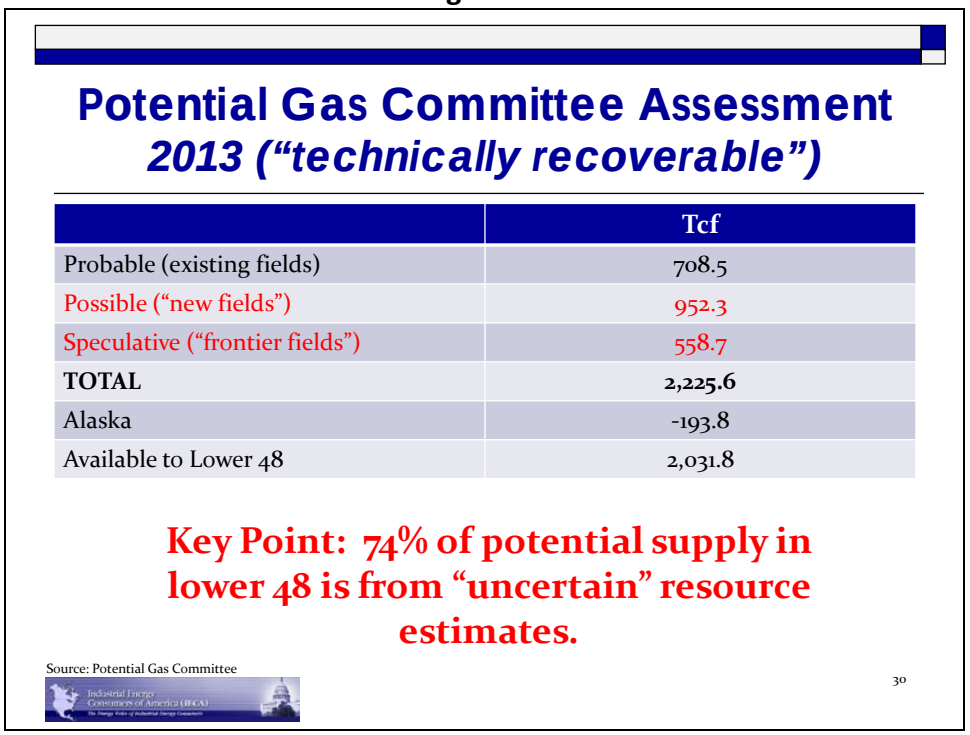
[27] Browning, J., Tinker S. W., Ikonnikova, S., Gülen, G., et al. 2014. Fayetteville shale reserves and Production forecast, OGJ January 6, 2014.

[28] http://www.beg.utexas.edu/shale/pubs.php.

[29] http://www.postcarbon.org/wp-content/uploads/2014/10/Drilling-Deeper_FULL.pdf.

[30] http://www.oxfordenergy.org/wpcms/wp-content/uploads/2014/03/US-shale-gas-and-tight-oil-industry-performance-challenges-and-opportunities.pdf.

Figure 14



The one thing that everyone knows will be right about all of these forecasts is that they will all be wrong. As large employers who have trillions of dollars of capital assets at risk long term, we cannot begin to understand DOE's justification to promise to never revisit or revise a 20 to 30-year decision. In either case, it is not consistent with the law.

Those who claim that the DOE must never alter an order on LNG export once issued argue that by doing so the DOE would introduce great uncertainty into the capital investment plans supporting the LNG export terminals and contracts, and would undermine the entire enterprise. The facts do not support this. The entirety of investment in LNG terminals and contracts is but a small fraction of the global commerce and long-term investment decisions impacted by the value of the U.S. dollar. Yet, the value of the U.S. dollar is subject to constant monitoring and potential adjustment. The U.S. Federal Reserve continuously monitors economic conditions and meets at least 8 times per year to decide whether to make any adjustments. The Federal Reserve does this, in part, because Congress gave it a "dual mandate."[31] We believe the DOE should consider a similar approach to govern its decisions on LNG exports. Specifically, the dual mandate in this context would seek to maximize U.S. employment while promoting responsible development of U.S. energy resources.

[31] The term "dual mandate" refers to direction Congress gave to the U.S. Federal Reserve in a 1977 revision to the Federal Reserve Act. Specifically, US Code states: *"The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices and moderate long-term interest rates."* (12 USC §225a) While the law actually lists three objectives, they are commonly understood to reduce to the two or 'dual mandates' of maximum employment and low inflation.

Another reason that we reject the DOE argument against adjusting or reviewing approved applications is that it protects investments made by a relative few, while exposing investments made by a much broader part of the economy to the full spectrum of risk in the global energy market. Those with capital investments in LNG export terminals have already accepted and embraced all of the risks that attach to global energy markets, which is far in excess of the uncertainty that would be introduced if the DOE were to 'from time-to-time' review and adjust LNG export orders as anticipated by NGA. On the other hand, with the approval of each new LNG export license the exposure of the U.S. manufacturing sector to all of the uncertainty and risks of the global energy markets intensify. These risks are out of balance, and contrary to the public interest. By refusing to review and adjust approved export applications the DOE is introducing uncertainty to capital investments that are in orders of magnitude larger than the capital invested in LNG export facilities. The comparison is one of tens of billions as compared to trillions. DOE is casting a blind eye to this risk.

In summary, we believe the NGA requires the DOE to articulate a definition of public interest and promulgate rules-based decision policy guidance applicable to LNG exports. We further believe that the DOE should use appropriate modeling methods to monitor the cumulative impacts of LNG exports and periodically make (or not make) supplemental orders as it may find necessary or appropriate per the Natural Gas Act. It is sound public policy that the DOE should use its authority to periodically review LNG exports, and if necessary, issue orders that throttle LNG exports, consistent with the definition of the public interest and the criteria for assessment.

Thank you for your consideration.

Sincerely,

Paul N. Cicio
President