Before the

UNITED STATES DEPARTMENT OF ENERGY

OFFICE OF FOSSIL ENERGY

LNG EXPORT DECISIONS	)	**REQUEST FOR COMMENTS**

Comments of America's Energy Advantage

July 21, 2104

I. Introduction

To date, DOE has given final approval for the export of 2.2 billion cubic feet per day (Bcf/d) of Liquefied Natural Gas (LNG) to nations without a free trade agreement with the United States. It has given conditional approval to a cumulative 9.27 Bcf/d. The Proposed Procedures For Liquefied Natural Gas Export Decisions makes several changes to the process for export decision-making, most notably proposing to review applications and make final public interest determinations only after completion of the review required by environmental laws and regulations that are included in the National Environmental Policy Act review (NEPA review), suspending DOE's current practice of issuing conditional commitments.

In accordance with the Department of Energy (DOE), Office of Fossil Energy's (OFE) request for comments, America's Energy Advantage is pleased to present these comments on the proposed rule. We appreciate the Department's consideration of our views.

II. America's Energy Advantage

America's Energy Advantage (AEA) is a trade association representing many of the world's leading manufacturers and commodity producers, as well as the United States' publicly-owned natural gas distribution companies. Our organization is a strong supporter of rules-based free trade as we have seen the power of open markets to create economic growth and higher standards of living for all Americans. AEA is dedicated to educating the American public about the growth in American manufacturing that has been made possible by our country's abundant,

affordable and stable supply of natural gas, which has created more than 500,000 jobs in the United States since 2010.[1]

AEA's members provide thousands of products to American consumers and tens of thousands of high-wage jobs for American workers. Its member companies directly employ nearly 200,000 people worldwide, and its members are active purchasers of natural gas who use natural gas and natural gas liquids to provide indispensable services to all segments of American society. These services include supplying energy to consumers, producing vital commodities such as steel and aluminum, and manufacturing chemicals, plastics, and other products that drive economic growth and strong job creation.

America's newfound abundance of natural gas is powering a remarkable manufacturing renaissance, which to date has generated more than $110 billion of announced investment in over 120 different manufacturing projects. America's natural gas advantage is so significant that companies are beginning to "reshore" foreign operations back in the United States, a trend that could lead to five million additional jobs by 2020, according to the Boston Consulting Group.[2] The shale gas boom is a job magnet, attracting foreign investment and domestic industries to invest in the United States. This energy advantage is directly responsible for the thirteen consecutive months of growth in the manufacturing sector.

This American energy competitive advantage will best serve the broad public interest when we export both LNG and finished products, as manufactured goods yield a 5-20x greater economic multiplier than the export of raw materials, while keeping energy costs affordable for U.S. consumers.[3] Only with a balanced approach to LNG exports will America's energy advantage create broadly shared prosperity.

III. Process

America's Energy Advantage and its members have substantial interests in U.S. distribution and sale of natural gas. In September of 2013, AEA filed motions to intervene and comment on DOE natural gas export permitting proceedings.[4] Our motion to intervene was denied.

In light of the DOE's new proposed procedures for liquefied natural gas export decisions, coupled with the vast amount of new analytical and market data that has emerged since the first LNG export application was approved, it is our view that all pending dockets be re-opened for intervention.

---

[1] "Rising U.S. Exports – Plus Reshoring – Could Help Create up to 5 Million Jobs by 2020," The Boston Consulting Group, September, 2012.
[2] "Behind the American Export Surge: The U.S. as One of the World's Lowest-Cost Manufacturers," The Boston Consulting Group, August, 2013.
[3] "The Facts About Manufacturing," The Manufacturing Institute, April, 2014.
[4] "America's Energy Advantage Motions to Comment and Intervene," September, 2013.

The current DOE process established the expectation of an export project's NEPA review following the granting of a conditional license. The Department, in its rulemaking, proposes to reverse the order of these steps, which if adopted, will re-order the entire queue of pending applications.

Such an inversion is new and material and should not be used a means to preclude intervention by new parties. Putting the NEPA determination before the public interest determination materially changes how interveners approach each docket. Fairness demands that any material change in any pending application should require the DOE to re-open such dockets to participation by potential interveners.

Furthermore, it is our view that there is so much additional new information in the public record since the first conditional license was filed to require the re-opening of all pending dockets. Indeed, there are a large number of material and significant changes in conditions, to the point where many conclusions reached in 2011 are of dubious validity in 2014:

- Conditions in domestic natural gas market;
- Conditions in global "market" for natural gas and oil;
- Conditions in the interrelated regulatory environment, such as the grid reliability questions raised by gas-power coordination, the EPA presumption towards gas-fired generation in its new Clean Plants Program.

It is also our view that the Federal Energy Regulatory Commission (FERC) should consider factors beyond the National Environmental Policy Act (NEPA) review, including how the operation of a proposed LNG terminal will affect operations in the surrounding natural gas pipeline network and electricity grid.

The new procedure proposed by the DOE will put FERC on the "front line" of reviewing applications to export LNG. As such, it is important to ensure that the scope of FERC's review and oversight matches the extent and import of the challenges posed by adding LNG terminals, and their related demands, to the network of interstate natural gas pipelines.

With the recent growth in natural gas as a power generation fuel, the natural gas and electricity markets have become increasingly interrelated. Furthermore, because natural gas is expected to continue to expand its role as a power generation fuel, the inter-relationships between these two energy markets and infrastructures will also continue to intensify. These complex interrelationships have created significant challenges to the operation and reliability of both the interstate natural gas pipeline network and the nation's electricity grid. In fact, these challenges are so significant and so widespread that FERC has seen fit to open separate dockets on questions pertaining to the sharing of non-public information[5] and the

[5] Docket No. RM13-17-001; Order No. 787, November 15, 2013

harmonization of the trading and scheduling of natural gas and electricity[6]. The challenges to availability, reliability and the price of natural gas and electricity related to the occurrence of the polar vortex during the winter of January, 2014 was also the subject of a FERC Technical Conference on April 1, 2014[7]. One result of this Technical Conference is a continuing question on whether there is sufficient interstate pipeline capacity to move supplies of natural gas to the locations needed in a reliable and cost effective manner. In fact, preliminary FERC Staff Findings presented during the Technical Conference include:

- "Natural gas prices were high and deliverability into market areas was a concern. Although shale supplies are plentiful, some gas did not make it to market demand centers in the east due to pipeline constraints, contributing to the extreme basis.

- Further, increasing natural gas demand for industrial uses and power burn in the long-term, and continuing infrastructure constraints in the near-term, may exert upward pressure on natural gas prices which staff would expect to see reflected in electricity prices."[8]

In addition to its responsibilities to perform a review under the NEPA, Section 3 of the Natural Gas Act also requires FERC to ensure that "(a)n order issued for an LNG terminal … shall not result in subsidization of expansion capacity by existing customers, degradation of service to existing customers, or undue discrimination against existing customers as to their terms or conditions of service at the facility, as all of those terms are defined by the Commission."[9]

Given the serious and growing challenges posed by the increased and growing reliance of the power generation sector on natural gas, the clear intent of the Congress as expressed by the Natural Gas Act and FERC's present efforts to address these challenges, it is entirely appropriate for FERC to explicitly include considerations of the impact that the siting and operation of an LNG terminal will have on the adequacy and reliability of natural gas and electricity in the region surrounding said LNG terminal and to withhold or condition its approval of any application accordingly. FERC can exercise its responsibilities while leaving the policy questions related to LNG exports entirely and exclusively within the Department of Energy.

IV. Analytical Methods

We welcome the Department's plans to commission a new economic study in order to gain a better understanding of how potential U.S. LNG exports between 12 and 20 Bcf/d could affect

[6] Docket No. RM14-2-000, EL14-22-000, EL14-23-000, EL14-24-000, EL14-25-000, EL14-26-000, EL14-27-000, RP14-442-000, Item Nos. M-1, M-2 & M-3, March 20, 2014

[7] Docket No. AD14-8-000 Technical Conference "Winter 2013-2014 Operations and Market Performance in Regional Transmission Organizations and Independent System Operators", Staff Presentation, April 1, 2014

[8] ibid

[9] http://fossil.energy.gov/programs/gasregulation/2011usc15.pdf

the public interest. We are also pleased that the DOE will continue to look at the cumulative impacts as the key criterion in assessing the public interest.

LNG export decisions should be based on the most current and accurate forecasts of natural gas supply and demand, validated and benchmarked to current market conditions. Our view, as we have repeatedly stated, is that DOE should take an immediate "time out" from further LNG export approvals until a new review of the natural gas marketplace is completed.

Our view is that the new economic study should be conducted by an independent panel of experts. It should examine all relevant factors which may affect supply, demand and price, including data that has been ignored to date – the utility sector's increasing reliance on natural gas, the transportation sector's growing trend of fuel switching and the manufacturing sector's growth and increasing demand projections.

The previous study conducted by NERA consulting was severely flawed. The NERA report does not account for the Administration's regulations on coal-fired power plants which will push the utility sector toward a greater reliance on natural gas. The report also ignores the transportation sector's growing trend of fuel switching and the manufacturing sector's growth and current demand projections. Consider also the recent findings of several respected academics and energy market experts:

- Purdue University found that whether LNG export levels are at 6Bcf/day or 12Bcf/day (NERA's low and high scenarios), it will result in a decline in GDP and higher electricity prices for all Americans.[10]
- Charles Rivers Associates warned that unchecked exports of U.S. natural gas could lead to a tripling of natural gas prices from current levels by 2030.[11]
- ConocoPhillips projected domestic natural demand will exceed DOE's projections by 30 percent in 2017 – just three years from today.[12]
- JP Morgan's global head of commodities research projected that natural gas prices will spike to $8.00 per million Btus by 2016 — more than doubling its current price in three years.[13]
- Black & Veatch released a survey of market participants that projected natural gas prices to climb to between $4.50 and $7.49 per million Btus through 2020.[14]

[10] Comparison of Analysis of Natural Gas Export Impacts from Studies Done by NERA Economic Consultants and Purdue University," Purdue University, January 13, 2013.
[11] "US Manufacturing and LNG Exports: Economic Contributions to the US Economy and Impacts on US Natural gas Prices," Charles Rivers Associates, February 25, 2013.
[12] "Increasing demand to shift to forefront of gas story: ConocoPhillips analyst," Platts, September 11, 2013.
[13] "Long-term gas prices poised to jump on global demand, economy: JPMorgan exec," Platts, September 10, 2013.
[14] "2013 Strategic Directions in the North American Natural Gas Industry Report," Black & Veatch, October 13, 2013.

In short, neither the analytical methods nor the data upon which the Department is relying to justify continued LNG export approvals accurately reflect current or anticipated market conditions.

- New EPA Carbon Rules: The EPA's new greenhouse gas standards affecting 600 existing coal-fired power plants will cause massive and sustained increases in domestic natural gas demand. A recent analysis by the U.S. Chamber of Commerce projects that the new regulations would result in the use of natural gas soaring to 46 percent of total electricity generation by 2030 from about 27 percent now.[15]
- DOE Has Approved LNG Exports Well Beyond the "High-Export" Scenario: As you know, the Department of Energy has conditionally approved a volume of LNG exports that would make the U.S. the largest LNG exporting nation in the world, surpassing Qatar. The volume of LNG exports approved goes well beyond the "high-export" scenario evaluated in the 2012 NERA report, which itself predicted consumer price increases of as much as 54 percent. Price increases of this scale could translate into more than $60 billion a year in higher energy costs for American consumers and businesses.
- Domestic Natural Gas Supplies Are at Their Lowest Levels in 11 Years: At 826 billion cubic feet, natural-gas supplies stand at their lowest level in 11 years, according to the Energy Information Administration. Some analysts are bracing for potential shortages next winter if producers cannot replace stockpiles fast enough. Parts of the U.S. experienced natural gas shortages in 2013 due to the unusually harsh winter, underscoring strong and continued domestic demand for this strategic resource.
- U.S. Could Exhaust "Economically Recoverable" Natural Gas Supplies in 16 Years: According to a May 18th, 2014 article in The Financial Times, Garten Rothkopf, an international advisory firm projected that:

  > "The U.S. is set to exhaust its supply of 'economically recoverable' natural gas supplies by 2030. That estimate is based solely on existing projects, and excludes those that have been announced but not yet started. It also makes the conservative assumption that there will be just three liquefied natural gas export terminals in operation by then, as opposed to the six already in the works. Everyone is piling into the 'dash for gas' on the basis that U.S. gas prices will remain low as far as the eye can see. Long before 2030, however, US producers will have been pushed into the more expensive shale formations."

Since the NERA report was issued, the natural gas marketplace has changed dramatically, rendering its conclusions – already unfounded – now obsolete.

[15] "Assessing the Impact of Potential New Carbon Regulations in the United States," U.S. Chamber of Commerce, May 30, 2014.

It is imperative that the new study is credible and viewed by all stakeholders as an independent, fair and balanced assessment. We believe a few key criteria must be applied to the new analysis to ensure this outcome:

- The new economic study should take into account not only macroeconomic impacts on economy, but also regional, state by state and industry sector impacts.
- Its modelling must capture the ongoing manufacturing renaissance and gas-intensive manufacturing projects that are projected to come online in the coming years.
- It should capture projected natural gas demand increases.
- It must thoroughly examine natural gas supply issues, one of the most crucial yet most misunderstood aspects of this complex picture.
- Most importantly, it must be peer reviewed. A peer review process was not completed on the NERA modeling approach and final results. While there is no government-wide rule for when and how to conduct peer reviews, there are established peer review processes within DOE for scientific programs. DOE should apply a rigorous peer review process for the new economic study to increase confidence in its findings.

The proposed rule also states that the Energy Information Administration (EIA) plans to update its 2012 LNG Export Study and DOE will rely on that update to guide future export decisions. America's Energy Advantage has significant concerns with DOE relying on an updated EIA study to arrive at public interest determinations. We believe EIA's models and methods are inappropriate for the purposes intended by DOE and should not be used. The underlying EIA model is so severely flawed that updating it with data from the 2014 Annual Energy Outlook (AEO) is insufficient.

Even accounting for AEO2014 data, the EIA models are based upon regression analyses calibrated to data not more recent than 2010 – a time most notable for the worst U.S. manufacturing slowdown in the recent past. Any predictions from such a model so calibrated would understate the natural gas demand for industrial customers and manufacturers.

Even if the EIA models were built with a more recently determined coefficient, the practice of using a regression model to extrapolate assumed relationships 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 five or ten years are significantly error prone.

Even if the EIA models were built with more recently determined coefficients, it uses a top-down approach to estimate industrial demand as a 'fill' or means to balance larger equations. It is not clear that these equations accurately model how industrial demand will interplay with a myriad of factors that did not exist in 2010 or earlier.

Rather than a regression model calibrated on outdated relationships that estimate a variable as critical to the process as industrial demand as only a top-down 'fill', DOE should explicitly 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. 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 or Charles River Associates).

Moreover, DOE should use the results of these new and better-suited studies to revisit the conditional approvals granted to date and periodically update these studies as DOE discharges its duty to monitor the cumulative impacts of LNG export and make (or not make) supplemental orders as it may find necessary or appropriate per the Natural Gas Act.

V. Decision Criteria

Public interest determinations based upon NERA Study are inappropriate and inadequate

In order to approve LNG export licenses, DOE must determine whether applications to export domestically produced LNG to non-free trade agreement ("FTA") countries are consistent with the public interest[16]. In reviewing all of the LNG export licenses conditionally approved by DOE to date, the NERA Report[17] appears to be the primary, if not the only, analytical assessment in the public record of how LNG exports affect the public interest.

This NERA Report explains that exporting LNG "…raises energy costs and, in the process, depresses both real wages and the return on capital in all other industries, but it also creates two additional sources of income. First, additional income comes in the form of higher export revenues and wealth transfers from incremental LNG exports at higher prices paid by overseas purchasers. Second, U.S. households also benefit from higher natural gas resource income or rents."[18]

The NERA Report then concludes: "The benefits that come from export expansion more than outweigh the losses from reduced capital and wage income to U.S. consumers, and hence LNG exports have net economic benefits in spite of higher natural gas prices."[19]

The NERA Report, and hence DOE, seems to say that exporting even unlimited quantities of LNG serves the public interest, in some aggregated manner, because the windfall to a small

[16] NGA section 3(c)
[17] "Macroeconomic Impacts of LNG Exports from the United States", December 3, 2012
[18] NERA Report page 7
[19] NERA Report page 7-8

number of resource owners and terminal operators is so large that it outweighs the higher energy costs and lower wages visited upon the economy as a whole. This tacit approval of wealth concentration runs completely contrary to the traditional understanding the "public interest" – that which yields the most benefit for the largest number of people.

DOE should initiate a public process to determine appropriate criteria to determine "public interest"

In its September 2013 motion to intervene and comment in DOE natural gas export permitting proceedings, AEA details its concerns with the underlying standards that the Department is using to assess, as required by law, whether proposed LNG exports are in the public interest. In the applications approved so far, DOE has relied on vague criteria that it adapted from the guidelines used to review natural gas *import* applications in 1984. This approach is not adequate, appropriate or sustainable. Natural gas imports are not exports; exports raise a variety of unique economic, environmental and other strategic concerns that cannot be addressed by relying on an interpretation of a mirror image question from three decades ago.

While importing natural gas involves the introduction of foreign resources to supplement the U.S. market, involving a straightforward dynamic of gas-on-gas competition in that market, exporting natural gas involves the depletion of a finite domestic resource for which there are limited, if any, alternatives. LNG exports thus raise a variety of unique economic, environmental, and other strategic concerns that cannot be adequately and specifically addressed by simply replacing the word "import" in the 1984 guidelines with the word "export." For example, LNG imports reduce price and availability risks to domestic consumers, while exports increase these risks. Accordingly, DOE needs to articulate relevant and reliable standards that are properly tailored to evaluating LNG export applications.

As was done for natural gas importation 30 years ago, the Department of Energy needs to develop standards that will enable it to make informed public interest determinations regarding LNG export applications. As was done on the import side, DOE should develop these standards based on comments from U.S. stakeholders. This will lead to export public interest standards that enable DOE to administer the law in a way that broadly optimizes outcomes for consumers, manufacturers and the U.S. economy as a whole. The current *ad hoc* approach to export applications is unlikely to be sustained by the courts – an outcome that the Department realized about import applications three decades ago.

Beginning with its passage of the Natural Gas Act ("NGA") over 70 years ago, Congress has recognized that natural gas is a critical natural resource, trade of which can substantially affect the well-being of all Americans. Thus, Congress has mandated that the export of natural gas must be in the public interest. Under the NGA, DOE is entrusted with determining whether proposed natural gas exports to non-FTA nations are in the public interest. The NGA does not explain or define "public interest."

With an appropriate articulation of public interest criteria for LNG exports, the impact of the pending applications on all affected constituencies can be systematically weighed. This will enable DOE to reach a reasoned decision derived from a comprehensive and legally sufficient record that can withstand judicial review, something it does not now have. With the stakes of exporting so high, the Department must take the time and effort to ensure that LNG export levels are consistent with its legal obligations and in the public interest of all Americans.

AEA believes that a rulemaking or similar process involving public comment would be the best method to establish appropriate standards for reviewing LNG export applications. Notably, DOE's predecessor halted its review of natural gas import applications in the early 1980s to conduct a public conference process to reexamine natural gas import policy in response to evolving market conditions, and it is this process that culminated in the development of the 1984 guidelines for import applications on which DOE has relied. But even if DOE declines to initiate a similar process to inform its review of LNG export applications, at the very least, DOE must elicit public comment and articulate standards that "consider adequately and fully all factors relevant to an intelligent determination of the overall public interest" as it relates to LNG exports. Properly established, these standards could be consistently and reliably applied to all parties seeking authorization for LNG exports. Robust, well-defined public interest criteria will bring a level of economic and other analysis and transparency that is currently lacking.

VI. CONCLUSION

As demonstrated above, the changes proposed by the Department of Energy to the LNG export review process must continue to be guided by what is in the public interest of all Americans. The public interest test is the very center of the Natural Gas Act. Yet the Department of Energy has yet to define the underlying standards that the Department is using to assess whether proposed LNG exports are in the public interest. In the applications approved so far, DOE has relied on vague criteria that it adapted from the guidelines used to review natural gas import applications in 1984.

As was done for natural gas importation 30 years ago, the Department of Energy must develop standards that will enable it to make informed public interest determinations. DOE should develop these standards based on comments from U.S. stakeholders. This will lead to export public interest standards that broadly optimize outcomes for consumers, manufacturers and the U.S. economy as a whole.

LNG export policy is a matter of critical national importance. The significance and complexity of the issue requires a process that will allow for the reasoned consideration of many diverse viewpoints on the question of whether exports of natural gas in the volume contemplated by the rulemaking – as much as 20 Bcf/d – are in the public interest.

America's Energy Advantage believes that with development and implementation of public interest criteria for LNG export applications, and utilization of analytical tools that use fact-based, forward-looking projections to represent future market conditions, the Department of Energy will be able to achieve an appropriate balance of national interests. The overarching policy goal should be to broadly optimize outcomes for the nation as a whole, from the American consumer to the various sectors of the economy and, at a minimum, to reflect income effects, job creation and value-added inputs to the economy from production and investment.

Respectfully Submitted,

Michael E. Hacker
On behalf of America's Energy Advantage
www.americasenergyadvantage.org
1000 Vermont Ave. NW
Suite 800
Washington, D.C. 20005
(202) 789-4365